International Conference on Gateways and Corridors
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Abstracts

Workshop I: Pricing, Borders and Gateways

Gateways and intermodal pricing – Achim Czerny, Berlin University of Technology, Germany

Gateways connect different modes of transport. In this paper we explore the effect of gateways on intermodal pricing (i.e. the prices for transport services including different modes), capacities, and profits using a three-stage game. In the first stage firms cooperatively decide whether to build a gateway or not. In the second stage firms decide on capacity levels. With gateway capacities are chosen cooperatively. Without gateway firms individually choose capacities. In the third stage firms individually choose prices. The game is applied to horizontally integrated firms (i.e. firms providing land- and seaside services) and horizontally separated firms (i.e. firms providing either land- or seaside services).

Infrastructure capacity, pricing and gatgeway competition gateways – Prof. Robin Lindsey, University of Alberta, Canada

The federal and western provincial governments in Canada have recently launched several major infrastructure investments to facilitate Asia-Pacific trade, including port capacity expansions and new roads, bridges and pipelines. This paper reviews some analytical models of transport infrastructure investment, congestion pricing and competition, and draws some lessons for freight transport and gateway competition from a Canadian perspective. The analysis applies to all modes of transport although emphasis is given to maritime transport and seaports. Attention is focused on the complexities of freight transport and gateway competition, the need for further model-based research, and the scope for cross-fertilization between the literatures on different transport modes.

How high is the gate? A study of the border effect at five major Canadian airports – Prof. Tim Hazledine, University of Auckland, New Zealand

Workshop II: Port Productivity and Gateway Performance

Tying it all together: The challenge of integration in and through gateways – Prof. Trevor Heaver, University of British Columbia, Canada

The dramatic changes that have taken place in transport and information and communications technologies (ICT) in recent decades have enabled major improvements in the pursuit of more efficient logistics arrangements for international trade. The goal of getting goods to the customer as efficiently as possible has not changed but the way this can be achieved has been revolutionized. Transportation and ICT technologies have enabled new levels of integration in intermodal transportation and in the control of logistics activities. As a consequence, a new vocabulary has evolved to capture the concepts and methods for managing current logistics systems.

The ability of supply chains to be global owes much to the efficiency of logistics systems, as reflected in the growth of international trade. The challenge of handling this trade efficiently through ports and airports has given rise to the concept of gateways, a concept that captures the importance of many activities in these communities. However, result in gateways being the most difficult part of many supply chains in which to achieve effective and efficient integration.

The challenges arise from the number and characteristics of the gateway activities and the urban environments in which they take place. However, too little attention is often given to the effective integration of the numerous activities performed in gateways so that the gateways become sources of constraints and inefficiencies in the logistics systems. Stronger initiatives are needed to tie gateway activities together. Success is not easy to achieve as strategic and operational cooperation is required among many firms as well as with

public sector organizations. Solutions are not likely to be found in any single community organization but in greater communication and cooperative among participants and in greater assumption of responsibility by lead logistics organizations.

The role of port performance in gateway logistics - Prof. Tae Oum, University of British Columbia, Canada and Prof. Jose Tongzon, University of Tasmania, Australia

Globalization, economic integration and the continued rise of the Asian economies have presented tremendous business opportunities for the logistics sector particularly in those countries that can act as gateways. There are, however, certain requirements to become a successful gateway. One of these requirements is to have an efficient and cost-effective transport infrastructure. Seaports are one of the most critical components of this infrastructure as the bulk of international trade is carried by sea.

