

US BEEF TRADE IN THE TRANS-PACIFIC PARTNERSHIP AGREEMENT:  
ANALYSIS OF RELEVANT MARKETS AND POTENTIAL SCENARIOS

---

A Thesis  
presented to  
the Faculty of the Graduate School  
at the University of Missouri-Columbia

---

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science

---

by  
JOSEPH TVRDY  
Dr. Scott Brown, Thesis Supervisor

MAY 2016

The undersigned, appointed by the dean of the Graduate School, have examined the [thesis or dissertation] entitled

US BEEF TRADE IN THE TRANS-PACIFIC PARTNERSHIP AGREEMENT:

ANALYSIS OF RELEVANT MARKETS AND POTENTIAL SCENARIOS

Presented by Joe Tvrdy,

A candidate for the degree of Master of Science,

And hereby certify that, in their opinion, it is worthy of acceptance.

---

Assistant Research Professor – Dr. Scott Brown

---

Professor – Dr. Jan Dauve

---

Assistant Teaching Professor, Adjunct – Lori Wilcox

.....**DEDICATION**

This thesis is dedicated to Dr. Abner Womack. Without his constant support and encouragement, I may have never pursued a career in agricultural policy or pursued an advanced degree in economics. He has been a mentor and a role model to me for almost a decade, and I truly appreciate all his words of encouragement and intellectual arm-twisting.

.....**ACKNOWLEDGEMENTS**

I would like to express my sincerest thanks to my advisor, mentor, and friend, Dr. Scott Brown, who worked tirelessly with me throughout my thesis. I appreciate the honest candor and patience it took to work with my through a slightly unorthodox Master's program. I would also like to thank Dr. Dauve and Dr. Wilcox who served on my thesis committee and provided great insight and words of encouragement on my journey. A special thanks to Daniel Madison, Joel Greene, Colin Woodall, Terry Meikle, John Goldberg, Chris Heggem, and Wyatt Thompson, who were extremely helpful in the research and defense stages of my thesis. In addition, I would be remiss if I did not mention Harvey James, Pat Westhoff, Willi Meyers, and everyone at FAPRI who each played a significant role in my education over the past two years. Finally, I would like to thank my wife for the patience and grace she has shown over the past two years and my family (Tvrdy and Heins) for their unconditional love and support during graduate school.

Thank you all for the investment of time and effort you put towards my education. I am eternally grateful.

## Table of Contents

ACKNOWLEDGEMENTS.....	ii
TABLE OF CONTENTS.....	iii
LIST OF FIGURES.....	v
1: INTRODUCTION.....	1
2: FREE TRADE THEORY AND TRADE RESTRICTIONS RELEVANT TO FTAs	
2.1 Definitions.....	3
2.2 Review of Free Trade Theory.....	5
2.3 Import Restrictions.....	8
2.31 Import Tariffs.....	9
2.32 Import Quotas.....	11
2.4 Harmonized System of Tariffs.....	13
2.41 General Overview.....	14
2.42 Description of Beef Tariff Lines & Relevant Beef Definition.....	15
3: TRANS-PACIFIC PARTNERSHIP & MARKETS RELEVANT TO US BEEF TRADE	
3.1 Overview of the Trans-Pacific Partnership (TPP) Free Trade Agreement.....	17
3.2 Relevant TPP Beef Markets.....	20
3.21 North American Beef Markets.....	20
3.22 Oceanic Beef Markets.....	23
3.23 US Beef Export Markets.....	25
3.24 US Beef Exports by Tariff Line.....	29
3.25 Existing US Export Tariffs and Relevant Free Trade Agreements.....	33
3.26 US Beef Imports, Existing Tariff Rate Quotas, and Free Trade Agreements.....	35
3.27 Japanese and Southeast Asian Beef Markets.....	37
3.28 Japanese Beef Import Tariffs and Free Trade Agreements.....	41
3.3 Sanitary & Phyto-Sanitary Measures and Technical Barriers to Trade.....	47
3.4 Existing Analysis of Beef Market Impacts from Potential TPP Agreement.....	50

<b>4: THE US BEEF MODEL</b>	
4.1 Overview of Research.....	52
4.2 US Livestock Model.....	52
4.3 Beef Export/Import Model.....	53
4.4 Data.....	55
4.5 Baseline.....	56
<b>5: Potential Trans-Pacific Trade Partnership Scenarios</b>	
5.1 Overview of Potential TPP Scenarios Relevant to US Beef Trade.....	58
5.2 Scenario I: Tariff Elimination.....	59
5.3 Results: Tariff Elimination Scenario.....	61
5.4 Scenario II: Major Disease Incident with and without Improved SPS Measures.....	66
5.5 Results: Major Disease Incident with and without Improved SPS Measures.....	69
<b>6: SUMMARY AND CONCLUSION</b>	
6.1 Summary.....	75
6.2 Conclusion.....	79
<b>7: BIBLIOGRAPHY</b>	

## List of Figures

### **Chapter 1 - None**

### **Chapter 2**

Figure 2.1 – Supply and Demand Impacts of Implementing Import Tariff.....	9
Figure 2.2 – Welfare Effects of Implementing Import Tariff.....	10
Figure 2.3 – Supply and Demand Impacts of Implementing Import Tariff.....	11
Figure 2.4 – Welfare Effects of Implementing Import Quota.....	12
Figure 2.5 – Example of HS Code.....	14
Figure 2.6 – Beef Tariff Lines and Description.....	15

### **Chapter 3**

Figure 3.1 - US Beef & Veal Imports and Exports from Canada and Mexico Pre and Post NAFTA.....	25
Figure 3.2 - US Total Value of Beef and Beef Product Exports to TPP Countries.....	25
Figure 3.3 - US Total Value of Beef and Beef Product Exports to TPP Countries.....	26
Figure 3.4 - US Total Beef and Beef Product Exports.....	26
Figure 3.5 - Percentage of Total World US Beef Exports by Volume to TPP Countries.....	27
Figure 3.6 - Total Value per Metric Ton of US Beef and Beef Product Exports.....	28
Figure 3.7 - Value of US Beef by Tariff Line – Five Year Average 2010-2014.....	32
Figure 3.8 - Volume of US Beef by Tariff Line – Five Year Average 2010-2014.....	32
Figure 3.9 - Tariffs and Volume of US Beef Exported to Japan in 2014.....	34
Figure 3.10 - US Beef Imports by 6-digit tariff line.....	35
Figure 3.11 – Japanese Beef Imports from World and Major TPP Exporters.....	38
Figure 3.12 - Japanese Beef Imports – Percentage of World Trade by Country .....	39
Figure 3.13 - Japanese Beef Imports from World by 9 Digit Tariff Line.....	39
Figure 3.14 -2014 Japanese Imports from World, US, & Australia by 9 Digit Tariff Line.....	40
Figure 3.15 - Japanese Beef Tariff Rates for WTO Countries.....	41

### **Chapter 3 (Cont.)**

Figures 3.16- JAEPA Beef Tariff Reduction Schedule & Tariff Rate Quota Volumes.....	43
Figure 3.17- JAEPA TRQ Tariff Rates.....	44
Figure 3.18 – Japan-Mexico EPA Pooled Quota Tariff Rates.....	46
Figure 3.19 - Percentage Change in US Beef Imports & Exports by Country from 2014-2025....	50

### **Chapter 4**

Figure 4.1 – US Beef Exports to Japan Equation Regression Results.....	54
Figure 4.2 – Residual and Predicted Values of Regression for US Beef Exports to Japan.....	55
Figure 4.3 - US Beef Model Baseline.....	56

### **Chapter 5**

Figure 5.1 - Potential TPP Scenarios.....	58
Figure 5.2 – US Japanese Spread on Select Cuts of US Beef.....	61
Figure 5.3 – Quantitative Results from Tariff Elimination Scenario.....	64
Figure 5.4 – Percentage Results from Tariff Elimination Scenario.....	64
Figure 5.5 – Trade Effects by Country from Tariff Elimination Scenario.....	65
Figure 5.6 – US Beef Exports as a Percentage of 2003 Volume of Select Countries from 2003-14....	67
Figure 5.7 – Quantitative Results from Major Disease Incident and Improved SPS Scenario.....	72
Figure 5.8 – Percentage Results from Major Disease Incident and Improved SPS Scenario.....	72
Figure 5.9 – Trade Effects by Country from Major Disease Incident and Improved SPS Scenario.....	73

### **Chapter 6 - None**

## 1: INTRODUCTION

On June 29, 2015, President Obama signed the "Bipartisan Congressional Trade Priorities and Accountability Act of 2015 (TPA)," which lays the legal framework necessary for the United States to confidently negotiate and consider international free trade agreements (FTAs) like the Trans-Pacific Partnership (TPP)<sup>1</sup>. Many free trade advocates and trade-reliant industries applauded passage of TPA as a major step forward including many participants in the US beef industry. Phillip Ellis, President of the National Cattlemen's Beef Association (NCBA), called passage of TPA "... a fundamental step to securing future free-trade deals that will allow beef producers greater access to foreign markets" as trade is very important to the US beef industry. Mr. Ellis elaborates:

Cattlemen and women have seen tremendous value in trade, exporting over \$7.1 billion worth of U.S. beef in 2014, which alone accounts for over \$350 in added value per head of cattle in the United States. This value is not just from increased demand, but also from adding value to variety meats that have very limited value here at home. As the demand for U.S. beef continues to grow around the world, the future success of the beef industry rests in our ability to meet foreign demand without inference of tariff and non-tariff trade barriers. With TPA passed, the U.S. can focus on finalizing trade agreements like the Trans-Pacific Partnership that will give us greater access to consumers throughout the Pacific Rim.<sup>2</sup>

Mr. Ellis's comments represent an industry that has become increasingly reliant on exports, and, if the beef industry views the final agreement favorably, it will likely play an integral role in garnering the support in Congress necessary to pass any potential agreement once negotiations conclude.

Economic analysis of trade agreements have been pivotal in promoting previous authorizing legislation in the past, and the United States Department of Agriculture (USDA) has already released a report on the economic impacts of full tariff elimination in a potential TPP agreement<sup>3</sup>. Outside of the USDA report, little quantitative analysis has been conducted on beef trade in relation to TPP. While the USDA report is a comprehensive overview of the impacts of full tariff elimination of TPP on all

---

<sup>1</sup> Fergusson, I. *Trade Promotion Authority (TPA)*. Congressional Research Service Report IF10038. July 2, 2015.

<sup>2</sup> Ellis, P. *Senate Finalizes TPA, Sends to President's Desk*. National Cattlemen's Beef Association Website. <https://www.beefusa.org/newsreleases1.aspx?NewsID=5009>. Accessed Sept. 25, 2015.

<sup>3</sup> Burfisher, M. et Al. *Agriculture in the Trans-Pacific Partnership*. Economic Research Service Report 176. US Department of Agriculture. October, 2014.

agriculture commodities, several important complexities of the beef trade are simplified in this analysis including treating beef as a commodity, only considering full tariff elimination in the TPP agreement, and not accounting for the non-tariff benefits of a potential TPP agreement. In 2014 the US was the world's largest beef producer and consumer with overall beef production and consumption nearly equal at 11.2 million metric tons signaling that very little beef trade would occur if all beef was of the same quality and grade<sup>4</sup>. However, the US was the world's largest importer and fourth largest exporter of beef in 2014<sup>5</sup>. The quality, cut, and reputation of beef is an integral factor in world trade and simplifying the trade equations could potentially skew the results of an economic analysis. In addition, Mr. Ellis of NCBA's statement of TPA acknowledges the importance of both tariff and non-tariff trade barriers while the USDA report clearly states its analysis is only limited to the tariff related provisions of the agreement:

The scope of the TPP negotiations goes well beyond cutting tariffs; they also cover other areas that could impact agricultural trade, including investment, trade in services, technical barriers to trade, sanitary and phytosanitary barriers, etc. This analysis does not account for the gains that might be achieved in these other areas of the negotiations.<sup>6</sup>

In order to prepare for a potential agreement, this research seeks to lay a foundation for a more thorough economic analysis of the US beef industry in the case of a final TPP agreement and provide insight into various scenarios that could play a significant role in the potential agreement. Specifically, this research will seek to:

1. identify key import and export markets in the TPP region relevant the US beef industry,
2. analyze current barriers to trade in those markets including current tariffs and existing FTAs,
3. examine value and volume of beef traded at the individual tariff level in key TPP beef markets, and
4. quantify impacts of potential TPP scenarios including both full/partial tariff elimination and a major disease incident with and without improved sanitary and phytosanitary provisions

---

<sup>4</sup> Cook, Rob. *United States Beef & Cattle Statistics*. <http://beef2live.com/story-united-states-beef-cattle-statistics-89-108399>. Beef2Live Website. Accessed June 13, 2015.

<sup>5</sup> Cook, Rob. *United States Beef & Cattle Statistics*. <http://beef2live.com/story-united-states-beef-cattle-statistics-89-108399>. Beef2Live Website. Accessed June 13, 2015.

<sup>6</sup> Burfisher, M. et Al. *Agriculture in the Trans-Pacific Partnership*. Economic Research Service Report 176. US Department of Agriculture. October, 2014.

## 2: FREE TRADE THEORY AND TRADE RESTRICTIONS RELEVANT TO FTAs

### 2.1 Definitions

**Free Trade** - A theoretical concept that assumes international trade unhampered by government measures such as tariffs or nontariff barriers. The objective of trade liberalization is to achieve “freer trade” rather than “free trade,” it being generally recognized among trade policy officials that some restrictions on trade are likely to remain in effect for the foreseeable future.<sup>7</sup>

**Exports** – Goods and services produced in one country and sold in other countries in exchange for goods and services, gold, foreign exchange, or settlement of debt. Countries devote their domestic resources to exports because they can obtain more goods and services with the international exchange they earn from the exports than they would from devoting the same resources to the domestic production of goods and services.<sup>8</sup>

**Imports** – The inflow of goods and services into a country’s market for consumption. A country enhances its welfare by importing a broader range of higher-quality goods and services at lower cost than it could produce domestically. The expansion of world trade since the end of World War II has therefore been a principal factor underlying a general rise in living standards in most countries.<sup>9</sup>

**Tariff** - A duty (or tax) levied upon goods transported from one customs area to another either for protective or revenue purposes. Tariffs raise the prices of imported goods, thus making them generally less competitive within the market of the importing country unless that country does not produce the items so tariffed.<sup>10</sup>

**Ad Valorem Tariff or Duty** - A tariff calculated “according to value,” or as a percentage of the value of goods cleared through customs; for example, 15 percent ad valorem means 15 percent of the value of the entered merchandise.<sup>11</sup>

**Quota** – A government-imposed restriction on quantity, or sometimes on total value.<sup>12</sup>

**Tariff Rate Quota (TRQ)** - A combination of an import tariff and an import quota in which imports below a specified quantity enter at a low (or zero) tariff and imports above that quantity enter at a higher tariff. Also called a tariff quota.<sup>13</sup>

---

<sup>7</sup> *Terms of Trade*. Export.Gov Website. [http://export.gov/exportbasics/eg\\_main\\_017485.asp](http://export.gov/exportbasics/eg_main_017485.asp). Accessed August 28, 2015.

<sup>8</sup> *Terms of Trade*. Export.Gov Website. [http://export.gov/exportbasics/eg\\_main\\_017485.asp](http://export.gov/exportbasics/eg_main_017485.asp). Accessed August 28, 2015.

<sup>9</sup> *Terms of Trade*. Export.Gov Website. [http://export.gov/exportbasics/eg\\_main\\_017485.asp](http://export.gov/exportbasics/eg_main_017485.asp). Accessed August 28, 2015.

<sup>10</sup> *Terms of Trade*. Export.Gov Website. [http://export.gov/exportbasics/eg\\_main\\_017485.asp](http://export.gov/exportbasics/eg_main_017485.asp). Accessed August 28, 2015.

<sup>11</sup> *Terms of Trade*. Export.Gov Website. [http://export.gov/exportbasics/eg\\_main\\_017485.asp](http://export.gov/exportbasics/eg_main_017485.asp). Accessed August 28, 2015.

<sup>12</sup> Deardorff, Alan. *Deardorffs’ Glossary of International Economics*. <http://www-personal.umich.edu/~alandear/glossary/q.html>. Accessed August 28, 2015.

<sup>13</sup> Deardorff, Alan. *Deardorffs’ Glossary of International Economics*. <http://www-personal.umich.edu/~alandear/glossary/q.html>. Accessed August 28, 2015.

**Quota Rent** – The economic rent received by the holder of the right (or license) to import under a quota. Equals the domestic price of the imported good, net of any tariff, minus the world price, times the quantity of imports.<sup>14</sup>

**Codex Alimentarius (Codex)** – the international food standards organization that sets guidelines to protect public health and ensure fair practices in the food trade, set maximum residue levels (MRLs)<sup>15</sup>

**Sanitary and Phyto-Sanitary Measures (SPS)** – the laws, rules, standards, and procedures that governments employ to protect humans, animals, and plants from diseases, pests, toxins, and other contaminants. Examples include meat and poultry processing standards to reduce pathogens, residue limits for pesticides in foods, and regulation of agricultural biotechnology.<sup>16</sup>

**Technical Barriers to Trade (TBT)** - cover technical regulations, product standards, environmental regulations, and voluntary procedures relating to human health and animal welfare. Examples include trademarks and patents, labeling and packaging requirements, certification and inspection procedures, product specifications, and marketing of biotechnology. SPS and TBT measures both comprise a group of widely divergent standards and standards-based measures that countries use to regulate markets, protect their consumers, and preserve natural resources.<sup>17</sup>

**Harmonized System** - The Harmonized Commodity Description and Coding System – commonly known as the Harmonized System or HS - is an internationally standardized nomenclature for the description, classification and coding of goods. It is developed and maintained by the World Customs Organization (WCO), formerly known as the Customs Co-operation Council. As of 1 September 2007, there were over 200 countries and customs or economic unions (including 131 contracting parties to the HS Convention) representing about 98 per cent of world trade, that use the Harmonized System as the basis for customs tariffs and for the compilation of international trade statistics. Although 85 WTO Members are contracting parties to the HS Convention, practically all the remaining WTO Members apply it in spite of not being contracting parties to it.<sup>18</sup> (A more thorough description can be found in the section below)

**World Trade Organization** - The World Trade Organization — the WTO — is the international organization whose primary purpose is to open trade for the benefit of all.<sup>19</sup>

---

<sup>14</sup> Deardorff, Alan. *Deardorffs' Glossary of International Economics*. <http://www-personal.umich.edu/~alandear/glossary/q.html>. Accessed August 28, 2015.

