Forestry, Wildlife and Fisheries Graduate Seminar

"Exchange Rate Effects on the US-Canada Forest Product Trade"

Presented by: Pracha Koonnathamdee

When: 4.40 PM Monday, October 1, 2007

Where: 160 Plant Biotech Building

Introduction

What is Exchange Rate?

- FX specifies how much one currency is worth in terms of the other (Price of Dollar)
- An exchange rate of 123 Japanese yen (JPY, ¥) to the United States dollar (USD, $) means that JPY 123 is worth the same as USD 1

Introduction

- FX have been commonly perceived as the most important macroeconomic variable affecting trade flows of forest commodities
- For example, representatives of the US forest industries have called forcefully for policies that would decrease the value of the US dollar in order to improve their competitiveness (Sound Dollar Coalition)
- The Coalition is engaged in advocacy with the Bush Administration urging that the U.S. support exchange rate policies that are consistent with market fundamentals and ensure the competitiveness of U.S. industry

Quick survey question

- Based on the Sound Dollar Coalition, how many of you would support NAM or AF&PA

Basic Research Questions

- Lower price of dollar = higher competitiveness?
- Does information in the handout make sense?
  – What is producer objective?
  – Half truth?
- **How does exchange rate affect the US forest product trade?**
  – Short run and/or long run

Objective

- The objective is to observe dynamic patterns of forest products trade using a structural model of disaggregated the trade value
- Because different categories of forest products may behave in a different way, analysis by category is important; aggregation could ambiguous significant responses within categories

Hypothesis

- This research hypothesizes that there are not only contemporaneous but also over time of the relationships between forest products trade (i.e. imports and exports or trade balance) and exchange rate, and the interrelationships between imports and exports in forest products

Data

- Monthly US-Canada export and import value of selected forest products from January 1989 to May 2007 (221 observations in each series) FASOnline, USDA (http://www.fas.usda.gov/ustrade/)
- Six categories based on 4 digits Harmonized Schedule (HS)
- The exchange rate data, values of the Canadian currency in US dollars, are monthly averages, compiled from Federal Reserve Bank of St. Louis and Board of Governors of the Federal Reserve System (http://research.stlouisfed.org)
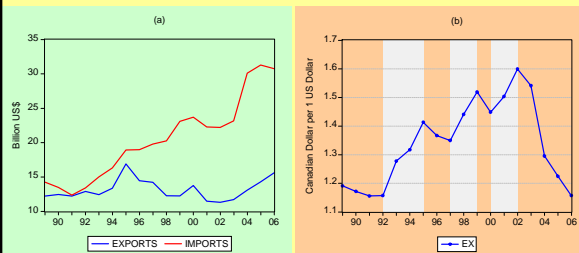
The US Forest Product Trade and FX Data

Source: Koonnathamdee (2007)

The US Forest Product Trade (Cont.)

(a)

(c)
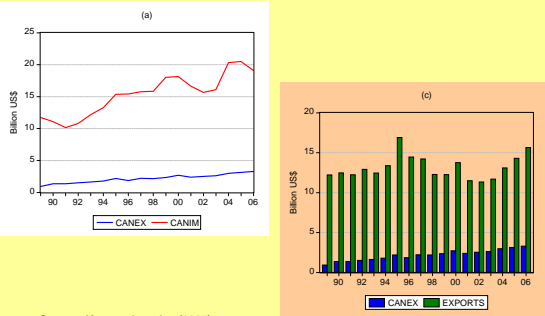
Source: Koonnathamdee (2007)

The Model

- We estimate VAR models for selected six categories of US-Canada forest products imports, exports, and trade balance
- Using various trade shocks and exchange rate shocks, this article exhibits impulse response functions (IRFs) that describe the response of imports, exports, and trade balance to exogenous shocks over several periods

Methodology

- To produce consistent estimates, data must be stationary across time, neither a trend nor a unit root. We then perform the Augmented Dickey-Fuller (ADF) unit root test for stationary testing
- All data series are difference stationary where the error term in each series has white-noise properties tested with Ljung-Box's Q statistics
- The first difference of the natural logarithm in each series means the relative change from initial period to the next period

4

Methodology

- In this paper, we estimate

$$\mathbf{v}_t = \mathbf{A}_0 + \mathbf{A}_1 \mathbf{v}_{t-1} + \mathbf{A}_2 \mathbf{v}_{t-2} + ... + \mathbf{A}_T \mathbf{v}_{t-T} + \mathbf{e}_t$$

- After estimating six VARs, we apply impulse response analysis to quantify and graphically depict the time path of the effects of typical shocks on imports and exports

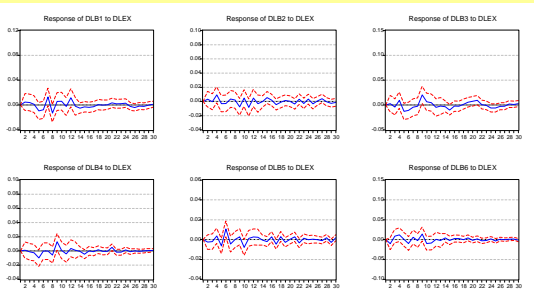## Empirical Results (Imports)

Empirical Results (Exports)
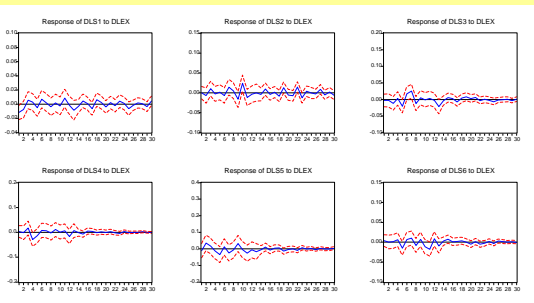
Empirical Results (Trade Balance)
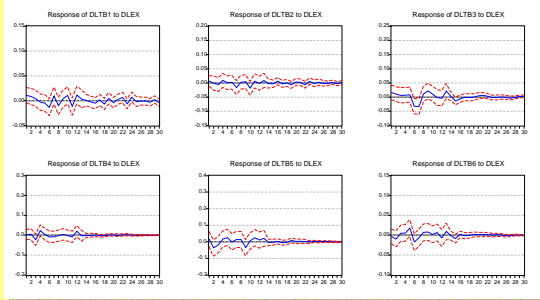
Implications

- We find that a shock in exchange rate has no effect to imports in the short-run in all markets
- For trade balance, we find little positive effect of the US–Canada trade in five forest products
- However, these results could not guarantee the competitiveness of the industries under depreciation policies
- A shock in exports affects nothing in the level of imports. It means that any export promotion policies would not reduce significantly in the imports amount
- In contrast, a positive shock in imports does affect a positive change in exports which explain the availability of re-export pattern in the forest products industries

Basic Research Questions

- Lower price of dollar = higher competitiveness?
  NOT REALLY
- Does information in the handout make sense?
  YOU HAVE YOUR OWN ANSWER
  – What is producer objective?
  PROFIT
  – Half truth?
  YES
- **How does exchange rate affect the US forest product trade?**
  – Short run and/or long run
  BINGO

Thank You