This paper aims to evaluate the important role of seaports by discussing the linkage between port performance and gateway logistics. The first section of this paper identifies the key components of gateways, and the nature of infrastructure and policy environment underpinning their transshipment and distribution functions. The second section analyzes the critical role of seaports in gateways and in this context proceeds to explain the importance of such factors as strategic location, efficiency and reliability, connectivity and shipping frequency and adequate infrastructure in the performance of gateways. The relative importance of these factors is further supported by the results of our recent survey among a sample of freight forwarders based in Southeast Asia confirming these factors as important determinants in the choice of gateway ports and pointing to port efficiency as the most important gateway port determinant. The third section discusses the linkage of port performance and gateway logistics based on previous empirical studies. The key aspects to port performance covered in these studies are efficiency, connectivity, quality of port infrastructure and degree of supply chain orientation. These variables are shown to have significant impacts on transportation, international trade and logistics. The last section presents the ranking of ports/terminals in terms of efficiency based on stochastic frontier analysis and DEA. It can be argued based on their relative rankings that there is a close linkage between port efficiency and gateway performance.

Port pricing and governance in congestible gateways and corridors – Prof. Anming Zhang, University of British Columbia, Canada

This paper examines the price decisions of an intermodal transport system that consists of two congestible facilities, namely, a port and a highway corridor. The port serves as a gateway to the region, and may be operated by an entity that is independent of the operator of the corridor. Each facility in this intermodal transport system serves its own local traffic as well as the common transit traffic, and shipping liners may possess market power and there act strategically. We investigate port pricing under two alternative governance structures: a private port that maximizes its own profit, and a public port that maximizes social welfare. Further, given each port governance structure, we compare two alternative regional governance structures: 1. the port and the corridor act independently in their price decisions; and 2. they act cooperatively to maximize the region's welfare. Price and welfare levels will be compared, and the practical experiences of selected cases will be discussed..

The evaluation of China's reform on aircraft landing pricing and its role to Shanghai Pudong Airport as an international gateway - Prof. Hongmin Chen, Shanghai Jiao-Tong University, Shanghai

This paper evaluates China's current reform on aircraft landing pricing to airlines as well as to airports. Our research shows that the new reform raises more incentive of China's airlines to have large aircrafts and create stronger economy of scale for China's airports. We also investigate its role for Shanghai Pudong International Airport as an international gateway.

Session I: International Experience with Gateways and Corridors (panel discussion – no abstracts)

Session II: Logistics and the theory of Gateway and Corridors

Gateway and corridor performance: what is important? – Dr. Michael Tretheway, InterVISTAS, Canada

Gateways and transportation corridors play a significant role in the economies of many nations in the world. Some nations rely on gateways to service their economies, while others go beyond this and operate gateways as an economic sector in its own right, serving trade between other nations as a means of generating jobs and economic value added. Gateway success depends on competitiveness.

Gateway investment often depends, at least in part, on public funding. Both of these require establishing targets for performance and then measuring performance. This paper examines what are the key performance parameters for gateways and the corridors serving them. It discusses the merits and challenges of benchmarking performance. The vital role of inland facilities in gateway performance is also described. These facilities can significantly enhance achievement of performance goals such as on time shipments, reduction in urban congestion and reduced costs. These facilities can also help balance trade flows are reduce empty backhauls, thereby increasing corridor capacity.

The changing role of gateways in the context of global value chain dynamics – Prof. Werner Delfmann, University of Cologne, Germany

Intermodal transportation services and multimodal transportation infrastructure will play central roles in the logistics systems of corporations competing in global markets in the 21st century. Several trends are fundamentally changing multinational value chains: continued economic globalization as the driving force in trade and investment, the growing demand for time definite product delivery, the adoption of flexible and customer oriented manufacturing and business practices, the ongoing trend of outsourcing, and - above all and as a consequence of all this - the need for an integrated management of the resulting global value chains and complex logistics networks. These value chains depend on intermodal transportation services to meet customers' demands for a system of interconnected logistics networks, involving combinations of transport modes, in which all the component logistics flows are seamlessly linked and efficiently coordinated. It has to offer manufacturers a full range of transportation modes and routing options, allowing them to coordinate supply, production, storage, finance, and distribution functions to achieve efficient relationships.

