



Analysis of the Japan-ASEAN Free Trade Agreement

**By Thomas Hertel,
Ken Itakura and Jeffrey Reimer
Center for Global Trade Analysis
Purdue University**

General approach

- Respond to study group's concerns (February):
 - Impacts on Unemployment
 - Linking trade and market structure to productivity
 - FDI linkages to productivity and growth
 - Model validation, trade elasticities/robustness of results
- Draw on outside econometric work relating:
 - Exports to firm-level productivity
 - Imports to pro-competitive effects on markups and output per firm
 - FDI to productivity
 - Estimation of trade elasticities

Introduction

- **Japan-ASEAN FTA is most recent in a flurry of regional trade initiatives**
- **Japan-Singapore FTA is already underway, this would add other ASEAN members**
- **ASEAN is a heterogeneous region:**
 - **range from less-developed to developed economies**
 - **patterns of specialization and trade are generally complementary to Japan**

Adding links to productivity: Impacts of increased imports

- **Many different mechanisms for imports to affect productivity:**
 - **Technology spillovers: van Meijl et al.**
 - **New varieties: Romer**
 - **Procompetitive effects: Markusen**
- **Focus here on pro-competitive effects:**
 - **Theory is well developed**
 - **Some empirical work to draw upon**
 - **Seems appropriate in context of Japan-ASEAN FTA**

Theory: Hertel, JIE, 1994

- **Small, open economy**
- **Imports differentiated goods which compete with protected domestic sector exhibiting:**
 - Scale economies
 - Potentially restricted entry
 - Oligopoly markups
- **Exports undifferentiated product produced under PC/CRTS**
- **Contrast impacts of tariff cut on diff. product with outcome under PC/CRTS**

Case III in Hertel (1994): Foreign varieties displace domestics (fully packed product space)

- **Welfare depends on scale of domestic production**
- **In GE, rationalization occurs**
 - **Markups fall**
 - **Output per firm increases**
 - **Welfare increases**
- **Change in output per firm and size of welfare gain are directly proportional to the magnitude of the responsive of domestic markups to foreign price cuts**

Exports and productivity

- **Problem of causality:** exporters are more productive because they export, or they are exporting because they are more productive.
- **Bernard and Jensen (2001)** control this by looking at the behavior of 50,000 individual plants in the US from 1983-92.
 - Firms *always* export during this period are 8 – 9% productive than firms *never* export
 - Once start exporting, productivity converges on that of exporting firms
 - Once stop exporting, productivity drops towards that of firms that never exported

