

## APPENDIX C

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### THE MARKET AND AVIATION INFRASTRUCTURE: PRICING, PRODUCTIVITY AND PRIVATIZATION

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The Airport Capacity Enhancement Plan (1989) forecasted that delays in the U.S. will continue to grow. In 1987 21 airports each exceeded 20,000 hours of airline flight delays and by 1997, the report claims, this can be expected to rise to 39 airports, assuming no improvements in the system. Three airports are forecasted to exceed 100,000 hours of aircraft delays by 1997. This document and many others which speak to the growing congestion in the U.S. aviation system note that these delays are what can be expected "if no increases in capacity are carried out". Those concerned with delay are not the only ones calling for investment in capacity, those advocating public physical infrastructure spending also argue for investment but for somewhat different reasons: to revitalize America and increase the Nation's productivity and competitiveness. These groups are joined by governor's task forces and joint economic committees, all calling for public spending on transportation, including aviation, infrastructure.

Making airports and the aviation system bigger is not necessarily the route to take. Making the system and its components smarter is most certainly the way to go. But why, what is the problem? Is the system too small, are there too many flights, too many airplanes, too many airlines and passengers? Let's double the size of O'Hare, Newark, Los Angeles, San Francisco, and Boston Logan. What would we expect? Immediately upon completion, benefits will flow from this investment as travel costs will have been lowered, less time will have been wasted, and airline will have lower costs as a result of less fuel, capital, and crew time wasted. Lower costs with lots of capacity will stimulate demand, new businesses will spin off, land use will expand, the economy will grow, and 20 years hence our children will wonder why they have flight delays and congestion and ask what they can do to fix the system.

The Nation's aviation system will not and should not be immune to the rethinking and structural changes that are taking place in the private sector and beginning to filter into the public sector. The catch phrase, "getting

more out of less", echoing through the halls of corporate America does not mean not to invest in capacity. It means something quite different: demand management must be used to improve the efficiency (productivity) of the system; any investment in capacity must involve **smart** capacity; and the institutional structure must create the right incentives for long-term decisions. As a fourth point led me add that public spending on aviation infrastructure does not guarantee a solution to recession or improved productivity.

I would like to consider each of the three points raised earlier. First, what does it mean to improve productivity with demand management? Very simply, pricing and investment policies must reflect the true social costs of building and using aviation capacity. Efficiency in this context goes beyond an elementary output per unit of input measure. It means that if we use prices to signal what it costs our economy to produce and use our aviation system, users will reveal the amount of aviation service they would like to have. It makes little sense that a decision to expand the system is based on the conclusion that there is excess demand when the use of airports is not priced to reflect the costs of production. If a subsidy is being paid, is it any wonder there is some excess demand? Efficient prices are those that result in the greatest economic welfare to the community (broadly defined) from the use of capacity and in the optimal investment in capacity to ensure this welfare optimum is maintained over the longer run.<sup>1</sup> Therefore, to improve productivity means to put in place use charges that lead to the highest level of economic welfare per unit of input. This includes consideration for externalities such as noise and air pollution.<sup>2</sup> Efficient pricing and investment, as Winston (1991) claims, could generate approximately \$11 billion in annual benefits (1988 dollars). The vast majority of these benefits are in the form of reduced traveler delay and lower airline operating costs. The political cost is that such a scheme would result in considerable redistribution from travelers to airports and higher costs to some general aviation (GA) users.

Why has there been such reluctance to use economic measures. There are a number of reasons. First, there is the misconception that since pricing will not eliminate congestion it is not worth introducing. The problem here of course is the failure, particularly on the part of academics and other experts, to convey the fundamental idea that the optimal amount of congestion is not zero. It would be impossible to provide sufficient capacity to eliminate congestion. Rather there is an amount of

