

## **Summaries of Principal Research Reports**

**Kevin Antonides**

### **Valuation of Rail Corridors: A Brief for the *Canada Transportation Act* Review**

This report provides a professional real estate appraisal perspective with regard to valuing the real estate component of rail corridors in the context of the provisions of the *Canada Transportation Act*. The report offers an overview of fundamental appraisal principles, which are the basis of methods followed in valuing corridors, and identifies accepted conventional appraisal methods. It goes on to apply these concepts to the issue of valuing rail corridors, taking into account the relevant considerations, and concludes with recommendations.

**R.L. Banks & Associates, Inc.**

### **North American Railway Restructuring and Implications for Merger Policy**

This paper was commissioned in relation to the Panel's consideration of the appropriateness of the current legislative and regulatory framework for dealing with the public policy requirements that may arise from newly emerging industry structures. The paper discusses the dimensions, causes and consequences of restructuring of North American railways in the past two decades and identifies the policy concerns arising from that experience, principally those associated with railway mergers. The principal conclusion is that further concentration of the North American railway industry should be permitted only under the most stringent guarantees that competition will not be eroded.

**Michel Boucher**

### **Newly Commercialized Transport Infrastructure Providers: Analysis of Principles of Governance, Accountability and Performance**

Transport Canada's commercializations of airports, ports, the air navigation system and the St. Lawrence Seaway are examined. Governance processes are considered using a formal analysis of principal/agent relationships. In the case of airports, the study concludes that lack of controls has permitted some excessive managerial discretion and excessive costs. Delegation of air navigation to NAV Canada is judged effective, though air traffic controllers can appropriate quasi-rents. The latest delegations, to independent port and the St. Lawrence Seaway authorities are judged successful because of controls imposed by the government. The operational performance and price structure of the agencies are also examined to assess their ability to recover costs and finance investments. The study concludes that NAV Canada, the ports, and St. Lawrence Seaway Management Corporation can meet their financing needs, but there are doubts about the ability of some of the smaller airport authorities to do so.

**Garland Chow**

## **E Business Impact on Canadian Transportation**

This paper examines the importance of electronic business in the transportation industry by following the adoption and use of e-business technology among Canadian and U.S. carriers. Three separate studies focus on e-business in trucking, marine and rail. For each mode, the paper explores the benefits in best practices in e-business and the barriers preventing its adoption. The study also compares Canadian and U.S. competitors with respect to meeting shippers' needs using e-business capabilities. Finally, the paper suggests public policy changes that could further the development of e-business in Canadian transportation.

### **The Conference Board of Canada**

#### **The Effectiveness of the *Canada Transportation Act* Framework in Sustaining Railway Capital Spending**

This paper outlines considerations related to the railways' need to provide for and maintain their own infrastructure. This responsibility, along with the high capital intensity of railways, imposes a large annual investment requirement and highlights, in turn, the need for a policy and regulatory environment conducive to generating the necessary funds. The paper notes that over the past forty years, the railways' real net investment in plant and equipment was negative more often than positive; it was strongly negative between 1985 and 1995, in part because the regulatory regime did not sufficiently facilitate productivity improvement and contributed to a low return on capital. By contrast, policy initiatives such as privatization of CN and passage of the *Canada Transportation Act* contributed to a significant upsurge in railway capital spending after 1995. From an investor point of view, Canadian railways have improved their financial performance significantly. Nevertheless, there remains an overhang of long years of under-investment, uncertainty about the future regulatory environment, and questions about the railways' ability to sustain earnings across the economic cycle. The Class I freight railways will need to invest an estimated \$1.3 billion annually over the next five years, and maintaining a climate conducive to attracting capital will be important.

### **D.W. Flicker**

#### **Canada-United States Railway Economic Regulation Comparison**

This study compares railway economic regulations in Canada and the United States. Because of the size and significance of the U.S. economy, as well as the close and growing linkages between the Canadian and U.S. economies and their rail industries, this information was essential to the Panel's consideration of rail policy issues. The comparison covers the transportation policy statement; the regulatory agency; market entry and exit; level of service; rate provisions; exemptions; tariffs; confidential contracts; cost of capital and revenue adequacy; final offer arbitration; interswitching and the use of terminal facilities; competitive line rates; market dominance; and maximum

rates. The two countries' statutes are found to have strong similarities, in that both fall squarely within the deregulatory trend of the final decades of the twentieth century while addressing the recourses shippers require in circumstances where a question of an imbalance of market power arises. The statutes differ, however, in the instruments chosen to deal with similar issues, reflecting the differences in political economy between the two countries and in the development and history of their rail industries.

