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ANMING ZHANG

B.Sc. (Shanghai Jiao-Tong University),  
 M.Sc., PhD (University of British Columbia)  
 Vancouver International Airport Authority Professor in Air Transportation  
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### Research Interests

- Transport Economics and Policy
- Air Cargo Logistics
- Industrial Organization

### Courses Taught in 2016-2017

On sabbatical from July 1st, 2016 to June 30th, 2017.

- Not teaching during this academic year.

### Selected Recent Publications

- Chen, H., Q. Qian and A. Zhang (2015), "Would allowing privately funded health service reduce public waiting times? – Theory and empirical evidence from Canadian joint replacement surgery data," *Production and Operations Management*, 24 (4), 605-618.
- Czerny, A.I. and A. Zhang (2015), "How to mix per-flight and per-passenger based airport charges," *Transportation Research, Part A: Policy and Practice*, 71 (1), 77-95.
- Czerny, A.I. and A. Zhang (2014), "Third-degree price discrimination in the presence of congestion externality," *Canadian Journal of Economics*, forthcoming.
- Xiao, Y., X. Fu, A. Ng and A. Zhang (2015), "Port investments on coastal and marine disasters prevention: Economic modeling and investigation," *Transportation Research Part B: Methodological*, 78, 202-221.
- Wan, Y., C. Jiang and A. Zhang (2015), "Airport congestion pricing and terminal investment: Effects of terminal congestion, passenger types and concessions," *Transportation Research, Part B: Methodological*, 82, 91-113.

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**THE UNIVERSITY OF BRITISH COLUMBIA**  
***Curriculum Vitae for Faculty Members***

**Date:** 9 November 2016

**SURNAME:** Zhang

**FIRST NAME:** Anming

**DEPARTMENT/SCHOOL:** Operations and Logistics Division

**FACULTY:** Sauder School of Business

**PRESENT RANK:** Professor

**SINCE:** 1 July 2004

**POST-SECONDARY EDUCATION**

University or Institution	Degree	Subject Area	Dates
University of British Columbia	Ph.D.	Policy/Management Science	1990
University of British Columbia	M.Sc.	Business Administration	1986
Shanghai Jiao-Tong University	B.Sc.	Mathematics	1983

**EMPLOYMENT RECORD**

(a) *non-UBC Employment*

University, Company or Organization	Rank or Title	Dates
City University of Hong Kong	Department Head	1998-2001
City University of Hong Kong	Associate Professor	1996-2001
Zhong-Shan University	Visiting Scholar	Sept-Oct 2000
University of Victoria, B.C.	Associate Professor	1995-98 (on leave 1996-98)
University of Victoria, B.C.	Assistant Professor	1990-94
Graduate School of People's Bank of China	Visiting Scholar	Fall 1997
Shanghai Jiao-Tong University	Visiting Scholar	Summer 1994, Summer 1995

(b) *UBC Employment*

Rank or Title	Dates
Professor, and YVR Authority Chair Professor in Air Transportation	July 2004 – present
Chair, Operations and Logistics Division	July 2004 – Dec 2005
Director, Academic, Centre for Operations Excellence	Aug 2002 – June 2004
Director, Centre for Transportation Studies	July 2003 – Dec 2004
Associate Prof., and YVR Professorship in Air Transportation	Jan 2002 – June 2004

**LEAVES OF ABSENCE**

University, Company or Organization at which Leave was taken	Type of Leave	Dates
UBC, plus visits to <ul style="list-style-type: none"> <li>- Chinese University of Hong Kong, Sept.-Oct. 2011</li> <li>- Shanghai Advanced Institute of Finance, Shanghai Jiao-Tong University, Oct. 2011-Jun. 2012</li> </ul> and shorter-term visits to other universities	Sabbatical	Jul 1, 2011 – Jun 30, 2012
UBC, plus visits to <ul style="list-style-type: none"> <li>- Chinese University of Hong Kong, Jan.-Feb. 2006</li> <li>- University of Tokyo, April-May 2006</li> <li>- German Social Science Research Center (WZB), Berlin, Aug. 2006</li> </ul> and shorter-term visits to other universities	Sabbatical	Jan 1 – Dec 31, 2006

**AWARDS AND DISTINCTIONS***(a) Awards for Scholarship*

2014. The 13<sup>th</sup> Outstanding Research Prize Competition in the City of Beijing: Second Place Award (Social Science Category), for the paper “Effects of High-speed Rail and Air Transport Competition on Prices, Profits and Welfare” with Hangjun Yang, December 2014, Beijing.

