

# ACES 2006 CONFERENCE

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CSES, Victoria University, Melbourne  
Australia

## Who Gains and Who Loses from an Australia-China Free Trade Agreement?

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## MOTIVATION 1: WTO & FTA ALTERNATIVES

I. **WTO (GATT, GATS) – even Doha Lite**  
On the verge of collapsing (Pascal Lamy)?

I. **Emerging: Regional Trade Agreements**

- NAR and FTA: accepted exceptions under Articles XIV of GATT and V of GATS
- Cover Investment (outside-WTO scope)

Examples:

AFTA, NAFTA, ASEAN+3, ASFTA, ATHFTA,  
Proposed ACFTA & AJPFTA

## MOTIVATION 2 : WHY & WHAT GAINS FROM WTO & FTAS?

III. **Why FTAs?**

- 1 Slow WTO negotiations even as at 2006
- 2 Strong Recovery in Asia after 1997 despite a sick Japan over a decade
- 3 Benign neglect from North America and EU due to minor contagion

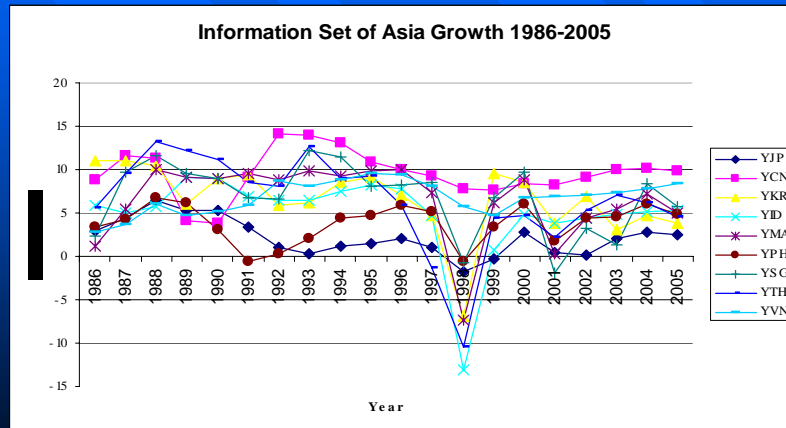
IV. **When? 1940s and Early 2000s**

V. **What Impact Empirically?**

Perceived/Validated

National Benefits and Sectoral Losses

### **MOTIVATION 3: ROLES OF POLICY CHANGE, REGIONAL & GLOBAL SHOCKS IN TRADE/GROWTH**



### **HOW TO INCORPORATE POLICY CHANGE, REGIONAL & GLOBAL SHOCKS IN TRADE/GROWTH ANALYSIS**

#### ■ **UNIT ROOT CHARACTERISATION**

- Definition (qualitative-binary-ternary/quantitative)
- Taxonomy and Characteristics (SL & LT)
- Econometric Implications & Support
- Credible Policy Implementation
- Do They Really Matter in Practice?
- Empirical Validation

## **MOTIVATION 4: EXISTING TOOLS ARE INADEQUATE**

### **VI. Tools (Methodologies) to Measure Impact**

- 1 Talkfest (ministerial and senior official meetings)
- 2 Graphical and Descriptive Analysis (WTO, ADB, WB)
- 3 Quantitative Approaches (CGE, Macro, Partial)
- 4 Policy-Compliant Research (commissioned)
- 5 Research-Based Policy Analysis (independent)
- 6 **Core Need:** Historical Realism and Valid Projections

### **EXISTING QUANTITATIVE APPROACHES: MAJOR FEATURES and LIMITATIONS**

- Time Series (No Economic Theory)
- Regression Models (Spurious, lacks ST/LT Causality)
- Macroeconomic Models
- CGE/GTAP Models (Highly Calibrated,  
– For old & even new trade theories)
- Gravity Theory (Cross Section)
- Panel Regression (No Simultaneity)

## **MOTIVATION 5: A NEW MODELLING APPROACH**

### **VII. Quantitative Approach: New Measuring Tool (Methodology)**

**Introducing  
The Generalised Gravity Theory  
(TVH 2002)**

## **A GGT TRADE-GROWTH MODEL 1**

### **■ The Generalised Gravity Theory: Function-Free Multi-Equation Structure**

- $Y = Y(T, X)$                       **Implicit Arbitrary Function**
- $T = T(Y, S, X, Z)$                 **Implicit Arbitrary Function**

**where**     $Y$ =GDP  
           $T$ =Trade in goods, services, FDI  
           $X$ =Other economic factors  
           $Z$ =Gravity & non-economic factors  
           $S$ =Shocks, policy reforms etc

## GGT MODELLING FEATURES

- 1 Specifying No Specific Functional Form
- 2 Macro & Micro (Disaggregated) Mixture
- 3 Data-Consistent & Non-Calibrated
- 4 Allowing Circular Causality
- 5 Gravity Factors
- 6 Stochastic Structural & Policy Equations
- 7 Time Domain

