Non-Tariff Measures in CGE Models
Session IV: A Review of Some Recent Results

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Introduction

- In this session we will finish up by considering some selected recent results from the CGE literature.
- The objective is to give you a feel for how NTMs are used in CGE simulations of real trading agreements, and to give feel for the estimated size of the economic effects associated with NTMs relative to tariff measures.
- The studies are drawn from a recent survey of over 35 studies using CGE methods to analyze the Trans-Pacific Partnership, a major proposal regional trading agreement in the region (which is currently on life support).

What is the TPP?

- The TPP is a 'mega-regional' FTA between 12 Asia-Pacific countries, with a level of liberalization and a breadth of coverage of trade and trade-related issues that has so far eluded negotiations at the multilateral level.

- It can be interpreted as a simultaneous rationalization and intensification of a substantial part of the 'noodle bowl' of overlapping and intersecting FTAs that had expanded over the early years of the 21st century to link countries of the region.

- As its name indicates, a defining feature of the TPP is its trans-Pacific character, bringing together large and small countries from both sides of the Pacific.

- It has been negotiated and signed, but **not** ratified (and may never be).
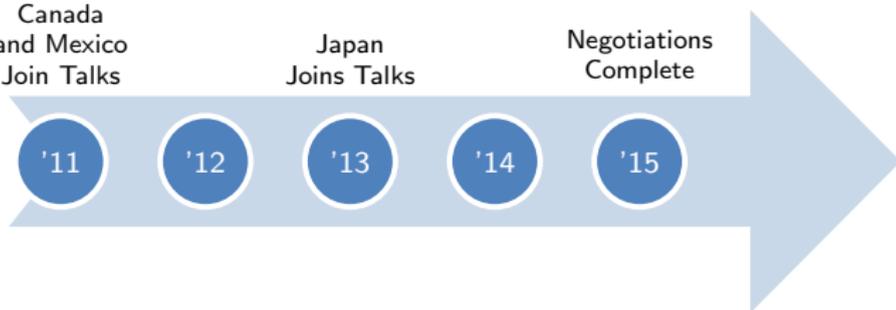
Timeline of Development of the TPP

Formation of
TPSEP (P4)

'05 '06 '07 '08 '09 '10

TPSEP Enters
into Force

US, Peru,
Australia,
and Vietnam
Join Talks

TPP
Negotiations
Launched
Malaysia Joins

Canada
and Mexico
Join Talks

Japan
Joins Talks

Negotiations
Complete

'11 '12 '13 '14 '15

TPP Member Countries

TPP Members

What Will the TPP Do?

1. Liberalize trade barriers (tariffs and NTBs) on goods and services.
2. Free up investment flows between the member economies.
3. Introduce measures aimed at trade facilitation through enhanced regulatory coherence.
4. Introduce measures to encourage the development of production and supply chains.
5. Make provisions for intellectual property.
6. Provide for investor-state arbitration.

Ciuriak and Xiao (2014) – Study Structure

- This is a study was primarily focused on evaluating the benefits of joining the TPP for Canada.
- The simulations utilized a modified version of the GTAP model.
- AVEs of NTMs are sourced from Petri et al. (2012), and cuts are introduced for both merchandise and mode 1 services trade, in the form of import augmenting technical change.
- In the case of goods, the authors take the AVEs of Singapore as the best achievable, and reduce the AVEs of other countries by 10 percent of the difference on a bilateral basis. They cut non-country specific costs by 25 percent.
- In services, the same convergence approach is used (with Singapore as the base) but the AVEs are cut by 56 percent (except for public services).

Ciuriak and Xiao (2014) – Key Results

- Estimates of total efficiency impact range from $74-166 billion.
- Only around 25 percent of the gains are from tariff liberalization. Reductions in NTMs accounting for most of the gains (with those in goods being larger than those in services).
- This study is an excellent example of being clear about what is driving the results – the authors fully break down the effects by policy shock.

- This is a study with a focus on the potential effect of the TPP on the Philippines.
- The simulations use PEP model, a competitive Armington model with recursive dynamics. It uses GTAP8 data (2007 base year) aggregated to 20 regions $\times$ 15 commodities.
- AVEs of NTMs are sourced from Kee et al. (2006). They are implemented in the model as tariff equivalents, and applied in all merchandise sectors.
- The simulations assume that tariffs are cut by 90 percent, while NTMs are cut by 20 percent.

Cororaton and Orden (2015) – Key Results

- Exports expand from TPP members by around 1.5 percent, more than half of which is driven by tariff reductions.
- This suggests that gains from trade liberalization (which range from a low of 0.05 percent of GDP for the US to a high of 2.71 percent for Viet Nam) are coming more from tariff than NTM reform in this study – in contrast to most others.
- Why? Use of tariff equivalents rather than import augmenting technical change, plus relatively conservative assumptions about the magnitude of NTM cuts.

Kawasaki (2016) – Study Structure

- This is probably the most well-known study in Japanese policy circles.
- It uses the GTAP model and GTAP8 data, but projects the equilibrium forward prior to simulation. The closure used is steady state.
- The simulations of the TPP include tariff reductions (assumed cut all to zero) and NTM reductions modeled via import augmenting technical change.
- The assumed NTM shock is a straight 50 percent improvement in productivity, with a 50 percent spillover rate.

Kawasaki (2016) – Key Results

- The total efficiency gains estimated by this model are among the largest in the literature – around \$450 billion.
- Most of these gains are from the NTM shocks, (around \$355 billion).
- Big gains to Japan, and big gains to the US from NTMs.
- These are massive numbers by the standards of CGE models, partly driven by the capital accumulation in the closure, but in large part due to very strong NTM assumptions.

- This paper is the latest update of what is perhaps the best known CGE assessment of the TPP.
- The modeling is based on one of the more advanced CGE models, a recursive dynamic Armington model with monopolistic competition in manufactures and private services, and firm heterogeneity, using GTAP9 data.
- The simulations were designed after the agreement was reached.
- NTM assumptions similar to those is Ciuriak and Xiao study (which was based on an earlier version), but data is updated. Cuts are slightly more conservative, but spillover rate bigger.

Petri and Plummer (2016) – Key Results

- This is another study with gains at the high end – $465 billion with largest gains to US and Japan.
- The authors are again careful in laying out the source of the gains (relative to their earlier work). Larger estimates of the AVEs of NTMs are a big component, as are the assumed spillover effects.

- This was the major US government study, and focused on US interests.
- Like the latest Peterson Institute stud, it had the advantage over many earlier studies of being completed after the agreement was finalized – so simulations better fit the actual agreement.
- The study used the GTAP model with some modifications, with GTAP9 data.
- In goods, the study concentrates on tariff reductions and expansions of TRQs (a big part of the final agreement). NTMs are there, as technical changes, but very modest (1 percent).
- In services, AVEs were estimated and then cuts of varying sizes introduced as technical changes. All fairly modest.

USITC (2016) – Key Results

- The reported results are limited to the US.
- Total gains in the region of 0.2 percent of GDP – much more conservative than many other studies.
- Around 55 percent of the US gains are from merchandise trade reforms, 35 from the assumptions on services.

- The survey paper on CGE simulation of the TPP is available as an ARTNeT working paper (#147).