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**Cross-Border Mergers and Acquisitions Within
APEC and Their Implications for Exports, Greenfield
FDI, and GDP - Presentation**

Submitted by: Hong Kong, China



**Capacity Building for Sharing Success Factors
for Improvement of Investment Environment**

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Investment Environment
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Cross-border Mergers and Acquisitions within
APEC and Their Implications for Exports,
Greenfield FDI, and GDP

Authors: Zhigang LI and Larry D QIU, University of Hong Kong

Presented by Larry D QIU, University of Hong Kong and
Elley Mao, Hong Kong China (HKC) Government

Cross-border M&As in APEC

- Introduction
- Objectives
- Interesting Patterns
- Empirical results
- Policy implications
- Conclusion

Introduction

- Globalization shortens distance (intensified utilization of IT helps minimize physical barriers)
- Globalization drives international flows
 - goods) foreign exchanges
 - capital) # fixed assets
 - knowledge) # human capital
- Motivates economic integration at regional/global level

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Means to economic integration

- Breakdown trade barriers (tariffs and non-tariffs) to facilitate flows in goods and services
- Breakdown investment barriers to facilitate flows in capital
 - # greenfield FDI) Fixed assets) Knowledge, technology, skills,
 - # Cross-border M&As) human capital) management, institutions (corporate culture, governance and transparency)

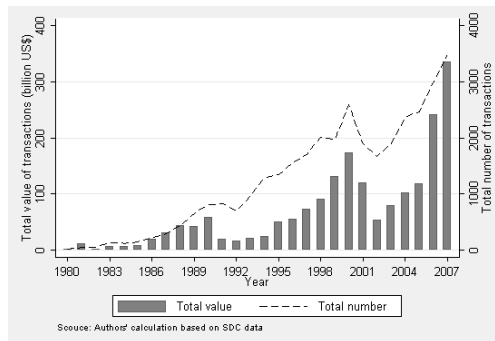
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Objectives

- Examine the patterns of cross-border M&As within APEC;
- Explore the determinants of cross-border M&As;
- Analyze the impacts of cross-border M&As on international trade, greenfield FDI, and GDP;
- Discuss the possible policy implications based on observations of M&A patterns and empirical analysis.

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Patterns of cross-border M&As within APEC



- Rapidly rising Cross-border M&As within APEC.

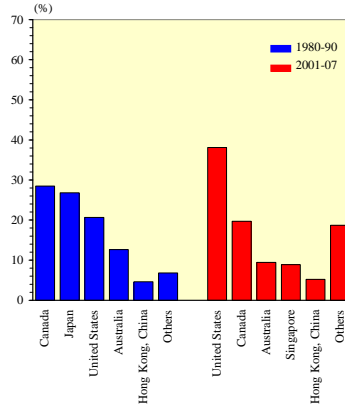
	<u>1980</u>	<u>2007</u>	<u>Growth rate p.a.</u>
Value	US\$1.75 bn	US\$335.6 bn	21.5%
No.	8	3,493	25.3%

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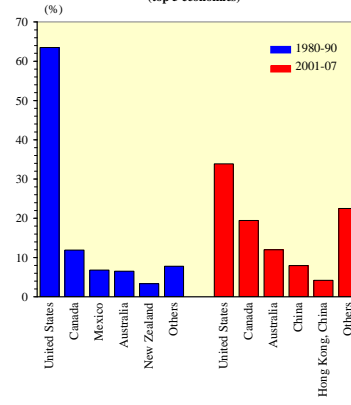
Patterns of Cross-border M&As within APEC (cont'd)

- Broader spread of acquirer and target economies over time

Shares of cross-border M&As in transaction value - acquiring (top 5 economies)



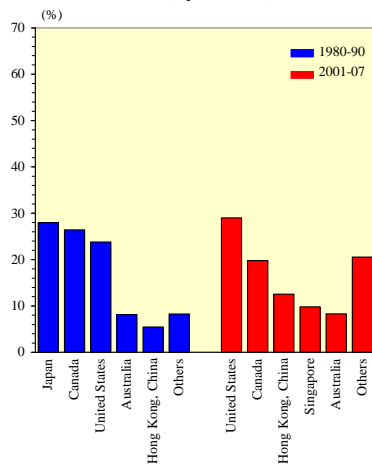
Shares of cross-border M&As in transaction value - target (top 5 economies)