2014. The Best Overall Paper Prize for the paper “How to Mix Per-flight and Per-passenger Based Airport Charges” written by Czerny A.I. and A. Zhang, awarded at the *ITEA (International Transport Economics Association) Conference on Transportation Economics*, Toulouse School of Economics, June 5, 2014.

2008. The CORS Practice Prize Competition Third Place Award, for the project “Pulling it All Together: Asset Lifecycle Management” with Amanda Armstrong, awarded at the *Canadian Operations Research Society (CORS) Annual Conference*, Quebec City, Quebec.

2006. The Runner-up for the Best Conference Paper Award, for the paper “Trying to Put the ‘Full’ in the Full Costs of Transportation” written by Gillen, D., J. Lawson, W.G. Waters and A. Zhang, awarded at the *Canadian Transportation Research Forum (CTRF) 41<sup>st</sup> Annual Conference*, Quebec City, Quebec.

2004. The Runner-up for the Best Conference Paper Award, for the paper “Alternative Forms of Economic Regulation of Airports: Modelling and Empirical Evaluation” written by Oum, T.H., A. Zhang and Y. Zhang, awarded at the *Canadian Transportation Research Forum (CTRF) 39<sup>th</sup> Annual Conference*, May 2004, Calgary, Alberta.

2004. Sauder School of Business Research Excellence Award (junior category), University of British Columbia.

1998. The WCTR-Society Prize for the paper “Optimal Demand for Operating Lease of Aircraft” written by Oum, T.H., A. Zhang and Y. Zhang, awarded to the best paper of the *8<sup>th</sup> World Conference on Transportation Research (WCTR)*, Antwerp, Belgium. (893 papers were presented at this tri-annual conference.)

1998. Merit of Certificate, Excellent Applied Research Award, City University of Hong Kong.

1995. The Yokohama Special Young Prize for an Outstanding Young Researcher, awarded at the *7th World Conference on Transportation Research (WCTR)*, Sydney, Australia.

(b) *Other Awards*

The Izaak W. Killam Pre-doctoral Fellowship, UBC, 1988-1990.

The University of British Columbia Graduate Fellowship (UGF), 1986-1988.

The Canadian International Development Agency (CIDA) Scholarship, 1984-1986.

## **REFEREED PUBLICATIONS**

### **(a) Journals**

Brander, J.A. and A. Zhang (1990), "Market Conduct in the Airline Industry: An Empirical Investigation," RAND Journal of Economics, Vol. 21 (December), pp. 567-583.

[Reprinted in P. Forsyth, K. Button and P. Nijkamp (eds.), Classics in Transport Analysis: Air Transport, 2002, pp. 217-233, Edward Elgar Publishers.]

Zhang, A. (1993), "An Analysis of Common Marketing Agencies," Canadian Journal of Economics, Vol. 26 (February), pp. 134-149.

Oum, T.H., A.J. Taylor and A. Zhang (1993), "Strategic Policy in Globalizing Airline Networks," Transportation Journal, Vol. 32 (April), pp. 14-30.

Oum, T.H., A. Zhang and Y. Zhang (1993), "Inter-Firm Rivalry and Firm-Specific Price Elasticity in Airline Markets," Journal of Transport Economics and Policy, Vol. 27 (May), pp. 171-192.