## A GGT TRADE-GROWTH MODEL 2: Mathematical Derivation

- **Using Planar Taylor Series Expansion**
- $dY = (\partial Y/\partial T) dT + (\partial Y/\partial X) dX + \text{Higher Order}$
- $dY/Y = T (\partial Y/\partial T) (dT/T) / Y + X (\partial Y/\partial X) (dX/X) / Y$   
 $= [(\partial Y/Y) / (\partial T/T)] (dT/T) + [(\partial Y/Y) / (\partial X/X)] (dX/X)$
- $= E1 (dT/T) + E2 (dX/X), \text{ or}$
- $Y\% = E1 T\% + E2 X\% + U \text{ (stochastic).}$

E1=Elasticity of Y on T, etc. And, similarly for Function of T.

## **Applications:** **China-World and Australia-China FTA Issues**

- China & WTO Membership (since 2001)
- China Economic Performance (since 1980s)
- China & Its Trading Partners
- Causes of China Growth
- Causes of China Trade
- Impact of Reform & Global Shocks on China
- Australia-China FTA: **Prospects and Challenges**

## **ECONOMIC AND TRADE DATA SETS**

- FRANCE CEPII CHELEM
- UNCTAD
- OECD
- WORLD BANK WORLD TABLES
- ICSEAD
- AUSSTATS
- DFAT

## FACTS AND FIGURES 1



## DOES CHINA TRADE GAIN FROM WTO? SIMPLE CHOW TESTS

$$LTY = A_1 + A_2 LGDP + A_3 LTY(-1) + U$$

where  $LTY = [\text{LOG}(X+IM)/GDP]$

■  $LGDP = \text{LOG}(GDP)$

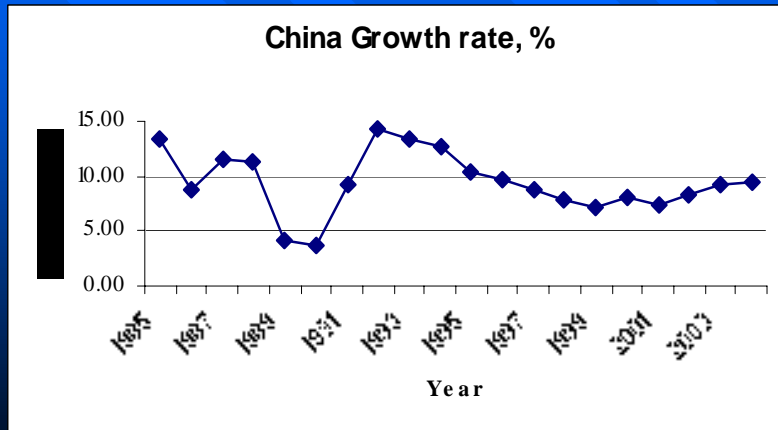
■ For 1986-2000 ( $R-SQ=0.90$ )

■  $\text{Chow} = 1.14$

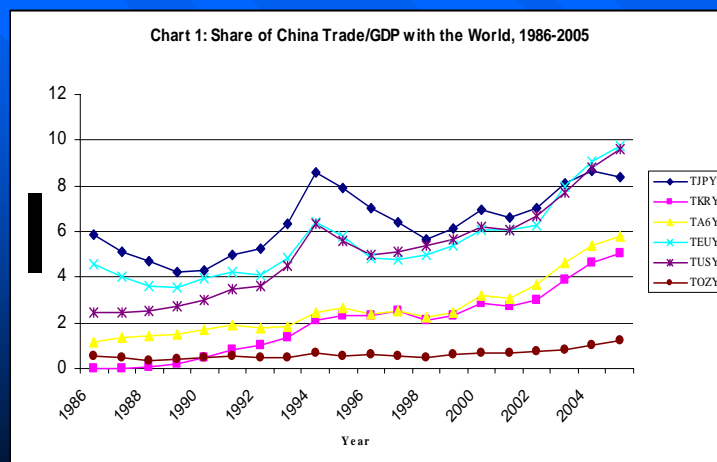
■ For 1986-2004 ( $R-SQ=0.92$ )

■  $\text{Chow} = 5.30^{**}$

## FACTS AND FIGURES 2



## FACTS AND FIGURES 3



## **CAUSALITY ISSUES FROM FACTS AND FIGURES**

- 1 Does Trade Cause Development and Growth?
- 2 What Causes Trade?
- 3 What Are Major Trade Components?
- 4 Endogenous and Exogenous Causality of Trade
  - WTO and FTA Scope
  - Any Credible Empirical Support for ACFTA?