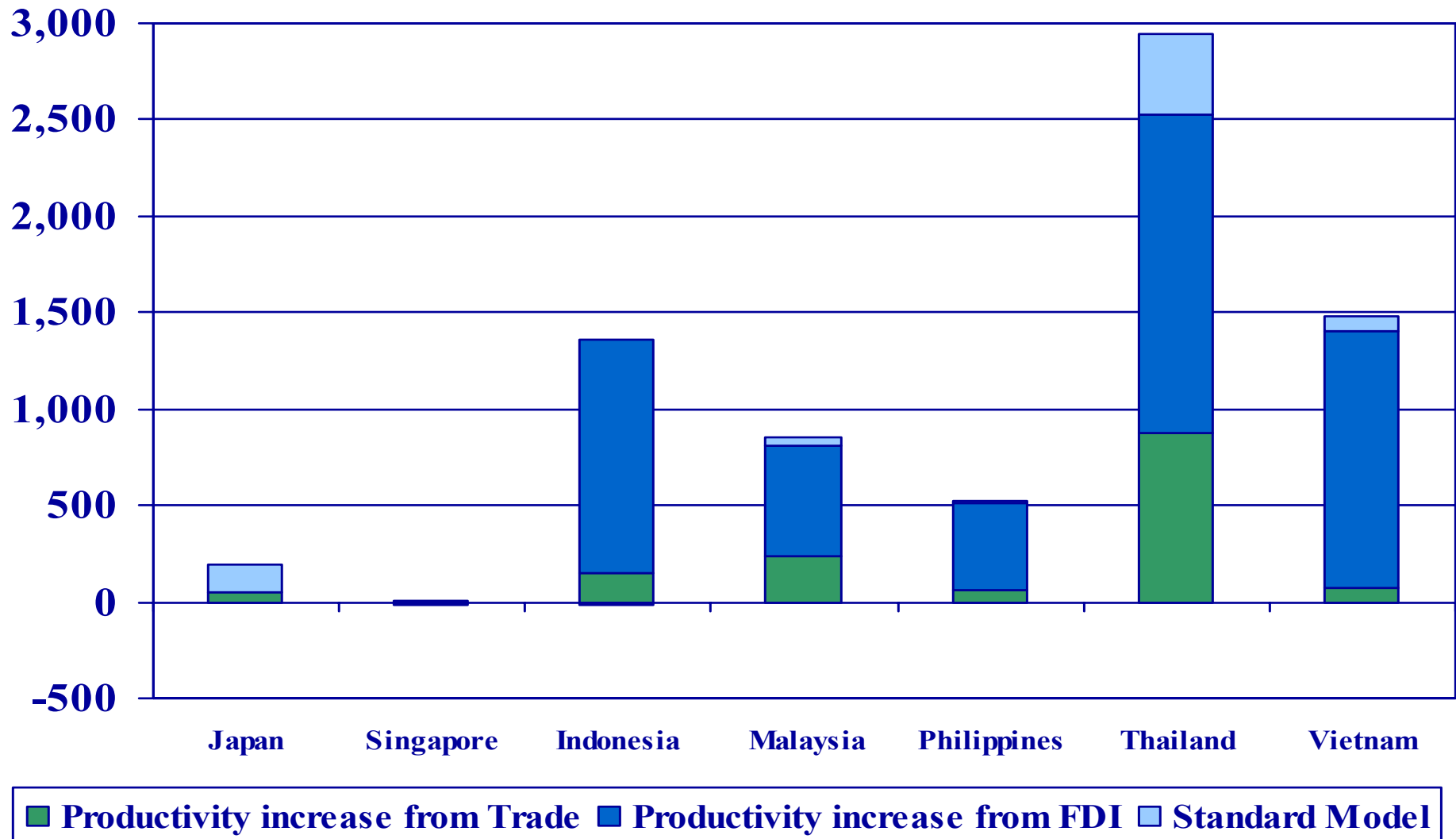
FDI and productivity

- **Strong relationship between FDI and productivity (Rodrik 1999), but few empirical studies**
- **Chuang and Lin (1999) confirm the existence of beneficial spillovers from FDI**
- **1% increase in FDI's share of capital stock produces 1.40% increase in domestic firm productivity. This is only applied to ASEAN countries, where FDI impacts of the FTA may be significant**

