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Regulatory Reform in Transport Some Recent Experiences

***Regulatory Reform in Transport:
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A World Bank Symposium

***Regulatory Reform in Transport:
Some Recent Experiences***

edited by
José Carbajo

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Foreword

The markets for transport services have been traditionally the subject of government regulation and public ownership. Rate regulation in the railways, entry restrictions in the trucking industry, minimum levels of service for urban buses and cargo reservation for shipping are examples of regulatory controls on transport that have been promoted in many circumstances worldwide. The economic model that supports such regulations in all transport modes has been based on the belief that, under some circumstances, private markets fail to provide transport services in the most efficient manner. Theoretically, this same model takes for granted that government intervention is flawless. It is not at all clear, however, that the government cure works better than the private market illness. The belief that government intervention may produce more welfare losses than the absence of any intervention has been the driving force behind the movement for reform in transport which started in the late 1970s. The contributions in this volume attempt to capture the most important aspects of that regulatory trade-off between the social costs of market failure and the

costs of correcting them via government intervention and public ownership. Two interrelated issues are at the center of the debate: whether government intervention is better than the absence of any intervention; and if some regulation is necessary, what should be the scope and content of such regulation. This debate is particularly relevant for developing countries where the inefficient delivery of transport services is a major obstacle to productivity growth and the improvement in the quality of life. Equally important, the regulatory reform of the transport industries is directly related to the efficient provision, operation and management of infrastructure. The analyses and case studies included in this volume, both by practitioners and scholars, provide an account of both issues as they present themselves worldwide.

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Introduction and Summary

José Carbajo

Functional failure is the classic economic rationale for government intervention in markets. Market failure is the inability of *private* markets to provide certain goods or services even though provision is economically justified, or to provide them in the most efficient manner. Its various causes are imperfect information among market agents, the presence of externalities, imperfect competition, or the existence of increasing returns to scale. Government market intervention may be direct—the legislation and administrative regulation of prices, quality of service, entry, and exit—or indirect, in the form of antitrust regulation intended to control firms in the unfettered exercise of their market power.

In developed and developing countries, the markets for transport services have been a traditional subject of public control, going well beyond the regulations that have health and safety for their motives. Rate regulation in the railways, entry restrictions in the trucking business, minimum levels of service for urban buses, or cargo reservation in shipping are but some examples of the myriad of regulatory controls on transport which have been promoted in the name of the public interest. The overall effect of such economic regulations depends on a variety of factors (Joskow and Rose, 1989): the motivation for regulation, the nature of regulatory instruments and the structure of regulatory processes, transport market characteristics, and the legal and political environment in which regulation takes place.

The true economic test is whether the regula-

tion improves the allocation of resources. That test is the starting point of recent regulatory reforms, including privatization. If the case for regulation was based on perceived market failures, the argument for deregulation focuses on regulatory failure. Regulatory failure occurs when the outcome of trying to address market failures is inferior to that achievable in the absence of regulation (Bradburd and Ross, 1991). An example is regulatory “capture:” when regulators adopt the regulated firms’ objectives as their own. Regulatory inefficiencies, in turn, arise in the form of a “wrong” amount of regulation, or when regulations are not implemented in the least costly way.

Overall, there is a regulatory trade-off between the social costs of market failure and the costs of correcting them via regulation, and the contributions in this volume attempt to capture the essence of this trade-off as it presents itself in different transport markets, in developing and developed countries. They range from an analysis of the evolution and reform of regulation in industries that have often been researched (such as U.S. railroads and trucking) to the examination of recent deregulation in less well known markets (Chilean shipping). This has also been the opportunity for comparing different regulatory reforms in the same market worldwide, as in the case of the urban bus industries of the U.K. and of several developing countries. Brief case studies of trucking in Mexico and Sub-Saharan Africa, intercity bus and trucking deregulation in Chile, and railway restructuring in Uruguay com-

plement this volume. The intention is to draw lessons from the experience of those developing and developed countries where regulatory reform, of one kind or the other, is taking place. A summary of the contributions follows.

Regulatory Reform of Transport

For Moore, the debate about regulatory reform starts from the recognition that we live in an imperfect world. Policymakers must choose between options that achieve better, not perfect, results. The trade-off is between the unregulated private provision of transport services and its regulated alternatives. The former does not preclude antitrust legislation; the latter includes two options: regulated private provision, or public ownership and provision.

Regulation tends to protect firms from competition, whereas government monopolies are neither disciplined by the market nor by a regulator. Privatization and deregulation are alternative ways to restore competitive private markets to industries that governments have traditionally controlled. In deregulating or privatizing an activity, governments should foster competition.

Among the propositions formulated by the theory of regulation are the interdependence between the regulators and the regulated party, the asymmetry in the information available to regulators and regulated firms, the participation of prices and the rate setter's lack of information on true costs, and incentives built into rate-setting rules, whether based on investment or operating cost criteria, which lead to inefficient allocation of resources.

The history of U.S. railroad regulation shows most of these effects. As its origin are government construction subsidies, and its evolution is governed by the interplay of various special interests. Excess capacity forced down rates, and railroads were accordingly sympathetic to regulations that would support and stabilize prices. Railroads, grain shippers, and ports were all involved in accepting rate regulation. As a result, rates increased in long haul, previously competitively priced, and declined little in the short haul. U.S. regulation of buses and trucks, on the other hand, was to control competition with railroads.

In the United States, Germany, and New Zealand, the long run effect of regulation was to

lessen competition and raise rates, except for powerful interest groups. Contrary to predictions, deregulation has not so far resulted in intense competition or market instability. The evidence is strong that trucking works better when unregulated.

Shipping Deregulation in Chile

From 1956 to the end of the 1970s Chile reserved all coastal shipping as well as 50 percent of foreign trade cargoes to national vessels. The object of the measure, in fact a value quota on service outputs, was to protect and nurture the national merchant marine and promise its entry into markets controlled by the international liner conferences. But during the 1970s these restrictions came into ever more intense conflict with the open-economy policy that characterized Chile after 1973.

An open-economy policy implies reliance on exports to stimulate recovery and growth. In Chile, this required export diversification, a departure from the concentration of exports in terms of commodities and markets, that is, the typical consequences of import substitution policies. Chile's traditional exports and imports had not been much affected by these restrictions, due to exemptions or enough political power which protected their interests. The impact of cargo reservation was rather felt by the new and expanding exports, since the required quality of vessels and service was not available in the Chilean fleet. Deregulation of shipping was undertaken first as a necessary complement to the general open-economy policy.

In 1979, cargo reservation was totally abolished in external trade, with exceptions based on the principle of reciprocity. In coastal shipping, cargo reservation was substantially relaxed. Export industries now had free access to modes, quality, itinerary, and timing of transport according to their needs and they were quick to take advantage of this freedom. The direct result was reflected in a large, quick switch between ocean transport modes: the substitution of tramps or bulk vessels for liners. The indirect effect was to induce more competition in the liner services.

The removal of cargo reservation affected the market structure of Chile's shipping industry only marginally. There was only one clear casualty among its operators, as well as several mergers,

and some new entry. Several external factors, such as the strong rise in exports from 1984 onwards and the reduction in operating costs resulting from the drastic reform of the ports, played an important role in the survival of the industry. But when the incentives to operate under the national flag had disappeared, ship-owners cut costs by *outflagging* on a large scale.

Bennathan finds that the benefits of shipping deregulation in Chile were large and prompt to appear. The negative effects of regulation, on the other hand, had been neither minor nor diffused. They were concentrated on a limited group of industries and firms which banded together in an effective coalition. Timing of deregulation was well chosen, since it was introduced when the market for ship operators was improving markedly. Above all, the deregulation of shipping in Chile was seen as a necessary companion to the open-economy policy.

Railroad Regulation and Reform

Railways were the first U.S. means of transport to be regulated nationwide, in response to rate instability caused by intense competition. Eleven legislative landmarks, from the Interstate Commerce Act of 1887 to the Transportation Act of 1958, shaped an entire period of U.S. railroad regulation. Thompson attributes the success of the first piece of legislation to the commonality of interests between the railroads, some major shippers and popular support. A similar regulatory framework was applied to trucking (the Motor Carrier Act of 1935), with the same objectives of reducing competition and stabilizing rates.

Throughout the regulatory period, railroads lost market share continually, both in the passenger and freight markets, with the trends accentuating after World War II. Trucking was the major beneficiary. The experiences of the National Railroad Passenger Corporation (Amtrak) and the Penn Central, which gave way to Conrail, were two precursors of regulatory change. The Amtrak case is particularly interesting. Congress, confronted with the costs caused by the rate and service regulations, chose to eliminate regulation rather than pay up. Similarly, a significant change in the regulatory regime was unavoidable if Conrail was not to continue as a major financial drain on the federal government.

The industrial restructuring that preceded

deregulation of U.S. railroads and trucking was one of the conditions for its success. Political acceptance was secured by the promise of direct benefits to consumers and shippers, whereas opponents (trucking industry and unions) were divided and thus unable to influence the final outcome.

The political economy experience worldwide suggests that political support and the interest and involvement of the critical policy makers are necessary conditions for successful deregulation. The political significance of the railways in less developed countries (LDCs) is great. They are large employers, usually represented by a special minister and ministry. Moreover, many shippers and final users are themselves public agencies whose transport costs are borne by the public budget. Hence, Thompson urges that a restructuring of the relationships among governments, suppliers, and consumers should be considered before railway deregulation in developing countries is attempted. Berchesi's account of the steps that were taken to introduce service rationalization and reduce costs in the monopolistic market of the railroads in Uruguay exemplify this conclusion.

Urban Bus Deregulation and Privatization

Bus deregulation in the U.K. had the primary purpose of reducing central and local government expenditures. Countrywide, bus subsidies had risen from £10 million in 1972 to £520 million in 1982. The "Buses" White Paper (1984) stated the government philosophy on bus policy: removal of quantity regulation, reduction of subsidies, and industry restructuring by privatizing the nationalized operators and by separating the metropolitan counties operators from the tutelage of the local authorities.

Full deregulation occurred in January 1987. Fares rose between 1984 and 1988/89 by an average of 23 percent in real terms in the metropolitan areas but by only 10 percent in the UK as a whole. There was a 15 percent increase in the number of vehicle kilometers (1985-89), though by smaller vehicles. Operating costs fell by around 30 percent, excluding depreciation, except in London, where costs fell 14 percent. Overall, the fall in public expenditure on local buses (excluding London) between 1984 and 1988 was 26 percent at constant (retail) prices.

In London, rather than fully deregulating bus transport, routes were put out to tender. The philosophy was that of competing *for* the route rather than competing *in* the route. Tendering, it was thought, would avoid the risks perceived in deregulation. It would allow local authorities to control fares and plan an integrated set of services with cross-subsidy, while competition for tenders would provide the required pressure on costs. Glaister suggests that tendering may not be as successful as deregulation, in its effects on costs and prices, unless it is applied to all routes simultaneously. (In London, by mid-1990, only 30 percent of bus kilometers had been let out.) Some of the difficulties in London stem from the fact that the major incumbent operator is owned by the tendering authority and from the fixed nature of the contract specification. Franchising may, therefore, have some advantages over tendering.

But the overall conclusion is that bus deregulation achieved its primary objective in terms of reduced costs and subsidies. London's experience with comprehensive tendering contains valuable lessons, of merits and some drawbacks, in particular the limited pressure that tendering exerted on costs. There has been little change in the general level of fares. Fare competition in local bus routes has failed to emerge. Cross-subsidy has been replaced by explicit subsidy, while patronage does not appear to have responded to the increased services at offer.

Buses form the principal form of motorized public transport in the cities of the developed and developing countries, and are subjected to varying forms of ownership and regulation. Meyer and Gómez-Ibáñez discern an empirical cycle of private and public involvement in the provision of urban bus services that is based on ten phases characterized by several dimensions of bus regulation: type of ownership (private or public), the scope of regulation as regards safety, roadworthiness, fares, routes, entry and exit of firms, and the extent and type of subsidies. The cycle goes from the industry's emerging stage (with numerous small private firms), through increasing public involvement, to a stage where the public authority faces the trade-off between higher public subsidies and higher fares and decides to return the service to the private sector.

Developing countries display a large variety of systems of bus ownership and regulation. Public-

ly owned companies have an effective monopoly on urban bus services in only a minority of developing countries (for example, in most cities of India) and they still face competition from other forms of close substitute services privately supplied, such as the motorized tricycle.

The interplay between privatization, regulation, deregulation, and the continuance of subsidies is based on the experience of several cities of developing countries, such as Colombo (Sri Lanka) and Santiago (Chile). Four basic lessons emerge. First, the benefits of privatization and deregulation depend critically on the presence of effective competition. Second, the introduction of market-oriented services has other benefits besides reduced costs and improved productivity. Third, the maintenance of unprofitable but socially worthwhile services, and also the regulation of fares, can be pursued while establishing a viable and competitive private sector. In developing countries, the prospect for using subsidies as a tool to enhance competition depends on the prevailing administrative capacity. Finally, the policy of subsidizing public transport, based on second-best principles, is questionable, since transit subsidies may do little to reduce the number of autos used in commuting.

Intercity Bus and Trucking Deregulation

Intercity bus and trucking deregulation in Chile were the result of global economic policies and not the outcome of sectoral reforms. Free entry into the trucking business resulted from implementing an antimonopoly government decree which was approved in 1975. Freight rate liberalization would follow.

Brown describes the historical and legislative context of transport deregulation in Chile. Policy was shaped by the emergence of an economic ideology based upon the concept of the subsidiary state and the consolidation in power of technocrats and politicians with a deeply rooted belief in free markets.

Trucking deregulation resulted in a dual market structure. A few large and profitable companies coexist with thousands of independent truckers who operate under financial difficulties. Deregulation of the intercity bus market caused a proliferation of new companies in the early stages, followed more recently by market concentration and reinforced by the construction of private bus terminals.

Mexican trucking deregulation occurred against the background of two macroeconomic policy objectives: the improvement of public finances and the reform of international trade practices. Fernández describes the inefficiencies of the trucking industry which had their origin in a legal framework of the 1940s and influenced specialized cargo and regular cargo and reviews the political context in which the regulatory reform took place. The regulations of July 1989 were issued with the aim of promoting competition so that companies of different size would co-exist and provide a greater variety of services and tariffs.

A study of trucking costs conducted in 1988 and 1989 in Cameroon, Côte d'Ivoire, and Mali serves Bonnafous as the basis to reflect on the efficiency with which trucking services take place in these three Sub-Saharan African countries. The results of two surveys, on prices and market carriers, help to analyze the hypothesis that the way trucking services operate in the local, regional, national, and international markets depends on

the combined effects of vehicle type and quality of the road infrastructure. Any regulatory strategy entails policy measures that must be monitored and enforced. The safety characteristics of vehicles and the control of overloading are some of the most difficult technical regulations to be enforced. Inefficiencies such as the payment of unofficial tolls to government employees cannot be attributed to regulation and require the improvement of the training and information accessible to all market participants.

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1

Regulatory Reform of Transport

Thomas Gale Moore

This paper sketches the origins of regulation, the rationale for government imposing controls, and the reasons for deregulation. Although the institutional details differ greatly around the world, the same political and economic factors have been involved in both the origins of regulation and its subsequent relaxation.

One difference stands out: in many parts of the world, instead of regulating privately owned industries, governments choose to own and operate the utility or mode of transport itself. At an International Monetary Fund seminar, Professor Said El-Naggar, formerly of Cairo University, said, "One of the most distinctive features of the economic situation in developing countries is the predominant role of the public sector in the production structure." While the motivation for nationalizing the industry was often the same as that for regulating it, the results were somewhat different. Moreover, when the deregulation movement began to sweep the world, in sectors where the government owned the operating companies the movement took the form of privatization.

Privatization and deregulation are alternative approaches to restoring competitive private markets in industries that the government has controlled since the 19th century, or early in this century, when many governments nationalized or regulated them. The forces and considerations that led governments to remove them from the market and, more recently, return them to the unregulated private sector are virtually identical.

It was an earlier loss of faith in the competitive

market that resulted in government takeovers of specific industries. However, government ownership and regulation were also problematic. Now, as authorities have a better understanding of both government and market failure, privatization and deregulation have become the dominant paradigm. Both theoretically and empirically, as will be outlined below, unregulated private markets work better than controlled ones or government-owned monopolies.

The economics of regulation applies to all industries supervised by governments: the government must decide on what constitutes an appropriate price and quality of service, as well as who can offer it. At the same time, regulated firms will attempt to utilize the system to increase their profits.

This conference concentrates on the deregulation of surface transport, but all modes share important characteristics. An airplane leaving with empty seats has the same problem as a train leaving with half-filled boxcars or a merchant ship without a full manifest. Some modes, such as railroads, subways, and pipelines, are capital-intensive and inflexible, while others, such as trucks, buses, merchant ships, and airlines, are much more adaptable and have less fixed investment.

Less-than-truckload motor carriers, most bus operations, and a considerable portion of airline service use a hub and spoke mechanism, a system pioneered by Federal Express with its introduction of an overnight package network. They must normally provide scheduled service on fixed

routes with sufficient capacity to accommodate last-minute shippers or passengers. As a result, such carriers customarily operate at less than capacity. For example, a load factor of 60 percent is now normal in the U.S. airline industry. By contrast, merchant shipping, tankers, truck load carriers, charter buses, and air taxis offer point-to-point transport and can often gain full loads on specific hauls.

Unless a transportation company can differentiate its service from that of other firms, it cannot have an independent pricing policy. Although bus service differs significantly from rail, which is sharply differentiated from air travel, within each of these modes passengers typically see little difference. For example, airlines have tried, with only partial success, to differentiate themselves from other airlines through frequent flyer programs, amenities on the aircraft, and ground facilities. All of these attributes, however, are easily copied. As a consequence, there can be little sustainable difference between airline fares and service. Thus, because it costs nothing to carry a passenger on a flight with empty seats, carriers are therefore induced to offer very low fares for standby passengers or others who might fill the plane. To prevent what the industry views as "cutthroat" competition, the airlines or other carriers are tempted to agree quietly on fares.

Cutthroat competition is inherently unstable: one or more firms either are driven from the market or learn to control their pricing. This need not result in monopoly, although it may mean that only a few firms offer the transport service and competition may be less than perfect.

Where cartel type agreements are unenforceable or impractical, carriers have often sought government help to stabilize rates and prevent "excessive" competition. These industries normally claim that such regulation is in the public interest, but the consumer, shipper or traveler almost always pays more.

Whether less than perfect competition is acceptable depends on the alternatives. We live in an imperfect world. If regulation is instituted either to restrain a less-than-fully-competitive market or to prevent cutthroat competition, will the regulated firm provide a better or less expensive service? Will any of the benefits of regulation outweigh the costs?

An alternative to industry regulation worth

considering is antitrust policy. Even though it cannot turn an industry with only a handful of participants into a perfectly competitive market, it can restrain some of the worst manifestations of oligopoly: outright collusion can be prohibited and, most of the time, prevented. Furthermore, government policy can thwart attempts to block entry of new carriers. Tacit collusion and price leadership, however, may just have to be tolerated.

Theory of Regulation

Good theoretical reasons exist for believing that because unregulated private firms are subject to the discipline of the market, they will perform better and enhance consumer welfare more than either regulated firms or government-owned companies. Conversely, regulation tends to protect firms from competition. Government monopolies are even worse since they are disciplined neither by the market nor by a regulator.

Whereas the market forces firms to provide the best service at the lowest cost, regulators have other goals; they are motivated by a desire to please their political superiors, politically influential groups, and the firms they oversee. If the regulators are elected, they must raise funds and obtain support for the next election. And, if businesses oppose a regulator's reelection, winning may be difficult. Moreover, the regulated industry or its supporters are often a source of campaign funds.

If the regulators are appointed to a commission by politicians, they are concerned with their reappointment or with their careers after they leave their posts. Because they acquire considerable knowledge of the industry, their best job opportunities will be within it. Furthermore, if they are on good terms with regulated firms, they are more likely to find good employment. The politicians who reappoint them also look to the industries for funds in their re-election bids. Thus the political system is biased towards supporting the industry's position. Regulators often mix and socialize with industry officials. They go to industry meetings to explain government policies and hear the trade's position and its troubles. Moreover, regulators recognize they cannot bankrupt enterprises in the industry since these cannot supply services. And, at least in the United States, courts hold that private regulated companies must be allowed to earn a profit.

Industry usually has the stronger position when governments regulate rates, since industry officials provide almost all the information about costs, rates, demand, and service. At rate hearings, the regulated firms employ the best legal and accounting talent available. Regulators must rely on low-paid government employees to counter industry arguments.

Not only do regulators have to rely on a few civil servants, but most regulatory commissions, especially in the United States at the state level, oversee a large number of firms in different industries. State commissions typically control rates and services of telephone companies, electric power utilities, natural gas distributing firms, truckers, intrastate railroads and bus operators, and assorted other industries. The Interstate Commerce Commission (ICC) oversees dozens of passenger and freight railroads, thousands of trucking firms and bus lines, and large numbers of freight forwarders and pipelines. Commissions must spread their limited resources over many highly technical topics and are unable to develop expertise about the industries they regulate.

Other factors also weaken their performance. For example, whereas commissions are often subject to intense public scrutiny when they decide on telephone or electricity rates, their work on motor carriers or railroads is followed intensely only by the trade. Even when they set telephone, gas, and electric rates, and despite public opposition to increases, commissions must be concerned with insuring the viability (profitability) of the operating companies.

At least two studies have shown that regulation has little impact on the rates for electricity charged to residential users. Further, since governments normally prohibit new companies from competing with existing regulated firms, regulations strengthen the monopoly position of firms already in the industry. However, some research has indicated that even for electric power, which is often considered the quintessential natural monopoly, competition has worked, producing lower rates.

Regulations also politicize prices: any time a change in rates is suggested, political forces are mobilized on both sides of the issues, while economic issues, such as efficiency, receive little attention. In periods of rapid inflation, opposition to nominal rate increases can often lead to

uneconomic charges and financial difficulties for utilities, which means they may be unable to make the appropriate investments to maintain and expand their facilities. In general, increasing rates to reflect costs becomes very difficult; the great difficulties in the Eastern European countries at present result from all prices, especially of daily necessities such as bread, being controlled by the state. In many other parts of the world (such as Egypt, Columbia, and Peru) riots have erupted when gasoline or bread prices have been increased to bring them closer to costs.

Moreover, if regulations do little to keep rates down and have the effect of strengthening monopolies, it may be better to suffer from an unregulated monopoly that is subject to potential competition than to rely on regulation. Technology and entrepreneurial effort may erode the market position of the firm. Monopoly welfare costs are never large: the major effect of monopoly is to transfer income from consumers to the stockholders of the corporation. And the importance of this transfer depends on the relative incomes of consumers and stockholders and on personal values relative to such income shifts.

As mentioned above, government officials, including regulators, are often tempted to provide benefits to politically influential groups. For example, farmers were involved in securing railroad regulations and in opposing regulation of motor carriers carrying agricultural goods. In addition, regulators frequently provide hidden subsidies for special interest groups: organized labor, for example, has been favored repeatedly by regulators and government agencies, since the greater the number of workers and the better their pay, the more votes for politicians who have supported prolabor policies. Other special interest groups and politically influential consumers, such as the publishers of newspapers and magazines, which typically enjoy subsidized postal rates, frequently benefit from regulations.

Even if regulators were operating solely in the public interest, which would in most cases be contrary to their personal interest, regulation is inherently faulty. Not only is information incomplete and biased, since it comes from the industry, but the regulatory process itself is fundamentally defective.

For regulators to determine appropriate rates, they must determine, in addition to the allowable cost of providing the service, a reasonable profit

for the corporation. The problem is that, not only are costs unclear, but utilities must be allowed to earn on their investment at least the cost of capital. If the return is less, they will be unable to maintain and replace plant and equipment.

An adequate profit rate, however, is a tricky concept and uncertain at best. Regulators inevitably allow a return that is sufficient to attract capital to the industry. If this is above the cost of capital, firms can increase profits by increasing investment—the larger the investment, the higher the rates and the level of profit that utilities can justify to the regulators. Since the desire to increase profits motivates business, firms have an incentive to “over-invest” and this can result in more capital and less labor than those that minimize costs. Thus, not only do regulations fail to protect consumers, but they result in inefficient production. Furthermore, if there is some competition, utilities can underprice their competitive business to justify larger investments (a larger rate base) and higher prices in their monopoly lines—a profit-increasing strategy. Not surprisingly, competitors view this as unfair competition. To illustrate, if a railroad subject to rate regulation competes with motor carriers for transporting certain commodities, it will be induced to cross-subsidize its competitive traffic and increase its rates for noncompetitive traffic. Having low rates in the competitive market allows it to justify investing more in equipment to move that traffic. If it is allowed to make a profit based on a percentage of its investment in this equipment, it can justify higher prices on its noncompetitive transport, resulting in increased overall profits.

In some cases, allowed rates are based on operating costs rather than investment. Since most of the costs for the motor carrier industry are operating rather than fixed, the ICC has traditionally looked at the ratio of operating costs to revenue to determine maximum legal tariffs. In such instances, the industry profits by agreeing on wages that exceed competitive norms in order to justify higher charges and larger profits.

Although regulators typically use their powers to protect or benefit special interests, the mischief they can perpetrate is at least limited by the desire and needs of the regulated enterprises for profit. Government-owned firms, however, are free from profitability constraints. The absence of

market discipline frees government agencies to employ more workers than are needed and be generous in wages and benefits, as well as to provide management perks. In fact, since earnings are simply returned to the government treasury without benefit to the enterprise, it is senseless for a government enterprise to earn profits. Managers of government businesses can always find costly ways to improve working conditions or to further “worthwhile” objectives, precluding realization of positive returns.

In the United States most public utilities, airlines, and railroads have historically been privately owned but regulated by the government. However, regulation limits the freedom and therefore the property rights of firms. In other countries utilities are usually government owned, which is the extreme example of limiting property rights. Hence, to return these activities fully to the marketplace requires deregulation in the United States and privatization elsewhere.

In deregulating or privatizing an activity, governments should foster competition. Structuring the policy correctly can often result in more competition than if a single government monopoly or regulated monopoly is simply privatized or deregulated. For example, governments can break up a monopoly into rival corporations, as the United States did with American Telephone and Telegraph, and it can encourage firms to enter.

In summary, regulations fail due to the lack of good information available to governments, the inherent biases of regulators, the rate-setting mechanism itself (which leads inevitably to inefficiencies), and the politicization of price-setting. Even though unregulated private monopolies charge excessive prices and produce inefficiencies, they are ultimately subject to potential competition by entrepreneurs seeking to earn a portion of their profits. Consequently, policy-makers should weigh carefully proposals to regulate an industry and move wherever possible to deregulate existing government-controlled enterprises.

Origins of Regulation

According to N. R. L. Mwase, the absence of a perfect market, especially in the developing countries, caused government to own, control, or influence, among other things, the pricing system,

at least for public utilities.

For many decades this attitude was used to justify the regulation of railroads, trucks, and other modes of transport. The only surprising aspect of Mwase's statement is that he still believes it. Modern theory and evidence suggest that regulation is not necessarily justified when the market is "imperfect." Indeed, government regulation is also flawed. Thus, in an imperfect world policymakers must choose which option will achieve a better result—not a perfect result.

The regulation of surface transport has a long history. Under British common law, ferries and bridge tolls were subject to state control by the start of the 17th century. In the United States, the first federal regulation of transport came with the Interstate Commerce Act of 1887, which established partial control over railroads. Prior to the federal legislation, a number of states attempted to limit rail rates. State commissions, for example, operated in New England before the Civil War. Given the interstate nature of much of railroad transport, however, these state agencies were relatively ineffectual.

Railroad Regulation

Virtually everywhere in the world, the pattern of regulation or government ownership of railroads originated in the 19th century. Often, railroads were heavily subsidized by the government; national or regional railroad monopolies were common. As a result, governments frequently built railroads themselves, purchased them from private owners, or regulated them.

In Africa, for example, the French built railroads in their colonies. And while the British encouraged the private sector to construct railroads in their colonies, the colonial governments took over the roads during World War I for national defense reasons, as did the Germans in their colonies.

In the United States, the factors behind the establishment of the railroad regulations by the ICC are complex. No one explanation (neither that railroads wanted regulation to enforce their cartel nor that farmers wanted regulation to control railroad monopolies) is valid. Rather, regulations arose, at least in part, from government subsidies providing for construction and from the interplay of various special interest groups seeking to capture economic rents.

Construction of railroads in the United States and in much of the rest of the world was heavily subsidized. In the United States, the result was considerable excess capacity in many major markets. This increased competitive pressure often led to rates being bid down to levels the industry claimed barely covered operating costs, with nothing left over for overhead. Thus, railroads were sympathetic to any approach that would stabilize rates at profitable levels.

Where rival railroads did not exist, as for many short-haul movements, rates were often significantly higher than for through-traffic that faced competition. Moreover, except for a handful of specially chartered corporations, railroad companies became the first large private corporations in history and appeared threatening (to the public). For this reason, grain shippers, businesses in small communities served by only a single railroad (particularly where they exercised monopoly power), and various port authorities wanted rates to be controlled.

Under these conditions, the railroads supported regulations to stabilize and raise rates on competitive routes, grain shippers and small communities did so to obtain protection against monopoly pricing, and port authorities did so to reduce competition among ports for export of grain. Given the public unease with the size of the railroads, this coalition was able to secure legislation establishing the ICC. The result was that rates increased on long haul and declined a little on short haul.

The same pressures existed around the world but, probably because central governments were stronger than in the United States, state ownership was often substituted for regulation. In fact, in the 19th century, the U.S. government could not own and operate a railroad, or almost any major business, because there was no provision in the Constitution that explicitly permitted it. The Constitution authorizes the government to provide a mail service and a sound currency, and thus makes government ownership (of the post office or central bank) constitutional. The Constitution also provides for the federal government to regulate interstate commerce; hence, the commission by that name. Thus, regulations have been used to control the industry, rather than ownership. It is not coincidental that the industries subject to the most extensive regulation in the United States—railroads, airlines, power compa-

nies, and water companies—were the ones that abroad were government-owned.

In the second half of the twentieth century, however, under the less stringent interpretation of the Constitution, the U.S. government took on ownership of railroad operations (Conrail) and passenger transportation (Amtrak). In both cases, the government took possession of money-losing activities to prevent them from being abandoned or significantly curtailed. Today, Conrail has been successfully privatized, but Amtrak, which few believe can operate without subsidies, remains in government hands.

In virtually all major countries, except in Japan where passenger service was recently privatized, rail passenger transport is a heavily subsidized government enterprise. The almost universal rationale for taxpayer-subsidized rail passenger transport is that substitution of rail for auto or air travel reduces congestion and pollution. It is claimed that there are externalities involved which warrant taxpayers' funds to preserve a form of transport that cannot survive in the free market.

Although this paper is not the place to explore the issue fully, rail transport may do little for congestion or pollution: Amtrak carries less than 1 percent of all intercity passenger miles and its share has been falling. Under even the most heroic assumptions, it cannot reduce air pollution from travel by more than 0.5 percent. And although a somewhat larger percentage of intercity travel is by rail in most other countries, railroads contribute little if anything to the abatement of either congestion or pollution.

For local public transport, the role of subways or light rail lines in reducing congestion and pollution is equally negligible. Where new light rail lines or subways were built in the United States, passenger traffic never lived up to projections; rather, passengers attracted to these systems were often diverted from bus systems. Mass transit systems have induced few passengers to give up their vehicles. Thus, if most passengers were diverted from bus to rail, any environmental benefit must come from that substitution. But, since rail systems are costly to build—with respect to energy—the energy savings derived from operations must be great enough to counterbalance the amount used in the construction phase.

Trucking and Bus Regulation

The regulation of trucks and buses grew out of their competition with railroads, which had enjoyed a monopoly position in many short-haul markets (although the longer routes were usually competitive). With the advent of motor carriers, however, short-haul transport was subject to increased competition.

In the United States, railroads began to agitate for extending regulations to trucking and motor buses almost from the first horseless carriage; in fact, they often brought successful suits in state courts arguing that the legislation establishing controls over railroads should be extended to trucks and buses. In response, several states imposed limits on motor carriers. The U.S. Supreme Court, however, held that individual states could not regulate interstate trucking or passenger traffic; consequently, state control of motor carriers was largely ineffective. As a result of the court decisions, state regulatory commissions, railroads and the ICC, anxious to limit motor carrier competition, petitioned the Congress to extend federal regulations to trucks and buses.

Partly because of opposition from the trucking industry, Congress failed to act until 1935, in the depth of the depression, when the American Trucking Associations, speaking for large trucking firms, turned to supporting regulations. Thus, a competitive mode of transport was brought under federal control.

It is unlikely that regulation would have been imposed on the motor carrier industry without at least weak support from voters and the media. Public support for regulations reflected a notion that competition had failed as a regulatory mechanism. The Great Depression contributed significantly to this rejection of the market. The growth of socialist ideas, positive reports from Communist Russia, and a belief that government engineering of the economy could cure instabilities and inequities all contributed to the belief that regulations were superior to the market.

In the case of trucking, many economists and transport scholars, as well as vested interests, claimed that regulations were appropriate: the motor carrier industry was viewed as "excessively" competitive. Entry was too easy. Firms failed to understand their costs. Prices were bid down "too low."

In general, however, regulation of motor carriers was the natural extension of regulation or government ownership of railroads. Without the agitation of railroad interests, motor carriers would have remained uncontrolled. For example, in Great Britain the Road and Rail Traffic Act of 1933 established controls over entry into the trucking industry. This imposition of controls was a direct result of the Depression and the increased competition with railroads, which found it increasingly difficult to compete with the new mode. Germany imposed controls over its motor carrier industry in 1931. Unlike the British but more like the United States four years later, the Germans established comprehensive rate controls that tied truck rates to rail rates. The main objective was the protection of rail traffic. As in most countries, the road haulage industry was taking the most profitable traffic, leaving the railroads with uneconomic goods, much of which the government required the railroads to carry at a loss. Bus transport was eating into the lucrative rail passenger market. The reduction in earnings of the German state railroad was most disturbing because for a hundred years the profits of this railroad had financed the government.

New Zealand, which recently deregulated its road freight transport industry, introduced controls over road haulage in 1936 "primarily to protect the government-owned railways' revenue and to establish price stability in the freight transport industry." Prior to the 1983 act deregulating the industry, trucking firms were subject to price controls, route restrictions, and distance limitations.

Virtually everywhere, motor carriers were brought under government supervision not because they failed to perform satisfactorily, but to protect railroad interests. In this process, politicians ignored the interests of passengers, shippers, and, ultimately, consumers who were forced to pay more for goods.

Experience with Regulation

From the beginning, economists in many countries criticized the regulation of motor carriers. They believed that bus transport was not as naturally competitive as trucking; but, as long as there was a rival rail passenger network, competition was viewed as adequate. Trucking was generally seen as a highly competitive industry—

too much so in the railroad industry's eyes—that could perform well without government supervision. Regulation, for the reasons given above, would reduce competition and lead to higher tariffs. The critics turned out to be right.

In the United States, Germany, and New Zealand (to take but three examples) regulation over time led to higher rates, monopoly pricing, and less competition. In the United States, the ICC "grandfathered" existing carriers: it awarded grandfather certificates of public convenience and necessity that confined the truckers to those routes and goods they could prove they had hauled prior to 1935. After the initial grandfathering, it was virtually impossible for new firms to enter the trucking industry: to secure a new certificate of public convenience and necessity, the commission required the applicant to show not only that there was a demand for its service but also that existing carriers would not be able or willing to provide the service.

Eventually, the operating rights of regulated carriers were worth hundreds of thousands or millions of dollars, reflecting the monopoly profits inherent in the restrictions. Organized labor shared about half the profits from restricting entry. The losers were the shippers and—once more—the consumers, who were forced to pay extra for trucking transport. Under pressure from agricultural interests, however, the U.S. Congress exempted the transport of farm products from regulation, and a competitive industry of exempt carriers developed to handle these products.

A number of studies showed that unregulated trucking was superior. For example, studies by the U.S. Department of Agriculture showed that after the courts in 1950 ruled that agricultural products such as poultry, frozen fruits, and vegetables were exempt from regulation under the law, freight rates fell 12 to 59 percent, with an average of 33 percent for fresh poultry and 36 percent for frozen. The weighted average decline for frozen fruits and vegetables was 19 percent. The department also found that shippers tended to prefer the unregulated service to the regulated.

In the 1970s a survey by the National Broiler Council of its members gave further evidence of the effect of regulation on rates and the quality of service: in comparing rates for the same routes between the same points, it found that, on average, unregulated rates for cooked poultry were

approximately 33 percent less than rates charged by regulated carriers. Members also indicated that they preferred unregulated carriers to regulated ones or found no difference between the two on all aspects of service quality.

Contrary to industry predictions, deregulation has not brought excessive competition or instability to transport markets. Australia was the first major country to deregulate a significant portion of its road haulage industry. In the 1950s, its Supreme Court ruled that the government could not regulate the interstate transport of goods. Although there are no data on rates, the industry is reportedly free of any instability or destructive and wasteful competition yet is quite competitive.

Experience in Europe demonstrates that regulations tend to produce higher rates. In 1970, the United Kingdom, which had never imposed very restrictive regulations on road haulers, removed all economic controls over the trucking industry. After the limits on entry were abolished, rates appear to have fallen.

In comparison, Germany, with a more restrictive regime, sharply limited the number of licensed vehicles. As in the United States, the value of the licenses for each vehicle rose to hundreds of thousands of dollars. Furthermore, since Germany did not deregulate its motor carrier industry, these licenses are still very valuable, although the threat of deregulation with the formation of a true common market in 1992 has undoubtedly tempered their value.

A study of rates actually paid during 1973-74 in Germany, the United Kingdom, other European countries with light regulation, and in the United States, showed that costs were highest in heavily regulated Germany, almost as high in the United States, and considerably lower in the unregulated or lightly regulated countries.

The evidence that unregulated trucking works better than regulated is forceful. The theoretical justification for believing that a free market works better than regulation is unambiguous. Nonetheless, it took a change in the ideological climate for the political system to change its policies. Partly this change reflected the success of airline deregulation; partly it reflected the success of unregulated trucking elsewhere; and partly it reflected a new appreciation of the market as an allocator of resources.

Worldwide Liberalization

Most of the nations of the world have adopted a policy of privatization and deregulation. While many are simply giving lip service to the concept, a significant number are actively pursuing liberalization policies. For example, many countries are selling state-owned enterprises or reducing government controls over the private sector. Even economists in the former Soviet Union are proposing denationalization and markets, although they have yet to accept fully the necessity of allowing for private property. Until June 1989, China was moving towards deregulation and privatization. Poland recently embarked on an ambitious program of structural reform, including freeing prices, selling government assets, and opening up competition. Hungary has set up an agency to manage and foster privatization.

The worldwide success of domestic liberalization efforts is the result of a change in intellectual climate. At the end of World War II the prevailing paradigm was socialism. Most observers believed that, in one form or another, it would become dominant. Nevertheless, a growing body of literature on how poorly government performed helped convince opinion makers, intellectuals, and officials that markets often work better than the government. For example, studies of unregulated airline markets, demonstrated they performed better than regulated ones. The work of James Buchanan and other public choice theorists showed that government administrators and bureaucrats have the wrong incentives and too little information to ensure good outcomes.

In country after country nationalized industries have performed poorly. Often, they lose money and large taxpayer subsidies are necessary. In many cases service is inferior to that provided privately. Moreover, workers, who expected to benefit from government ownership, have frequently found that the government was no better an employer than were capitalists.

Finally, the obvious failure of socialist systems around the world has proved the case for liberalism. Germany worked better than the Communist East; South Korea is more successful than the socialist North; South Vietnam, before it was overrun, was more prosperous than the North. Hong Kong, with no natural resources, has become

the second richest economy in Asia, while China stagnates. Taiwan, although less liberal than Hong Kong and Chile, prospers. Chile, which, under Pinochet, adopted free market principles, has the most prosperous economy in South America.