<sup>15</sup> McMinimy, M. *Major Agricultural Trade Issues in the 114<sup>th</sup> Congress*. Congressional Research Service Report R43905. February 10, 2015.

<sup>16</sup> Johnson, R. *Sanitary and Phytosanitary (SPS) and Related Non-Tariff Barriers to Agricultural Trade*. Congressional Research Service Report R43450. March 31, 2014.

<sup>17</sup> Johnson, R. *Sanitary and Phytosanitary (SPS) and Related Non-Tariff Barriers to Agricultural Trade*. Congressional Research Service Report R43450. March 31, 2014.

<sup>18</sup> Yu, D. *The Harmonized System – Amendments and Their Impact on WTO Members' Schedules*. Economic Research and Statistics Division. World Trade Organization. February 2008. [https://www.wto.org/english/res\\_e/reser\\_e/ersd200802\\_e.pdf](https://www.wto.org/english/res_e/reser_e/ersd200802_e.pdf). Accessed June 27, 2015.

<sup>19</sup> *Overview*. World Trade Organization Website. [https://www.wto.org/english/thewto\\_e/whatis\\_e/wto\\_dg\\_stat\\_e.htm](https://www.wto.org/english/thewto_e/whatis_e/wto_dg_stat_e.htm) Accessed June 27, 2015.

## **2.2 Review of Free Trade Theory**

The economic basis for a country engaging in a free trade agreement is based on the premise that free trade improves the overall welfare of all parties involved in the agreement. Free trade is “a theoretical concept that assumes international trade unhampered by government measures such as tariffs or nontariff barriers. The objective of trade liberalization is to achieve “freer trade” rather than “free trade,” it being generally recognized among trade policy officials that some restrictions on trade are likely to remain in effect for the foreseeable future<sup>20</sup>.” The first theories on international trade were born out of “the liberal reaction to the mercantilist domination from the 16<sup>th</sup> to the 18<sup>th</sup> century, a reaction which approached the topic of international trade with considerable attention.”<sup>21</sup> The 19<sup>th</sup> century saw a fierce debate over the influence of tariffs or free trade on the economic growth of a country<sup>22</sup>. Economists in the British Classical School of thought argued in favor of reducing barriers to trade with Adam Smith arguing international specialization of production leads to goods being produced by the country with the lower absolute cost of labor<sup>23</sup> and Ricardo further developing the theory of comparative advantage that focused on relative, not absolute lower production costs between countries and regions<sup>24</sup>.

While international trade only occurs without coercion when individuals on both sides benefit from the transaction<sup>25</sup>, certain players in the economy are negatively affected by these transactions despite overall welfare gains to the economy in general, which led one British statesman to write “free

---

<sup>20</sup> *Terms of Trade*. Export.Gov Website. [http://export.gov/exportbasics/eg\\_main\\_017485.asp](http://export.gov/exportbasics/eg_main_017485.asp). Accessed August 28, 2015.

<sup>21</sup> Dorobat, C. E. A brief history of international trade thought: From pre-doctrinal contributions to the 21st century heterodox international economics. *The Journal of Philosophical Economics*, 8(2), 106-137. Spring, 2015. Retrieved from <http://search.proquest.com/docview/1683745594?accountid=14576>. Accessed September 2, 2015.

<sup>22</sup> C.R. Why did the Economist Favour Free Trade. *The Economist*. September 6, 2013.

<http://www.economist.com/blogs/freeexchange/2013/09/economic-history>. Accessed September 2, 2015.

<sup>23</sup> Smith, A. (1993) [1776]. *Inquiry into the Nature and Causes of the Wealth of Nations*. Oxford University Press.

<sup>24</sup> Ricardo, D. (1951) [1821]. *On the Principles of Political Economy and Taxation*. Cambridge University Press.

<sup>25</sup> Houck, J. (1986). *Elements of Agricultural Trade Policies*. Macmillan Publishing Company. Page 15.

trade ... is in almost every country unpopular<sup>26</sup>.” Partial equilibrium trade models are very useful in analyzing the effects of various policy decisions and restrictions using supply and demand effects to examine various aggregate price, production, income, and trade effects on individual agricultural commodities. While limiting the scope of the analysis to a single commodity is very practical and useful, interactions with the larger economy linked by competition and substitution are lost. However, partial equilibrium models are useful in showing “sharp results that highlight important differences among policy measures<sup>27</sup> .” While these models often differentiate between large and small country effects, this brief review will only focus on large country trade effects for the sake of clarity<sup>28</sup>.

The international trade realm is a complicated network of trade-offs and ever changing welfare benefits that influence domestic and foreign producers and consumers. Traditionally, tariffs and quotas have been the main trade restriction tools for importing countries while exporting countries have used export subsidies, taxes, and embargoes.<sup>29</sup> The reduction or elimination of these barriers have been the focus of free trade agreements although the list of tools has continued to grow as economies evolve to include a much longer list of restrictions including but not limited to the restrictions outlined below.

- **“Quantity restrictions**—import quotas; export limitations; voluntary export restraints; import–export embargoes and bans; countertrade, etc.
- **Price restrictions**—antidumping duties; countervailing duties; border tax adjustments; variable levies/tariff rate quotas.
- **Regulatory restrictions**—licensing; domestic content and mixing requirements; sanitary and phyto-sanitary standards (SPS); safety and industrial standards regulations; packaging, labeling, and trademark regulations; advertising and media regulations.
- **Investment restrictions**—exchange and other financial controls.
- **Customs restrictions**—advance deposit requirements; customs valuation procedures; customs classification procedures; customs clearance procedures.
- **Direct government intervention**—subsidies and other aid; government industrial policy and regional development measures; government-financed research and other technology policies; national taxes and social insurance; competition policies; immigration policies; government procurement policies; state trading, government monopolies, and exclusive franchises.”<sup>30</sup>

---

<sup>26</sup> Houck, J. (1986). *Elements of Agricultural Trade Policies*. Macmillan Publishing Company. Page 7.

<sup>27</sup> Houck, J. (1986). *Elements of Agricultural Trade Policies*. Macmillan Publishing Company. Page 29.

<sup>28</sup> Houck, J. (1986). *Elements of Agricultural Trade Policies*. Macmillan Publishing Company. Page 29.

<sup>29</sup> Houck, J. (1986). *Elements of Agricultural Trade Policies*. Macmillan Publishing Company. Page 45.

<sup>30</sup> Kim, A. *Tax Freedom*. <http://www.heritage.org/index/trade-freedom>. Heritage Website. Accessed September 21, 2015.

While the body of economic work on trade restrictions is quite extensive, this review will briefly examine the main import restrictions generally involved in bilateral and regional free trade agreements followed by a discussion on the welfare benefits of each of these different policy tools using the two country partial equilibrium trade model framework. Export restrictions play a very important role in today's agricultural economy, but this research will not focus on these restrictions since most of the negotiations on export restrictions have traditionally only been negotiated on the aggregate international level through entities like the World Trade Organization (WTO).

## **2.3 Import Restrictions**

Tariffs and quotas are the two most common forms of import restrictions and the focus of many free trade agreements as these tools are the primary means by which a country shields their domestic producers from foreign competition. Import tariffs are essentially a tax on foreign goods levied as they pass into a domestic market by the government of the importing country. An import quota is a limit on the total quantity or value of a given good allowed to enter an importing country within a specific time period usually measured in years or months. These tools can be “calculated, applied, and administered in endlessly complex ways<sup>31</sup>” to protect domestic producers, raise government revenues, or retaliate against a foreign government as a means of retribution for trade disputes or other geopolitical concerns. It is important to understand the basic welfare effects of implementing tariffs and quotas. The basic economic principles used in creating these policies of effects on importing and exporting countries are mirror images of eliminating or reducing tariffs and quotas in a free trade agreement.<sup>32</sup>

---

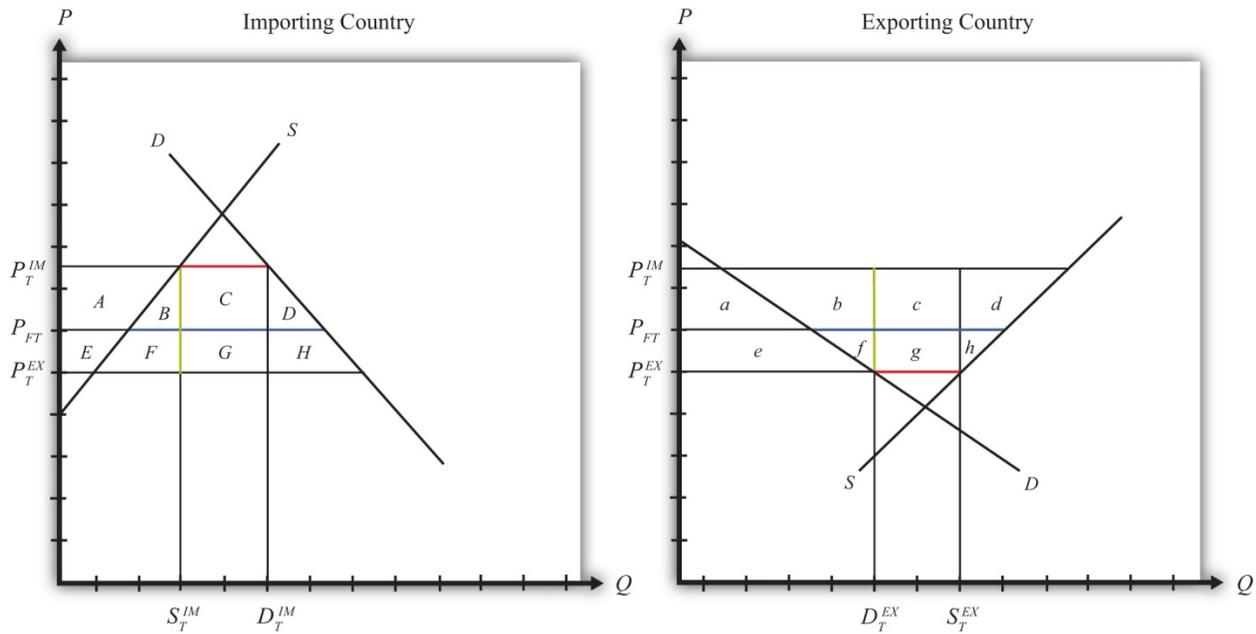
<sup>31</sup> Houck, J. (1986). *Elements of Agricultural Trade Policies*. Macmillan Publishing Company. Page 45.

<sup>32</sup> Houck, J. (1986). *Elements of Agricultural Trade Policies*. Macmillan Publishing Company. Page 45-59.

### 2.31 Import Tariffs

To explore the welfare impacts of an import tariff, a two-country partial equilibrium model can be utilized as outlined in figure 2.1. The blue line on both the import and export country graphs represents the price ( $P_{FT}$ ) that goods are traded with no restrictions where excess demand from the importing country is equal to the excess supply of the exporting country. As the importing country introduces the tariff, the importing country's domestic price paid by consumers ( $P_{IMT}$ ) increases, the exporting country's price ( $P_{EXT}$ ) decreases along with overall world prices, and the product of the difference between the two prices and the quantity is collected by the government of the importing country.<sup>33</sup>

**Figure 2.1 – Domestic Supply and Demand with Impacts of Implementing Import Tariff<sup>34</sup>**



<sup>33</sup> Suranovic, S. *Policy and Theory of International Trade*. V. 1.0. Accessed September 21, 2015. <http://2012books.lardbucket.org/books/policy-and-theory-of-international-trade/s10-05-import-tariffs-large-country-w.html>

<sup>34</sup> Suranovic, S. *Policy and Theory of International Trade*. V. 1.0. Accessed September 21, 2015. <http://2012books.lardbucket.org/books/policy-and-theory-of-international-trade/s10-05-import-tariffs-large-country-w.html>

**Figure 2.2 – Welfare Effects of Implementing Import Tariff** <sup>35</sup>

	Importing Country	Exporting Country
Consumer Surplus	$-(A + B + C + D)$	$+ e$
Producer Surplus	$+ A$	$-(e + f + g + h)$
Govt. Revenue	$+(C + G)$	$0$
National Welfare	$+ G - (B + D)$	$-(f + g + h)$
World Welfare	$-(B + D) - (f + h)$	

The welfare effects in figure 2.1 are outlined explicitly in figure 2.2. The overall impact of the tariff on the importing country is an increase in domestic production, producer surplus, and government revenue, a drop in consumption and consumer surplus, and a decrease in overall imports. The overall national welfare of a large importing country is dependent on the level at which the tariff is set as relatively large tariffs will have negative net welfare impacts although a positive optimal tariff will maximize national welfare. The exporting country experiences a decrease in domestic prices, exports, producer surplus, and production, an increase in domestic consumption and consumer surplus, and a decrease in overall welfare. Key elements of the welfare impacts of tariffs are outlined below<sup>36</sup>.

- “An import tariff lowers consumer surplus in the import market and raises it in the export country market.
- An import tariff raises producer surplus in the import market and lowers it in the export country market.
- The national welfare effect of an import tariff is evaluated as the sum of the producer and consumer surplus and government revenue effects.
- National welfare may rise or fall when a large country implements an import tariff.
- National welfare in the exporting country falls when an importing country implements an import tariff.
- An import tariff of any size will reduce world production and consumption efficiency and thus cause world welfare to fall.”<sup>37</sup>

<sup>35</sup> Suranovic, S. *Policy and Theory of International Trade*. V. 1.0. Accessed September 21, 2015. <http://2012books.lardbucket.org/books/policy-and-theory-of-international-trade/s10-05-import-tariffs-large-country-w.html>

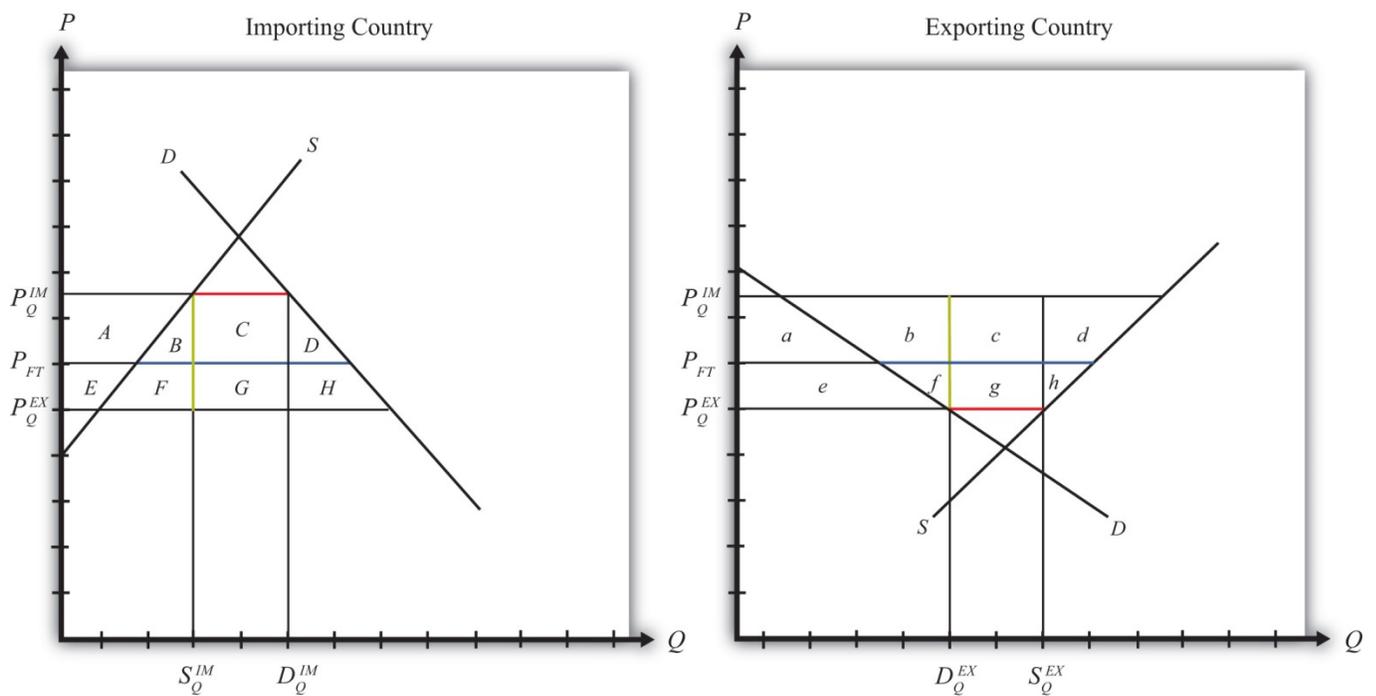
<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

### 2.32 Import Quotas

The welfare impacts of an import quota are very similar to an import tariff although the importing government does not necessarily receive any direct revenue from the quota. As outlined in figure 2.3, the blue line on both the import and export country graphs represents the price ( $P_{FT}$ ) that goods are traded with no restrictions where excess demand from the importing country is equal to the excess supply of the exporting country. As the importing country introduces the quota, the importing country's domestic price paid by consumers ( $P_{IMQ}$ ) increases, the exporting country's price ( $P_{EXQ}$ ) decreases along with overall world prices, and the quota rents are either absorbed by the government, lost, or transferred to either producers or a third party.<sup>38</sup>

**Figure 2.3 – Domestic Supply and Demand with Impacts of Implementing Import Tariff<sup>39</sup>**



<sup>38</sup> Suranovic, S. *Policy and Theory of International Trade*. V. 1.0. Accessed September 21, 2015. <http://2012books.lardbucket.org/books/policy-and-theory-of-international-trade/s10-12-import-quota-large-country-wel.html>

<sup>39</sup> Suranovic, S. *Policy and Theory of International Trade*. V. 1.0. Accessed September 21, 2015. <http://2012books.lardbucket.org/books/policy-and-theory-of-international-trade/s10-12-import-quota-large-country-wel.html>

**Figure 2.4 – Welfare Effects of Implementing Import Quota** <sup>40</sup>

	Importing Country	Exporting Country
Consumer Surplus	$-(A + B + C + D)$	$+ e$
Producer Surplus	$+ A$	$-(e + f + g + h)$
Quota Rents	$+ (C + G)$	0
National Welfare	$+ G - (B + D)$	$-(f + g + h)$
World Welfare	$-(B + D) - (f + h)$	

The welfare effects in figure 2.3 are outlined explicitly in figure 2.4. The overall impact of the quota on the importing country is an increase in domestic production and producer surplus, a drop in consumption and consumer surplus, an increase in quota rents, and a decrease in overall imports. The overall national welfare of a large importing country is again dependent on the level of the quota and the ultimate recipient of the quota rents. The exporting country experiences a decrease in domestic prices, producer surplus, exports, and production as well as an increase in domestic consumption and consumer surplus. Key elements of the welfare impacts of quotas are outlined below.

