

Intervention on U.S. Bedroom Furniture Imports: Lessons and Challenges

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May 20, 2014

Road Map

- 1 Wooden Bedroom Furniture Market
- 2 Project A: Intervention Analysis of Antidumping Investigation
- 3 Project B: Import Competition in the United States
- 4 Project C: Price Transmission between China and Vietnam
- 5 Project D: Global Growth in Bedroom Furniture Trade
- 6 Summary and Discussion

Wooden Bedroom Furniture Market

The total world trade of wooden bedroom furniture was US\$2.91 billion in 1997 only but reached **\$8.33 billion in 2012** (UN Comtrade, 2013).

China has become the leading exporter: \$0.12 billion and 4% in 1997; **\$3.02 billion (36%) in 2012**.

USA has been the largest importer: \$0.76 billion (26%) in 1997; **\$3.23 billion (39%) in 2012**.

A set: bed, chest, dresser, mirror, nightstand



Furniture sample



Furniture sample



Product classifications

Harmonized Tariff Schedule (HTS) Chapter 94

HTS 9403.50 “wooden furniture of a kind used in the bedroom”

Bed—HTS 9403.50.9040

Rail—HTS 9403.50.9080

Part—HTS 9403.90.7000

Mirror—HTS 7009.92.5000

Antidumping against China: complaint

In the global wooden bedroom furniture market, there has been an **intense dispute** between the leading importer and exporter (i.e., the United States versus China).

The large amount of China's exports has resulted in strong reaction from domestic manufacturers in the United States.

The petitioners alleged that wooden bedroom furniture from China has been **dumped in the United States at less than fair value**.

Antidumping against China: market share

In 2002, **39%** of the imported bedroom furniture by U.S. was from China.

In 2002, **50%** of the wooden bedroom furniture consumption in the U.S. was met by domestic production.

33% of bedroom furniture imports from China over 2001–2003 were imported by U.S. manufacturing firms.

Antidumping against China: a 15-month investigation

In **October 2003**, a group of American furniture firms and labor unions filed a petition with the International Trade Commission (ITC) and Department of Commerce in the United States.

An affirmative decision was reached for the preliminary less-than-fair-value determination in **July 2004**.

In **December 2004**, it was concluded that the furniture industry was materially injured by wooden bedroom furniture imports from China.

Final antidumping duties ranging from **0.83% to 198.08%** have been imposed on **individual Chinese firms** since **January 2005**.

Antidumping against China: the five-year review

In 2010, a five-year review concluded that revocation of the antidumping duty order on wooden bedroom furniture from China would be likely to lead to continuation or recurrence of material injury to the industry in the United States within a foreseeable time.

The antidumping duties have been retained as the same since 2010.

Research questions

Dumping is an economically harmful **disease**.

Antidumping is the **medication**.

Has the U.S. antidumping policy and trade intervention achieved its goal?

In **2009, 22%** of the wooden bedroom furniture consumption in the U.S. was met by domestic production, which was a further decrease from **50% in 2002**.

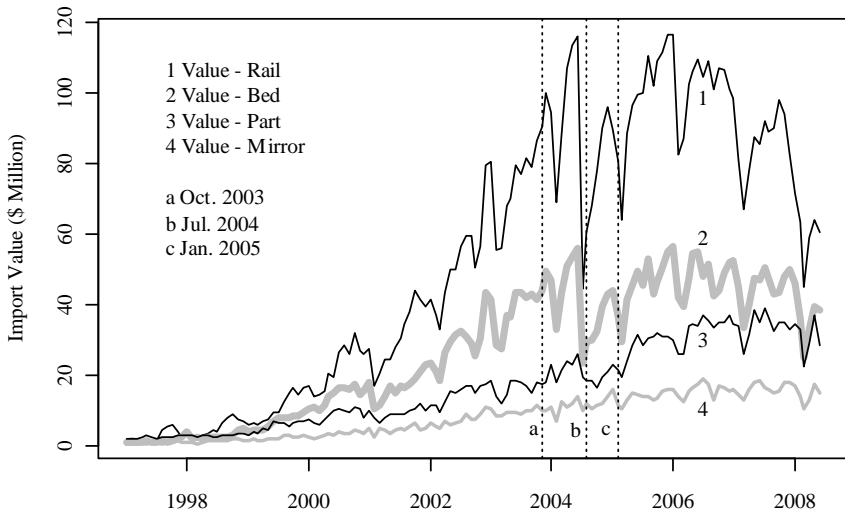
Project A: Intervention Analysis on the Investigation