The strong evidence that unregulated private enterprise works better than either a government-owned firm or a private, regulated one has convinced much of the world to reduce government regulation and to privatize. Unfortunately, there is strong opposition. The status quo, whether a governmental establishment or a regulated industry, provides benefits for some at the expense of others. Thus, those that benefit oppose privatization or reduced government supervision of private enterprises. Even where industries were deregulated, those that profited from regulation want to restore government management. Maintaining a liberal economy requires a continuous and often frustrating battle. For example, in 1989, the secretary of transportation of the Philippines supported a limited decontrol of "jeepney" routes (small buses on fixed routes in Manila). However, the Land Transportation Franchising and Regulatory Board, owners of jeepneys, and the Alliance of Drivers Association opposed the move and won.

In the United States some politicians, airline union officials, and academics have questioned the benefits of airline deregulation. Since organized labor lost benefits under deregulation, union support for re-regulation is understandable. Although almost all passengers benefitted from decontrol, travelers in a few smaller cities have had to paid higher fares. Naturally, politicians from those districts also advocate recontrol. Nevertheless, only one study out of dozens on the effect of airline deregulation concluded that there were no significant benefits from the liberalization.

Deregulation in the United States

Deregulation does not mean abolishing all regulations, since antitrust and safety constraints are normally maintained. In the United States, the airline industry, for which all economic controls over entry and prices were abolished, is still subject to antitrust oversight and Federal Aviation Administration (FAA) supervision of safety. The Federal Highway Administration in the Department of Transportation oversees highway safety.

Motor Carriers

Congress has deregulated truck and bus operations almost entirely, but some controls remain. Operating licenses (certificates of public convenience and necessity), are still required and motor carriers must file rates or tariffs with the ICC. In recent years, the ICC has been fairly liberal in granting new operating licenses—often granting nationwide authority to carry almost all types of freight. Occasionally rates have been suspended or denied, but the commission has been generally permissive.

Such increased freedom produced a decline in freight rates and greater willingness of trucking firms to go off-route to pick up or deliver freight, although rates for truckload shipments fell farther and more quickly than those for less-than-truckloads. At the same time, non-union firms and subsidiaries of existing motor carriers have sharply eroded the strength of the drivers' union, the International Brotherhood of Teamsters.

Nonetheless, regulation does continue and a commission less sympathetic to competition and more regulation minded could become quite restrictive. In fact, throughout the 1980s a struggle ensued between the Congress and administration, the former favoring pro-regulation appointees to the commission and the latter favoring those who were pro-market.

In its last term, the Reagan administration sent a bill to Congress to abolish ICC control over rates and entry of motor carriers. The Teamsters' union and the American Trucking Associations vigorously opposed it. For its part, the Bush administration came out strongly for abolishing all remaining controls on motor carriers, intercity buses, interstate rail passenger transport, interstate barge operations, ferries, pipelines (other than water, oil, or gas), carriers of household goods, freight forwarders, and freight broker services. Even with administration support, however, it would be a struggle to move legislation through Congress.

Railroads

With the 1980 Staggers Act, Congress increased the freedom of railroads to negotiate rates and price their services freely, except in cases of "market dominance." As a result, railroads became aggressive competitors, successfully going after

new markets. In addition, the ICC deregulated a number of services, such as intermodal piggyback service and certain grain rates. Railroads also vigorously used the authority acquired in the Staggers Act to contract with major shippers.

On average, since the passage of the Act in 1980 real rail rates have declined. Coal companies and a few other "captive" shippers have complained that their rates have risen, but data published by the ICC fail to show any significant increase in rail rates for coal shipments. Because of pressure from these coal companies, some power companies, and certain grain shippers, a number of influential legislators in Congress have attempted to strengthen railroad regulation: in recent years, they introduced several bills to roll back the Staggers Act, but the administration successfully opposed them.

Surface Freight Transport Benefits

Overall, curtailed surface freight regulation has led to significant savings for the American economy. One study indicates that the benefits range between \$39 billion and \$63 billion annually. These benefits have come largely in the form of reduced inventory costs resulting from "just-in-time" shipping, which has been enhanced because trucking and rail firms are able to offer better service—more off-line and guaranteed delivery—than they could under regulation.

Conclusions

A less regulated economy will provide more flexibility and rapid growth than one that is highly controlled. Between 1982 and 1989 the United States, following a series of important deregulatory measures, enjoyed one of the highest rates of growth among Organization for Economic Co-operation and Development (OECD) countries. Financial markets, transport, and communications were given new freedom and the economy flourished. While it is impossible to prove that moderating controls on the private sector alone

caused the improved market performance of the U.S. economy, it is noteworthy that during the 1960s and 1970s U.S. growth was significantly slower than in Europe.

The other outstanding performer during the 1980s was the United Kingdom. Between 1985 and 1988, the "sick man of Europe" enjoyed the fastest growing economy in the Common Market. It is plausible that this strong performance stemmed from the British program of privatization which, in turn, increased the competitiveness of its economy. As argued earlier, when an economy is heavily government owned, privatization is the equivalent of deregulation.

Even if increased freedoms for private firms fail to improve the performance of an economy, they normally bring benefits to consumers. Because regulation is inherently biased toward reducing competition and producing benefits for the regulated and other special interests, it rarely, if ever, helps consumers. Almost universally, whenever deregulation occurs, prices fall, service improves, and consumers are better off. This is particularly true for transport.

Transport modes, with the possible exception of railroads and pipelines, are normally quite competitive, which leads to low rates and good service. Motor carriers and sea transport are potentially fragmented industries with many carriers. Even rail transport, if it faces active trucking and barge industries, is subject to competitive pressures.

Unfortunately for most developing countries, government control and ownership is the norm. Deregulation and privatization would do much to move these economies towards a more efficient system that would eventually produce badly needed growth. The benefits of free markets and a private transport sector are also applicable to the rest of the economy. As Hong Kong proves, an unregulated free market economy performs well; as mainland China demonstrates, government ownership and regulation strangle economic growth.

QUESTIONS AND ANSWERS

Q: Based on your views about deregulation, how do you see the problems with the savings and loan institutions in the U.S.?

Moore:

The savings and loan institutions reflect too much control in one area, liberalization in the wrong area without deregulation of the one most important areas, that is, the deposit guarantees. Because the federal government gives \$100,000 deposit guarantees to depositors at savings and loans and other banks, they encourage the S&Ls to take high risks. When the government deregulated part of the industry, they should have also addressed these guarantees because now, under the current deposit guarantee system, if there is a financial difficulty, the S & L has an incentive to make a big, risky loan. If you lose, taxpayers pay; if you win, your stockholders win. As long as they had that kind of guarantee for substantial deposits, it was insane to permit them to make very risky loans. You have to control both areas or free up both.

Q: One objective of this conference is to establish preconditions and conditions, not only for deregulation as such but also for a judicious blend of regulation and deregulation. In reading through the paper by Professor Moore, it seems the only area where there is clear Pareto optimality in any sense is the airlines, where all parties seem to have gained. In trucking the main effect has been to actually reduce wage levels, and in the railroads, one effect has been to reduce employment. Even if one applies some sort of Hicks-Kaldor test of compensation, which many people consider inadequate, it does not necessarily prove that deregulation is beneficial to society. This applies particularly in developing countries, where, very often, other preconditions necessary for absorbing the labor force displaced by such activities are not yet in place and a lot of countries are subject to structural adjust-

ment loans. In other words, isn't it somewhat dangerous to apply deregulatory policies across the board without having some adjustment mechanism in place?

Moore:

I never claimed that deregulation of any industry is Pareto optimal, including the airline industry. There, pilots clearly lost from deregulation, since they got lower wages as a result. Also, there is a belief that some businessmen ended up losing because they used to fly half-empty planes and now it is no longer so since airfares are cheap. I do not claim that deregulation was Pareto optimal for the airline industry. In trucking, wages went down for the truckers. But before, they were vastly overpaid, getting half of the monopoly gains. I do not see why the rest of the shippers and the public should pay for higher-than-competitive wages for part of the trucking industry. The other part of the trucking industry, the owner-operators, were just getting a normal return on their efforts. Why it is good that some truckers exploit a monopoly position? In the railroad industry, deregulation reduced employment, which makes productivity go up and that is what is involved in economic growth. If we can produce more with less labor, that is economic growth. That is not negative, that is good. All these things are in fact benefits, not necessarily to monopolistic labor that lost out, but to the economy in general.

Q: My concern is the framework in which we discuss regulation, which is a direct intervention by government in the transport sector. In fact, it is only one type of possible intervention. The sector is also affected by macroeconomic and sectoral policies. These seem highly relevant to developing countries; so, it may be misleading to put so much emphasis on the United States, which has no transport policy—which is a hindrance. In many developing countries,

there would be great concern if they were to go through the experiences of Penn Central, Greyhound, Eastern, Braniff, and American President Lines—examples which indicate considerable lack of global policy towards the transport sector, leaving it up to piecemeal regulation by different agencies.

Moore:

I do not see how macroeconomic policies fit in this discussion, and nobody knows what macroeconomic policies do. We could have a long discussion as to whether budget deficits are positive or negative for the economy. As far as the United States not having a transport policy and that this constitutes a hindrance, I would suggest it is quite the opposite: it is a hindrance to have one. When Jimmy Carter developed an energy policy, it resulted in long queues at gasoline stations in the United States and a misallocation of oil. Thank God we do not have an energy policy anymore! Instead, we have a market that generates energy and transport, but this does not mean firms will not go bankrupt—that is part of the natural competitive mechanism. If Greyhound [the major interurban bus company] makes it, fine. If Greyhound does not make it, there will be other bus companies. The question is whether it is desirable to have bankruptcy. It is part of the competitive mechanism to drive firms to be efficient and provide good services at good rates to the public. What developing countries ought to do is get rid of transport policies that are standing in their way.

Q: You mentioned that the trend worldwide is towards deregulation. Most of us concur. But, there is an area where regulations may return: the broad area of environmental concerns. There are vehicle and fuel standards, and I would not be surprised if pricing by different modes becomes the subject of the environmentalists who argue that different modes should be priced differently according to their environmental effects. What are your views?

Moore:

I would agree that the environment is an area where government should play a role. There are externalities from industry, or any human activity, that can degrade the environment.

So an appropriate government regulatory mechanism is a desirable policy. Motor carriers replaced the horse and buggy, but if they had not, downtown Washington would be filled with as many horse and buggies as there are now cars and the pollution and stench would be such that nobody would want to go there. Natural economic forces produced a cleaner environment even before there was an Environmental Protection Agency. It is not coincidental that the richest countries in the world also have the cleanest environment. But if motor carriers are, in fact, particularly harmful to the environment, then a gasoline or fuel tax might easily be a useful remedy and I would not oppose it. I would oppose trying to use a regulatory scheme—say, raising the price of trucking—to encourage people to use rails. What you want is to impose a tax on all motor carriers' fuel because burning of the fuels adds to environmental problems, and to directly attack it that way rather than use a regulatory mechanism.

Q: To extend the point about externalities, aren't they much broader than the environment? Europeans frequently argue that they are willing to subsidize passenger transport by as much as 50 percent because they want cities to have a certain look, the look of Paris and Geneva and not of Los Angeles. This is a legitimate, political decision. A second point: isn't it too soon to assess the effect of deregulation? It is not good enough, two or three years later, to argue that tariffs have fallen 20 to 30 percent and therefore it is a success story? It is pretty clear that the U.S. airline industry has not gone through all of the dynamics, and we don't know what it is going to look like in the final analysis. Amtrak is still 50 percent subsidized. Greyhound is having enormous problems and has just declared Chapter 11 bankruptcy. In other words, it is going to take possibly two or three decades to work itself through until we can reach a definitive conclusion.

Moore:

I consider Washington, D.C. and San Francisco very beautiful cities, and I would put

both of them up with Paris as three of the most beautiful cities in the world. Los Angeles is not the only alternative in the world for a deregulated environment. We still have San Francisco and Washington, D.C. As far as judging the effects of deregulation, you are absolutely right, except that we will never have a definitive answer. We will never get to an equilibrium and say, this is the way the industry is going to look. The industry will continue to evolve over time. Ten years from now someone will say it is too soon to judge, and, in some sense, it is always too soon. Actually, we have had 13 years of airline deregulation because deregulation started before Congress acted. It goes back to 1977 for airlines, back to 1978 and 1979 for trucks and rails, well before the passage of the act. We have already had over a decade of experience and the evidence is unambiguously beneficial, not to everybody, but in general. Ten years from now we will know more, but we will not have the final answer.

Q: If I may, in one sentence, try and capture the thrust of what you said, regulation is bad, deregulation is good. My concern is that if you say regulation is bad and rates regulation is good, I would agree with you. But there are other regulatory instruments which allow, within a deregulated framework, the use of market incentives that result in better outcomes for society. These are structural regulations, such as franchising, yardstick competition, and even conduct

regulations, which prevent some sectors from cream-skimming. There is literature, particularly on the United Kingdom in the 1980s, which considers these matters.

What is your opinion?

Moore:

I support antitrust regulations, but when you talk about economic regulation, such as control of entry and control of rates, even if you talk about cream-skimming, if you control one area, you have to control the other. It is like the savings and loan example. Either you free up the industry or you don't. There has been much discussion about ways to improve regulation. Yardstick competition is an example which is not new. The Tennessee Valley Authority in the United States, which produces electric power, was considered a yardstick for judging private power companies. Yet, it has had more nuclear power plants shut down than any other electric power company in the United States and probably in the world. None of them is operating. They have spent billions on building them and it has been a disaster which the public doesn't realize. I am not sure that yardstick competition is a very efficient way to regulate an industry. I have looked at a variety of ways and I have yet to see one that works. People keep hoping there is something the government can do. I keep looking for something the government can do right. There are things the government can do, but these are usually a mess, especially in the regulatory area.

2

Deregulation of Shipping: Lessons from Chile

Esra Bennathan

In 1956, Chile introduced a system of cargo reservation in coastal and external shipping.^{1/} In 1979, that system was dismantled, almost wholly with respect to external shipping and partly with regard to cabotage.^{2/} In both its rules and the methods of implementation, Chile's system of 1956 was similar to what other developing countries have instituted and still retain. What was distinctly unusual was the fact and form of abolition (or "deregulation") in 1979. The question arises, therefore, whether Chile's policy and experience were conditioned by unique circumstances or whether they have wider relevance.

With regard to coastal and foreign shipping, and to shipping policy, Chile is similar to various other developing countries. Its geographic position at a great distance from the world's main markets and, moreover, in a region of relatively light ocean traffic, make for relatively high ocean transport costs. Competition among carriers is weak in such circumstances, and the market power of traditional liner cartels is correspondingly strong. In other countries, the causes may differ but the results are the same. Chile's national merchant fleet is similar in tonnage to that of other middle-size maritime developing countries (say, Colombia or Malaysia), and the national shipping industry includes a small number of well-established firms, one state-owned and another that ranks among Chile's 20 largest nonfinancial corporations in terms of the value of company assets.

Like other countries that pursued import substi-

tution, supported by controls on foreign trade, foreign exchange, and internal prices, Chile's exports, until the early 1970s, were highly concentrated in terms of commodities and markets. Copper, nitrates, iodine, and iron ore made up 80-90 percent of export value. Copper moved in liners, nitrates and iodine partly in liners but largely in tramps, and iron ore in bulk carriers. The dominant exports were controlled by a small number of corporations that could make their voices heard by the government and could hold their own in negotiations with liner conferences or in the international charter markets. The break in national economic policy came with the change of government in September 1973. Controls were removed gradually but consistently throughout the 1970s, the economy was opened to world markets, and exports were relied on to stimulate recovery and growth. Success was contingent on an expansion and diversification of export products and markets, particularly because external conditions were not helpful: copper prices, which had attained a historic peak in 1970, fell and continued falling until 1978, rose steeply for two years, and eventually resumed their downward trend. The terms of trade were deteriorating throughout most of the 1970s and beyond. Growth of national income was therefore slow, but the government persisted in its open economy policy. The results are reflected in the share of exports in GDP: 15 percent in 1973, 23 percent in 1979, and 31 percent in 1986.

Chile is not, therefore, a special case in terms

of its shipping situation, national shipping industry, economic structure, external conditions affecting trade, and the declining markets for its main traditional export, or in the turn of policy from import substitution to export orientation. What is unusual is the persistent and systematic manner in which open economy policies have been pursued, extending to the country's ocean transport and the national shipping industry.

Cargo Reservation and Consequences

The law of 1956 reserved all coastal shipping to Chile's national vessels. It also reserved 50 percent of foreign trade cargoes. The reservation applied separately to each category of cargo and separately to exports and imports.

National vessels were vessels registered in Chile, which required 75 percent Chilean ownership, and flying Chile's flag, which required registration as well as a Chilean crew and compliance with prescribed manning scales.^{3/}

To supplement their fleets, national companies were permitted to charter foreign vessels for up to 50 percent of their own tonnage and operate them as national vessels, provided the chartered vessels did not belong to Chilean owners.

Most profits of national shipping were taxed at concessionary rates, but the resulting savings, as well as 13 percent of profits, were tax exempt and were to be allocated to a capital construction fund. The free sale of national vessels was prohibited.

To protect trade and industry (the shippers), rates charged for the transport of reserved cargo could not exceed the levels prevailing internationally. For liner transport, this limitation soon came to mean the rates posted by the liner conferences. For other modes—tramps and bulkers—rates were those established for comparable operations in competitive international markets, which were difficult to determine in individual cases.

The 1956 measure had multiple objectives. It was to protect the national merchant marine by imposing a quota—in fact, a value quota—but to do so at minimum cost to the country's exporters and importers. It was to enable Chile's shippers to enter territory dominated by the international liner conferences, and it was carefully designed to lead to the growth of a merchant fleet owned and manned by Chileans and under the country's

flag. The combination of objectives is not uncommon and is, in fact, similar to U.S. law. The measure had the backing of the navy, because national ships can be commandeered in emergencies and all maritime personnel are automatically members of the naval reserve,^{4/} and of labor, because employment on national vessels is reserved to nationals.

Chile's national merchant fleet did indeed grow substantially. Its total tonnage doubled between 1965 and 1979, not as fast as world tonnage, increased, but faster than world tonnage of general cargo vessels, which continued to form the bulk of Chile's fleet (as is also the case in other developing countries).^{5/} Chile's share of export tonnage at the end of the 1970s was about 20 percent and of export freight revenue, about 30 percent. In imports, the cargo share was higher, at 47 percent, and in the associated freight revenue, 45 percent. In general cargo—essentially in liner transport, which was the mainstay of the national companies' operations—the tonnage share was about 40 percent in both exports and imports. However, the companies that acquired the tonnage and were involved in external transport were only modestly profitable at the end of the decade. Financial rates of return on total resources employed by the two leading private companies in 1979 (a year of strong cargo movements and an improved international freight market) were 11 and 8 percent; the state-owned company operated at a loss. Thus, it is unclear how much benefit the enterprises derived from the protective system which imposed on them labor costs well above the levels of foreign shipping industries.

The impact of the regulations on exporters and importers was determined by the 50 percent rule and by the method of applying it. Chile's trade routes were covered by liner cartels, and the national companies joined them whenever they could or else priced their services according to the conference tariffs. With half the trade reserved to Chile's flag, not enough was left of the market to attract independent carriers that might have established regular services to compete with the conferences, nor would such competitive entry have been in the interest of Chile's shipping companies.

The scope for external competition was further narrowed by the way in which the law was applied, which involved an administrative assign-

ment of individual shipments to either national or foreign flags. Shippers had difficulty predicting to whom the assignment would be allocated, and exemption depended on the issue of waivers by each of the national companies that operated on the routes in question. Liner conferences pool cargo and revenues. A Chilean conference member, when asked to issue a waiver because it had no ship available to take the cargo, could therefore not be indifferent to the competitive status of the ship that the shipper was proposing to use. It would readily waive its rights in favor of another conference member but would be less cooperative when the ready vessel was an independent competitor. Further, when nonlinear shipping seemed appropriate for the cargo, there was the possibility of conflict with the conference (or with Chilean companies outside the conference but applying the conference tariff) over whether the cargo was not really "liner cargo." Even when there could be no disagreement on the point, the assigning procedure prevented shippers from contracting with foreign shipowners or bulkship consortia for the regular transport of their products simply because they could not be certain they would be allowed to load the cargo on those ships. Moreover, the provision that Chilean national carriers should not charge more for their service than was charged internationally for similar service left ample room for dispute and delays.

The evidence of the 1970s indicates that traditional exports and imports were not noticeably affected by the regulations: either they were exempt from the restrictions, were powerful enough to protect their interests, or had adapted to the system in terms of the quantities and destinations of their exports. It was the new or the expanding exports that felt the impact of cargo reservation: fresh fruit, fish, pulp and paper, fishmeal, and simple manufactures sought connections with new markets and had to establish themselves by prompt delivery of goods in good state. However, the quality of vessels and service that was demanded by some of the new commodity flows was not available in the Chilean fleet. Exporters found access to available foreign bulk shipping services blocked by the obligation to give half their annual cargo to Chilean vessels, as well as by the assignment method.

An expansion of exports is the most obvious condition for the success of a policy where so

much depends on opening the economy. Experience after 1973 showed plainly that this expansion had to come from new export industries or from new markets for established products. By 1979 it was clear that impediments to such new ventures had to be eliminated if the momentum of the new exports was to be maintained. While the low productivity of public ports was generally seen as the country's main shipping problem, and could indeed be blamed for the continuing decline of coastal shipping, negotiations for port reform had been under way since 1974 and by 1979 were still not resolved. Thus, deregulation of shipping was undertaken first, as a necessary adjunct to the general policy of opening the economy.

Deregulation

The law of 1979 abolished cargo reservation totally in external trade, except with countries that reserved cargo for their own ships. In those cases, Chile reserves the same share for national vessels that the others reserve for theirs. The trade affected in this way by the principle of reciprocity—essentially with other Latin American countries—was somewhat less than one-quarter of Chile's total trade in the early 1980s. Even so, until 1985, ships of all freely trading countries were allowed to compete for what was reserved to the Chilean flag under the reciprocity rule. In 1985 there was a partial retreat from this fully competitive system in that cargo notionally reserved to Chile's flag under the reciprocity principle became so in reality.

Cargo reservation in coastal shipping was substantially relaxed. Cargoes above 5,000 tons could be put to public tender, open to all flags; for lesser volumes, private quotations could be obtained from any flag. In each case, the lowest bid or quotation could be accepted, with preference to Chilean national ships in the case of equal bids or offers. This measure also underwent change in 1985, signifying again a certain retreat into a more protectionist regime: shipments of 900 tons or less were reserved to Chilean national vessels, presumably to protect Chile's operators in the transport of general cargo, which was reviving strongly after the reform of the ports in 1982. Larger shipments were open to international competition, subject to preference margins and taxes that thus acted like import duties, replacing the original quantitative restriction.

The totality of these measures amounts to a more thorough liberalization of shipping than was undertaken by other countries that practiced cargo reservation. The partial retreat from the line drawn in 1979 and the redrawing of the line in the cabotage regime suggest that reform was not driven by doctrine but by the quite pragmatic considerations of the wider costs and benefits of protection. There was also an element of caution in shipping policy: Chile signed the UNCTAD Code of Conduct for Liner Conferences, which prescribes the division of conference line cargo or revenue among the companies of the importing and exporting countries and third countries in the proportion 40:40:20. Chile's reciprocity principle is not compatible with the code. Further, the government did not encourage competition with liner cartels: in 1981, after economic conditions plummeted and Chile's companies were experiencing losses, it helped the state-owned company enter the European cartel, but at the expense of the existing Chilean member. Competitive undermining of the cartels in trade with Chile did follow on the reform, but only as an indirect result.

After Deregulation

The years after deregulation put Chile's shipping industry to a harsh test. The international shipping depression that started in 1974 resulted in growing excess capacity and falling rates until the end of the decade. After a revival at the turn of the decade, rates started to slide again and continued sliding for three years. The severest test, however, came with the fall of Chile's economy into deep recession in 1981-82.

The 18 months after the deregulation of shipping in 1979 saw high activity in the economy and foreign trade. However, trade volumes and values dropped sharply in 1981, followed in early 1982 by a financial crisis and a deepening of the recession: GNP in 1982 fell by 16 percent. By 1983-84, when the recession turned into slow recovery, Chile's shipping companies, like other corporate enterprises, had lost a substantial part of their capital.

Export industries reacted immediately to the new freedom in shipping, searching the international markets for the most economical way of transport to established and new destinations. Free access to service modes, quality, itinerary,

and timing of transport irrespective of flag became particularly important during the years of crisis and recession. The government persevered, with only temporary retreats, in an open economy policy. The growth of exports that could make up for steadily falling revenues from copper and iron ore was indeed essential for success. But from 1979 to 1982, the incentives to export were severely eroded by the combination of a fixed exchange rate, high inflation and backward indexation of wages. Some of the major new exports faced unavoidably high ocean transport costs: for fresh fruit and fish, pulp, paper and other forestry products, this amounted to 15-25 percent of the price in the foreign market. In those circumstances, unhindered access to the most reliable and economic transport available was essential for exporters who were trying to retain their markets or gain new ones.

Once cargo reservation was removed, trade, and industry responded—both directly and indirectly. The direct result was reflected in a large switch, quickly accomplished, between ocean transport modes. With respect to Chile's exports to the United States, the results can be quantified. The substitution of tramps or bulk vessels for liners went furthest in the shipping of refrigerated cargo: the share of liners dropped from 40 percent in 1978 to 4 percent in 1986. Substitution was also substantial in dry cargoes (pulp, paper, other wood products, fishmeal, and nitrates) that move in loads large enough to fill a substantial part of a tramp or the smaller bulker. On that and other routes, exporters chartered directly in the international market or entered into contracts with international bulkship pools. Different exporters consolidated their individual shipments and chartered jointly or integrated their shipments into trade flows to or from other regional countries.

The indirect effect, however, was to induce more competitive behavior on the part of the liner conferences and the liner services that followed their pricing lead. As shipments switched from liners to tramps or bulk services, and when Chilean conference members could no longer inhibit competition by working the levers of cargo reservation, conference pricing in Chile's trades became more competitive. More room was given to service on negotiated terms, and cargoes that had formerly been in contention between conferences and tramps were now of-

ferred transport by competitively priced conference bulk services operated by the conferences themselves.

Judging from the statements of exporters and importers, the largest benefit to Chile's trade resulted from the removal of restrictions on the choice of ocean carrier and service. But the savings from this direct effect of deregulation are distributed over a great variety of functions and activities and are therefore difficult to quantify. The indirect effect, working through increased competition between carriers, expressed itself in the freight charges relative to those in the foreign trade of other countries which continued to operate cargo reservation.

An analysis of the determinants of liner freight charges in U.S. imports shows that liner rate-making in Chile's trade became more competitive after deregulation than in the export of similar commodities from the east coast of South America, where cargo reservation continued to rule. An alternative way of tracking the indirect effect of deregulation, in the same sample of exports to the U.S., is to compare the percentage changes of freight charges from Chile and from the east coast of South America for the same list of exports (Table 1.) The index of Chile's freight charges

in this trade rose by 2 percent. Had charges followed the same path as those paid by exporters on the east coast of South America, the increase would have been 23-37 percent, depending on the responsiveness of freight charges to differences in the relative quantities within these baskets of identical commodities—essentially, on whether the charge per ton is lowered as quantity rises. (The third line in the panel, weighting freight charge changes with east coast relative quantities and modal mix in 1978, confirms that the faster rise in the east coast index cannot be explained by differences in the base year composition of the two samples. The residual explanation is then the difference in shipping regimes and its consequences.) We estimate, therefore, that deregulation was associated, six years after the event, with a saving of some 22-25 percent of the freight bill on Chile's exports to the U.S. This is also likely to have been the order of the general indirect effect of deregulation, via a more competitive supply of ocean transport.

A higher freight bill would, of course, have raised the operating revenue of Chile's shipping companies. For a rough idea of the order of losses and gains involved, assume that freight charges in 1986 had been raised by 10 percent

Table 1: Average Freight Charges per Ton for 20 Commodities Imported by the United States, 1986

<i>Weight</i>	<i>(Laspeyres index)</i>	
	<i>1978 = 100</i>	
	<i>From Chile</i>	<i>From east coast South America^a</i>
1. Each origin's cargo quantities and modal distribution ^b in 1978	102	123
2. Chile's cargo quantities and modal distribution ^b in 1978	102	137
3. East coast of South America cargo quantities and modal distribution ^b in 1978	82	123

^a Brazil, Argentina, and Venezuela.

^b Liners and tramps, including bulk carriers.

Source: Bennathan (1989), part II.

across the board, on imports and exports, with no change in the cost of supplying shipping service. The freight bill on the country's exports and imports would have risen by \$90 million, while Chile's shipping companies would have added \$34 million to their gross profits. Assume, however, that Chile's companies had decided not to follow such a general increase in freight charges, had therefore kept their prices constant, and had managed to raise their share of aggregate freight revenue (from an unchanged national tonnage of exports plus imports) by one-half, from 38 to 57 percent. If the ratio of the companies' operating and sales expenses to their operating revenue was on average equal to 0.89 (as reported in 1986 by Sudamericana, Chile's leading shipping company) the result would have been to add \$16 million to the gross operating incomes of Chile's companies but \$38 million to the aggregate freight bill for Chile's exports and imports. This back-of-the-envelope calculation shows that in any plausible circumstances relevant to Chile in the 1970s and 1980s, only competition among the foreign suppliers of shipping services could restrain prices sufficiently to yield net gains to the economy. Chile's cargo reservation scheme, like that of other countries, did nothing to stimulate such competition; if anything, it had the contrary effect. Deregulation provoked substantial external competition, with effects that are reflected in the development of Chile's freight charges relative to those of its cargo-reserving competitors.

The speed and scale of the response by Chile's producers and traders to deregulation testify to the restrictiveness of the system that was withdrawn in 1979. Since the restriction was intended to protect and promote the national shipping industry, what occurred after the industry was deprived of protection was the most noteworthy chapter in Chile's experience with deregulation of shipping.

Among the firms that made up the industry, deregulation and the consequences of economic crisis and recession appear to have caused only one clear casualty. In addition, deregulation seems to have motivated some mergers. But there were also additions: the official list of shipowners grew from 19 firms in 1980 to 23 in 1986. The leading firms lost part of their capital in the years of crisis, but by 1986 much of the loss had been recovered. After two years of

negative results, the two leading private companies were earning returns on total resources of the same order as on the eve of deregulation.

The survival of the enterprises owes something to events outside their own sphere. Exports rose again strongly from 1984 onward. Operating costs in Chile's trades were reduced by the drastic reform of ports and the resulting increase in port productivity. Important help also came from the growth of coastal shipping, to be attributed in part to the improvements in the public ports, but for the rest to the industry's own efforts.

An immediate response to deregulation and the disappearance of the incentives to operate under Chile's flag was outflagging on a large scale. By 1983, some 30 percent of Chile's merchant tonnage was under foreign flag, the obvious escape from the high cost of manning rules and wage levels. In the next stage, with better access to finance, the quality of the companies' fleets was improved by introducing new or young ships and by adapting the technical composition of the fleets to what the market seemed to indicate: more bulk carrying capacity in multipurpose vessels, container capacity, and, especially, reefer ships. All the leading firms became more active in providing bulk services, in chartering vessels for operations under their own control, or in chartering on behalf of customers. All entered into port cargo operations. New services were inaugurated. Management in several firms was reformed and entrusted to new executives.

There is little doubt that membership in conferences or intercompany agreements protected the revenues of Chile's shipping companies in Latin American internal trade. In the main interregional trade, however, the market shares of liner conferences were being eroded by defections, by the growth of independent operations for the transport of traditional liner cargoes in quasi-bulk form, and by the growing independence of container consortia. To suggest conference membership as a major reason for the survival and recovery of Chile's shipping companies is to do less than justice to the vitality and adaptability of the firms as they emerged after deregulation and the economic crisis of the following years.

Protection of the national shipping industry is not, however, an accurate description of the overt objective of Chile's cargo reservation law, nor a full one of the presumed ultimate aims. Cargo

was exclusively reserved for ships owned by Chileans and flying Chile's flag (enhanced by a limited volume of chartered foreign flag tonnage, provided it was not owned by Chileans). Overtly, the object was to build up a merchant fleet owned and operated by Chileans. Underlying this were a "naval" objective and an economic one. Deregulation did nothing to further the naval objective, which was to increase the tonnage under Chile's flag and manned by Chileans: national tonnage in this sense was about the same in 1986 as in 1979 and rather less than in 1980 (when ships under contract of purchase were finally paid for and added to the fleet). The question is then, whether deregulation conflicted also with the objective of promoting the national shipping industry, at minimum cost to Chile's trade and industry. The mechanisms in the regulatory apparatus that were to protect users against monopolistic exploitation by the sheltered shipping companies were obviously failing in the 1970s, in relation to the new export flows, and they failed in ways not foreseen by the authors of the protective system. In that respect, it was regulation that had failed. The positive economic objective, to promote the national shipping industry, was framed in terms of target shares of national flag vessels in export and import freight. In those terms, deregulation defeated the economic objective: by 1985-86, Chile's flag share of export freight had dropped by two-thirds and that of import freight, by one-half, below the levels of 1978-79.

By the mid-1980s, however, Chile's companies were earning no less than 40-50 percent of their freight revenues from operating under foreign flags, whether in vessels owned by Chilean companies or chartered by them for their own or their customers' use. The aggregate share of Chile's national companies in freight revenue from Chile's exports and imports after deregulation was, if anything, somewhat higher than the revenue share of the national *flag* had been before deregulation.⁶⁷ Under cargo reservation, however, the share of the national companies should not have been very different from the share of the national flag. If that is a valid assumption, it follows from the data that deregulation did not significantly affect the revenue share of Chile's shipping companies. If an industrial promotion objective has to be stated in terms of market share, the natural focus would be the share of the

national companies. In that sense, deregulation seems to have done not much worse, or no worse, for the shipping industry than cargo reservation had done, and at a substantial saving to trade and industry.

Conclusions

Chile's experience is relevant to the regulation and deregulation of ocean transport in the following ways:

- Governments do not ordinarily legislate protective measures against the interests of important existing groups of producers. Chile's cargo reservation rules of 1956 did not conflict in any critical way with the interests and needs of the main exporting and importing industries of that period. (Nitrates, which might have been hurt, were explicitly exempted from compliance with cargo reservation.) Minor exporting interests, on the other hand, tend to get overlooked, and new entrants into the production of tradables have to fight their way across the obstacles of the protective system. The costs of the system fall on new initiatives but only attract attention and cause concern when traditional exports get into difficulties or new export industries, having surmounted the transport barriers erected by the system, take a visible place in the foreign trade accounts. Cargo reservation acts like a tax on new enterprise, and the costs tend to get counted too late.
- Immediately after deregulation, Chile's exporters and importers transferred large portions of their cargo from customary to alternative modes—from liners to chartered vessels or alternative bulk services, much of it to be carried by foreign companies. By that time, however, Chilean companies already had considerable experience in chartering and in operating with bulk or tramp vessels. They also owned or controlled vessels appropriate for such operations and were seeking in the 1970s to adapt themselves to the new demands. But the dimension of the transfer of cargo between modes and flags after deregulation indicates the inadequacy of local resources. Protected industries, even those as vigorous as the country's shipping industry, do not on the whole adapt very quickly to demand changes,

nor can a national fleet of medium size possibly reproduce the variety of technical resources available internationally. In a restricted market it is difficult to obtain a reliable idea of what kind of transport service local exporters and importers find optimal for their trades, at given prices of their products and inputs, and within the range of operational technology. The general conclusion from Chile's experience is that the real cost of protection is not easily ascertainable and certainly not predictable, even within broad limits.

- The side effects of cargo reservation, as of other forms of protection, are difficult to foresee and control. Provisions intended to minimize or limit the cost of regulations to transport users are therefore likely to fail in their purpose. A side effect of the country's cargo reservation rule and the way in which it was administered was to suppress competition *among foreign ocean carriers* even though that should have been in the interest of the country and its industries. It had the effect of strengthening the hold of liner cartels over Chile's trade for longer than might otherwise have been the case and of reinforcing the internal cohesion of the cartels. Once the restrictions were lifted, competition among foreign suppliers of ocean transport caused Chile's freight rates to fall significantly relative to those facing its competitors in international trade who continued to protect their shipping.
- Cargo reservation, in Chile as elsewhere, is intended and designed to protect national flag shipping, not the total operations of national shipping enterprise in the transport of national exports and imports. Two explanations are available for this common feature. First, the government intends to retain full control over the beneficiaries of protection and their use of the proceeds. The intention is to ensure that profits are invested in further ships, increasing the size of the nationally owned fleets. Second, protection of national enterprise by quotas on the import of shipping service is more readily accepted by other states and by the international liner cartels if limited to national flag trade rather than the potentially larger trade of national shipping enterprise. Organized labor also approves because use of flag normally requires the employment of nationals. Thus, the volume of shipping entitled to protection is

less than what national shipping companies could provide to their customers by recourse to chartering and contracting with alternative shipping modes available in the international markets. The cost to users who have to comply with cargo reservation is raised correspondingly and in the various ways that appear from the study of Chile's experience. Looked at merely as a measure to promote industrial development, cargo reservation thus appears inefficient and even less justifiable as an economic policy than the standard quota method of protecting industrial production.

- A distinctive characteristic which shipping shares with air transport but with few other industries is that its productive equipment, in the shape of ships of all kinds, qualities and technologies, can be leased or chartered in a highly competitive international market on a great variety of terms. Cargo reservation systems, however, typically require the protected operations to be carried out with the operators' own vessels. This condition is implicit in restricting protection to national flag vessels, since flag is conditional on the ship being registered in the country and registering usually requires national ownership of the total equity or a large portion of it. Chile, like other regulating countries, reinforced the incentive for national ownership by restricting the national companies in the chartered foreign tonnage that they could employ in carrying reserved cargo.

For the purpose of industrial development, however, the acquisition of capital assets, where they are not essential for carrying on the business, seems less important than acquisition of experience and contacts in the domestic and world markets through which shipping services are traded. It is those skills that have made for success in international transport services. The reasons for requiring operation with owned tonnage are similar to those for limiting the protection of cargo reservation to national flag operations. The naval interest argues for this requirement, and so does the belief that only commitment to high fixed costs guarantees serious commitment to the activity. Finally, the rules of international liner conferences require members to operate principally with their own vessels. But liner conferences have an interest in

raising the financial scale for entry into ocean shipping, while industrial policy should aim at lowering barriers to entry. Nor is good choice of investment guaranteed by these rules. If investment is to be encouraged, there are more neutral methods. The decision on what to own and what to lease is best made on the technical and commercial judgment of operators. Hazarding a guess, a neutral policy for the promotion of Chile's shipping enterprise would probably have resulted in a different composition of Chile's owned fleet than what emerged in 1979, with more reefer and tramp or small bulk ship capacity and fewer conventional liner-type ships.

These conclusions relate directly to the effects of regulatory regimes commonly imposed on shipping and to their removal. But Chile's experience may also be examined in the light of standard questions that arise in the study and the practice of deregulation, in transport as in other sectors.

Stigler, in a celebrated article (1971), states that regulation theory must furnish an explanation of who will receive the benefits. Where is one to look? Chile's navy supported regulations that promised to nurse a fleet legally under the country's control and therefore enhance its strategic naval potential.^{7/} Labor benefited from high, obligatory manning scales, to which Chilean flag ships had to conform, and from wage scales negotiated with the participation of government and, hence, of the navy. Deregulation may have resulted in a lower rate of wage hikes, but the increase in shipping activity has prevented unemployment. The owners form a third obvious group of potential beneficiaries. But the accounts of incumbent companies, over the period examined in our study, show no clear gains in profits. The regulations appear to have raised costs but not, to any significant degree, profits.