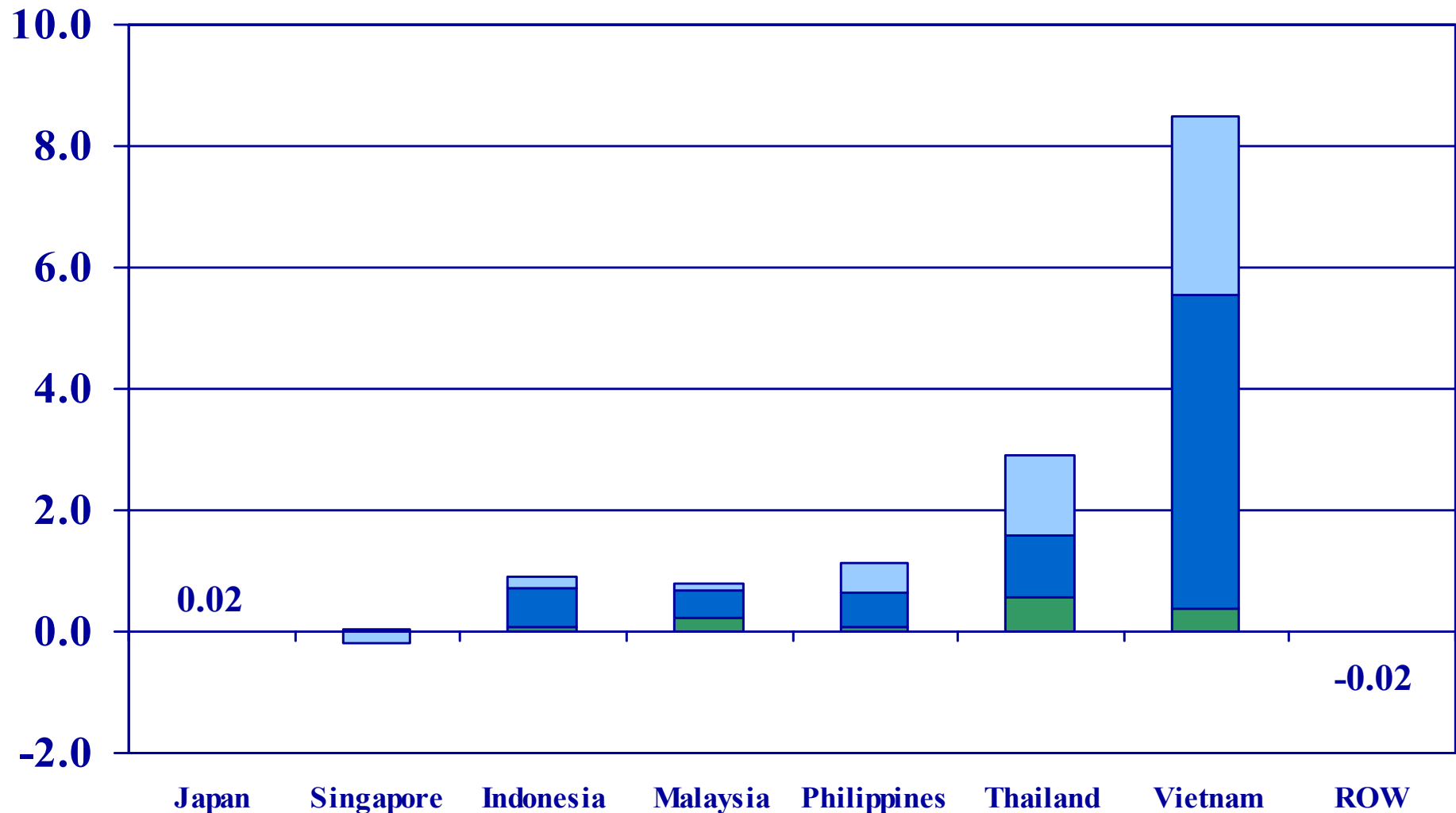
Comparative Static Analysis

- **Based on:**
 - 2005 data projections
 - Change in trade balance from dynamic model
- **Include productivity effects:**
 - Decompose to uncover relative importance
 - SR GDP impacts with addition of productivity
 - Welfare impacts
 - Sector Impacts:
 - Output
 - Employment