Objective: to evaluate the impacts of the 2003 antidumping case on bedroom furniture imports from China and other competing countries

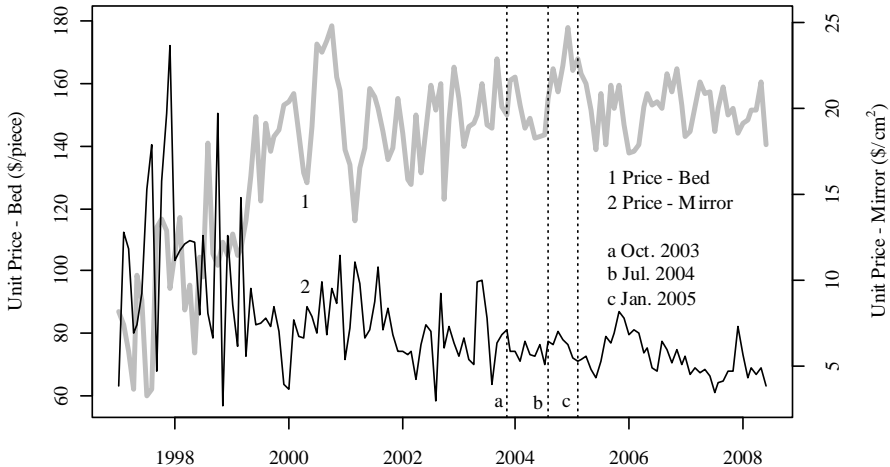
Data: import values of four commodities; prices of two commodities; China and six competing countries

Period: **January 1997 to June 2008**

Monthly import values from China over 1997–2008



Monthly import **prices** from China over 1997–2008



Empirical methods: intervention analysis

Intervention analysis and various statistical techniques related to multiple interventions were employed.

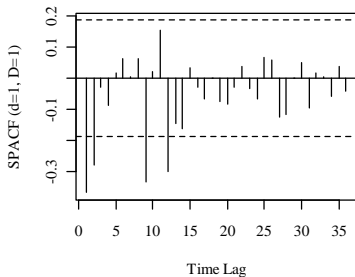
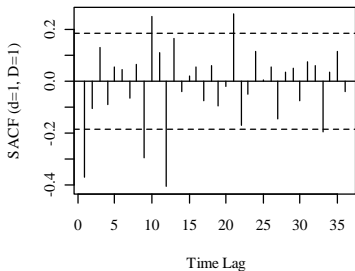
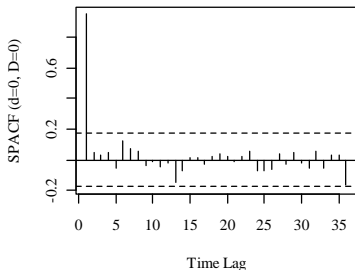
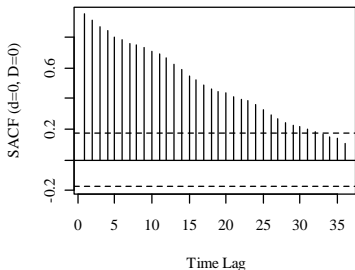
Autoregressive integrated moving average (ARIMA) model

Three dummy variables:

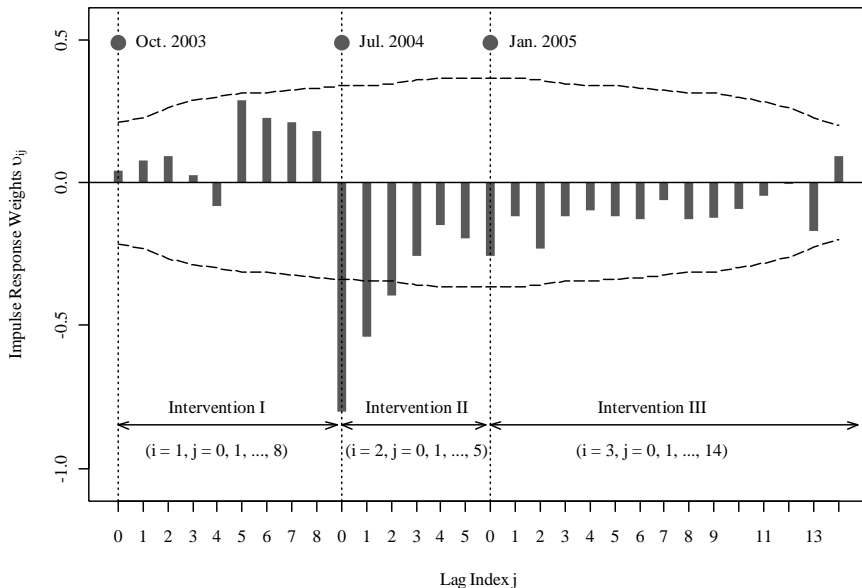
- ① $D_1 = 10/2003$ investigation announcement
- ② $D_2 = 07/2004$ preliminary decision
- ③ $D_3 = 01/2005$ duty imposition