- “An import quota lowers consumer surplus in the import market and raises it in the export country market.
- An import quota raises producer surplus in the import market and lowers it in the export country market.
- National welfare may rise or fall when a large country implements an import quota.
- National welfare in the exporting country falls when an importing country implements an import quota.
- An import quota of any size will reduce world production and consumption efficiency and thus cause world welfare to fall.” <sup>41</sup>

<sup>40</sup> Suranovic, S. *Policy and Theory of International Trade*. V. 1.0. Accessed September 21, 2015. <http://2012books.lardbucket.org/books/policy-and-theory-of-international-trade/s10-12-import-quota-large-country-wel.html>

<sup>41</sup> Suranovic, S. *Policy and Theory of International Trade*. V. 1.0. Accessed September 21, 2015. <http://2012books.lardbucket.org/books/policy-and-theory-of-international-trade/s10-12-import-quota-large-country-wel.html>

## **2.4 Harmonized System of Tariffs**

### ***2.41 General Overview***

The Harmonized System of Tariffs is used by almost every country trading internationally to organize and regulate tariff and trade data. This system is maintained by the World Trade Organization.

“The HS provides a coding system that is based on a hierarchical structure, starting with the Section at the higher level and getting more specific at Chapter, heading and subheading levels. Chapters, headings and subheadings are coded according to their positions in the hierarchy. An HS code can be sub-divided into the next lower level to provide greater detail and definition of a product than the higher level. The HS consists of around 1200 four-digit headings and 5000 six-digit subheadings, which are organized in 21 Sections and 97 Chapters, which theoretically cover all commodities in international trade. These headings and subheadings, along with the General Rules of Interpretation and Section and Chapter Notes comprise the legal text of the Harmonized System.

As the basic building-blocks of the HS, subheadings are identified by six-digit codes. A six-digit subheading code comprises three parts which provide information on its three different levels of detail. The first two digits represent the Chapter in which the goods are classified, the next two digits identify the heading within the Chapter where the goods are described, and the last two digits represent the most detailed subdivisions of the HS. For instance, the code 0102.10 in the (figure 2.5) indicates that it belongs to Chapter 01, under heading 0102. An undivided heading has a six-digit code ending in “00”.

In this hierarchical structure based on subsets, the scope of each level is dependent on the descriptions of the higher levels, which provide the context and need to be read in conjunction with the lower level descriptions. It is therefore often necessary to look at the complete structure to identify the specific product(s) classified therein. For example, the subheading description for 0102.10 in (figure 2.5) only indicates the product as "Pure-bred breeding animals". The specific kind of breeding animal is specified by the higher level heading description "Live bovine animals". Although this kind of descriptive system effectively avoids redundancy and duplication of descriptive text at lower levels, it requires that users look at the hierarchical context in order to understand the meaning of the lower levels.

Figure 2.5 – Example of HS Code

SECTION I		
LIVE ANIMALS; ANIMAL PRODUCTS		
Chapter 1		
Live animals		
Heading	H.S. Code	
<b>01.01</b>		<b>Live horses, asses, mules and hinnies.</b>
	0101.10	- Pure-bred breeding animals
	0101.90	- Other
<b>01.02</b>		<b>Live bovine animals.</b>
	0102.10	- Pure-bred breeding animals
	0102.90	- Other

An HS subheading at six-digit level is the most detailed level of the HS. However, in order to fulfil national needs, the HS Convention allows contracting parties to subdivide the HS classification into even more specific levels by inserting additional national codes. For instance, it is common for many countries to use two additional digits for tariff duties and another two digits for more specificity in their trade statistics. These additional breakouts beyond the six-digit codes are referred to as national tariff lines, or national breakouts. It should however be stressed that different countries often create different breakouts and national codes under the same HS subheading, except for customs unions, which normally tend to use identical tariff structures.

At the Section level, the Harmonized System groups products largely according to the sector of the economy, starting with agricultural products and ending with industrial and technological products. It attempts to group together all goods of a single industry in a single Chapter or group of Chapters. Within the same Chapter, headings and subheadings are generally arranged by the stage of processing, starting with raw materials and progressing to finished products.”<sup>42</sup>

<sup>42</sup> Yu, D. *The Harmonized System – Amendments and Their Impact on WTO Members’ Schedules*. Economic Research and Statistics Division. World Trade Organization. February 2008. [https://www.wto.org/english/res\\_e/reser\\_e/ersd200802\\_e.pdf](https://www.wto.org/english/res_e/reser_e/ersd200802_e.pdf). Accessed June 27, 2015.

## 2.42 Description of Beef Tariff Lines and Relevant Definition of Beef

While the various beef products are traded on many lines throughout the world, fresh, chilled, and frozen beef and offal are the most relevant beef tariff lines as described in great detail in the following chapter. Figure 2.6 outlines the four, six, and nine digit HS beef tariff lines used in this analysis. The nine digit tariff lines used in this research are harmonized among the major beef exporters in the TPP region including the US, Canada, Mexico, New Zealand, and Australia. Over the past five years, these lines consisted of 95 percent of the value and 92 percent of the volume of all US exports.

**Figure 2.6 – Beef Tariff Lines and Description** <sup>43</sup>

0201 - Meat Bovine Fresh/Chilled
0201.10 Carcasses - Half and Whole
0201.20 Other Cuts with Bone in
0201.30 Boneless
0201.30-010 Loin
0201.30-020 Chuck, Clod and Round
0201.30-030 Brisket and Plate
0201.30-090 Other
0202 - Meat Bovine Frozen
0202.10 Carcasses - Half and Whole
0202.20 Other Cuts with Bone in
0202.30 Boneless
0202.30-010 Loin
0202.30-020 Chuck, Clod and Round
0202.30-030 Brisket and Plate
0202.30-090 Other
0206 - Beef Offal Only Total
0206.10 - Bovine Offal Fresh/Chilled
0206.10-011 Fresh/Chilled Tongues
0206.10-019 Internal Organs
0206.10-020 Cheek and Head Meat
0206.10-090 Other
0206.21 - Bovine Tongues, Frozen
0206.22 - Bovine Livers, Frozen
0206.29 - Bovine Offal Frozen
0206.29-010 Internal Organs
0206.29-020 Cheek and Head Meat
0206.29-090 Other

<sup>43</sup> USITC Website. *Harmonized Tariff Schedule*. US International Trade Commission. <http://hts.usitc.gov/?query=beef>. Accessed June 27, 2015.

Beef is traded on other lines such as line 0210.02 – salted bovine meat and line 1602.50 – prepared bovine meat, but analysis of these lines is outside of the scope of this research as they represent a small portion of the market and are generally considered a more value added product than the traditional beef lines. The US largely only trades on the salted and prepared bovine lines with Canada and Mexico, which constitute approximately two-thirds of all trade on those lines<sup>44</sup>. The USDA definition of beef includes these lines, but excludes the 0206 offal lines in its official definition. However, given the relative importance of offal and small portion of salted and prepared beef traded outside of North America, this research will limit the definition of fresh, chilled, and frozen beef and offal to product trading on the 0201, 0202, and 0206 (ex) lines. 0206 lines includes offal from multiple species; however, 0206 (ex) is used in this analysis to only include the beef offal lines highlighted above in figure 2.6.

---

<sup>44</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015

### 3: TRANS-PACIFIC PARTNERSHIP & MARKETS RELEVANT TO US BEEF TRADE

#### **3.1 Overview of the Trans-Pacific Partnership (TPP) Free Trade Agreement**

The Trans-Pacific Partnership commonly referred to as the TPP agreement is a comprehensive regional free-trade agreement being negotiated by twelve nations including the US, Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam<sup>45</sup>. According to the Office of the US Trade Representative (USTR), the US “is dedicated to expanding economic opportunity for American workers, farmers, ranchers, and businesses. That’s why we are negotiating the Trans-Pacific Partnership, a 21st century trade agreement that will boost US economic growth, support American jobs, and grow Made-in-America exports to some of the most dynamic and fastest growing countries in the world. The TPP not only seeks to provide new and meaningful market access for American goods and services exports, but also sets high-standard rules for trade, and address vital 21st-century issues within the global economy<sup>46</sup>.” Nearly 30 chapters are being negotiated on goods, services, and agricultural trade<sup>47</sup>. TPP is the largest regional free trade agreement ever negotiated by the US and would incorporate approximately eleven percent of the world’s population and thirty six percent of the world’s GDP<sup>48</sup>.

In general, US agriculture has mostly offensive interests in the negotiations, and US farm advocacy organizations have been generally supportive of the TPP negotiations with the hope of increased market access to large or growing Southeast Asian markets like Japan, Vietnam, and Malaysia as well as improved dispute resolution protocols on non-tariff trade barriers especially sanitary and

---

<sup>45</sup> Fergusson, I. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Congressional Research Service Report R42694. March 20, 2015.

<sup>46</sup> Office of US Trade Representative Website. *Trans-Pacific Partnership*. <https://ustr.gov/tpp>. Accessed 5/30/2015.

<sup>47</sup> Fergusson, I. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Congressional Research Service Report R42694. March 20, 2015.

<sup>48</sup> Williams, B. *The Trans-Pacific Partnership (TPP) Countries: Comparative Trade and Economic Analysis*. Congressional Research Service Report R42344. June 10, 2013.

phyto-sanitary measures designed to reduce trade disruptions<sup>49</sup>. The US is currently engaged in a separate offer/request process with each of the five countries it does not yet have a bilateral free trade agreement including Brunei, Japan, Malaysia, New Zealand, and Vietnam as well as negotiating with Canada on egg, poultry, and dairy provisions that were excluded from both the Canada-US Free Trade Agreement (CUSFTA) and the North American Free Trade Agreement (NAFTA)<sup>50</sup>. Japan is the most promising market for US agriculture goods and is already the fourth largest market for US goods despite high tariffs and restrictive quotas<sup>51</sup>. According to an October 2014 USDA report on the economic impacts of TPP in which tariffs and tariff rate quotas on agricultural products were eliminated for all countries, Japan would absorb 70 percent of the \$8.5 billion increase in agricultural trade among TPP countries by 2025, and the US would capture approximately one-third of the overall increase in farm exports within the TPP region<sup>52</sup>.

The five TPP countries that stand to gain the most from an increase in beef trade by significantly reducing barriers to trade include the US, Canada, Mexico, New Zealand, and Australia. Producer groups from these nations, which account for one third of global beef trade, have commonly worked together internationally to advocate for their trade priorities through a formal network called the Five Nation's Beef Alliance (FNBA)<sup>53</sup>. In a February 6, 2014 statement, FNBA expresses the view that "all agricultural market access schedules within the TPP deal should be plurilateral. This would ensure that all countries receive the same tariff phase out period and reduction in tariffs for each tariff line, as well as ensuring future TPP aspirant countries have a clear understanding of the level of commitment required in agricultural market access." Significant quotas, tariffs, and non-tariff trade barriers still exist in several

---

<sup>49</sup> Fergusson, I. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Congressional Research Service Report R42694. March 20, 2015.

<sup>50</sup> Fergusson, I. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Congressional Research Service Report R42694. March 20, 2015.

<sup>51</sup> Fergusson, I. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Congressional Research Service Report R42694. March 20, 2015.

<sup>52</sup> Burfisher, M, Et Al. *Agriculture in the Trans-Pacific Partnership*. US Department of Agriculture Economic Research Service Report Number 176. October, 2014.

<sup>53</sup> Five Nations Beef Alliance Website. Home Page. <http://fivenationsbeefalliance.com/>. Accessed 5/30/15

TPP countries with respect to beef, and on-going negotiations continue to be tenuous<sup>54</sup>. By eliminating tariff and non-tariff trade barriers, these cattlemen believe each group will be able to utilize their own competitive advantages to increase value for their industry and compete on quality and price against other major beef producing countries around the world.

While there is hope that in the long run many developing Southeast Asian countries in the TPP negotiations will increase their consumption of beef as incomes rise, most of the short and medium term market access remains steadily focused on Japan. “But realizing this potential is contingent on Japan either dismantling, or substantially rolling back, the high tariffs and restrictive quotas that surround its most sensitive commodities<sup>55</sup>.” Japan is already a major market for the TPP beef exporters despite applied tariffs of 38.5 percent on most products<sup>56</sup>, and Australia has already successfully negotiated a free trade agreement that will significantly reduce these tariffs<sup>57</sup>. Beef is one of the six “sensitive commodities” Japan will be trying to protect; and beef, pork, and dairy market access to Japan is a key for US negotiators as well as the other four beef exporting nations<sup>58</sup>.

---

<sup>54</sup> Fergusson, I. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Congressional Research Service Report R42694. March 20, 2015.

<sup>55</sup> Fergusson, I, et. al. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Page 22. Congressional Research Service Report R42694. November 19, 2014.

<sup>56</sup> Japan Customs Website. *Harmonized Schedule of Tariffs – Japan*. April 1, 2015. <http://www.customs.go.jp/english/tariff/>. Accessed June 14, 2015.

<sup>57</sup> Japanese Ministry of Foreign Affairs Website. *Joint Statement on the Entry into Force of the Agreement between Japan and Australia for an Economic Partnership*. Japanese Ministry of Foreign Affairs. January 15, 2015. [http://www.mofa.go.jp/page3e\\_000283.html](http://www.mofa.go.jp/page3e_000283.html). Accessed June 20, 2015.

<sup>58</sup> Fergusson, I, et. al. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Page 22. Congressional Research Service Report R42694. November 19, 2014.

## **3.2 Relevant TPP Beef Markets**

### ***3.21 North American Beef Markets***

In 2014 the US was the world's largest beef producer, consumer, and importer and the fourth largest exporter in 2013 despite the fact the US has only the world's fourth largest beef herd accounting for only nine percent of world cattle numbers<sup>59</sup>. Yet overall US beef production and consumption on a pound for pound basis almost identical at 11.2 million metric tons in 2014<sup>60</sup>. The US aggressively markets high quality, grain fed cuts of beef to Mexico, Canada, Japan, South Korea, and the Pacific Rim to gain a premium and imports leaner, grass fed beef from Australia and New Zealand to cover domestic demand for lean products like ground beef that constitutes approximately fifty percent of domestic beef consumption<sup>61</sup>. The US is beginning the process of rebuilding its herd after significant droughts that plagued the country from 2011 to 2013 and is projected to continue to increase imports from Australia and New Zealand until 2021<sup>62</sup>.

Canada, much like the US, produces nearly the same amount of beef that it consumes by volume but actively trades in world beef market albeit on a much smaller scale in relation to its southern neighbor. Canada exported 333,000 metric tons of beef in 2013 and imported 290,000 metric tons in 2014<sup>63</sup>. Canadian markets are expected to grow with an increase in exports of both live cattle and beef as domestic consumption has been falling<sup>64</sup>. In the North American markets, feeder cattle tend to move

---

<sup>59</sup> Cook, Rob. *United States Beef & Cattle Statistics*. <http://beef2live.com/story-united-states-beef-cattle-statistics-89-108399>. Beef2Live Website. Accessed June 13, 2015.

<sup>60</sup> Cook, Rob. *United States Beef & Cattle Statistics*. <http://beef2live.com/story-united-states-beef-cattle-statistics-89-108399>. Beef2Live Website. Accessed June 13, 2015.

<sup>61</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page77.

<sup>62</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page77.

<sup>63</sup> Cook, Rob. *Canada*. <http://beef2live.com/story-canada-beef-cattle-120-106614>. Beef2Live Website. Accessed June 13, 2015.

<sup>64</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page74.

north for feeding from Mexico to the US and the US to Canada while slaughter cattle trade tends to flow in the opposite direction.

Mexico is a larger producer<sup>65</sup> and consumer<sup>66</sup> than Canada, and domestic consumption has been on the rise in recent years due to an increased population and positive economic growth<sup>67</sup>. Such changes in the economy have led to an increase in disposable income, which is also changing consumer preference to grain fed beef from the traditional grass fed sourced beef although Mexican consumers still desire leaner beef than their northern counterparts. The US imports significant numbers of feeder cattle from Mexico for finishing as the US maintains a comparative advantage on this front although the Mexican finishing capacity has increased in recent years<sup>68</sup>.

The North American Free Trade Agreement (NAFTA) was implemented in 1994 and has had a profound effect on the North American beef markets over the past two decades. NAFTA ensured the elimination of Mexican import tariffs and Canadian import quotas on beef and has led to almost complete integration of the US, Canadian, and Mexican beef markets leading to increased trade flows. Figure 3.1 shows an increase in bilateral trade of 119 percent by value and 276 by volume for beef and veal trade between the US and Canada as well as the US and Mexico over the three year periods starting in 1991 and 2011.<sup>69</sup> The elimination of these trade barriers decreased transaction costs and volatility in the market, which lowered prices for consumers and ensured that North American beef products were distributed most efficiently by the market leading to an increase in both producer and consumer surplus in each of the three countries.

---

<sup>65</sup> Cook, Rob. *World Beef Production by Country*. <http://beef2live.com/story-world-beef-consumption-ranking-countries-130-106879>. Beef2Live Website. Accessed June 13, 2015.

<sup>66</sup> Cook, Rob. *World Beef Consumption: Ranking by Countries*. <http://beef2live.com/story-world-beef-consumption-ranking-countries-130-106879>. Beef2Live Website. Accessed June 13, 2015.