These trends are also driving the demand for new types of multimodal transportation infrastructure being an integral part of integrated value chain management. Requiring coordinated, continuous, flexible, and reliable transportation and transhipment, but more and more also a wide range of value added services, this is generating demand for new roles of sea- and airports as well as new types of "landports" that integrate transportation and logistics services in order to facilitate integrated value chains. In this light ports and gateways have to meet much more differentiated requirements than mere transshipment points. Logistical flows between these nodes show a wide range of logistical diversity. Depending on the functional role the ports have to play in logistics systems the infrastructural and procedural requirements may differ significantly. Key influence factors determining these different requirements are the structural types of logistics networks, the procedural types of goods flows, their time characteristics, the different transport modes and the degree of integration of the ports in the overall value networks.

The paper will discuss the impacts of such an integrated value chain and logistics network perspective on the future role of ports in general and of global gateways in special and will show the need to come to a much more differentiated understanding as traditionally.

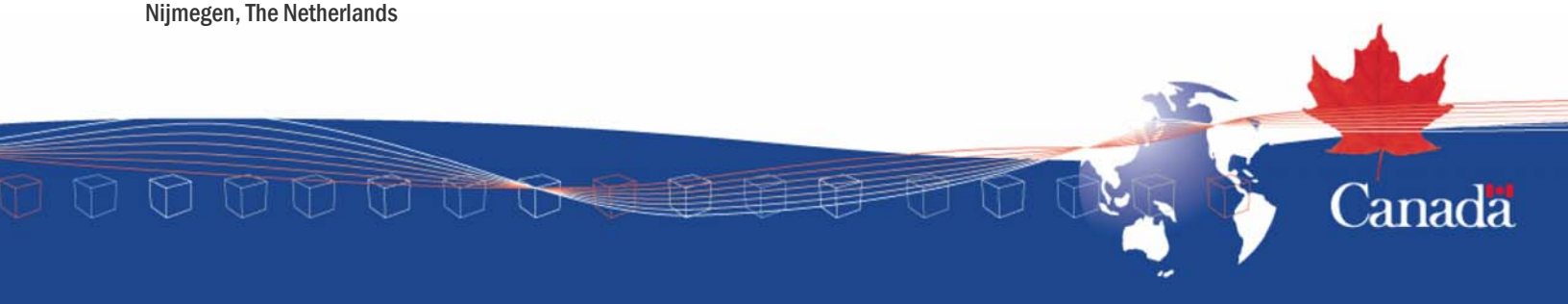
Port productivity and gateway choice: a comparison of Vancouver and New York - Prof. Joseph Berechman, City University New York, USA

Session III: Supply Chains and Gateway and Corridors

Assessing productivity and performance of seaports: the importance for gateways – Prof. Martin Dresner, University of Maryland, USA

The key access to inland transportation corridors are seaports, as the vast majority of goods imported from abroad and exported overseas move through seaports en route to their final destinations. In choosing amongst transportation corridors, an important consideration is the performance and productivity of seaports. Highly productive ports can pass cost savings onto shippers, while high-performance seaports can reduce transit times and inventory carrying costs. Therefore, the performance and productivity of seaports are factors in determining their use and the use of corridors leading to the ports. With this in mind, an analysis of the factors affecting performance and productivity of seaports is provided, followed by a discussion of the impact of the factors on gateways and transportation corridors.