Key formula: $y = \beta_1 D_1 + \beta_2 D_2 + \beta_3 D_3 + ARIMA$

Sample autocorrelation function



Estimated impulse response weights



Results: investigation and duty effects

The first major finding was that **investigation effects** on imports of all the commodities from China were significant.

No duty effect was found on imports from China after the antidumping duties have been formally implemented since January 2005.

Results: positive trade diversion

Significant and positive **trade diversion effects** on six major competing countries were discovered.

The magnitude of the diversion effect was less than the trade depression effect on China.

Project B: Import Competition in the United States

Objective: to assess the import competition among 7 countries

Method: static and dynamic Almost Ideal Demand System (AIDS)

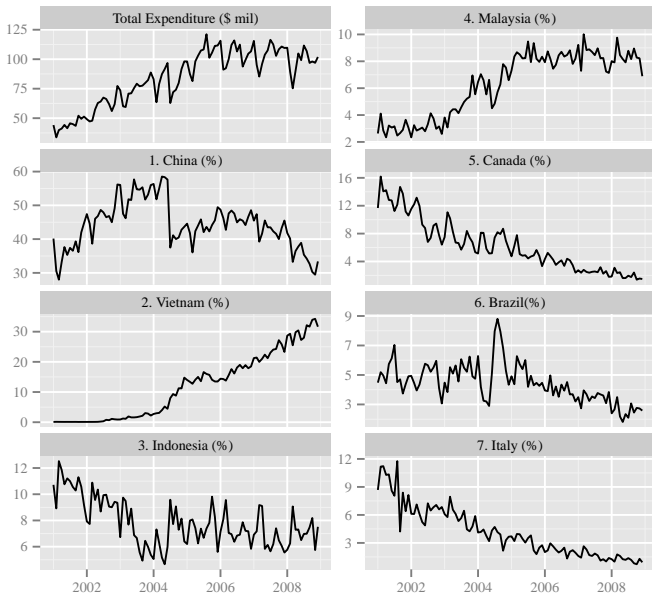
Product: wooden beds, HTS 9403.50.9040

Data: import prices and quantities of wooden beds from 7 countries

Period: January 2001 to December 2008

AIDS model is “macro”; intervention analysis is “micro”.

US import values and shares over 2001–2008



Static AIDS model

$$w_{it} = \alpha_i + \beta_i \ln \left(\frac{m_t}{P_t^*} \right) + \sum_{j=1}^N \gamma_{ij} \ln p_{jt} + \sum_{k=1}^K \varphi_{ik} D_{kt} + u_{it}$$

where

w_{it} = import share for country i at period t

$\ln \left(\frac{m_t}{P_t^*} \right)$ = real total expenditure

$\ln p_{jt}$ = price of beds for country j at period t

D_{kt} = investigation and duty dummy

Dynamic AIDS model = cointegration + error correction + static AIDS

Results: limited overall effects

As a trade remedy instrument, the antidumping investigation against China has **limited effects in reducing the import growth of wooden beds until 2008.**

The effectiveness of this antidumping investigation is only temporary. This is consistent with the continuous growth of total import value of wooden beds by the United States between 2005 and 2008.

Results: trade diversion and substitution

The **trade diversion** takes place from China to Vietnam, Indonesia, and Brazil at the same time.

The imports among most countries can be substituted by each other, except the wooden beds from Italy. **Most cross-price elasticities are inelastic with moderate magnitudes**, implying that wooden beds from these countries are far from perfect substitutes.

Project C: Price transmission between China & Vietnam

Motivation: With a **combined market share of more than 60%**, China and Vietnam have dominated the import market of the United States in recent years.