<sup>67</sup> Peel, D et. al. *Trade, the Expanding Mexican Beef Industry, and Feedlot and Stocker Cattle Production in Mexico*. ERS Report LDP-M-206-01. US Department of Agriculture. August 2011.

<sup>68</sup> Peel, D et. al. *Trade, the Expanding Mexican Beef Industry, and Feedlot and Stocker Cattle Production in Mexico*. ERS Report LDP-M-206-01. US Department of Agriculture. August 2011.

<sup>69</sup> Zahniser, S. et. al. *NAFTA at 20: North America's Free-Trade Area and its Impact on Agriculture*. US Department of Agriculture. February, 2015.

**Figure 3.1 - US Beef & Veal Imports and Exports from Canada and Mexico Pre and Post NAFTA<sup>70</sup>**

	Volume (Metric Tons)			Value (Millions of USD)		
	1991-1993	2011-2013	% Increase	1991-1993	2011-2013	% Increase
U.S. Exports to Mexico	58	133	129%	171	692	305%
U.S. Imports from Mexico	1	81	8000%	2	460	22900%
U.S. Exports to Canada	87	169	94%	363	1100	203%
U.S. Imports from Canada	121	201	66%	283	826	192%
<b>Total</b>	<b>267</b>	<b>584</b>	<b>119%</b>	<b>819</b>	<b>3078</b>	<b>276%</b>

(Excluding Mexico/Canada direct trade)

In 2003, both the US and Canadian beef markets suffered a serious setback at the discovery of bovine spongiform encephalopathy (BSE), more commonly known as “mad cow” disease. More than 40 countries closed their markets to Canadian and US beef, and the US closed its border to all Canadian beef, which represented 75 percent of the Canadian beef export market<sup>71</sup>. It took these markets nearly a decade to recover from the incident as many countries maintained various age and source limits on US and Canadian beef. Japanese and South Korean markets opened significantly in 2012, and US exports increased substantially as a result of this policy change and favorable exchange rates at the time<sup>72</sup>. Due to the high integration of the two markets resulting from the NAFTA agreement, the two governments worked closely to establish greater food safety standards to control risk factors associated with BSE and other diseases<sup>73</sup>.

<sup>70</sup> Zahniser, S. et. al. *NAFTA at 20: North America’s Free-Trade Area and its Impact on Agriculture*. US Department of Agriculture. February, 2015.

<sup>71</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page 74.

<sup>72</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page 77.

<sup>73</sup> Zahniser, S. et. al. *NAFTA at 20: North America’s Free-Trade Area and its Impact on Agriculture*. US Department of Agriculture. February, 2015. Page 32.

### 3.22 Oceanic Beef Markets

Australia and New Zealand are the two major beef producing nations in the Oceanic region with a strong focus on export markets. Australia is the larger and more significant beef market participant. With a small population and abundant land resources, Australia is the world's sixth largest producer with almost four percent of world production and less than one percent of beef consumption<sup>74</sup>. The Australian beef industry's biggest competitive and comparative advantage is its reputation as a consistent supplier of disease-free beef, having avoided BSE and foot and mouth disease (FMD) that have plagued nearly every major beef growing region in the world<sup>75</sup>. Due to the arid climate of the continent and sparsely populated growing regions, Australia focuses on raising large quantities of grass-fed beef as compared to the grain-fed production systems of North America<sup>76</sup>.

New Zealand is a much smaller although important market contributing only one percent of global production but up to eight percent of global exports<sup>77</sup>. The New Zealand beef industry is a mix between European breeds and culled cows and bulls calves from its thriving dairy industry raised in a low-cost, low input feed system that utilizes the temperate local climate<sup>78</sup>. Historically, exporting lean beef to the US consists of approximately 50 percent of New Zealand exports by volume and value with the remainder of the exports mainly traded with Japan, South Korea, Taiwan, Canada, and Indonesia<sup>79</sup>.

---

<sup>74</sup> Cook, Rob. *Australia*. <http://beef2live.com/story-australia-cattle-beef-120-106611>. Beef2Live Website. Accessed June 13, 2015.

<sup>75</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page 65-67.

<sup>76</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page 65-67.

<sup>77</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page 67-68.

<sup>78</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page 67-68.

<sup>79</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page 67-68.

New Zealand shares the same benefits of disease-free status as its island neighbor, Australia, and their beef industries work in tandem around the globe to lower trade barriers and increase exports<sup>80</sup>.

Australia and New Zealand are both currently suffering from a major drought that could have effects on the countries' ability to produce in the medium term while increasing exports in the short run. Australia is in the midst of a drought with 80 percent of Queensland, its largest beef producing region, facing a record drought and possible El Nino conditions forming that could further deteriorate conditions in the Eastern region of the country<sup>81</sup>. New Zealand is facing similar conditions with only 12 inches of rain in the past twelve months in some regions of the country making this the driest year on record since 1948<sup>82</sup>.

---

<sup>80</sup> Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.) Page 67-68.

<sup>81</sup> Sedgman, P. *Beef Seen Declining by ANZ as Australia Defies Trend on Drought*. Bloomberg Business. May 18, 2015. <http://www.bloomberg.com/news/articles/2015-05-18/beef-seen-declining-by-anz-as-australia-defies-trend-on-drought>. Accessed June 14, 2015.

<sup>82</sup> Radio New Zealand. *Snow no respite for drought afflicted farmers*. May 25, 2015.

### 3.23 US Beef Export Markets

The US was the world's fourth largest exporter of beef in 2013 behind Brazil, India, and Australia respectively accounting for over 1.1 million metric tons and 13 percent of world trade<sup>83</sup>. Figure 3.2 below outlines the top six export markets for US beef over the 2005 to 2014 time frame as measured in both total volume and value. Three of the top four markets for US beef (Mexico, Japan, and Canada) included in the TPP negotiations.

**Figure 3.2 - US Total Value of Beef and Beef Product Exports to TPP Countries<sup>84</sup>**

Mexico			Japan			Hong Kong/China		
	Volume (Metric Tons)	Value (\$Millions)		Volume (Metric Tons)	Value (\$Millions)		Volume (Metric Tons)	Value (\$Millions)
2014	242,566	1,166	2014	241,129	1,579	2014	154,591	1,151
2013	216,386	925	2013	234,615	1,389	2013	130,112	823
2012	192,989	822	2012	152,763	1,032	2012	68,185	343
2011	256,938	985	2011	158,646	874	2011	51,772	238
2010	247,614	819	2010	124,561	639	2010	40,384	159
2009	291,704	910	2009	91,467	470	2009	24,337	85
2008	396,065	1,399	2008	74,119	383	2008	10,237	43
2007	359,452	1,185	2007	46,744	244	2007	9,953	36
2006	371,087	1,169	2006	13,736	66	2006	3,450	15
2005	282,115	882	2005	2,307	8	2005	1,000	2.5

Canada			Middle East			South Korea		
	Volume (Metric Tons)	Value (\$Millions)		Volume (Metric Tons)	Value (\$Millions)		Volume (Metric Tons)	Value (\$Millions)
2014	137,532	1,030	2014	134,777	274	2014	117,567	847
2013	173,030	1,169	2013	147,696	276	2013	105,406	609
2012	180,015	1,177	2012	152,333	331	2012	125,614	582
2011	191,047	1,032	2011	175,181	355	2011	154,019	686
2010	153,177	733	2010	134,510	261	2010	112,759	518
2009	143,044	637	2009	98,965	148	2009	55,535	216
2008	154,798	716	2008	92,368	148	2008	57,267	294
2007	132,144	602	2007	95,801	112	2007	25,166	118
2006	96,469	433	2006	88,073	114	2006	233	.61
2005	48,860	209	2005	33,110	68	2005	2,106	1.2

Statistics provided by US government and compiled by US Meat Export Federation.<sup>85</sup>

<sup>83</sup>Cook, R. *World Beef Exports: Ranking of Countries*. Beef2Live Website. <http://beef2live.com/story-world-beef-exports-ranking-countries-0-106903>. Accessed June 1, 2015.

<sup>84</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

<sup>85</sup>US Meat Export Federation Website. *US Beef Export Statistics 2004-2014 Summary*. <https://www.usmef.org/downloads/Beef-2005-to-2014.pdf>. Accessed June 1, 2015.

The US has consistently exported over a million metric tons of beef each year and the overall value of that product has increased significantly over the past five years from four to seven billion dollars. Figures 3.3 and 3.4 display the total value in both US dollars and volume in metric tons of US beef and beef product exports to each TPP country. Japan, Mexico, and Canada are consistently the largest markets for US beef and the only significant markets in the current TPP negotiation.

**Figure 3.3 - US Total Value of Beef and Beef Product Exports to TPP Countries<sup>86</sup>  
(Millions of US Dollars)**

Country	2010	2011	2012	2013	2014
World Total	\$ 4,079	\$ 5,420	\$ 5,508	\$ 6,173	\$ 7,135
Japan	\$ 639	\$ 875	\$ 1,032	\$ 1,390	\$ 1,579
Mexico	\$ 819	\$ 985	\$ 822	\$ 927	\$ 1,166
Canada	\$ 734	\$ 1,032	\$ 1,178	\$ 1,177	\$ 1,030
Chile	\$ 6	\$ 23	\$ 59	\$ 69	\$ 66
Peru	\$ 11	\$ 20	\$ 30	\$ 33	\$ 34
Vietnam	\$ 163	\$ 192	\$ 161	\$ 27	\$ 22
Singapore	\$ 12	\$ 15	\$ 13	\$ 16	\$ 17
Australia	\$ 2	\$ 4	\$ 4	\$ 5	\$ 4
New Zealand	\$ 0	\$ 4	\$ 1	\$ 1	\$ 1
Malaysia	\$ 0	\$ 0	\$ 1	\$ 0	\$ 0
TPP Total	\$ 2,388	\$ 3,150	\$ 3,300	\$ 3,644	\$ 3,918

**Figure 3.4 - US Total Beef and Beef Product Exports<sup>87</sup>  
(Metric tons)**

Country	2010	2011	2012	2013	2014
World Total	1,067,342	1,284,809	1,131,271	1,178,699	1,196,749
Japan	124,557	158,689	152,690	234,657	241,128
Mexico	247,463	256,749	192,804	216,873	242,565
Canada	153,281	191,015	179,563	174,614	137,532
Chile	1,557	4,248	11,403	12,885	11,156
Peru	6,266	10,900	12,899	17,389	13,275
Vietnam	43,262	44,661	40,284	4,458	2,870
Singapore	2,423	2,894	1,219	1,420	1,559
Australia	962	1,300	1,147	1,184	902
New Zealand	39	1,071	218	304	190
Malaysia	102	98	107	33	3
TPP Total	579,911	671,625	592,334	663,818	651,181

<sup>86</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

<sup>87</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

The US has consistently exported slightly more than 50 percent of its beef to TPP countries with the largest share going to Canada, Mexico, and Japan. Figure 3.5 reveals the percentage of overall US beef exports to each of the TPP countries and the block as a whole. Japan’s share of total US exports of beef jumped from 13 to 20 percent in 2013 following the February 1<sup>st</sup> agreement between the two countries of that year to allow exports of beef from US cattle less than 30 months of age into Japan, compared to the previous limit of 20 months that was a lingering barrier from the 2003 BSE incident<sup>88</sup>. Chile is the only small country that has increased its imports over the past five years enough to claim a single percent of US beef exports but still remains an insignificant market. Vietnam is the only real outlier that commanded a small share of three to four percent during the first three years of the period examined before dropping off significantly. While there is no documented evidence, it is widely believed that Vietnam operated as a shadow market for China during the period of increased US beef exports, but analyzing such undesirable activity is outside of the scope of this research.

**Figure 3.5 - Percentage of Total World US Beef Exports by Volume to TPP Countries<sup>89</sup>**

Country	2010	2011	2012	2013	2014
Japan	12%	12%	13%	20%	20%
Mexico	23%	20%	17%	18%	20%
Canada	14%	15%	16%	15%	11%
Chile	0%	0%	1%	1%	1%
Peru	1%	1%	1%	1%	1%
Vietnam	4%	3%	4%	0%	0%
Singapore	0%	0%	0%	0%	0%
Australia	0%	0%	0%	0%	0%
New Zealand	0%	0%	0%	0%	0%
Malaysia	0%	0%	0%	0%	0%
TPP Total	54%	52%	52%	56%	54%

<sup>88</sup> Office of US Trade Representative Website. *US Trade Representative Ron Kirk and Agriculture Secretary Tom Vilsack Announce Agreement to Further Open Japan’s Market to US Beef*. <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2013/january/ustr-kirk-ag-sec-vilsack-japan-beef-announcement>. Jan. 28, 2013. Accessed June 6, 2015.

<sup>89</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

The average value of US beef exports varies significantly by country. Figure 3.6 provides the average overall value in dollars per metric ton of US exports to the world and TPP countries. Over the past five years, the world average price for a ton of exported US beef has steadily risen from \$3,820 to \$5,960. Of the TPP countries, Japan, Canada, Mexico, and Singapore have purchased higher quality cuts significantly above the world average price for US exports while other TPP countries have purchased lower quality below world average price and, as displayed in figure 3.4 above, in much lower volumes.

**Figure 3.6 - Total Value per Metric Ton of US Beef and Beef Product Exports<sup>90</sup>  
(Thousands of US Dollars)**

Country	2010	2011	2012	2013	2014
World Total	\$ 3.82	\$ 4.22	\$ 4.87	\$ 5.24	\$ 5.96
Japan	\$ 5.13	\$ 5.51	\$ 6.76	\$ 5.92	\$ 6.55
Mexico	\$ 3.31	\$ 3.84	\$ 4.26	\$ 4.27	\$ 4.81
Canada	\$ 4.79	\$ 5.40	\$ 6.56	\$ 6.74	\$ 7.49
Chile	\$ 4.01	\$ 5.36	\$ 5.19	\$ 5.32	\$ 5.91
Peru	\$ 1.78	\$ 1.82	\$ 2.31	\$ 1.87	\$ 2.54
Vietnam	\$ 3.78	\$ 4.30	\$ 3.99	\$ 5.97	\$ 7.71
Singapore	\$ 5.03	\$ 5.07	\$10.58	\$11.39	\$10.88
Australia	\$ 2.54	\$ 2.92	\$ 3.78	\$ 4.51	\$ 4.57
New Zealand	\$ 2.53	\$ 3.49	\$ 4.58	\$ 4.71	\$ 5.43
Malaysia	\$ 3.89	\$ 3.18	\$ 5.82	\$ 5.56	\$ 3.67

<sup>90</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

### **3.24 US Beef Exports by Tariff Line**

In 2014, 95 percent of the share of US beef exports within the proposed TPP region were sold to Mexico, Canada, and Japan henceforth known as the “Big 3”. To further analyze the Big 3 and understand the portion of the world beef market American producers are occupying, it is necessary to examine exports to the world and the major US markets in TPP down to the common six digit tariff line. Figures 3.7 and 3.8 below outline by tariff line the five year average from 2010 to 2014 of US beef exports by value and volume respectively. Of the nearly \$5 billion in US beef exports to the world, approximately \$2.4 billion is sold as fresh or chilled boneless beef, \$1.7 billion as frozen boneless beef, \$600 million as offal, and \$500 million as frozen bone-in beef.

The TPP countries combined account for 82 percent of the fresh or chilled boneless beef by value with the Big 3 consuming 97 percent of that total. The distribution between the Big 3 is fairly even with Mexico and Canada consuming a slightly larger portion than Japan in terms of both volume and value. Mexico and Canada are almost identical on overall value, but Mexico’s share is greater, consuming about 30 percent more by volume. There has a small amount of trade in bone-in fresh and chilled beef consisting of about 7.5 percent of overall fresh and chilled sales with Canada and amounting to 70 percent of the trade on that tariff line. Such high levels of trade in fresh and chilled beef between the US, Canada, and Mexico is primarily due to the close proximity of the three countries, high amount of integration of the North American market resulting from the North American Free Trade Agreement, and a culture of strong demand for beef products in North America. There is no significant trade in fresh and chilled beef carcasses.

Frozen beef accounts for six percent greater volume but 20 percent lower value in world trade with nearly three quarters of US exports sold outside of the borders of the TPP countries. About 80 percent of the volume and value of frozen beef sold is boneless with a third going to TPP countries. Japan consists of 70 percent of that tariff line with another combined 13 percent to Canada and Mexico

and the remaining 17 percent to the other eight countries by both volume and value. Japan is a major market for US frozen beef consuming 20 percent of all US exports by volume and 17 percent by value. Frozen beef to Japan has seen the most drastic increase on the tariff line level since the February 1, 2013 agreement between the two countries on age limits of US beef allowable in Japan.<sup>91</sup> Only 13 percent of the bone-in frozen beef is sold to TPP countries and accounts for only one percent of US beef exports by volume and value, and there is almost zero trade on the frozen beef carcass line.

Offal accounts for a much smaller but still important share of US exports as American domestic consumption has trended away from offal. Of the \$586 million of beef offal exports, 60 percent by value but only 36 percent of the volume is sold to TPP countries. The Big 3 consume 95 percent of the value of all beef offal within the TPP region. Virtually all fresh and chilled offal the US sells goes to TPP countries with 90 percent going to Japan alone. The Big 3 import 90 percent of the value and 85 percent of the overall volume of frozen beef tongues with almost no exports to any other TPP countries. Japan accounts for two thirds of the TPP volume and value with the other third going to Mexico. Frozen tongues along with fresh and chilled offal are higher value, lower volume products whereas frozen offal and frozen liver tariff lines are higher volume and lower value. TPP countries import 60 percent of the value of US frozen offal but only 26 percent of the total volume. Mexico's share consists of two thirds of overall TPP volume and value with Japan and Canada collectively accounting for another 24 percent of the volume and value. TPP countries import less than 10 percent of all frozen livers with the Big 3 consisting of about half of both value and volume and a majority of that going to Mexico.

Overall, fresh and chilled boneless beef – tariff line 020130 – has been the most traded line in terms of value and volume worldwide with an overwhelming amount being consumed by the Big 3. Frozen boneless beef – tariff line 020230 – is close to the line above in terms of volume and value with

---

<sup>91</sup> Office of US Trade Representative Website. *US Trade Representative Ron Kirk and Agriculture Secretary Tom Vilsack Announce Agreement to Further Open Japan's Market to US Beef.* <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2013/january/ustr-kirk-ag-sec-vilsack-japan-beef-announcement>. January 28, 2013. Accessed June 6, 2015.