GDP effects of FTA in presence of productivity shocks: 2005 in US\$ million

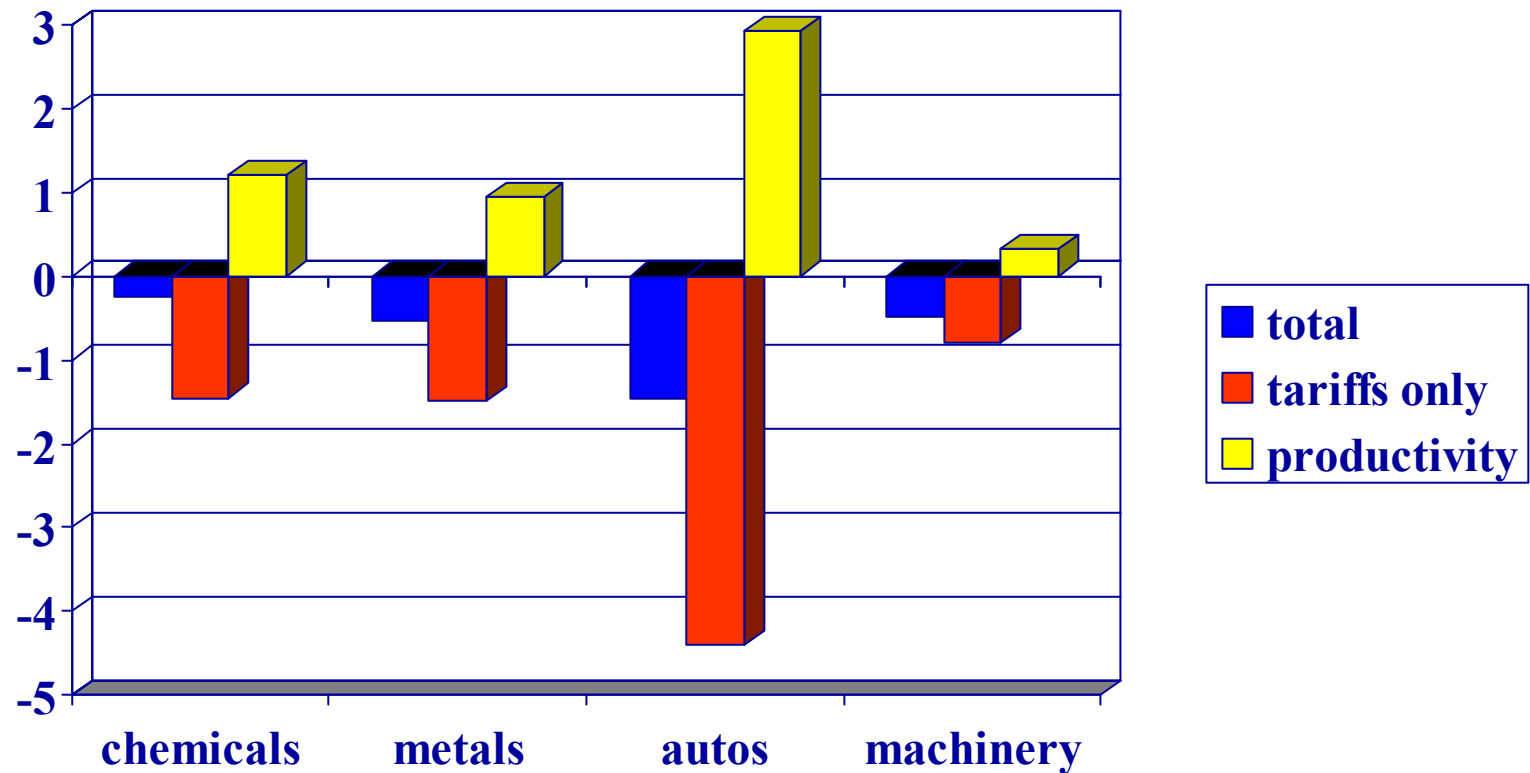


Percent change in per capita welfare, 2005