Stigler proposed that regulation, as a rule, is acquired ("captured") by the industry and operated primarily for its benefit. But regulation also has side effects. Benefits slide away beyond the confines of the industry as usually defined. In industrial countries, there is considerable evidence that the benefits of regulation of telecommunications and aviation were shared, if not absorbed, by the suppliers of equipment.^{8/} In Chile's case, benefits partly went to the international shipping conferences and their members, European, American, or Japanese. The confer-

ences accordingly looked on deregulation with considerable misgivings, which were justified by the event.

In many cases, as Beesley points out in his study of Britain's deregulation of road transport (1988), benefits from deregulation do not reveal themselves sufficiently promptly to be readily identified, attributed, and measured. Transport users adapt themselves to the system and only respond concretely to the opportunities opened by deregulation when they perceive a balance of advantages in reorganizing their business methods and in adapting or changing their capital plant. The passage of time and the change in general circumstances then covers the track. It follows that the faster the benefits of deregulation reveal themselves, the worse have been the effects of regulation. Our study suggests that the benefits of shipping deregulation in Chile were prompt and were sufficiently large to be widely acknowledged and measured with reasonable credibility. By that evidence, the negative effects of regulation had become significant when deregulation was undertaken.

The timing was therefore tactically right. The government was not driven by fundamental principle, as appears from subsequent realignments and retreats from the first radical measures of deregulation. With the navy, labor, incumbent companies and their foreign partners in the cartels arguing for continuation or, at best, limited reform of the regulations, and with some uncertainty about the effects of deregulation in ministerial circles, the government was unlikely to embark on the dismantling of a long-established and widely practiced system of regulations (and one that could in no sense be imputed to the policies of the preceding regime) had its effects been judged minor, or perhaps substantial in the aggregate but widely diffused in incidence. But the negative effects were not minor and not diffused; rather, they were concentrated on a limited and visible group of industries and firms. The lobby for deregulation thus conformed to Olson's (1965) criterion for the effectiveness of coalitions in that it was relatively small and compact—principally exporters of forest products, fruit, vegetables, and fish, jointly pursuing a well-defined and limited objective. And the urgency with which they pressed their case was reinforced by the cost, much higher in shipping than in road transport, of escaping the effects of

regulation and the suppression of competition by a resort to own-account operations. Timing was also tactically good in that deregulation was introduced when the market for ship operators was improving markedly. Freight rates all over the world were recovering from a deep shipping recession in the mid-1970s, and they improved markedly in 1979. A few years earlier, or indeed four years later, the opposition of the industry to any move that threatened the increased competition would have been more determined and probably, more convincing to the policymakers.

Above all other factors, however, deregulation of shipping in Chile should be seen as a logical and very effective adjunct to any open economy policy.

Notes

1. That is, the government required that a certain proportion of cargo be carried on Chilean-registered ships.
2. Cabotage refers to transport between two points within a country.
3. Registration is thus a necessary but not sufficient condition for flagging. Exceptionally, a vessel on Chile's register could be permitted to fly a foreign flag (cf. Law 12.041 of 1956, Art. 3, and the Navigation Act, Law 2.222 of 1978, Arts. 3, 9, 12, 13, and 14).
4. Decree Law 2.222 (1978), Art. 98.
5. World tonnage of general cargo vessels—tramps but mainly liner-type ships—rose by about 50 percent.
6. The national flag share, in this calculation, includes revenues earned from chartered vessels within the legal limit of 50 percent of owned tonnage that Chilean companies could employ like national vessels, in cabotage or the remaining trades.
7. Inasmuch as the regulations protected the national state-owned shipping company, they also protected employment opportunities for senior naval personnel on retirement from the service.
8. For example, Olson and Trapani (1981).

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QUESTIONS AND ANSWERS

Q: Without disagreeing with the general conclusion of your important study—in particular, that regulation is bad at times of major technological and commercial change—I take issue with the comparison you make between freight costs on the east and west coasts of South America. Strictly speaking, this is not comparing like with like because if you had substituted Peru or Ecuador in

the table which compares freight costs before and after the period of deregulation in Chile with the average freight rates on the east coast, you would have reached the same conclusion: Peru and Ecuador also enjoyed a reduction in freight costs over this period. Yet these two countries maintained their cargo reservation and probably strengthened it during this period. This is

not to say that the abolition of cargo reservation was not a positive step in Chile. It is simply to observe that exogenous factors may influence freight rates more heavily than deregulation itself. Regulation may be very important at certain moments in the history of a country's shipping, usually connected with major technological changes like containerization or commercial changes like the emergence of new export commodities, such as frozen food in Chile. The Bank should focus on determining when these changes occur and on what its reaction to these pressures should be. How do you view this?

Bennathan:

I would maintain that the comparison I make between Chile and the east coast is the right one. It is perfectly true that Peru and some Colombian ports experienced much the same rapid change in rates as Chile, but Chile remained the main trader on that coast, and certain liner conferences tend to charge very much the same rates. The competitive pressures arose in Chile and Peru and to some extent in Colombia. The same happened in bulking. Moreover, the Chileans dragged the Peruvians to some degree through joint ventures into a relatively liberal system. As regards the simple freight rate comparison, if you look at conference tariffs and also at the prices quoted according to Drury's by trampers, or at rates at which charter contracts were concluded on the west coast, they are more or less dominated by what goes on in Chile. For that reason, in order to make this clear in my own tables, I distinguish Chile, east coast, west coast, and others. I don't believe that I perfectly standardize. If the difference had been small then, lacking Dr. Moore's optimism, I probably would not have found anything; but the differences are not small. Whichever weighing system you use in the Laspeyres index, the differences are quite telling. If I understood your second point, I do not know whether the cargo reservation introduced in Chile in 1956 was an instance of a successful infant industry measure. I have my doubts, but I do not know. What we are trying to do at this conference is to take a step beyond the theory of regulation and look at the theory of deregulation. While

there is no such theory very clearly in my mind, I think it is important to ask in what circumstances you can get out of a scheme that has shown itself, as no doubt was true in Chile, to be strictly counterproductive. In certain circumstances, I think, things should happen. If Chile had not done what it did in 1979, if I had been at the World Bank at that time, I would have advised it to act in this manner. The same goes for Turkey. When general economic conditions are such that shipping stands against the achievement of what, by common agreement, is a major policy objective the World Bank, project officers should give up. This is really my reason for not concentrating on what led to cargo reservation in many countries. Import substitution, on the whole, is out of favor in trade and services even more so than in industrial production and agriculture. No one would say that import substitution in food in the Asian countries has misfired. That was caused by technological changes. However, in services, import substitution for airlines, road transport, and shipping has misfired. The same is true of insurance. Import substitution of insurance was attempted by restrictions similar to those we discussed in shipping, and the consequences have been unfortunate. My question is really not so much what did Chile get out of regulation—because I am sure that if it got something out of it, it sat too long on its loss. The 1970s were the time to get out of regulation. In a sense, I was intrigued to find it took them so long, in the course of all those reforms that were meant to open the way to foreign trade and restructure the Chilean economy, to get rid of cargo reservation. When they did deregulate, they embraced it forcefully, and that is what I found very impressive; that the act of deregulation was followed, almost immediately, by a crash of the economy and by a retreat of all the neighboring countries into high degrees of protection.

Robert Brown:

The reason it took so long is that it took a long time to convince the navy. In fact, the first two laws in the transport sector, as you point out, strongly reinforced cargo reservations under the Pinochet government. On the quantitative side, I am afraid it is more sticky

still because Chile did not just deregulate maritime shipping. Rather, it had a revolution in the ports, and I would defy anyone statistically to disentwine the impact of the increase in port efficiency and deregulation of shipping. It is a single package. I believe there is a paper in the Bank on port deregulation where we make practically no mention of shipping deregulation. All the benefits of Chile's increase in commerce are due to what they did in the ports. If we put these two studies back to back, we would have a reasonably balanced picture of what really went

on. The particularities of Chile may not seem too relevant to, say, Africa. But what is critically important is that the cargo reservation in Chile since 1956 and the reservations that continue in Colombia, Peru, Brazil, and Argentina have had a disastrous effect on the introduction of new technology, in particular, containerization. All these countries got stuck with obsolete traditional general cargo carriers at a time when they should have been opening up to containers and new kinds of ships. This did not happen—I would say, in large measure, because of cargo reservation. And that is a lesson for other parts of the world.

3

The Evolution of Railroad Regulation in the United States

Louis Thompson

To answer the simple question, "How should governments approach the issue of controlling railroads, with regulation being one of several alternative methods of control," several topics must be explored. This paper discusses the U.S. experience in detail because it is so fully documented and, in fact, relevant to World Bank borrowers. The four broad topics are: (1) the growth of transport regulation in the U.S., and why it flourished; (2) the results of regulation up to 1980, when the regulatory equation was changed; (3) the deregulatory experience in the U.S.; and (4) similarities and differences between the U.S. and developing countries, lessons for the Bank in railway (and transport) management, and a framework for looking at the issues of control and regulation.

The Growth of Transport Regulation

According to Moore (1972, p. 3), "The current situation of railways is only intelligible in the context of its history." A brief history of railways and regulation in the US is therefore useful.

"Regulation" in this paper means "economic regulation," that is, public intervention in the rates or services offered by an entity that sells goods or services to the public. To the extent that the distinction can be made, this definition excludes public interventions for reasons of worker health and safety, or working conditions, although these have obvious economic implications. Also, as will be discussed below, the definition of regulation should not be viewed

statically: in fact, it has changed considerably over time, as has the ability of economists to define the objectives and measure the impact of economic regulation.

The first nationwide regulation of transport in the U.S. was in railways. Interestingly, it came about because of a belief that there was too much competition: railways had been over-built in many areas of the country—especially the Northeast—mainly because of financial speculation in the creation of railway companies. As a result, the perceived "high fixed cost, low variable cost" structure of railways tended to generate severe rate cutting and tariff instability whenever railways directly competed for traffic, and the railways did not favor this sort of competition, for obvious reasons. Not so obvious is the fact that many of the major shippers did not like it either because, in a period when the producers/shippers enjoyed monopolies or monopsonies, their objective was not to minimize transport costs but to factor uncontrollable competitive elements, including transport charges, out of the competitive equation. Both shippers and railways wanted rail rates to be public and to be averaged over large and small shippers. Another major thrust was "locational" (regional) interests: farmers located farther from major markets who wanted their rates averaged and stabilized so that they would have the same transport costs as farmers located nearer. Also, port authorities in smaller ports, or ports more costly to serve, wanted rates vis-à-vis larger ports to be equalized in the same fashion. To the shippers, controlling instability

was often just as important as equalization. Many countries in which the Bank now works, especially Eastern Europe, still have this attitude, in which predictability and comfort are preferred to the uncertain challenges of the private sector.

The first piece of legislation, the Interstate Commerce Act of 1887, deserves some discussion because it set the stage for nearly a century of regulation. It is especially important to understand the political philosophy which led to adoption of the act. The act provided:

- All rail charges should be “reasonable and just.”
- There should be no discrimination in rates between persons, and concealed rebates of tariffs were prohibited.
- Geographic discrimination (rates which “favored” one port over the other) was prohibited.
- Long hauls were not allowed to be charged at rates less than short hauls.
- Pooling of traffic was barred.
- All rates should be public and charged as published (no secret rebating.)
- The Interstate Commerce Commission (ICC) would be created to oversee the regulations and to collect and publish information.

An important characteristic of the Interstate Commerce Act legislation is the language of the objectives: much of the thrust is aimed at non-economic or even antieconomic considerations. For example, the basis for the notion of “reasonable and just” rail charges was equity, not economic efficiency. The emphasis on geographic equalization was an explicit attempt to reach political objectives, with the knowledge (at least later, if not at the beginning) that the result would be clear inefficiency in transport operations. This is not to mention, of course, the hopes of the railways and certain shippers that competition would be suppressed, along with the “ruinously low” (according to the railroads) rates. Although Congress had some sense of the economic rationale (or “irrationality”) for the legislation, the overwhelming motivating force was political perception, and those perceptions exist today. In a report for the World Bank, Eric Beshers (1989, p.1) called this perception the myth of the miraculous railroad—that the railroads were rich, powerful, and unscrupulous and that they were probably earning exorbitant profits from their

monopoly position. So, they could always afford a little more of a social burden (rates reduced for political purposes) if they were protected by regulation from undue competition. (This is a familiar phenomenon in many of the Bank’s borrowers: for example, about three years ago the government of Kenya, ordered the railway to hire additional staff purely to create new employment. The government did not offer to compensate the railway for this imposed inefficiency, believing that the railway could simply increase its rates in order to cover the costs.)

It is important to realize that the pressure to do exactly the same things came simultaneously from the railroads, from some major shippers, and from a part of the public, although for very different reasons. The railroads wanted to collude and increase rates, and many shippers wanted to equalize rates (no matter what their level) in order to control competition. At the same time, politically powerful interests (for example, Midwestern farmers) were encouraged to think that they were getting something for free, even though the overall impact was bound to be adverse. This is the wonder of politics, and it is not confined to the U.S.

Recognizing this commonality of interests (if not of objectives) is critical because there are some who argue that the “history of regulation clearly indicates that it was established mainly to reduce the competitiveness of railroads...to maintain cartel pricing and increase the profitability of railroads” (Moore 1972, p. 93). While this was at least one of the railways’ objectives, it is only a partial explanation. The real power of the idea came from the fact that major shippers also supported the law, and, however paradoxically, it was consistent as well with a powerful strain of populist politics. If just one of the supporters had acted alone, the original legislation would probably not have passed.

Unlike other modes of transport, railroads have an important place in the country’s folklore—which partially explains the attitudes of those regulating railroads from the start: Images such as John Henry or Casey Jones are combined with “Let the public be damned” notions,^{1/} to suggest the overbearing power of railways or their financiers on public consciousness. These images strengthen the myth which is not unique to the U.S. Myths, like songs and stories, perhaps especially *because* of songs and stories,

endure long after the words were written.

Transport regulation, as in many other areas, also illustrates the phenomenon that political or economic models can be more appealing than reality: When reality departs from the model, there is a tendency to try to fix reality rather than adjust the model. Mostly in this spirit, the 1887 Interstate Commerce Act needed "fixing" a number of times over the years. The equity goals, along with the aims of the interest groups that passed the law, were inconsistent with economic efficiency. The reason it was not fixed for nearly 100 years is because the political myth was much stronger than reality.

The first attempted fix was the Elkins Act of 1903, that (1) made it a punishable offense for railway corporations or railway officials, to offer or engage in rebates or concessions; (2) made it unlawful for shippers to solicit or receive rebates; and (3) made it a misdemeanor to depart from published rates.

It is clear that this was a bill to satisfy shippers' interest, although the railroads did not oppose it. Shippers who opposed the earlier practices because they were more concerned with limiting competition than with lowering their costs obviously benefitted from the new law's provisions. In fact, this strain of thought frequently affected regulatory practice.

The next piece of legislation, the Hepburn Act (1906), (1) permitted the ICC to set maximum rates (establish a quantitative definition of unjust and unreasonably high rates); (2) required a 30-day notice of rate changes; (3) prohibited railroads from shipping commodities they or their subsidiaries produced (the "commodities clause"), in order to prevent them from gaining a competitive advantage on these products; (4) extended ICC jurisdiction to pipelines and express companies; (5) permitted the ICC to set through rates and joint rates for shipments that traversed two or more railroads; and (6) increased the penalty for offering rebates (which was already illegal). With such provisions, the act aimed to continue the general thrust of reducing competition and stabilizing rates.

The process continued with the Mann-Elkins Act of 1910. This legislation (1) permitted the ICC to suspend the implementation of proposed rate changes for up to 6 months (a measure that restrained railroad competition as much as it protected shippers because railroads were often

the ones demanding that rates be suspended); (2) gave the ICC control over the classification of commodities in order to remove another degree of railroad pricing freedom; (3) allowed shippers to designate the route they preferred, a measure intended to increase competition; and (4) reinvigorated the "long haul/short haul" clause.

World War I was an interesting interlude in the story. During this period, the federal government actually took over the direction of railroad operations in the name of promoting the war effort. The result was that, in a time of booming traffic, a \$568 million profit in 1917 was turned into a loss of \$1.5 billion by 1920. This was an expensive, but depressingly familiar, lesson with the public operation of railroads.

The next step was the Transportation Act of 1920. Somewhat traumatized by the experience, and the cost, of the ill-fated venture into railway management, Congress wanted to make the railroads financially sound and stable again. The act provided that the ICC should (1) set "just and reasonable" rates so that railroads could earn roughly a 6 percent rate of return on assets (railroads that earned more than this would have to place half the excess into a recapture fund which would be paid to the weaker railroads to keep them alive); (2) consider the revenue "needs" of the weaker railways (a provision that became another method of providing an internal cross-subsidy for inefficient operations and services) when deciding the division of joint rates, that is, on how to divide revenues when more than one railroad was involved in the shipment; (3) establish minimum rates (to define and prohibit rates that were "too low"); (4) control intrastate rates, under certain conditions, and entry and exit (including the abandonment of branch lines) in the railroad business; (5) approve traffic and rate pooling (where competitors divide the business among themselves instead of competing); and (6) develop a plan for consolidating the "weak" and "strong" railway lines in order to keep as much mileage in operation as possible. This last was not a mandatory authority but could be used in approving merger cases. It was eventually used to force inclusion of weak lines into the mergers of stronger carriers.

Then came the Emergency Transportation Act of 1933, which provided for (1) a new "rule of ratemaking," which required the ICC to consider the impact of the rate being set on the movement

of the traffic, the need for adequate transport at the lowest cost, and the need for revenues sufficient to provide the required services; and (2) a federal coordinator of transportation who would improve coordination of routes and movements among competing railroads, facilitate the creation of traffic pools, and identify gaps in regulatory authority.

This act (although it was never implemented as the proponents hoped) deserves discussion because of its intent. In effect, the U.S. Congress was still exploring the idea, initiated in the Transportation Act of 1920, of increased federal intervention in the management of the railroads. The role of the private sector was actually diminishing, even though ownership of the railroads remained in private hands.

The next step, which was one of the most important regulatory initiatives, was the Motor Carrier Act of 1935. This brought trucking under the full regulatory framework that had applied to the railroads. It was a natural response to the Great Depression, which nearly destroyed the railroads; many went into bankruptcy, and several never really emerged from bankruptcy, although they survived in their weakened state into the 1960's and 1970's). The general thrust in trucking was the same as it had been for the railroads to reduce competition and stabilize rates. The act covered three broad areas—entry, rates, and service—and it created three types of trucking services: common, contract, and exempt (Table 1). As the terms suggest, the common carrier offers to carry goods for anyone who meets the

terms, conditions, and rates of the carrier's tariffs. The contract carrier offers specialized services, under defined contract conditions, with a particular shipper and does not offer similar service to the general public. The exempt carrier is not regulated as to tariffs and entry.

Much of this basic structure continues today. Unlike railroads, control over entry, especially the "grandfather clause," was extremely important to the trucking firms because there were (and are still) very few economic barriers to entry in trucking. Thus, for the trucking industry and the banks that financed them, limiting entry was critical, as it created very large economic rents, and turned trucking certificates into financeable commodities. Also, important to understanding the incidence of regulation is the fact that the "exempt" commodities (largely agricultural products) were significant, amounting to more than 60 percent of intercity ton per kilometer. The "contract" status, which created a direct and productive relationship between shipper and carrier, did not exist for railroads. The primary proponents of the legislation were railways, large ("grandfathered") truckers, the ICC and labor, a slowly growing force, both in trucking and railroads. Larger shippers and smaller trucking companies opposed the legislation because the former did not want competition to be constrained and the latter feared for their survival if they had to compete with large, protected firms.

Congress took several steps to try to close the final gaps. The first was the Transportation Act of 1940 which brought inland water carriers under

Table 1: Types of Carrier, under the Motor Carrier Act of 1935

	<i>Common</i>	<i>Contract</i>	<i>Exempt</i>
Entry	Operate under a certificate of public convenience and necessity (PC&N). Grandfather Clause	Need a permit of PC&N Less restrictive	Unrestricted (safety regulations)
Rates	Just and reasonable All rates to be published	Publish minimum tariffs only	Not regulated
Service	Specified routes, commodities, and end points. Very specific and restrictive.	"Specialized service;" limited number of customers, distinct needs	Private carriage, local, fish, and agricultural products

regulation. However, it immediately exempted about 85 percent of their traffic from regulation and established a new transportation policy that aimed at "preserving the inherent advantages" of each of the modes. Freight forwarders were brought under regulation in 1942 (with entry similar to contract trucking status, and with rates similar to common carriers). The Reed-Bulwinkle Act of 1948 legalized rate bureaus (railroad rate-setting cartels) under ICC control. The Transportation Act of 1958 was a final attempted patch in the regulatory balloon: it tried, somewhat tentatively, to free railroads to compete with (unregulated) water transport, but it was ignored by the ICC.

Regulation Results

During the time the regulatory framework was being erected and developed, the economy under regulation was very much a moving target. For example, the dominant role of railways at the beginning of the regulatory period was clear: even as late as 1929, railways carried about 74 percent of the volume of intercity freight per ton-km. The major competition was shipping on the Great Lakes, a source of traffic which is no longer significant. If this shipping is excluded, the figure is higher still—about 90 percent. By 1988, however, the share had fallen to only 37 percent (which accounted for only 9.6 percent of revenues).

A similar picture developed in the passenger field. In 1929, railroads carried over 77 percent of the volume of intercity public carrier passenger-km (and over 15 percent of all passenger-km includes the private auto). By 1987 this had dropped to just 3.4 percent of the public carriers (only 0.7 percent when private auto traffic is counted). The trends in traffic after World War II accentuated the shift, resulting in a dramatic loss of passenger business and a clear decline (in relative position) in freight.

Profitability followed the same trend. Many railroads were in extremely shaky financial condition by the end of the 1970's, following a period of near financial disaster at the beginning of the decade marked by the Penn Central bankruptcy and the collapse of several Midwestern farm railroads. The length of railroad lines actually peaked around 1910, after which the system continually shrank.

The trucking industry was a major beneficiary of the railway decline. First, this was the result of the changes in the structure of the economy, which placed a premium on the quality of service that trucks could deliver. Second, it was due to the massive federally funded highway construction program, the Interstate Highway System. After WWII, over \$230 billion in Federal funding went to the national highway system; \$82 billion was earmarked for the Federal Aviation Administration; and only \$22 billion was spent on railroads—about \$19 billion of which was for Amtrak. In fact, business was booming for freight modes other than railways. There is evidence the favorable traffic trends were accompanied by financial health: The other modes did not suffer from regulation, to anywhere near the same degree as railways, if at all. There was no crisis in trucking or water shipping, as there was with railways, which was driving the need for regulatory changes.

Change in the 1980s

Why were changes in the regulations needed in the 1980s? First, there was a clear shift in the nature of the market for freight and passenger transport and of the roles of each of the carriers. Passengers had clearly turned away from railway travel, and freight business had long since shifted as well. Although the myth died hard, there was an emerging realization that the fable of the bountiful railway would have to be reexamined.

There were two significant precursors to general regulatory reform: the formation of Amtrak and the reorganization of the Penn Central. A short discussion of each is important to understand both the power of the myth and the way change was approached.

The Amtrak experience offers significant lessons. Intercity rail passenger service had rapidly declined after WWII (when gasoline was rationed and highway travel tightly restricted). By 1970, industry experts estimated that railroads were losing over \$300 million a year on passenger service (almost \$900 million in 1988 dollars and about half their potential net income), and the financial viability of many individual carriers, and thus of the entire industry, was threatened. Equally important, at least in the minds of rail passenger service proponents, was the belief that the quality of rail service had drastically declined

and that the primary focus on freight by the existing private railway companies ensured that passengers would never receive adequate attention.

As a result, Congress and the Nixon administration created the National Railroad Passenger Corporation, better known as Amtrak, to assume the responsibility and financial burden for providing intercity rail passenger service. Amtrak which is wholly owned by the federal government, was conceived of as a for-profit corporation. It is managed exactly as private corporations are managed and, significantly, is entirely free of all of the regulatory constraints on pricing and service frequency that had burdened the formerly private sector passenger operations. Amtrak has clearly achieved its objective of lifting the burden of passenger losses from the freight railways; however, it has also been an expensive proposition, costing the federal government about \$19 billion since its founding in 1971. This figure includes operating subsidies, capital payments, and the \$2.2 billion invested in the project to upgrade passenger service between Washington, D.C., and Boston.

Amtrak was the first major break in the prevailing belief that railroads could, or should, carry all the historical burdens to which their supposed "monopoly" status entitled them (the myth of the miraculous railroad that can pay for anything). Its creation was also significant because Congress, when confronted with the need to cover the cost related to rate and service regulations (as opposed to burying them in the accounts of a private sector corporation), chose to eliminate regulation entirely. It was an important precedent.

The Penn Central experience also helped create an environment for regulatory change. In 1970, the Penn Central railroad entered bankruptcy—just three years after it was created from the merger of three large railroads (the Pennsylvania, the New York Central, and the New Haven). Moreover, the merger had been hailed as the genesis of a powerful carrier that would be able to survive the shrinking rail traffic conditions in the northeast U.S. At first, Congress ignored the problem; but as it was confronted with the fact that the railroad would be liquidated (which would translate into loss of jobs and rail service and considerable negative impact on the regional economy), the legislators provided

operating subsidies while the secretary of transportation was asked to consider other solutions (in the hope that more drastic action would not be necessary). Next, Congress decided, in effect, to nationalize the railroad—by now called Conrail²—and an intensive analysis and restructuring effort was initiated.

The result of the planning process was a set of projections, including network reductions, which were too optimistic. As Conrail continued to founder, it became clear that a number of major actions, including a significant change in the regulatory regime, was necessary if Conrail was not to continue as a major financial loss to the federal government. Other necessary changes, especially devolution of local rail commuter services to local governments and flexibility to reduce redundant labor, were completed in 1982. Thus, in a very direct and painful way, the Conrail dilemma confronted the federal government with another aspect of the real cost of adverse regulation (the government, as owner, had to pay the bill for the cross-subsidies imposed by Conrail) and, even more painful, made the bill direct and transparent. The overall cost of the Conrail experience was not low—about \$7.8 billion before the privatization sale, which netted about \$2 billion. In fact, Amtrak and Conrail dramatized in a concrete way the costs of inefficient and destructive regulatory policies and forced explicit action to be taken.

Deregulation in the U.S.

The response, long delayed, was thorough regulatory reform. The year 1980 saw a pair of dramatic legislative initiatives—the Staggers Act and the Motor Carrier Act—which have changed the face of transport regulation (and of the health of the carriers) in the U.S.

The Staggers Act radically changed the ability of railroads to market their product, in terms of both pricing and quality (for which the customers were willing to pay). Its most important provisions were the following:

- Rate-making regulation was substantially relaxed, subject to findings concerning the relationship of the rate in question to its variable cost, the degree of market dominance (that is, monopoly position) of the carrier and geographic service involved, and the overall

adequacy of the carrier's revenues.

- Contract rate-making was explicitly legalized.
- Railroads were allowed much more flexibility to abandon unprofitable lines.
- Antitrust limitations were substituted for certain prior rate-making restrictions.

The Motor Carrier Act created an even more radical change. It provided the following:

- Entry into the contract and common carrier trucking business was deregulated. Among other factors, this change permitted "exempt" carriers to compete fully with "regulated" carriers for otherwise empty "back" haulage.
- Rates were deregulated, although they were still required to be published and to be enforced.
- As in the Staggers Act, antitrust restrictions were reimposed in place of prior regulatory controls.

The results were astounding, for both rail and trucking. For rail, traffic remained relatively stable after 1980 while productivity of labor and physical assets increased dramatically. Further, accident rates have fallen by over 60 percent. Moreover, recent estimates are that more than 60 percent of rail business now travels under contract rates, which permit railroads and customers to enter into mutually advantageous long-term relationships. Average freight rates dropped every year after deregulation, in current as well as constant terms. In addition, profitability reached levels not seen since the turn of the century. A recent paper (Winston 1990) concluded that rail shipper benefits increased by \$5 billion as a result of better service, offset by a \$1 billion increase in rail rates over what they would have been (if the mix of commodities carried and average lengths of haul had remained the same), leading to a net benefit to the economy of over \$4 billion (one of the lower estimates).

In trucking, physical outputs are at an all time high, as is net income, at least in current dollars. In addition, the initial wave of carrier financial failures (in the deregulatory environment) may have run its course and is dropping. The number of carriers has more than doubled since 1980 as a result of the ease of entry, although growth has occurred among small, Class III carriers, while Class I and II carriers have decreased. There is

some evidence that the number of less than truckload (LTL) carriers was reduced, with a resulting increase in concentration in this market segment. (LTL amounts to about 5 percent of intercity tonne-km, but about twice that percentage in revenue.) It appears that the major truckers' union (Teamsters) may have lost as many as 120,000 members, but the total number of drivers has grown by about 800,000 (to 2.6 million) since 1980. Average hourly earnings have continued to increase in current terms. In total, Winston estimated the economy benefited by about \$8.1 billion from trucking deregulation, of which \$3 billion was in reduced private carriage costs, \$4.3 billion in lower rates to shippers (primarily in the LTL area), and \$0.8 billion in the value of better service.

There will never be a precise quantification of the benefits to the economy of regulatory reform. There may well have been some losers (primarily LTL truckers and union interests); but what does not seem in doubt is that the experience overall has been a resounding success, and this would be accepted by almost all carriers and almost all significant shippers. This consensus holds for all the areas of reform and is based on a general agreement that the quality of service has improved far faster than rates. There remains some criticism, especially by electric utilities, which would like lower rail rates on coal, and by organized labor interests, but Congress and the Reagan and Bush administrations rejected proposed changes. There are few who would turn back the clock.

Given the enormous inertia which had built up in the system and the power of certain entrenched interests, how was it possible to bring change about? Why did it happen in 1980 (rather than later)? And why was it successful? Several reasons can be postulated. These have obvious applications for World Bank borrowers, although the mix of reasons and the relative importance of each will be unique to the country involved.

Perhaps the most important, at least with regard to railroads, was that the "do nothing" alternative was no longer tenable. The Penn Central and the Midwestern railroads' bankruptcies had made some regulatory reform imperative if broad-scale federal subsidies were to be avoided. This was not true in trucking, but the validity and impact of deregulatory arguments were seen to have the same general force and positive value, if not the same critical importance.

There was also concern about inflation, the emergence of "consumerism", and a disaffection with the status quo. These factors created the framework in which legislators could attach themselves to the general idea of deregulation, even when their usual constituencies would have dictated otherwise. At least partly because of this phenomenon, the "elite opinions" converged on the idea of deregulation (see Derthick and Quirk, 1985). Also, a success model had emerged with the abolition of the Civil Aeronautics Board, which before had to regulate entry and fares in the airline industry much more tightly; the results, in terms of lower fares, had already begun to emerge.

Next, the proponents were promising direct benefits (lower rates and better service) to consumers and shippers. Thus, the coalition in favor of deregulation was promising benefits and not asking for sacrifices. At the same time, opponents (such as the trucking industry and the Teamsters) were divided and unable to control the outcome, especially because their arguments were related to their own self-interest, clearly at the expense of consumers. Another likely opponent—the railway unions—were sufficiently preoccupied with other issues, such as the labor sacrifices necessary to save Conrail, that they may not have fully understood the potential adverse impacts of deregulation on rail employment until it was too late. Some of the railway unions may also have understood that a healthy rail industry, even one that would pressure for improved labor productivity, was their best hope of long range employment stability.

The impact of restructuring in the rail area, which preceded deregulation, was also significant. Before 1970, U.S. private sector railways were expected to provide intercity and commuter passenger service as a public service. To some extent, the imposed cross-subsidy between freight and passenger service was manageable as long as there was no competition. However, after WWII, the emergence of the highway system and the dramatic growth of air travel destroyed the market for intercity rail passenger service. What were left were the losses, not the passengers. Commuter service had generated losses for many years, but had never constituted a large enough problem to make a solution imperative. The creation of Amtrak (and its complete deregulation) removed the freight railways from the

intercity passenger business. However, the subsequent bankruptcy of Conrail, plus the fact that it was the predominant carrier of commuters, led to getting Conrail out of the commuter business and transferring the burden to local authorities. This setup was a major contribution to Conrail's financial success and a major relief of a managerial burden which Conrail was ill equipped to carry.

Lessons for the Bank

How does this experience apply to developing countries? First, there is no substitute for detailed knowledge of the actual situation and its history. What are the circumstances of regulation? Who is being regulated? Who is doing the regulating and by what authority? What is the degree of enforcement? What are the objectives (legal as well as actual or mythical), and how well does practice conform to the legal framework? Many appraisal reports have made sweeping proposals with regard to financing transport changes without furnishing or considering the actual regulatory situation and its history in the country.

Second, while good economic and legal analysis help, politics, not economics, is ultimately the critical factor. To bring about change, politicians must be involved—at the highest levels possible—and the proponents of regulatory change must be prepared to provide analysis that anticipates and answers political objections, especially issues of distribution and equity, and not solely questions of economic efficiency. Change comes when political leaders deal with vital noneconomic concerns, not just with rational debate. This also implies a much closer and more intensive role for the World Bank than is required by the traditional transport investment project.

Third, support from those in decision and policymaking positions is crucial. In the U.S., those promoting regulatory change were in fact the elite, whether in academia, business or politics. This was especially true of the ICC and executive branch political leadership during the critical stages. Thus, it is important to focus on the people occupying the critical positions of power in developing countries because political opponents can destroy a reform program. The experience in Uruguay, with regard to reforming the railway, illustrates what can be accomplished,

even under very difficult political circumstances, when the right people are in the right place at the right time.

It is not true that the experience in the U.S., the U.K., or Canada can be dismissed as non-transferable to developing countries. Rather, much of what has been learned is directly applicable. But, this experience must be adjusted to suit specific situations.

The model in the industrial economies tends to start with the underlying (and unquestioned) assumption that transport suppliers and consumers should operate under generally competitive conditions, although some regulatory intervention may be desirable. However, in developing countries, railways are government ministries; and in this context, regulation of rates—for example, by a separate regulatory agency—is untenable because it can erode the financial viability of the railway and completely confuse the managerial objectives set for the railway (because the regulatory agency is often unable to resist the opportunity to play politics at the expense of the transport agency) and the transport system suffers.

Another problem could evolve if the various types of nongovernmental regulation which lie barely beneath the surface of the official regulations are overlooked. There are a multitude of restrictions, including those set by (1) voluntary trade associations, which conspire to fix rates, services, or the quality of goods (generally under the banner of protecting the consumer from the dangers of “unscrupulous” competition); (2) trade unions (even in the absence of formal contracts between unions and employers) which constrain the ability of employers to manage costs or quality of service; and (3) established patterns of business (such as the notorious distribution system in Japan), which restrict the ability of suppliers or buyers to react to change. In many cases, these problems can deter regulatory changes. Thus, it is vitally important to identify them in advance and eliminate them at the same time as regulatory change is implemented—while the right political moment still exists.

An important, and exactly parallel, point should be made about the demand side of the equation. The World Bank tends to assume that shippers or receivers of services are influenced by commercial considerations (either maximizing net income or, at least, minimizing cost). How-

ever, in many developing countries—for example, Pakistan and Egypt, where shippers and receivers are mostly other government ministries whose transport costs are paid out of the overall budget—this is simply not true. If the consumption decisions of the market are not rational, then rational regulation, or even private sector competition, will not work. Thus, donors such as the World Bank need to approach the regulatory issue from the point of view of the structure and decisionmaking objectives of both transport suppliers and consumers. They must consider the ownership and objectives of both, as well as the regulatory procedures in force, formal and informal, before developing useful approaches. In many cases, the answer will not be regulatory reform or deregulation, but a thorough clarification and restructuring of the relationships among government, transport suppliers, and transport consumers (to the extent that these are different parties) and the roles they play (see Table 2).

Table 2 summarizes the possible interactions among the types of services being provided (freight, urban and intercity passenger), the structure of the supply function (private sector versus local or national public sector), the structure of the demand function (private sector versus public sector), and the appropriate regulatory regime. For example, when both freight suppliers and customers are national public authorities, that which is considered as a regulatory issue (for example, what rate should be charged) should actually be governed by transport and financial policy. The same is true of local commuter services provided by local, public transport authorities. It is only where the private sector participates significantly in both supply *and* demand that further tests for regulations are needed to prevent abusive monopoly power.

In summary, deregulation is often far too restrictive a word to describe what is actually needed if donors are to help free up the various modes to supply, and free the shipper to buy and utilize efficient transport. Instead, such issues should be framed more broadly in terms of restructuring, which denotes the critical need first to define basic objectives, then to clarify roles and responsibilities, and finally to discuss the appropriate regulatory framework. In most developing countries, this is the only sequence which has a chance of success.

Table 2: A Taxonomy of Regulatory Regimes

<i>Transport Product</i>	<i>Supply Model</i>	<i>Customer Model</i>	<i>Regulatory Regimes</i>	<i>Examples</i>
Urban passenger	Auto: private	Individuals	None: get taxes, charges right	Normal (except get taxes right)
	Taxi: private	Individuals Businessmen	Local; fares, services and entry (with care) Same	Normal, Lagos London
	Taxi: public	Individuals	Local; discourage, no advantages	Volan taxi (Hungary): phasing out (Turkey, Northern Ireland)
	Bus: private	Individuals	Local; fares and routes	Argentina, Sri Lanka, Philippines
	Bus: public	Individuals	No regulation; owned and operated directly; extensive controls	Washington, D.C., Bombay
	Transit: public	Individuals	No regulation; owned and operated directly	Normal, Hong Kong, Caracas
	Rail: private	Individuals	Local; fares and routes, subsidy payments, possibly under contract.	MBTA in Boston (Amtrak), Tokyo
	Rail: public	Individuals	No regulation; operate under contract plan	Normal, Nigeria, Poland, India
Intercity passenger	Auto: private	Individuals	None: get taxes, charges right.	Normal
	Bus: private	Individuals	National: fares and routes	Argentina, US
	Bus: public	Individuals	No regulation; owned and operated directly, discourage when possible.	Hungary, Poland
	Rail: private	Individuals	Franchise operation over track owned by others, control through franchise.	Thailand, Malaysia
	Rail: public	Individuals	None, use contract plan with national government, some regional/local payments.	U.S., Société Nationale des chemins de fer Français, Kenya, Cameroon
	Air: private	Individuals	National, rates and services	
	Air: public	Individuals	None, use contract plan with national government, some regional/local payments.	U.S., Argentina, Nigeria Most national airlines
Freight	Truck: private	Private, corporate government agency	National, minimal rates, services, safety. None; rely on competition and contracts	Normal, Mexico Common: Egypt, Pakistan
	Truck: public	Private, corporate government agency	None, should be rare. None, use transport contracts	Ethiopia, Bangladesh Tanzania, Hungary, Poland, Burma, Pakistan
	Rail: private	Private, corporate government agency	National, minimal rates, services, safety. None; rely on competition and contracts	U.S., CP Rail, Chile (A&B) None
	Rail: public	Private, corporate government agency	None; use contracts where possible. None; use contracts and contract plan	Common in Europe, Chile, Canadian National Railways, Egypt, Pakistan, Zaire, China

Notes

1. Commodore Vanderbilt, in 1883.
2. The stock of Conrail was owned entirely by the federal government, but Conrail was legally set up and managed as if it were a private sector corporation.

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QUESTIONS AND ANSWERS

Moore:

(Opening comment.) Some people argue we should not deregulate airlines because they will become less profitable and therefore less safe. There was a big conference at Northwestern University about three years ago on the question of safety and economic regulation, and no relationship was found. In fact, if you look at profitability by airline, and look at their safety record, the airline has become safer after deregulation. I am not saying it was because of deregulation, because they were becoming safer before deregulation. But the pattern is unchanged after deregulation. If you look at the pattern of accidents, those that are related, say, to mechanical difficulties that might be the result of inadequate maintenance, have not increased as a proportion of total accidents. Accidents that are related to pilot error have not increased. So there's no evidence that accidents have gotten worse and safety has gone down, and there is no relationship between profits and safety.