[Reprinted in T.H. Oum, J.S. Dodgson, D.A. Hensher, S.A. Morrison, C.A. Nash, K.A. Small and W.G. Waters II (eds.), Transport Economics: Selected Readings, 1997, pp. 313-342, Harwood Academic Publishers.]

Zhang, A. and X. Wei (1993), "Competition in Airline Networks: The Case of Constant Elasticity Demands," Economics Letters, Vol. 42 (August), pp. 253-259.

Brander, J.A. and A. Zhang (1993), "Dynamic Oligopoly Behaviour in the Airline Industry," International Journal of Industrial Organization, Vol. 11 (September), pp. 407-435.

Chen, H. and A. Zhang (1994), "Horizontal Mergers and International Trade," System Engineering (Xi-Tong Gong-Cheng), Vol. 3, pp. 25-32. (in Chinese)

Ferguson, D. and A. Zhang (1994), "Strategic Labour Contracts," Canadian Journal of Economics, Vol. 27, pp. 734-751.

Zhang, A. (1994), "Bonus Contracting in Oligopoly," Taiwan Economic Review, Vol. 22, pp. 219-235.

Oum, T.H., A. Zhang and Y. Zhang (1995), "Airline Network Rivalry," Canadian Journal of Economics, Vol. 28, pp. 836-857.

[Reprinted in D.A. Hensher (ed.), Transport Economics (Critical Concepts in Economics), 2012, pp. 432-454, Routledge, London.]

Oum, T.H., J. Park and A. Zhang (1996), "Effects of Airline Code-sharing Agreements on Firm Conduct and Fares," Journal of Transport Economics and Policy, Vol. 30, pp. 187-202.

Oum, T.H., A. Zhang and Y. Zhang (1996), "Optimal Airport Pricing in a Hub-and-Spoke System," Transportation Research, Part B: Methodological, Vol. 30, pp. 11-18.

Zhang, A. (1996), "An Analysis of Fortress Hubs in Network-based Markets," Journal of Transport Economics and Policy, Vol. 30, pp. 293-308.

Zhang, A. and Y. Zhang (1996), "Stability of Nash Equilibrium: The Multi-product Case," Journal of Mathematical Economics, Vol. 26, pp. 441-462.

Zhang, A. and D. Aldridge (1997), "Effects of Mergers and Foreign Alliances: An Event Study," Transportation Research, Part E: Logistics and Transportation Review, Vol. 33, pp. 29-42.

Zhang, A. and Y. Zhang (1997), "Concession Revenue and Optimal Airport Pricing," Transportation Research, Part E: Logistics and Transportation Review, Vol. 33, pp. 287-296.

Zhang, A. (1998), "Industrial Reform and Air Transport Development in China," Journal of Air Transport Management, Vol. 4, pp. 155-164.

[Reprinted in P. Forsyth, K. Button and P. Nijkamp (eds.), Classics in Transport Analysis: Air Transport, 2002, pp. 629-638, Edward Elgar Publishers.]

Park, J. and A. Zhang (1998), "Airline Alliances and Partner Firms' Output," Transportation Research, Part E: Logistics and Transportation Review, Vol. 34, pp. 245-255.

Zhang, A. and Y. Zhang (1998), "Import Protection as Export Promotion under Economies of Scale," Japan and the World Economy, Vol. 10, pp. 199-219.

Oum, T.H., A. Zhang and Y. Zhang (2000), "Optimal Demand for Operating Lease of Aircraft," Transportation Research, Part B: Methodological, Vol. 34, pp. 17-29.

Park, J. and A. Zhang (2000), "An Empirical Analysis of Global Airline Alliances: Cases in North Atlantic Markets," Review of Industrial Organization, Vol. 16, pp. 367-384.

Oum, T.H., A. Zhang and Y. Zhang (2000), "Socially Optimal Capacity and Capital Structure in Oligopoly: The Case of the Airline Industry," Journal of Transport Economics and Policy, Vol.34, pp. 55-68.

[Reprinted in K. Button (ed.), Recent Developments in Transport Economics (The International Library of Critical Writings in Economics Series No. 164), 2003, Edward Elgar.]