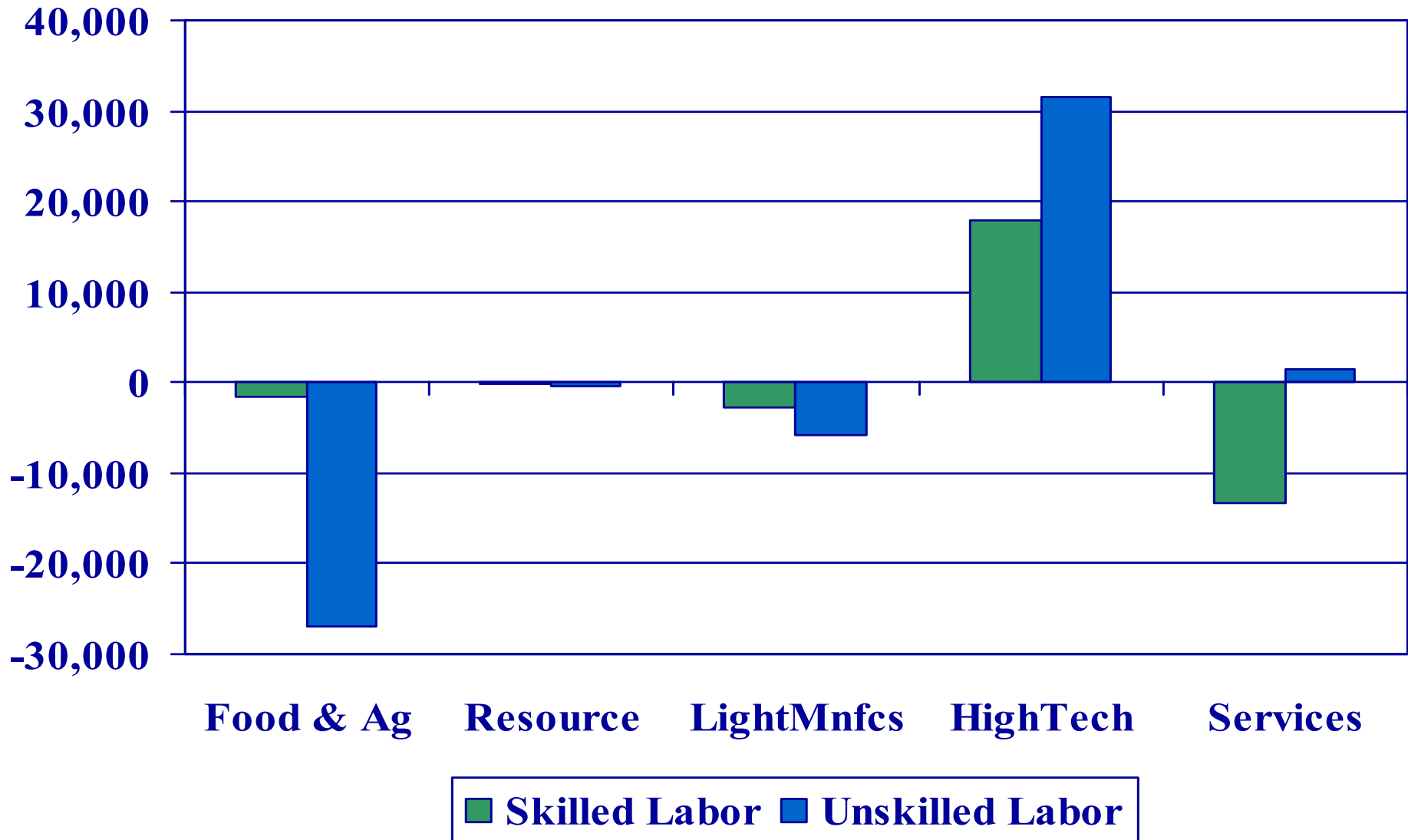


■ Productivity increase from Trade ■ Productivity increase from FDI ■ Standard Model