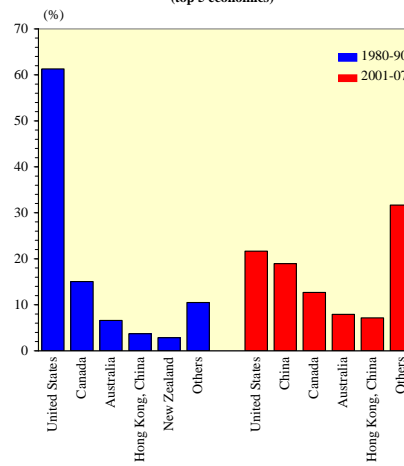
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Patterns of Cross-border M&As within APEC (cont'd)

Shares of cross-border M&As in transaction number - acquiring (top 5 economies)



Shares of cross-border M&As in transaction number - target (top 5 economies)



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Patterns of Cross-border M&As within APEC (cont'd)

- There are more cross-border intra-industry M&As in APEC than inter-industry M&As

Inter vs. intra industry shares in total cross-border transactions (% , 1980-2007)

	Target Industry									Total	
	0	1	2	3	4	5	6	7	8		
Acquiring Industry	0	0.05	0.03	0.14	0.01	0.00	0.05	0.01	0.00	0.00	0.29
	1	0.00	9.30	0.66	0.32	0.90	0.06	0.26	0.06	0.00	11.55
	2	0.39	1.09	7.75	0.55	1.65	0.35	0.26	0.75	0.00	12.80
	3	0.01	0.96	0.55	13.24	0.27	0.29	0.31	1.66	0.01	16.31
	4	0.02	0.34	0.18	0.16	11.12	0.05	0.12	0.71	0.03	12.73
	5	0.03	0.29	0.28	0.21	0.08	1.47	0.14	0.16	0.00	2.68
	6	0.20	1.38	3.61	2.79	6.31	2.79	17.85	2.63	0.00	37.56
	7	0.00	0.02	0.53	0.31	0.24	0.14	0.31	3.36	0.00	4.92
	8	0.00	0.05	0.10	0.13	0.04	0.02	0.26	0.54	0.00	1.12
	9	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.05
Total	0.71	13.47	13.80	16.71	20.63	5.21	19.53	9.89	0.05	100.00	

- cross-border vertical integration (supply chain)
- cross-border horizontal integration (scale economies)

Notes: 0 – Agriculture; 1 – Mining and construction; 2 – Light manufacturing; 3 – Heavy manufacturing; 4 – Utilities and transportation; 5 – Wholesale and retail; 6 – Finance and insurance; 7 – Services other than finance and insurance; 8 – Public administration.

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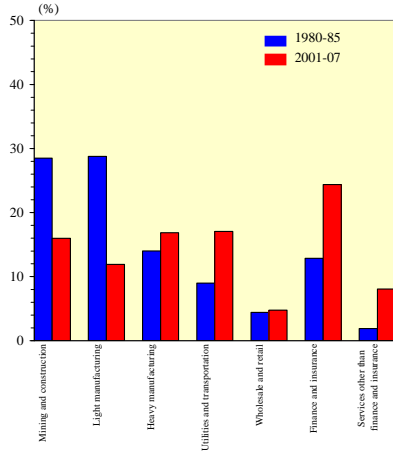
Patterns of Cross-border M&As within APEC (cont'd)

- Finance and insurance shows rising significance both as acquiring and target industry.
- Utilities and transportation is the heavy target.
 - ▣ The largest inter-industries acquirer is finance and insurance.