Japan being the most significant market in the TPP agreement by far with a quarter of the overall volume and a fifth of the overall value. Canada and Mexico do not largely trade with the US on this line, and countries outside the TPP negotiations are much larger players on this line than those inside of the agreement. Offal matters to a much lesser extent with high value, low volume fresh and chilled along with frozen tongues exported to Japan and Mexico making up a lion share of the trade on those lines.

**Figure 3.7 - Value of US Beef by Tariff Line – Five Year Average 2010-2014<sup>92</sup>**  
(Millions of US Dollars)

Product	World	TPP Total	Big 3	Canada	Japan	Mexico
0201 - Meat Bovine Fresh/Chilled	\$ 2,602	\$ 2,133	\$ 2,076	\$ 807	\$ 577	\$ 692
020110 - Bovine Carcass Fresh/Chilled	\$ 10	\$ 4	\$ 4	\$ -	\$ 4	\$ 0
020120 - Bovine Bone In Fresh/Chilled	\$ 200	\$ 166	\$ 161	\$ 138	\$ 8	\$ 14
020130 - Bovine Boneless Fresh/Chilled	\$ 2,392	\$ 1,962	\$ 1,911	\$ 668	\$ 565	\$ 678
0202 - Meat Bovine Frozen	\$ 2,162	\$ 559	\$ 438	\$ 43	\$ 366	\$ 29
020210 - Bovine Carcass Frozen	\$ 2	\$ -	\$ -	\$ -	\$ -	\$ -
020220 - Bovine Bone In Frozen	\$ 490	\$ 65	\$ 19	\$ 3	\$ 11	\$ 5
020230 - Bovine Boneless Frozen	\$ 1,669	\$ 491	\$ 418	\$ 39	\$ 355	\$ 24
0206 - Beef Offal Only Total	\$ 586	\$ 351	\$ 333	\$ 25	\$ 156	\$ 153
020610 - Bovine Offal Fresh/Chilled	\$ 103	\$ 100	\$ 99	\$ 2	\$ 90	\$ 7
020621 - Bovine Tongues, Frozen	\$ 94	\$ 85	\$ 85	\$ -	\$ 49	\$ 36
020622 - Bovine Livers, Frozen	\$ 127	\$ 11	\$ 6	\$ 2	\$ 1	\$ 3
020629 - Bovine Offal Frozen	\$ 263	\$ 153	\$ 144	\$ 21	\$ 15	\$ 107
<b>Total Beef</b>	<b>\$ 5,350</b>	<b>\$ 2,933</b>	<b>\$ 2,847</b>	<b>\$ 874</b>	<b>\$ 1,099</b>	<b>\$ 874</b>

**Figure 3.8 - Volume of US Beef by Tariff Line – Five Year Average 2010-2014<sup>93</sup>**  
(Metric tons)

Product	World	TPP Total	Big 3	Canada	Japan	Mexico
0201 - Meat Bovine Fresh/Chilled	389,497	336,165	326,185	114,369	79,484	132,332
020110 - Bovine Carcass Fresh/Chilled	2,144	986	973	0	889	84
020120 - Bovine Bone In Fresh/Chilled	23,078	18,561	17,638	13,740	1,230	2,668
020130 - Bovine Boneless Fresh/Chilled	364,275	316,618	307,574	100,629	77,365	129,580
0202 - Meat Bovine Frozen	412,128	121,598	95,402	9,204	79,637	6,561
020210 - Bovine Carcass Frozen	600	42	35	0	0	35
020220 - Bovine Bone In Frozen	83,616	12,592	3,954	736	1,679	1,539
020230 - Bovine Boneless Frozen	327,912	108,964	91,413	8,468	77,957	4,987
0206 - Beef Offal Only Total	274,293	100,150	89,716	12,237	21,510	55,969
020610 - Bovine Offal Fresh/Chilled	11,558	10,905	10,835	533	9,171	1,131
020621 - Bovine Tongues, Frozen	14,622	12,593	12,582	32	5,910	6,640
020622 - Bovine Livers, Frozen	91,705	7,772	4,121	824	643	2,654
020629 - Bovine Offal Frozen	156,407	68,880	62,178	10,848	5,787	45,544
<b>Total Beef</b>	<b>1,075,917</b>	<b>531,587</b>	<b>511,304</b>	<b>135,810</b>	<b>180,631</b>	<b>194,862</b>

<sup>92</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

<sup>93</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

### **3.25 Existing US Export Tariffs and Relevant Free Trade Agreements**

In 1994, the US signed the North American Free Trade Agreement (NAFTA) with Canada and Mexico leading to full tariff elimination and integration of the North American beef market<sup>94</sup>. Japan maintains high tariffs that can be prohibitive for US beef, and American beef producers have the most to gain from increased access to Japanese markets. US beef faces a 38.5 percent applied tariff on all fresh, chilled, and frozen beef products exported to Japan on the 0201 and 0202 tariff lines while the offal tariffs range from 12.8 to 50 percent as applied at the nine-digit tariff line level outlined in figure 3.9. Offal lines set at 12.8 percent enjoy significantly more volume than the lines set at 21.3 percent. At the 50 percent applied tariff rate, no offal is traded for fresh and chilled head and cheek meat into the Japanese market. Even with such prohibitive tariffs, the US exports a great deal of fresh, chilled, and frozen brisket, chuck, clod, round cuts, and tongue to the Japanese markets. Japan has been importing at an applied rate of 38.5 percent for much of the recent history, which is less than the 50 percent bound rate for most beef tariff lines obligated in the WTO Uruguay Round agreements<sup>95</sup>.

---

<sup>94</sup> Zahniser, S. et Al. *NAFTA at 20: North America's Free-Trade Area and its Impact on Agriculture*. US Department of Agriculture. February, 2015.

<sup>95</sup> Japan Customs Website. *Harmonized Schedule of Tariffs – Japan*. April 1, 2015. <http://www.customs.go.jp/english/tariff/>. Accessed June 14, 2015.

**Figure 3.9 - Tariffs and Volume of US Beef Exported to Japan in 2014** <sup>9697</sup>

Tariff Line	Bound	Applied	Metric Tons
0201 - Meat Bovine Fresh/Chilled	50%	38.5%	
0201.10 Carcasses - Half and Whole			0
0201.20 Other Cuts with Bone in			342,827
0202.30-010 Boneless			
0201.30-010 Loin			9,146,159
0201.30-020 Chuck, Clod and Round			38,441,784
0201.30-030 Brisket and Plate			35,567,515
0201.30-090 Other			29,796
0202 - Meat Bovine Frozen	50%	38.5%	
0202.10 Carcasses - Half and Whole			0
0202.20 Other Cuts with Bone in			1,072,461
0202.30-010 Boneless			
0202.30-010 Loin			3,940,367
0202.30-020 Chuck, Clod and Round			11,261,793
0202.30-030 Brisket and Plate			88,868,146
0202.30-090 Other			4,647
0206 - Beef Offal Only Total			
020610 - Bovine Offal Fresh/Chilled			
0206.10-011 Fresh/Chilled Tongues	12.8%	12.8%	7,598,891
0206.10-019 Other	12.8%	12.8%	12,416,351
0206.10-020 Cheek and Head Meat	50%	50%	0
0206.21 - Bovine Tongues, Frozen	12.8%	12.8%	9,874,048
0206.22 - Bovine Livers, Frozen	12.8%	12.8%	535,194
0206.29 - Bovine Offal Frozen			
0206.29-010 Internal Organs	12.8%	12.8%	2,443,825
0206.29-090 Other	21.3%	21.3%	57,494

<sup>96</sup> Japan Customs Website. *Harmonized Schedule of Tariffs – Japan*. April 1, 2015. <http://www.customs.go.jp/english/tariff/>. Accessed June 14, 2015.

<sup>97</sup> Japanese Customs Website. *Trade Statistics of Japan*. Japanese Ministry of Finance. [http://www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm). Accessed June 14, 2015.

### 3.26 US Beef Imports, Existing Tariff Rate Quotas, and Free Trade Agreements

Over 90 percent of the volume of beef imported by the US came from TPP countries on average over the 2009-2013 timeframe<sup>98</sup>. Figure 3.10 outlines US imports from Australia, Canada, Mexico, and New Zealand as well as the total world imports. Due to NAFTA, Canada and Mexico have full, tariff free access to US markets, which will not change with TPP<sup>99</sup>. The US and Australia negotiated a free trade agreement that went into effect in 2005 that will reduce the existing tariff-rate quota (TRQ) incrementally until full elimination in 2021. However, New Zealand has not entered into a free trade agreement with the US and is currently subject to various tariffs based off the system established under the Uruguay Round Agreement<sup>100</sup>.

**Figure 3.10 - US Beef Imports by 6-digit tariff line**<sup>101</sup>  
(Metric tons, 2009-2013 average)

Product	World	Australia	Canada	Mexico	NZ
0201 - Meat Bovine Fresh/Chilled	316,090	30,213	218,256	56,854	1,198
020110 - Bovine Carcass Fresh/Chilled	2,700	0	2,700	0	0
020120 - Bovine Bone In Fresh/Chilled	42,667	198	16,577	25,859	11
020130 - Bovine Boneless Fresh/Chilled	270,722	30,014	198,979	30,995	1,187
0202 - Meat Bovine Frozen	407,999	174,692	15,868	3,616	159,794
020210 - Bovine Carcass Frozen	23	2	21	0	0
020220 - Bovine Bone In Frozen	5,585	256	4,111	796	183
020230 - Bovine Boneless Frozen	402,391	174,434	11,735	2,820	159,612
0206 - Beef Offal Only Total	29,163	8,240	14,398	2,348	774
020610 - Bovine Offal Fresh/Chilled	8,662	1,193	6,198	1,234	38
020621 - Bovine Tongues, Frozen	1,357	3	1,335	0	2
020622 - Bovine Livers, Frozen	299	146	145	0	7
020629 - Bovine Offal Frozen	18,845	6,899	6,720	1,114	727
<b>Total Beef</b>	<b>753,252</b>	<b>213,145</b>	<b>248,521</b>	<b>62,818</b>	<b>161,767</b>

<sup>98</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

<sup>99</sup> Zahniser, S. et Al. *NAFTA at 20: North America's Free-Trade Area and its Impact on Agriculture*. US Department of Agriculture. February, 2015.

<sup>100</sup> Brester, G, Wohlgenant, M. *Impacts of the GATT/Uruguay Round Trade Negotiations on US Beef and Cattle Prices*.

<sup>101</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

On January 1, 2005, the Australia-US Free Trade Agreement (AUSFTA) took effect, eliminating or phasing out a significant amount of TRQs. The US agreed to eliminate its beef TRQ by 2021 and the details of the implementation of the agreement in relation to beef are outlined below.

Since the completion of the Uruguay Round of multilateral trade negotiations in 1995, Australia has had a tariff rate quota for beef into the US which was initially set at 378 214 metric tons. The Australia US Free Trade Agreement (AUSFTA) increases the quota by 20 000 metric tons from 2007 and then by 5 000 metric tons biannually to 2021. Out-of-quota shipments are subject to an ad valorem tariff of 21.12%. However, this tariff will be phased out by 2021 effectively terminating the TRQ.

The current quota is 418 214 metric tons at zero tariff, increasing bi-annually.

This quota provides Australian exporters with greater opportunity to seek higher rates of return on their product. One of the conditions applying to Australian exporters in gaining access to the quota is the need for an Australian Government certificate of authenticity to accompany each consignment.

The US beef quota is administered by the Quota Unit under a no-allocation, first-come-first-served arrangement for each US beef quota year (1 Jan to 31 December). If Australia exports more than 85 per cent of the quota amount before 1 October, the remaining 15 per cent of the quota would change from being first-come first-served to being allocated proportionally, based on the exporter's record of shipment to the US, averaged over the previous 2 years.<sup>102</sup>

The ongoing drought in Australia has led to an increase in culling of cattle at a time when the US is experiencing high prices as American producers work to rebuild from the droughts of 2011, 2012, and 2013. Australia is on track to exceed their quota for the first time since AUSFTA was signed. Australia had already exported 56 percent of its quota by June 1, 2015, and imports of Australian beef over quota would be subject to a 21.12 percent tariff as outlined in AUSFTA.<sup>103</sup>

---

<sup>102</sup> Australian Government. *Red Meat Quotas*. Department of Agriculture. <http://www.agriculture.gov.au/ag-farm-food/meat-wool-dairy/quota/red-meat>. Accessed June 14, 2015.

<sup>103</sup> Vidot, A. *Quota restrictions could be triggered, as Australian beef exports to US continue to grow*. ABC Rural. June 3, 2015. <http://www.abc.net.au/news/2015-06-04/australian-beef-exports-could-trigger-quota-restrictions/6521112>. Accessed June 14, 2015.

New Zealand has not negotiated a free trade agreement with the US and is allowed to import beef under a Tariff Rate Quota of up to the 213,402 metric ton level set in the Uruguay Round. Quotas are managed by the New Zealand Meat Board as outlined below.

As a result of the GATT Uruguay Round 213,402 metric tons (product weight) of New Zealand beef and veal may be exported to the US annually at a tariff rate of US\$4.4c/kg on most beef products. Imports within the Tariff Rate Quota ("TRQ") are referred to as in-quota. An out-of-quota tariff rate of 26.4 percent ad valorem (based on the F.O.B. value) applies to product imported outside the quota.

Prior to the start of each Quota Year (which runs from 1 January to 31 December), the (New Zealand Meat) Board makes quota allocations to Qualifying Companies and New Entrants in accordance with the Quota Allowance Allocation System in Respect of US Beef and Veal Tariff Rate Quota.<sup>104</sup>

New Zealand is also on track to exceed its TRQ level for 2015. TPP is unlikely to have major impacts on US beef imports in most years. However, the elimination of TRQ for New Zealand or expediting elimination of TRQ for Australia could have small positive impacts on US beef imports during outlying years with major disruptions in the market access, extreme currency fluctuations, or high years of harvesting due to conditions such as the drought currently facing Oceania.

### ***3.27 Japanese and Southeast Asian Beef Markets***

In 2014, Asia contained four of the world's top fifteen beef import markets by volume. Japan (3<sup>rd</sup>), Hong Kong (4<sup>th</sup>), China (5<sup>th</sup>), and South Korea (7<sup>th</sup>) constituted 30 percent of all world beef imports<sup>105</sup>. China, Hong Kong, and South Korea are all important complex and important beef markets but are not currently included in the TPP Agreement.

---

<sup>104</sup> New Zealand Meat Board. *USA Beef and Veal Quota Management*. <http://www.nzmeatboard.org/main.cfm?id=20>. Accessed June 14, 2015.

<sup>105</sup> Cook, Rob. *Japan*. <http://beef2live.com/story-japan-cattle-beef-120-106618>. Beef2Live Website. Accessed June 13, 2015.

Japan is the world's 10<sup>th</sup> largest consumer of beef by volume, but third in imports in 2014 constituting around ten percent of world beef trade<sup>106</sup>. Japan does produce an ultra-high quality beef from its native Wagyu breeds yet domestic production only meets around 40 percent of beef demand. As shown in figure 3.11, Australia, the US, New Zealand, Canada, and Mexico fill nearly 100 percent of Japanese imports<sup>107</sup>. Australia has consistently provided over half of Japanese imports, but US imports significantly increased in 2013 when Japan implemented new protocols to allow beef harvested at less than 30 months of age to enter the country. Previously, the age limit had been set at 20 months<sup>108</sup>. Japan remains an extremely significant export market for all five countries despite prohibitively high tariffs that can reach as high as 50 percent<sup>109</sup>.

**Figure 3.11 – Japanese Beef Imports from World and Major TPP Exporters<sup>110</sup>**

Partner Country	Unit: Metric Ton (Customs Clearance Basis)							
	Calendar Year (Jan. – Dec.)					Year To Date (Jan. – Jun.)		
	2011	2012	2013	% Chg. (2013/13)	2013 Share	06/2013	06/2014	% Chg.
World	517,231	514,186	534,255	4%	100%	242,566	236,991	-2%
Australia	338,744	318,400	285,923	-10%	54%	135,579	129,125	-5%
United States	120,605	131,921	186,056	41%	35%	75,295	85,988	14%
New Zealand	29,739	31,412	29,429	-6%	6%	15,928	13,619	-14%
Mexico	17,406	20,450	19,571	-4%	4%	10,446	3,432	-67%
Canada	10,179	11,468	12,691	11%	2%	4,985	4,546	-9%
Others	558	535	585	9%	0%	333	281	-16%

On average over the past five years, 99 percent of all Japanese beef imports came from the five TPP beef exporting countries with a vast majority coming from the Australia (~60 percent) and the US (~30 percent) with a smaller portion (~10 percent) coming from New Zealand, Mexico, and Canada.

<sup>106</sup> Cook, Rob. *Japan*. <http://beef2live.com/story-japan-cattle-beef-120-106618>. Beef2Live Website. Accessed June 13, 2015.

<sup>107</sup> Cook, Rob. *Japan*. <http://beef2live.com/story-japan-cattle-beef-120-106618>. Beef2Live Website. Accessed June 13, 2015.

<sup>108</sup> Office of US Trade Representative Website. *US Trade Representative Ron Kirk and Agriculture Secretary Tom Vilsack Announce Agreement to Further Open Japan's Market to US Beef*. <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2013/january/ustr-kirk-ag-sec-vilsack-japan-beef-announcement>. Jan. 28, 2013. Accessed June 6, 2015.

<sup>109</sup> Japan Customs Website. *Harmonized Schedule of Tariffs – Japan*. April 1, 2015. <http://www.customs.go.jp/english/tariff/>. Accessed June 14, 2015.

<sup>110</sup> Cook, Rob. *Japan*. <http://beef2live.com/story-japan-cattle-beef-120-106618>. Beef2Live Website. Accessed June 13, 2015.

Figure 3.12 shows the percentages of beef imported on average over the past 5 years by four digit tariff line and figure 3.13 outlines beef imports from the five nations by the nine digit tariff level.