congestion that which is worth just what it costs. Second, in past decades there has generally been sufficient excess capacity in our airport system that congestion was not a problem. However, this has led to an attitude among policy makers and the general public that excess capacity is a public good.<sup>3</sup> It is somehow deemed desirable to build runways and air traffic control systems to satisfy the maximum demand thereby leaving large amounts of excess capacity at other times. Third, the public and airlines (and GA users) argue they have paid for the runways why should they have to pay for them again. While there is considerable debate as to who has picked up the bill for the infrastructure, this attitude fails to distinguish the allocation of runway use from the payment for the capital stock and it clearly indicates people are myopic regarding their contribution to the congestion problem. Fourth, proponents of runway pricing have presented it as a demand management tool independent of other policy decisions. This has unfortunately led to criticisms by those users who may be priced off a facility who legitimately ask, "what am I supposed to do"? Without question, pricing must be introduced in conjunction with other policy tools as a management package. Fifth, the proponents of economic management have in the past failed to provide some measure of the benefits arising from the use of this tool rather than some other. They have traditionally tried to sell runway pricing on the basis of economic efficiency yet the public has no understanding of the concept. It does not provide a meaningful measure of benefits in their eyes. It is only recently that the sizable welfare gains have been quantified and that the real economic benefits arising from efficient pricing and investment in transportation infrastructure, have been made known to a broader public audience. Winston (1991) has estimated welfare gains nearly \$11 billion annually from efficient pricing and investment. Massport has proposed a new peak hour pricing program at Boston Logan Airport and claims such a pricing scheme could cut peak hour activity by near 10 percent which would lead to a 20-percent drop in average flight delays. Finally, and perhaps the strongest argument used against pricing is the claim that it is inequitable, that it discriminates against the outlying regions and reduces access to larger centers. There is no clear evidence that this will, in fact, be the case.

Second, what does it mean that an investment in capacity must involve "smart" capacity? Smart capacity incorporates new technology and uses it to manage. It is not enough that airports or ATC systems are bigger. New technology allows investments in capacity to monitor, time, and direct aircraft on the ground and in the air. It can be used to charge for the use of runways,

airspace and navigational aids with little additional cost and no slowdown.

This smart capacity is not only useful for introducing economic measures to manage capacity but also for refining them and collecting information on usage to develop superior investments in the future. New technology can also be used to increase the capacity of the system without investing in new infrastructure that would simply enlarge the system. Third, what does it mean to have the institutional structure provide the right incentives for long-term decisions? In a word, privatization or corporatization. Aviation system infrastructure is for the most part publicly owned. The ideal view of privatization is that it enhances individual freedoms, encourages and improves efficiency, makes industry more responsive to the demands of the customer, decreases the public debt, and reduces the potential stranglehold of labor by forcing management to face the realities of the marketplace.<sup>4</sup> The argument is made that, when projects meet private investors' profit return expectations, only economically sound projects will be undertaken. Furthermore, the operation of infrastructure facilities by private operators is claimed to result in lower costs than if it were run by the public sector. The cost savings are said to be real efficiency gains and not simply transfers from one sector of the economy to another.<sup>5</sup> The private sector also represents a source of financing for development, expansion, and improvement of infrastructure at a time when governments are meeting increasing taxpayer resistance and are reluctant to further increase their debt. Finally, there is an argument that a public firm would have less incentive to charge socially efficient prices. This is based upon the notion that public firms will be used for general government purposes such as promoting regional economic development, and that allocative inefficiencies would arise from a government firm and provide the wrong mix of outputs.<sup>6</sup> This means that with public ownership there is some likelihood that infrastructure will be financed out of general revenues rather than through user charges.