The development of international freight transport in Europe as a result of developments in international trade and logistics - Prof. Cees Ruijgrok, Tilburg University, and Lori A. Tavasszy, TNO Mobility and Logistics & Radboud University Nijmegen, The Netherlands



The development of international trade is one of the main driving forces behind the international and transcontinental freight transport. Within Europe the European integration has given a significant impulse for the development of trans border freight transport. A third element, which is of significant influence on both the volume and the composition of international freight transport concerns the (inter company) logistics organization. Where which activity takes place, is being determined by the logistics requirements of the actors in the supply chain, most importantly its final customers.
This paper describes megatrends that are shaping international trade, logistics organization and (multi)modal transport in Europe. It focuses on impacts on the European context, both from the peculiarities arising from the European unification process and the European transport policies, but also taking into account the highly fragmented transport market that tries to cope with the increased level of congestion, the threat for increasing taxes and fuel prices as well as the ever increasing service requirements.
On the one hand transport systems will need to adjust better to a globalizing economy, with a higher variation in different types of networks than ever before. The splintering of flows that occurs due to the demands of customization and increased responsiveness will force firms to look outside their company borders for co-operation and, in the end, for scale. Thus, transport systems will need to be more flexible and obtain a more hybrid nature, to accommodate both slow and large scale flows as well as small scale, just-in-time shipments.

Investing in transport infrastructure: institutional design and efficiency – Prof. Peter Forsyth, Monash University, Australia

This paper focuses on the task of designing institutions to promote efficiency in investment in transport infrastructure, such as airports, ports, roads and rail. The scope for competition in provision of these facilities is examined, but in many cases it is quite limited. Alternative institutional arrangements include provision by public enterprises, by private but regulated enterprises, and by hybrid forms such as Public Private Partnerships. Australia as extensive experience in all of these arrangements, and the difficulties in achieving adequate but not excessive investment is examined in the light of this experience. Some problems are given particular attention – these include regulatory gaming, the lack of independent evaluation of projects, the pressures from regional governments for excessive investment and the difficulties in allocating risks and responsibilities between parties.

Session IV: Gateway and Corridors, Governance and Regulation

Gateways and Canada's ports policy: issues and impediments – Prof. Mary Brooks, Dalhousie University, Canada

Gateways and trade corridors have occupied North American thinking in recent years as businesses struggle to compete in the global trading environment. In the past year, the issue has come to the fore on the east coast of Canada, and there has been much discussion about the promise of an Atlantic Gateway. This paper begins by examining the issue of gateways and trade corridors in general, and the Atlantic Gateway in particular. It draws on three recently published studies examining the Atlantic Gateway as a potential infrastructure investment, and seeks to explore the issues and impediments surrounding the development of the gateway. It then moves to explore port governance in Canada and, more specifically, the issues of port governance that support or impede the development of gateways, and in particular the Atlantic Gateway. Port governance issues are not the only ones influencing gateway development on the east coast, and the paper will conclude by examining other regulatory barriers and administrative governance structures influence gateway and corridor effectiveness in global supply chains serving North America.

Can P3s contribute to the upgrade of Canada's Asia-Pacific trade infrastructure? – Prof. Anthony Boardman, University of British Columbia, Canada and Prof. Aidan Vining, Simon Fraser University, Canada

The expansion of Canada's Asia-Pacific trade is likely to continue over the foreseeable future. Investments in gateway and related corridor infrastructure may be publicly funded, privately funded or it may be some combination of both. Given provincial and federal governments' desires to minimise current expenditures, public-private partnerships (P3s) are a likely mechanism. This paper reviews the theoretical reasons for public funding of tangible and intangible infrastructure investments and discusses the potential role for P3s. It also reviews the recent evidence concerning the use of P3s in Canada. While P3s are politically attractive, there are a number of concerns over their use. In particular, they do not work well when governments attempt to transfer all of the risks to a P3.

Port Policy and the Asia-Pacific Gateway and Corridor Initiative – Ron Hirshhorn, Hirshhorn Consulting, Canada

British Columbia's ports are clearly major components of Canada's Pacific Gateway and play a key role in this country's efforts to capture the benefits of strong Asian growth. The focus of this paper is on the policies that will generate the required incentives for the efficient provision of port services. This paper first considers what the general experience of countries that have engaged in port reform can teach us about the policy requirements for efficient port performance. It is suggested that international experience with devolution and commercialization highlights the need to give attention to three issues: the requirements for an effective governance regime; the objectives set out for the devolved organization; and the mechanisms that may be required to control the market power of port service providers. Each of these issues is examined in the paper and the different types of regimes that may emerge from the policy response to all three issues are discussed. Against the background of these representative regimes involving quite different pressures for port efficiency, the paper examines the policy framework governing Canada Port Authorities. There is an investigation of whether reforms are needed and, if so, what actions are required to strengthen the policy incentives for port efficiency and reinforce the other initiatives intended to help Canada capitalize on the opportunities from the growth in Asian-North American trade.

