

*The Hong Kong Polytechnic University*  
*Department of Logistics and Maritime Studies*  
*Research Seminar*

## **Investment Competition on Dedicated Terminals under Demand Ambiguity**

by

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**Time: 10:30am - 11:30am**  
**Venue: M802, Li Ka Shing Tower**  
**The Hong Kong Polytechnic University**

**(Conducted in English)**

### **Abstract:**

This paper investigates two competing shipping lines' timing decisions for their dedicated terminal (DT) investments in the presence of demand ambiguity. We establish real option game models and find that if the shipping lines are symmetric, their DT investment game could reach sequential investment equilibrium, where the leader makes a preemptive investment while the follower's investment timing makes his expected present value of the future profit increment exceeds his investment cost by the option value multiplier. In addition, we compare the shipping lines' DT investment timing with the social optimum. The results indicate that if the investment cost is not very low, the follower's DT investment could be later than the social optimum, when the competition between the shipping lines is low or the charge of the public terminal is low. The inconsistency between the social optimum and the shipping lines' preferred timing makes the government's regulation necessary. We also explore the regulation rules to use the subsidy to align the shipping lines' DT investment timing to the social optimum, when the government knows and does not know the shipping lines' ambiguity levels.

### **Bio:**

Shiyuan Zheng is a professor in Transportation School at Shanghai Maritime University. He got his PhD degree in management science and engineering from Shanghai Jiaotong University in 2008. His research interests include transportation investment under uncertainty, transportation governance under incomplete information, port competition and cooperation. He has published several papers in the journals including *Transportation Research B, Part D, Part E, Maritime Policy and Management, Maritime Economics and Logistics*, and *International Journal of Production Economics*.

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**All are welcome!**