**Figure 3.12 - Japanese Beef Imports – Percentage of World Trade by Country (5 Year Average)<sup>111</sup>**

	5 Country Total	Australia	USA	New Zealand	Canada	Mexico
0201 - Meat Bovine Fresh/Chilled	100.0%	62.2%	32.5%	3.3%	1.2%	0.9%
0202 - Meat Bovine Frozen	99.8%	60.1%	24.5%	7.3%	3.2%	4.6%
0206 - Beef Offal Only Total	98.2%	37.3%	44.5%	7.8%	4.3%	4.3%
<b>All Beef Total</b>	<b>99.1%</b>	<b>58.8%</b>	<b>28.8%</b>	<b>5.8%</b>	<b>2.5%</b>	<b>3.2%</b>

**Figure 3.13 - Japanese Beef Imports from World by 9 Digit Tariff Line (5 Year average in metric tons)<sup>112</sup>**

	World	Australia	USA	New Zealand	Canada	Mexico
0201 - Meat Bovine Fresh/Chilled	213,766	132,919	69,495	6,995	2,476	1,858
0201.10 Carcasses - Half and Whole	-	-	-	-	-	-
0201.20 Other Cuts with Bone in	152	20	92	5	7	19
0201.30-010 Loin	28,608	18,935	7,403	1,336	259	667
0201.30-020 Chuck, Clod and Round	120,268	79,806	34,590	4,266	1,225	375
0201.30-030 Brisket and Plate	61,685	31,199	27,354	1,351	983	797
0201.30-090 Other	3,052	2,960	55	36	1	-
0202 - Meat Bovine Frozen	303,017	182,086	74,280	22,260	9,797	14,088
0202.10 Carcasses - Half and Whole	-	-	-	-	-	-
0202.20 Other Cuts with Bone in	1,555	121	1,264	84	34	50
0202.30-010 Loin	9,305	3,453	2,118	2,918	249	516
0202.30-020 Chuck, Clod and Round	42,354	19,031	13,173	7,834	1,869	301
0202.30-030 Brisket and Plate	127,221	44,842	57,223	4,474	7,646	12,965
0202.30-090 Other	122,581	114,640	502	6,950	-	256
0206 - Beef Offal Only Total	49,952	18,633	22,233	3,917	2,128	2,159
020610 - Bovine Offal Fresh/Chilled	19,744	4,861	14,258	133	360	130
0206.10-011 Fresh/Chilled Tongues	7,021	1,807	4,989	53	106	65
0206.10-019 Internal Organs	12,661	2,992	9,269	81	254	64
0206.10-020 Cheek and Head Meat	60	60	-	0	-	-
0206.10-090 Other	2	1	-	-	-	1
0206.21 - Bovine Tongues, Frozen	19,138	7,796	5,516	2,895	1,153	990
0206.22 - Bovine Livers, Frozen	1,140	381	482	-	2	276
0206.29 - Bovine Offal Frozen	9,930	5,596	1,976	889	614	763
0206.29-010 Internal Organs	8,984	4,829	1,917	844	614	744
0206.29-020 Cheek and Head Meat	495	480	-	14	-	-
0206.29-090 Other	451	288	59	31	-	20
<b>Total Beef</b>	<b>566,734</b>	<b>333,638</b>	<b>166,008</b>	<b>33,172</b>	<b>14,402</b>	<b>18,106</b>

In 2014, Australia and the US accounted for 90 percent of all Japanese imports, accounting for 95 percent of all fresh and chilled beef, 87 percent of frozen beef, and 86 percent of all beef offal. Australia consistently imported more beef on the almost all lines except for fresh, chilled, and frozen brisket and

<sup>111</sup> Japanese Customs Website. *Trade Statistics of Japan*. Japanese Ministry of Finance. [http://www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm). Accessed June 14, 2015.

<sup>112</sup> Japanese Customs Website. *Trade Statistics of Japan*. Japanese Ministry of Finance. [http://www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm). Accessed June 14, 2015.

plate beef, other bone-in frozen cuts, and offal cuts such as tongues and internal organs. The US has been steadily gaining market share since the 2013 policy change allowing beef under 30 months of age from the US into Japan<sup>113</sup>, but 2015 numbers are showing a resurgence in Australian beef in Japan due to tariff reductions outlined in the newly negotiated free trade agreement and a stronger US dollar<sup>114</sup>.

**Figure 3.14 -2014 Japanese Imports from World, US, & Australia by 9 Digit Tariff Line<sup>115</sup>**

	Metric Tons			% of World		
	World	Australia	USA	Australia	USA	US + AUS
0201 - Meat Bovine Fresh/Chilled	219,253	125,457	83,528	57.2%	38.1%	95.3%
0201.10 Carcasses - Half and Whole	-	-	-	0.0%	0.0%	0.0%
0201.20 Other Cuts with Bone in	424	22	343	61.6%	30.3%	91.9%
0201.30-010 Loin	30,201	18,610	9,146	61.6%	30.3%	91.9%
0201.30-020 Chuck, Clod and Round	116,251	73,338	38,442	63.1%	33.1%	96.2%
0201.30-030 Brisket and Plate	69,407	30,588	35,568	44.1%	51.2%	95.3%
0201.30-090 Other	2,969	2,898	30	97.6%	1.0%	98.6%
0202 - Meat Bovine Frozen	299,456	155,385	105,147	51.9%	35.1%	87.0%
0202.10 Carcasses - Half and Whole	-	-	-	-	-	-
0202.20 Other Cuts with Bone in	1,290	128	1,072	9.9%	83.1%	93.0%
0202.30-010 Loin	11,225	4,516	3,940	40.2%	35.1%	75.3%
0202.30-020 Chuck, Clod and Round	39,663	18,279	11,262	46.1%	28.4%	74.5%
0202.30-030 Brisket and Plate	141,895	32,834	88,868	23.1%	62.6%	85.8%
0202.30-090 Other	105,383	99,629	5	94.5%	0.0%	94.5%
0206 - Beef Offal Only Total	61,317	19,554	32,926	31.9%	53.7%	85.6%
020610 - Bovine Offal Fresh/Chilled	25,729	5,035	20,015	19.6%	77.8%	97.4%
0206.10-011 Fresh/Chilled Tongues	9,855	1,985	7,599	20.1%	77.1%	97.3%
0206.10-019 Internal Organs	15,822	3,004	12,416	19.0%	78.5%	97.5%
0206.10-020 Cheek and Head Meat	45	43	-	97.1%	0.0%	97.1%
0206.10-090 Other	8	3	-	42.9%	0.0%	42.9%
0206.21 - Bovine Tongues, Frozen	24,083	8,895	9,874	36.9%	41.0%	77.9%
0206.22 - Bovine Livers, Frozen	907	264	535	29.1%	59.0%	88.1%
0206.29 - Bovine Offal Frozen	10,598	5,359	2,501	50.6%	23.6%	74.2%
0206.29-010 Internal Organs	9,581	4,542	2,444	47.4%	25.5%	72.9%
0206.29-020 Cheek and Head Meat	618	597	-	96.7%	0.0%	96.7%
0206.29-090 Other	399	220	57	55.1%	14.4%	69.5%
<b>Total Beef</b>	<b>580,025</b>	<b>300,395</b>	<b>221,601</b>	<b>51.8%</b>	<b>38.2%</b>	<b>90.0%</b>

<sup>113</sup> USTR Website. *US Trade Representative Ron Kirk and Agriculture Secretary Tom Vilsack Announce Agreement to Further Open Japan's Market to US Beef*. US Trade Representative. <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2013/january/ustr-kirk-ag-sec-vilsack-japan-beef-announcement>. Jan. 28, 2013. Accessed June 6, 2015.

<sup>114</sup> Takada, A. *Australian Beef Gains Ground in Japan as Trade Deal Buys Sales*. Bloomberg. May 12, 2015. <http://www.bloomberg.com/news/articles/2015-05-12/australian-beef-gains-ground-in-japan-as-trade-deal-buys-sales>. Accessed June 21, 2015.

<sup>115</sup> Japanese Customs Website. *Trade Statistics of Japan*. Japanese Ministry of Finance. [http://www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm). Accessed June 14, 2015.

### 3.28 Japanese Beef Import Tariffs and Free Trade agreements

Following the negotiations of the Uruguay Round, Japan was able to set bound tariff rates on its beef imports from WTO countries at 50 percent for frozen, fresh, and chilled beef and between 12.8 and 50 percent on offal depending on the product. As outlined in figure 3.15 below, Japan has lowered its applied tariff on frozen, fresh, and chilled beef imports to all WTO countries in Article 7-5 of Temporary Tariff Measures Law of Japan (Law No. 36 of 1960) as amended<sup>116</sup>.

**Figure 3.15 - Japanese Beef Tariff Rates for WTO Countries<sup>117</sup>**

Tariff Line	Bound	Applied
0201 - Meat Bovine Fresh/Chilled	50%	38.5%
0202 - Meat Bovine Frozen	50%	38.5%
0206 - Beef Offal Only Total		
020610 - Bovine Offal Fresh/Chilled		
0206.10-011 Fresh/Chilled Tongues	12.8%	12.8%
0206.10-019 Other	12.8%	12.8%
0206.10-020 Cheek and Head Meat	50%	50%
0206.10-090 Other	21.3%	21.3%
0206.21 - Bovine Tongues, Frozen	12.8%	12.8%
0206.22 - Bovine Livers, Frozen	12.8%	12.8%
0206.29 - Bovine Offal Frozen		
0206.29-010 Internal Organs	12.8%	12.8%
0206.29-020 Cheek and Head Meat	50%	50%
0206.29-090 Other	21.3%	21.3%

Japan has a free trade agreement with only two of its top five beef importing countries – Australia and Mexico. The US and New Zealand do not have any formal bilateral trade negotiations pending with Japan while Canada entered into negotiations on the “Canada-Japan Economic Partnership Agreement (EPA)” on March 25, 2012 with the latest round taking place in November 2014 in Tokyo

<sup>116</sup> Japan Customs Website. *Outline of Tariff and Duty Rates System*. Japanese Ministry of Finance. [http://www.customs.go.jp/english/summary/tariff.htm#Temporary\\_Rate](http://www.customs.go.jp/english/summary/tariff.htm#Temporary_Rate). Accessed June 27, 2015.

<sup>117</sup> Japanese Customs Website. *Japan’s Tariff Schedule (Statistical Code for Import)*. Japanese Ministry of Finance. <http://www.customs.go.jp/english/tariff/>. Accessed June 14, 2015.

although no agreement currently appears imminent<sup>118</sup>. The US, Canada, and New Zealand are all subject to the same applied beef tariffs outlined in figure 3.15 while Australia and Mexico have negotiated more favorable treatment with Japan.

#### *Japan-Australia Economic Partnership Agreement (JAEPA)*

On January 15, 2015 the Japan-Australia Economic Partnership Agreement (JAEPA) took full effect. According to the Japanese Ministry of Foreign Affairs, JAEPA

- Represents an historic development in economic relations between Japan and Australia and is the most significant bilateral economic agreement since the 1957 Agreement on Commerce
- Lays the foundation for the next phase of bilateral economic relations, and will strengthen "the special strategic partnership" between Japan and Australia.
- Will deliver significant economic benefits to both countries, through increased trade in high-quality goods and services, an easing of bilateral investment restrictions and promoting economic growth.<sup>119</sup>

JAEPA resulted in significant tariff reductions for Australian beef as outlined in figures 3.16 and 3.17.

The fresh and chilled beef tariff line (0201) and frozen beef (0202) immediately dropped on January 15, 2015 from 38.5 percent to 32.5 and 30.5 respectively. These tariff lines will continue to drop in small increments to 23.5 percent by 2029 for fresh and chilled and 19.5 percent by 2032 for frozen beef. With respect to beef offal (0206 ex), a tariff rate quota (TRQ) was put in place to allow a lower in-quota tariff on offal under a certain quantity by 5.2 to 20 percent depending on the tariff line. TRQ volumes were set at 17,000 metric tons in 2015 and increase by 400 metric tons a year until they reach 21,000 metric tons in 2025. "Under the agreement, Japan can return beef tariffs to 38.5 percent if imports from Australia exceed certain limits. The ceiling for Australian frozen beef was set at 195,000 metric tons for the initial year of the agreement, which will be raised to 210,000 metric tons over a decade. The limit for Australian chilled beef was set at 130,000 metric tons for the initial year, which will be expanded to

---

<sup>118</sup> Canadian Foreign Affairs, Trade and Development Canada Website. *Canada-Japan Economic Partnership Agreement*. Updated November 2014. <http://www.international.gc.ca/trade-agreements-accords-commerciaux/agr-acc/japan-japon/index.aspx?lang=eng>. Accessed June 17, 2015.

<sup>119</sup> Japanese Ministry of Foreign Affairs Website. *Joint Statement on the Entry into Force of the Agreement between Japan and Australia for an Economic Partnership*. Japanese Ministry of Foreign Affairs. January 15, 2015. [http://www.mofa.go.jp/page3e\\_000283.html](http://www.mofa.go.jp/page3e_000283.html). Accessed June 20, 2015.

145,000 metric tons.”<sup>120</sup> In 2014, Japan imported over 125,000 metric tons of chilled beef and 155,000 metric tons of frozen beef making it likely Australia will quickly hit the quota on chilled with most of the growth potential from tariff elimination in frozen beef.<sup>121</sup>

**Figures 3.16- JAEPA Beef Tariff Reduction Schedule & Tariff Rate Quota Volumes<sup>122</sup>**

Date	New Tariff Schedule		Special Tariff Rate Quota
	0201 Line	0202 Line	0206 Line (All)
	Ad Valorem Tariff		Metric Tons
Prior to JAEPA	38.5%	38.5%	N/A
January 15, 2015	32.5%	30.5%	17,000
April 15, 2015	31.5%	28.5%	17,400
April 15, 2016	30.5%	27.5%	17,800
April 15, 2017	29.9%	27.2%	18,200
April 15, 2018	29.3%	26.9%	18,600
April 15, 2019	28.8%	26.7%	19,000
April 15, 2020	28.2%	26.4%	19,400
April 15, 2021	27.6%	26.1%	19,800
April 15, 2022	27.0%	25.8%	20,200
April 15, 2023	26.4%	25.6%	20,600
April 15, 2024	25.8%	25.3%	21,000
April 15, 2025	25.3%	25.0%	21,000
April 15, 2026	24.7%	24.1%	21,000
April 15, 2027	24.1%	23.2%	21,000
April 15, 2028	23.5%	22.3%	21,000
April 15, 2029	23.5%	21.3%	21,000
April 15, 2030	23.5%	20.4%	21,000
April 15, 2031 +	23.5%	19.5%	21,000

<sup>120</sup> Takada, A. and Suzuki, I. *US Beef Sales to Japan May Decline on Australia Deal*. Bloomberg. April 8, 2015. <http://www.bloomberg.com/news/articles/2014-04-08/u-s-beef-sales-to-japan-may-decline-on-australia-deal>. Accessed June 21, 2015.

<sup>121</sup> Japanese Customs Website. *Trade Statistics of Japan*. Japanese Ministry of Finance. [http://www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm). Accessed June 14, 2015.

<sup>122</sup> Japanese Ministry of Foreign Affairs Website. *Agreement between Japan and Australia for an Economic Partnership. Annex 1 Schedules in Relation to Article 2.4*. Japanese Ministry of Foreign Affairs. September 30, 2014. <http://www.mofa.go.jp/files/000044323.pdf>. Accessed June 20, 2015.

**Figure 3.17- JAEPA TRQ Tariff Rates**<sup>123</sup>

	In-Quota Tariff	Out of Quota Tariff
0206 - Beef Offal Only Total		
020610 - Bovine Offal Fresh/Chilled		
0206.10-011 Fresh/Chilled Tongues	7.6%	12.8%
0206.10-019 Internal Organs	7.6%	12.8%
0206.10-020 Cheek and Head Meat	30.0%	50%
0206.10-090 Other	12.7%	21.3%
0206.21 - Bovine Tongues, Frozen	7.6%	12.8%
0206.22 - Bovine Livers, Frozen	7.6%	12.8%
0206.29 - Bovine Offal Frozen		
0206.29-010 Internal Organs	7.6%	12.8%
0206.29-020 Cheek and Head Meat	30.0%	50.0%
0206.29-090 Other	12.7%	21.3%

JAEPA is already having profound effects on bilateral beef trade. Tatsuo Iwama, the Executive Director of Japan Meat Traders Association, reported Japanese ministry data on chilled beef imports from Australia rose eight percent in the last quarter to 27,723 metric tons while US imports fell 27 percent to 12,913 metric tons. Part of that decline in US imports is being attributed to a supply disruption at the US west coast ports, but Mr. Iwama outlined in a May 11 interview that “lower duties for Australian products are attractive to Japanese meat importers and beneficial to local consumers. The US beef industry needs an early conclusion of TPP talks to regain equal footing with Australian exporters.”<sup>124</sup> Australia overtook the US as Japan’s top beef supplier in 2002 and solidified its market share after the 2004 BSE incidence; however, the US had been steadily gaining market share since protocols were relaxed in 2013.<sup>125</sup>

<sup>123</sup> Japanese Ministry of Foreign Affairs Website. *Agreement between Japan and Australia for an Economic Partnership. Annex 1 Schedules in Relation to Article 2.4.* Japanese Ministry of Foreign Affairs. September 30, 2014. <http://www.mofa.go.jp/files/000044323.pdf>. Accessed June 20, 2015.

<sup>124</sup> Takada, A. *Australian Beef Gains Ground in Japan as Trade Deal Buys Sales.* Bloomberg. May 12, 2015. <http://www.bloomberg.com/news/articles/2015-05-12/australian-beef-gains-ground-in-japan-as-trade-deal-buys-sales>. Accessed June 21, 2015.

<sup>125</sup> Takada, A. *Australian Beef Gains Ground in Japan as Trade Deal Buys Sales.* Bloomberg. May 12, 2015. <http://www.bloomberg.com/news/articles/2015-05-12/australian-beef-gains-ground-in-japan-as-trade-deal-buys-sales>. Accessed June 21, 2015.