The pro-competitive and FDI effects dampen decline in ASEAN hi-tech mnfcng



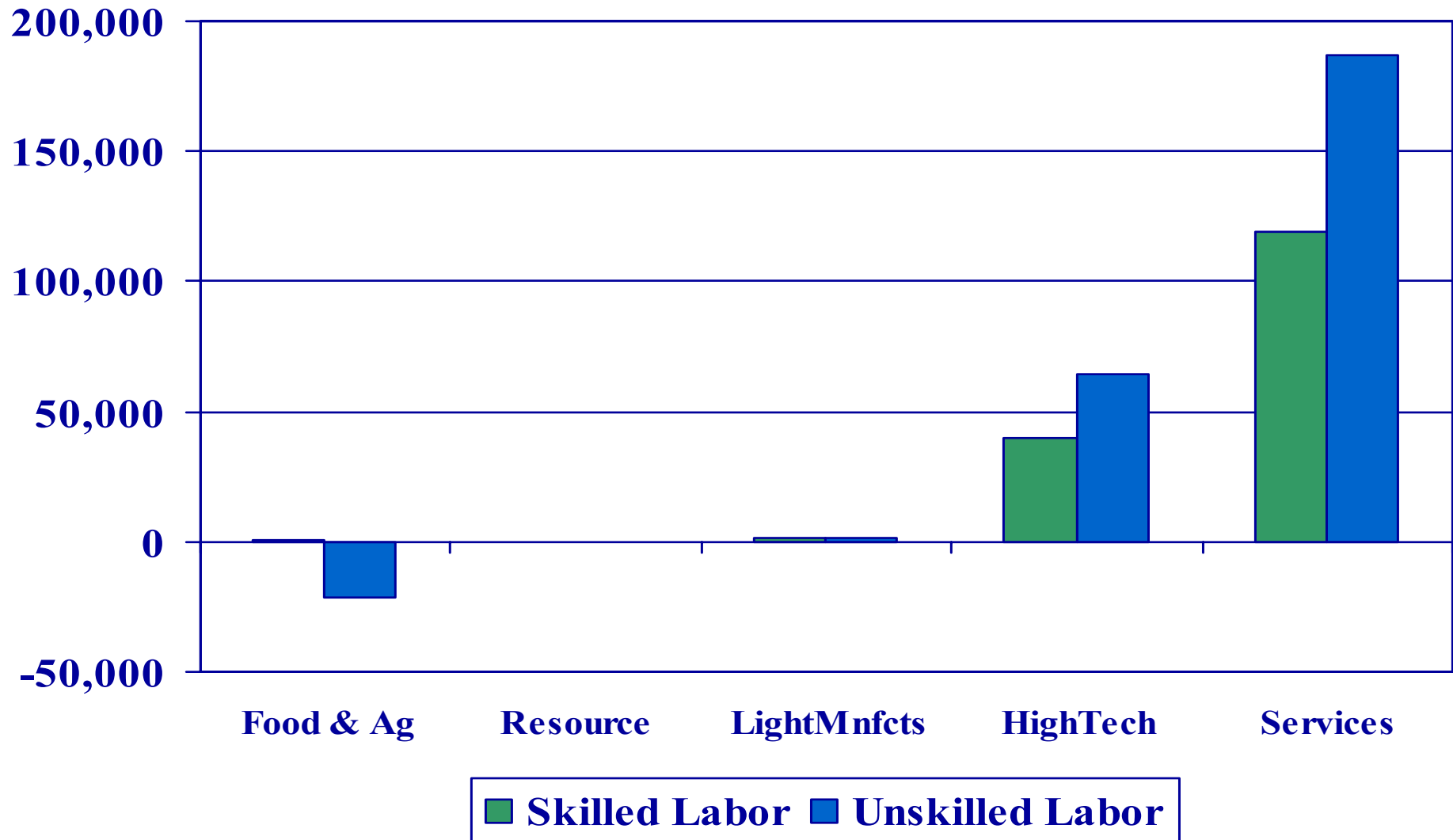
Japanese employment impacts of FTA (number of jobs)



Interactions of FTA with Unemployment in Japan and ASEAN: Change in Aggregate Employment

	Skilled Labor	Unskilled Labor
Japan	0.4	0.4
Indonesia	-1.2	-0.5
Malaysia	0.4	0.8
Philippines	-1.0	0.4
Thailand	-0.3	2.3
Vietnam	7.8	7.9

Employment impacts in Japan in presence of unemployment (number of jobs)