Objective: to examine the dynamics between **two import prices** of wooden beds from China and Vietnam

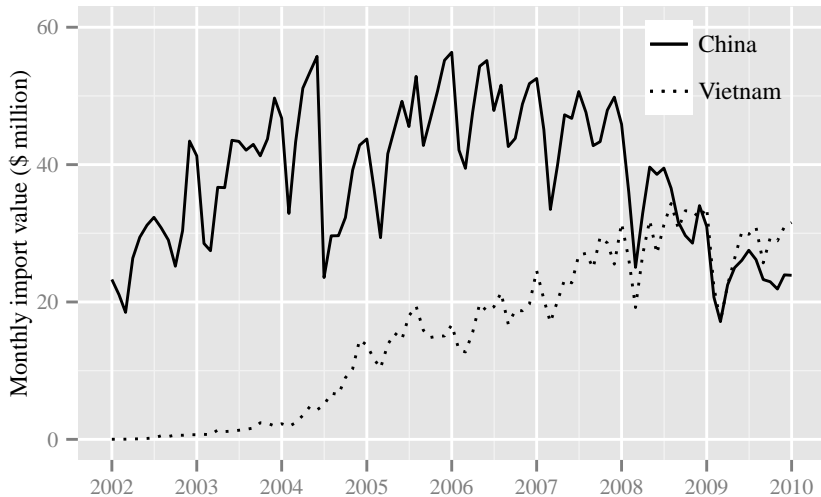
Product: wooden beds, HTS 9403.50.9040

Method: error correction model with **nonlinear threshold cointegration**

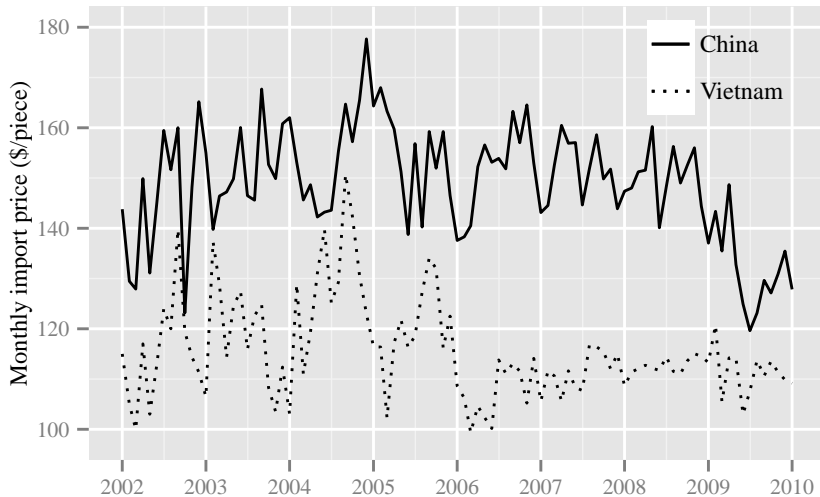
Data: monthly import prices of wooden beds for China and Vietnam

Period: January 2002 to **January 2010**

Import values from China and Vietnam over 2002–2010



Import prices from China and Vietnam over 2002–2010



At the beginning, **linear cointegration analyses**, including Johansen and Engle-Granger two-step approaches, are applied to evaluate the cointegration relationship.

Then the analysis is extended to **nonlinear threshold cointegration**.

In the end, an **asymmetric error correction model** with threshold cointegration is utilized to analyze the short-term relationship.

Results: China as a price leader

The import price of China has been fluctuated between \$140 and \$160 per piece, which is about 30% higher than the price of Vietnam. Nonetheless, the monthly import value from Vietnam has passed that from China since January 2009.

China has been the price leader of the market and its price has been evolving more independently. China may lose its price leadership to Vietnam over next several years if the current trade trend continues.

Results: asymmetric price transmission

The transmission between the prices of China and Vietnam has been **asymmetric** in both the long term and short term.

In the long term, positive deviations of the price spread between the two countries take about 4 months to be fully digested, while negative deviations take less than 1.5 months.

These furniture firms are **more sensitive and act more promptly** when price fluctuations reduce their profits.

Project D: Global Growth in Bedroom Furniture Trade

Motivation: **China is still exporting more bedroom furniture** — \$1.4 billion in 2005, \$2.6 billion in 2010, \$3.0 billion in 2012.

