

Trans-Pacific Partnership, GMOs, and Japan's Agricultural Trade

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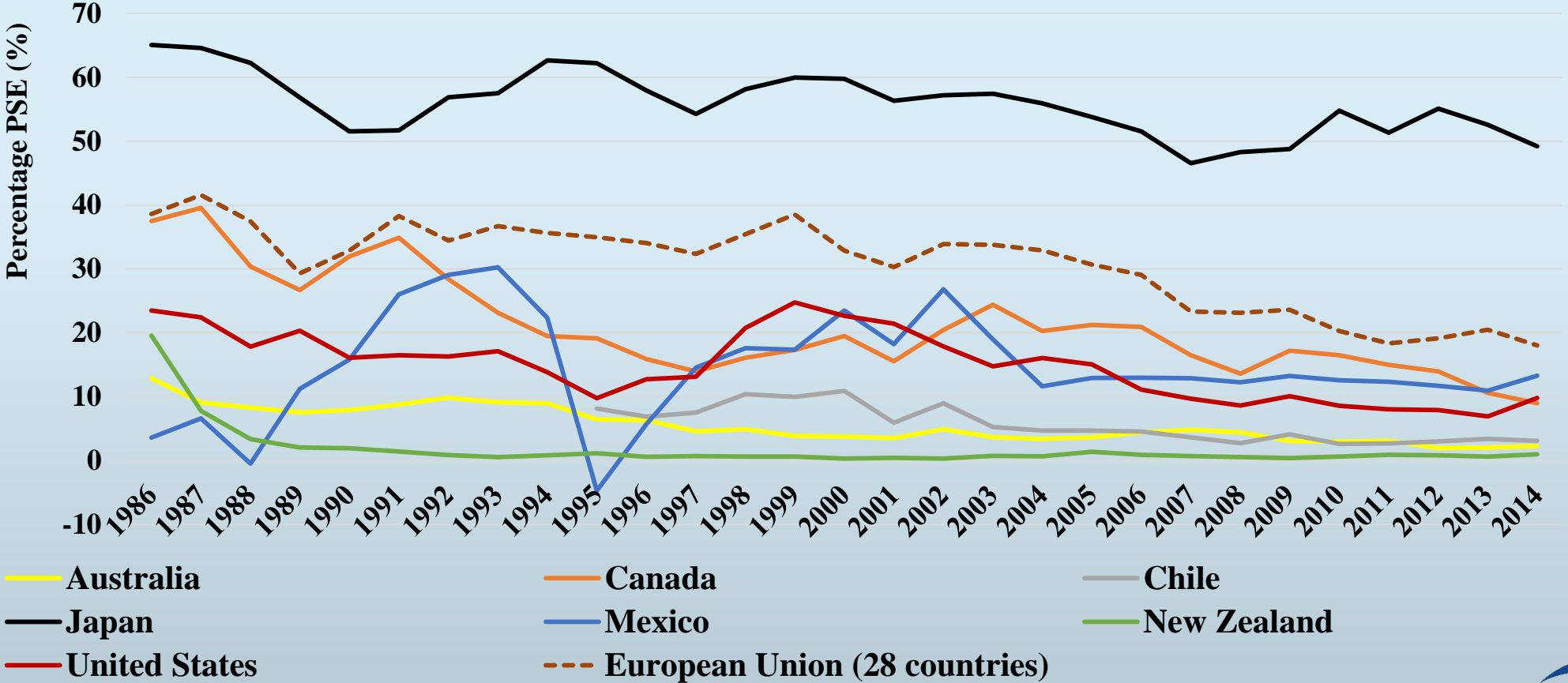


Motivation

- Little empirical work has been done on Japan's degree of protection on its five sensitive agricultural categories consisting of rice, wheat and barley, beef and pork, sugar, and dairy products.
- There is a lack of clarity on whether or not trade barriers on imports of genetically modified organisms (GMOs) are causing trade distortions in Japan.
- The Trans-Pacific Partnership (TPP) is concluded on Oct. 5th, 2015. In Japan, will or how can the deal get ratified?

Japan's Aggregate Protection

Farmers in Japan have been the most highly protected, compared with those in six of the other TPP countries and the European Union (EU), by the Producer Support Estimate (PSE) as calculated by the Organization for Economic Co-operation and Development (OECD).