Session V: Security, Risk, Information Management and the Costs of Supply Chain Disruption

Gateways and Corridors: assessing and addressing strategic security concerns – Margaret Purdy, University of British Columbia, Canada

Countries and regions develop and promote transportation gateways and corridors principally as a means to increase trade and enhance competitiveness. Economic issues dominate the public dialogue, as well as the academic literature and research, around gateways and corridors. Non-economic issues and concerns are beginning to emerge, including about such matters as the human rights records of prospective trading partners and the negative impacts of increased trade on gateway communities, including increased congestion and pollution.

Security has remained a peripheral issue in the discussion of gateways and corridors – both inside and outside governments. Most business and industry stakeholders continue to perceive security as an obstacle, an inconvenience and an expense -- even in the post-September 11 period. On their part, governments have focused on the international trade potential of gateway and corridor initiatives. The end result is that little policy or research attention is being directed to assessing how robust security programs could help facilitate trade or provide competitive advantage to specific gateways and corridors

A serious and comprehensive approach to gateway and corridor security would entail much more than protecting shipments of goods and passenger movements, and would encompass the full range of threats – economic espionage, terrorism, organized crime, pandemics and other serious human/animal health concerns, cyber attacks, and natural disasters. Initiatives to address these threats would include not only defensive, protective measures, but also emergency response and business resumption programs.

The most significant threats to the security of gateways and corridors have international dimensions. As a result, a strategic approach to gateway and corridor security must take into consideration the security measures in place at points of origin and international borders, as well as along supply chains and international trade and travel routes.

Collateral benefits of security and supply chain improvements at international gateways - Prof. Garland Chow, University of British Columbia, Canada

Freight security initiatives do not necessarily result in cost increases or reduced service. Security improvement can also reduce logistics and supply chain costs by improving supply chain visibility and enhancing transit reliability, resulting in collateral benefits to the supply chain. Previous studies have examined the impact of security ex ante, typically through surveys. We develop a total cost logistics model to simulate alternative logistics scenarios and security strategies to determine the influence of security initiatives on total logistics cost. A hypothetical application of the model to competing gateways is used to demonstrate the models usefulness in evaluating how security impacts the total cost of using a specific gateway and subsequently the competitive advantage of the using that gateway.

The costs of supply chain: congestion, disruption and uncertainty - David Colledge, Colledge Transportation Consulting (CTC) Inc., Canada

Cargo transportation is no longer a narrow concern of those within the industry. Supply chain issues are being more widely debated. However, the real economic costs and risks of supply chain congestion in the global economy are not being tallied and are therefore

understated as key inputs for policy makers. A greater awareness and understanding of the costs of supply chain congestion, disruption and uncertainty is needed by governments and the private sector to justify transportation infrastructure investments as well as new operating practices that will expand system capacity in a timely manner.

This paper adopts a case study approach to examine the "congestion tax" on logistics. Many years have been spent transforming logistics from a "push" to a "pull" system to reduce inventories, drive costs out of the system and to improve customer service. Modern logistics depends more than ever on tight distribution schedules and reliable, consistent transportation performance. Yet supply chain bottlenecks increase inventories, cause production delays and add to the costs of imports/exports. The paper explores these impacts from the perspective of shippers, consumers and the Canadian economy, as well as discussing the policy implications.