Oum, T.H., A. Zhang and Y. Zhang (2000), "Efficiency and Social Value of the Aircraft Leasing Industry," International Journal of Transport Economics, Vol. 27, pp. 131-145.

Zhang, A. and Y. Zhang (2001), "Airport Charges, Economic Growth, and Cost Recovery," Transportation Research, Part E: Logistics and Transportation Review, Vol. 37, pp. 25-33.

Jones, J.C.H., T. Potashnik and A. Zhang (2001), "Patents, Brand-Generic Competition and Pricing of Ethical Drugs in Canada: Empirical Evidence," Applied Economics, Vol. 33, pp. 947-956.

Oum, T.H., C. Yu and A. Zhang (2001), "Global Airline Alliances: International Regulatory Issues," Journal of Air Transport Management, Vol. 7 (1), pp. 57-62.

Zhang, A. and Y. Zhang (2001), "Airport Charges and Cost Recovery: The Long-run View," Journal of Air Transport Management, Vol. 7 (1), pp. 75-78.

- Park, J., A. Zhang and Y. Zhang (2001), "Analytical Models of International Alliances in the Airline Industry," Transportation Research, Part B: Methodological, Vol. 35, pp. 865-886.
- Zhang, A., Y. Zhang and R. Zhao (2001), "Impact of Ownership and Competition on the Productivity of Chinese Enterprises," Journal of Comparative Economics, Vol. 29, pp. 327-346.
- Oum, T.H. and A. Zhang (2001), "Global Strategic Alliances and the Impacts on the Canadian Airline Industry," Journal of Air Transport Management, Vol. 7, pp. 287-301.
- Zhang, A. and H. Chen (2002), "Horizontal Mergers in a Liberalizing World Economy," Pacific Economic Review, Vol. 7 (2), pp. 359-376.
- Zhang, A. and Y. Zhang (2002), "Issues on Liberalization of Air Cargo Services in International Aviation," Journal of Air Transport Management, Vol. 8, 275-287.
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- Zhang, A. and Y. Zhang (2002), "A Model of Air Cargo Liberalization: Passenger vs. All-cargo Carriers," Transportation Research, Part E: Logistics and Transportation Review, Vol. 38, pp. 175-191.
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- Park, J., N. Park and A. Zhang (2003), "The Impact of International Alliances on Rival Firm Value: A Study of the British Airways/USAir Alliance," Transportation Research, Part E: Logistics and Transportation Review, Vol. 39, No. 1, pp. 1-18.
- Zhang, A. (2003), "Analysis of an International Air Cargo Hub: The Case of Hong Kong," Journal of Air Transport Management, Vol. 9, pp. 123-138.
- Zhang, A. and H. Chen (2003), "Evolution of China's Air Transport Development and Policy towards International Liberalization," Transportation Journal, Vol. 42, pp. 31-49.
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- Li, J., Q. Sun and A. Zhang (2004), "State-owned Enterprise Reform in Transition Economy: A Theoretical Analysis," Economic Research Journal (Jing-ji Yan-jiu), Vol. 39, No. 1, pp. 64-73. (in Chinese)
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- Airports,” Journal of Transport Economics and Policy, Vol. 38, pp. 217-246.
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- Sun, Q., A. Zhang and J. Li (2005), “A Study of Optimal State-owned Shares in Mixed Oligopoly: Implications for SOE Reform,” China Economic Review, Vol. 16, pp. 1-27.
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- Fung, M., A. Zhang, L. Leung and J. Law (2005), “The Air Cargo Industry in China: Implications of Globalization and WTO Accession,” Transportation Journal, Vol. 44, No. 4, pp. 44-62.
- Wong, C., J. Wu and A. Zhang (2006), “A Model of Liberalization of Trade in Services,” Review of International Economics, Vol. 14, pp. 148-168.
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- Zhang, A., S. Hanaoka, H. Inamura and T. Ishikura (2008), “Low Cost Carriers in Asia: Deregulation, Regional Liberalization and Secondary Airports,” Research in Transportation Economics, Vol. 24, pp. 36-50.  
[Reprinted in L. Budd and S. Ison (eds.), Low Cost Carriers: Emergence, Expansion and Evaluation, pp. 55-69, 2014, Ashgate.]
- Park, Y., J.K. Choi and A. Zhang (2009), “Evaluating Competitiveness of Air Cargo Express Services,” Transportation Research, Part E: Logistics and Transportation Review, Vol. 45, pp. 321-334.
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Airline Markets,” Canadian Journal of Economics, Vol. 42, pp. 440-468.