**David Gillen, Len Henriksson, Bill Morrison**  
**Airport Financing, Costing, Pricing and Performance**

The paper takes a sample of costs and prices at 35 airports to evaluate the effects of the 1995 National Airports Policy on airport investment, service delivery, pricing and financing. It examines costs and investment, how they varied with traffic level, and the 'fiscal capacity' and 'fiscal effort' of the sample airports. It also considers the integration of airline and airport policy. The main recommendation is that National Airport System airports be split into two tiers, one including the largest eight, to remain under lease from Transport Canada, and the second including all smaller NAS airports, to be fully privatized eventually. Lease payments from the largest should be placed in an investment fund, to which all airports would have access. The report also makes recommendations on the basis for lease payments, airport regulation, treatment of gates and slots to ease market entry by carriers, and airport taxation.

**John Gratwick**  
**The Evolution of Canadian Transportation Policy**

The report describes the evolution of the statement of national transportation policy in the transportation acts of 1967 and 1987 and the Canada Transportation Act of 1996. It provides a brief history of transport and government policy from the early nineteenth century, offers an interpretation of the motivation behind the first statement of national transportation policy in the 1967 act, and reviews policy developments leading to its modification in 1987 and 1996, including a clause-by-clause assessment that reveals how the statement changed. Suggestions are offered for considerations in designing a new statement.

**Peter P.C. Haanappel**  
**International Aviation Framework and Implications for Canadian Policy**

The paper first examines current trends in international air transport, including international air transport to and from Canada. These trends include open skies agreements and their provisions on airline alliances; efforts toward air transport liberalization in international organizations, such as the International Civil Aviation Organization, the World Trade Organization, the United Nations Conference on Trade and Development, and the Organisation for Economic Co-operation and Development; and the creation of regional common aviation areas, in particular the European Union and

the European Economic Area and the proposed Transatlantic Common Aviation Area. The second part of the paper discusses the legal and regulatory implications for Canada, if it allowed, as a matter of policy, foreign airlines and investors to participate in domestic air transport. This includes the implications of granting cabotage rights to non-Canadian airlines and of allowing foreign airlines and/or investors to establish themselves as Canadian carriers, including the potential effects on airline ownership and control clauses in Canada's bilateral air service agreements.

**George Hariton and Peter Milne**  
**Open Access in Network Industries**

This study reviews policies introduced to open up the Canadian long distance and local telecommunications and natural gas industries to greater competition and considers the relevance of these measures to the railway industry. In telecommunications, access has taken two forms: (1) interconnection and (2) resale of facilities and functionalities. The analogous concepts in rail transport are interswitching and competitive line rates (interconnection) and running rights (resale). In the long distance telecommunications market, where open access has been in effect for some time, competition has flourished and price rivalry is intense. Even so, the effect of access in terms of overall economic performance is still a matter of controversy. In the local market, competition is still in the early stages, and the effect of open access is harder to assess. Access in the context of natural gas is less directly applicable to rail. The main emphasis to date has been on unbundling ownership of the gas from its carriage. By contrast, railways have traditionally provided only the transport function, unbundled from ownership of the commodities being carried. While pipelines interconnect with each other, gas transport has become competitive only recently, with the construction of an alternative pipeline system. Nor has consideration been given to allowing competitors to use each other's capacity directly or to operate any aspect of another company's pipeline.

**Trevor Heaver**  
***The Shipping Conferences Exemption Act: Review and Suggestions of Positions***  
**Appropriate for the Panel**

The paper reviews the intent of the *Shipping Conferences Exemption Act* when first enacted in 1970, describes subsequent developments in the liner shipping industry, and argues that conferences are of greatly diminished significance. It outlines recent opposition to the act from shippers and assesses the arguments of proponents, finding implausible their assertion that Canadian ports would lose traffic and services if the act were eliminated. Finally, the paper offers recommendations for liberalization.

**Trevor Heaver**  
**The Statement of National Transportation Policy: Assessment and Suggestions for Change**

The report examines and comments on the development of the declaration of national transportation policy in the Canada Transportation Act. It describes the origin and intent of the first such declaration in the 1967 act, then the policy debates and motivations for subsequent rewordings in the acts of 1987 and 1996. The paper's central argument is that the declaration has lost focus and needs radical re-thinking.