Opponents charge that privatization would lead to monopolies, loss of service, reduced flexibility, and unfairness among users as well as between modes. They view private ownership as a return to the mean market mentality of the nineteenth century, to the elevation of private greed over public interest, and a shortsighted policy that sells valuable state assets in order to finance tax cuts and converts public monopolies into private ones with no adequate safeguards for the consumer or worker. (Veljanovski 1987)<sup>7</sup>

Advocates of privatization or liberalization base their arguments upon three bodies of economic literature:

property rights, transaction cost, and principal agency. Property rights literature focuses upon the non-transferability of ownership claims in the public sector. Transaction cost literature analyzes the decision by an economic agent, such as a firm, to make or buy a product or service. Principal-agent literature is concerned with the problem of information and incentives and addresses the question of what is the optimal incentive scheme for the principal to lay down for the agent. (Vickers and Yarrow, 1989) This refers to a situation in which a shareholder of a firm (the principal) has interests that differ from those of the manager. The shareholder hires the manager (the agent) to represent him or her and to manage the firm to achieve the best rate of return for the principal. The problem is that the principal cannot control what the agent does and thus must try to develop incentive schemes that will lead the agent to act on the principal's behalf.

Transaction cost literature (Williamson, 1985) focuses upon the make-or-buy decision by government. The three options available to the government are to have the product or service provided and marketed by the private sector, to have it produced by the private sector through contracts and purchased by the public sector for allocation and distribution, or to have it provided by the public sector. The decision will rest upon the ability of government to have private sector production and to extract the rents from the more efficient production of the private sector. Interestingly this is the same behavior as a private firm. Economic welfare is enhanced if the private sector produces the product or service, and it is more efficient if the private sector also appropriates the rents.

Much of the debate over privatization has focused upon the greater efficiency of the private sector and the potential cost savings. It is also seen as attractive for financing much needed capacity increases that the public sector cannot or will not undertake. Herein lies the real rub. The public sector has failed to price what it owns and operates in an efficient manner. The end result is not only excess demand but also inefficient levels of investment. It is not that the public sector is unable to price efficiently, it is simply unwilling, because with its historical operating measures and procedures, it has left the impression with the public that there is community fairness and value in underpricing, uniform pricing, and excess capacity.

Perhaps the most important outcome of corporatization and privatization is removing investment and pricing decisions from the hands of politicians and bureaucrats, who have some grand notion that building airports, ports, roads, and railways will somehow provide the panacea for economic ills of a region or nation. What has generally happened is government has not only provided the capacity but underpriced it as well. It

should be remembered that transportation is a derived demand and neither investments in capacity nor policy initiatives will alter economic activity in a substantive way. This simple notion seems to be lost to proponents of public ownership. In their view, privatizers fail to see the need for the government to provide public services in the event the private sector fails to provide them. The publicizers see government as wise, disinterested, and technically competent. The evidence is far from compelling for this view particularly when governments intervene to direct markets. Government failure has done more harm than market failure and privatization. Or, at the very least, corporatization, provides a superior solution.

Finally let me address the claims of the group that argues for investment of public funds in public transportation infrastructure to end the recession and increase productivity. There is nothing new in the current clamor for greater public investment. It is an example of what some have termed the "grand transportation mystic": the belief (or hope) that investment in roads, bridges, airports, canals, and harbors provides an elixir for economic ills that face any town, city, region or nation.

When community leaders are asked about the value of a proposed new airport, they typically use a standard economic impact study to project numbers of jobs created, tax revenue generated, income created, and generally just how much a contribution public investment makes to the local economy. However, standard economic impact studies usually stress employment and purchases during construction, which undoubtedly represent a shot in the arm for the economy in the short term. The typical studies say nothing about long-term assistance to the economy and ignore the activity created by the investment funds in their alternative use. Often the jobs in transit systems or airports once built are counted as benefits while, in fact, they are costs to be paid and not a measure of the contribution of infrastructure to economic growth and development.

No one would deny that investment in transportation and other public infrastructure can have some impact on private productivity, costs, profitability, and economic growth. However, this has been a conclusion based on an intuitive acceptance rather than any clear or convincing analysis. Over the last five years, some researchers have been engaged in a statistical crusade to establish an association between public spending on infrastructure and private sector productivity. The result has been a voluminous literature. However, we simply have not been able to establish the linkage analytically. There certainly seems to be a relationship, but there has yet to be a clear statement of cause and effect.