Yuen, A. and A. Zhang (2009), “Effects of Competition and Policy Changes on Chinese Airport Productivity: An Empirical Investigation,” Journal of Air Transport Management, Vol. 15, pp. 166-174.

Wong, W., A. Zhang, YV Hui and L. Leung (2009), “Optimal Baggage Limit Policy: Airline Passenger and Cargo Allocation,” Transportation Science, Vol. 43, No. 3, pp. 355-369.

Hong, S. and A. Zhang (2010), “An Efficiency Study of Airlines and Air Cargo/Passenger Divisions: A DEA Approach,” World Review of Intermodal Transportation Research, Vol. 3, pp. 137-149.

Fu, X. and A. Zhang (2010), “Effects of Airport Concession Revenue Sharing on Competition and Social Welfare,” Journal of Transport Economics and Policy, Vol. 44, Part 2, pp. 119-138.

Basso, L. and A. Zhang (2010), “Pricing vs. Slot Policies When Airport Profits Matter,” Transportation Research, Part B: Methodological, Vol. 44, pp. 381-391.

Zhang, A and Y. Zhang (2010), “Airport Capacity and Congestion Pricing with both Aeronautical and Commercial Operations,” Transportation Research, Part B: Methodological, Vol. 44, pp. 404-413.

Ha, H., Y. Yoshida and A. Zhang (2010), “Comparative Analysis of Efficiency for Major Northeast Asian Airports,” Transportation Journal, Vol. 49 (4), pp. 9-23.

Fu, X., T.H. Oum and A. Zhang (2010), “Air Transport Liberalization and its Impacts on Airline Competition and Air Passenger Traffic,” Transportation Journal, Vol. 49 (4), pp.24-41.

Zhang, A., X. Fu and H. Yang (2010), “Revenue Sharing with Multiple Airlines and Airports”, Transportation Research, Part B: Methodological, Vol. 44, pp. 944-959.

Brueckner, J.K. and A. Zhang (2010), “Airline Emission Charges: Effects on Airfares, Service Quality, and Aircraft Design,” Transportation Research, Part B: Methodological, Vol. 44, pp. 960-971.

Yuen, A. and A. Zhang (2011), “Airport Congestion Pricing and its Welfare Implications: The Case of Variable Passenger Time Costs,” Pacific Economic Review, Vol. 16, pp. 83-102.

Czerny, A.I. and A. Zhang (2011), “Airport Congestion Pricing and Passenger Types,” Transportation Research, Part B: Methodological, Vol. 45, pp. 595-604.

Yang, H. and A. Zhang (2011), “Price-cap Regulation of Congested Airports,” Journal of Regulatory Economics, Vol. 39, pp. 293-312.

Yuen, A. and A. Zhang (2011), “Unilateral Regulation and Greenhouse Gas Emissions: The Case of the Airline Industry,” Transportation Research, Part D: Transport and Environment, Vol. 16, pp. 540-546.

Ha, H.K., Y. Yoshida and A. Zhang (2011), “Social Efficiency Benchmarking of Japanese Domestic Transport Services: A Comparison of Rail and Air,” Transportation Research, Part D: Transport and Environment, Vol. 16, pp. 554-561.

Yang, H. and A. Zhang (2012), “Impact of Regulation on Transport Infrastructure Capacity and Service Quality,” Journal of Transport Economics and Policy, Vol. 46, pp. 415-430.