**HLB Decision Economics Inc.**  
**Relationship between E-Business, Advanced Transportation Logistics, and Canadian Industrial Economic Performance**

The study examined the direct and indirect productivity effects of e-business investments in transport infrastructure. An original framework was developed to measure indirect benefits of investments that have not been captured in traditional cost-benefit analysis. From recent empirical studies it is estimated that a 10% reduction in transportation costs yields a 14.5% reduction in overall logistics costs. The project included a limited survey of Canadian firms to provide corroboration of potential effects of improvements in transportation system performance on their logistics and productivity. The report concludes that, without consideration of the full supply chain benefits in policy decision making, there is likely to be under-investment in transportation.

**HLB Decision Economics Inc.**  
**The Value Proposition for Transit Investment, Subsidy and Federal Involvement**

The paper provides a methodology for estimating the value of transit in avoiding the social costs of increasing road congestion in private vehicles, providing 'affordable mobility', and raising urban 'amenity values'. Using plausible values (based on previous studies) for the marginal social costs of congestion, environmental and safety risks of private vehicle use, the methodology is applied to Canadian transit use in aggregate and to case studies of the Toronto and Montreal regions. The results suggest that aggregate national subsidies of about three times existing levels could be justified by the potential benefits. The report also considers the justification for an extended federal role in transit funding.

**Bangqiao Jiang**  
**A Review of Studies on the Relationship between Transport Infrastructure Investments and Economic Growth**

The author reviews published studies about the relationship at the macro-economic level between public infrastructure capital and economic growth. An extensive literature has developed in North America, since the controversial work of Aschauer in 1989 suggested a growing deficiency in public capital spending. The review describes the development of

methodologies and empirical estimates in the U.S. and Canada and suggests some policy implications of the findings.

**Kieran MAS (Michael Kieran)**  
**Methods and Practices in Pricing Railway Track Access**

The purpose of the study was to propose principles and methods for setting prices for access to railway infrastructure by guest operators. The paper undertakes three main tasks: (1) to explain the operational, economic and commercial aspects of owning and operating railway track; (2) to examine costing and pricing approaches now used between arm's-length parties in different situations where infrastructure is shared, both with and without traffic solicitation privileges; and (3) to demonstrate through pro forma examples the application of selected concepts, illustrating arrangements that might be made between owners and guest operators in hypothetical yet representative circumstances.

**Fred Lazar**  
**Potential Market Impacts of Liberalization Options on the Commercial Canadian Aviation Industry**

The report considers the potential effects of further liberalization of domestic aviation, through raising foreign ownership limits; granting foreign airlines modified sixth freedom rights, consecutive cabotage rights and/or stand-alone cabotage rights; or allowing foreign ownership of domestic-only carriers. The paper reviews market entry since deregulation, including developments in the cargo market. It examines experience in the U.S. and Australia, using this to predict likely responses to the various liberalization options. The study concludes that there would be limited entry by foreign competitors, but even that would weaken the financial performance of smaller Canadian carriers. The paper argues against unilateral Canadian liberalization and suggests that relaxing foreign ownership limits might do more to ensure the survival of domestic competition than any other change.

**Metropolitan Knowledge International (Bob Lehman)**  
**Potential Uses of Abandoned Rail Corridors for Regional Rail Purposes**

The study examines the importance of conserving existing rail corridors for future possible use in regional rail systems. Increased traffic congestion will become a major concern over the next twenty years. The paper explains how the value of existing rail corridors will increase because of future growth in urban centres and the ensuing lack of transportation capacity. It would cost an estimated \$3.6 billion to acquire land similar to existing corridors in the six major Canadian cities studied. The study concludes that urban congestion is a national problem, requiring federal action. The main recommendation is to preserve urban corridors with a program similar to the U.S. rail banking program.

**Patrick Monahan****Constitutional Implications of Expanded Railway Access**

The paper examines the constitutional implications of granting running rights over federally regulated rail lines to provincially regulated railways. The conclusion is that Parliament can grant such rights and require the provincial operator to meet federal statutory requirements. The study also concludes that where operation of the provincial railway remains a separate and distinct undertaking from operation of the federal railway, the mere physical connection between them occasioned by running rights would not change the constitutional status of the provincial railway.