Q: I would like to discuss briefly the subject of sustainability. It seems to me this is a crucial issue when we discuss reforms of the type you have described. It is related to the timing of the reforms. If you implement reforms at the wrong time, when

other things have not taken place or not in the right sequence, you run a risk that the process might go in the wrong direction. In that regard, the fact that U.S. deregulation occurred at the start of the period of nine years of economic growth may have a bearing on the results you have shown. Regulation becomes very strong in depressions and in periods when the industry has felt threatened by the economic environment. In many developing countries, they are implementing economic reforms that can result in the short run in no economic growth or either negative economic growth until the whole process of structural reform provides a basis for growth (which is the ultimate objective). If that is the context in which you are operating, it may not be the right time to introduce deregulation, and you could run the risk of jeopardizing the chances of success. Could you comment on that?

Thompson:

First, economic expansion makes the results of deregulation look better than they would in a period of economic depression. Second, it is easier to sell a major change when the harm will be masked or covered by a change in the economy. There is no question about that. It is harder to explain the fact that rail-

road rates for the first time in many years went down in current terms—not just constant terms but current terms—every year. At the same time, profits were going up. There is another fact that was not mentioned: Over 60 percent of railroad rates within a period of eight years are moving under contract rates, not common carrier rates. The reason is that the railroads finally can work with their customers to provide them the service they want and under the terms they want. It can be seen as a win proposition for everyone concerned under the right circumstances. Depending on the economy, you win less, and depending on the interrelationship between the political system and the state of the economy, it may be harder to sell deregulation. But all other things being equal, it ought to be saleable, at a different schedule or slightly different way, just about everywhere we go.

Q: I want to talk about risk aversion. I was struck by the explanations you gave for regulations in the early railroad years. Users and customers preferred to inhibit their own opportunities for getting favorable rates provided they could also inhibit their competitors from doing so. People perceive costs far more readily than they perceive benefits. If we are going to make the case for deregulation, we have to recognize that there has to be a disproportion between the benefits and the costs before people will be persuaded that risk is worth taking. How do you see this?

Thompson:

Another way to put that is we have to look at the interests of consumers. It may well be that consumers have no interest, or no perceived interest in this wonderful deregulatory competitive environment that we are attempting to provide. They may not even understand or believe that it is in their interest. And if they do not, rightly or wrongly, we have a problem and we should be prepared to deal with it. Whether it should exist or not is not the point.

Comment:

One of the more interesting points in your paper is the emphasis on coalition building because efficiency arguments are not the ones which are going to dominate. Who will get

hurt is the problem you have to address if you are going to be successful in regulatory reform.

Q: You mentioned what happened to safety with the railroads after deregulation, but you did not mention what happened to it with the trucking industry. Could you talk about that? Also, in the airline industry, I would agree there were some technological advances that clearly improved safety about the same time that deregulation was introduced. But, the one very important statistic that you didn't talk about is the near-misses that have occurred. The General Accounting Office of the U.S. government has kept very close track of them and since deregulation, they have increased dramatically. In fact, most people who observe this feel they are still terrifically underreported because pilots now have a strong incentive not to report them, since it can look as if they are to blame. There is an enormous amount of underreporting, and the near misses, for many observers, are as important as or maybe even more important than the number of accidents.

Thompson:

In trucking, the evidence is unambiguous. There is some evidence of increased accident rates. Many observers argue it is a result of an increase in new, small trucking companies. There is no evidence at all that the older, established trucking companies are getting any less safe. With respect to near misses, it is the government that runs the air traffic system, not the airline companies. They go where they are told to go. To the extent that near misses are increasing it has, in my opinion, a lot more to do with the staffing, resources and operations of the FAA and not with those of the private sector companies themselves. I would be prepared to argue that the best way to increase safety is deregulation, not regulation. That is the reason why the railways are now safer in the United States—because they have the assets and the resources necessary to be safer. Also, the impact of being unsafe is a lot more immediate than it used to be.

Moore:

We should be talking about near collisions

and not near misses. The major reason the number went up is that the FAA changed the definition of a near collision and required airlines to report those that occur at a greater distance; a larger number of them come under the definition. In trucking, one should standardize in terms of the number of ton-miles that are being moved or the number of truck-miles driven. Then, the best evidence is that safety has continued to improve under trucking deregulation. You just have many more truck-miles being driven.

Comment:

The example of the airlines is a rather extreme one because it is very clear what happens when airlines don't maintain well. But all this is rather abstract relative to many developing countries. Safety regulation, if you think in terms of bus services in Nepal or in India where there is less of a culture of safety, is extremely important. But in terms of airlines, not many planes fall, even outside the United States. Railways are very difficult from a managerial point of view: running them under regulation or deregulation is probably one of the most management-intensive activities a country can have, particularly in developing countries. Beyond regulation or deregulation, railways should find feasible ways to manage, and even in developed countries very few have been able to manage railways well. That is a challenge.

Thompson:

The thrust of what you are saying is correct, and the railway is a very complicated, discipline-intensive, confidence-intensive organization. It takes more people per ton-kilometer than trucking. There are at least two hindrances we could remove. First, it is impossible to manage a commuter and an intercity passenger and freight organization in the same way with the same people. They are different markets, take different skills, and have different challenges. The longer we let the same management try to operate those two, we are asking for trouble. Second, it is always difficult to get good people, underpay them, and ask them to do stupid or conflicting things. In many cases the objectives the railways are trying to meet and the rules of the game they are living under are impossible, no matter how good the people are, or

how many you have. The problem with the U.S. rail industry was exactly that. People were not rewarded for good performance, and there was no feedback from progressive management. And in a lot of developing countries, they have exactly the same problem.

Q: When we talk about deregulation, we all are for it and we have examples to back up our position. But, there is definitely a difference between economic deregulation and safety deregulation. Those of you who do not want regulation under any circumstances drop the words "safety regulations" and call them safety standards. The more we deregulate, the higher the safety standards we need to set. I believe a well-run enterprise is better served by maintaining high standards. In all probability, it makes higher profits if it maintains better standards, but society cannot rely on those efforts. We need to have safety measures to protect ourselves. So let us call them safety standards and strengthen them when we go for deregulation. On the other hand, we did a study for Malaysia and Thailand because Thailand wanted to start regulating its trucking industry. Both countries are rather similar. General trucking in Malaysia, which is highly regulated, was about double the cost of that in Thailand except for one segment, and that was container traffic, which was about the same in both countries. Thailand already had that part of the market regulated. They were proposing more regulations and we tried to use these figures to dissuade them. They have not regulated and we hope they will not. When the U.S. industry was regulated, it was because, as you already said, they wanted to be protected from ruinous competition. That was exactly the same word they used in Thailand. They felt that in this free society, there is certain behavior they do not like and by franchising certain services and giving them to certain truckers, they might achieve certain advantages. In the 1980s it was fashionable to be in favor of deregulation. In the past it was equally fashionable to talk in terms of regulations and limitations. Now countries we work with find

themselves in a pre-deregulation stage, and they sometimes have good arguments for this. How do you feel about this?

Thompson:

One factor in U.S. deregulation was what was called the issue entrepreneurs. These were people who understood a general thrust and were able to relate that in a way that was comprehensible to the decisionmakers. This is one job we can certainly perform. If we understand what people need and we do not just provide them with purely academic studies, but instead figure out what they really need and give it to them, we could help the process.

Q: You have set up a paradigm in which, before deregulating, restructuring should be considered. I am concerned as to whether that is appropriate. In all our railway projects, we are still trying to restructure to the point that we can get to deregulation—for example, with the Pakistan railway. I think we have to clarify a bit more what we mean by “restructuring before deregulation.” Do you do it in every case? Do you do it in Costa Rica versus Argentina? What does it mean for other modes? Why in railways and why not in bus or truck? And last, if Conrail had been done differently—if, rather than spending all the \$7.8 billion to restructure, they had gone straight to deregulation and divestiture—what would have happened?

Thompson:

It is an irrelevant question because we could not have gotten there from here. The political coalition and the political understanding that was necessary to deregulate the industry did not exist until Congress had paid the price of the Conrail disaster. It could not have been done before then. All the wishful thinking needed to be eliminated because we tried everything that people earnestly wanted to work but did not. It was only at that point where people were able to say to their various constituencies that we tried and we just cannot do that anymore. So when I say you have

to restructure, what I mean is the structure of the railway or the trucking companies. And the regulation and structure of the consumers have all got to be linked. If you don't have an appropriate interaction between them, one or the other is not going to work. In its function as relating what the consumer wants to buy to what the producer wants to sell, if regulation is not set up that way because one or the other has got the wrong incentives, then it is not going to produce the intended result.

Q: One of the most important points that needs to be stressed is that the bankruptcy of the railroad industry, the decline of its financial viability, was enormously important. It relates directly to the point that we were not deregulating in an era of good times. The impetus came because the railway industry was bankrupt. Two things happened: One, suddenly the world woke up to the fact. Two, there was a failure of government. Government regulation is supposed to keep a healthy industry. It didn't and there was great soul searching about how this could have happened. How could an industry which is guaranteed a rate of return go bankrupt? The bill designed to create Conrail put the burden of restructuring labor onto the federal taxpayer at the very outset. Government had to do something because the bankruptcy law was in place. Had government not interfered, we automatically would have gone into liquidation of the northeastern railroads. The law read that if you could not reorganize as an ongoing concern, the next step was liquidation, and the Congress and the politicians were simply afraid to allow that to happen. How do you see this?

Comment:

One could imagine that it could have taken a different scenario. The solution that was actually put in place was not necessarily the only imaginable solution to that problem.

4

The Recovery of the Railroad in Uruguay

Juan Berchesi

By the recovery of Empresa de Ferrocarriles del Uruguay is meant (1) the restoration of a means of transport which provides society with a service at an economic cost, competitive with that of alternative methods; (2) the return to health of a railway company that was bankrupt and doomed to disappear unless decisions were reached in quick order; and (3) the salvaging of an instrument that could facilitate integration with neighboring countries.

The AFE (Administración de los Ferrocarriles del Estado—the State Railroad Administration) with its US\$30 million operating deficit (\$10 per capita, or US\$10,000 per kilometer of railway), was an economically and financially bankrupt company. Its assets covered a mere 25 percent of its operating income. Wages—the lowest of any public enterprise in Uruguay—accounted for almost 80 percent of the company's expenses.

The company was overextended, with 3,000 kilometers of railway and 9,200 employees to serve less than 1 million tons of freight a year and 5 million passengers. It carried less than 675 U.T. per annum—an extremely low traffic density rate.

Its assets were completely depleted. Its road infrastructure was in wretched condition, its traction capacity was on average more than 30 years old and poorly maintained, and its signaling equipment was on the verge of collapse. All this was the result of more than 40 years of operating without a company policy or an acceptable investment policy. The company had no objectives and its services were administered without regard to their cost, efficiency, or profitability. The entre-

preneurial goals defined at the start of the century, when the railroad operated as a monopoly and a means of uniting the country, remained unchanged, despite changes in technology, production, and demographics, and in development of the highway system.

The AFE functioned as a closed system, resting on its laurels and continuing to assume that the world should adapt itself to the railroad, rather than the reverse. Its operating structure remained virtually unchanged throughout the century, during which it functioned as a self-sufficient entity insofar as its inputs were concerned.

Guided by a philosophy geared to production rather than to the market, the company sold what it produced irrespective of what the market demanded; and the quality of that product declined consistently in reliability, safety, and punctuality. As a result, it was rejected by the market, and revenue plummeted. In order to survive and retain its clientele, the railway implemented a policy of very low rates, which only aggravated the situation. Further, to play a social role, it offered special discounts to segments of the population (and thus guaranteed political support). However, during the 1980-1985 period, AFE cornered less than 8 percent of the freight market and less than 5 percent of passenger traffic.

Finally, the company lacked a transport policy: From the time the railroad was nationalized in 1948, there was no government policy to define the roles of the different modes of transport or their relationship with the railroad.

Definition of Policy

Recently, the government for the first time defined the transport sector's objectives and established those of the railroad subsector. The most salient features of that policy were as follows:

- The railroad will provide only those services it can render at an economic cost and that can compete with rates offered by alternative and socially acceptable methods;
- It will seek to ensure that the price of service reflects the social and economic costs;
- The railroad must achieve an earnings-to-outlays ratio that will cover the necessary investments, as well as operating costs.
- The managerial and entrepreneurial efficiency of the AFE must be improved.

The government also wished to orchestrate a social policy, that is, one that called for transport revenue to be redistributed to society through direct transfers (subsidies) to the user, not to the mode of transport, on the premise that the latter method was not only inefficient but discriminatory as well.

If the railroad performs services that are economically unjustified—such as maintaining low-density lines, defined as such in the program contract—it must be compensated by the government.

The government defined a long-term policy which sought to establish a program-contract that would set forth the rights and obligations of each party—the Ministry of Transport and Public Works (MTO) and the AFE—based on compliance with agreed-on objectives.

The New Railroad Company

The new policy thus identified the major parameters of the railway's future services. These included establishing a freight company specializing in large-scale and long-distance hauling, suspending passenger service, changing the delivery of express shipments and parcels, eliminating all AFE services unrelated to hauling freight (such as medical care and restaurants), substantially reducing staff, selling unnecessary assets, significantly increasing operating efficiency by restructuring the organization, shifting to a

commercial approach, offering training, concentrating investment in areas of greater impact, updating technology, and applying free-ranging tariffs.

Strategy to Implement Change

An analysis of AFE's problems showed that the main challenge was finding a way to institute changes. The key question was—given the persistent diagnosis, the same management indicators, the same status of economic and financial bankruptcy confirmed by consultants' studies and findings, some of which dated back more than 30 years—how was it possible that no change whatsoever had been put into effect before?

It was clear that the strategy needed to implement sweeping changes was, and continues to be, at least as important as the changes themselves, particularly when the transformation was to occur in a country where democracy had only recently been restored. The fact that political conditions were assessed at the same time as the entrepreneurial situation was diagnosed made it possible to create a strategy that might overcome the almost certain resistance to change.

Change will only be possible in a company such as a railway if the proposed restructuring is designed to consider the political system as an integral part of the issue. Thus, it will be necessary to adapt general technical proposals to the specific needs of each country.

Although it is still early in the process, it is clear that certain planned tactics facilitated changes. Also, various unforeseen situations were utilized to advantage. First, basic guidelines were identified and approved quickly, at the highest level of government. This action made it possible, right from the start, to establish business-oriented strategies that embodied the basic philosophy while the final restructuring project was worked out. For example, freight transport was prioritized; tariffs were raised substantially; benefits (free passes and so on) to students, retirees, railroad employees, and their families were reduced; no additional personnel were hired; a policy for gradually reducing staff was instituted; and very low-density passenger service was suspended. (Eliminating lightly used services would result in a 25 percent cut in the passenger service and would close 60 out of a total of 214 stations.)

Second, a communications policy to support the changes was established, aimed at the deputies in the government party, political parties, the general public, and railway users. It was based on a qualitative and quantitative market study that identified the following factors as the chief obstacles to the scheduled changes:

- The population's abiding affection for the railway;
- The public's belief that railway was very important to the country, although it could not give reasons why;
- The public conviction that the railway plays a social role, particularly for the disadvantaged sector;
- Public resistance to firing employees but the public would accept change if the workforce were reduced by attrition.

Rapport with legislators was so useful that it enabled the government to service three parliamentary interpellations. The general public and the users were clearly informed of the new entrepreneurial policy. Repeated publicity in the mass media and elsewhere also explained the railway's situation—the damage it was causing the population, the deficit, and the fact it played no social role.

Third, an international consultant was hired to conduct in-depth studies of the railway's possible role in Uruguay. The ensuing report, coupled with those prepared by technical staff of the Ministry of Transport and the Railway, formed the basis of the strategy selected, particularly with regard to suspension of passenger service.

Fourth, a consistent effort was made to avoid discussing the railway's problems and solutions in ideological terms. Efficiency rather than privatization was emphasized, although peripheral privatization did take place. The respective merits of public and private enterprise were not compared, since Uruguayans have a deep-seated respect for the public sector.

Fifth, the number of staff was reduced. This was another critical feature of the strategy, for it was unthinkable to fire workers at a time when the recently restored democracy was in full swing. Arrangements were made with the govern-

ment's executive branch to transfer surplus staff to other public agencies, subject to the approval of the legislative branch. This, along with natural attrition (as employees left to take to other jobs or retired), reduced payroll expenses. In light of the economic situation—both of the country and the railway—it was not possible to give retirement-package incentives, since no resources were available for such "golden parachutes."

Sixth, a 1985 railway workers' strike, which lasted more than 90 days, showed the country could get along without rail service without seriously harming its economy and revealed the weakened state of the railway workers' union. It was also the first time in the labor history of Uruguay's public sector that employees' wages were docked for the days they had not worked due to the prolonged strike—a fact that greatly facilitated the restructuring project.

Finally, the Ministry of Transport and Public Works set up bus service at all points that might be isolated by the lack of rail passenger service. Conditions on some routes were also improved, and arrangements were made for emergency rail service at certain regions in the country that might be isolated in the event of heavy rains.

Results

Although no immediate spectacular changes could be expected, given the gravity of the situation, results have been favorable.

Table 1 compares freight carried in 1989—the second year of AFE's operation as a specialized freight company—with 1987, the last year that the AFE operated as a traditional railway, and with 1984, a representative year (in the freight area) and the final year of management by the old board. In 1989, 1,102,659 tons of freight and 242,969,936 ton-kilometers were moved. Rates rose from US\$1.83 per ton-kilometer in 1984 to US\$3.07 in 1989. Billing for mass freight services in 1989 amounted to US\$7,361,545, compared with US\$4,604,147 in 1984. Total AFE revenue for 1989, when the railway handled freight only, was equal to 92.8 percent of total earnings for 1987 and to 90 percent of the 1984 figure, even though the earlier figures include freight, passengers, and parcel service.

Table 1: Freight Performance in 1989

<i>Output</i>	<i>Over 1987</i>	<i>Over 1984</i>
Tons carried	+16.3%	+11.4%
Ton-km	+13.1%	-5.2%
Freight revenue (US\$)	+23.0%	+59.9%

The area of international traffic has unquestionably had the most impressive results, thanks to the policy of openness and integration espoused by the government of Uruguay and the credibility gained by the railway in neighboring countries.

In-transit traffic rose to 58,770 tons in 1989 (5.3 percent of total tonnage and 8.52 percent of total ton-kilometers of freight carried). When total international transport is considered (in-transit traffic plus exports and imports shipped by rail in 1988), the figure rises to 127,432, the equivalent of 12.9 percent in tons and 21.6 percent in ton-kilometers. International traffic for 1989 amounted to 167,336 tons (15 percent of the total amount of freight hauled and 26.65 percent of the ton-km) while in-transit traffic soared from 8,669 tons in 1984 to 58,770 in 1989—representing a 578 percent increase.

The situation with personnel has progressed dramatically and, given the impact of manpower on operating expenses, is a critical variable for financial soundness. Today, AFE has 4,266 employees, 4,843 fewer than in April 1985 when the new board of directors took office and introduced

the equivalent of a 53.17 percent cut in personnel. Of the total, 914 left the company and 3,929 were assigned to positions in other agencies. Because of the current reduction-in-force system, AFE is still paying wages to 5,558 workers.

The mechanisms used to substantially reduce the payroll have been among the most important keys to progress in the entrepreneurial restructuring, and among the clearest examples of adapting purely technical solutions to political realities.

Railway express service, which has been operated by a private company since September 1986, is another area that shows positive results. The company assembles the freight, hires entire railroad cars, and delivers shipments to consignees. AFE sells the space but does no handling and has managed to set up, in conjunction with the private sector, a company that combines the advantages of a private concern with those of the railway. It is still too soon to estimate revenue—which will undoubtedly be higher than past AFE earnings. Most important, however, users are receiving better service and a real choice.

Table 2: In-Transit Traffic From an Originating Country to a Destination Country via Uruguay (thousands of tons)

<i>Year</i>	<i>Tons</i>	<i>% of Total</i>	<i>Ton-Km</i>	<i>% of Total Ton Kms</i>
1983	2,046	0.2	1,184	0.5
1984	8,669	0.8	4,996	1.8
1986	3,143	0.3	1,843	0.9
1987	7,442	0.8	3,647	1.7
1988	39,335	4.01	13,833	6.5
1989	58,770	5.3	20,696	8.52

With respect to medical service, the AFE system is another holdover from the self-sufficient British railway of the past which—for lack of clear entrepreneurial objectives—continued throughout the period of state administration. The new policy (operating the company as a specialized freight carrier), dictates that AFE should no longer be the direct provider of medical care. This is particularly evident considering that benefits produced a deficit for the company of \$975,000 in 1988. Services were transferred to private purveyors of group medical assistance in Montevideo and in the interior to care for present subscribers to the AFE system. At present, authorities are implementing this revised structure, accepting offers from companies specializing in comprehensive medical care for all employees, retirees, and their immediate families. The specific duties of the Medical Service and Hygiene Division, which had a staff of 170 at the end of 1989, will include labor assistance, certification, and auditing of the private agencies providing service to members. This solution will substantially reduce the cost of medical services to the railway.

The creation of the new railway company also required that the transport management office be restructured in order to consolidate and expand freight transport. This was particularly necessary because the office was unnecessarily large in proportion to activity in this sector. In the course of restructuring, the office identified permanent and seasonal traffic for the medium term, the origin and destination of freight shipments, the number of trains, the need for crew, and station activity. As work was nationalized, the 154 stations manned by AFE personnel were classified with respect to commercial and technical railroad performance. This allowed freight activity to be concentrated at only 77 stations, and traffic supervisors' offices were reduced from seven to five. The restructuring operation will continue to make progress in determining the number of personnel needed, improving the man-

agement information system; and introducing new communications systems. This will entail a further adjustment in the number of stations, traffic supervisors, and traffic control centers. At present, several projects are underway. They include:

- Constructing new diesel workshops, with an investment of US\$4,800,000;
- Reconstructing 15 ALSTHOM locomotives (eight already completed);
- Improving signal and communications equipment;
- Upgrading road infrastructure, which includes completion of documents for public bidding on the project to repair 120 kilometers of roads;
- Conducting a study on strengthening coastline bridges to raise the 14-ton-per-axle limit and heighten the possibilities of international and in-transit traffic;
- Providing technical assistance in different areas with RENFE, FA, the French government, Brazil, and others;
- Developing a broad plan of general and technical training;
- Orchestrating the administrative restructuring project, the focus of which is organic restructuring, a promotion system based on productivity, and payment of incentive bonuses.

The Acid Test: The Operating Deficit

The AFE operating deficit for 1981-84 exceeded US\$31 million a year. The restructuring process that began in 1988 reduced it to US\$20,539,666—more than 34 percent below the 1981-84 average and 22.10 percent less than the 1987 level.

According to the balance sheet and statement of earnings for 1989, the operating shortfall for this year was US\$14,481,000, almost 45 percent less than in 1987 and 53 percent below the annual average for 1981-84. It is interesting to note that if the items of personnel and labor were based on current levels, the deficit for 1984 would be close to US\$10 million.

5

Bus Deregulation in the United Kingdom

Stephen Glaister

This paper is an overview of the context surrounding British bus deregulation in mid-1984, when the decision to deregulate was taken.¹ It compares the predictions and outcomes as of June 1990, drawing on many studies which have been or are about to be published. In order to evaluate the policy, it is important to understand the primary problem it was intended to solve, which was to reduce central and local government expenditures. The Conservative government also sought to introduce competition into markets, increase private ownership of public sector assets through privatization, and secure government income by non-tax means—but these were secondary objectives which only became important after the privatization of British Telecom in November 1984.

The 1984 Bus Policy

The philosophy, aims and means of the new bus policy are described in *Buses*, the government's White Paper, which notes:

The total travel market is expanding. New measures are needed urgently to break out of the cycle of rising costs, rising fares, reduce services, so that public transport can win a bigger share of this market. We must get away from the idea that the only future for bus services is to contract painfully at large cost to taxpayers and ratepayers [local property tax payers] as well as travellers. Competition provides the opportunity for lower fares, new services, more passengers. For these great gains, half measures will not be enough.

Within the essential framework of safety regulation and provision for social needs, the obstacles to enterprise, initiative and efficiency must be removed. The need to act is urgent.

The White Paper proposed the following:

- **Abolishing road service licensing.** Instead of having to apply for a road service license, operators who serve short runs under 15 miles would be required to register the route and timing of their services with a new licensing authority and give notice of intent to begin, modify significantly, or withdraw from a service. Services with a minimum sector length of over 15 miles would be classified as "express" and would remain exempt from any quantity restrictions under the 1980 act. It was expected that a competitive market would be created, resulting in lower fares, reduced costs, greater variety and responsiveness of services, new opportunities for operators, and increased patronage. Taxis and hire cars were seen as a potentially important intermediate form of transport between the car and the bus; restrictions on numbers licensed would be relaxed, and taxis would be permitted to accept more than one separate fare.
- **Competition.** To facilitate and foster competition, the industry would be restructured. The National Bus Company was to be broken into separate companies immediately and sold to the private sector; the Scottish Bus group was not to be privatized until 1990. The remaining publicly owned operators in metropolitan counties and municipalities were to be made

into "arm's length" companies, owned by local authorities and set up with standard company accounts so that any subsidy would be visible and explicit. The extensive system of cross-subsidies of unremunerative services—a deliberate function of the route licensing system under the 1930 act—would be abolished. The previous anomalous exemption of the bus industry from the provisions of competition law was to be removed.

- **Subsidy.** After operators had registered commercial services, local authorities would be required to secure any additional services needed through competitive tendering with equal access for any who would care to bid. Companies owned by local authorities would compete equally with the private sector, including the ex-National Bus companies. If a local authority chose to allow particular groups—such as the elderly—to travel at concessionary rates, all operators would have to be given access to the compensation on the same terms.
- **Safety.** Provisions to ensure safety were not greatly changed. Operators' licenses would be required and vehicles would be subject to regular and random inspection. Traffic commissioners would have limited powers to "stop operators who behave foolishly on the road from running local services at all" and, where there is traffic congestion, to "impose conditions about routes and stopping places."

In interpreting the U.K. experience, care must be exercised about attributing any one effect to a particular cause, since there were distinct and simultaneous changes. These included reducing subsidies substantially, removing quantity regulation, and privatizing the nationalized operators while separating the others from their local authorities. Further, it is in principle possible to introduce any one of these changes without the others. In the bus deregulation scenario, authorities decided they needed to change all three in order to achieve the objectives.

The Problem to Be Solved

In its White Paper, the government stated that "in some of our major cities the cost of subsidizing public transport is now unacceptable." Based on 1983 data, bus revenue support was growing very

rapidly, largely due to the policies of local authorities. Countrywide, it rose from £10 million in 1972 to £520 million in 1982, a thirteen-fold increase in real terms. Because the government was determined to reduce public expenditure (for macroeconomic reasons), the situation in the bus industry could not be allowed to continue. Moreover, there had been a long-standing desire to put the industry on a sounder, more commercial footing.

Although revenue support was classified as public expenditure and partially funded from the center, its magnitude was determined by local authorities: in fact, the bulk was supplied by the Greater London Council (which had taken responsibility for London Transport from central government in 1970) and the six metropolitan counties which represented the major conurbations. The administrations of the "mets" were by this time left wing and saw the provision of cheap, high quality public transport as one of their major functions. (Interestingly, revenue support in London was first introduced on a significant scale by the Conservative Council of 1972-76 to allow a fare freeze that would conform to a national policy of price restraint.) Subsidies were given as block grants predominantly in dense urban areas that were expected to have potentially high ridership. Rural areas, which have increasing car ownership, received rather little support.

Both left- and right-wing central governments had attempted to moderate this aspect of local government expenditure, among others, with little success for several years. The dispute became more acute when the Conservative government, which assumed power in 1979, produced a new system of control of public transport expenditures, the Protected Expenditure Limits, under a 1983 act. But it did not succeed in controlling expenditures. It felt that local bus subsidies were running far ahead of central government provision, that no effective controls existed, and that the industry did not have a sufficiently commercial outlook. Thus, it sought solutions.

Reducing Cost

The prospect of closing the gap must have seemed daunting. Simple calculations show that if this were to be achieved by removing subsidies at constant service levels and constant unit costs,

fares would have to increase by an average two and a half times in metropolitan areas and much more in some. To close the gap by reducing output at constant fares would have implied an outcome which would have been just as politically difficult. However, unit costs had increased, especially where subsidies had risen: the White Paper noted that from 1972 to 1982, unit costs rose 15-30 percent over inflation. Leaving London aside, if costs were cut by 18 percent, the saving would be over £200 million a year, against revenue support totaling £350 million. After reviewing comparative data on bus workers' earnings, the government concluded that costs could be reduced up to 30 percent. The issue was how best to achieve this.

Alternatives were considered, and authorities decided the method most likely to succeed—and the *only* one that could meet the timetable set by the public expenditure requirements—was to introduce genuine competition into bus labor markets. This would entail creating a competitive industrial structure—that is, both deregulating and privatizing.

Interestingly, while most of the controversy about bus deregulation and much of the subsequent evaluation have concerned the effects on passengers (that is, the effects on the demand side), the prime motivation for the policy was to change things on the supply side. This was to meet global requirements for reducing subsidies while minimizing damage to passengers (through fare increases and service reductions).

Costs and Subsidies

Full deregulation occurred in January 1987, although a transitional arrangement started in October 1986. London was exempted.

The policy worked better than many dared hope. Between 1984 and 1988-89, fares in metropolitan areas rose by an average of 23 percent in real terms but by only 10 percent in the country as a whole. Further, there was a remarkable increase in output where a decrease might have been expected—a 15 percent increase in total vehicle kilometers from 1985 to 1989 (although the average vehicle size fell). Over 80 percent of the existing routes continued as commercial operations (Gómez-Ibañez and Meyer 1989).

This was possible because of the predicted fall

in bus operating costs per vehicle-kilometer: from 1985 to 1989, the drop, excluding depreciation, was around the predicted 30 percent, with the exception of London, where costs fell 14 percent. Real weekly and hourly earnings dropped—although they rose in other industries so that, relative to general male weekly earnings, costs per bus-mile fell not by 30 percent but by 44 percent. Also, the work force was reduced which, together with the increases in output, suggests considerable increases in output per employee. Costs also fell due to the substantial reduction in fuel prices—worth 2-3 percentage points (White and Turner 1990).

Two caveats are needed. A factor that helped reduce costs was the new pay scale associated with the ever-increasing number of small vehicles. Thus, the fall in cost per vehicle kilometer overstates the fall in cost per seat kilometer by about one-third. Second, the estimates exclude depreciation. This is important because it has been alleged that operators failed to renew their vehicle stock (White and Turner 1990). If this is true, some missing components will inevitably appear in the cost accounts sooner or later. However, this is a difficult issue to resolve. First, many new vehicles were purchased. Second, leasing grew significantly, which also affected the depreciation issue. Further, operators were initially quite cautious in assuming a life of only four to five years for the new, smaller vehicles. Seven or eight years has since been found more appropriate (Banister and Mackett 1990); thus, depreciation was substantially less than previously thought.

Deregulation, alone, did not reduce subsidies. In real terms, with the exception of London, revenue support peaked before 1984 due to other measures to limit local authority expenditure, such as the system of protected expenditure limits under the 1983 act. After 1984, subsidies dropped more rapidly; advocates of deregulation claim this is due to reduced labor costs resulting from the new policy.

Although revenue support was reduced, two other important items—fuel duty rebate and concessionary fares compensation—remained stable at constant retail prices. Local authorities paid the former to operators to compensate them for allowing elderly and other concessionaires to travel free or at a discount. The government regarded it as a subsidy to passengers rather than

operators and calculated the amount on the grounds that operators should be in the same financial position as without the scheme. Such schemes were not universal and were much more generous in metropolitan areas. The government would have liked to contain them, but once given, they were politically difficult to reduce. For this reason, the White Paper only proposed that all operators have equal access to revenues and that calculations be reviewed to ensure that they truly reflected the costs of providing these concessions.

It might have been possible and reasonable to abolish the system of fuel duty rebate because it distorted the price of one particular input. However, it was retained; and increases in the fuel duty rebate, due to increased vehicle mileage, were offset by the fall in fuel prices.

Another subsidy was the Rural Bus Grant, a small transitional arrangement (now ceased) created to provide relief in rural areas.

The lesson here is that if some forms of subsidy are subjected to new market disciplines while others are not, there is a risk that substitution will occur away from the disciplined subsidies in favor of the others.

The overall fall in public expenditure on local buses (excluding London) from 1984-1988 was about 26 percent at constant retail prices. (It is much the same when London is included, although the fall was due to a smaller cost reduction and a larger revenue gain.) At the same time, there were additional administrative and other costs in local authorities connected, for instance, with the tendering process—which reduced the saving from 26 percent to 16 percent.

Reduced costs must be seen as the major success of the 1985 Act. Public expenditure was reduced in the face of rising real labor costs in a labor-intensive industry. Yet physical output increased, fares rose only moderately, and concessions were protected.

How the Battle Was Won

The system of quantity licensing was introduced in 1930 and implemented in the subsequent decade, with the aim of tidying up a chaotic, freely competitive industry which had expanded rapidly after World War I. As an administrative tool, it worked well, and the traffic commissioners who presided over the quasi-judicial process

were, and continue to be, widely respected by all sides. Operators were generally satisfied with the system and opposed its change. From an administrative point of view, the system continued smoothly enough, and the changes proposed involved complex, major legislation and some obvious risks.

However, fundamental change was possible, in spite of opposition from administrators, due to the ground having been laid several years before. In the late 1970 the Conservatives (then in opposition) drafted an agenda for reforming the transport sector. The National Bus Company demonstrated there was substantial scope for improving the economics of the industry, and by 1979 the intention to deregulate the industry was firm. If there was not sufficient consensus at the time the 1980 Act was formulated, it would develop and materialize in the 1985 Act. In fact, once ministers were convinced of their goals, they rejected half-way measures, such as retaining the quantity licensing system in urban areas of a certain size or density (which would have failed to apply pressure where it was most needed).

There was much debate during the early 1980s among professionals about the benefits of deregulation and competitive markets for consumers. Ministers were receptive to arguments by economists and others in favor of competition in consumer markets. However, these alone were not sufficient to convince ministers and their civil servants. Instead, the overriding concerns were those outlined above—the increasing gap between subsidy and official provision, the determination to reduce public expenditure, and the acceptance that labor costs could be substantially reduced (but only if competition was introduced into the relevant labor markets).

The line of argument fitted well with more general objectives of the administration to weaken the power of the labor unions and break up nationally negotiated agreements on terms and conditions. In the bus industry, the dominance of the National Bus Company, together with a relatively few large companies serving left wing metropolitan areas, made it easy for the Transport and General Workers' Union to keep a firm grip on negotiations. Deregulation and fragmentation of ownership were recognized as a means of loosening this grip and facilitating the development of new and individual labor contracts. In fact, it is estimated that about one-third of the

labor cost savings was due to deterioration of terms and conditions and two-thirds were due to increased productivity (Hibbs 1990; Hesselstine and Silckock 1990). Managers noted that one of the biggest advantages of the post-1986 situation resulted from their leaving the two negotiating bodies that had for many years set the national agreements on pay and conditions. As a result, plant bargaining grew, and wages reflected the local labor market. Without this, minibus operations at specific rates could not have developed (see below). Some observers also noted that municipal operations had always been constrained by the unions through their influence in the Council Chamber and its committees. Management was undermined, and moves to improve productivity were often blocked. This was most significant in Labor councils, but occurred elsewhere as well.

When the legislation was introduced, union representatives were slow to recognize its implications and were late and muted in their opposition. No doubt this was partly due to the fact that the period was one of a general weakening in labor union influence.

The Alternative to Deregulation: London

The White Paper proposed that London would not be deregulated "for the time being." The 1984 Act created London Regional Transport (LRT) as a nationalized industry to take over the operation of London transport from the local authority, the Greater London Council. The government decided to defer deregulation in London until the changes imposed elsewhere could be evaluated. Although the government repeatedly stated its intention to deregulate London, it has not used the existing provision under the 1985 Act because it is judged to be inadequately drafted, and thus a conflict might arise. Also, the future of the concessionary fare schemes was not thought to be adequately protected.

Before, during, and after the preparation of the bus deregulation bill, there was general agreement that costs could and should be reduced—although there was no agreement on where or by how much. The most credible alternative to the line the government adopted was to put routes out to competitive tender but disallow competition on the road. This became summarized as "competition *for* the route rather than competition *on* the

route." This was promoted by many operators, notably through an organization of operators in the metropolitan counties, which argued that tendering would avoid the risks perceived in deregulation (for example, bad road behavior in an attempt to win passengers). Also, it would allow local authorities to control fares and plan an integrated set of services with cross-subsidies. At the same time, competition for tenders would provide the required pressure on costs.

Competitive tendering was included in the 1984 Act, which set up London Regional Transport, and the two systems have since worked side by side—one in London and the other in the rest of England, Wales, and Scotland. It is still too soon to assess the outcomes with any certainty since neither system is close to a long-run equilibrium state. Some analyses have been made (Bayliss and Tyson 1988), but no comparative statistical study has been carried out. London Regional Transport has been conducting an internal review of its own system, and a more detailed analysis is available elsewhere (Glaister and Beesley 1990).

Route Tendering in London

LRT's role is to plan and secure public transport services. London Buses Limited (LBL) is a wholly-owned subsidiary that provides the network bus services and bids for the remainder, which LRT puts out to tender, in competition with other operators (many of which are privatized ex-National Bus companies). LRT specifies the service to be provided in detail. The contracts, valid for three years, are for the cost of operation: standard fares are charged, all tickets are valid, and revenues are remitted to LRT. To date, about 30 percent of bus kilometers have been put out to tender, of which just over half have been won by LBL. They have done relatively well in winning the large networks, which have been offered under a single contract, and less well with the smaller single routes.

Each time a set of contracts is awarded, LRT estimates how much less the services would cost to run than if services remained in the network. These estimates have varied, but they average 20 percent gross and 16 percent net of additional administration and enforcement costs. This is consistent with experience with similar kinds of tendering for various local authority and hospital

services in the U.K. and U.S. (Glaister and Beesley 1990).

In general, the quality of service improved on tendered routes because of the closer attention required for contract enforcement. Revenues rose due to the increase in bus miles delivered.

Tendering in London can be considered a success. Results have been good, the administration has run smoothly, and the sensitive situation created by an in-house supplier bidding against outside competitors has generally been handled satisfactorily. However, the London experience illustrates the weaknesses of the system and why full deregulation was favored outside of London. First, official statistics show that bus unit costs in London as a whole fell 14 percent in real terms over a period when they fell 30 percent elsewhere. Further, after five years, less than one-third of the services was subject to direct competitive pressure. While the threat of tendering has undoubtedly changed attitudes and conditions of work and labor practices, it is probably unreasonable to attribute the entire 14 percent drop to this factor. For example, a significant amount was saved by introducing driver-only operation of many buses. Thus, the London experience suggests that tendering might not have been as successful as deregulation unless it could have applied to *all* routes immediately and pressured costs more than it apparently did on the tendered routes.

Second, LRT hesitated about whether to accelerate the scale of tendering because it was concerned this would take routes away from its subsidiary (while preparing it for future deregulation and privatization). Also, it questioned whether a tender would have unfavorable cash effects on the group as a whole, at the start, because of fixed costs in the short run and severance payments to displaced staff. Such hesitation illustrates that any system of comprehensive tendering by a body not fully exposed to commercial pressures will find good reasons for proceeding slowly, especially if it owns the incumbent operator!

Third, change and innovation have been slower in the LBL network operation than outside the city. Tendered routes were carefully reassessed and significantly changed, often by introducing small buses. But this is less true where the impetus of tendering was absent. In fact, LBL was

slow to introduce small vehicles, despite the conspicuous success of the routes that were converted. In the case of one pair of network (that is, not tendered) bus routes that LBL did convert to minibus operations, total costs are estimated to be 8 percent lower than they would have been and revenues are 22 percent higher. One reason may be that LBL felt constrained in its freedom to invest in new capital assets by the system of approvals—a private firm would simply make a commercial judgement and act accordingly. Another reason may be that LBL is waiting to see which size and type of small vehicle is appropriate before investing heavily.