Data source: OECD (2015)



Major Food Exporters to Japan

	Top three exporters and their market shares in Japan			ROW shares
Rice	United States (56.9%)	Thailand (26.1%)	China (9.9%)	7.10%
Wheat*	United States (57.2%)	Canada (23.1%)	Australia (18.8%)	0.90%
Barley*	Australia (54.5%)	Canada (26.6%)	United States (14.2%)	4.7%
Beef	Australia (69.0%)	United States (18.7%)	New Zealand (6.7%)	5.60%
Pork	United States (42.1%)	Canada (19.5%)	Denmark (15.9%)	22.50%
Sugar	Thailand (51.7%)	Australia (27.7%)	South Africa (7.2%)	13.40%
Dairy products	Australia (27.5%)	United States (23.4)	New Zealand (23.3%)	25.80%

Data Source for barley: Japan Grain and Feed Annual, 2015; for others: United Nations Commodity Trade Statistics, United Nations Statistics Division

Nontariff Barriers and GMOs

None of the six GM crops imported to Japan are included into the five political sensitive categories.



To avoid labeling requirements, imports of GM varieties are largely processed into processed oils or sweeteners which do not contain GM ingredients.

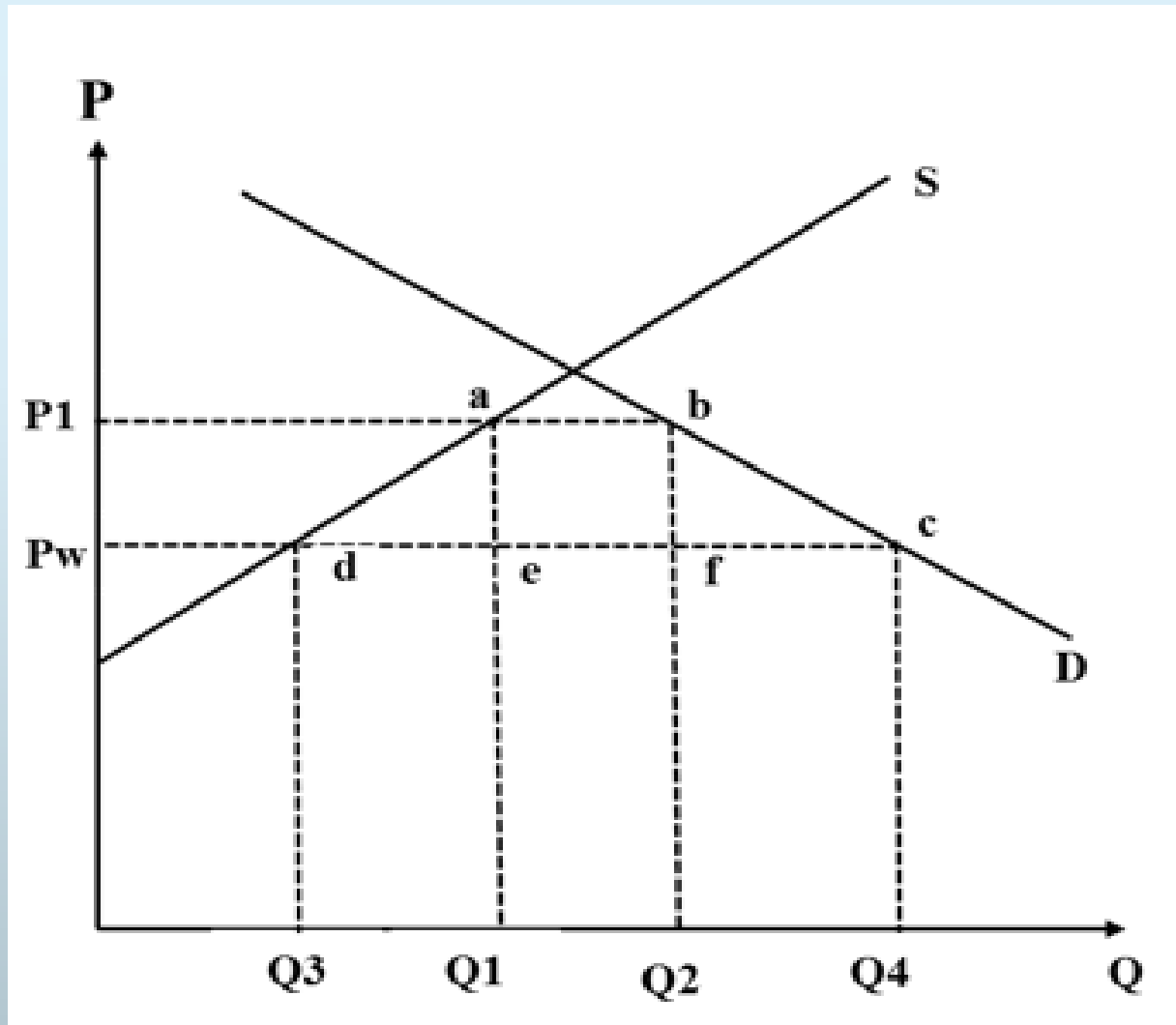
The significant tariffs on imports of most processed oils and sweeteners have little to do with whether or not they contain GM ingredients. Rather, they are largely the outcome of rent-seeking activities (Schmitz et al., 2010) by Japan's processing industries.