Session VI: Land Use/Urban Planning and the Environmental Footprint of Gateway and Corridors

Marketing green logistics: environmental strategies for transportation based gateways and corridors - Prof. Claude Comtois, University of Montreal, Canada

Transportation based trade gateways and corridors are representing the archetypical modern growth machine. They are emerging as new land use models considered a prerequisite to participate in the increasingly exchange-based world economy. The activities of these expanding transport terminals with capacity for the handling and transhipment of goods and the related growth in traffic volume underpinned by the extension of air-sea-land connections have considerable environmental impact. Henceforth, corporate decision makers have no alternative than embarking on a quest for a value balance point that satisfies the prevailing market whilst minimizing the adverse effects on the environment. A series of critical issues is raised by these concerns. How are stakeholders participating in the development of gateways? How is the environment becoming a factor of changes? How investments choices considering environmental impact? How are these developments affecting the status of transportation based trade gateways and corridors?

The initial issues are considered by examining changes in stakeholders preferences favouring the development of transportation based trade gateways and corridors. In interpreting these changes, evidence is drawn primarily from international comparative studies. A detailed examination is then made of the environmental impact of increasing mobility, rising volume and upgraded infrastructure. A key feature of the analysis is the focus on environmental issues confronting the transportation industry. We will then present the market's competitive factors underpinning sustainable development strategies. This section will outline both the opportunities for and constraints to investments in controlling the negative externalities of transportation facilities and operations. Finally, there is a consideration of the conditions affecting strategic orientations of the Asia Pacific gateways and corridors.

Gateways and corridors in globalisation: planning sustainable infrastructures for transcontinental 'Spaces of Flows' - Prof. Kathy Pain, Young Foundation and Loughborough University, UK

The post-industrial shift from manufacturing to knowledge-based services, the informationalisation of economic activity and rise of the transnational business organisation in a globalising service economy, pose major challenges for policy-making and planning which remain tied to a territorial space defined by jurisdictional boundaries. This paper suggests that cross-border flows associated with new forms of commercial production and trade are changing local-global relationships, and the roles, functions and policy imperatives for gateway cities and corridors. Major tensions arising between Europe's regional development priorities as the impacts of globalisation extend and deepen are examined and the potential lessons for other places considered."

Global logistics and local dilemmas – Prof. Peter Hall, Simon Fraser University, Canada

Global logistics which connect widely dispersed producers and consumers are increasingly organized through gateways and corridors located in urban regions. At the same time, global logistics systems are increasingly physically, economically and institutionally disconnected from the city-regions that host them. This disconnection raises a series of dilemmas for the host localities. This paper presents a conceptual framework for understanding the dilemmas that confront cities and regions that host national and continental logistics gateways. The framework is illustrated with examples from several sites, including Los Angeles-Long Beach and Durban, South Africa. The framework focuses on the land use, economic and community development impacts of gateways and corridors on the host city-region. It pays particular attention to the differing scales at which these impacts occur; these range from the highly localized to the metropolitan scale. It is proposed that the impacts be evaluated in terms of sustainability criteria, namely efficiency, equity and environment.

Session VII: Gateway, Corridors and Competitiveness

Gateways, corridors and competitiveness: An evaluation of trans-European networks and lessons for Canada - Prof. Roger Vickerman, University of Kent, UK

The development of transport infrastructure as a means of enhancing both national and regional competitiveness has a long, but not always convincing, history. Its use in the European Union as an explicit agent of policy dates back to the early 1990s when it became enshrined in the Maastricht Treaty. The policy to develop a series of Trans-European Networks (TENs) which would cover all the main modes of inland transport, but also include the major gateways of seaports, inland ports and airports, was later extended to include short-sea shipping through the so-called Motorways of the Sea. In addition the proposed extension of the EU required that the networks be developed to embrace both the candidate countries and a number of neighbouring countries. The claim was made that the development of such a pan-European set of networks would enhance both overall competitiveness by reducing the costs of transport within the EU enabling greater integration of the European economy and its cohesion by educing national and regional disparities arising through inequalities in infrastructure provision and transport quality.

