

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

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## MOTIVATION 1: WTO & FTA ALTERNATIVES

- I WTO (GATT, GATS) – even Doha Lite**  
**On the verge of collapsing (Pascal Lamy)?**
- II Emerging: Regional Trade Agreements**
  - NAR and FTA: accepted exceptions under Articles XIV of GATT and V of GATS
  - Cover Investment & Services (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 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

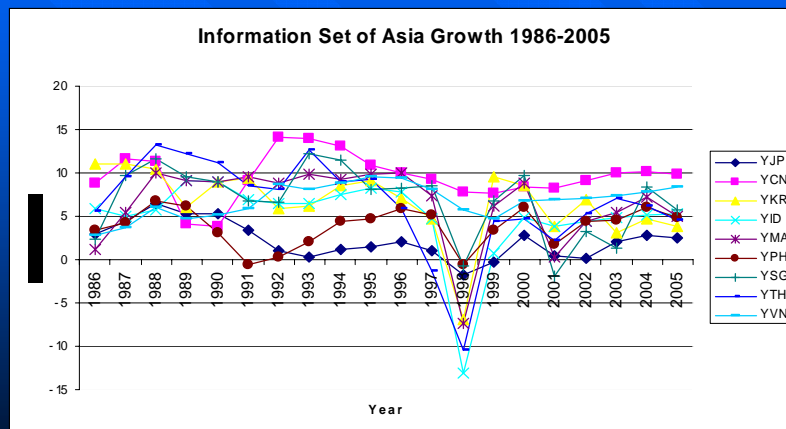
### IV. When? 1940s and Early 2000s

### V. What Impact Empirically?

Perceived or 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. General 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 (Kydland Criterion)

**EXISTING QUANTITATIVE APPROACHES:  
MAJOR FEATURES &  
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  
(GGT, TVH 2002)**

# A GGT TRADE-GROWTH MODEL 1

## ■ The GGT: 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



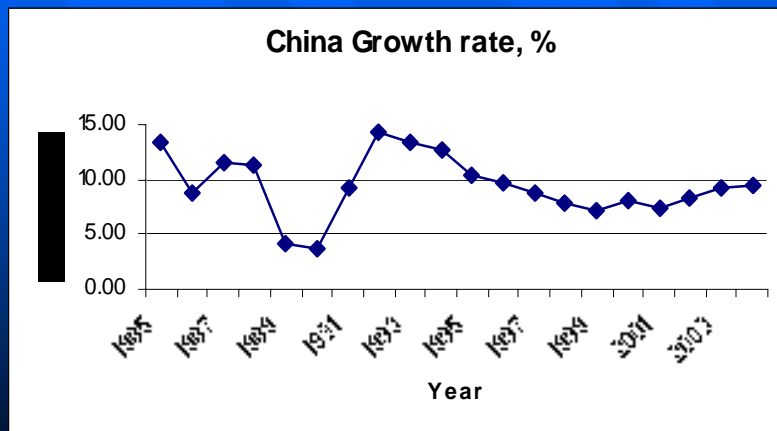
## DOES CHINA TRADE GAIN FROM WTO? SIMPLE CHOW TESTS

$$LTY = A1 + A2LGDP + A3LTY(-1) + U$$

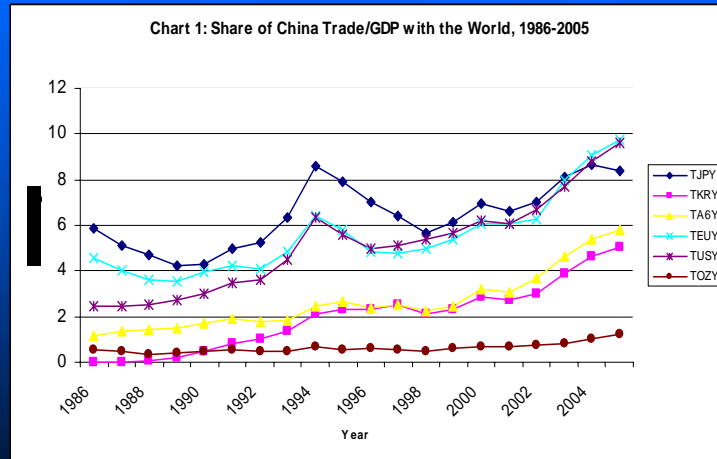
where  $LTY = [\text{LOG}(X+IM)/\text{GDP}]$

- $LGDP = \text{LOG}(\text{GDP})$
- For 1986-2000 ( $R\text{-SQ}=0.90$ )
- Chow=1.14
- For 1986-2004 ( $R\text{-SQ}=0.92$ )
- 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	2SHE	OLS	2SLS	2SHE	OLS	2SLS	2SHE
■ 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
■ R2	0.92	0.89	0.94#	0.92	0.88	0.94#	0.92	0.2	0.86
■ 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	2SRI	OLS	2SLS	2SRI	OLS	2SLS	2SRI
Constant	11.11**	11.29**	10.01**	11.16**	11.07**	9.78**	7.43**	4.91**	4.07**
Openness/GDP 0.18***			0.02 0.03	0.03	0.02	0.03	0.03	0.11**	0.22**
Services/GDP -0.01*			0.001 0.001	0.001	0.002*	0.003@	0.003@	-0.03	-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 -2.60@			-1.43 -1.77	-1.57	-0.97	-0.15	-0.14	-1.10	-3.14@
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	13.29**	12.81**	6.22**	12.27**	13.62**	6.98**	11.89**	11.07**	7.88**
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 (contd)