The manager of the pair of converted minibus routes points out that, in the light of experience, he made several significant changes to his services in the first few months before he got them “right.” He feels that had the routes been operated under a tender specification, rapid fine tuning would not have been so easy. This is a small illustration that tendering may actually inhibit market-led innovation because, once let, a contract specification is fixed for a matter of years unless it can be renegotiated. But renegotiation is difficult and costly and is not initiated by an operator who is making a satisfactory profit on his contract. In this respect, franchising may have some advantage over tendering—which is rather similar to the present situation for the non-tendered sector in London.

Finally, there is the administrative problem of tendering all services in a large urban area. So far, it appears to have gone well enough in London. But in equilibrium, with three-year contracts, one-third of all routes would have to be retendered every year. That is a tall order, and the temptation will be considerable to simplify in ways that make the problem more manageable at the expense of competitive pressures on bidders—such as longer contracts, bundling routes into large contracts, and negotiating extensions rather than reletting.

The London experience confirms that to have attempted to put all bus routes in the country out to competitive tender in a short period of time—as the alternative to deregulation would have required—would have been administratively difficult. The use of market signals, under deregulation, to indicate which routes could be provided without intervention, greatly simplified the

task of tendering the unremunerative remainder.

When interviewed, managers in the bus industry stated they would not wish to return to the system as it was before the 1985 act. They prefer competition *in* the market to a tendering or franchising system because that gives them freedom to manage and develop their businesses in their own way, without having to deal with a higher authority. Their greatest complaint about the former system was not regulation, but the increasing interference from political bodies, which inevitably accompanied the rapidly growing subsidy in the context of route licensing.

The virtues claimed with regard to tendering have been realized in London. Fares and services have been unified and integrated. Information has been provided to passengers, and change has been transparent from their point of view. There has been no predatory behavior and no bad-driving behavior. Tendered routes have been carefully planned without the same slavery to cost and demand conditions as a market solution demands.

In comparing the two systems, it is important not to weigh an idealized (but not, in practice, realized) planned solution with a hypothetical free market solution. It is not possible to reach a definitive conclusion on the relative merits of tendering and deregulation. However, if tendering is the selected option, the experience in London and elsewhere provides an excellent model: various forms of contracts and procedures for letting, enforcement, and administration have been shown to work reasonably well.

One other point can be illustrated by the present situation in London. There is a risk of things going wrong because of uncertainty and delay over deregulation. LRT declared itself in favor of deregulation; so has LBL—a remarkable difference from the 1984 situation in which the incumbent operators and their owners were strongly opposed. The bus company has been reorganized for some time now into a set of separate subsidiaries in preparation for deregulation. Subsidiary company managers have been hired on that basis, and relations with labor have been conducted in that context. The tendering program is being modified to take account of it. Yet the government has hesitated and delayed the planning date for deregulation several times. The date now stands beyond the next general election. If enough doubts surface about whether deregula-

tion will ever happen, LBL may lose its sense of purpose and become harder to manage. The point has been made many times in other contexts: if fundamental change is decided upon, it is better to make it quickly and with conviction.

Some of the difficulties with tendering in London stem from the fact that the major incumbent operator is owned by the tendering authority. This inherently unsatisfactory situation is to be avoided. In the case of London, given the lack of credibility of rapid deregulation, there may now be a case for abandoning the policy for a specified number of years and immediately privatizing the bus companies. This might be done by creating explicit fixed-term contracts for each of the services currently secured by LRT (not necessarily by competitive tendering) and selling the companies with the benefit of these contracts. By appropriate layering of contract lengths, LRT could review and tender the contracts as they came up for renewal.

The Speed of Change

Bus policy has been successful in its primary aim: subsidies were reduced without dramatic loss of service within a couple years. But many analysts expected secondary advantages that were described in the White Paper, although others thought it was far too optimistic.

At the time the White Paper was published, few explicitly considered how long it would take for the industry to settle down, except some argued that deregulation was the only possible way of securing the requisite cost savings in the specified time. As for the secondary effects, the authors of the White Paper implicitly expected them to occur at a similar speed. In retrospect, this was not sensible, especially in an industry declining for years and from which so much subsidy was to be removed (Beesley 1990a).

History gives some indication of the rate of adjustment to be expected in the industry. The impetus for the explosive development of England's bus industry in the 1920s was the ready availability of mechanically mature war surplus vehicles and demobilized soldiers. From 1919 to 1937 the number of omnibuses operating grew at a more or less *constant absolute* rate from about 6,000 to 46,000 (Glaister and Mulley 1983). In other words, even in the heyday of this then highly profitable industry there was no sign of

reaching a static equilibrium after eighteen years.

After the 1930 act another kind of change was imposed on the industry: traffic commissioners who administered the new system of quantity and quality licensing, took a strong line to rationalize the "chaotic" industry by encouraging mergers and agglomeration and by standardizing fares. The annual reports suggest that rapid change in these respects continued from 1931 to 1937-38. The outbreak of war then clouds the picture.

The 1980 Transport Act created the opportunity for local authorities to declare experimental trial areas—and three were created. The Act also deregulated long-distance coach services, and after the first three years, much of the initial rapid change in the long distance market had sorted itself out (see Cross and Kilvington 1985). But local bus deregulation in 1986 and the creation of an unambiguous profit motive for the dominant operator (National Express) by privatization in March 1988 were important factors suggesting that even in the case of the long distance services, a longer period is needed to assess the truly competitive market (Beesley 1989).

It is worth noting that the principal physical assets in the industry are vehicles and real estate (office buildings and maintenance depots). Traditionally, the life of the large, heavy vehicle was reckoned at about fifteen years; and at deregulation the vehicle stock was not particularly old. The relevant real estate markets were insulated from full market pressures by town planning restrictions. When competition is sluggish, the asset lives are such that the industry can carry on for some years before it is forced to confront capital market pressures.

It is also noteworthy that many bus companies were bought by their managers. One other asset in the industry is *bus professionalism*, which has been turned to good advantage with the improved use of human and mechanical resources (Hibbs 1990). But proper marketing, use of price discrimination, and other standard commercial techniques working on the demand side have yet to be fully developed. This is interesting in view of the fact that price competition has not developed in the industry.

Thus, it is fair to claim that two or three years is too soon after deregulation to make a final assessment.

The Secondary Expectations of the 1984 Bus Policy

This paper does not list all the effects of bus deregulation; rather, it identifies a few matters where the literature poses some interesting questions or where there have been recent developments. The following were identified in the White Paper as secondary effects that could be expected.

A competitive market would be created

It is difficult to say how much competition has occurred, beyond conceding that it has so far been less than what was optimistically expected. Generally competition increased in the second year of deregulation, and a good deal of on-the-road competition can be witnessed in particular places. According to Tyson (1989), competition was more than was anticipated in metropolitan areas, with at least thirty operators in each area and an average of three bids for each tender for subsidized services.

Companies have generally expanded into areas where they have local knowledge, avoided confrontation, and preferred to compete for tendered routes rather than lodge commercial registrations. In many areas, operating territories are similar to those before deregulation, and it is possible there has been a tacit agreement not to trespass on each other's territory. Active competition has been reported in Scotland (Hills 1989).

National statistics fail to report numbers of small operators; however, they show a 10-15 percent increase each year in the number of medium-size operators.

Still, it is too soon to conclude on this topic. Competition will increase if and when the investing institutions at home and abroad decide the British bus industry is profitable. The prices at which the last few of the National Bus Companies were sold and the active trading in bus companies now occurring may be indicators that competition is increasing.

One disappointment has been that owner-drivers have not become common, as they are in the taxi industry. The requirement for an operator's license seems to be an inhibition. In an important test case, the holder of an operator's license attempted to let his drivers effectively own

their vehicles through a leasing arrangement. This was prevented by a ruling that each driver needed an operator's license under the arrangement. This may have closed the door to an important route for easy entry by individuals with a minimum of qualifications, which was important in the bus boom of the 1920s.

Traffic might be congested

A fear often expressed with regard to bus deregulation is that a flood of competing vehicles will cause road congestion. Thus, the 1980 act gave reserve powers to the traffic commissioners in the event such congestion had to be controlled.

Generally, there has not been enough growth of service to cause traffic problems. Further, the agility of minibuses is manifest by the greater speeds actually achieved. There is also some isolated evidence of substitution for car use (Banister and Mackett 1990). The Traffic Commissioners have not had to use their powers. In the most notorious case—in Glasgow, where competition was and continues to be fierce—they declined on the grounds that the problem was caused by inadequate parking enforcement rather than bus traffic. However, LRT's experience is that the Traffic Commissioners have very limited detection capabilities and even less enforcement power.

Fares would fall and cross subsidies would be reduced

This was an oversimplification of a quite complex series of propositions. The system of quantity licensing had fostered uniform pricing—rates per kilometer that did not vary much by time or place. It also enforced cross subsidy—permission to run profitable services was granted if operators also agreed to offer unremunerative services. Operators themselves introduced other kinds of cross subsidy. However, these were considered difficult to identify, often perverse in their effects, and not subject to political scrutiny. Competition was expected to drive fares closer to avoidable costs, by route and period of the day. Costs would be generally reduced which would allow fares to be reduced on heavily loaded routes, except to the extent that peak load pricing

was implemented. Conversely, fares might rise on routes previously receiving generous cross subsidies.

The new arrangements for tendering for non-commercial services greatly reduced some forms of cross-subsidy and forced responsible authorities to consider what is worth paying for. But price competition did not develop to any great extent, and fares scales remain uniform. In addition, differences remained in average fare levels among apparently similar areas.

Services would be more varied; operators would have new opportunities

It was believed that in the UK buses were too large and the forces of competition would greatly encourage the use of various types of smaller vehicles. Bus size increased systematically over the decades, partly due to the "new bus grant" that was available for large and technically complex vehicles (which subsequently proved expensive to maintain), and also from the attempts to measure efficiency in bus operations in terms of costs per *bus* kilometer instead of by a more market-oriented criterion. It is also possible that the big bus is optimal for many market circumstances (see Gwilliam, Nash and Mackie 1985a, b). But many concluded that capacities of the order of thirty to forty passengers would suit many circumstances better than the seventy or more of the conventional double decker. (See Banister and Mackett 1990 for a summary.)

There were actually two distinct predictions concerning vehicle size. The first was that where the market was large enough, smaller buses would be used as a means of product differentiation, filling the gap between the large bus and the taxi. They would operate at higher speeds, run with greater frequency, and generate their own market at higher fares than the big bus, with which they would coexist. On the whole this has not happened; there are places such as Oxford, where small and large vehicles compete, but their fares are not very different, and it appears to be the result of two different views of how best to cater for the same market rather than create distinct markets.

The second proposition was that taking service frequency, capital, labor, and maintenance costs

and depreciation into account, smaller vehicles would displace the larger ones in markets too small to sustain more than one type of vehicle. Although there have been examples of moves in the opposite direction, there are signs this was substantially correct. Minibuses generally continue to displace larger vehicles: in 1985, roughly forty locations were served by 400 minibuses. By 1987, 390 locations were served by 5,600 minibuses. In fact, growth should continue, reinforced by the recent development of technically superior small buses and the experience that vehicle life is longer than some had expected.

Several benefits have been noted from the use of minibuses. They achieve higher speeds often becoming economically viable without increasing fares. Greater route coverage, better penetration of residential areas, and hail-and-ride operations have all occurred. Passengers comment favorably on the increased security from robberies and assaults offered by the proximity of the driver. Press reports have been generally highly favorable. However, minibuses also have higher load factors, which causes complaints of crowding, and extra waiting time at stops.

There are also important effects with regard to drivers. First, driving-license requirements are less demanding. Also, drivers enjoy better contact with passengers and achieve greater job satisfaction. In addition, because the vehicles are less daunting to drive, new labor markets have opened up.

The minibus has led to substantially less advantageous terms and conditions of work (for drivers), both in London and under deregulation (Banister and Mackett 1990). However, it is unclear to what extent these effects have anything to do with the technology of vehicle size. Nor are they necessarily related to deregulation: skeptics point out that minibus experiments predate deregulation and that the vehicles are being introduced in a regulated London. Nevertheless, it appears it is the commercial pressure brought to bear by deregulation that has changed attitudes and speeded change.

Some operators have taken advantage of opportunities offered by the technology of small vehicles to do things differently. For instance, in Exeter repair shops were closed and the main technical activity was contracted out on a performance contract to the Ford dealer.

Patronage will increase

Official statistics through 1989 indicate that patronage has not increased. Observers have noted that after standardizing for the fare increases, the decline in patronage is much as it would have been on the basis of secular trends (Gómez-Ibañez and Meyer 1989, White and Turner 1990). Thus, any increase in vehicle kilometers would appear to be unproductive. Costs per-vehicle-kilometer have fallen considerably, but vehicle kilometers have increased while passenger kilometers have remained stagnant. Thus, load factors have fallen and costs per-passenger-kilometer have fallen little.

This is the great disappointment of the policy. It is also a mystery. One explanation is that the potential benefit of the extra vehicle kilometers was not converted into better service quality (White 1990). This was because of irregular running, or vehicle bunching, lack of service coordination, or confusion among passengers because of frequent changes, or some other factor. There can be no doubt that some of these factors played a part. For instance, some authorities put a great deal of effort into opposing deregulation and none into preparing for it; thus, there were unfortunate short-term consequences for passengers.

However, this explanation may not be complete. In most detailed case studies, bus output increase was accompanied by an improvement in observed or estimated service quality. For example, some have documented the favorable small-vehicle experience in terms of patronage (although they can find little direct evidence on service quality) and note that the full market potential for minibus operations has not yet been identified (Banister and Mackett 1990). Another estimated a 5 or 6 percentage point fall in scheduling efficiency since competition started, which is not enough to vitiate the considerable increase in bus kilometers (Evans 1990). And in spite of the expanded service the level of patronage did not increase.

One problem in assessing patronage outside metropolitan areas is the quality of the data. In many cases, "before" data are the outcome of a single day's observation. In all cases, "after" data are difficult to calculate because bus routes change rapidly. To state the obvious, if a funda-

mental change such as deregulation is to be evaluated, good statistics must be recorded both before and after the event—particularly with respect to passenger usage. However, this was not achieved in the U.K.

Observers state the most convincing explanation for why patronage did not change: a known infrequent service was replaced by an unknown frequent one, so effective waiting times were not reduced (Evans 1990). If this is correct, the remedy is simple: inform passengers about the services. The White Paper foresaw some of these problems but took the line that providing good information would be in the operators' own commercial self-interest. A precaution was taken: the registration system for commercial services and the rule requiring operators to wait forty-two days for entry and exit were to provide authorities with a central source of information and to constrain the rate of change, which could confuse passengers. Managers seemed slow to adopt good marketing practices and commercial pricing: in 1984, the U.K. bus industry spent less than 1 percent of its revenue on marketing (Wooton 1984), and there is little sign this proportion increased greatly. If normal commercial incentives are not operating, there may be a case for some short-term action by public authorities. To a degree, this was done by some local authorities from the beginning, where they accepted this as one of their functions (Tyson 1989, 1990).

Coordination and integration would be provided by the market

The White Paper took a strong-free market line on coordinating and integrating services. To the extent these are valued by passengers, they would command a price and would automatically be provided by the normal commercial process. This path was controversial, however, because it eliminated the need to intervene in route planning and in ticketing systems.

It was always accepted that some central agency would be required to administer concessionary fares schemes. Local authorities undertook this, and the schemes seem to have worked well.

Other forms of integration, notably the integrated travel pass, have had a mixed experience. However, after a period in which many schemes were withdrawn, the availability of tickets be-

tween modes and operators has been substantially restored (Tyson 1990). Also, in Tyne and Wear, a separate company was created—jointly owned by the Passenger Transport Executive and the bus operators—to administer a travelcard scheme, issuing tickets and allocating revenues according to agreements among its members.

Safety would decline

Safety was a subject of great debate: it was alleged that competition would lead to neglect of vehicle maintenance and personnel training. One observer reported on the various irregular driving practices that allegedly took place before regulation in 1930 (although no evidence appears to demonstrate how common this was. (Foster 1985)). Nevertheless, some predicted such practices would reappear, and the operator licensing system and extra vehicle inspection resources were created as precautions.

Until now there have been few serious problems of this kind. Official accident statistics show a steady continuation of the previous decline in injuries and deaths per passenger kilometer. Thus, it seems that the quality regulation has been sufficient so far. Further, one should note that times are different and drivers better educated, trained, and generally more responsible than in the 1920s.

Barriers to Competition: Collusion, Predation, Merger

The White Paper took a simple line on competition: regulation was the important barrier. Technical conditions in the bus industry were thought to be such that economies of scale, network effects, and information asymmetries would not permit significant barriers to continue. Although predatory practices had been observed in the trial areas, it was argued that it would not be commercially sensible, or even possible, to ward off competition on many fronts simultaneously without the support of a protected, regulated sector. It was accepted that the historical experience under competition was for territorial companies to form and, in dense urban areas, for operators to create associations.

For various reasons, authorities expressed little concern about these matters. Because sophisticated pro-competitive legislation now exists in the

U.K., corruption and criminal enforcement of cartels are not likely to be as much of a problem as elsewhere in the world; and associations and territorial monopolies would be so constrained by the threat of competitive entry that they would have to behave almost as if the industry were perfectly competitive—that is, it was argued that the market would be *contestable*, to use the modern terminology.

At the time deregulation was debated, opponents questioned this proposition. It is certainly true that once the primary binding constraint to competition was removed, other less important constraints emerged. What is not yet clear is whether they are sufficiently damaging in practice and sufficiently resistant to removal as to destroy the case for deregulation.

Some of the present barriers were created deliberately, such as the 42-day rule for entry and exit, the registration system, and the requirements for an operator's license. All of these ensured that a single operator would be large enough to operate a whole route and able to run a misjudged service for a period of time. Owner-drivers have not been encouraged by the operator's license requirement. Some have argued that the operation of concessionary fares schemes constituted a barrier (Gwilliam 1989, Beesley 1990a).

In spite of the confidence that company size would not matter, it was decided, as a precaution, that the National Bus Company (NBC) would be broken up into relatively small companies (some 200-300 vehicles each) and privatized in such a way as "to promote sustained and fair competition." However, privatization was not a necessary accompaniment to deregulation, as the situation in Scotland illustrates, where the industry was deregulated but not privatized until several years later.

The market value of the NBC was recognized to be small in the absence of regulation. Thus, according to press reports, early sales realized rather little. However, later sales realized more than had been hoped for.

Recently, it has been alleged that one or two ex-NBC companies are aggressively buying up companies, leading concentration of ownership, and auguring badly for competition. The general view seems to be there is a clear tendency toward concentration in the bus industry. However, it is almost impossible to know for sure if this is true;

official statistics do not yet show greatly increased concentration. It seems those taking this line must rely on the specialist trade press from which it is difficult to gain a representative picture (Beesley 1990b). Nevertheless, the Monopolies and Mergers Commission ruled on several cases, establishing that two geographically contiguous companies would cover a "substantial part" of the U.K. within the meaning of the legislation and that such mergers would be viewed with concern. Conversely, mergers not involving geographically contiguous bus companies—of which there have been several—regarded as being of little concern.

General U.K. competition law is currently under review. The present failings include the difficulty of detecting non-registration of registerable agreements; inadequate sanctions for non-registration; slowness of action; the difficulty of defining and detecting collusion and predation; and the difficulty of interpreting merger. Remedies have been proposed, including the possibility of adopting the US sanction of triple damages to a party shown to have been injured by anti-competitive behavior (Beesley 1990b).

It would appear that the White Paper underestimated the importance of potential failures of competition and that U.K. competition law is presently not ideally suited to deal with problems that occur. However, it is unclear how important competitive failures have been in practice, and it seems unlikely a great deal of damage has been done. It is particularly difficult to frame legislation and implement laws that will not unintentionally hinder desirable, market-led integration and coordination.

Cost-Benefit Calculus

Researchers have carried out preliminary cost-benefit analyses of bus deregulation. In brief, they conclude that if increased vehicle mileage had been translated into extra patronage, the result would have been highly favorable (Evans 1990, White 1990). As it was, the costs of running unproductive, extra vehicle miles consumed some of the benefits gained from unit cost reductions. However, there is still a net benefit in the metropolitan areas but a slight net loss in the shire counties.

Particular issues raised in the analysis of costs and benefits of bus deregulation are:

- How should changes in labor markets be evaluated? Since quasi-monopoly rents (because of unionization) were dissipated with the creation of a competitive labor market, how do we value the deteriorating terms and conditions of workers in the industry? The standard economist's answer does not find favor with some people, especially those who believe regulation should create good terms and conditions for workers in the industry.
- Similarly, what is the opportunity cost of the labor (the appropriate shadow wage)?
- How do we decide what would have happened in the absence of deregulation? What would the exogenous trends have been? In particular, what would have happened to labor costs—would they have risen in line with retail prices or with real earnings?
- Is it legitimate to count subsidy savings of £1 as £1? What is the shadow cost of tax revenue? (Some researchers conclude that the evidence suggests a cost of £1.20 to £1.50 per £1 of tax raised (Dodgson and Topham 1987).)

Conclusions

The primary objective of the bus policy was achieved: competition reduced costs and subsidies, and bus kilometers substantially increased. Over 80 percent of the network was offered commercially. Some items of subsidy were not subject to market discipline, and these did not decrease: however, it is too soon to make a final assessment of bus deregulation.

The legislation was carried due to single-mindedness on the part of the politicians, a long period of preparation, and lack of opposition from unions and others—in spite of its radical nature and the fact that it replaced a smoothly-operating administrative system by the vagaries of the market.

The alternative of comprehensive tendering was adopted in London. This works well and serves as a good model; but it also illustrates some of the practical drawbacks of tendering—in particular, the relatively limited pressure it puts on costs. Experience in London and elsewhere shows the importance of obtaining a proper separation between ownership of bidding companies and the authorities offering the contracts.

It is difficult to generalize about the extent of on-the-road competition. There has been a sub-

stantial amount but not as much as was hoped by the government. Competition for tenders has been strong. Traffic congestion has not been a problem.

There has been little change in the general level of fares after the initial impact of subsidy reduction. The failure of price competition to emerge in local bus routes was unexpected.

Cross-subsidy has been reduced and replaced by explicit subsidy. Smaller vehicles have flourished, as predicted, but they have not created differentiated markets.

Patronage does not appear to have responded to the increased service offered. It is not understood why, but irregularity, change, and poor information and marketing may well be factors. If so, the benefits of deregulation could be greatly increased by improving those aspects, and policies may need to be created to respond to this need.

Initially, some coordination of services and ticketing was lost, but it is now re-establishing itself as a commercially attractive undertaking.

Safety does not seem to have been compromised.

Privatization of publicly-owned National Bus Company operators was successfully accomplished, as was the transition from regulation to deregulation. Companies owned by local authorities were separated although they have not yet been privatized. However, barriers to competitive entry and anti-competitive practices were underestimated: no such barriers have been too problematic although they could become obstacles in the future. The present pro-competitive legislation is too slow, inflexible, and generally inappropriate. It is currently under review.

Appendix

The bus industry developed in the latter half of the nineteenth century under the mild safety legislation intended for hackney carriages. It was profitable and highly competitive. Though subject to local cartels—the horse bus associations—the industry's power was circumscribed by the continual threat of competitive entry. World War I consolidated the technology of the motor lorry and motor bus. The ready availability of surplus vehicles and demobilized soldiers after the war gave the opportunity for a rapid and profitable expansion of the bus industry. The number of

accidents involving buses grew commensurately with bus traffic and attracted the attention of the legislature. The 1930 Road Traffic Act created a system of licensing operated by Traffic Commissioners and Traffic Courts. The primary intention was to impose safety restrictions, but some protection from competition was given to license holders to compensation for the extra cost imposed by the safety requirements (see Glaister and Mulley 1983). Traffic Commissioners chose to *rationalize* the industry by encouraging mergers, reducing what they saw as "wasteful competition," forcing the provision of unremunerative services by cross-subsidies as a condition for granting licenses to operate profitable routes, and by enforcing price controls. The notion of giving commercial protection to the railways and tramways arose late in the consideration of the legislation and was of secondary importance. However, it became essential in the administration of the legislation because applicants for route licenses were required to demonstrate positively a public need and the statutory right that incumbents and competitors had—and used—to object. The decline of the bus industry started in the late 1950s: cars took away ridership, and it became harder to sustain cross-subsidies. The regulatory system made the industry slow to adapt to the changing market. Many urban operators were already owned by local authorities. Most of the rest were nationalized and formed the National Bus Company under the 1968 Transport Act. One of the first actions of the 1979 Conservative government was to remove price and quantity restrictions on long-distance coach services. After that, all bus services, except in London, were deregulated, and the National Bus Company was privatized under the 1985 Transport Act.

Passenger transport in London has always been treated under separate legislation. The underground railways were built in the 1860s and the deep tubes at the turn of the century—both as private ventures. They were never very profitable, in contrast to the privately-owned buses. In 1933 bus and rail were amalgamated into a single, monopolistic industry, with the aim of allowing buses to cross subsidize the ailing railways. In 1969 the organization came under the control of the local authority, the Greater London Council. Outside subsidy on a significant scale was unnecessary until the mid 1970s, when government-inspired price restraint caused

revenues to fall behind increasing costs. In the early 1980s, public transport subsidy became a deliberate policy, leading to conflict with central government and the eventual reversion to a nationalized industry in 1984.

Notes

1. A first draft of this paper was presented at the World Bank Seminar "Regulatory Reform in Transport," held in Baltimore, Maryland on June 7-8, 1990.

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QUESTIONS AND ANSWERS

Comment:

You have made the deregulation of the bus industry in Britain look too easy. Based on your paper, it appears as if the new Minister Nicholas Ridley came into office at the end of 1983, by 1984 he had a White Paper ready, in 1985 the act was passed, and by the end of 1986 deregulation was in force...three years from start to finish. Unfortunately, it was not as simple as that. The key decision to deregulate the bus industry was actually taken in 1977 by Norman Fowler, then shadow Minister of Transport, who was chairing a committee of backbench conservative members of parliament preparing the agenda for the next conservative administration. The policy agreed by this committee was summarized in the document called "The Right Track," which actually mentioned reform of the bus industry as one of the cornerstones of the new policy—it even used the terminology reform of the regulatory system. What motivated this decision to promote deregulation of the bus industry was, primarily, the rapidly rising costs of revenue support, not union bashing. The intention in 1977 was to improve the efficiency of the bus industry as demonstrated by the National Buses Market Analysis Project, which showed that bus companies voluntarily managed to cut 20 percent of their costs with only 3 percent loss in patronage. When the Conservative government came to power in 1979, having done this prior work, they were able to pass the Transport Act in 1980. But in 1979, although the intent was to deregulate the entire industry, not enough political support existed to carry it through. Thus, we can say that, first, it takes a long time. Second, studies are important, but it is the political commitment that counts most.

Third, you have to build a constituency to support it, and this takes a long time. Fourth, you have to do it in stages so you can demonstrate there will be benefits that exceed the costs so you can carry the public with you.

Glaister:

The other thing you have to get on your side in Britain is the administration, the civil service. They were very doubtful about this until the 1984 policy review for the local bus industry. It helped a great deal that we had the 1980 Act and that it had worked well.

Q: A question of clarification of a somewhat technical nature about the change and quality of service and its quantification. You mentioned in the paper that the elasticity of patronage with respect to changes in vehicle-kilometers was not as expected, and I would like some clarification of what were the underlying assumptions, in particular with regard to how the drop in load factors is related to increased change in travel times on buses. You commented that there was not a lot of price competition. But was there, at least initially, some degree of quality-of-service competition? And the industry equilibria that emerged, are they not so surprising if one considers appropriate valuations of the changes and quality of service?

Glaister:

What you would expect, at the crudest level, would be simply that if you have twice as many bus kilometers, then headway would drop by half, with its likely effects. One understands things are much more complicated than that. When people look at detailed case studies of what actually happened, they find that patronage grew depending on what happened with generalized costs. The trouble is that one is dealing with very broad aggre-

gates that move in different directions. The national statistics are grotesquely aggregated, and it is very difficult to generalize. But on the quality competition side, there was and is a lot.

Q: I have the same question about the measurement of vehicle-kilometers. It is simplistic the way you stated it because it is very likely that with the overall decline in patronage, without deregulation, you would have expected what you got. How do you see this?

Glaister:

That was quite right. So even having standardized for the trend you would have expected, you still find the patronage has not increased.

Q: I would like to discuss the point of why deregulation happened. Isn't the real reason that the British government faced a huge crisis and there was just too much money going to bus subsidies? The other point is why in the world do you need a pro-competition law? And what is that?

Glaister:

By the pro-competitive law, I simply mean standard antitrust legislation. The British antitrust legislation is nowhere near as powerful as in the U.S., where it is antimerger and antipredation. We do not have triple damages or anything of that kind. You can predate and then be told to stop. And that is the end of it.

Q: Would you elaborate a little bit more on the 42-day rule, because I think you put some doubts on its validity. It seems to me that it would help to provide information to the market for the improvement of its functions.

Glaister:

Yes, that was exactly the argument. When the policy was debated, many people were saying there would be chaos, so we needed a mechanism to gather information and reduce the speed of change—hence, the 42-day rule. Another reason was recognizing that local authorities would have to subsidize some services. They clearly needed to know which ones were going to be provided and regis-

tered commercially and then have time to step in and fill in the gaps. It was, as I recall, something of a concession that the 42-day rule was included. We argued that since it was in operators' interest not to change things so quickly and they wouldn't damage their own markets, there was no reason to intervene. That may have been naive. It has created what some people say is a barrier, and the industry is now arguing that the time delay should be eliminated.

Q: Competitiveness is at the heart of whether deregulation will work. You mentioned that no price competition emerged. Could you comment on two other points: One, what was the experience with terminals? Obviously, favorable terminal locations in the city center are a big advantage and there are efforts to control them. Second, you mentioned that there was no marketing, and that surprised me. One study argues there are economies of scale in marketing—that is, a large bus company, through national advertising campaigns, could have an advantage.

Glaister:

It is obvious that terminals would create an advantage. That was recognized in the 1980 act. But the National Bus Company, the national long-distance operator before 1980, owned the coach station in central London, which was, of course, the hub of the long distance operation. They used it exactly as you would have expected—and they cleaned up. Service was better and cheaper, but there was not much competition because of the presence in that coach station. That was corrected in 1985 because the industry became subject to the normal pro-competitive legislation, and all operators had to have equal access to the bus stations. So there have been cases which have actually gone against operators' attempts to keep other operators out of bus stations. Now there is, in principle at least, free access to all operating assets of that kind. It is possibly true that there are increasing returns to scale and other barriers created by advertising. National Bus Company's express services are another example: if you run a big operation, you can advertise all your services nationally in both directions. If you operate mainly in

one direction, you are not going to get any backhauls because you can't advertise over the whole of the area served. The fact is that bus operators are not spending a great deal of money on advertising. I do not have an answer as to why.

Q: There are just a few amendments I wanted to make to your presentation. One was to disentangle deregulation, privatization, and subsidy cuts from one another. Three separate policies are being implemented, and you cannot disentangle deregulation from privatization (in Britain); but, you can do some crude calculations about subsidy costs. There is not a lot of evidence that implementing deregulation and privatization, along with subsidy cuts, helps the industry absorb the cuts with less pain (in terms of fare increases). The second important point, which tends to be overlooked, is that levels of competition vary a lot across the U.K., especially in the metropolitan areas. Conventional calculations about whether deregulation and privatization were having much effect worked much better in areas where people thought the environment was more competitive. In places like West Midlands, where an entrenched monopoly had everything and had not given it up, the policy looked terrible (in the calculations). In Strathclyde, where it was warfare between the bus companies, the calculations looked very good. It is important to understand what the British experience strongly suggests, and the aggregate statistics for the nation as a whole mask it. The whole emphasis on doing a quantitative cost-benefit analysis is a little beyond the state of the data and the art, particularly because it is so difficult with aggregate statistics to get any estimate of the value people place on service changes. What is interesting is that you cannot identify winners and losers but probably can make an assessment about whether it is a gain or loss. The clearest winners have got to be the taxpayers in the British context. The clearest loser is probably labor, although even there it is uncertain because they get lower wages and tougher work rules, but there has been a big increase in

employment because of the increase in vehicle mileage. So they traded more jobs for lower wages. Whether users gained or lost is really tough to tell. Clearly, they lost from the fare increases. But whether there were service improvements to compensate, we don't know. Another category, the bus investors, are gaining. When you run the calculations about the 20 percent cost reduction coupled with the 23 percent fare increase and 14 percent ridership decline, it appears money is going into some pocket, and I think the bus industry is a really profitable operation.

Glaister:

Yes, that is a very important point. Of course you will not get a lot of new investment and competition until people take the view there is money to be made out of buses. There is some suggestion now that people are beginning to understand that. The last of the national bus companies were sold for a good deal more than the others, and there is a lot of trading of companies now, at really quite high prices. Not because of the property involved but because some people think you can make money out of running buses. As soon as that becomes established, and when interest rates come down a bit, some big investments will start, and that will change things even more.

Q: In your paper you said there was an actual or potential embargo on a transport company in one route taking over the operations of another adjacent route. What is the intrinsic logic of this approach? Obviously, it has something to do with economies of scale, but I am not sure exactly what. Second, how do you think that would apply to, say, a country with a fairly sparse population and a somewhat lower level of ridership?

Glaister:

There have been some cases before the Monopolies and Mergers Commission concerning the merging of two companies. But the legislation does not stop a company owned in, say Exeter, from operating a route next to Oxford or in Oxford. There is no prohibition on who runs which route. It's just that a company with one territory cannot be owned by one with adjacent territory.

Q: My question has to do with transferability, not so much to other countries as to other sectors. You talked about the administrative burden of tendering in the London markets being very high and the risk of privity also being high. Is there something about the bus industry that makes tendering a risky proposition? For example, in garbage collection the evidence is that while public garbage collection is more expensive, garbage collection organized through tendering has been cheaper than through free competition.

Glaister:

Yes, the rule of 20 percent (cost reduction) applies to garbage collection, hospital services, and other things. I do not think there is anything special about transport. Certainly, in the U.K., under the Local Government Act, which requires tendering of other government services, there is a system of appeal: if an independent bidder does not win, he can require, through a third party, an investigation as to whether the tender was awarded fairly or not. There is no such system in the bus industry since it is not under the same legislation, and that might be a problem. I do not think there is anything inherently special about buses except that specifications of the product can be quite tricky. There are many dimensions to route specifications, and enforcement is difficult.

Q: Concerning transferability, can you tell about the structure of the regulatory authorities, how they function, how big they are, what they do, what are their capacities, and what are the drawbacks of transferring the administrative structure over to the new regulatory body?

Glaister:

I gave a figure of 4 percent as the difference between the net and the gross cost savings for tendering in London. That has to do with administering the tendering process and enforcing the contracts. Presumably one could find out how much the Traffic Commission system cost, but it will depend on the availability of data.

Q: On the routes that are not tendered what kind of system exists?

Glaister:

At the moment there is almost nothing, just the business of registration. The commissioner receives a registration, publishes it, and that is the end of it. That really does not demand resources. There may be a case for taking that registration information and using it more aggressively to market the services, such as providing coordinated timetables and so forth. The silly example at the moment is that there may be a commercial, registered day-time service and a competitively-tendered evening service on the same route. And yet there is no timetable which shows both services. That is just crazy. A passenger will not know that if he comes in during the day, he can get back at night on the same route.

Q: On the question of transferability, let us assume that an administration has decided to privatize its national bus company and that it is of the same size as the one in the U.K. What are the steps it would need to take to dismantle this organization? It has its depots, its bus fleet, its unionized labor, and many other assets. How do you go about it?

Robert Brown:

On transferability, we need to know a lot about the structure, because transferability probably depends more on the industrial structure than any other single variable. The Chilean case is interesting because it went much further than the U.K. in deregulating. Today anyone who has a valid safety inspection certificate can take a bus and run it anywhere. No prior authority is needed. He can charge anything he wants, go anywhere he wants. But Santiago de Chile is a case where deregulation has been a real failure and undoubtedly will sharply reverse in the next few months. We are right down to the line as to how long some deregulation will last and how fast it will get undone through some sort of franchising agreement. It is interesting to see the differences and similarities between the experience in the U.K. and in Chile. In the latter, it took about ten years for the process of deregulation actually to occur. It did not start until 1979, at the same time that shipping was being deregulated. It did not really finish until 1989, when complete free access was permitted. Between

y1979 and about 1987, the number of vehicles doubled in Santiago, from 5,000 to 10,000, with no corresponding increase in the number of passengers. In fact, it is likely that the number of passengers decreased during that period. There is also a route structure where there are, for example, 50 bus routes and 50 taxi-bus routes. Taxi-buses are just smaller buses, but because of the variations on this, there are over 450 separate routes. Because of this great increase in the number of vehicles, there is a great proliferation of where those buses go. Two facts are important: one, individual bus routes became much longer. But at the same time, the connections between them were greatly increased through this dense supply route structure. People who used to take two buses to get from home to work now could find one bus that would go all the way. Quality of service in that sense increased considerably, but the cost has been deemed too high. In the first place, Steve Glaister mentioned that tariffs in England were relatively stable, when they have actually gone up 23 percent in real terms. In the case of Santiago, tariffs went up 140 percent in real terms between 1983 and 1989. No tariff competition evolved, and we believe there are strong theoretical reasons why it cannot. As happened in England, bus size fell, but in England this did not create vertically differentiated services, as Glaister anticipated. In Chile they started with vertically differentiated services—the small taxi-buses and the big buses. But with deregulation, tariffs became equal on both services. At the same time, there was a tendency for the size of vehicles to diminish to the extent that some bus owners took their buses, cut out a chunk in the middle, and soldered the ends back together again on both ends. There has been a strong tendency towards smaller and smaller vehicles. It was also mentioned that safety was not a problem in the U.K., but it has been a very serious problem in Chile. Here, individual bus owners on a single route try to pass the bus ahead to get to the corner first where passengers are waiting. This has caused very serious safety and accident problems in Santiago. The strong disadvantages are that tariffs went up 140 percent in real terms, which means that a poor family uses

20 percent of its income to ride the bus. Second, there was a doubling in the number of buses without even a close corresponding increase in ridership. Average ridership per bus has dropped from 1,000 passengers per day to less than 500, which means there are empty buses all over the city at all times of day. This, in turn, has led to very severe congestion and pollution. So there are buses bumper to bumper, three lanes across, empty, over a semi-empty subway in the middle of the city. Transit times have become progressively longer because of the congestion. All of these pushed costs up, and this is what, in fact, justifies the very high price they are paying at present.

Q: There is great pressure to regulate buses in some of the African countries because of the accident and safety problem. That was indeed the origin of regulation in the U.K. However, we need some way to offer governments a chance to solve the safety issue without jumping immediately to the other end, which is to create a national bus company, as is being done in Kenya. Also, I would like to know if there are fewer automobiles on the road because of the bus service, that is, if people are leaving their cars at home.

Glaister:

The point you made about safety regulations is very good. Almost all economic regulations in transport start out as safety regulations and then end up being severe economic regulations of other kinds. The option is always taken to add other things, which then change them entirely.

Moore:

I know nothing about Santiago, but I am a little suspicious about all those firms and the excess capacity. I know something about the origin of bus regulation in the United States, and it is often dressed up in terms of safety; that is usually the secondary consideration. And I ask whether it is true in the U.K., or was it the railroads that pushed for regulation initially because buses were beginning to take away their business? Railroads were the principal forms of passenger transportation early in this century and in the 1920s before automobiles became more widely owned. It

was the railroads that pushed for bus regulation in the U.S., and I suspect that railroads had a role to play in the U.K.