Japan's Agricultural Policies on the Five Special

Selected seven commodities	Major domestic measures	Major border measures
Rice	Gentan System	TRQ; mark-up; 341 yen/kg for out-of-quota imports (778% simple tariff)
Wheat	Income stabilization program; rice diversion subsidies	TRQ; mark-up; 55 yen/kg for out-of-quota imports (252% simple tariff)
Barley	Income stabilization program; rice diversion subsidies	TRQ; mark-up; 39 yen/kg for out-of-quota imports
Raw sugar	ALIC exercises monopsony power in importing; guaranteed minimum prices	TRQ; mark-up; prohibitive out-of-quota tariff (680% for cane sugar, 220% for beet sugar)
Beef	Deficiency payment	38.5% ad valorem tariff; safeguard mechanism
Pork	Regional Pig Production Stabilization Fund Project	4.3% ad valorem tariff; "Gate Price", safeguard
Butter	ALIC exercises monopsony power in importing; government subsidies	35% ad valorem tariff; 29.8+985 yen/kg for out-of-quota imports

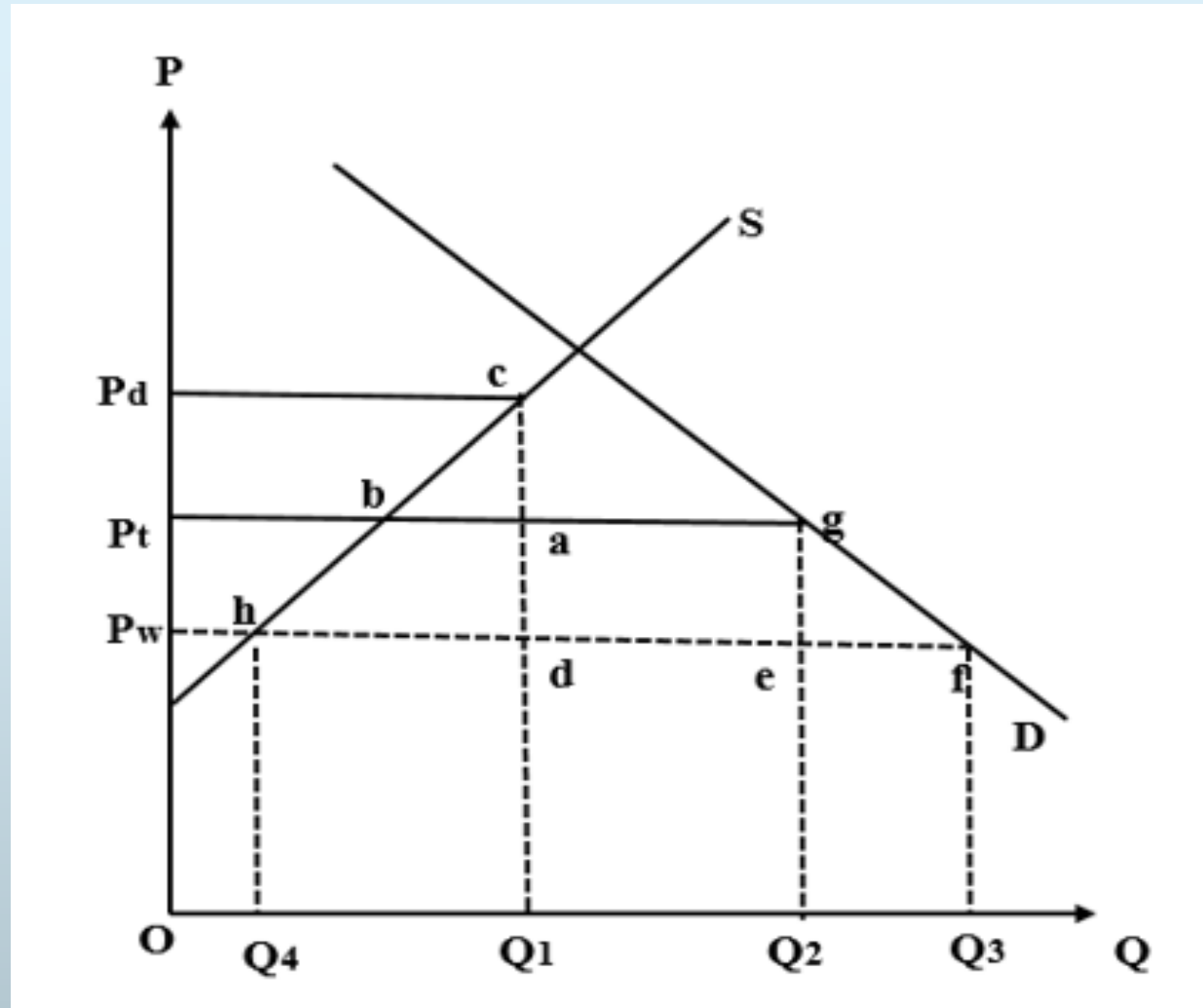
Free Trade Welfare Impact

Effects of the TPP in **rice, wheat, barley, and raw sugar** imports



Free Trade Welfare Impact

Effects of the TPP in **beef, pork, and butter** imports



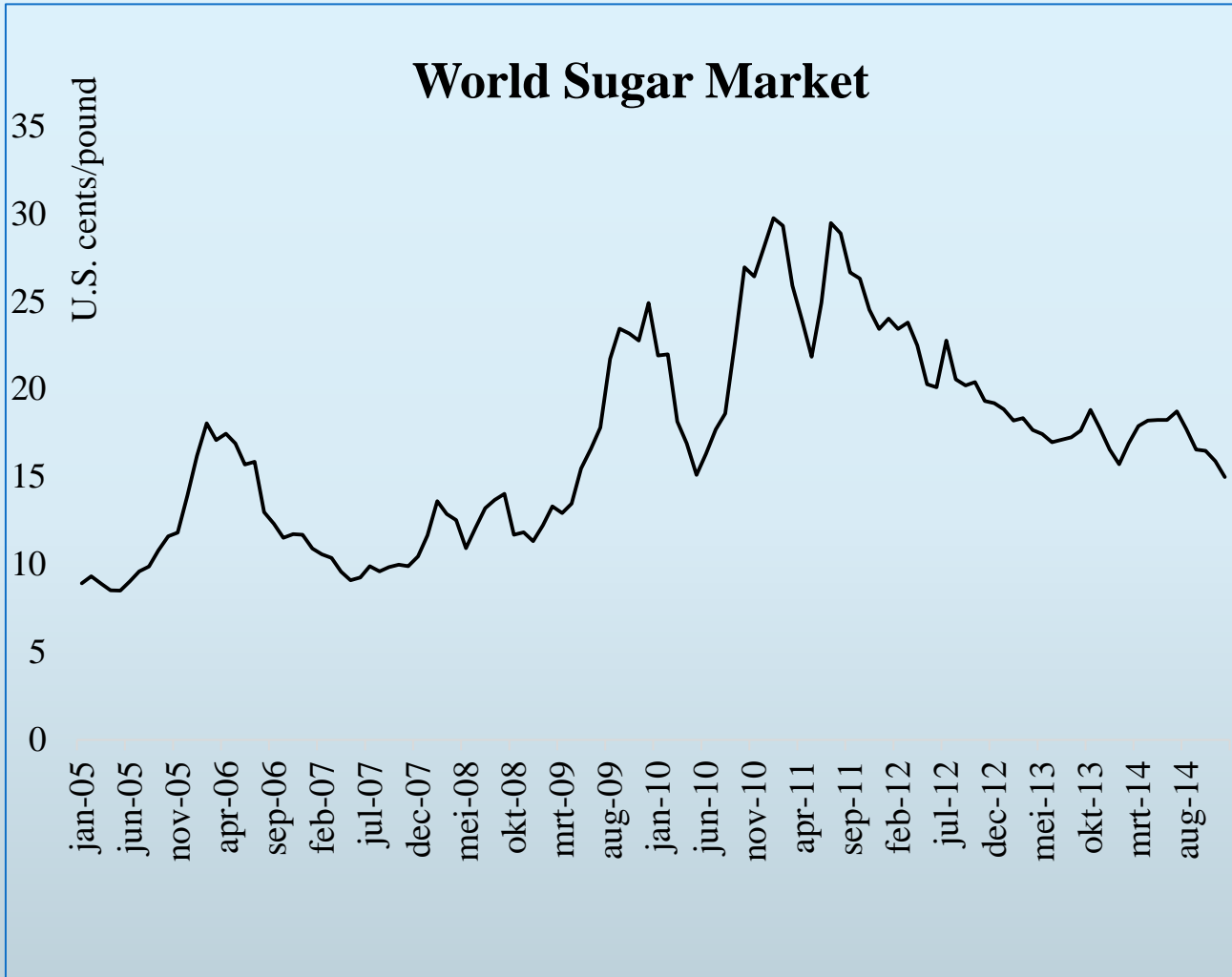
Empirical Estimates

	Producer surplus loss	Consumer surplus gain	Government welfare change	Net gain
Rice	6.37bn (Es=0.5) ~ 7.69bn (Es=0.25)	15.8bn (Ed=-0.1) ~ 42.4bn (Ed=-0.5)	-1.05bn	7.08bn (Es=0.25, Ed=-0.1) ~ 34.3bn (Es=0.75, Ed=-0.5)
Wheat*	104m (Es=0.75) ~ 114m (Es=0.25)	1.09bn (Ed=-0.5) ~ 1.59bn (Ed=-1.5)	-822m	151m (Es=0.25, Ed=-0.5) ~ 666m (Es=0.75, Ed=-1.5)
Barley*	10.6m (Es=0.75) ~ 11.6m (Es=0.25)	123m (Ed=-0.5) ~ 180m (Ed=-1.5)	-94.3m	17.0m (Es=0.25, Ed=-0.5) ~75.2m (Es=0.75, Ed=-1.5)
Raw sugar	632m (Es=0.75) ~ 770m (Es=0.25)	6.02bn (Ed=-0.5) ~ 16.0bn (Ed=-1)	-1.54bn	3.71bn (Es=0.25, Ed=-0.5) ~ 13.8bn (Es=0.75, Ed=-1.5)