- 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?**

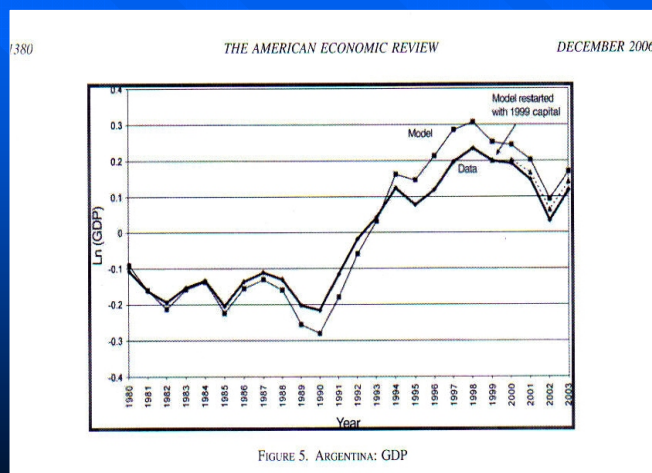
## Outcomes Reliability: A Graphical Evaluation Analysis

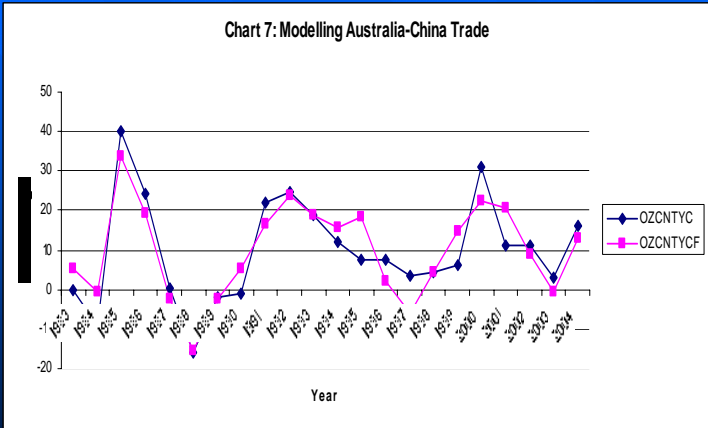
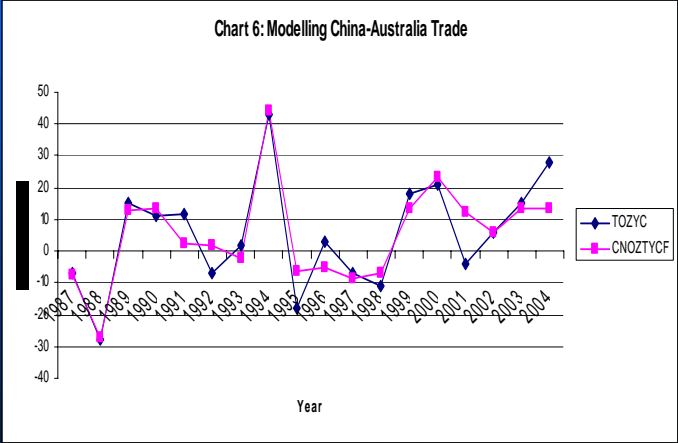
### Reliability of Our Findings on

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

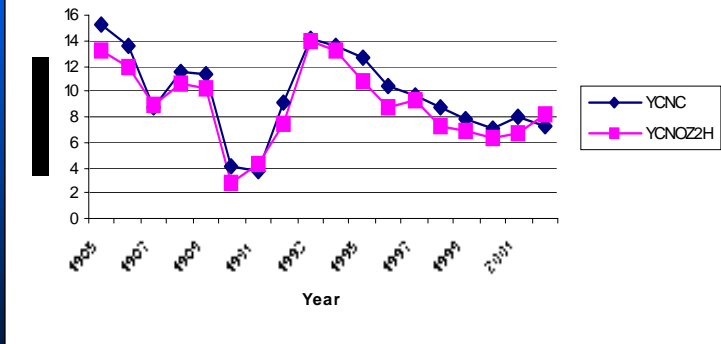
### Ex Post and Ex Ante Simulations

## Kydland Data-Consistency Criterion

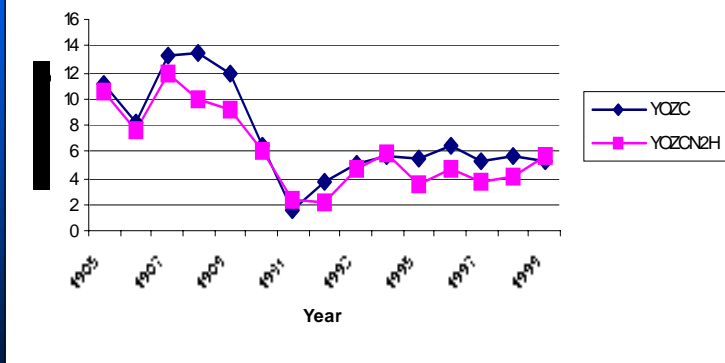




**Chart 8: Modelling Australia Trade-to-China Growth**



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



# ACFTA: CURRENT STATE OF PLAY

## CHINA IMPORTS INTO AUSTRALIA