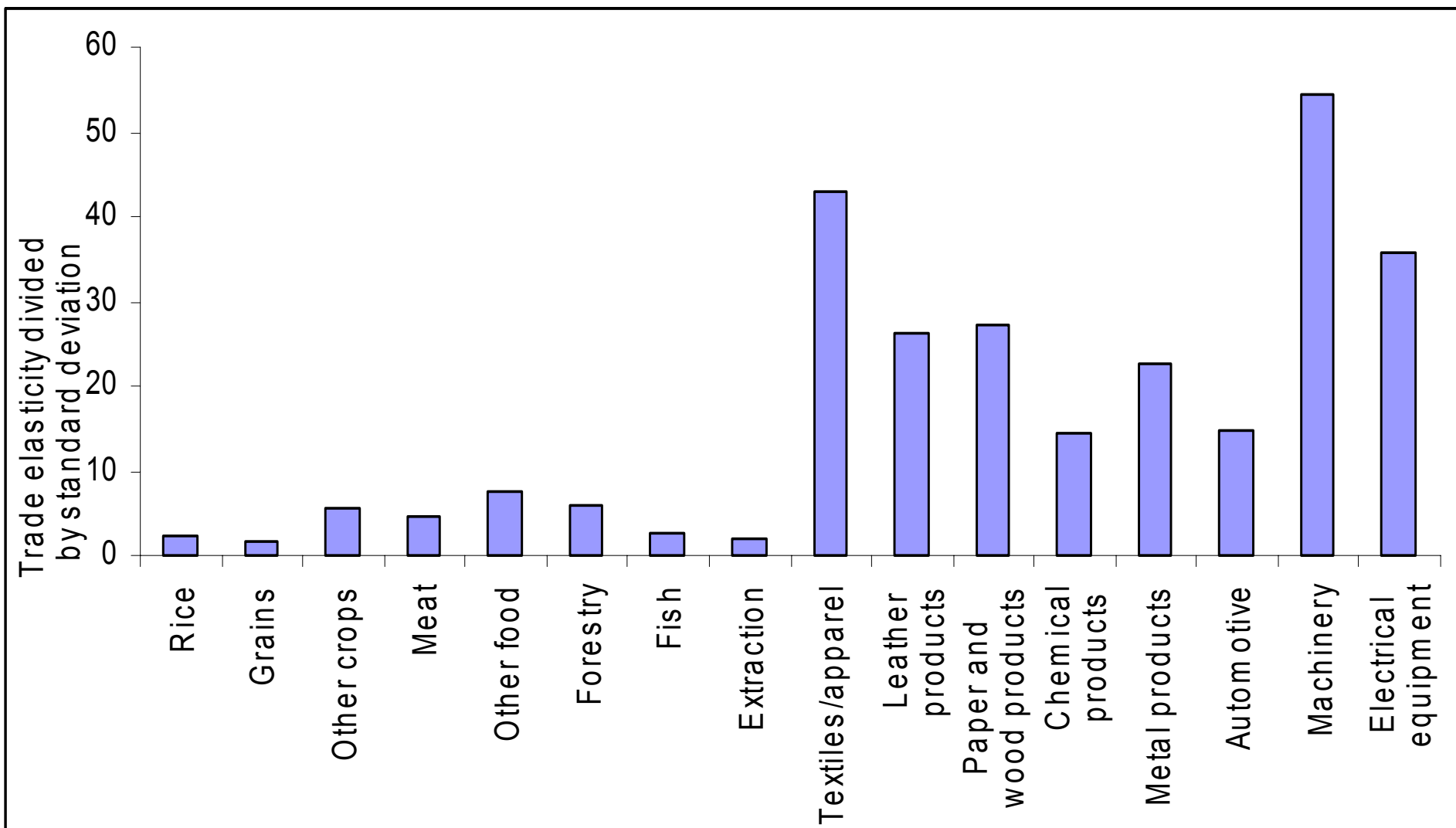
Comparing the impacts on Unskilled Labor between Full / Unemployment closures (number of jobs)