In this paper the basis of these claims will be reviewed from a conceptual and theoretical perspective in the light of the evidence of the development of the TENs. The theoretical development will outline the nature of the wider economic effects of infrastructure, but the particular issues which arise here are the way in which these benefits arise in the development of corridors and networks. This raises key questions of the nature of agglomeration economies and the balance between core and peripheral regions. This evidence will be drawn from a number of studies of the impact of the TENs. The key issues which arise are the balance between the local, regional and national impacts and the wider European impact of the networks, the extent to which the TENs lead to concentration rather than cohesion, and the slow progress in the development of the TENs given the costs involved (€600 billion) and the general failure to harness the private sector funding seen as essential.
The progress of the development of the networks will be summarised and lessons drawn for the development of other large-scale network developments and in particular the potential role of Asian-Pacific Corridors for Canada. One of the critical issues to emerge is the problems which arise when decisions on investment are in the control of lower level jurisdictions, but the main benefits depend on network effects which can only be raised at a higher level. Thus the economic appraisal of corridor development is critically dependent on the structure of decision-making.

Corridors and the maritime / land interface: North America and the Pacific – Prof. Jean-Paul Rodrigue, Hofstra University, USA

After more than 50 years of containerization global freight distribution have profoundly changed, both from a structural and operational standpoint. Particularly, the last decade has experienced a surge in transpacific trade which has placed intense pressures on the maritime / land interface to handle the corresponding growth of containerized traffic. This interface includes not only maritime shipping companies, port terminals and inland transportation, but also the wide array of activities linked with logistics and freight distribution. It is an important intermediary in the setting and operation of global commodity chains, which functional integration have placed demands on gateways and corridors on both sides of the Pacific Ocean. The integration of transport functions provided by logistics and the re-orientation of maritime networks have redefined the functional role of ports in value chains and have generated new patterns of freight distribution. These patterns increasingly involve imbalances in trade, container flows and the balance of payments. Further, the development of better hinterland connections, particularly through corridors, has become as important as the port facilities themselves to secure additional traffic and improve the reliability of freight distribution. Yet, substantial time improvements are still needed as only 63% of transpacific container vessels arrived on time – on the same day or the day after – at their scheduled port calls. The major factor behind delays is port congestion and the difficulties of moving large quantities of containerized freight inland. This challenge to the maritime / land interface, notably in the North American context, will require improvements in existing long distance rail corridors as well as the setting of new ones.

Asia-Pacific Gateway and Corridor and its implications to Canada-China trade – Prof. Yimin Zhang, China Europe International Business School (CEIBS), China

Canada is an open economy with heavy reliance on international trade. Over the last decade, the trade pattern of Canada has experienced significant changes, especially with China and other Asia-pacific economies. Now China has become the second largest

trading partner of Canada, only after the US. In 2005, China was the fourth largest export market for Canada, after the US, the UK and Japan, and the second largest source of imports.

Most of the commodity trade between Canada and China are carried by ocean shipping. From 1994 to 2004, exports to China via Vancouver port increased by more than 300% and imports from China via Vancouver port increased by more than 1000%. In 1999, there were 1.6 million tons of containers shipped between Canada and China while in 2004, trade has increased to 5.1 million tons of containers. This tremendous growth in the trade, however, has met substantial constraint on the handling capacity of the ports in the two countries. For Vancouver port, handling capacity at present is only 1.7 million containers per year, compared with 12 million containers per year in Shanghai and 18 million containers per year in Hong Kong.

This paper will examine the changing trade patterns between Canada and China, from both the growth in total trading volume and the composition of the commodities that are flown between the two countries, and try to identify the trend for future trade. Based on the trend of trade, bottle neck of port facilities and investment on the Asia-pacific gateways and corridors will be assessed from the view point of Canada-China trade relations.