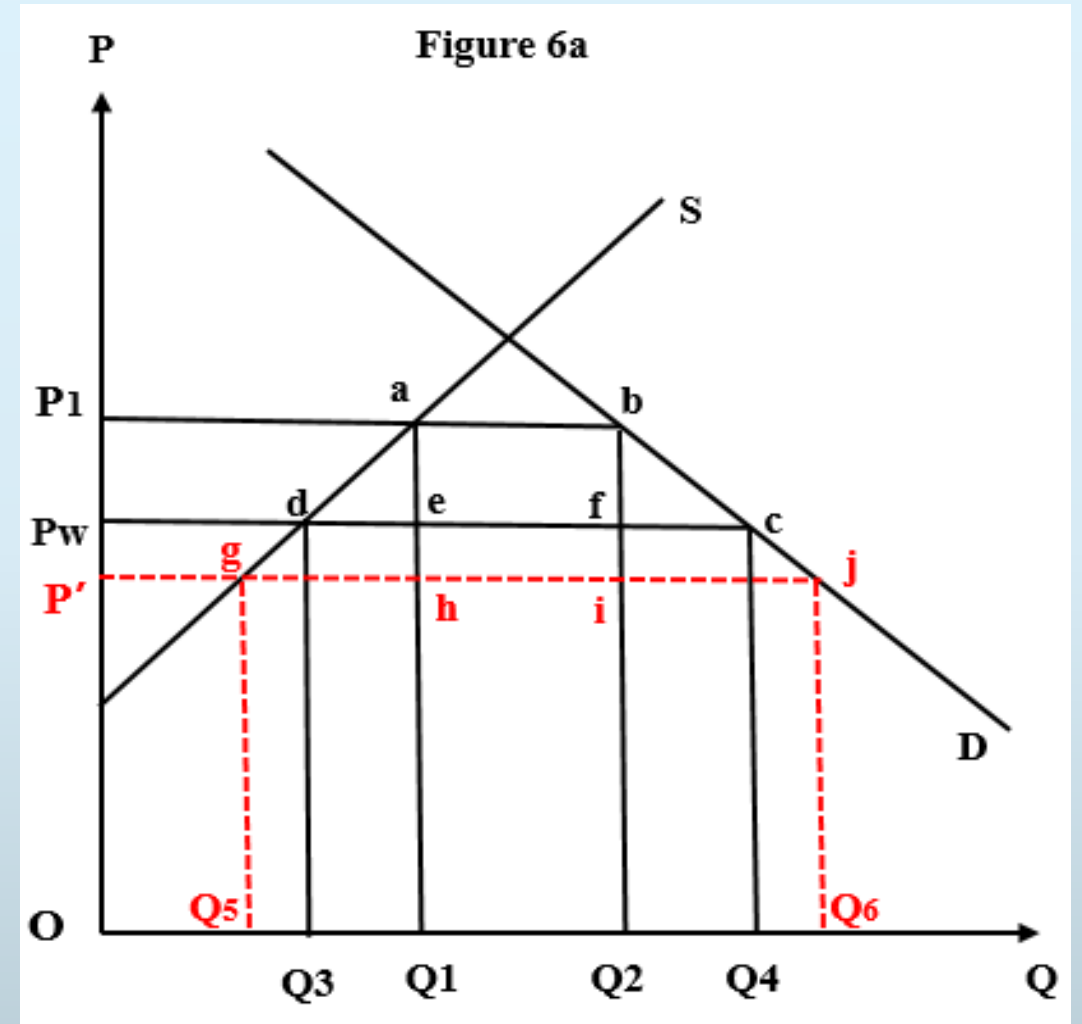
Empirical Estimates

	Producer surplus loss	Consumer surplus gain	Government welfare change	Net gain
Beef	2.22bn (Es=1) ~ 2.27bn (Es=0.5)	4.09bn (Ed=-1)~ 8.18bn (Ed=-3)	-868m	954m (Es=0.5, Ed=-1) ~ 5.09bn (Es=1, Ed=-3)
Pork	1.88bn (Es=1) ~ 1.89bn (Es=0.5)	3.31bn (Ed=-0.5) ~ 3.33bn (Ed=-1.5)	-1.42bn	7.98m (Es=0.5, Ed=-0.5) ~ 26.4m (Es=1, Ed=-1.5)
Butter	491m (Es=1) ~ 492m (Es=0.5)	124m (Ed=-0.5)~ 159m (Ed=-1.5)	384m	16.2m (Es=0.5, Ed=-0.5) ~ 51.9m (Es=1, Ed=-1.5)