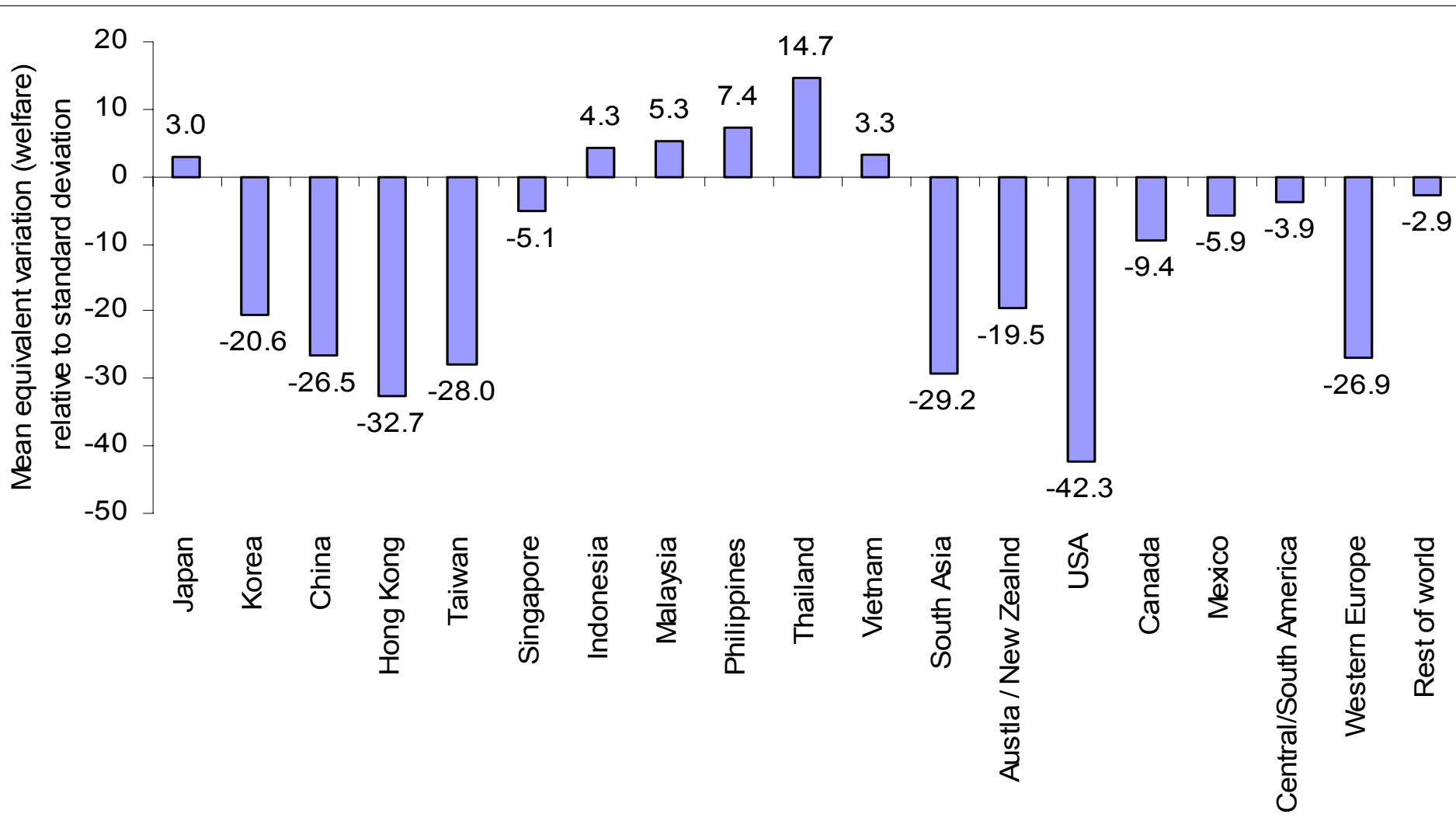
Robustness of results

- **Trade elasticities are key determinant of welfare changes following FTA**
- **Standard GTAP elasticities are:**
 - Excessively aggregate
 - Based on literature review
 - Out of date
- **We have estimated a new set of trade elasticities at the disaggregated GTAP commodity level using the methodology of Hummels**
- **Use estimated standard errors to guide SSA**

Robustness of trade elasticities: Estimate divided by standard error



Robustness of Japan-ASEAN FTA results with regard to trade elasticities



Summary and Next Steps

- **Impacts of Japan-ASEAN FTA:**
 - Hinge importantly on impacts of trade and investment on productivity
 - Of particular importance are:
 - Pro-competitive effects of trade liberalization on import-competing, high-tech industries in ASEAN
 - Impacts of increased FDI on productivity in ASEAN
- **Evaluate and finalize trade-investment-productivity linkages**
- **Incorporate productivity linkages into dynamic analysis**

Welfare Effects: Summary

- **ASEAN gains dominated by trade and investment driven productivity increases**
 - Largest proportional gains for Vietnam
 - Largest absolute gains for Thailand (45% ASEAN)
 - Singapore has small loss due to erosion of recent preferences obtained in JP-SNG FTA
- **Welfare impacts are:**
 - robust to estimated uncertainty in trade elasticities
 - but sensitivity to productivity parameters needs further investigation

Sector Effects: Summary

- **Japan-ASEAN FTA reinforces current, complementary trade patterns:**
 - ASEAN exports more food, resources and light mnfcs to Japan
 - Japan exports more high-tech goods to ASEAN
- **Pro-competitive effects dampen contraction in ASEAN high-tech sector**
- **Unemployment closure:**
 - Reduces contraction in Japanese agriculture sector
 - Gives a large boost to services employment