### *Japan-Mexico Economic Partnership Agreement (Japan- Mexico EPA)*

The Japan-Mexico Economic Partnership Agreement (Japan-Mexico EPA) was originally signed in September of 2004 and recently updated in on September 23, 2011 to move up timelines and increase market access for various products including an expansion of low-import tariff quotas for Mexican beef outlined in figure 3.18. <sup>126</sup>According to the Congressional Research Service:

One of the goals of the Mexico-Japan EPA was to restore the competitiveness of Japanese companies in the Mexican market. Mexico already had free trade with the US and Canada under NAFTA and with the European Union. These two agreements had placed Japanese companies at a disadvantage due to differences in tariff rates and exclusion of Japanese companies from public-works projects in Mexico. Mexico entered the agreement to increase Japanese investment in Mexico, and, thus, create jobs, expand Mexican exports to Japan, expand technology transfer from Japan, and strengthen Mexican industrial competitiveness. <sup>127</sup>

This agreement was significant in the fact that it was only Japan's second free trade agreement and the first to liberalize trade in agricultural products. <sup>128</sup>

In the original agreement, Mexico was able to secure tariff reductions on multiple lines in a pooled quota that started at 5,000 metric tons per year and increased gradually to the current 15,000 ton level, which will be carried forward until a point at which the countries agree to increased liberalization<sup>129</sup>. On average over the 2010-2014 time frame, Mexico exceeded this pooled quota by exporting over 18,000 metric tons of beef to Japan with almost 13,000 metric tons coming from frozen brisket and plate beef.<sup>130</sup> While the Japan-Mexico EPA has led to increased market access for Mexican beef, Japan still only imports three percent of its beef from Mexico.

---

<sup>126</sup> Villarreal, A. *Mexico's Free Trade Agreements*. Congressional Research Service Report R40784. July 3, 2012.

<sup>127</sup> Villarreal, A. *Mexico's Free Trade Agreements*. Congressional Research Service Report R40784. July 3, 2012.

<sup>128</sup> Villarreal, A. *Mexico's Free Trade Agreements*. Congressional Research Service Report R40784. July 3, 2012.

<sup>129</sup> Japanese Ministry of Foreign Affairs Website. *Japan-Mexico Economic Partnership Agreement. Protocol Amending the Agreement between Japan and the United Mexican States for the Strengthening of the Economic Partnership*. Japanese Ministry of Foreign Affairs. September 22, 2011.

<http://www.mofa.go.jp/region/latin/mexico/agreement/pdfs/protocol1109e.pdf>. Accessed June 21, 2015.

<sup>130</sup> Japanese Customs Website. *Trade Statistics of Japan*. Japanese Ministry of Finance.

[http://www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm). Accessed June 14, 2015.

Figure 3.18 – Japan-Mexico EPA Pooled Quota Tariff Rates<sup>131</sup>

	Tariff for the Pooled Quota	Out-of-Quota Tariff
0201 - Meat Bovine Fresh/Chilled		38.5%
0201.10 Carcasses - Half and Whole	-	
0201.20 Other Cuts with Bone in	34.6%	
0201.30-010 Loin	30.8%	
0201.30-020 Chuck, Clod and Round	30.8%	
0201.30-030 Brisket and Plate	30.8%	
0201.30-090 Other	30.8%	
0202 - Meat Bovine Frozen		38.5%
0202.10 Carcasses - Half and Whole	-	
0202.20 Other Cuts with Bone in	30.8%	
0202.30-010 Loin	30.8%	
0202.30-020 Chuck, Clod and Round	30.8%	
0202.30-030 Brisket and Plate	30.8%	
0202.30-090 Other	30.8%	
0206 - Beef Offal Only Total		
020610 - Bovine Offal Fresh/Chilled		
0206.10-011 Fresh/Chilled Tongues	7.6%	12.8%
0206.10-019 Internal Organs	7.6%	12.8%
0206.10-020 Cheek and Head Meat	-	50%
0206.10-090 Other	-	21.3%
0206.21 - Bovine Tongues, Frozen	7.6%	12.8%
0206.22 - Bovine Livers, Frozen	11.5%	12.8%
0206.29 - Bovine Offal Frozen		
0206.29-010 Internal Organs	7.6%	12.8%
0206.29-020 Cheek and Head Meat	30.0%	50.0%
0206.29-090 Other	19.1%	21.3%

<sup>131</sup> Japanese Ministry of Foreign Affairs Website. *Japan-Mexico Economic Partnership Agreement. Protocol Amending the Agreement between Japan and the United Mexican States for the Strengthening of the Economic Partnership*. Japanese Ministry of Foreign Affairs. September 22, 2011. <http://www.mofa.go.jp/region/latin/mexico/agreement/pdfs/protocol1109e.pdf>. Accessed June 21, 2015.

### **3.3 Sanitary & Phytosanitary Measures and Technical Barriers to Trade**

Tariff reduction and the removal of non-tariff trade barriers has long been the target of international trade negotiations. While tariff elimination and reduction is fairly straight forward and has seen marked success in previous agreements, enforceable measures non- tariff trade barriers like sanitary and phyto-sanitary (SPS) measures and technical barriers to trade (TBT) have been more difficult to negotiate, which has led to a variety of WTO cases on the matter. The US has negotiated SPS and TBT measures in each of its free trade agreements in some form or fashion since NAFTA. These measures are seen by many to be just as, if not more important than tariff barriers especially with respect to agriculture products.<sup>132</sup>

US beef is facing a variety of SPS and TBT barriers, which have negatively affected US beef exports. In addition to the lingering effects of BSE discussed previously, trade barriers have arisen with various trading partners due to the use of synthetic hormones and ractopamine, an animal drug used to increase weight gain, in US beef production systems. The US has been in a long standing trade dispute with the EU over its use of beef hormones; and while the US has successfully argued its case at the WTO, barriers to US beef and retaliatory tariffs on EU agriculture exports to the US remain in place. Ractopamine faces similar barriers but on a broader scale. US beef maintains a residual level of ractopamine below the internationally recognized CODEX level set in 2012; however, major beef importers including the China, the EU, Russia, and Taiwan, all banned US beef raised using ractopamine. Exports of US ractopamine-free beef to these countries accounted for seven percent of US production in 2014. Beef hormones and ractopamine are the most detrimental SPS measures affecting the market,

---

<sup>132</sup> Johnson, R. *Sanitary and Phytosanitary (SPS) and Related Non-Tariff Barriers to Agricultural Trade*. Congressional Research Service Report R43450. March 31, 2014.

but small barriers and temporary bans on US beef can have significant effects on beef demand and preference for US raised beef products.<sup>133</sup>

The twelve TPP countries are currently negotiating a chapter on SPS measures. SPS measures are particularly difficult to negotiate as a proper balance between enforceable measures and domestic sovereignty. For the US and almost all countries for that matter, there is a strong desire to be able to protect its citizens from any real or perceived food safety concerns especially from foreign sources. Domestic governments are concerned that by allowing an international body to regulate SPS or TBT measures, they would not be able to protect its citizens in response to potential disease event or similar, which is untenable to most countries negotiating a free trade agreement. While many interested parties have been very vocal in calling for a strong SPS chapter, the actual effectiveness of any SPS agreement is difficult to quantify until a real issue arises and countries react.

As part of the effort to make the TPP a 21<sup>st</sup>-century agreement, while boosting US agricultural exports beyond what US negotiators might secure in market access talks alone, negotiators are drafting a chapter on sanitary and phytosanitary (SPS) matters that lays out commitments relating to human health and animal/plant safety which would go beyond those found in the World Trade Organization's (WTO) SPS Agreement.

An important issue that has been a source of controversy concerns what approach should be included to resolve SPS disagreements that arise among TPP members. USTR has tabled text that would establish both a "consultative mechanism" among technical experts to address SPS disputes that arise, and a "rapid-response mechanism" designed to quickly resolve SPS barriers that block shipments of perishable products. Other TPP countries that are significant agricultural exporters appear to favor a dispute settlement process for SPS obligations. At the Ottawa round in July 2014, USTR reportedly indicated it would accept dispute settlement for some SPS obligations, but not for all. Unclear was what type of dispute settlement mechanism would be acceptable and which SPS obligations the US would agree to subject to this procedure.

US agricultural interests and food groups have supported the inclusion of an enforcement mechanism for SPS disputes in the TPP text. In testimony before the House Committee on Agriculture on March 18, 2015, the United Fresh Produce Association cited the increasing use of nontariff barriers as an obstacle to US fruit and vegetable exports and advocated for "the creation of a dispute settlement process that resolves nontariff trade issues in a timely manner." A letter from 24 Members of Congress on SPS disputes, dated August 3, 2012, called for the inclusion of "effective and enforceable rules" to strengthen the role of science in resolving

---

<sup>133</sup> McMinimy, M. *Major Agricultural Trade Issues in the 114<sup>th</sup> Congress*. Congressional Research Service Report R43905. February 10, 2015.

differences. A different perspective on SPS enforcement is expressed in Representative Levin's report to the Council on Foreign Relations in September 2014. In that report, Representative Levin cautioned that any new SPS disciplines under TPP must not place US regulatory sovereignty at risk in view of the broad array of conditions that exist across TPP countries.<sup>134</sup>

Beef interests in TPP are no different than that of agriculture broadly. The Five Nation's Beef Alliance explains, "Risk based scientific decision making, regulatory convergence and equivalence are also critically important. International science-based standards must be incorporated in the text (for example conformity with OIE and Codex guidelines). Non-science based Sanitary and Phyto-Sanitary (SPS) measures must not impede trade."<sup>135</sup> Finding the proper balance between sovereignty concerns and enforceable science-based standards will be difficult; but the creation of a dispute settlement board with proper protocols will likely be a step in the right direction, leading to quicker resolutions of disputes outside of more formal avenues like the WTO process. If the TPP agreement is truly a living agreement that will experience periodic updates, the dispute settlement system will likely be an evolving process, changing to meet the new and growing needs in the SPS space.

---

<sup>134</sup> Fergusson, I. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Congressional Research Service Report R42694. March 20, 2015.

<sup>135</sup> Five Nations Beef Alliance Website. *Five Nations Beef Alliance Urges High Quality, Comprehensive TPP Outcomes*. February 6, 2014. [http://fivenationsbeefalliance.com/pdf/WGTN\\_DOCS-155406-v2-FNBA\\_TPP\\_Statement\\_February\\_2014.pdf](http://fivenationsbeefalliance.com/pdf/WGTN_DOCS-155406-v2-FNBA_TPP_Statement_February_2014.pdf). Accessed June 28, 2015.

### **3.4 Existing Analysis of Beef Market Impacts from a Potential TPP Agreement**

Since TPP is still in the negotiation process and the ultimate outcome of the agreement is unknown, there has not been extensive analysis on outcomes of the agreement. The most significant work to date on potential impacts of the TPP agreement on agriculture was undertaken by a USDA team led by Mary Burfisher. The report, entitled “Agriculture in the Trans-Pacific Partnership,” outlines the potential impacts of full elimination of all agriculture tariffs and tariff-rate-quotas (TRQ). USDA utilizes a GTAP computable general equilibrium model to simulate impacts on 29 agriculture commodities for 11 TPP countries (excluding Brunei) and the rest of the world. Overall, the USDA model predicts an 18.3 percent increase in the value of intra-TPP trade in beef in the 2014-2025 time frame, increasing from \$9,849 million to \$11,777 million over the baseline projections from their model. The US is projected to experience a 3.9 percent increase the quantity of beef exported and a 4.8 percent increase in the quantity imported to the world over the baseline estimates while overall output is only projected to grow in the US by 0.1 percent. Figure 3.19 below outlines the percentage change in US beef imports and exports by TPP country along with interaction from the rest of the world above the USDA baseline projections.<sup>136</sup>

**Figure 3.19 - Percentage Change in US Beef Imports & Exports by Country from 2014-2025<sup>137</sup>**

	Australia	Canada	Chile	Japan	Malaysia	Mexico	NZ	Peru	Singapore	Vietnam	ROW
% Change in US Exports	5.7%	-10.3%	0.8%	35.1%	1.3%	-3.2%	4.8%	-0.2%	1.8%	73.6%	0.1%
% Change in US Imports	11.5%	-2.5%	-4.3%	29.9%	0.0%	-2.2%	8.6%	-3.3%	0.0%	0.0%	0.0%

While the US negotiators are committed to pursuing full market access in TPP, such an agreement may not be feasible as countries like Japan have continually expressed a strong desire to

<sup>136</sup> Burfisher, M. et. al. *Agriculture in the Trans-Pacific Partnership*. Economic Research Service Report 176. US Department of Agriculture. October, 2014.

<sup>137</sup> Burfisher, M. et. al. *Agriculture in the Trans-Pacific Partnership*. Economic Research Service Report 176. US Department of Agriculture. October, 2014.

exclude certain commodities from full market access. Japan has included maintaining tariffs or TRQs on sensitive commodities like beef, rice, and pork in all previous trade agreements. According to the Japan Times, “Japan has proposed during negotiations with the US to slash its 38.5 percent tariff in imported beef to 9 percent over 15 years... Tokyo also called for a safeguard measure that allows it to raise tariffs back to 20 percent if US beef imports surge.”<sup>138</sup> With Japan as the only major beef importing market and pressure on the US to remain competitive with Australia in the Japanese market after the signing of the Japan-Australia Economic Partnership Agreement, it is entirely plausible the US will not secure full tariff and TRQ elimination in the TPP agreement. The USDA analysis falls short in its ability to analyze the complexity around beef tariff lines and treats all beef as equal despite the different volumes and values traded on individual tariff lines. Further analysis is needed if full tariff and TRQ elimination is not achieved in the agreement to accurately model such important dynamics.

---

<sup>138</sup> Kyodo. *Japan TPP Offer Chops Beef Tariffs to 9% over 15 Years*. Japan Times. January 30, 2015. <http://www.japantimes.co.jp/news/2015/01/30/business/japan-tpp-offer-chops-beef-tariffs-9-15-years/#.VZBLdUYkpUN>. Accessed June 28, 2015.

## **4: MODEL OF US BEEF INDUSTRY**

### **4.1 Research Overview**

The literature review highlights that there are a multitude of different beef trade scenarios possible in the final outcome of the TPP negotiations. While it is impossible to correctly predict any successful TPP outcome, this research seeks to lay a foundation for analysis of a final TPP agreement by quantifying the effects of potential scenarios that expand upon the work done by the USDA. By examining the impacts of various tariff elimination scenarios as well as major disease incident scenarios with and without improved SPS measures in the final agreement, this research will seek to quantify the impacts of various TPP outcomes on the US beef market. This research utilizes two existing models developed by the Agricultural Markets and Policy Group (AMAP) as these models are among the most complex and intricate models currently available to analyze the US beef industry.

### **4.2 US Livestock Model**

The model of the US beef industry used in this research is part of the larger US livestock model developed by the Agricultural Markets and Policy Group (AMAP) at the University of Missouri and stems from the modeling structure developed by the Food and Agricultural Policy Research Institute (FAPRI). FAPRI and their affiliates maintain structural economic models for each of the major crop and livestock sectors of the US agriculture industry including the livestock model maintained at AMAP. Each model contains a complex set of supply and demand equations based on OLS regressions rigorously tested for statistical accuracy and combined with real world market knowledge and expertise established over thirty years of economic modeling. These stochastic models are linked together to project a 10 year baseline utilized historical data and a series of 500 potential scenarios with various production levels and price effects. This baseline is re-established yearly and updated at frequent intervals and is used to analyze the effects of various policies.<sup>139</sup>

---

<sup>139</sup> FAPRI Website. *About FAPRI*. Food and Agricultural Policy Research Institute. Accessed August 8, 2015.

The AMAP US beef model attempts to capture the complexities of the US beef industry through a series of estimated equations, technical relationships, and closing identities. The underlying parameters of the model are updated on occasion with the most recent model regressions run over the 1980 to 2010 period. Using OLS regressions to decipher the statistically significant data, this model is able to forecast the major supply and demand equations that attempt to represent the US beef industry. These supply and demand equations are useful for examining effects of various policies on the various segments of the US markets and informing economists and policy makers of potential impacts.

### **4.3 Beef Export/Import Trade Model**

In order to better examine effects of exports and imports on the aggregate US beef model, a beef export/import model, or trade model as it will be referred to in this research, was developed by Daniel Madison at AMAP. The trade model contains a series of export and import equations fitted with OLS regressions of price and production data. The export equations for Canada, Mexico, Japan, South Korea, and the rest of the world as well as the import equations for Canada, New Zealand, Australia, and the rest of the world are aggregated separately to generate data points for both beef imports and exports that are linked to the US livestock model. In addition, the US boxed beef cutout price, beef cow slaughter, and Sioux Falls utility cow price from the US livestock model are connected with the trade model to link both models and bring them into equilibrium.

For this research, the most significant equation in either model is the US beef exports to Japan equation. A regression of Japanese beef production (JABEEF), US beef production (USBEEF), an aggregate of US pork cutout and US wholesale chicken prices deflated by the US consumer price index (PKCHK), an exchange rate adjusted boxed beef price deflated by the US consumer price index (ExAdBBP), and a dummy variable that accounts for the effects of the 2004 BSE incident (Shift) were ran over the 25 year historical period 1990-2014. The regression results in figure 4.1 reveal a strong

correlation with over 95 percent of the variation in US beef exports to Japan accounted for in the following equation:

**US Beef Exports to Japan =**

- 16,687 Intercept
- 886 Japanese Beef Production
- + 134 US Beef Production
- + 583,472 Pork Cutout/Chicken Wholesale Price
- 6,957 Exchange Adjusted Boxed Beef Price
- 866,731 Shift from 2004 BSE Incident

All factors in the equation except Japanese production are significant at the 10 percent confidence level with both the exchange rate adjusted boxed beef price and dummy variable significant at the 99 percent confidence level.