## **SUBSTANTIVE GGT FINDINGS**

- **China and Its Major Trading Blocs: ASEAN, Japan, US and EU**
  - Impact of Trade, Services, FDI, Policy Change and Global Shocks **on China Growth**
- **China and Australia (ACFTA Outcomes)**
  - Impact of Trade, Services, FDI, Policy Change and Global Shocks **on China/Australia Growth**

## CHINA: IMPACT OF TRADE ON GROWTH

Variables	China-ASEAN			China-Japan			China-US		
	OLS	2SLS	2SMM	OLS	2SLS	2SMM	OLS	2SLS	2SMM
Constant	10.71**	10.34**	8.78**	11.02**	10.97**	9.17**	10.87**	10.93**	9.71**
Openness/GDP	0.02	0.02	0.02	0.01	0.03	0.03	0.02	0.03	0.02
Services/GDP	0.001	0.003	0.002	0.001	0.003*	0.003*	0.002	0.001	0.001
FDI/GDP	0.03**	0.04**	0.03**	0.03**	0.03**	0.03**	0.03**	0.03**	0.03**
China Turmoil 89	-6.87**	-6.56**	-5.67**	-6.97**	-6.74**	-5.64**	-7.09**	-7.19**	-6.38**
Gulf War 91	6.05**	5.90**	5.00**	5.79**	5.29**	4.43**	6.06**	6.15**	5.46**
China Reform 93	-0.03	-0.62	-0.53	0.02	-0.58	-0.49	0.07	0.05	0.04
Asia Crisis 97	-1.39	-0.61	-0.52	-1.28	-0.30**	-0.25	-1.32	-1.53	-1.36
WTO Membership	0.81	0.69	0.59	0.81	0.64	0.53	0.81	0.81	0.72
R <sup>2</sup>	0.92	0.89	0.94#	0.92	0.88	0.94#	0.92	0.2	0.96
F	12.60**	4.25**	9.16**	12.24**	4.41**	8.41**	12.74**	8.58**	12.45**
DW	2.71	2.65	0.63&	2.72	2.57	0.58&	2.78	2.78	0.87&

## CHINA: IMPACT OF TRADE ON GROWTH

Variables	China-EU			China-Australia			Australia-China		
	OLS	2SLS	2SMM	OLS	2SLS	2SMM	OLS	2SLS	2SMM
Constant	11.11**	11.29**	10.01**	11.16**	11.07**	9.78**	7.43**	4.91**	4.07**
Openness/GDP	0.02	0.03	0.03	0.02	0.03	0.03	0.11**	0.22**	0.18**
Services/GDP	0.001	0.001	0.001	0.002*	0.003@	0.003@	-0.03	-0.01*	-0.01*
FDI/GDP	0.03**	0.03**	0.03**	0.04**	0.04**	0.04**	0.001*	0.001**	0.001**
Stock Market Crash 87							8.45**	13.45**	11.14**
China Turmoil 89	-7.22**	-7.43**	-6.59**	-7.45**	-7.47**	-6.59**	-7.11**	-10.04**	-8.31**
Gulf War 91	6.09**	6.27**	5.56**	6.04**	5.81**	5.13**	-7.57**	-8.44**	-6.99**
China Reform 93	-0.10	0.01	0.01	-0.25	-0.70	-0.62	3.89**	4.56**	3.79**
Asia Crisis 97	-1.43	-1.77	-1.57	-0.97	-0.15	-0.14	-1.10	-3.14@	-2.60@
WTO Membership	0.77	0.75	0.67	0.72	0.62	0.55			
R <sup>2</sup>	0.92	0.92	0.96#	0.92	0.91	0.96#	0.90	0.87	0.94
F	12.81**	6.22**	12.27**	13.62**	6.98**	11.89**	11.07**	7.88**	13.29**
DW	2.75	2.72	0.84&	2.71	2.65	0.81&	2.21	2.40	0.99&

## **CHINA AND THE WORLD**

### **QUESTIONS and SUBSTANTIVE ANSWERS**

#### **1 More Trade -> Higher Growth?**

- **Yes (but weak) for all trading blocs**
- **Best gains from Developed Countries (Japan, US, EU and Australia. Not from ASEAN)**

#### **2 More Services -> Higher Growth?**

**Yes (mild from Japan and Australia)**

#### **3 More FDI -> Higher Growth?**

**Yes (strong) for all trading blocs**

## **CHINA AND THE WORLD**

### **QUESTIONS and SUBSTANTIVE ANSWERS**

#### **4 Good Policy Reform 1991 -> Higher Growth?**

**Yes (strong) all trading blocs**

#### **5 Internal Shocks -> Lower Growth?**

**Yes (strong) all trading blocs**

#### **6 Regional Crises 1997 -> Lower Growth?**

**Yes (strong) all trading blocs**

#### **7 WTO Membership -> Higher Growth?**

**Yes (but weak) all trading blocs**

# AUSTRALIA-CHINA FTA

- 1 **Who Gains More in an ACFTA?**
  - 1 Australia more from China's Trade
  - 2 China more from Services & FDI
- 2 **Who Loses More in an ACFTA?**