Glaister:

As a matter of fact, the railways in the U.K. were not very active in the bus legislation of 1930, although they may have been in the trucking laws in 1933. The important thing was that they were given the opportunity to object to applications, so they were important in the implementation of the legislation. I do not think they were very active in lobbying during the formulation of legislation.

Q: Why is there a lack of tariff competition?

Robert Brown:

The key to this is the industrial structure. There are 10,000 buses and taxi-buses with approximately 8,000 owners. They are organized into associations, but the associations are not run like companies. Rather, they are run like unions. There are 50 routes and 50 associations. People who run these unions are

elected. It is a political process. They do not take rational economic decisions to maximize the associations' profits. Instead, they make decisions which ensure that everybody who belongs to that association stays alive economically. That is the objective of the association. So when the government freed fares in 1979, people immediately began to buy buses, and they put them into Santiago so that service began to improve tremendously. With this big influx of buses, people had to find something to do with them. They made them run longer distances looking for passengers, and this made costs rise. In addition, the dollar was devalued in 1981 and the price of the dollar went up very much in pesos. As a consequence, tariffs went up. As this happened, ridership began to drop. Since people could no longer afford to ride the bus and had to walk, the average cost of operating a bus per day, per passenger, went up again. Since the associations had to keep their least efficient members happy and content, prices rose.

6

Transit Bus Privatization and Deregulation Around the World: Some Perspectives and Lessons¹

John R. Meyer and José A. Gómez-Ibañez

In the past decade many countries have reduced public regulations on prices, service quality, entry, exit, and other aspects of private industry behavior and have turned to private firms to provide services formerly offered by public agencies.^{2/}

The United States (starting under Presidents Ford and Carter) has been a leader in deregulation at the national level, most notably with the relaxation of government controls over airlines, telecommunications, banking, trucking, and railroads. Europeans, by contrast, and particularly Britain (under Prime Minister Thatcher) and France (under Prime Minister Chirac), have been leaders in privatization, in large part because the European countries nationalized many industries that have always remained in the private sector in the United States and thus had more state enterprises (ranging, for example, in Britain from Telecom to Jaguar) to sell back to private investors. The developing countries also experimented with privatization and deregulation in the 1980s, with varying degrees of enthusiasm and effectiveness, while political developments in the Soviet Union and Eastern Europe at the end of the 1980s suggest that privatization may become a truly massive and timely worldwide phenomenon, popular with a remarkable range of governments and under various policy orientations.

To study these phenomena, this paper focuses on experiences with deregulation and privatization of urban bus transit services. Urban buses pro-

vide a useful focus because they have been the subject of more experimentation with varying forms of ownership and regulation than most other commonly provided local public services. For example, one of the most ambitious and unprecedented experiments in deregulation and privatization occurred with bus services in Great Britain in the mid 1980s, when the national government ordered the deregulation and privatization of local bus services throughout the nation, excepting only the Greater London metropolitan area.^{3/} Prior to these reforms, most local bus services in Britain were provided by publicly-owned bus companies, as is still the case in the United States and most other developed countries. Many developing countries have also experimented with different forms of ownership and regulation of urban buses in the past two decades, and the United States has had some limited experience with public bus authorities contracting with private bus companies to provide services.

Buses are the principal form of motorized public transportation in the cities of both developed and developing countries, with bus ridership typically higher than that of all the other public modes combined. In developing countries, urban transport systems are strained both by rapid population growth and by the shift, as incomes grow, to higher quality and more costly transportation modes. In the poorest cities, the shift is from foot-powered modes (walking or bicycles)

to motorized public transport, while in the wealthier, it is from public transport to the private automobile. In both, however, the most important motorized modes are typically the conventional-size bus (with thirty-five or more seats), the minibus (which has thirty seats or fewer, and often as few as ten to fifteen), and the shared-ride taxi or jitney. Because buses and minibuses often carry 50 to 80 percent of all motorized trips, good bus transportation is important both to meet the aspirations for a motorized mode in the poorer cities and to forestall unnecessary growth in automobile traffic in the wealthier cities (of both the developed and developing world).

Options and Trends in Urban Bus Service

Basic options

Almost every country has struggled with the question of how best to provide urban bus services. Among the basic choices are the form of ownership, the degree of government regulation or control over the business decisions of bus firms, and the extent and means by which bus services are subsidized.

The basic ownership options are a public authority or a private firm, although hybrid forms are also possible. In West Africa several important urban bus companies are owned jointly by the government and private investors, for example, while in a number of U.S. cities local public authorities own the urban bus company's assets and employ the drivers but contract with private management companies to manage the company.

Government regulation is primarily an issue where bus companies are privately rather than publicly owned or operated. The scope of regulation varies widely. Regulations governing safety are common, such as requirements that vehicles be inspected and licensed for road worthiness or that drivers be licensed. In many cities local authorities also regulate entry and exit of firms from the business by requiring permission for a firm to initiate or abandon specific services or routes. The government may also set fares or establish standards for service frequency, hours of operation, and other aspects of the quality or quantity of service.

Subsidies to keep fares lower or extend services are an option whether the bus company is publicly

or privately owned. The government may provide subsidies directly in the form, for example, of cash payments to offset the firm's deficits, exemptions from fuel or other taxes normally paid by other businesses, or the provision of government-purchased vehicles or facilities. Alternatively, the government may avoid direct expenditures by establishing a system of subsidies across different types of bus services, commonly called cross subsidies. A system of cross subsidies usually requires an exclusive franchise to operate the profitable services, since without such protection, others could be expected to enter these lucrative markets and capture or compete away the profits.

The cycle of private and public involvement

Many cities in both developed and developing countries have experienced a fairly similar cycle of private and public involvement in urban bus service. The cycle, which can be divided into ten phases, begins with the private sector being largely responsible for urban bus service, followed by an increasing degree of public involvement and, at least in some cases, by a partial or complete return to private provision.

The first phase in the cycle is the entrepreneurial stage when the industry first emerges. At this stage service is typically provided by numerous small firms, often with only a few vehicles in each fleet. In some cities, particularly in the developed countries, this phase occurred over 100 years ago, when horse-drawn vehicles were the reigning technology, although there was often a resurgence of small entrepreneurship once the motorbus appeared. In the newly developing countries, this entrepreneurial phase usually occurred much later, and in a few instances may even hold today.

The second phase is characterized by mergers and consolidation of small firms into a few dominant companies, often with little overlap between their route networks. In cities which were large and wealthy enough around the turn of the century to support horse-drawn or electric street railways, the emergence of the railway technologies was partly responsible for this consolidation. Those cities which bypassed the street railway phase or where entrepreneurship reemerged once the motorbus developed usually experienced consolidations and mergers as well, although often at a later date.

Consolidation is typically followed in phase three by regulation of fares and franchising of the firms (to control routes and entry). These were often a response to the perceived or real market power of the newly consolidated and larger firms created in phase two. In other cases regulation may be more a response to a period of general inflation and public outcries against fare increases on services which had become increasingly popular and on which the city depended. Another common argument for regulation was to eliminate so-called "chaotic" or "destructive" competition where too many competitors ostensibly appeared, with unfortunate consequences for service stability, safety, reliability, etc.

The fourth phase involves a gradual downward trend in the profitability of the private firms followed, by a fifth phase of capital withdrawal and service reductions. Profitability usually declines because government regulators are reluctant and slow to allow fares to increase during periods of inflation. In developed countries, profitability often declined because of the rapidly increasing popularity of the automobile and the reluctance of regulators to allow firms to prune routes and adjust service frequencies accordingly. Whatever the cause, the result is that service is provided in aging and often dirty or otherwise under-maintained vehicles. In developing cities, where demand for public transport is increasing, the supply of vehicles is soon inadequate; thus, existing routes are overcrowded, and service is not extended to growing outlying areas.

In the sixth phase, public authorities usually take over the ailing private bus firms, followed by a seventh phase in which an infusion of public subsidies is made to restore capital and services. Public subsidies are commonly viewed as the only option for maintaining or expanding services at reasonable fares, and they are apparently more acceptable when accompanied by public ownership. In developing countries, public assistance is usually intended to expand service to accommodate increasing demand, while in developed countries, the concern is to stabilize service in the face of stagnant or falling demand.

Public takeovers and subsidies are usually followed by an eighth phase of increasing operating inefficiencies and real unit costs. Often wages for bus company employees increase steadily and more rapidly than other comparable wages (or inflation), labor productivity declines due to

overstaffing, and vehicle utilization declines because of inadequate attention to maintenance or slack scheduling practices. Eventually costs rise to the point where bus subsidies become a significant burden on the public treasury. In this ninth phase, public authorities face an increasingly difficult and unattractive choice between further increases in public subsidies or significant and unpopular fare increases or service reductions.

In some cities this dilemma is resolved by entering a tenth phase, in which the responsibility for bus service is returned to the private sector. Usually this is accompanied by a severe reduction or outright elimination of public subsidies, in the hope the greater efficiency of the private sector will be enough to offset the loss of subsidies without forcing fare increases. In most cases, public regulation of fares is retained in effect, resuming the cycle in its third phase. In a few notable exceptions, specifically the U.K. and a few cities in the developing world, fare regulation is also eliminated and the cycle returns to its second phase.

Differences between developing and developed cities

There are several important differences in the way the cycle of private and public responsibility plays out in developed and developing countries. First, dissatisfaction with inadequate service provided by regulated private companies is not the only, or even the primary, motivation for public takeovers in various developing countries. In some, public ownership is an important political symbol, either of independence from former colonial regimes or of the socialist ideology of the government. In many countries public takeovers coincided with independence from colonial rule, especially in Africa where the urban bus services in the largest cities often were provided by monopoly franchises granted to European-owned companies.

In both developed and developing cities, the consolidation of numerous private bus firms into a single public authority commonly was promoted as a source of greater efficiency by rationalizing route networks and eliminating redundant services. Further, in some developing cities, particularly in Asia, public ownership was often undertaken to hasten the replacement of smaller public transport vehicles (for example, pedicycles,

motorized tricycles, jitneys, or minibuses) with modern and larger conventional buses that would ostensibly use congested street space more efficiently. Critics argued that pedicycles and motorized tricycles impeded traffic because they were slow; certainly both they and the jitneys, and even minibuses, required more street space per passenger carried than the modern conventional bus. Whatever the merits of these arguments, elimination of pedicycles and motorized tricycles was consistent with the modern image that many developing countries wished to project.

The argument (to a certain extent spurious) was also made that the choice of transport technology dictated the form of ownership: it was alleged that small private operators would be unable to raise the capital needed to purchase modern buses, even though private operators of conventional buses often were already in existence, and their expansion might have been encouraged by a more generous regulatory environment or better franchise terms. Private operators were also sometimes alleged to operate dangerously—for example, by racing competitors to stops, although this, too, conceivably could have been remedied by providing exclusive franchises on individual routes or more stringent enforcement of traffic regulations.

A more fundamental difference between developed and developing countries' public transit experiences is that the cycle of private and public responsibility for bus service is more compressed in the latter. In large part, this is because buses carry a much larger portion of urban trips in developing countries, creating a serious public policy dilemma for local officials. On the one hand there is enormous political pressure to keep bus fares low and affordable because buses are the main mode of urban transportation. It is tempting to hold fares down even in the face of inflation, conceivably even by subsidizing bus fares from public funds. On the other hand it is risky to keep bus fares too low. Direct fare subsidies from government could easily absorb a large share of the local public budget, and overly stringent fare controls (without direct government subsidies) could easily leave the bus firms, whether public or private, without sufficient resources to provide this essential public service.

As a consequence, the public takeover phase is sometimes done less completely, and there is more experimentation with mixed systems in the

developing than the developed countries. Urban bus companies have been publicly owned and subsidized in virtually every major city in North America and Europe since the late 1960s;^{4/} Britain, which completed the public takeover of its private bus companies in the 1960s, is now (since 1986) virtually the sole exception.^{5/}

The patterns of urban bus ownership and regulation are thus more varied, and therefore inherently more interesting, in the developing countries. Urban bus services are still provided entirely by the private sector in many cities; reliance on private ownership is particularly common in the cities of Latin America and Asia. In most, however, local public authorities specify fares, the routes that firms can serve, and sometimes the number of vehicles or the frequency of service. Although private ownership is not necessarily a bar to public subsidy, the two rarely occur together.

Mixed systems of public and privately-owned buses are currently found in many developing cities, particularly in Africa. Often, conventional, full-sized buses are operated by a publicly owned corporation, but significant minibus services are provided by private operators. The relative sizes of the public and private sectors and the degree of regulation and control of private firms by local government vary. Dakar, the capital of Senegal, is an example of a mixed system where the public sector dominates; the public bus company is the exclusive provider of bus services within Dakar itself, while private minibus operators are restricted to the suburbs, and minibus fares and licenses are rather tightly controlled. Accra, the capital of Ghana, is an example of a mixed system where the private sector dominates: Accra's two publicly-owned bus companies carry only 20 percent of all metropolitan public transport trips, while the remaining 80 percent are carried by private firms operating conventional buses, minibuses, and converted trucks, and the private carriers are only loosely regulated by local authorities.

Often, mixed systems emerged because of inadequate service provided by recently nationalized and deficit-ridden public bus companies. A common solution is for the government either to reverse its position and privatize, to allow fare increases or, more often, to allow another less regulated and privately operated mode, such as minibuses, to fill the gaps. In the last situation,

the emergent private companies either may be allowed to charge a higher fare (as in Cairo, Egypt) or may be so much more cost efficient than the public or conventional bus system that they can make a profit at the old low fare (as seems to be the case in Jakarta and Ankara).

Publicly-owned companies have an effective monopoly on urban bus services in only a minority of developing countries, and even those often face competition from other forms of privately-owned transportation that offer services similar to that of a bus. The largest and most obvious example is in India, which undertook public ownership of urban bus companies only after independence. Now public companies operate almost all bus services in all but one or two of India's largest cities. The publicly-owned bus companies face significant competition, however, from privately-owned pedicycles and motorized tricycles. For shorter trips particularly, the latter offers a service that is superior to or reasonably competitive with that of the conventional bus; consequently, pedicycle or motorized tricycles may carry as many or more passengers daily as bus services in most large Indian cities. The popularity of motorized tricycles may also account for the relative scarcity of minibuses in India, at least compared to other developing countries; in fact, some hold six passengers and might almost be classed as small minibuses.

In any event, the substantial importance of buses in the developing world has generally forced both a higher reliance on the private sector and a greater tolerance for more innovative or hybrid forms of public and private involvement. By contrast, the developed world can afford to rely relatively consistently on publicly-owned and heavily subsidized urban buses, with Britain being the only major exception.

Significant Reforms and Policy Experiments

Britain's reforms

Much can be learned about the potential for privatization and deregulation from recent experiments. Among the most significant is almost surely that implemented in Britain in the 1980s. The British central government turned back the trend common to developed countries by ordering local governments to privatize and deregulate a

system in which public companies had provided virtually all bus services for two decades. The new scheme (which was fully and formally implemented in 1986 after several years of debate and experimentation) relaxed government controls over entry into the industry and allowed private or public bus companies to operate virtually any service they deemed profitable and to set their own fares. The old public bus companies were ordered spun off as corporations that could no longer receive direct non-competitive government subsidies. Some of these public bus companies have since been sold to the private sector, often through management or labor buy-outs, and those that remain publicly-owned must be operated as for-profit businesses.

Britain's reforms are also interesting because the government privatized and deregulated while still preserving the possibility of subsidizing socially worthwhile but unprofitable services. Local authorities can decide to supplement the profitable or commercial routes with additional subsidized services where they feel social concerns warrant, but they must secure them through competitive bidding among privatized operators, with the lowest bidder normally awarded the service contract. The British reforms thus provide at least a partial test of whether privatization and deregulation are compatible with the preservation of some subsidies.

Privatization with regulation

In many major cities of the developing world, the failure of public firms to provide adequate bus service at a reasonable cost has forced a rethinking of public ownership and often a partial or complete return to the private sector (for example, in Buenos Aires, Argentina; Ibadan, Nigeria; Kingston, Jamaica; and Colombo, Sri Lanka). In all but a handful of these cases, privatization has been accompanied by some forms of public regulation, particularly over fares.

The Kingston case was typical: the private Jamaica Omnibus Service was taken over by the government in 1974 because the company could not maintain service at low, regulated fares. But by 1983, government turned bus services back to the private sector, an action apparently forced by rising costs and deficits incurred by the public company.

In some cases, the shortcomings of public

ownership became apparent even before the initial takeover was completed. In Jakarta, Bangkok, and Manila, for example, the public sector assumed ownership of most or all private firms providing service with conventional-size buses in the 1970s, intending to expand service and gradually replace privately-owned (but publicly regulated) pedicabs, motorized tricycles, minibuses, and jitneys, or at least restrict them to feeder services on secondary streets or in outlying areas. In Jakarta, although pedicabs were successfully restricted, the growth in the subsidies required by the public bus company forced the government to slow or stop its program of restricting private motorized tricycles and minibuses (which still carry the majority of the city's public transport trips) and to leave fourteen bus companies still in private hands. In Manila the government's efforts to establish a large public bus company and to organize the remaining private operators of conventional buses into consortia to rationalize routes (with the "carrot" of subsidized vehicle leases) proved so costly and ineffective in competing with private jitney and small bus operators that the government is considering turning back its buses to the private sector. In Bangkok, the government was successful in nationalizing all private operators of conventional buses; but large deficits did not allow much expansion of services, and the public buses are outnumbered by privately owned minibuses (many of which are illegal and unregulated).

As in Britain, privatization has often allowed cities in developing countries to eliminate or check growth in subsidies while maintaining or expanding services, largely because the costs of private bus companies are often much lower than those of their public counterparts. While public companies need not have high costs, and some clearly do not (as in Bombay and Madras), public bus companies frequently have costs twice as high as their private competitors. This is due to excessive staffing, lower vehicle utilization, and greater *farebox-revenue leakage*. Also, private companies often pay their employees less, particularly if they use minibuses, which usually have less stringent requirements for driver licensing. Public bus companies are rarely able to deploy more than 60 to 70 percent of their bus fleets during the peak while private operators often deploy 80 to 90 percent. Finally, fare evasion by passengers and theft by bus crews are more

prevalent among public firms.

Because of the lower costs achieved, privatization often does not lead to fare increases.⁶¹ At the same time, private operators profit in cities where bus services are provided by both types of operators and both charge the same fares. In Jakarta, for example, public and some private firms operate conventional buses and charge the same fares, but the former need a 50 percent subsidy while the latter make a profit. A similar situation exists in Accra and Calcutta. In a few cases, such as in Khartoum, a private operator of conventional buses apparently charges less than the public operator.

Privatization while maintaining subsidies

Privatization and deregulation in the developing world are seldom accompanied by the maintenance of any significant direct public subsidy, as Britain did through its system of contracting for supplementary services. Some modest aid may be provided in the form of a waiver of fuel taxes or the public provision of bus stations, but very few (or none) of the subsidies that former public bus companies enjoyed are made available to their private successors. Perhaps this is because avoiding the heavy and growing burden of subsidies is such a major motivation for privatization in the first place. If direct subsidies are maintained in developing countries, usually they are provided only for a public bus company, which is not disbanded but remains in competition with unsubsidized private operators.

Direct subsidies are occasionally provided to private operators as temporary measures to ease transitions from one regulatory regime to another. In Medellin, Colombia, for example, government regulators held down fares so long that private operators could not earn enough to replace (let alone expand) their aging fleet of buses, and services had become increasingly dirty, unreliable, and inadequate. The government finally authorized a substantial fare increase, but only for new buses. It also gave operators of old buses a modest daily subsidy to encourage them to continue running for a while longer at the old fare. The subsidy smoothed the transition to the new higher fares, and was modest and limited to the short remaining useful life of the old vehicles.

A few developing countries contract with private operators to serve individual routes that

the public bus company finds unprofitable, but generally subsidy is not involved, so the problems of contract management and enforcement are not severe. This occurs in Istanbul and Bangkok, where private operators are happy to take over the routes because they can make a profit at the same fare the company charges—in fact, they pay the authorities for the routes.

In the rare case where a subsidy policy is preserved, the usual form is a cross subsidy so as to avoid any direct burden on the public purse. Problems of accountability and control are also often less obvious or more workable. For example, when dismantling its public bus system because of rising subsidy costs and inadequate service, a government may fear that the private sector might find it unprofitable to serve some routes at the contemplated regulated fares. One solution might be to divide the city into sectors, each including some profitable and unprofitable routes, and offer private bus companies the opportunity to bid for exclusive franchises to serve the profitable ones if they also agree to serve the others.

Cross-subsidy schemes of varying types have been employed in Buenos Aires, Santiago, Daejong (Korea), Casablanca and Rabat. In Daejong, for example, the city has sixty bus routes, forty of which are profitable and twenty unprofitable; the private operators are organized into associations which rotate among the routes weekly so that each takes its turn providing profitable and unprofitable services.

The choice between cross- and direct subsidies can raise equity concerns. Whether it is fairer for some bus riders to be subsidized by other bus riders rather than by the general taxpayers depends on particular perspectives and the situation. Cross subsidies may seem more equitable if many of the taxpayers are rural residents who don't enjoy the benefits of subsidized urban bus services, for example, while general tax revenues may seem fairer if the most lucrative bus routes are patronized by the poor or if the burden of general taxes falls mainly on the well-to-do.

Cross subsidies are also not free of administrative or regulatory problems, although these are probably no more demanding than the accountability and control problems raised by direct subsidies. One special problem, for example, is the potential anticompetitive effects of the exclusive franchises necessary to make cross-subsidy

schemes work. With operators protected from competition on their lucrative services (in order to generate the profits needed to subsidize unprofitable services), the risk is that the protection may be more than needed, so that firms earn excessive profits or indulge in sloppy management or other forms of inefficiency.

The risk of excess profits is significantly less where a route association rather than a single firm is granted the exclusive franchise, as long as members compete with one another and entry into the association is reasonably open. Route associations are organizations of very small private operators (usually with one to three buses each) that band together to provide common facilities (such as bus stations and maintenance depots) and to coordinate their schedules on a route. Where they permit new operators to join, they should compete away any excess profits above and beyond those required to cross subsidize the unprofitable services (as in Daejong). With single firms, however, the risk is that even if the franchises are initially rewarded on the basis of competitive bids, they subsequently may be extended or renegotiated through a more informal and less competitive process. Even in such cases, government fare regulations may prevent excess subsidy profits being earned. In Rabat and Casablanca, for example, franchises have not been re-bid for a while, but operators are probably not earning excess profits because the government has not allowed fare increases and has imposed a new tax on the operators.

A problem with cross-subsidy schemes is ensuring that the less lucrative as well as the more profitable services are provided. Franchisees have incentives to skimp on the former, say, by cutting frequencies or hours of operation, a problem that was reported in Rabat and Casablanca. Government officials operating a cross-subsidy scheme may underestimate the need to monitor, since no direct public subsidies are involved; however, in practice, the monitoring requirements for cross-subsidy schemes differ little from those of all but the simplest direct subsidy and may be a major strain on government departments.

Privatization with deregulation

In some cities, certain types of public transport have always been privately operated and largely unregulated (beyond requirements for vehicle inspection

and driver licensing). However, it is difficult to infer what the effects deregulation might have since there is no former regulatory regime or comparable existing regulated service to provide a benchmark for comparison.

The only two widely noted examples of transport privatization and deregulation in the developing world are Colombo, Sri Lanka, and Santiago, Chile. Their reforms are slightly different from one another's and from similar British reforms. In Colombo the government in 1979 permitted private operators to render bus services largely free of fare and route regulation but maintained the previous publicly-owned bus company. In Santiago a publicly-owned bus company which shared the market with regulated private operators was disbanded in 1980 while fare and route regulations covering the private sector were also relaxed. In neither case were subsidies for unprofitable routes made available to private operators, as in Britain, although in Colombo the public operator continues to receive substantial subsidies.

In both Colombo and Santiago the reforms led to increased service and higher fares, as in Britain. Unlike in Britain, however, the Colombo and Santiago reforms appear to have led to ridership increases, perhaps because the service improvements were greater and (at least in Colombo) the fare increases more moderate than they were in Britain.

In Colombo, overcrowding and inadequate service led the government to turn to private operators. As of 1985, the public operator, the Central Transport Board (CTB), operated around 3,000 buses in the Colombo area, most with seated capacities of fifty-five passengers each, while the new private operators deployed 4,000 buses, most with seated capacities of ten to thirty passengers each. Although the private operators are free to set their own routes and fares, the CTB's policy of maintaining fares at extremely low levels has limited the private operators' ability to raise their fares, which are only about 5 percent higher than CTB's. As a result, some private operators have resorted to overloading, and they do not serve some of the CTB's most unprofitable routes. Ridership has increased significantly in the years since deregulation, due to a combination of normal population and income growth as well as the substantial increase in capacity and bus frequencies stimulated by deregulation.^{7/}

In Santiago the private sector provided a wide variety of public transport prior to the reforms, including services with 35-seat minibuses, 20-seat taxibuses, shared-ride taxis plying specific routes, and regular taxis. Microbus and taxibus fares were deregulated and restrictions on their entry and routes relaxed in 1979 while taxi entry restrictions were relaxed in 1978 and fares for shared ride taxi service deregulated in 1981. At the same time the government gradually disbanded its publicly owned bus company, shrinking its fleet from 710 minibuses in 1978 to forty-four in 1980 and none in 1981.

Santiago's reforms brought a dramatic expansion in public transport capacity but large fare increases for some forms of transport. Between 1978 and 1984 the number of minibuses increased by more than 50 percent, the number of taxibuses nearly doubled, and the number of taxis providing either shared ride or regular services almost tripled. Fares approximately doubled in real terms (that is, net of inflation) on the minibuses and taxibuses, although fares on the shared and regular taxis remained roughly constant in real terms during this period. The fare increases were larger than the estimated increases in the running costs of a microbus or taxibus, which rose by 20 percent during the period largely because of a 100 percent real increase in the price of fuel. Ridership appears to have increased dramatically for Santiago's taxis, whose fares did not increase, but not much on its minibuses or taxibuses.^{8/}

Microbus and taxibus fares apparently increased rapidly because of the anticompetitive actions of their route associations, while taxi fares were stable because no taxi route associations existed. Many of the private buses were operated by small entrepreneurs with only two or three buses each (while there were one or two large operators with fleets of fifty buses). Traditionally the small operators pooled themselves in route associations for specific routes, which financed bus terminals and dispatched vehicles on a commonly-agreed route and schedule. After deregulation, these route associations set fares and would war on new entrants who chose not to join the association or attempted to set their own schedules or fares. The associations seem to have been relatively effective in defending their fare and schedule policies because the small size of the individual operators made it risky to challenge the associations' rules.

Basic Lessons

The importance of competition

At least four lessons emerge. First, the benefits of privatization and deregulation depend critically on whether effective competition can be established and maintained. When it exists, deregulation and privatization have great potential to reduce costs and improve the quality of urban bus services; without it, reforms may bring little improvement and, conceivably, even a degradation in service or (as in Santiago's case) unwarranted increases in fares as firms abuse their monopoly positions.

Interestingly, the prospects for effective competition among private bus operators appear greater in developing than developed countries. The striking feature of bus transit in the major developing cities is the enormous number of small private operators, at least where local governments have not severely restricted entry. Minibus services, in particular, are often provided by independent operators with one or at most a few vehicles each. Even standard size bus services are often provided by a half-dozen or more operators, each with fleets of fifty vehicles or fewer. Competition is often further enhanced because the minibus and standard bus operators not only compete with one another but with shared-ride taxis, jitneys, or motorized tricycles as well. By contrast, in Britain, with the most openly competitive bus transit of all developed countries and several years after deregulation and privatization, most metropolitan areas are dominated by one to three large bus firms with smaller firms rarely accounting for more than 10 percent of the patronage.

Several factors may account for these differences. British metropolitan areas were served by large and well entrenched public firms as recently as 1986; in time, a less concentrated industry structure may emerge. But even with time the British bus industry is unlikely to be populated by small firms to the same degree as commonly found in developing countries. Bus ridership is generally much higher per capita in the developing world, and these high-passenger volumes may allow a large number of competing firms to be financially viable. At the same time, the high bus frequencies on many routes may reduce the advantages of the regular schedule or coordinated route

network that large firms can offer. In developing countries, bus ownership also may offer relatively attractive opportunities for ambitious or entrepreneurial persons of modest means to earn a reasonable income.

While the competitive prospects seem greater in developing countries, there still may be a need for government intervention to maintain competition, although it typically takes a different and less urgent form than in the industrialized countries. In Britain the need is for vigilance against collusion among the few dominant firms in each metropolitan area or predatory behavior by large firms against their smaller rivals. In developing countries, route associations may provide important benefits in coordinating schedules and reducing unsafe driving by small independent firms; but as the Santiago case illustrates, they sometimes appear to limit competition by restricting entry or encouraging higher fares.

Service innovations vs. cost cutting

A second basic lesson is that these policies can provide important benefits, not just in reducing costs and improving productivity but also in encouraging more market-oriented services. Much of the rhetoric (particularly in the United States) has focused on the potential for cost cutting, and deregulation and privatization are therefore often viewed as largely a means to transfer wealth or income from labor (who previously may have been overpaid or underworked) to taxpayers or consumers (who, after deregulation, often pay less for labor's services).

However, reforms in both Britain and several developing countries illustrate that competition has the potential to induce major service innovations and improvements as well as to cut costs. In Britain, deregulation and privatization stimulated the spread of minibuses, which replaced less frequent double-deck bus services or extended service to low-density and previously unserved housing estates. To the extent innovation occurs, it may be there are few or no losers and mostly winners. Labor may suffer some pay cuts or have to work harder, for example, but may also gain from the increased employment opportunities provided in a larger, leaner, and more market-oriented industry. Consumers may lose from higher fares (particularly if the efficiency savings from competition are not enough to offset the

withdrawal of public subsidies or restrictive fare regulations), but the improvement and expansion of services may more than compensate them, especially where the past lack of competition and limits on fares or subsidies had severely constrained services and inhibited innovation.

The perils of maintaining subsidies or regulating fares

Third, a viable and competitive private sector can be established while a government still maintains subsidies for unprofitable but socially worthwhile services or regulates fares, although the capacity to pursue these policies simultaneously is probably greater in developed than developing countries. The British experience, for example, suggests that subsidized services, procured from private firms through competitive bidding, may actually promote rather than inhibit competition by providing a niche for small firms to enter the market. In developing countries the prospects for using subsidies as a tool to enhance competition seem somewhat weaker, largely because administrative capacities to implement competitive bidding schemes are generally more limited, and the alternatives (notably cross-subsidy) have some serious drawbacks. But the need for subsidies is probably reduced, largely because low labor costs and high patronage make it more likely that extensive bus services can be self-supporting.

The experience of developing countries suggests there are few advantages to a mixed system of subsidized public and unsubsidized private firms, largely because the former are usually less efficient than their private counterparts. This is especially true where they both offer service on similar routes and charge the same fares. Wherever services and fares are indeed comparable, little would be lost from the travelers' perspective (and much gained for taxpayers or recipients of competing public services) by phasing out subsidies to the publicly-owned firms. The rationale for subsidizing public but not private firms in a mixed system is slightly stronger in the rarer cases where the public firms charge a significantly lower fare or provide clearly different services from those provided by their private counterparts.

But even where services or fares differ, subsidy schemes can have significant drawbacks. The most important common problem is that the publicly-subsidized services may remain inade-

quate and overcrowded because of the high costs of the public operator and the continuing inability or unwillingness of the government to foot the subsidy bill for service expansions. Conceivably, if the unsubsidized private operators were allowed to provide standard as well as deluxe or premium fare services, they could provide the same or greater capacity at a similar or only slightly higher fare than the public companies—since the latter are relatively inefficient. And a publicly-subsidized alternative may do more damage (restraining innovation by privately operated services) than good (providing a more affordable alternative), especially when the fare differentials are small.

Most developing countries have maintained fare regulation during privatization in an attempt to ensure that fares would remain reasonable even while subsidies were discontinued. Experience suggests this poses as many risks as subsidization, however, because of the extreme pressure on public officials to set unrealistically low fares for private buses. These, in turn, lead to service inadequacies and shortages. In several cities where the bus industry has recently been privatized but not deregulated, dissatisfaction with inadequate service, usually blamed on the companies rather than on fare regulators, may eventually lead to a renationalization of bus service and a fruitless repetition of the cycle of private and public ownership.

The limits of the second best

Finally, experiences with bus deregulation and privatization cast some doubt on the empirical foundations of an important economic concept—second-best pricing—often used to justify government intervention in a market economy. Normally, economists assert that economic efficiency and welfare are improved if prices in a sector are brought closer to the costs of producing particular products or services. However, this assumes competitive markets elsewhere in the economy, particularly for complementary or competitive goods or services. Thus, a move toward more cost-oriented or competitive prices in a particular sector might actually reduce rather than improve economic welfare if the particular sector complements or substitutes for other goods and services that are sold in noncompetitive markets (so that prices diverge widely from costs).

Earlier it was observed that tariff or other trade barriers imposed by one country or group of countries (for example, the EEC) might imply that static measures of economic welfare could be improved if all other countries also deviated from free-trade principles. Of course the new equilibrium would not be as good as that achieved if all countries pursued free trade, and hence the term "second best." As another example, taken from the transport sector, an argument can be made that a state-owned or government-regulated railroad might improve economic welfare by charging higher markups over cost to its customers in competitive markets while charging less to those who were monopolists; this restructuring of rail tariffs would encourage the monopolists to produce more and the competitors less, which would be beneficial since the monopolists' higher prices otherwise lead to underconsumption of their goods while the competitors' low prices induce overconsumption of theirs.

Second-best principles sometimes are used to justify subsidies to urban bus services on the grounds of compensating for overuse of autos, particularly for commuting to central city workplaces. Autocommuters are priced substantially below marginal costs (because drivers typically fail to pay the full costs of the congestion or pollution they create and, often, the parking they use). Most efforts to privatize or deregulate buses impose a strong move toward competitive markets and unsubsidized prices for bus services; at the same time these policies do little to rectify the substantial departures from cost-oriented prices for automobile use that often motivated government intervention and subsidy support for buses in the first place. Experience suggests, however, that a move to a more market-oriented bus industry, and the removal of bus subsidies designed to compensate for the underpricing of auto use, does not invariably increase auto traffic congestion or otherwise generally exacerbate larger urban and environmental problems. Indeed, the bus industry appears to have a much better chance of competing with the automobile if it is lean and market-oriented than if it is publicly-subsidized and heavily encumbered by government regulation and constraints. In the British context, for example, minibuses, express services, and other innovations unleashed by deregulation and privatization seem to have added almost as many commuters as reduced subsidies and

higher fares subtracted.

Recent, and relatively realistic, behavioral models of high-density commuter corridor operations also suggest that transit subsidies may do little to reduce the number of autos used in commuting. Rather, transit subsidies may tend to pull commuters from other modes, mainly walking and car pooling. In essence, the cross elasticities are greater between walking and transit. Thus, higher transit subsidies may not greatly reduce the number of cars on the road in peak hours but instead reduce the number of people walking to work or riding in car pools.

Skepticism about the efficacy of second-best policies is further strengthened if, as seems likely, the shadow price on each unit of deficit spending is greater than one. Specifically, an additional \$1.00 in taxation may create losses elsewhere in the economy of more than \$1.00 because of distortions caused by the additional tax or by collection or other administrative costs. If so, the benefits of implementing a second-best pricing scheme that involves government subsidy, as most such schemes do, must be correspondingly greater to render a net improvement in welfare. Estimates of the shadow price attached to an extra unit of taxation range up to nearly \$1.60. These estimates mainly pertain to industrialized countries (the United States, Britain, and Australia, for example), but it seems unlikely they are markedly lower in developing countries.

The negative-externality-offset arguments for transit subsidies remain, though somewhat stronger in less developed countries. Specifically, the extent to which privatization may have intensified safety and traffic congestion problems in less developed countries is unclear. Reports of aggressive driving by highly motivated private bus operators are fairly common, particularly where a large number of small firms or individual owner-operators ply the same route. Some observers argue that better public provisions for on-street bus stops, off-street terminals, and the enforcement of traffic regulations would ease these problems. In some cities the problem has been relieved by the development of route associations, which set schedules and sometimes share revenues among the independent operators on a given route, but route associations, as already noted, may also act to limit competition in undesirable ways.

Privatization is sometimes blamed for increas-

ing traffic congestion by promoting the use of smaller public transport vehicles. (This criticism may be misguided in some of the wealthier developing countries, where passengers deprived of minibuses or jitneys might select an autobike, or even an auto, rather than a conventional bus for their commute.) As noted earlier, there is of course no inherent reason why private operators could not be required to use larger vehicles. Private operators tend to select smaller vehicles when given the opportunity, however, because they are cheaper to operate and are usually very popular with customers. Smaller vehicles often can serve outlying areas where larger vehicles would be unprofitable or they provide a frequency of service and a guarantee of a seat that the larger vehicles find difficult to match. Indeed, minibuses and similar vehicles are often so popular with the public that government planners have been forced to back down from their efforts to suppress them, as happened in Hong Kong. The cost and service advantages of smaller vehicles are obviously important considerations from the public's perspective and should be balanced against the greater demands for street space in deciding whether vehicle sizes should be restricted.

Overall Assessment

On the whole, privatization and deregulation seem to have been beneficial in virtually every instance, taken separately or together. Even in its common and relatively unpromising form of privatization with continued regulation, such reforms appear to have benefitted nearly all parties in developing cities where they have been tried. Taxpayers have benefitted because the burden of public bus subsidies has been limited. Riders have probably benefitted in most cases, particularly where services expanded greatly with the introduction of private operators at little or no increase in fares. Finally, labor may not have lost much, or may have conceivably gained, as service expansions usually mean more jobs, albeit often at lower wages.

Nevertheless, major risks do attend privatization with regulation. The first is the unresolved issue of traffic congestion and safety, particularly where the local government's resources to provide bus stops or terminals or to enforce traffic regulations seem limited. The second is the

possibility that the retention of public regulations, particularly over fares and entry to the industry, might eventually seriously limit the ability of private operators to maintain or expand services and thus possibly lead to renewed calls for public takeovers and subsidies. For this reason, the few cases where privatization has been accompanied by full deregulation—including fares (Chile, Sri Lanka and Britain)—should be studied.

In general, privatization and deregulation would seem to be policies from which most parties win and few lose. In Britain, subsidy cuts, rather than privatization and deregulation, were largely responsible for taxpayers apparently gaining, at some expense to riders and labor. Nevertheless, privatization and deregulation probably made the subsequent fare increases smaller than they might otherwise have been, very definitely stimulated service innovations and improvements, and made it possible to maintain or expand the number of vehicle miles of service (and thus the number of driving jobs) in the face of the subsidy cuts. The open question in the British case is whether the benefits were, on average, enough to offset the adverse effects of the subsidy cuts on riders and labor. Were the service innovations in some markets enough to compensate for the widespread fare increases experienced by the average large city rider, for example, and did employment opportunities expand enough to offset the fact that new drivers were hired at lower wages?

In the developing countries these calculations often appear to come out more favorably for all parties. Privatization frequently generates large service expansions with little or no fare increases, even without deregulation and even when public subsidies to bus operators are simultaneously withdrawn or reduced; consequently, riders almost surely gain, and labor has even more job opportunities to compensate for lower wage rates. This happy outcome may occur because privatization evokes larger unit cost reductions in developing countries than it has so far in Britain, due to a combination of greater competition among private bus operators and, in some cases, greater inefficiency of public companies.