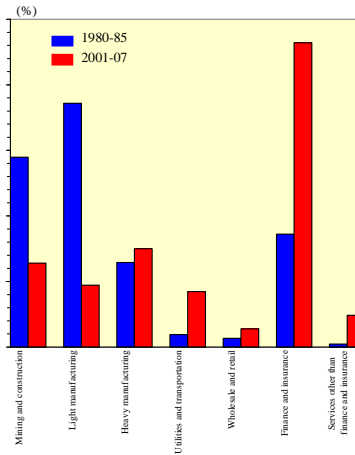
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Patterns of Cross-border M&As within APEC (cont'd)

Shares of different industries - acquiring



Shares of different industries - target

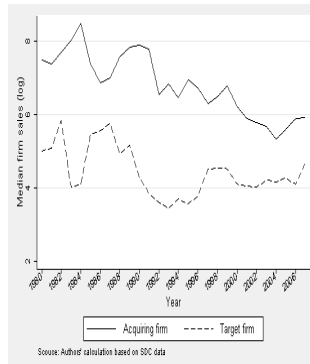


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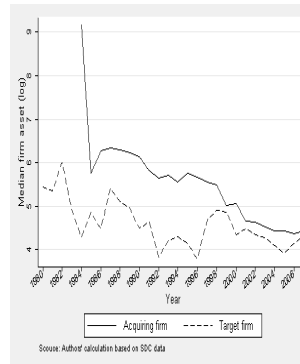
Patterns of Cross-border M&As within APEC (cont'd)

- Reducing barriers to cross-border M&As within APEC over time.

Acquiring and target firms' sales revenue



Acquiring and target firms' asset (median)



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Empirical Analysis

General approach

- Use gravity model
 - Distance, GDP, other control variables
- Commonly used in international trade and FDI research
 - Fits data well
- New in this study
 - Include cross-border M&As
 - OLS vs. Fixed effect approach

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Empirical Analysis (cont'd)

Model Structure

(i) M&A model

$$\begin{aligned} \ln(MA_{ijt}) = & \beta_0 + \beta_1 \ln(EX_{ijt-1}) + \beta_2 \ln(IM_{ijt-1}) + \beta_3 \ln(Stock_{ijt}) + \beta_4 \ln(GDP_{it}) \\ & + \beta_5 \ln(GDP_{jt}) + \beta_6 \ln(GDPgrowth_{it}) + \beta_7 \ln(GDPgrowth_{jt}) + \beta_8 \ln(GDPgap_{ijt}) \\ & + \beta_9 \ln(GDPgap_{jit}) + \beta_{10} \ln(ER_{it}) + \beta_{11} \ln(ER_{jt}) + \beta_{12} \ln(Dist_{ij}) + \beta_{13} Border_{ij} \\ & + \beta_{14} Lang_{ij} + \sum_{1981}^{2004} \beta_{15,s} Y_s + \sum_1^3 \beta_{16,k} Continent_i + \sum_1^3 \beta_{17,k} Continent_j + \beta_{18} RTA_{ijt} + \beta_{19} WTO_{it} \\ & + \beta_{20} WTO_{jt} + \xi_{ijt} \end{aligned}$$

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Empirical Analysis (cont'd)

Regression Results of the M&A Model

Independent Variables	OLS Results	Independent Variables	OLS Results
EX _{ijt-1}	0.076 (0.031)**	ER _{it}	-0.039 (0.373)
IM _{ijt-1}	-0.063 (0.029)**	ER _{jt}	-0.477 (0.369)
Stock _{ijt}	0.402 (0.025)***	Dist _{ij}	-0.205 (0.037)***
GDP _{it}	0.175 (0.026)***	Border _{ij}	0.360 (0.101)***
GDP _{jt}	0.100 (0.026)***	Lang _{ij}	0.128 (0.054)**
GDPgrowth _{it}	0.107 (0.119)	RTA _{ijt}	0.021 (0.080)
GDPgrowth _{jt}	0.128 (0.146)	WTO _{it}	-0.037 (0.084)
GDPgap _{ijt}	-0.289 (0.050)***	WTO _{jt}	-0.200 (0.102)**
GDPgap _{jit}	-0.018 (0.035)		
Observations	1172	R-squared	0.67

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Empirical Analysis (cont'd)