Australia more from

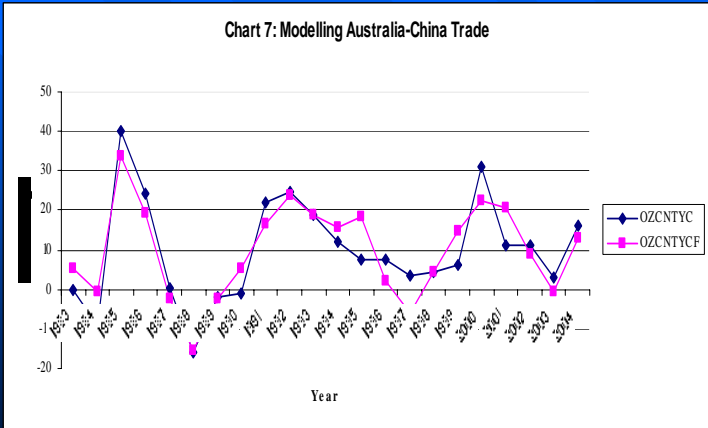
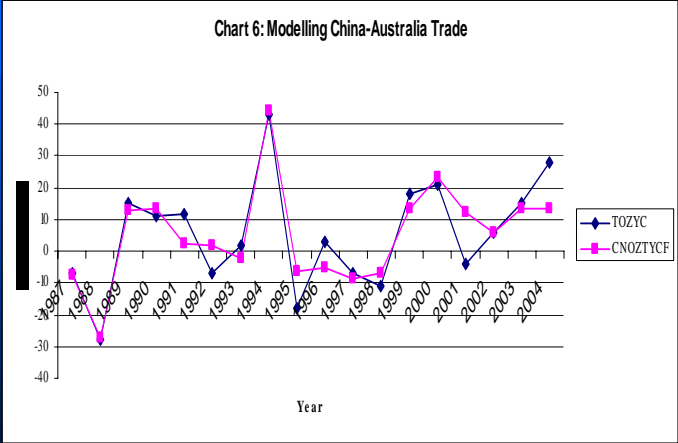
  - 1 China Internal Turmoil
  - 2 Reforms
  - 3 Regional Crises
- 3 **Are Our Findings/Policy Recommendations Reliable?**

## Outcomes Reliability: A Graphical Evaluation Analysis

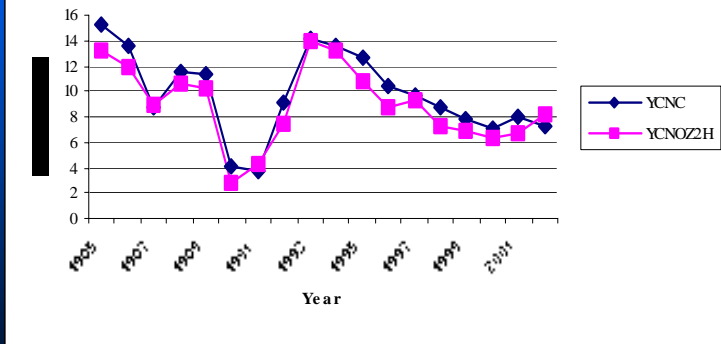
### **Reliability of Our Findings on**

- Trade Modelling
- Growth Modelling
- Policy Recommendations
- Regional Strategic Studies

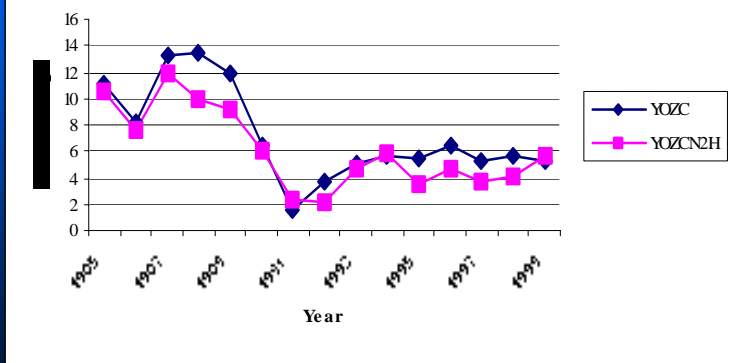
### **Ex Post and Ex Ante Simulations**



**Chart 8: Modelling Australia Trade-to-China Growth**



**Chart 9: Modelling China Trade-to-Australia Growth**



# ACFTA: CURRENT STATE OF PLAY

## CHINA IMPORTS INTO AUSTRALIA