Deregulation also may offer somewhat greater benefits in the developing countries than elsewhere, although the experience is limited. In the few cases where fares have been deregulated, fare increases were relatively modest, perhaps because

competition among operators was stronger. Continuing regulation often risks inadequate services, moreover, since regulators in the developing world are under great pressure to set unrealistically low fares. In short, deregulated fares probably lead to less excessive fare increases and more gains in improved or more adequate service. As a consequence, the desirability of maintaining public subsidies in a privatized and deregulated urban bus industry may also be less in the developing countries than elsewhere. However, local officials in developing countries seem unwilling or unable to establish subsidy contracting schemes of the type employed in Britain, and the alternatives of simple direct subsidy programs or cross subsidies can create service distortions or monitoring problems. If privatization and deregulation by themselves offer the prospect of expanded services with only modest or no fare increases, the risks of continuing subsidies may not seem worthwhile. In sum, privatization and deregulation are probably desirable public policies, taken separately or together, for both developed and developing countries, but the advice can be rendered with fewer equivocations and qualifications in the less developed parts of the world than in the developed.

Notes

1. A version of this paper was first presented at the World Bank Seminar on Regulatory Reform in Transport, held in Baltimore, Maryland, on June 7-8, 1990. Another version has been subsequently published in the *International Journal of Transport Economics*, Vol. XVIII, No. 3, October 1991.
2. For a review of trends in privatization, see John D. Donahue, *Public Ends, Private Means: The Privatization Decision* (New York: Basic Books, 1989) and Raymond Vernon, *The Promise of Privatization* (New York: Council on Foreign Relations, 1988).
3. For the authors own views on the British reforms, see José A. Gómez-Ibañez and John R. Meyer, "Privatizing and Deregulating Local Public Services: Lessons from Britain's Buses," *Journal of the American Institute of Planners*, Vol. 56, No. 1 (Winter 1990). For a more pessimistic view, see White (1990).
4. There are a number of useful histories of public involvement in the urban bus industry and its predecessor, the street railway, including Edward S. Mason (1932); Richard Dolomon and Arthur Saltzman (1972); and David W. Jones, Jr. (1985).
5. Local authorities in some U.S. cities contract with private bus companies to provide a portion of their service, but nationwide contracting accounts for less than 10 percent of the vehicle miles operated.
6. Britain is a notable exception, although fare increases in Britain are due largely to subsidy cuts and would have been larger if the cuts had not been accompanied by privatization.
7. There is no careful study which isolates the effects of deregulation from economic growth, ethnic strife or other factors that undoubtedly influenced ridership during that period.
8. Estimating the effects of privatization and deregulation on ridership is difficult because the Chilean economy suffered a severe recession starting in 1982, shortly after the reforms.

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QUESTIONS AND ANSWERS

Q: It has been said that, after deregulation in the U.S., railway rates were a little higher than they had been, but the quality of the service to the shipper improved dramatically. This means the Interstate Commerce Commission had, in the past, prevented the railway and shippers from striking the kind of relationship the latter would have preferred. They would have been happy to pay more if they could have gotten contract rates, guaranteed service, and the quality they wanted. Is there an equivalent of this with regard to bus services, where passen-

gers might be willing to pay more, but for various reasons they are prevented from doing so by the regulatory intervention?

Meyer:

Overall, I would say that around the world, the bus experience would be the same. I would interpret the American rail deregulation experience slightly differently, however. It is a bit tricky to do pre- and post-deregulation rate comparisons in American railroading because of substantial product modifications. Further, I am not sure there have been many tariff increases on a quality-adjusted basis, as

people argue. In the case of coal, we can document many instances where tariffs were reduced, certainly in western coal.

Q: Is the developmental cycle mentioned in your paper a given? It shows that each country has to come to understand that government is a bad regulator, and I wonder if there is a way for the Bank to help people avoid all these steps. Couldn't the other steps be skipped by introducing more intelligent antitrust actions to make sure the market stays competitive?

Meyer:

With regard to the first question about the nature of the development cycle, clearly, we hope it is avoidable. If you are back in phase four or five, a choice can be made of a little less regulation and a little less permissiveness on fares, and opting for the public ownership solution, which is phase number six. The cycle I described is empirical, and there is nothing inevitable about it if you are not too far down the road already. Unfortunately, my casual empiricism would suggest more countries are in stages eight and nine than are into stages three and four. Could you arrest it in stage two? Yes, you probably could, but in most instances, it is already well beyond that. In a few cases, where you are still in stage two, or not too far in stage three, you can put the proper government policies in place, try to maintain a competitive environment and that would be best of all.

Q: You mention that service innovation was often the result of privatization, but little has been done to cater to middle- or upper-class consumers, at least in many Asian cities. There they most likely rely on cars and for this reason buses haven't done much to reduce congestion. Generally, this has to do with the general subsidy that goes into car ownership. Is there any other reason this is happening, and what can be done to cater to those groups?

Meyer:

The British experience is truly fascinating and suggestive. While they have not succeeded in getting people out of their Rolls Royces, there has been a lot of service innovation there, for example, minibus service to suburban areas.

This has been aimed at upper-middle-income groups and has succeeded. In developing countries, I am not sure it is really all that different. Some of the minibus, air conditioned, guaranteed-seat service would seem to aim toward that same niche of the market as the British minibus express service to the suburban areas. I suspect the problems of weaning the very wealthy in some developing countries away from their private automobiles would be substantial, and there would not be enough of a market to make it worthwhile.

Q: You have said that to deregulate you first need a reasonably competitive environment. This, of course, does not exist in Eastern Europe. What is your advice in terms of the sequencing? Besides the nascent private sector, which must be allowed to develop, would you also recommend deregulating the very large firms in the public sector, breaking them up, or entering into leasing arrangements?

Meyer:

I cannot claim to be very expert on Eastern Europe since I have not been there recently. Some kind of program to make modest amounts of capital available at reasonable rates to small, start-up operations, would help get the entrepreneurial part of it going and challenge the large public monopolies. In a sense, Eastern Europeans have the worst combination. They have the problems of developing countries and at the same time have a very monolithic, all-powerful established government monopoly in place, probably stronger than in the developed countries, and certainly much stronger than in the developing countries. On the other hand, no nascent capitalist, small-capital group exists to be available as a potential interest group. They need to be developed, and this could mean some kind of program to make sure that capital was available for start-ups. At the same time, a start must be made on breaking up the big monopolies. But from what little I've seen, this is going to be very difficult.

Q: The question is how do we arrive at deregulation, since this is often a political issue. Your Shakespearean "ten stages of buses" provides a very useful framework for think-

ing about this. The key points are dissatisfaction, consensus that something needs to be done, consideration of options, decision and then action. This applies to regulation as well as deregulation. More specifically, the cycle basically breaks down as follows: first, widespread dissatisfaction amongst the public. In Britain, in the bus industry, people standing at bus stops noticed drivers were rude, knew buses were full on some routes and empty on others, were not servicing new housing developments, and complaints to management got evasive answers. The second key element is leadership. A leader has to emerge who basically focuses on this and starts building a consensus. At the same time, opposition emerges which comes from vested interests that will be affected. Generally, they have at their disposal the machine of public relations. Bus companies and railways normally have a public relations department and therefore can try to win back public support. Next, there has to be a break in the opposition. In the United States deregulation of airlines, it was one airline (United Airlines) breaking from the pack and saying it would benefit from deregulation. In the British bus context, it was the non-metropolitan counties that broke from the rest of the local government structure, saying they wanted deregulation. It was also the management of the National Bus Company that broke. That divides the opposition, which reaches the stage of a new action and introduces a new regime. Given this kind of cycle, where does the Bank fit in? Since transport deregulation is an inherently political process, what can Bank staff do to try and facilitate deregulation?

Comment:

In many developing countries, the context is one, which, for example, in the Chilean case, we may call a culture of collusion. It is a form of "cultural cartel" which operates in a very peculiar way to protect members of a particular group of buses. In other countries you have very serious corruption. If we are going to talk about the characteristics of the system, we always sweep corruption under the rug.

Meyer:

First, leadership emerging to build the consensus surely helps, but political institutions also help. One of the striking things in the British case is how the parliamentary system concentrates power in the hands of the cabinet and the prime minister in particular. This enabled this whole reform to come off. In many of her reforms, Mrs. Thatcher went beyond the unwritten constitution or conventions of British politics and explored new domains. But I am not quite sure how often that could happen or how long the British would tolerate that. In the American context, with its widespread diffusion of powers and non-centralized balance of powers among different groups, it would be very difficult, almost impossible, to do so on such a scale. If you take this into the context of the developing countries, one can make fascinating speculations. Like many economic reforms, it seems this one might be more easily implemented with less democracy than more. I am not saying that makes less democracy desirable, but just observing on the facts of the situation. Also, a strong person helps. Opposition from vested interests is certainly very real, and certainly a breakdown or division in that opposition helps, and that was part of it in the case of U.S. airlines. All the airlines except United were opposed to deregulation, although with varying degrees of intensity. And by the time deregulation happened, it was just lip service opposition. The comments about the nonmetropolitan counties in the British case was not completely accurate. But again, how do you do it? You can have PR, lunches, dinners, and cocktails and keep talking to the various parties. Usually there are some incipient divisions within most regulatory schemes that can be played upon. How far you want to go and how Machiavelian one wants to be in exploiting these, I am not sure. Widespread dissatisfaction, as an initial condition, is pretty easy to achieve. Almost all regulatory schemes begin to mess things up sooner or later in one form or another. The basic problem is that by trying to balance the different parties via redistributions, you also set up a lot of incentives to circumvent those redistributions by those being

asked to pay. For example, this is the inherent problem with most Ramsey pricing schemes, which are so widely advocated by economists. They are just not practical in the real politics of the world. It is necessary to mark up things which have very inelastic demands and not those that have elastic demands. But as time goes on, because of the incentives created by those markups, things that are inelastic become elastic, and things that are elastic become inelastic. That is the history of American railroad regulation from 1900 to 1960 and one fundamental reason why it began to break down. Regulation must also have built into it an awful lot of inertia to have adapted very well to these changing elasticities and circumstances. So widespread dissatisfaction will come one way or another from almost any regulatory schemes that have been in place. Corruption, is an intriguing issue and why a lot of things were originally moved out of the private sector into the public sector, at least in the U.S.— and I have a hunch that may be true elsewhere. Waste collection, for example, and many other activities that were done reasonably efficiently by the private sector, also were done quite corruptly. At the turn of the century, the populist movement arose in the U.S., and focused on getting corruption out of the system. This is why many went for government ownership. Franchising can be done at certain rates or even subsidized rates; but then corruption may rear its ugly head, so there is a turn to government ownership. Will we get a reemergence of this if we privatize? I think so. That is one reason deregulation should go along with privatization, so one can create a reasonably competitive environment (because that also tends to reduce the corruption problem).

Q: Is there a case for advising our member governments to keep the public sector as marginally unprofitable as they can, rather than to go through a whole disaster of bankruptcy and privatization and so on? Also, it is clear there are quite a few people who can afford and are willing to pay for better services but have been prevented from doing that because of overregulated systems. The experience with deregulation

in Morocco shows this. When private companies were allowed to run seat-only services at twice the price, they filled the buses from the first day and continue to fill them until now. I am sure there are many examples of this. What is not universally appreciated is what happens on exactly the opposite scale of the income distribution. Because this meeting has focused much more on intercity than urban, I find this a little curious. One never mentions poverty. In fact, the poor are double losers in most of these situations. Because public companies are so inefficient, average costs are high, and fares are not enough to cover costs—yet they are still not low enough for the poor. In my calculations on Morocco, based on assumed family scenarios, I found that 30 and 40 percent of disposable income went to pay for these “low fares”. This is tragic. When you deregulate and introduce higher-class and higher-price services, you take care of many people on one end. But you still have the poor who cannot pay those fares. What do you do for them?

Meyer:

On the first point, with the public sector having a continued role, I think that is very possible. Probably the most important part is creating a competitive environment or contributing to it. In fact, although it raises some very difficult questions about subsidized vs. unsubsidized competitors, there might still be a very real role for a continuing public-sector presence. That is particularly true if the public-sector company that continues is not too inefficient and is fully exposed to competitive forces. The public operator provides a potential yardstick, and if you really go the full route with deregulation, it may give you something of a safety valve or a fall-back position. So I would not rule out a continuing role for some kind of public presence, but one that really operates by some kind of market rules: Not too much subsidy (or no subsidy, preferably).

Q: Is there any correlation between economic cycles, in terms of upturns and downturns in the economy, and the timing of reform? As you move through your cycles or phases,

say cycle eight or nine, when you reach the point where things are really tight and costs are increasing, can you put in more subsidies, or do you have to privatize? Deregulation usually occurs at about the worst time, when the economy is in a downturn. The money is not there, but at the same time you have this big enterprise (whether a railway, national truck company, or national bus fleet) with 20,000 or 30,000 people. And you don't want to dump them in the street, which is what you might do while trying to move to phase ten (in terms of privatization). What kind of guidance can you give on this, since we face this kind of scene in many cases?

Meyer:

You have clearly identified the worst times to do it and the most probable. However, I would not be all that pessimistic. The best time to do it is when there is widespread dissatisfaction at the peak of the business cycle, which is likely to be inflationary. However, inflation tends to intensify other problems. But if you have reasonably full employment, you are less likely to have the dissatisfaction you are describing and where you would be adding to already extensive unemployment. The best timing would be, from the political standpoint, when you have some inflation and, at least moderate prosperity in terms of employment conditions.

7

The Political Framework of Regulatory Reform of Transport Enterprises: Bus and Truck Deregulation in Chile¹

Robert T. Brown

When the military government assumed power in Chile in September 1973, its first efforts in the economic sphere were dedicated to restoring the production of goods and services and reviving international trade. The transport sector continued to be heavily regulated, and there was no indication the new government intended to disturb Chile's tradition in this regard.

The seriousness of the chaotic state of Chile's economy was aggravated by the 1974 global depression, and the government undertook a severe economic adjustment program in early 1975. There was considerable concern within the military, the government's economic advisors, and the business community about the economic, social, and political costs being incurred, but extreme free-market economists within the government prevailed. Economic controls were rapidly eliminated, customs duties were reduced, and the economy was opened to the rest of the world.

The principal mechanism used to bring about these changes was the decree law, a law approved by the four members of the governing military junta, which replaced Chile's parliament between 1973 and 1990. Specific measures were implemented through the traditional supreme decree, an instruction issued by a minister and countersigned by the President of the Republic.

Deregulation of the transport sector was the result of a global economic policy (which bor-

dered on being an ideology), rather than an outcome of an analysis of the sector itself. Free access to trucking resulted from the application in 1975 of a new antimonopoly law and freight rates were freed at the end of that year. The importation of large trucks was promoted through highly differential customs tariffs and, because of the impact of other government policies, the number of truck operators increased sharply in 1977—many of whom had borrowed in dollars to finance the purchase of their vehicles.

In 1982, Chile (and most of Latin America) entered a severe economic crisis which had disastrous effects on the trucking sector. The government was forced to intervene and subsidized the repayment of truckers' loans but made no effort to reduce the overcapacity which existed in the sector. Rates fell to levels so low that they were frequently less than the truckers' total costs. As a result, it was politically impossible for the government to impose user charges adequate to recover a fair share of highway maintenance costs, which in effect constitutes an additional subsidy for truck transportation that still exists.

This situation caused a grave distortion in the relationship between truck and rail transportation. The state railroad has received no subsidy since 1979, suffered major operating losses, and gone heavily into debt to cover its losses, thereby worsening its financial difficulties and

distorting its competitive position even further.

The trucking sector slowly improved with the recovery of the Chilean economy in 1984, although the debt overhang continues to be a serious political problem. Under deregulation, trucking companies have tended to replace the traditional one truck-one owner structure with larger fleets, which become more specialized in specific markets. At present, there is considerable dichotomy between the large companies, which in general are profitable, and the thousands of independent truckers who continue to have financial problems.

Deregulation of the interurban bus sector began in 1977 and was not completed until the end of 1979. Passenger fares increased nearly 80 percent between 1977 and 1979 but, with the entry of new companies, dropped abruptly in 1980. Although deregulation caused a proliferation of new companies, the tendency in recent years has been for the larger companies to grow larger and for many of the smaller to be absorbed by them or disappear. This concentration has been aggravated by the government policy to permit the installation of private bus terminals, thus reducing the opportunity for the traveling public to compare fares and services before selecting the carrier of their choice.

Part of the difficulties that emerged from the deregulation of trucks and buses resulted from the lack of timely information about transport markets. The government did not dedicate even minimum resources to this aspect; thus, neither the government nor transport producers knew what was happening.

Nevertheless, despite severe (and largely unnecessary) problems in the trucking sector and the worrisome tendency toward concentration in the bus sector, deregulation has been a success: at present, except from the small, independent and indebted truckers, there is little political pressure to reinstitute government regulation of highway freight and passenger transport.

Historical Context of Transport Deregulation

During the period of development based on import substitution, which predated World War II and lasted until 1970, a structure of economic

and political interrelations evolved—largely sustained by copper exports—which was not all that different from the guild system of the Middle Ages: there was a place for everyone, and everyone had a place.

Public and private industrialists worked comfortably behind high and protective tariff barriers, aided by inefficient and costly ports and high maritime freight rates for imported goods. Large farmers, although hurt by poor terms of trade for their products in relation to industrial products, were compensated through low land taxes, easy access to subsidized credit, and labor legislation favorable to their interests. Small farmers were protected by state marketing systems for their products and also benefited from low land taxes. Organized labor in large industry, mining, banking, and the state-owned services sector was able to maintain wage levels well in excess of those of other workers. The middle class had easy access to stable, lifetime employment in the public sector. Social mobility was provided through free education through the university and entry into the professions, whose lesser stars were ensured employment through laws reserving certain posts in the government for them. The state-owned railways, shipping line, airline, and urban bus company lived tranquilly with the heavy annual subsidies they received from the government. The private shipping lines were protected by cargo reserve laws. Private truck and bus operators were defended by blanket governmental regulations, low taxes, and subsidized imports when they needed to renew their vehicles.

There were, of course, groups left out of these comfortable arrangements, notably landless agricultural workers and the nonunionized urban workers, whose political power was weak. There were also tensions, as one or another of the privileged groups sought to obtain a bigger slice of a pie growing only slowly, but these tensions tended to be resolved through inflation rather than through mechanisms which might seriously rock the status quo.

The one factor whose absence was most notorious during those idyllic decades was competition. And perhaps it was this absence of competition, as well as the absence of any need to change in order to survive economically,

that made the country a pleasant place for so many people.

The seeds of change were planted between 1959 and 1964, when a first tentative agrarian reform law was passed. The seeds were nurtured between 1965 and 1970, when a new agrarian law put teeth into the reform and large farms began to be broken up, perhaps as much to attain political objectives as to increase agricultural investment and output. But this tranquil garden changed dramatically during the Allende government between 1971 and 1973: at the same time that the legal expropriation of some farms accelerated, others were simply seized by their workers and the owners evicted. Factories were taken over by the government using a decades-old, forgotten law, and attempts were made to force banking, shipping, and other services into the public sector. As food and other goods shortages grew and foreign reserves fell, ever-widening controls extended over the economy. The black market exchange rate increasingly separated from the artificially low official rate while prices set by the government for nearly all goods and services became increasingly distorted and less useful as signals to producers and consumers. By 1973 the economy was out of control and, with the breakdown of markets, constant strikes in all sectors, and a citizens' revolt beginning, the country's entire social fabric was disintegrating.

At the end of this period the transport sector was much in evidence. Merchant ships were queued up waiting for a berth at which to unload. A major part of the country's truck operators went on strike in July 1973. The truckers were joined by urban and interurban bus operators. Thus, when the armed forces took control of the government in September 1973, they were most conscious of the role the transport sector had played in the demise of the government they replaced.

The Early Decree Laws of the Military Government

There is no indication that the military government came to office with a preconceived or coherent economic philosophy. Between September 1973 and June 1974, the ruling junta adopted its first 500 decree laws, including those which dissolved Congress, declared all

political parties to be in recess, and outlawed the leftist parties, brought order into the process of land reform, declared the public sector to be in a state of reorganization, and returned factories which had not been legally expropriated to their owners. Most of the decrees dealing with economic matters resolved specific urgent problems and did not reflect a consistent attitude regarding the direction the economy should follow. Only a few of the first decree laws dealt specifically with transport. One declared the state railways to be in reorganization and gave the director sweeping powers to hire and fire, although the removal and naming of top executives had to be approved by the Undersecretary of Transport.

Another decree sought to restore private transport in the nationalized shipping sector. A third, which extended the period during which owners of motor vehicles could legalize the transfer of ownership, explicitly recognized the role of the private highway transport sector in bringing down the Allende government.

Most of the decree laws pursued short-range objectives and said little about the junta's underlying political philosophy in the area of transport. A notable exception was a law adopted in May 1974, which not only reaffirmed the traditional maritime cargo reserves of 50 percent of imports and exports for Chilean flag vessels but also increased the reserve of imported bulk cargoes to 100 percent. This decree law put Chile squarely on the path to regulation and protection of the transport sector, with scant heed to the needs of the shippers. It was, however, in open conflict with that adopted in December 1973, which established "norms for the defense of free competition." This latter decree law transmitted a clear and coherent message on the evils of monopolistic practices and the need to guarantee free competition.

In summary, on assuming power in 1973, Chile's military junta dedicated its efforts in the economic field to restoring the shattered national economy and to resolving specific problems as they arose. While several decree laws contained elements of what would later become the dominant philosophy of the military government, others were oriented toward returning Chile's economy to its traditional, comfortable, government-regulated, noncompetitive path.

Emergence of an Economic Ideology

For a government to bring coherence into the actions of its many agents and to be able to communicate with the community it governs, it is necessary that there be a statement of the political, social, and economic principles which guide its policies and actions. No such statement was made when the military junta took control of the government in September 1973. Rather, the first decree law stated simply that the military were against the Marxist-Leninist philosophy that was being imposed on the country, but nothing was said about the alternative they proposed. This gap was filled six months later by the Declaration of Principles of the Government of Chile, issued in March 1974.

The Declaration of Principles was a highly abstract philosophical statement of the relationship between the individual and the state. It provided a conceptual framework which eventually brought coherence into the economic actions of the government by defining the concept of the subsidiary state, one of the two pillars of the government's economic policy.

The second pillar of the policy, which later led to the massive deregulation of the transport sector, took longer to emerge. The deterioration of Chile's economy during 1974, the increase in world petroleum prices and their impact on the Western economies, and the resulting fall in the price of copper, Chile's major export, made it clear during the first quarter of 1975 that the government needed to apply far more vigorous economic policies to defeat the problems inherited from the Allende government. To this end, an adjustment program, called the Economic Recovery Program, was immediately implemented to balance the external sector and to reduce the still high rate of inflation, primarily by drastically chopping the personnel and expenditures of the central government and government enterprises, which had been financed in large measure by printing money.

The drastic adjustment program brought, as anticipated, a severe depression in 1975, but it also brought down the rate of inflation to a manageable dimension and brought administrative and fiscal order into the public sector. A similarly important result of the adjustment

program was the consolidation of the power of the extreme free enterprisers—the so-called Chicago Boys—in key government positions and the withdrawal of the gradualists and others, including military officers, who objected to the high social cost being paid (many of them would have been content to return Chile to its traditional noncompetitive path). In this power shift the key player was the President of the Republic, General Augusto Pinochet, who showed his ability as a shrewd politician completely in charge of the direction the economy was taking. Thus, by December 1976, the second pillar of the government's economic policy was firmly in place: an unquestioned commitment to the socially-oriented free-market economy.

Chile's Global Economic Policy and the Transport Sector

Based on the principles of the subsidiary state and the socially-oriented free-market economy, the economic policy which took hold in Chile in 1975 was monolithic and global. Sectoral policies were deduced from the global policy rather than being built up from sectoral realities. Sweeping, even revolutionary, reforms initiated by a tight-knit group of economists were imposed, with slight regard to the opinions of the sectoral ministries. The state-controlled social security system was abolished and replaced by competing financial companies which managed individual retirement accounts for workers. Import duties were reduced to a uniform rate of 10 percent. Collective bargaining was restricted to the level of the individual plant or worksite. Collective farms were broken up and individual family plots sold to the workers. Foreign capital was given free access, and Chilean banks were allowed to seek foreign loans without restriction. State-owned enterprises were liquidated, as was the case of the urban bus company, while others were auctioned off, frequently to foreign buyers (although workers also became stockholders in many of these firms). Other state-owned companies, including the railways and the ports company, were required to reduce their personnel drastically. In the face of this avalanche, the people nominally responsible for the transport sector were swept under and left without

influence to affect the course their sector was taking.

In 1977, the National Planning Office distributed its National Strategy for Economic and Social Development, and for the first time the government's policy framework for the transport sector was presented in an integrated manner. Nevertheless, because it was not given even minimal resources, the Ministry of Transport was never able to carry out the functions which the National Strategy assigned to it, and in fact, these were not carried out by anyone. In addition, important elements of the strategy, such as the incorporation of infrastructure costs into the real costs of transport operators, were not implemented in the trucking sector, and as a result severe market distortions were created.

In the interurban bus sector, a worrisome aspect of the deregulation of bus services has been the tendency for the larger companies to grow larger and for smaller companies to be taken over or to disappear. Maintaining a competitive market is a major challenge, and there are few neutral policy instruments available for this purpose. One such instrument is the policy applied toward bus terminals.

Deregulation of the Transport Sector

Although the deregulation of the different means of transport in Chile was carried out consistently in the mid-1970s, the mechanisms used and the speed with which they were applied varied considerably from one transport sector to another. For this reason, trucking and interurban bus transport will be dealt with separately.

Highway freight transport

Trucking was the last means of transport to be regulated in Chile, and it was the first to be deregulated. The basis for the regulation of access to this sector dates back to 1966 when the government decided to permit trucks to be imported (which had been halted following the crisis of 1961-1962). The next government eliminated the requirement that truck importers had to consign a prior deposit in the Central Bank, and it lowered import duties to 50 percent. In order to import a vehicle under these favorable conditions, truckers were required to

register in the Undersecretariat of Transport and belong to an association of truckers—a requirement which led to a considerable expansion in the number of local truckers associations.

This system was consolidated under the Allende government: in January 1972 a law established the National Register of Transport Professionals as an independent organization and required all for-hire truckers (as distinct from own-account operators) to become members and to pay annual dues in order to obtain license plates. A prerequisite for registration was membership in a local association of truckers affiliated with the National Confederation of Truck Owners Associations. The Confederation then successfully promoted, with the government, a system whereby all the cargo generated in a particular locality could only be transported by members of the local truckers association. The result was a proliferation of such associations as well as a highly inefficient distribution of cargo among noncompeting local associations.

Highway freight rates were established centrally by the Ministry of Transport. A decree in 1975 was the last issued for this purpose, and it separated trucking services into various categories, for example, urban transport services; carriage of construction materials such as sand, gravel, crushed rock, etc.; and less-than-truckload freight, or services which combine with railway transport. The freight rates for this last category were established on the basis of the length of the trip. The rates were calculated according to distance. The freight rate for voluminous cargo, such as hay, refrigerators, empty bottles, wool, etc., which utilized more than 60 percent of the cubic capacity of the truck, was based on the tonnage capacity of the truck.

The third element of the economic regulation of trucking which the military government encountered on taking office was a monopoly established by the Allende government in August 1973 in the form of a joint company—ENASA—between the government and Pegaso of Spain for the production of trucks in Chile.

This complex regulation of access to trucking and of freight rates, in addition to the Pegaso monopoly, began to disintegrate when the Antimonopoly Commission resolved in 1975

that the National Register of Transport Professionals was a monopoly and, hence, illegal. Truck owners were therefore free to obtain their annual license plates and to solicit cargo without having to belong to any local truckers association. Freedom of access to highway trucking was further consolidated by a decree law, which stated that no one could be required to belong to any union or association in order to carry out an economic activity, thus wiping out another guild aspect of the traditional Chilean economy. Finally, in 1982 a decree declared that persons who wished to carry out trucking activities within Chile did not require any authorization from the ministry. This continues to be the law of the land today.

The elimination of all controls over trucking freight rates was implemented at the end of 1975. Each trucking operator had complete liberty to set his own rates, and it became illegal for any trucking association even to suggest minimum freight rates to its members.

With regard to the truck monopoly awarded to Pegaso, the military government agreed to purchase 5,136 standard units in compensation for the contract, which meant that only Pegaso trucks were imported until May 1978. Nevertheless, when 1,530 trucks were still to be delivered, ENASA accepted the cancellation of the rest of the commitment, and from then on importers could purchase any make of truck.

Thus the regulation of access to the trucking sector and the setting of freight rates were eliminated before 1976, well prior to the official transport policy enunciated in the National Strategy in 1977, which stated that:

- Trucking freight rates will be freely determined by the market;
- The state will ensure that cartels and regional monopolies are not created in trucking, that safe operating conditions are complied with, and that there is free access by new operators;
- There will be no special subsidies for the purchase of equipment, but all efforts will be made to eliminate existing obstacles and limitations on their purchase. At the same time, there will be no restrictions on the type of vehicles or their capacity, and they may be freely imported from any part of the world. Their operation, on the other hand, will

continue to be subject to general regulations, in particular those related to axle weights.

After 1975 Chile's trucking sector soon ran into serious problems, due primarily to the impact of policies outside the transport sector. The first problem was the massive elimination of employees from the central government and state-owned enterprises, beginning with the 1975 Economic Recovery Program and continuing well into the next decade. They were given generous lay-off benefits as well as access to subsidized credit available under a program for new small entrepreneurs. Many decided to invest their capital in a truck, thus contributing to two of the more serious problems of the sector which already existed at that time: its "atomization" (an average of 1.5 trucks per operator) and its lack of professionalism.

Second, the government opened the borders to the free inflow of foreign loan capital; and between 1978 and 1981, hundreds of millions of dollars were obtained by Chilean commercial banks and made easily available to borrowers, including truck importers and those wishing to buy trucks.

Third, the government froze the exchange rate at 39 pesos to the dollar in 1979, where it remained until June 1982. Since relatively high inflation continued during this period, imported goods became increasingly cheaper in pesos, and people—including those who bought trucks—were encouraged to go into debt in dollars.

Another effect of the fixed exchange rate was that trucking became more profitable, as the incidence of dollar-based costs, such as depreciation, spare parts and fuel, are high in trucking, and hence costs expressed in pesos remained relatively constant while freight rates in pesos increased with increasing demand and inflation.

Fourth, a customs tariff policy not only favored the import of trucks, but large trucks in particular.

Fifth, trucking operators were taxed on the basis of their presumed income, established by law to be 10 percent of the assessed value of their vehicles. But as they were not required to divulge their real income, this created an enormous taxloophole. Because corporate income taxes were high in Chile during the 1970s, it was advantageous for companies to establish a

subsidiary trucking company to handle their own transport needs: the amount paid to the subsidiary was chargeable to the costs of the parent company, thus reducing corporate taxes while the taxes of the subsidiary remained constant. In addition, as the subsidiary was completely free to handle third-party freight as well as the own-account freight of the parent company, income really earned by the parent company could be attributed to the trucking subsidiary and thus laundered tax-free. This tax policy led to a considerable expansion of the own-account trucking fleet: it is estimated that in 1983 own-account operators owned 61 percent of the national trucking fleet, with a capacity between 1.75 and 9.5 tons and 32 percent of that of more than 9.5 tons.^{2/}

These five factors mutually reinforced each other and led to a dramatic increase in truck imports between 1977 and 1981.

While the numbers are not certain, it has been estimated there were around 65,000 trucks in 1976 and 69,000 trucks in 1983. The small increase—despite the import of more than 20,000 trucks—reflects in part the gross errors in Chile's official statistics, but it also shows that many of the imported trucks replaced obsolete ones which had more than completed their economic life during the many years when imports were severely restricted.

The increase of only six percent in the number of vehicles in Chile's trucking fleet hides the far more significant increase in the capacity of the fleet, which may have increased from some 510,000 tons to perhaps 680,000 tons between 1976 and 1983, that is, by 33 percent. There was thus an important change in the quality of the trucking fleet during this period as a result of the import of much larger trucks than in the past.

This increase in capacity would have been excessive even if Chile's economic boom had continued after 1981. But the boom did not, and thence enters the sixth factor. In 1982 Chile (along with the rest of Latin America) entered a severe financial crisis. The peso was devalued to 46 pesos to the dollar and continued to fall thereafter. The inflow of foreign capital halted abruptly, and the national banking system went into technical bankruptcy, leading to the liquidation of several banks and governmental intervention in others in January 1983,

as thousands of borrowers were unable to repay their loans.

As a result, demand for trucking services fell when the gross domestic product dropped 13 percent in 1982. There was already excess capacity in the trucking sector in 1981, and it has been estimated that this increased in 1984 to 30 percent of the trucks of more than 11 tons capacity.^{3/} The large consumers of freight services, who constitute a major part of the freight market, sought to reduce their transport costs and used competitive bidding open to truck operators anywhere in the country.

In addition, truck operating costs increased as a result of the devaluation which immediately affected the prices of fuel and spare parts. Freight rates dropped precipitously. And thousands of truckers who had imported trucks were unable to meet the payments on their dollar-denominated debts, which were rapidly increasing in pesos as the national currency continued to devalue.

When trucks began to be auctioned off because loan payments were not met (the auctions were not suspended until June 1984), the government was forced to intervene. The only real solution would have been the temporary withdrawal of a large number of trucks from the market, and in fact, perhaps some 2,500 trucks were officially reexported.^{4/} Nevertheless, the government chose to ignore the real problem and decided to restrict its intervention solely to rescheduling the debts of people who had purchased trucks and were unable to meet the payments. An agency purchased the nonrecoverable loans from the dealers who had imported trucks, at an average of 65 percent of the face value, and then renegotiated the loan with the debtor. The first formulas used were only partially successful, as not more than 30 percent of the problem debtors reached an agreement. A second formula was established and it reduced the debt by 40 percent, the amortization period was set at a maximum of twelve years, and an interest rate of five percent was applied.^{5/}

Despite the favorable terms of the rescheduled debts, there was still excess capacity in the sector, which kept freight rates below costs, and truck operators continued to operate at a loss in most markets. In addition, the critical situation of the trucking sector made it politically

impossible to assign highway infrastructure costs to the users who generated them. The general economic recovery in Chile after 1984 eased many of the problems of the trucking sector, although some truckers' indebtedness has persisted until today. In addition, there are several positive tendencies in the sector which augur well for the future. First, truck operators and their vehicles are becoming more specialized and dedicated to specific transport markets, such as fruit, forestry products, and mining. As a result, the efficiency of transport in the corresponding sectors has improved, and the specialized services are remunerative. Second, larger, better organized, and more professional trucking companies are emerging, frequently associated with specific sectors such as those mentioned. As a result of these positive tendencies, truck imports have resumed.

Interurban buses

Regulation of interurban and rural bus services has a long tradition in Chile, as in most other countries, and the deregulation of the sector took longer than for the trucking sector. Until the mid-1970s, the government completely controlled the bus sector through three principal instruments: the granting of a specific concession for a specific bus service, the setting of passenger fares, and the rigid control of the importation and distribution of buses.

To obtain a concession, potential bus operators were required to present applications indicating the route to be served, the characteristics of the vehicles to be used, evidence that they complied with the established technical standards, and estimates of the minimum frequency of the service to be provided.

Theoretically, if an application to provide a new service was presented correctly, it was supposed to be approved. In other words, the governmental authority did not decide whether the new service was necessary. Nevertheless, the study of an application could take up to two years.

Even when a group of bus operators presented a single application to provide a new service, a concession was given individually to each operator. However, operators of the same service were required to form an association, which was the interlocutor with the govern-

ment. Further, holders of concessions were free to increase the frequency of service but were restricted in the use of their vehicles other than for the authorized service.

Maximum passenger fares were fixed at the national level and were based on the class of the service and the number of kilometers of service over paved and unpaved roads.

The Ministry of Transport and Telecommunications was thus able to set all maximum interurban bus fares and readjust them when costs increased significantly: During 1976, when inflation was 180 percent, there were seven fare adjustments. In addition, the Ministry set minimum fares so that interurban buses could not undercut fares charged on short suburban routes or rural routes which overlapped their services. Special low fares for students were also determined by the Ministry.

The deregulation of interurban bus fares began cautiously in May 1977, authorizing bus operators to fix fares freely for pullman services on vehicles with beds and restrooms. At the same time, fares also were freed on nine routes originating in Santiago and for which the government considered there was adequate competition, but these operators were required to inform the Ministry of fare increases three days before they went into effect. After monitoring the deregulated fares for two months, the Ministry decided that results were satisfactory and freed fares on another seventeen routes. Fares on an additional twenty-seven interurban services were freed. In August of the same year all fares were effectively freed for interurban and rural bus services. In theory, bus operators were required to inform the Ministry of Economy of any changes they made in bus fares, but this was not controlled. Since then, the government has only set student fares.

Access to providing interurban bus services was not significantly deregulated until 1979. Nevertheless, a series of decrees, beginning in 1977, simplified the process of obtaining concessions to operate bus routes. As a result, between March 1977 and April 1979, concessions granted increased from 84 to 282. Supreme Decree 320 required the Ministry of Transport and Telecommunications to grant concessions to any qualified applicants; they no longer needed to specify the service to be provided. Thus, the concept of concessions was

eliminated since successful applicants could provide interurban service anywhere in the country.

The action to deregulate interurban bus services was of an administrative nature and, hence, could be reversed by rescinding decrees or issuing new ones. Thus, the freedom to provide any bus service was guaranteed by law in 1988.

Government policy for the interurban bus sector was established in the National Strategy for Economic and Social Development in 1977, which determined that interurban bus transport would be provided by scheduled or regular services, except in the case of interurban taxis and tourist transport; also, that highway passenger fares would be set only when there was insufficient competition. In addition, government policy ensured free access to the highway passenger transport market, with the sole condition that minimum requirements for different services be complied with. This policy was fully implemented by the end of 1979, and another revolutionary step had been taken in the deregulation of Chile's transport sector.

Unlike trucking, the interurban bus sector in Chile in the mid-1970s was organized in companies, which contributed to its greater stability after deregulation during the bad times to come. Nevertheless, deregulation did generate significant changes. Before examining these, it is important to examine Chile's geography and population distribution, as bus services are directly related to these factors.

Because of the country's peculiar geography—squeezed between the Andes Mountains and the Pacific Ocean—most of the population centers from Arica in the north, on the border with Peru, to Puerto Montt at the end of the central valley in the south, are strung along the north-south Pan-American Highway. Most interurban bus services therefore overlap and are distinguished primarily by the city in the north or the south where the service terminates.

Santiago, 2,062 km from Arica and 1,016 km from Puerto Montt, has a population of more than 4 million, 32 percent of the country's total. Urban centers in the north are few and widely distant from one another, whereas those in the south are far more numerous. Thus there are two natural bus corridors: from Santiago to the north and from Santiago to

the south. To these should be added a third corridor: from Santiago to the coastal cities of Valparaíso/Viña del Mar and Cartagena, with routes of less than 125 km in length. Although Concepción, Chile's third largest city, with a population of 550,000, is on the coast, it forms part of the southern corridor because bus services to it use the corridor for 429 km before branching off for the final 86 km.

When interurban bus service was deregulated in 1979, the number of bus companies increased until the financial crisis, when the number dropped, since the companies were unable to meet the payments on the loans used to purchase their equipment. They either withdrew from the market or merged with other companies. The number offering services to Viña del Mar was actually lower in 1984 than in 1978, but the number of companies operating on the southern corridor increased significantly (from five to fourteen, over one southern stretch).

As expected, the severe financial crisis which began in 1982 reduced the number of interurban bus passengers severely, contributing to the problems the bus operators encountered as a result of the devaluation of the peso—which led to a sharp increase in the peso value of their debts incurred from purchasing vehicles and in increased operating costs.

Following the deregulation of interurban bus fares in 1977, it was expected fares would increase. While the real increase between 1977 and 1979 was extremely large (nearly 80 percent), with the entry of new bus companies into the market in 1980, fares dropped abruptly to not much above the 1977 level. In 1981, the last year of a period of sustained economic growth, fares increased somewhat and then drifted downward during the financial crisis, falling noticeably in 1984, when traffic again diminished. Although the data are notoriously bad on the evolution of fares, it is probable that the real level in 1984-1985 for the services between Santiago and Talca, Temuco, and Puerto Montt on the southern corridor was a few percentage points above the 1977 level.