(ii) The trade model

$$\begin{aligned}
 \ln(EX_{ijt}) = & \beta_0 + \beta_1 \ln(MA_{ijt-1}) + \beta_2 \ln(MA_{jit-1}) + \beta_3 \ln(EX_{ijt-1}) + \beta_4 \ln(GDP_{it}) \\
 & + \beta_5 \ln(GDP_{jt}) + \beta_6 \ln(GDPgrowth_{it}) + \beta_7 \ln(GDPgrowth_{jt}) + \beta_8 \ln(GDPgap_{ijt}) \\
 & + \beta_9 \ln(GDPgap_{jit}) + \beta_{10} \ln(ER_{it}) + \beta_{11} \ln(ER_{jt}) + \beta_{12} \ln(Dist_{ij}) + \beta_{13} Border_{ij} \\
 & + \beta_{14} Lang_{ij} + \beta_{15} RTA_{ijt} + \sum_{i=1981}^{2004} \beta_{16,i} Y_i + \sum_{i=1}^3 \beta_{17,k} Continent_i + \sum_{i=1}^3 \beta_{18,k} Continent_j + \beta_{19} WTO_{it} \\
 & + \beta_{20} WTO_{jt} + \xi_{ijt}.
 \end{aligned}$$

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Empirical Analysis (cont'd)

Regression Results of the Trade Model

Independent Variables	OLS Results	Independent Variables	OLS Results
MA _{ijt-1}	0.263 (0.040)***	ER _{it}	0.395 (0.879)
MA _{jit-1}	0.130 (0.038)***	ER _{jt}	-0.867 (0.764)
GDP _{it}	0.439 (0.039)***	Dist _{ij}	-0.068 (0.055)
GDP _{jt}	0.452 (0.041)***	Border _{ij}	1.405 (0.205)***
GDPgrowth _{it}	0.669 (0.252)***	Lang _{ij}	0.113 (0.086)
GDPgrowth _{jt}	0.109 (0.262)	RTA _{ijt}	-0.462 (0.206)**
GDPgap _{ijt}	-0.347 (0.096)***	WTO _{it}	0.462 (0.135)***
GDPgap _{jit}	-0.515 (0.095)***	WTO _{jt}	0.550 (0.167)***
Observations	661	R-squared	0.82

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Empirical Analysis (cont'd)

(iii) The greenfield FDI model

$$\begin{aligned}
 \ln(FDI_{ijt}) = & \beta_0 + \beta_1 \ln(MA_{ijt-1}) + \beta_2 \ln(MA_{jit-1}) + \beta_3 \ln(GDP_{it}) \\
 & + \beta_4 \ln(GDP_{jt}) + \beta_5 \ln(GDPgrowth_{it}) + \beta_6 \ln(GDPgrowth_{jt}) + \beta_7 \ln(GDPgap_{ijt}) \\
 & + \beta_8 \ln(GDPgap_{jit}) + \beta_9 \ln(ER_{it}) + \beta_{10} \ln(ER_{jt}) + \beta_{11} \ln(Dist_{ij}) + \beta_{12} Border_{ij} \\
 & + \beta_{13} Lang_{ij} + \sum_{1981}^{2004} \beta_{14,i} Y_i + \sum_{1}^3 \beta_{15,k} Continent_i + \sum_{1}^3 \beta_{16,k} Continent_j + \beta_{17} RTA_{it} + \beta_{17} WTO_{it} \\
 & + \beta_{18} WTO_{jt} + \xi_{ijt}
 \end{aligned}$$

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Empirical Analysis (cont'd)

Regression Results of the FDI Model

Independent Variables	Fixed-Effect Results	Independent Variables	Fixed-Effect Results
MA _{ijt-1}	0.321 (0.125)**	GDPgap _{ijt}	-3.277 (2.285)
MA _{ijt-1}	-0.058 (0.151)	GDPgap _{ijt}	3.037 (3.324)
GDP _{it}	7.802 (2.854)***	ER _{it}	0.280 (1.519)
GDP _{jt}	-2.174 (2.182)	ER _{jt}	-3.005 (1.488)**
GDPgrowth _{it}	2.455 (1.354)*	RTA _{ijt}	-0.363 (0.477)
GDPgrowth _{jt}	-0.752 (0.697)	WTO _{it}	0.491 (0.449)
Observations	203	R-squared	0.45