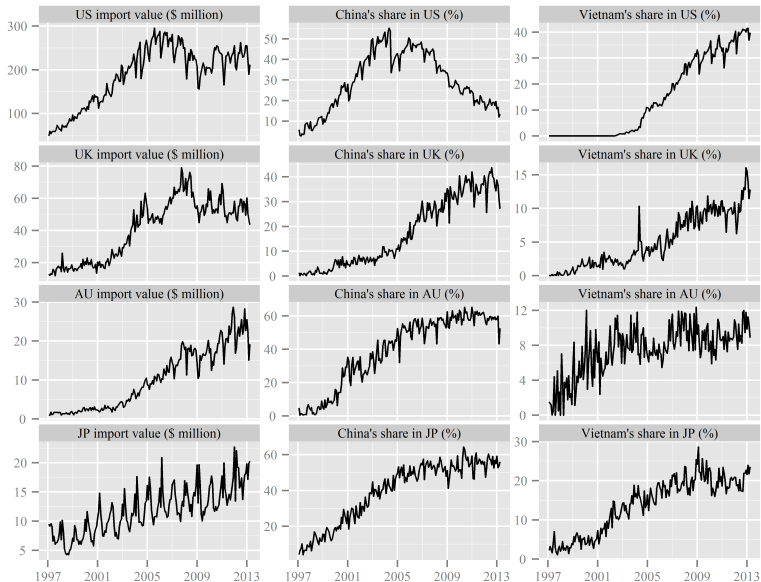
Objective: to evaluate the global trade competition of wooden bedroom furniture

Method: AIDS model for **4 separate import markets (US, UK, Australia, Japan)**; 9 exporters (e.g., China)

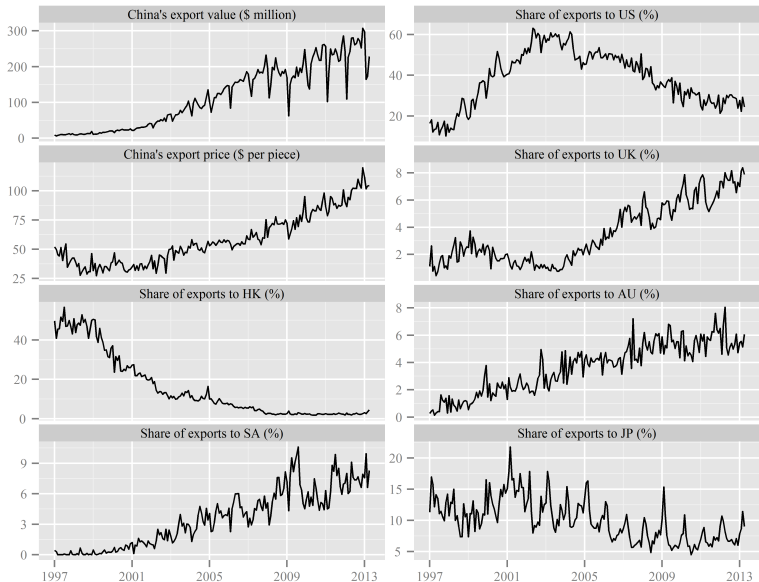
Product: HTS 9403.50 bedroom wooden furniture

Period: January 1997 and **April 2013**

China and Vietnam in four markets over 1997–2013



China's export value, price, and share over 1997–2013



Method: AIDS model

Static and dynamic AIDS model; cointegration

Three dummy variables:

- antidumping investigation in 2003
- duty collection since 2005
- global financial crisis since 2008

Results: depression on China and diversion to Vietnam

The antidumping duty has generated expected trade **depression effects on imports from China**. China's share: 48% in 2003 to 18% in 2012.

The trade remedy also produced **positive diversion effects to Vietnam and Malaysia** in the long term. Vietnam's share: 10% in 2005 to 40% in 2012.

Results: market share redistributed

The share of domestic shipments in total consumption in the United States has been declining over time: 50%, 32%, 27%, 25%, 23%, 22%, and 22% from 2003 to 2009.

After 8 years, it is safe to conclude that the trade intervention by the United States **did not help** the domestic industrial firms in the United States **gain more market shares**.

Instead, it has resulted in the **market shares being redistributed among supplying countries** in the U.S. import market.

Results: integration of the global market

The trade intervention by the United States generated trade diversion effect on other import markets in the world.

China has gained large export growth in other import markets, e.g., the United Kingdom, Australia, and Japan.

Summary and Discussion

It takes some time for a trade policy to generate some impacts on the market.

Contracting, manufacturing, strategy changes, ...

2003 complaint, 2005 imposition, 2010 five-year review, 2014 now, ...

Bilateral trade intervention

An antidumping policy for one country in an import market may not be effective in protecting its domestic industry.

Substitute relations among products from different supplying countries exist.

Globalization of the furniture industry is fast.

Domestic furniture industry

To improve the competitiveness and market share in an increasingly globalized furniture market, U.S. furniture manufacturers can learn greatly from these successful strategies adopted by the competing countries.

Vital strategies include:

- enhanced mass customization,
- more innovations,
- clearer customer targets and pricing,
- more intensive promotion by furniture associations, and
- better government supports.

... thank you ...