Fu, X., A. Zhang and Z. Lei (2012), “Will China’s Airline Industry Survive the Entry of High Speed Rail?” Research in Transportation Economics, Vol. 35, pp. 13-25.

Yuen, A., A. Zhang and W. Cheung (2012), “Port Competitiveness from the Users’ Perspective: An Analysis of Major Container Ports in China and its Neighboring Countries,” Research in Transportation Economics, Vol. 35, pp. 34-40.



- Bilotkach, V., J.A. Clougherty, J. Mueller and A. Zhang (2012), "Regulation, Privatization, and Aeronautical Charges: Panel Data Evidence from European Airports," Journal of Regulatory Economics, Vol. 42, pp. 73-94.
- Wan, Y. and A. Zhang (2012), "Impacts of Emission Trading Schemes on Airline Network Structure," Review of Transport Economics and Logistics, Vol. 3, pp. 42-61.
- Yang, H. and A. Zhang (2012), "Effects of High-speed Rail and Air Transport Competition on Prices, Profits and Welfare," Transportation Research, Part B: Methodological, Vol. 46, pp. 1322-1333.
- Zhang, A. and A.I. Czerny (2012), "Airports and Airlines Economics and Policy: An Interpretive Review of Recent Research," Economics of Transportation, Vol. 1, pp. 15-34.
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- Wan, Y., A. Zhang and A. Yuen (2013), "Urban Road Congestion, Capacity Expansion and Port Competition: Empirical Analysis of U.S. Container Ports," Maritime Policy & Management, Vol. 40, pp. 417-438.
- Bae, M.J., E.P. Chew, L.H. Lee and A. Zhang (2013), "Container Transshipment and Port Competition," Maritime Policy & Management, Vol. 40, pp. 479-494.
- Ha, H.-K., Y. Wan, Y. Yoshida and A. Zhang (2013), "Airline Market Structure and Airport Efficiency: Evidence from Northeast Asian Airports," Journal of Air Transport Management, Vol. 33, pp. 32-42.
- Xiao, Y., X. Fu and A. Zhang (2013), "Demand Uncertainty and Airport Capacity Choice," Transportation Research, Part B: Methodological, Vol. 57, pp. 91-104.
- Yang, S., C. Lee and A. Zhang (2013), "An Inventory Model for Perishable Products with Stock-Dependent Demand and Trade Credit under Inflation," Mathematical Problems in Engineering, Vol. 2013, Article ID 702939, 8 pages.
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- Chen, H., Q. Qian and A. Zhang (2015), "Would allowing privately funded health service reduce public waiting times? – Theory and empirical evidence from Canadian joint replacement surgery data," Production and Operations Management, 24 (4), 605-618.
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- Noruzoliaee, M., B. Zou and A. Zhang (2015), "Airport partial and full privatization in a multi-airport region: Focus on pricing and capacity," Transportation Research, Part E: Logistics and Transportation Review, 77, 45-60.
- Czerny, A.I. and A. Zhang (2015), "Third-degree price discrimination in the presence of congestion externality," Canadian Journal of Economics, 48 (4), 1430-1455.
- Hu, Q. and A. Zhang (2015), "Real option analysis of aircraft acquisition: A case study," Journal of Air Transport Management, 46, 19-29.
- Yang, H., A. Zhang and X. Fu (2015), "Determinants of airport-airline vertical arrangements: Analytical results and empirical evidence," Journal of Transport Economics and Policy, 49 (3), 438-453.
- Xiao, Y., X. Fu, A. Ng and A. Zhang (2015), "Port investments on coastal and marine disasters prevention: Economic modeling and implications," Transportation Research Part B: Methodological, 78, 202-221.
- Lo, W., Y. Wan and A. Zhang (2015), "Empirical estimation of price and income elasticities of air cargo demand: The case of Hong Kong," Transportation Research, Part A: Policy and Practice, 78, 309-324.
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