**Fred Nix****Alternative Road Financing Arrangements**

The paper describes road financing in Canada, including the predominant reliance on provincial and territorial consolidated tax revenues, together with municipal property taxes, and various transfers from senior levels of government for this purpose. Financing alternatives are explored, including toll facilities (highways and bridges) and innovative urban transport funding arrangements, notably in Montreal and Vancouver, involving more direct charges for road use. The paper urges consideration of the approach advocated by the World Bank and applied most extensively in New Zealand - the 'road fund' model of governance.

**Tae Hoon Oum****Key Aspects of Global Strategic Alliances and the Impacts on the Future of Air Canada and other Canadian Air Carriers**

The report summarizes key features of and recent developments in global strategic airline alliances and investigates the potential roles of Air Canada and other Canadian carriers in increasingly powerful alliance networks. Using an econometric analysis of data on 22 international airlines in the period 1986-1995, the study examines the effects of alliances on productivity, pricing and profitability of partner carriers, along with the effects of strategic alliances on partners' output, frequency of service, market outcome and consumer welfare. Using case studies, it also examines the effects of global alliance networks on intercontinental and North American traffic routing patterns. Anticipated roles of Air Canada and other Canadian carriers in North America and in the global alliance networks are described. Regulatory issues concerning alliances are discussed, with several pro-competitive recommendations offered.

**Tae Hoon Oum and Chunyan Yu****Assessment of Recent Performance of Canadian Carriers: Focus on Quantitative Evidence for Evaluating Canada's Air Transport Policy Options**

The paper presents the results of econometric analyses comparing the performance of Air Canada and Canadian Airlines with that of eight major U.S. carriers during the 1990s. Performance is assessed in terms of input prices and cost shares, partial factor productivity, total factor productivity, residual TFP, unit costs and cost competitiveness, yield, profitability, and other financial performance indicators. The study found, for example, that Air Canada faced lower input prices than the U.S. airlines, but its productivity ranked lowest among the airlines studied. Canadian Airlines made significant productivity gains and achieved above-average performance relative to the sampled carriers during the latter part of the period, before a sharp fall in 1999. Air Canada's superior yield management allowed it to improve its financial performance considerably and achieve a ranking about average among the sampled carriers, while Canadian Airlines' financial performance declined.

**Regulatory Consulting Group Inc. (Margot Priest)**  
**Report on Governance and Accountability: The New Transportation Organizations**

The paper adopts a formal analysis of principal/agent relationships to assess governance and accountability of the newly commercialized infrastructure providers for airports, ports, air navigation services and the St. Lawrence Seaway. The results suggest that more attention has been paid to accountability and transparency as the approach to the new entities matured, experience was gained, and criticisms were leveled at earlier arrangements. More and varied mechanisms were built into later governance relationships, notably for the ports, compared to earlier arrangements for airports. Further improvements in governance are possible, particularly for Local Airport Authorities.

**Research and Traffic Group**  
**Sustaining Capital Requirements for the Short Line Railway Industry**

The Panel's mandate refers to the overall effectiveness of the current legislative and regulatory framework in sustaining the high levels of capital expenditures required to enhance productivity and promote innovation. This paper examines the short line portion of the freight rail sector and the issues affecting its ability to sustain capital spending. The paper describes recent expansion and structure of the short line industry, discusses its capital expenditure requirements and funding sources, and assesses the sector's long-term capital expenditure sustainability in view of its investment requirements, traffic volumes and profitability. In addition, regulatory issues bearing on short line capital spending are discussed, including access to multiple long-haul carriers, enhanced running rights, interswitching and final offer arbitration. A principal conclusion is that the short lines' ability to sustain capital spending is not driven mainly by regulatory provisions, although individual regulatory decisions can be critical to a short line railway. The most important issue is how much traffic short lines can attract and retain as determined by general economic conditions, events affecting major shippers and highway competition.