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Empirical Analysis (cont'd)

(iv) The GDP model

$$\ln(GDP_{it}) = \beta_0 + \beta_1 \ln(MA_{it}) + \beta_2 \ln(Trade_{it}) + \beta_3 \ln(Pop_{it}) + \beta_4 \ln(Area_{it}) + \xi_{ijt},$$

Predicted value of trade and M&As

$$\begin{aligned} \ln(\tau_{ij}) = & \beta_0 + \beta_1 \ln(Dist_{ij}) + \beta_2 \ln(Pop_{it}) + \beta_3 \ln(Area_{it}) \\ & + \beta_4 \ln(Pop_{jt}) + \beta_5 \ln(Area_{jt}) + \beta_6(L_i + L_j) + \beta_7 B_{ij} \\ & + \beta_8 B_{ij} \ln(Dist_{ij}) + \beta_9 B_{ij} \ln(Pop_{it}) + \beta_{10} B_{ij} \ln(Area_{it}) + \beta_{11} B_{ij} \ln(Pop_{jt}) + \beta_{12} B_{ij} \ln(Area_{jt}) \\ & + \beta_{13} B_{ij} (L_i + L_j) + \xi_{ij}, \end{aligned}$$

$$\begin{aligned} \ln(MA_{ijt}) = & \theta_0 + \theta_1 \ln(Dist_{ij}) + \theta_2 \ln(Pop_{it}) + \theta_3 \ln(Area_{it}) \\ & + \theta_4 \ln(Pop_{jt}) + \theta_5 \ln(Area_{jt}) + \theta_6(L_i + L_j) + \theta_7 B_{ij} \\ & + \theta_8 B_{ij} \ln(Dist_{ij}) + \theta_9 B_{ij} \ln(Pop_{it}) + \theta_{10} B_{ij} \ln(Area_{it}) + \theta_{11} B_{ij} \ln(Pop_{jt}) + \theta_{12} B_{ij} \ln(Area_{jt}) \\ & + \theta_{13} B_{ij} (L_i + L_j) + \xi_{ij}, \end{aligned}$$

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Empirical Analysis (cont'd)

Regression Results of the GDP Model

Methods	OLS Results	Fixed-effect Results
Predicted Trade	-0.031 (0.028)	1.264 (0.103)***
Predicted M&A	0.399 (0.019)***	0.083 (0.013)***
Population	-0.231 (0.028)***	-0.118 (0.213)
Area	-0.063 (0.012)***	
Observations	278	278
Number of Group		18
R-squared	0.76	0.84

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Empirical Analysis (cont'd)

Interest findings

- Complementarities between exports and GDP with cross-border M&As
 - More exports lead to more acquisitions (acquirer to target)
 - Higher GDP lead to more cross-border M&As (acquirer and target)
- Complementarities between cross-border M&As and GDP with trade
 - More cross-border M&As lead to more trade (acquirer and target)
 - Higher GDP lead to more trade (acquirer and target)
 - More cross-border M&As lead to higher GDP (acquirer and target)
 - More trade leads to larger GDP (acquirer and target)
- Greenfield FDI and cross-border M&As are substitutes
 - More cross-border M&As lead to less greenfield FDI.

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Empirical Analysis (cont'd)

- Weak relations of GDP gap with cross-border M&As and greenfield FDI
 - Larger GDP gap will not induce more capital flow through M&As and FDI
- Weak relations of Exchange Rate with cross-border M&As, greenfield FDI and trade
 - Exchange rate depreciation unlikely to entice more trade/FDI/cross-border M&As

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Policy implications

- Minimize barriers to cross-border M&As
- Facilitate cross-border human resources flows
- Liberalize trade further.
- Include more cross-border M&A policy elements in the regional facilitation/integration agreements (such as RTA and WTO).
- Drive economic integration at the regional level.

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The End

hkuzli@hku.hk
emao@fso.gov.hk
larryqiu@hkucc.hku.hk