As Chile emerged from the financial crisis in 1985, some smaller companies were in financial trouble, but bus companies in general were covering their full costs, partially because of the income derived from transporting express

packages on buses. Thus, the interurban bus sector was able to avoid the catastrophe that affected the trucking sector.

A worrisome aspect since deregulation has been the tendency for larger companies to grow larger and smaller companies to be taken over or disappear—this happened both during and after the financial crisis. For deregulation to continue, it is essential that the interurban bus transport market be competitive; analysis shows that the number of companies operating over a route has a significant impact on fare levels. On the corridor to the coast, for example, only a few companies operate. While the average fare per passenger-kilometer would be expected to be somewhat higher on a route only slightly more than 100 km long, the difference in average fares between this route and services from Santiago along the southern corridor is greater than can be explained by route length alone. Clearly the difference in the number of companies competing has significant impact.

Maintaining a competitive interurban bus market is a major challenge, and few neutral policy instruments are available. However, one such policy is in regard to bus terminals. In interurban bus transport, passengers can best compare vehicles, schedules, and fares if buses are concentrated in a single terminal. In Chile, bus operators are free to change each of these variables as they wish, so that written information has extremely limited time validity. Unfortunately, the deregulation policy of the Chilean government extended even to bus terminals; thus, some of the larger operators constructed their own.

For example, in Santiago there are two municipal terminals, one for services to the south and coast and the other to the north. Nevertheless, the largest bus operator for the southern and coastal corridors, who owns more than 200 buses^{6/}, established his own terminal in 1983. As a result, daily bus departures from the municipal terminal dropped from 606 to 393 in two years. Another sizable company, which serves the north, south, and coast, also has its own terminal. In addition, seven companies which operate over the northern corridor, including the largest, built a terminal for their own use. This proliferation of terminals damaged the transparency of the market, which is needed to maintain competitiveness. It also

gave larger companies a strong advantage over smaller or potential competitors.

Prospects for the Future

The net results of deregulation of trucking and interurban passenger transport, as well as ports and maritime shipping, have been largely favorable. This has not been true of urban passenger transport in Santiago.

With interurban bus transport, deregulation brought new bus service, especially in the rural areas, and improved the frequency and quality of service on existing routes. Passenger fares are reasonable by international standards, and the profitability of the sector appears to be sufficient to maintain reasonable stability. The principal problem initially was the unwarranted and unnecessarily large increase in passenger fares in 1978 and 1979, but this was soon corrected by normal market forces as new bus companies were created. The principal challenge for the future will be maintaining competitive markets and, as noted earlier, this challenge may not be adequately met at present. Specific policies to achieve this are essential, in particular a policy on bus terminals in the major cities. If this challenge can be met, there should be few pressures to return interurban passenger transport to the messy and inefficient regulatory system of the past.

The short-term results of deregulation of trucking were disastrous, but these were caused principally by policies and events outside the transport sector which led to massive overinvestment in unneeded trucks and a severe disruption of the freight transport market. The debt overhang, which continues to affect nearly 13,000 truckers,^{7/} is still a political problem, and the National Confederation of Truck Owners, one of several associations in the sector, continues to call for an official schedule of freight rates which would "permit truckers with the least resources to earn a profit."^{8/} This view is not shared by other truckers, particularly the large and efficient companies, which direct their activities to specific markets and utilize specialized equipment and which would not want government to re-regulate the sector—especially if the objective was to protect the least efficient operators. Since the financial health of the sector has been slowly improving

since 1985, the political problem of the small indebted operators should be manageable.

In addition, the new government of Chile is passing legislation which eliminates taxes based on presumed income rather than real income. This policy change, which is supported by the truckers associations, will discourage the artificial use of own-account transport and will channel more cargo to legitimate trucking companies.

It is to be hoped that the new policymakers will realize that if the government cannot recover infrastructure costs from truckers, it must subsidize the infrastructure costs of the railways in order to maintain an efficient freight transport market.

One of the major errors of the deregulation policy was to apply it selectively. The government wanted to ensure that all users of infrastructure paid the corresponding costs and that no subsidies would be granted to the railways. While the latter half of the policy was applied, the first half was not (the railways got no subsidies after 1979)—truckers were not charged the full cost of using highway infrastructure. Because of their operating deficit, the railways went heavily into debt (at one point \$120 million), primarily with the national financial system, in order to operate. Railways have not been able to carry out even minimum maintenance for more than a decade, with the result that rail transport is becoming increasingly insecure.

Lessons to be Learned

Regarding the experience with deregulation in the trucking and bus sectors, the following observations can be made:

- Interurban bus and trucking markets can be made more efficient by removing governmental regulation of access, services, and prices.
- With interurban bus transport, stronger companies will tend to grow larger.
- With trucking services, the industry tends to move away from the one truck-one owner configuration toward the creation of true trucking companies, often dedicated to specific markets.
- It is likely that the successful deregulation of interurban bus transport was partially explained by the unique geography of the coun-

try, whereby different bus services are in fact offered over the same route, thus providing competition, which would not necessarily be the case in countries with transport networks.

- For deregulation to be sustainable, competitiveness of transport markets must be a constant concern of government. Of particular importance is the policy regarding passenger terminals. In addition, adequate and enforced antimonopoly legislation is required in order to protect users from collusion among operators and to prevent predatory action by existing financially-strong bus companies. This legislation should ensure the speedy consideration of complaints and corrective action before the monopolistic practice achieves the objective of forcing a competitor from the market. Further, different branches of the government, users of transport services, and existing and potential transport operators must have access to timely information about transport markets.
- The unnecessarily sharp increase in fares when interurban bus transport was deregulated might have been avoided by a policy which established maximum and minimum fare bands during the transition period while encouraging the entry of new companies. This would have been an alternative to the policy which was applied of progressively increasing the number of routes on which fares were freed entirely.
- When trucking and bus deregulation is undertaken in a country with an over-extended and inefficient railroad, it is essential that a parallel and compatible policy be applied to the railway.
- Results will depend heavily on the policies applied in other sectors, especially macroeconomic policies regarding customs duties, access to credit and interest rates, and tax policies. Thus, global and sector policies must be coherent, or experience will follow that of the trucking sector.

Notes

1. This paper is a shorter version of a larger paper presented at the World Bank Seminar on Regulatory Reform in Transport held in Baltimore, Maryland, on June 7-8, 1990. It is the sole responsibility of the author and

does not necessarily reflect the views of the United Nations.

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8

Trucking Deregulation in Mexico

Arturo Fernández

Mexico has formulated a new policy that focuses on macroeconomic stabilization and internationalization and that recognizes the importance of both external trade and the private sector to achieve development. Introduced in 1985, it has two main macroeconomic strategies that include:

- improving and strengthening public finances through cuts in public spending, better and more efficient tax collection systems, and privatization of government-owned companies;
- reforming trade practices through Mexico's entrance to GATT, reducing tariff and other commercial barriers, and promoting export strategies. Recently, Mexico has pursued a free trade policy with the U.S. and Canada.

At the microeconomic level, one of the most important strategies is economic deregulation: for Mexican firms to compete internationally, Mexico has to provide conditions similar to those of its international competitors. Thus, economic deregulation means setting long-term, clear rules for greater competition and access to different economic activities and ending the economic privileges of various interest groups.

Within this context, in which Mexico seeks to open its economy, authorities were concerned with the quality of transport, since all sectors depend heavily on freight transport, as in most countries. Therefore, any change in efficiency of transport directly affects all economic activities.

The main mode of freight transport is trucking, which moves 80 percent of Mexico's production. Railroads move only 15 percent of cargo. Trucking services in Mexico lag behind the moderniza-

tion process of the economy. The sector was regulated by a legal framework from the late 1940s and provided a service that was unreliable, costly, of poor quality, uncompetitive, and inadequate. By 1988 the trucking industry was identified as an important bottleneck to economic growth: it generated direct costs to the economy through higher tariffs than would exist under competition. Also, it generated costs through underutilized capacity, as well as having negative effects on inventories and productive processes.

In Mexico, it was almost impossible to enter the trucking industry. Trucking was considered a public service; and legislation established two forms of service. The first was with regard to regular cargo, which allowed firms to transport any type of product, but only on nine routes within the country. Established concessionaires legally had preference if any new concessions were granted. Although the law determined that individuals could not hold franchises for more than five trucks, in practice some concessionaires controlled large fleets of 300-500 trucks under various company names. The law also established that all truckers covering the same route and providing the same type of service had to join a company: if a firm was lucky enough to get a concession, it still had to be accepted into one of the established companies. This was enforced through the use of the *carta de porte*, the official transportation contract, which was given only by the Ministry of Transportation (SCT) to established companies. Altogether, regular cargo accounted for 1,495 companies operating 72,000 vehicles.

The second form of service was defined as

specialized cargo, which was enforced through permits. These allowed firms to transport only one type of good but on all federal highways. Although there were sixteen categories of permits, the principal one allowed transport of agricultural products, which represented 40 percent of all freight. Permits were not easy to obtain since established interest groups within each category controlled the disbursements. However, in practice, trucking fleets obtained temporary permits that eventually were regarded as permanent and enabled the firms to grow.

Restrictions also applied to loading and unloading in certain cities: if a firm had a concession for the Mexico-Monterrey-Laredo route, it was generally allowed to unload in Laredo but not to load.

Specialized cargo accounted for 1,355 companies with 78,000 vehicles. Table 1 and the figure summarize the main characteristics of the regulations.

In the mid-1970s, cargo centers were created, largely in cities with ports and along the U.S.-Mexican border. These evolved as controllers of cargo and the means to sustain the power of the concessionaires who owned them. Truckers were required to use them and pay fees that ranged from 5-25 percent of the fee paid by the shipper, depending on whether firms were members. Some cargo centers applied a system for both users and truckers that did not allow for direct negotiation between the two parties. In certain cities, if truckers were not affiliated with the cargo center, they could not load (for example, in Monterrey). This restriction was enforced by the Highway Patrol, which was responsible for checking that the *carta de porte* was sealed by the cargo center. In fact, some cities had mandatory checkpoints outside the urban area that did not allow trucks to enter if the *carta de porte* was not sealed.

In summary, the legal framework defined a sector characterized by two segmented oligopolies: one by routes for regular cargo and another by products for specialized cargo.

Barriers to Entry

Entry restrictions required trucking firms to:

- Obtain a permit or concession from the Ministry of Transportation. The process included consulting the route committees, composed of

the established concessionaires. The process was slow and, in general, not favorable to those not connected to the established group. There was a well organized black market for license plates (an indication of compliance), whose price was well above the official cost.

- Affiliate with a company. The costs of affiliation equaled to 10 percent of the freight.
- Restrict loading and unloading.
- Use the cargo centers.

Barriers were also created to limit mobility among markets. For example, routes were divided and distinctions were made between regular cargo and specialized cargo. This limited competition by dividing the market by territory and product. Further, routes were fixed, which led to underutilized capacity, since there are usually cargo imbalances (for example, there was not the same amount of cargo at points A and B). Also, with certain products, especially agricultural products, demand changes seasonally. Fixed routes did not allow trucking to respond to regional changes in demand, which translated to a lack of service.

In addition, private carriers were forbidden to transport other parties' cargo. This generated costs through empty backhaulages and underutilized capacity, as private companies usually had one-way transportation needs.

There were also barriers to competition in each market. These were created through limitations to load and unload on a route, specified in the franchises. Thus, although some truckers had franchises on high-priced routes, they were restricted from loading in certain cities.

Cargo centers also played a role. The allocation of cargo by queuing did not permit users to negotiate directly with truckers. This removed incentives for providing higher quality service and made it impossible to establish long-term relationships between users and truckers. If users had bad experiences because of a damaged or lost load, no assurances existed that the same trucker would not transport subsequent loads. Moreover, in some cities there was a certain code of honor among the affiliates of a cargo center not to respond to the requests of another trucking firm's clients. This structure had the following effects on the economy:

- Trucking services were unreliable, inflexible,

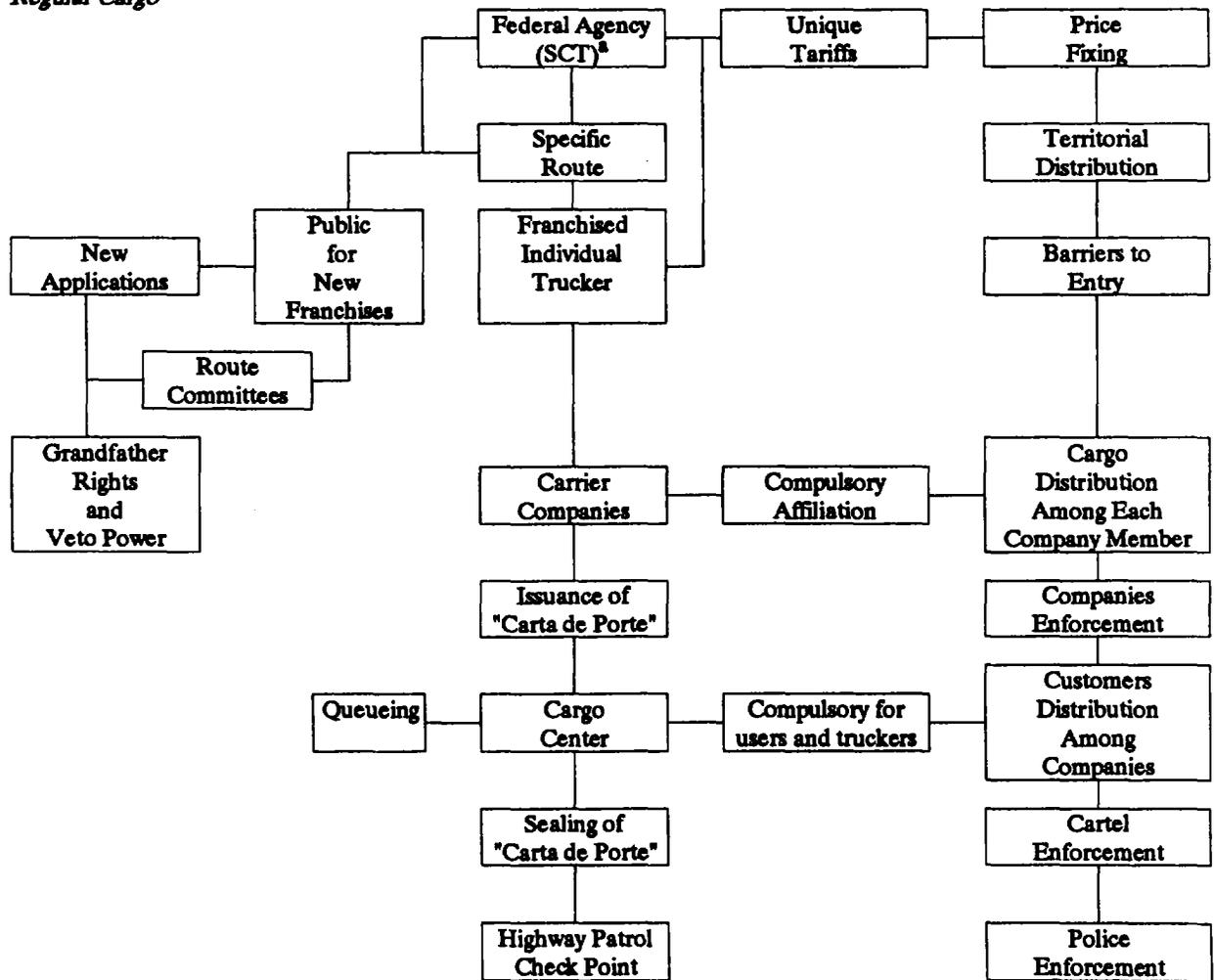
Table 1: Trucking Industry: Some Data and Main Regulations

<i>Regulation</i>	<i>Regular Cargo</i>	<i>Specialized Cargo</i>	<i>Own-account Service</i>
Specific route	Yes	No	No
Specific cargo	No	Yes	Only own-cargo
Entry requirements	Franchise	Permit	Permit
Cargo centers	Compulsory use	No	No
Company affiliation	Compulsory	No	No
Tariffs	Fixed by SCT ^a	Fixed by SCT	-
Number of companies	1,512	1,456	-
Number of vehicles	50,267	64,825	-
Tons moved (1987) (millions)	138	157	-
Tons-km moved (1987) (billions)	54.7	45.7	-

^a SCT is the Ministry of Transport

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Regular Cargo



^a SCT is the Ministry of Transport

inadequate, and of low quality. In addition, fees were 20–40 percent higher (depending on the route) than what they would have been in a competitive market. Although official tariffs applied nationwide, truckers had many ways to extract higher fees; they could charge for full truckloads instead of less-than-truckloads, claim higher tonnage, or delay the arrival. Thus, effective rates were higher than official rates. For example, to move cargo 30 km, clients had to pay US\$4.50–6.00 per ton, while in the U.S., this same movement cost US\$3.00–3.50 per ton.

- Companies had to keep larger inventories in case their inputs did not arrive on time—some had to close whole production lines because inputs did not arrive on schedule. In periods of high inflation, large inventories are particularly costly.
- Private companies were motivated to buy their own trucks, which resulted in empty backhaulage and underutilized capacity.
- *Maquiladora* plants preferred to rely on inputs from just across the border and to locate close to them because if they were further south they could not maintain zero inventories.
- As the demand for trucking increased, the informal sector expanded greatly—perhaps even to a total of 40,000–60,000 truckers. These operators included those with one type of permit who supplied a different service, such as renting license plates.

The regulatory framework generated a monopolistic sector that imposed huge welfare costs to the economy. Concessionaires that controlled companies and cargo centers obtained an average annual rate of return of 37 percent on their investment plus fees from small truckers for affiliating with the company and the cargo centers. (Some even said they recovered the full value of the truck in a couple years.) Those with regular cargo concessions had annual monopoly rents of US\$450 million, and those with specialized cargo permits earned US\$82 million, that is, a total of US\$532 million.

Deregulation Philosophy

This review found no evidence of cross subsidies. In fact, on low-traffic routes, truckers applied higher effective tariffs and provided less frequent

service. Those on high-traffic routes were not obliged to service low-traffic routes.

On the cost side, the structure of the trucking industry allows it to function well in a competitive environment. Therefore, the goal was to promote a more competitive structure, with small and large companies co-existing, with greater diversity of tariffs and quality of service. The challenge was to establish a legal framework that set clear rules for a competitive structure and to convince all the participants that the change would be good. This was important because they had lived under the system for fifty years.

After long negotiations, new regulations were issued in July 1989. The main points were the following:

- freedom of transit through all federal highways;
- freedom to transport any load (except highly toxic and explosive products);
- elimination of all restrictions to load and unload;
- substitution of fixed tariffs by maximum tariffs that allow free negotiation between users and truckers. This allowed for a tariff structure differentiated according to quality and type of service. Also, tariffs were liberalized.
- elimination of the queuing system in cargo centers, and freedom for both users and truckers to use the centers;
- permission for private carriers to transport other parties' cargo under predetermined contracts authorized by SCT;
- opening, simplification, and decentralization of the granting of permits;
- elimination of the 25 percent surcharge on empty backhaulage, except in the case of exclusive hiring, and elimination of the 15 percent surcharge for imports;
- regularization of all informal truckers;
- elimination of the previous procedure with the *carta de porte*.
- agreement by all sides—the federal government (represented by the Ministry of Transportation and Communication and the Ministry of Commerce and Industry) and the Truckers' Association—to improve the sector.

By the beginning of 1990, some changes could be observed in the sector. First, the tax system applicable to trucking changed from a fixed tax to

the normal system. Second, trucking tariffs were liberated. The results are as follows:

- a transfer to the rest of the economy on the order of US\$1 billion a year from increased competition, a reduction in underutilized capacity, and elimination of monopoly rents;
- greater competition and specialization. The number of permits issued after deregulation reached 32,000—a 21 percent increase in the (formal) trucking industry.
- a reduction of the average effective tariff by 25 percent. Tariffs were frozen as of December 1987 because of the stabilization program, and those in the northern part of Mexico did not increase. Some companies are receiving discounts of up to 10 percent. In the southern part of the country, where infrastructure is worse, increases have been 10 - 20 percent. Nevertheless, real rates have decreased.
- elimination of monopoly rents;
- greater flexibility to respond faster and better to changes in demand;
- higher quality;
- private companies subcontracting trucking services instead of providing these themselves;
- better service to small communities and small users (those hauling less than a truckload);
- net efficiency gains for the economy of US\$600 million annually;
- change in the role of the cargo centers.

Some implementation problems surfaced. For example, in cities such as Monterrey and Veracruz, truckers colluded and, at the beginning, did not allow for new entrants. They also established an across-the-board tariff increase of 25 percent. However, these problems were solved through joint action of the Trucking Chamber and the Ministry of Transportation.

Other important problems remain, especially at the state and local level, where monopolies control local distribution. At present there is an effort at the federal level to promote trucking deregulation at the state and local level.

Finally, it is necessary to review the political context of trucking deregulation. The trucking industry's political clout had been significant since the late 1950s. Trucking and passenger companies joined the Mexican Chamber of Federal Transportation Services; also, they are well represented in the Congress—at present, with one

senator and four congressmen. As such, companies avoided paying income and value-added taxes and for many years paid only 40 percent of the international price of diesel.

About fifteen families controlled the whole trucking industry, even when it contained several thousand individual truckers. Some of the most prominent truckers did not own a truck, but their power came from the control and ownership of the cargo centers. These families were able to organize a textbook cartel enforced by law and government officials. As a result, most drivers had not been able to join unions.

The cartel's unity and consensus were attained by maintaining territorial and cargo distribution of the market. This peaceful and profitable cartel was disturbed by the government decision to open the economy to foreign trade and join GATT. Why? Until now, the distribution of markets responded to transportation flows generated under the import substitution strategies followed for over thirty-five years. However, the opening of the economy to trade brought a dramatic change in trade flows (exports increased three times in five years) and substantial changes in the structure of cargo movements: cargo increased substantially in the routes connected with international trade (Mexico-Monterrey-Laredo, Mexico-Veracruz, and Manzanillo-Guadalajara) but decreased relatively in internal routes (Mexico-Guadalajara and Guadalajara-Monterrey).

Because these changes introduced conflict among the members of the trucking chamber, some were open to the concept of deregulation: truckers in losing routes, individual truckers exploited by cargo centers, all users, and truckers constrained to move agricultural products supported the new regulations. In addition, the political commitment, specifically on the part of the president and Ministries of Trade and Industry and Communications and Transport, was critical.

The new regulatory framework has provided greater confidence in the country's new economic policy and the government commitment to it. It has been widely approved by all sectors and, until now, has worked well. In conclusion, it is important to note that all these changes were attained in a peaceful and conciliatory environment. In all other countries where trucking was deregulated, it was followed by some violence. In Mexico this has not occurred.

9

Trucking in Sub-Saharan Africa: What Deregulation?

Alain Bonnafous

This paper is based on the findings of a study on trucking costs that was conducted in 1988 and 1989 in Cameroon, Côte d'Ivoire, and Mali, as part of the effort of the Sub-Saharan Africa Transport Program (SSATP).^{1/} The study included two surveys.^{2/} The first was a statistical survey on prices, which involved 500 shipments in each of the three countries. The second was an in-depth survey of transporters and several other agents in the system (about sixty interviews per country), which was used to construct the cost components and led to a better understanding of how the market operated. Because of scaling back the surveys, the in-depth interviews could not focus on specific areas designated by the statistical analysis of prices and may have, as a result, lost some of their explanatory power. Likewise, limiting the survey to three French-speaking countries weakened its representativeness. However, working in three franc-zone countries made it possible to measure prices and costs using comparable currency units, including those with prices and costs in France.

In addition to the statistical survey on prices and the in-depth survey of costs, this paper draws from discussions at a 1989 seminar in Yamoussoukro, Côte d'Ivoire. This seminar provided an opportunity to present the survey findings to the agents in the transportation system: shippers, transporters, and government officials. Thirteen Sub-Saharan countries were represented, and the reactions of the participants was a useful guide to how to proceed.

Findings

First, the price survey confirmed that freight transportation rates in Africa are particularly high. Assuming for the moment only that international road transportation is the least costly mode, the survey reveals an average cost per kilometer-ton (kt) expressed in CFAF, which ranges from CFAF 23.3 in Mali to CFAF 26.3 in Cameroon, with Côte d'Ivoire in the middle. Over a comparable stretch, that figure is CFAF 5 in Pakistan, according to work done by John L. Hine (Transport and Road Research Laboratory). Although the parity of the Pakistan rupee (PR 1 = CFAF 21) is difficult to compare, there is still a very marked difference, which seems to confirm that African transportation is the most costly in the world.

This observation is corroborated by a simple comparison with France, for which the problem of parity does not exist. For long-distance transportation provided by the same type of vehicle, prices in France are about half (CFAF 12-13/kt), despite much higher wages and related costs. This paper will use the French case on several occasions as a reference in interpreting certain statistics.

Further, a major finding concerns what could be called the hierarchy effect of the system. This was a basic working hypothesis of the research; the statistical methodology and, in particular, the sample of the shipments surveyed were defined so that the various levels in the hierarchy would

emerge as clearly as possible, with a distinction thus being made:

- local trips (farm to local market) provided primarily by utilitarian vehicles (pickups); few trips, if any, are made over paved roads, and the journeys rarely exceed 300 kt.
- regional trips (regional capital to interior of the country) provided primarily by rigid trucks (*camions porteurs*); infrastructure varies and the journeys range from 300 to 3,500 kt.
- national trips (regional capital to regional capital) provided by rigid trucks and semitrailers which share the market; roads are frequently paved and journeys range from 1,000 to 35,000 kt.
- international trips provided almost exclusively by semitrailers on roads that are generally paved; journeys are longer than 3,500 kt.

For these different levels in the hierarchy, average costs were as follows:

Table 1: Average Cost by Country and Level (CFAF per kt)

Level	Cameroon	Côte d'Ivoire	Mali
Local	200.2	164.4	141.6
Regional	64.3	72.9	52.5
National	32.9	29.4	31.5
International	26.3	24.2	23.3

Ratios of 1 to 6 in Mali, 1 to 7 in Côte d'Ivoire, and 1 to 8 in Cameroon show the strong hierarchy in the system, particularly the extremely high rates for the local traffic, which affect the cost of foodstuffs and considerably reduce the areas in which they can be marketed.

Explanation of the Hierarchy Effect

This hierarchy fully (one can even say arithmetically) depends on the physical conditions under

which the system operates; it is the product of the combined effects of vehicle type and the quality of the infrastructure used, as shown in Table 2.

The theoretical costs were calculated from simulations based on data collected by the in-depth cost surveys. The unpaved-road factor was derived from a model based on price statistics, which adjusts for the vehicle used.

The conclusions reached in John L. Hine's study on Pakistan are comparable, although his hierarchy does not go beyond what this paper would call long-distance regional transportation. The hierarchy effect is thus highly correlated with the physical conditions of the infrastructure and the type of vehicles used. Overall price differences must still be explained.

Vehicle Utilization Rates

Freight rates, which are very high in Africa in relation to other continents, are considered in the three countries studied to reflect a particularly sluggish market. To give but one example, in Côte d'Ivoire, only shippers working for the state comply with the mandatory rates (Stabilization and Equalization Funds). In all other cases they are negotiated at 15 percent below official rates, which have not been revised since 1982! In other words, although high, transportation rates adjusted for inflation are declining steadily and markedly, evidently in the wake of a decrease in demand and the resulting surplus capacity. As this situation did not change in exactly the same manner in the three countries, the differences in rates given in Table 1 must be interpreted cautiously.

In fact, rates seem highest in Cameroon (except at the regional level, which in that country involves longer journeys than in Côte d'Ivoire). The economic crisis hit Cameroon much later than Côte d'Ivoire. Conversely, overall transportation rates are lowest in Mali, which may be surprising since the freight market contracted more there than elsewhere, especially after the *fat* period associated with food aid during the severe droughts. Thus, rates cannot be expanded solely on the basis of direct international comparisons. They can be derived only from cost analyses following the methodology used in the studies.

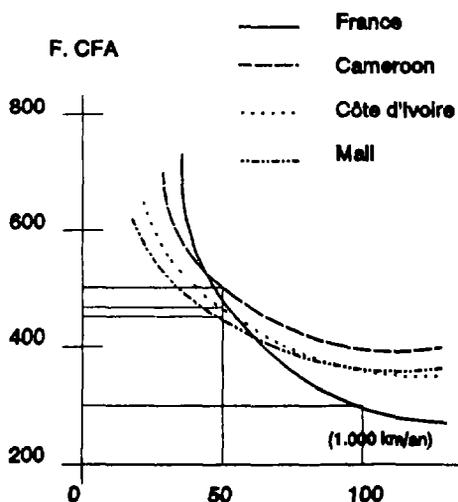
The key determinant of trucking costs is unquestionably the annual distance traveled by the vehicles. The cost function that reflects this rela-

Table 2: Breakdown of the Hierarchy Effect

	Cameroon	Côte d'Ivoire	Mali
Theoretical cost per kt transported by a semitrailer (base 100)	100	100	100
Theoretical cost per kt transported by a pickup (1) (vehicle effect)	490	448	445
Unpaved road factor (2) (infrastructure effect)	1.7	1.6	1.4
Theoretical cost of local transportation = (1)x(2) (international base 100)	831	717	623
Price for local transportation (international base 100)	760	680	610

tionship is relatively easy to establish statistically, provided the fixed and variable costs can be estimated. The findings of the cost survey for the three countries can be used to establish the cost functions of a semitrailer as shown in the figure here, supplemented by the curve for the case of France. For the specific situations in the countries studied, the annual distance is an estimated 109,000 km in France and about 50,000 km in the three African countries. Given these conditions, the vehicle cost/km is CFAF 508 for Cameroon, CFAF 456 for Côte d'Ivoire, CFAF 450 for Mali, and CFAF 290 for France.

Cost per km of a Semitrailer by Annual Distance



Source: Cost Survey Data

For the first three countries, the orders of magnitude are quite consistent with the price ratios for the upper part of the hierarchy, although the cost and price estimates are taken from completely independent surveys. The gaps are somewhat larger for prices, but this is due to the fact that the freight crisis is more recent in Cameroon and most acute in Mali.

However, the cost ratios did not reflect the ratio of 1 to 2 for prices between France and the African countries. Probably, this difference is due to the fact that the cost functions for the African countries assume only a 4 percent return on capital (net of inflation). The financial costs associated with borrowing money were not reflected because situations differ greatly. However, costs are very high when the loan is provided by a finance agency, and interest rates are frequently over 20 percent. This means that costs, which were reconstructed for a self-financed investment, are substantially higher in the general case (at least an additional CFAF 100 per vehicle km). There is thus full consistency between price and cost ratios.

The most important aspect of these cost functions is undoubtedly that if the vehicle utilization rate increased substantially on the African markets, costs would certainly fall—but would still be much higher than in France. This phenomenon can be understood by looking at the determinants of those costs.

Cost Structure

Not surprisingly, very few transporters in the formal sector keep vehicle operating accounts. Consequently, these had to be reconstructed from the in-depth interviews. Table 3 gives a breakdown of the costs and illustrates which cost items are particularly high, relative to those in France. One factor is the return on capital (excluding the financial costs mentioned above), the magnitude of which is associated with both the cost of the vehicles and high taxation rates. Insurance costs are also high, particularly in Côte d'Ivoire and Cameroon, due to very unsafe roads. Others include depreciation, which is highly linked to the cost of capital; fuel, due to especially high consumption levels; maintenance, primarily due to the cost of spare parts; tires, which have a life expectancy three to four times shorter than in France and which are heavily taxed; and road expenses, which are abnormally high for the developing countries but which include the clandestine tolls that drivers must pay at each control point.

On this last point, the direct cost of "clandestine" tolls is much lower than their real cost. It does not include, for example, the loss of time this practice can incur. It is also underestimated since it is partially covered by the cost of road personnel, with drivers sometimes receiving a lump-

sum amount to cover their wages and miscellaneous expenses, including the tolls.

State and Additional Charges

For several items, state action has had a dire effect through taxes of various types, such as on imports, licenses, and fuel (see Table 4).

Road transportation clearly brings in substantial revenue for the government, but this practice has the effect of artificially *extending* the distances expressed in transportation costs. In addition, overall taxation rates are much higher for smaller vehicles, which is an important factor in the hierarchy effect. Last, to take full account of government levies, costs associated with the clandestine tolls must be added because they are, after all, received by government employees.

In view of the market situation, import duties on vehicles should not be lowered at this juncture, as this could only heighten the imbalances. However, it is expected that lowering duties on imported spare parts would have a positive effect. In Cameroon, for example, such a charge would be particularly significant in the northern region, which "benefits" from intense contraband trade with Nigeria. However, lowering tire taxes may not be as well-advised since import duties can promote the development of local retreading workshops.

Table 3: Breakdown of the Cost/km for a Semitrailer (in CFAF/km)

	<i>Cameroon</i>	<i>Côte d'Ivoire</i>	<i>Mali</i>	<i>France</i>
Fixed costs	154.5	126.6	107.4	145.6
Return on capital	39.0	29.9	36.8	10.6
Insurance	21.2	18.2	8.1	10.6
Road personnel	39.2	31.9	12.6	71.9
Other costs	55.1	46.6	49.9	52.5
Variable costs	353.1	329.6	342.3	144.8
Depreciation	69.6	53.4	76.7	33.9
Fuel	199.6	108.0	126.0	50.4
Maintenance	97.2	107.1	68.1	24.9
Tires	61.7	50.0	55.5	9.5
Road expenses	25.0	11.0	16.0	26.6
Total cost	507.6	456.2	449.7	290.4

Table 4: Weight of Taxes in the Cost Price/Km of a Semitrailer

	Cameroon	Côte d'Ivoire	Mali	France
Percentage	30	25	29	15

Within operating costs, items such as maintenance and tires are especially important because of the condition of infrastructure. For each country, it may be advisable to study the ratio between customs and tax revenue earned from the transportation sector and the share allocated to road maintenance. However, that would have been covered by any studies done on the setting of road charges, in the broad sense.

The Correct Level of Regulation

As seen above, the phenomenon of clandestine tolls directly affects variable costs and, indirectly, the associated loss of time. This practice cannot be wiped out if only because of the social pressure of the beneficiaries. To eliminate such practices, Mali successfully established a free border-crossing system for major roads. However, the creation of customs escorts, between the border and Abidjan (to help Malian transporters), did not work.

It is very important to note the strange contrast between the extensive regulations that legitimize a multitude of controls and the reality which may actually encourage violations. An over-regulated *de jure* and virtually totally liberalized *de facto* system can generate only perverse effects, of which clandestine tolls are not the least. We will now look at the three main components of regulation (licenses, mandatory rates, and technical regulations) to examine their substance and the desirable direction of change.

A system of licenses and authorizations, whether or not based on quotas, has rarely regulated the supply of transport properly in the industrial countries. The same is true of the developing world. As the system operates in the three countries studied, it no longer is intended for that purpose and can thus be maintained as is without any problem; such a system makes it possible to charge specific taxes, to more or less track

changes in the structure of the fleet, and to provide a minimum of technical control.

Mandatory road charges were also inefficient in industrial countries when market forces *pushed* prices out of their brackets, particularly in crisis situations. The more the countries in question are unrealistic about these charges, when they do exist, the poorer is compliance, especially for services at the bottom of the hierarchy. In any event, compliance with mandatory rates is uncontrollable. It would certainly be useful for a reference rate to be established in principle. In order for it to play its full role in providing information to transporters and shippers, it must be based on actual costs, which means reflecting the weight and distance variables (which our study shows account for at least 70 percent of the price variance) much more accurately, along with the nature of infrastructure used. Under these conditions, the reference rate could have the dual merit of informing transporters about price levels under which they run economic risks and lead the government to keep a close eye on changes in the cost factors.

The major problem of technical regulation is not one of substance but of control. This is all the more delicate given the general practice of structural violations, in which the police authorities are clearly involved. Only a long-term strategy to improve the situation would be effective. This would probably require targeting control over specific safety aspects and providing specialization of oversight agents in these areas. Of all measures mentioned earlier, this is certainly not the easiest to implement. However, very localized technical controls, involving the introduction of free border crossings and controls for overloaded vehicles, would undoubtedly be effective in protecting vehicles and infrastructure.

Nevertheless, to the extent that this would mean some liberalization in state action, it does not necessarily imply a shift to a system that would spontaneously rely entirely on market mechanisms. Such mechanisms are in fact lacking in Sub-Saharan Africa, as demonstrated by low vehicle utilization, despite considerable evidence that the freight exists, but its transportation to market is poor and occasionally nonexistent.

The example has been used in Côte d'Ivoire of a transporter who, after having worked through the high season in his region, goes to other

regions in the country that do not experience a slowdown at the same time. This case seems exceptional but demonstrates the potential for creating more flexible freight markets. Currently, markets are flexible, not only in terms of practice and the commercial relationships of the operators, as in all freight markets, but also with regard to the internal workshops of many African markets. The partial or total monopoly of local transport cooperatives not only has the effect of making return loads impossible to find but also increases the effects of seasonal peaks by thwarting the interregional mobility of resources. An in-depth comparison should be made between countries and regions, of the degree of social control exercised by the local transport cooperatives and the relative efficiency of the markets assessed. A classic phenomenon is at work here, of transport cooperatives taking monopoly rents and restructuring entry into the system. The result is always an improvement in short-term security but at the price of a loss in overall productivity over the long run. This effect seems particularly marked for the cases in question, and it is one which is ultimately not beneficial for either operators or shippers.

From this standpoint, the role of the informal shipping agents (*cocksters*) may not be as negative as conventional wisdom would have it; the share they receive from the transactions must be compared to the benefits gained from the competitive environment they create. Currently, the image of the cockster is particularly negative in the mind of the operators. In fact, they seem to act frequently as intermediaries in various forms of infractions or even corruption. Nevertheless, it is not clear that if they were removed the system would be more efficient.

Still, two conditions seem vital if such intermediaries are to provide better market transparency. First, market transparency must be recognized by all players as a desirable situation in which each player has his own advantage; shippers benefit from more competitive prices, and transporters increase their business (return freight in particular). Second, intermediaries can provide efficient services; however, this may not be possible where there is a shortage of telephones.

Conclusion

From the standpoint of state intervention (which was our topic), the problem of more efficient road transportation of goods in Sub-Saharan Africa can be treated by measures clearly designed by the study on the sector and its deficiencies. However, these measures are running into cultural difficulties; they pit the family-oriented mindset against market-oriented considerations, the short versus the long term, and the potential financial gain from keeping information secret versus a recognition of the economic efficiency of disseminating it. However, the most important measure is to improve training and the information available. In addition, consistent actions by governments can gradually ensure that a *de jure* situation is replaced by a *de facto* situation. This means establishing regulatory systems that encompass only those provisions that can be truly controlled, along with an enforcement system that is less costly for transporters but which guarantees better transport safety. Last, governments must promote the collection of information on trucking, either by making markets more transparent or by providing the means for tracking changes in prices and costs, even if it is only to evaluate the efficiency of revised regulations.

Notes

1. The two surveys, which were to be carried out consecutively, were scaled back and conducted simultaneously, instead.
2. Originally, three other East African countries were to be included, but funding was limited to that provided by the French Ministry of Cooperation and the two agencies that conducted the study, the Institute for Research and Study on Transportation and Transportation Safety (*Institut de Recherche et d'Etude sur Les Transports et Leur Sécurité—INRETS*) and the Transportation Economics Laboratory (*Laboratoire d'Economie des Transports—LET*). As a result, they could not be brought into the study.



THE WORLD BANK

Worldwide, the markets for transport services have traditionally been under public control. Some examples of regulatory control in transport include rate regulation in the railways, entry restrictions in the trucking industry, service restrictions and fare setting for urban buses, and cargo reservation in shipping. These measures have been promoted in the name of the public interest because private markets are thought to be incapable of providing goods and services efficiently. Thus, market failure has been the economic rationale for regulation.

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