**Thomas W. Ross and W.T. Stanbury**

**Policy Proposals for Enhancing Competition in Canadian Airline Markets**

The report considers policy options to enhance the performance - particularly the competitiveness - of the airline industry. It begins by describing the current state of competition in Canadian airline markets and reviewing the current public policy framework. The report analyzes a broad range of policy alternatives, focusing on mechanisms to preserve or enhance competition and including (1) behavioural policies, such as re-regulation and rules on predation, that seek to control carrier conduct; (2) structural policies that seek to reduce carrier power directly (e.g., by breaking it up into smaller firms) or indirectly by facilitating entry of alternative domestic carriers (e.g., by reducing barriers to entry); and (3) policies that seek to encourage the participation of foreign carriers in Canadian markets. The paper suggests preferred options, including (1) exploring ways to facilitate new domestic entry by easing access to foreign capital (by relaxing foreign ownership regulations) and access to important airport facilities (slots, gates, counters); (2) possible adjustments to the predatory pricing regime to provide greater clarity to large firms; and (3) policies that could be adopted unilaterally to reduce the barriers to foreign carrier participation in Canadian markets. The latter policies include granting rights of establishment; permitting 'modified sixth freedoms' (or 'indirect cabotage'); and relaxing foreign ownership regulations to encourage franchising of foreign carrier operations in Canada. Discussions are urged with Europe, Australia, New Zealand and Mexico about creating a common aviation area. Policies not recommended at this time include breaking up Air Canada, re-regulating the airline industry, or unilaterally granting general rights of cabotage.

**Andrew Shea**

**Assessment of Open Access Policies in Other Industries and Jurisdictions: A Literature Review**

This study by The Conference Board of Canada reviews recent literature to assess (a) experience with open access regulatory policies in Canadian industrial sectors where they have been implemented and (b) the experience of other countries with open access regulatory policies in their rail industries. For each situation, the study reviews the essential features of the access policies, reasons for implementing them, the degree of success of the policies in terms of meeting the objectives, and the relevance of the experience to the Canadian rail industry.

**Richard Soberman**

**Public Transportation in Canadian Municipalities: Implications for the *Canada Transportation Act* and the Federal Role in Transit**

Canadian municipalities are trying to reduce automobile dependency and raise transit competitiveness as a means of achieving more sustainable development through

improvements in urban transit and commuter rail. Given Canada's commitment to greenhouse gas reductions, there is also a strong federal interest in these objectives. Public transit operators perform relatively well, recovering on average about 62% of operating costs from fares - far more than their counterparts in the U.S. However, there is a major shortfall in the capital investment needed to replace transit vehicles, rehabilitate infrastructure, and expand services to accommodate population growth. Municipal governments argue for federal assistance in financing urban transit, primarily through access to some portion of federal fuel taxes generated in urban areas. Some also see railway rationalization and abandonments as opportunities for new transit corridors that may be lost unless the federal government provides special funding to acquire them. The report suggests several amendments to the Canada Transportation Act, the most important of which relate to facilitating the acquisition of abandoned railway corridors for urban transit and establishing a mechanism for periodic review of operating agreements for commuter rail. Any new funding for transit should be limited to capital projects, such as acquiring rail corridors and cost sharing of capital assistance to transit operators based on performance.

### **Trans-Group**

#### **Railway Safety and Competitive Access with Common Running Rights**

This report examines the safety issues associated with running rights by identifying the possible additional risk factors posed by two railway companies operating over the same track. The report suggests that participants implement appropriate measures to mitigate these risks.

### **InterVISTAS Consulting Inc. (Michael Trethaway)**

#### **Airport Ownership, Management and Price Regulation**

The paper examines the ownership and operational structures of airports world-wide. Air transport is a growth industry with a need for continuous investment. The paper reviews the marked shift toward airport privatization to relieve the capital investment burden on governments. International privatization and governance models are reviewed, focusing on Canada's unique not-for-profit version. The paper sees airport improvement fees, introduced to generate needed capital for expansion, as a consequence of this approach. The paper also explores alternative forms of airport price regulation, arguing for caution in considering introduction of any price regulation.

### **WESTAC**

#### **Understanding Competitive Rail Access**

As part of the consultation process, the Panel engaged the independent Western Transportation Advisory Council (WESTAC) to prepare a report outlining (1) the positions of interested parties as put forth in their public submissions on the issue of

competitive rail access and (2) proposals for change in the competitive access and shipper protection provisions of the Canada Transportation Act. In addition to comparing proposals with existing Canada Transportation Act provisions, the report offers a list of critical questions concerning competitive access rules and rates for access; profiles of positions on sustainability of capital spending and newly emerging market structures; and profiles of the positions of shippers, railways, governments, labour and others.