Growth in an economy depends upon its ability to be competitive in world markets and to have a rising level of productivity. Researchers have, therefore,

concentrated on the public investment-productivity link as the focus of their investigations. Almost every study has indicated that public capital investment makes a positive contribution to private productivity. The results, however, have a wide variation. The 1988 paper which stimulated this literature claimed that each dollar of public capital investment would lead to approximately 60 cents in additional output for the economy. This represented a return to public capital exceeding the return to private capital by a factor of approximately 3 or 4. Critics quickly pounced on this figure, claiming it was too high. Volumes of paper emerged. Recently, a comprehensive review published by the Federal Highway Administration refined the estimate and stated that there is a "weak positive effect on private economic activity." Although empirical studies have established a statistical relationship between private productivity and public investment, they do not provide any additional understanding of how the transportation infrastructure or other public investment affects private productivity or what the mechanism is.

Proponents of public investment in infrastructure contend it will move the country out of the lingering recession and help to turn around the downward slide in productivity growth which began in approximately 1970, just about the same time investment in public infrastructure also declined. A number of academics also argue that such spending will cure the malaise of the American economy. This view contrasts sharply with the policy being followed in some other countries. In Canada, for example, the Royal Commission on National Passenger Transportation in its recently released final report recommended against any large public investment in infrastructure at this time. One reason for the decision was the lack of any convincing evidence of how such investment would lead to long-term economic growth and development. Instead, the Commission's recommendation was to first get the pricing of infrastructure right.

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<sup>1</sup> Economists have long argued that prices perform two functions. In the short run they ensure capacity (capital) is used in the most efficient way possible and in the longer run that capital flows into those types of investment that yield the highest return.

<sup>2</sup> The TRB Special Report 226, Airport System Capacity: Strategic Choices, devotes all of four pages to consideration of economic measures to distribute

demand. The report concludes that the principal disadvantages of economic measures would be increased air fares for peak travelers (yes, precisely what one wants), reduced airport access for new entrants and financially weak carriers who would be unable to afford costly peak-period slots (no, just the opposite would occur; since all costs are now averaged, there are entry barriers because these slots cannot be purchased and they carry a high value/rent precisely because the peak is not priced), and the potential loss of some regional air service (again, not all bad, and there are other solutions).

<sup>3</sup> Winston makes this point. See Winston, C. (1991), "Efficient Transportation Infrastructure Policy", *Journal of Economic Perspectives*. Vol. 5, No. 1 (Winter) 13-127.

<sup>4</sup> The major objectives of privatization were perhaps best spelled out by Great Britain's then Financial Secretary to the Treasury, John Moore, in 1983 and augmented by a subsequent government White Paper. They are: 1) to reduce government involvement in the decision making of industry; 2) to permit industry to raise funds from capital market on commercial terms without government guarantee; 3) to raise revenue and reduce the public sector borrowing requirement; 4) to promote wide share ownership to create an enterprise culture; 5) to encourage workers to share ownership in their companies; 6) to increase competition and efficiency; and 7) to replace ownership and financial controls with a

more effective system of economic regulation designed to ensure that benefits of greater efficiency are passed on to consumers. (Veljanovski 1987)

<sup>5</sup> See Gomez-Ibanez, John Meyer, and Luberoff (1991), "The Prospects for Private Infrastructure: Lessons from U.S. Roads and Solid Waste", *Journal of Transport Economics and Policy*, Vol. XXV, No. 5 (September) 259-279.

<sup>6</sup> In the absence of these two arguments there is no strong theoretical argument that a more efficient form of, and base for pricing is more likely with private operation than with public operation.

<sup>7</sup> If there are positive externalities which convey benefits by virtue of public ownership or efficiency gains from cost savings arising, from scale economies attributable to public ownership or regulation, public provision or standards are economically justified. Similarly, if there are network externalities resulting from the fact that all parts of the network are complements, government intervention may provide efficiency gains. Another legitimate basis for public intervention is when people make a decision whereby the marginal social cost exceeds the marginal private cost and private markets cannot be developed to internalize these effects. However, to use public ownership simply as a means to redistribute income does not constitute a legitimate public policy objective.