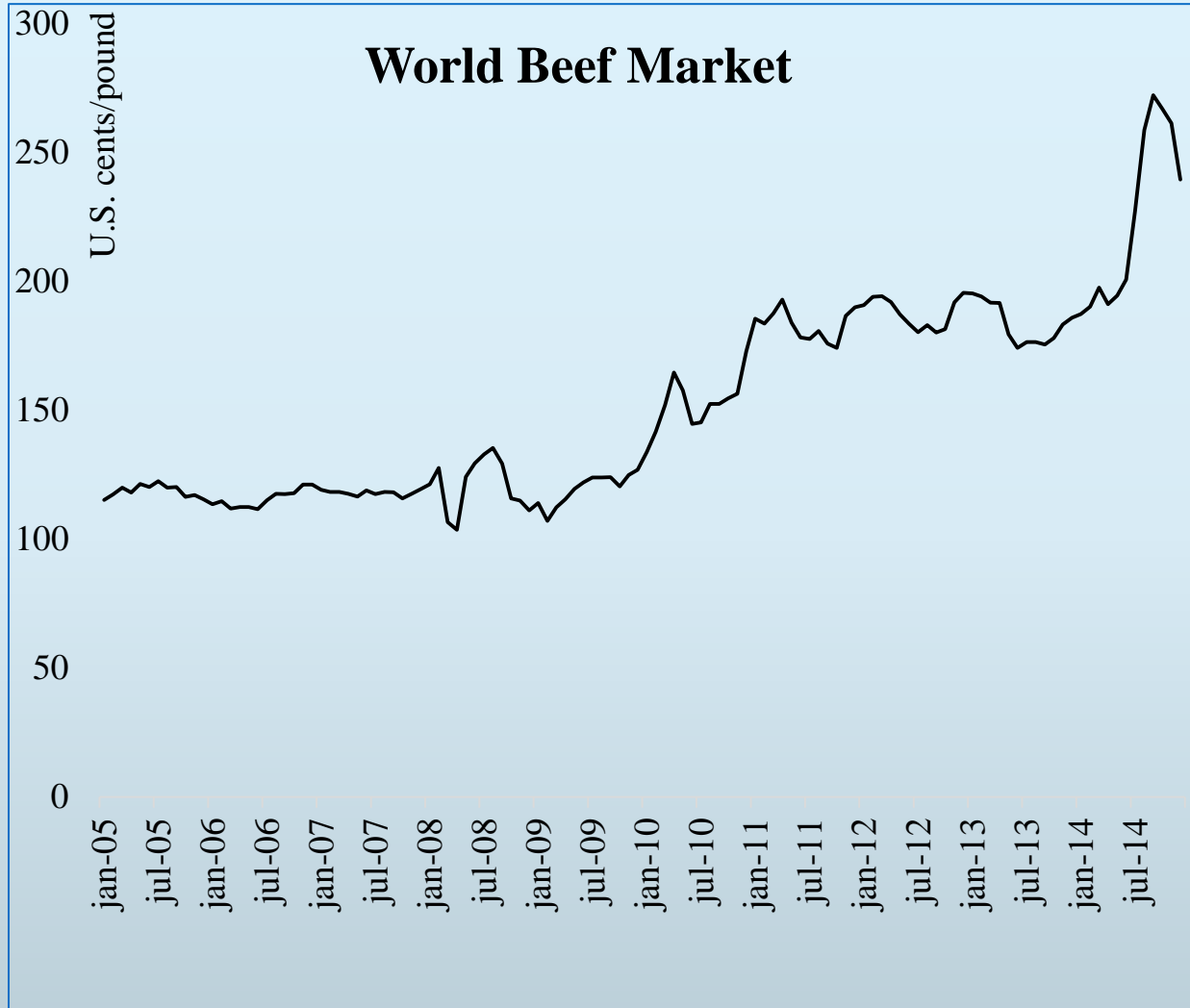
Sensitivity Tests



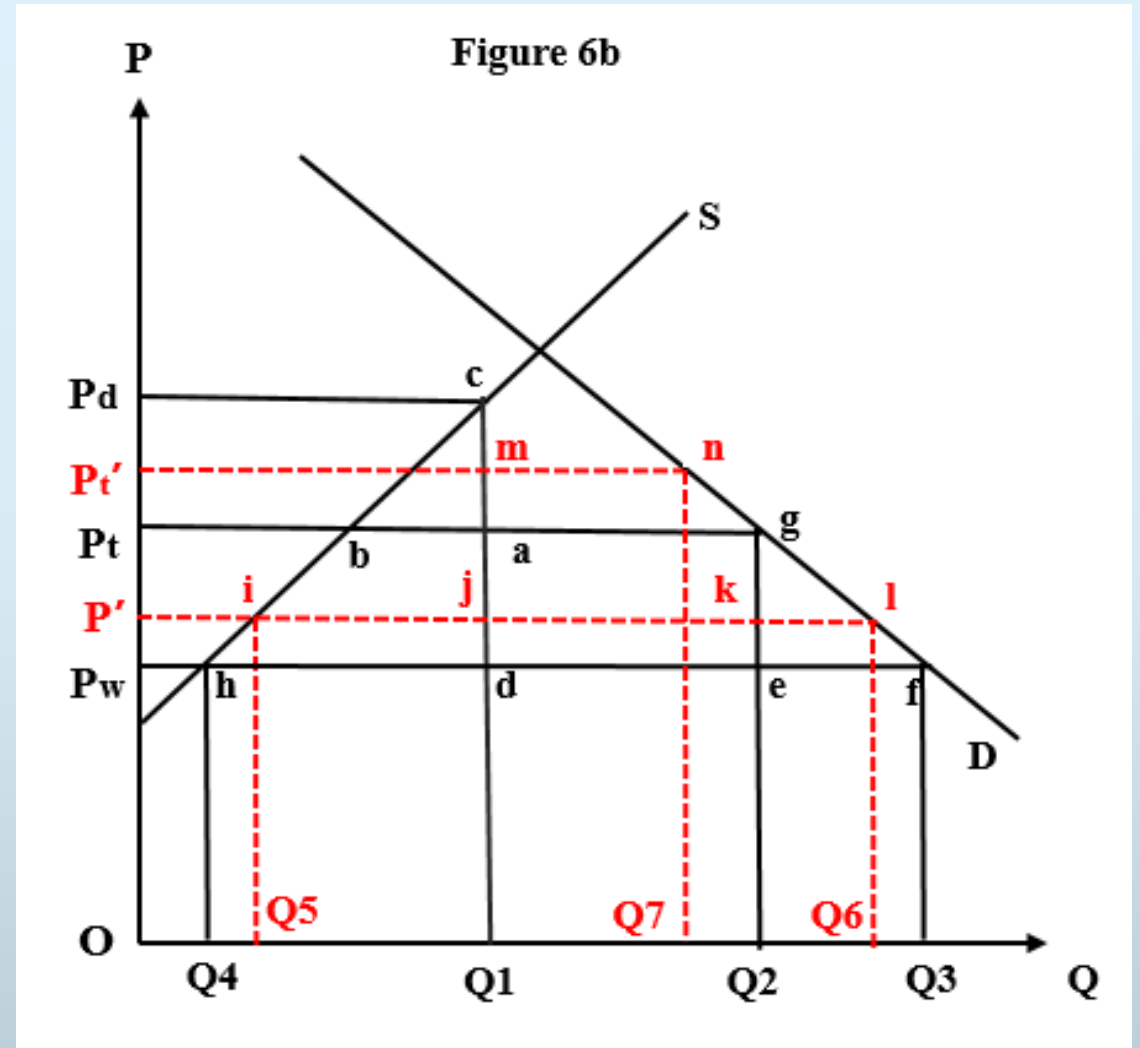
Data source: Sugar, Free Market, Coffee Sugar and Cocoa Exchange
 Contract No.11 nearest future position



Sensitivity Tests



Data source: USDA Market News (2014)



TPP Details

Commodities	Under the TPP agreement
Vegetables and fruits	<ul style="list-style-type: none"> • Immediately eliminate tariffs for virtually all vegetables and fruits
Rice and rice products	<ul style="list-style-type: none"> • Establish a new country-specific quota (CSQ) for the U.S.; • Immediately eliminate tariff on "other animal feeds, containing rice"
Wheat and wheat products	<ul style="list-style-type: none"> • Lower the mark-up by 45% over a 9-year period; • Establish new CSQ for the U.S.; gradually reduce or eliminate tariffs on wheat products
Barley and barley products	<ul style="list-style-type: none"> • Establish new CSQ for the U.S.
Sugar and sugar products (Source: Foreign Agricultural Service, USDA, online access http://www.fas.usda.gov/tpp)	<ul style="list-style-type: none"> • Establish an immediate duty free TPP-wide quota

TPP Details

Commodities	Under the TPP agreement
Beef and beef products	<ul style="list-style-type: none">• Reduce tariff from 38.5% to 9% in 16 years;• Safeguard snapback rate will be gradually phased out;• Eliminate tariffs on beef offal and processed products in 6-16 years
Pork and pork products	<ul style="list-style-type: none">• Immediately reduce the 4.3% tariff by 50%, and the residue in 11 years;• Gate Price system will remain, but the maximum specific duty will be gradually reduced;• Safeguard system will be terminated in year 12;• Tariffs and Gate Price system on processed products will be phased out over 11 years
Dairy products	<ul style="list-style-type: none">• Establish new TRQs to all TPP partners; tariff will be reduced

(Source: Foreign Agricultural Service, USDA. Online access <http://www.fas.usda.gov/tpp>)

Conclusions and Limitations

- Japan imposes high protection on the five politically sensitive categories.
- GMOs do not cause trade distortions.
- Japan's powerful domestic special interest will seek compensations for what they have given up in TPP.

Limitations:

- Accuracy of price elasticities of both demand and supply curves.
- We do not account for the market differentiation.
- We only chose the representative commodities.
- We assume Japan to be a small import country.