**Figure 4.1 – US Beef Exports to Japan Equation Regression Results**

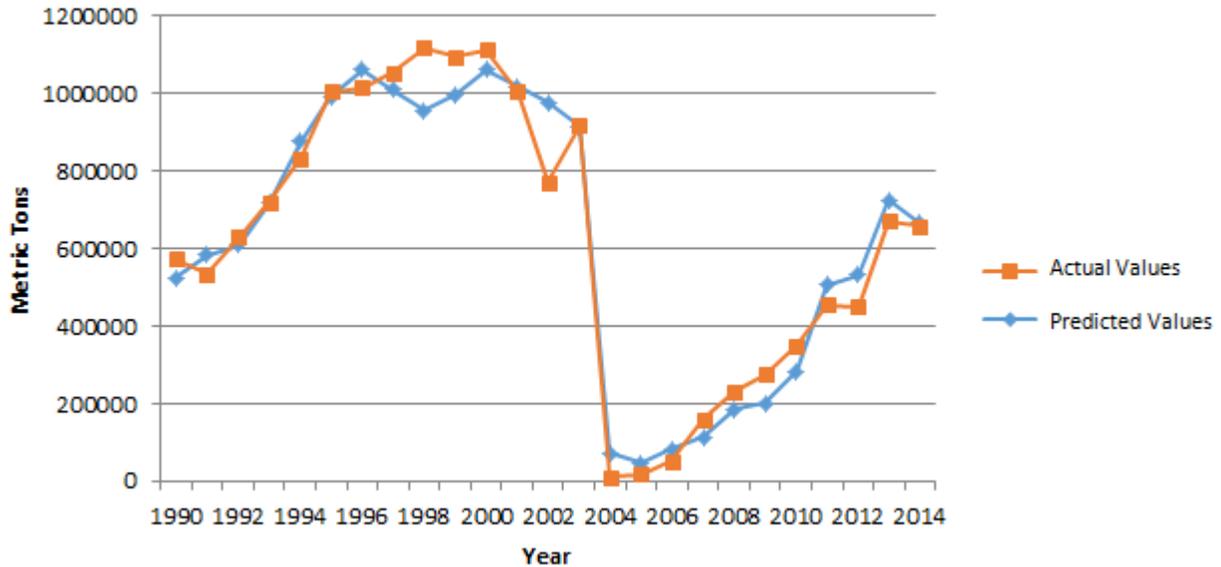
<i>Regression Statistics</i>	
Multiple R	0.9804
R Square	0.9612
Adjusted R Square	0.9510
Standard Error	80897
Observations	25

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	5	3.07826E+12	6.16E+11	94.07514	9.91851E-13
Residual	19	1.24341E+11	6.54E+09		
Total	24	3.2026E+12			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	(16,687)	1,343,609	(0.012)	0.990
JABEEF	(866,066)	740,356	(1.170)	0.257
USBEEF	133,507	68,734	1.942	0.067
PKCHK	583,472	297,293	1.963	0.065
ExAdBBP	(6,957)	1,687	(4.125)	0.001
Shift	(866,731)	47,938	(18.080)	0.000

Figure 4.2 graphs the residuals of the regression against the historical predicted values of the US beef exports to Japan equations revealing a very close trend and signifying the importance of the dummy variable that accounts for the 2004 BSE incident.

**Figure 4.2 –Actual and Predicted Values of Regression for US Beef Exports to Japan**



#### **4.4 Data**

A vast majority of the data employed in the AMAP models are sourced from various agencies in the US Department of Agriculture (USDA) with much of the data coming from the World Agricultural Supply and Demand Estimates (WASDE) report, which is a monthly compilation of relevant USDA data aggregated by the USDA Office of the Chief Economist<sup>140</sup>. Generally speaking, the production data utilized in this model is collected by the National Agriculture Statistics Service, and pricing data is collected by the Economic Research Service. The macroeconomic data such as pricing of fertilizer and oil products is purchased from IHS Global Insight, a world leader in macroeconomic forecasting.<sup>141</sup> Other

<sup>140</sup> Office of the Chief Economist Website. *How the WASDE is Prepared*. US Department of Agriculture. Office of the Chief Economist. <http://www.usda.gov/oce/commodity/wasde/prepared.htm>. Accessed August 8, 2015.

<sup>141</sup> IHS Global Insight Website. *About Us*. IHS Global Insight. <https://www.ihs.com/about/index.html>. Accessed August 8, 2015.

data such as consumer price indexes and foreign exchange rates were collected from the US Bureau of Labor Statistics and the US Treasury.

### 4.5 Baseline

The AMAP beef model produces a baseline from which to analyze policy changes such as the changes in US beef exports that will be examined in this research. The baseline makes certain assumptions such as the continuation of all current policy and existing trade agreements into perpetuity. Figure 4.3 shows the important baseline results that will be used in this research for even years over the 10 year 2015 to 2024 baseline period. While the model produces a much greater set of results, a few key indicators of supply, demand, domestic consumption, producer returns, and relevant prices are reported for this research for simplicity's sake.

**Figure 4.3 - US Beef Model Baseline**

<b>US Beef Model Baseline</b>						
	<b>2014</b>	<b>2016</b>	<b>2018</b>	<b>2020</b>	<b>2022</b>	<b>2024</b>
<b>Supply</b>						
Imports	2,928	2,764	2,645	2,633	2,728	2,809
Production	24,320	23,916	26,215	27,315	27,038	26,673
Total	27,832	27,180	29,414	30,574	30,405	30,113
<b>Disappearance</b>						
Domestic Use	24,718	23,980	25,768	26,657	26,473	26,156
Exports	2,584	2,690	3,047	3,279	3,297	3,329
Total	27,302	26,670	28,815	29,936	29,770	29,485
<b>Per Capita Consum</b>						
	54.3	51.8	54.8	55.8	54.6	53.1
<b>Cow-Calf Net Return</b>						
	\$ 408.31	\$ 359.66	\$ 100.82	\$ 14.70	\$ 39.96	\$ 71.64
<b>Prices</b>						
OK City Feeder Steers	\$ 225.21	\$ 221.63	\$ 171.71	\$ 157.81	\$ 165.98	\$ 174.48
Boxed Beef Cutout	\$ 239.26	\$ 234.17	\$ 204.54	\$ 199.02	\$ 204.38	\$ 208.38
Beef Retail	\$ 5.97	\$ 6.16	\$ 5.91	\$ 5.86	\$ 6.17	\$ 6.43

Supply and disappearance results are measured in millions of pounds. Per capita consumption is measured in pounds, and prices and returns are measured in US dollars per hundred weight except for retail beef prices which are measured in US dollars per pound.

The beef industry is still rebuilding cow herds from the droughts in 2011, 2012, and 2013. 2014 was a nearly perfect storm for producers with cattle to sell. Beef prices were relatively high due to tight supply and strong demand, which was coupled with significantly lower feed prices leading to historically high revenues for cattle producers.<sup>142</sup> As figure 4.3 above indicates, US production will increase in the long run, but fall in the short run due to the long lag time it takes for the beef industry to rebuild. Exports are expected to continue to grow significantly over the 10 year baseline, and domestic use and per capita consumption will stay fairly constant but fluctuate based on relative prices of domestic beef, pork, and poultry. Net returns for cattle producers and the OK City feeder steer price remain very high in the short run but are expected to fall in the long run as the US herd rebuilds. The boxed beef cutout price and the retail beef price remain strong in the short run, moderate in the medium term, and begin to increase again towards the out years in the baseline.

---

<sup>142</sup> Westhoff, P. et al. *U.S. Baseline Briefing Book – Projections for Agricultural and Biofuel Markets*. March 2015. Food and Agricultural Policy Research Institute. <http://www.fapri.missouri.edu/wp-content/uploads/2015/03/FAPRI-MU-Report-01-15.pdf> Accessed August 8, 2015.

## 5: POTENTIAL TRANS-PACIFIC TRADE PARTNERSHIP SCENARIOS

### 5.1 Overview of Potential TPP Scenarios Relevant to US Beef Trade

This research utilized the two linked models discussed above to examine the impacts of changes in the trade model on the aggregate US beef model maintained at AMAP. Two separate types of scenarios were examined with the first set of scenarios focusing on tariff elimination and the second set of scenarios examining a major disease incident with and without improved SPS measures in the final TPP agreement. Figure 5.1 below outlines the two scenarios.

**Figure 5.1 - Potential TPP Scenarios**

<b>Scenario I</b> Tariff Elimination	Full tariff elimination scenario	TPP agreement reduces Japanese beef tariff lines by 10 percent in 2016 and 5 percent each year after until tariffs are reduced to zero in 2022
	Partial tariff elimination scenario	TPP agreement reduces Japanese beef tariff lines by 10 percent in 2016 and 5 percent each year after until tariffs are reduced to 9 percent in 2020
<b>Scenario II</b> Major Disease Incident	Major Disease Incident Scenario	The US experiences a significant disease incident and exports to major regions – NAFTA, Asia, other - decrease similar to the 2004 BSE incident
	Major Disease Incident Scenario with Improved SPS measures in Japan	The US experiences the same disease incident. However, a TPP agreement that improves SPS measures is in place, and US access to Japanese markets parallels NAFTA access instead of Asia access.

These scenarios assume that all effects of the trade agreement will be realized in the ten year baseline time frame due to limitations in the forecasting ability of this model; however, it is likely the phase in period for tariff may be drawn out over a longer period like the fifteen year time frame in the Japan-Australia free trade agreement. In addition, it is assumed the TPP Agreement will be finalized in 2015 and take effect on January 1, 2016. Recently, progress has been made on the negotiations, but the 2016 enactment date is likely unrealistic. However, the current analysis is meant to merely show effects of various scenarios and a more thorough analysis will be needed to evaluate the final agreement.

## **5.2 Scenario I: Tariff Elimination**

In Scenario I, a full and partial tariff elimination scenario were examined. As outlined in the research above, USDA TPP models assume full tariff elimination for beef<sup>143</sup>, but Japan has never allowed any country full market access for beef in previous trade agreements and recent press articles indicate that Japanese negotiators may be pushing to maintain a nine percent tariff on all beef imports<sup>144</sup>. In both scenarios, it is assumed Japan will agree to immediately lower tariffs on January 1, 2016 by ten percent and decrease beef tariffs by an additional five percent each year of the agreement until the desired long term tariff level is reached. For simplicity sake, all beef tariff lines are reduced from the 38.5 percent level even though certain lines are as high as 50 percent and other lines are in the 20 percent range. The full tariff elimination level reduces tariffs to 3.5 percent in 2021 and completely eliminates beef tariffs from 2022 forward while the partial tariff elimination scenario decreases tariffs to 9 percent in 2020 and assumes that value through the end of the 2024 baseline.

The model is unable to forecast the tariff line data that corresponds to the increase in beef trade with Japan. However, by eliminating or reducing tariffs in Japan, consumers in that market will essentially experience a reduction in price, which will result in an increase in quantity demanded, ceteris parabis. The US and Australia, which constitute over ninety percent of the market will likely see the largest increase in exports to the Japanese market. The US will likely hold its relative advantage in higher value products like fresh beef and offal while Australia will continue to be a larger exporter to Japan in the aggregate with much larger sales of lower value frozen beef. New Zealand, Canada, and Mexico will likely see an increase in the volume of exports to Japan as its import market grows and the US as demand for beef will likely remain strong due to the inelastic demand for beef.

---

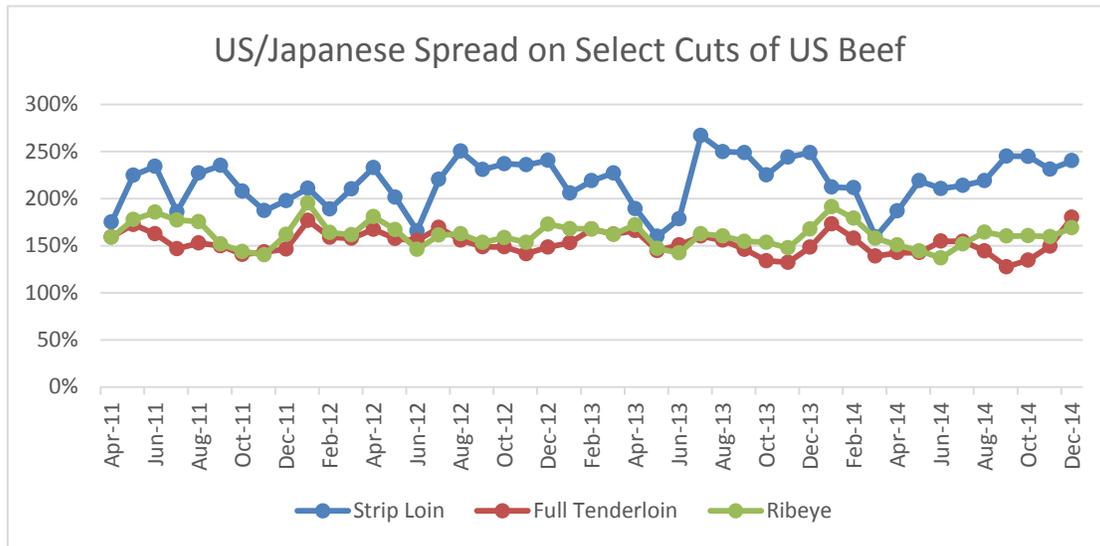
<sup>143</sup> Burfisher, M. et. al. *Agriculture in the Trans-Pacific Partnership*. Economic Research Service Report 176. US Department of Agriculture. October, 2014.

<sup>144</sup> Kyodo. *Japan TPP Offer Chops Beef Tariffs to 9% over 15 Years*. Japan Times. January 30, 2015. <http://www.japantimes.co.jp/news/2015/01/30/business/japan-tpp-offer-chops-beef-tariffs-9-15-years/#.VZBLdUYkpUN>. Accessed June 28, 2015.

While all the benefits from tariff elimination will decrease the spread between US cuts of meat and their landed equivalents in Japan, certain transaction costs that will remain as a result of needing to transport perishable products across the world. Figure 5.2 below shows that a 38.5 percent decline could be realized in the aggregate with full tariff elimination the spread between the price for selected beef cuts in the US and the landed price for those same cuts in Japan. To calculate the price spread in figure 5.2, monthly USDA pricing data for fresh strip loin, full tenderloin, and ribeye was compared with an exchange rate adjusted monthly pricing data collected by the Japanese government for the corresponding cuts of North American fresh strip loin, full tenderloin, and ribeye over the April 2011 to December 2014 time period. Fresh strip loin, full tenderloin, and ribeye were all selected due to their consistently high trading volumes and readily available pricing data from both US and Japanese government sources.

Each of these cuts move in tandem, generally staying between 150 and 250 percent range, with the strip loin spread being consistently higher and more volatile than the ribeye and full tenderloin. At certain points the spread does drop close to the 140 percent tariff line for the full tenderloin cuts. However, various other factors may have a significant influence on the price spread such as the yearly exchange rate comparison with monthly pricing data, difference in pricing data collection between the US and Japanese governments, long term pricing contracts for exported beef, imperfect information, and various other factors. Over the nearly four year period, the monthly spread of all three cuts averaged at around 177 percent. Having already adjusted for the exchange rate and eliminating the US price of the beef as well as the tariff, the spread between the US prices for these select cuts and the landed Japanese prices for the corresponding cuts computes to 38.5 percent, which would account for all transportation and other costs associated with exporting beef from the US to Japan. Essentially, this data shows that by completely eliminating all Japanese beef import tariffs, overall transaction costs for selling US beef to Japan could be cut roughly in half.

**Figure 5.2 – US Japanese Spread on Select Cuts of US Beef <sup>145</sup>**



### **5.3 Results: Tariff Elimination Scenarios**

Results from the full and partial tariff elimination scenarios are outlined in figures 5.3 and 5.4 below. Figure 5.3 outlines the effects of the two scenarios and the difference between the two over the short run 2016 to 2021 time period where tariffs are gradually being reduced and the longer term 2022-2024 period where the agreement has taken full effect for the three years in both the partial and full tariff elimination scenarios. Supply and disappearance results are measured in millions of pounds. Per capita consumption is measured in pounds, and prices and returns are measured in US dollars per hundred weight except for retail beef prices which are measured in US dollars per pound. Figure 5.4 analyzes the same results as a percentage change from the underlying baseline.

On the supply side, there is a slight uptick in production in the short run and a longer term rise in production in the longer term period, which is expected as tariffs are gradually being reduced and the cattle industry is slower to respond to price signals due to relatively long bovine biological cycle. There is no difference between full and partial tariff elimination in the short term and a very slight decrease in

<sup>145</sup> Agriculture & Livestock Industries Website. *Livestock and Livestock Products*. Japanese Ministry of Finance & United States Department of Agriculture. [http://lin.alic.go.jp/alic/statis/dome/data2/e\\_nstatis.htm](http://lin.alic.go.jp/alic/statis/dome/data2/e_nstatis.htm). Accessed August 9, 2015.

production on the partial versus full tariff scenarios. Both scenarios show a very small increase in imports as can be expected as higher quality US beef leaves the US and is replaced by lower quality beef from foreign producers.

The main shift on the demand side is the 3 percent increase in exports in the full tariff elimination short run and 4.5 percent increase in the long run. In the partial tariff scenario, exports also see a 2.8 percent increase in the short run and a 3.5 percent in the out years. Due to higher prices, domestic consumption is down by about 0.2 percent in almost all scenarios and down 0.3 percent in the long run full tariff elimination scenario resulting in an overall decrease in per capita consumption by the same percentages but only accounting for 0.1 fewer pounds of beef consumed per capita per year resulting from a larger decline in consumption of domestic beef and a smaller increase in consumption of imported beef.

Prices and returns for beef, as expected, are up across the board with higher prices and returns being realized in the full tariff reduction scenario compared to partial tariff elimination scenario. Retail beef prices are only up about one to two tenths of a percent or about a penny across all scenarios while boxed beef prices and Oklahoma City feeder steer prices are up significantly more with more volatile impacts between the scenarios and time periods. Boxed beef jumps by a half of a percent or 92 cents in the short run and 99 cents in the long run under the full tariff elimination scenario while only increasing by 87 cents in the short run under the partial elimination scenario and with the increase waning in the long term to only 63 cents as US beef production expands. Feeder steer prices see the highest increase in terms of both percentage and price-level by almost a percent in both the short by \$1.36 and long run by \$1.46 under the full tariff elimination scenario. In the partial elimination scenario, feeder steer prices see similar effects as the boxed beef prices increasing by seven tenths in the short run and only five tenths of a percent in the long run scenario or by \$1.27 and \$0.91 respectively. Net cow calf returns follow the same trends as the boxed beef and feeder steer prices, but on a much larger scale. In the full

tariff elimination scenario, net returns increase by 5.4 percent in the short run and 13.6 percent in the long run by \$6.71 and \$7.54. For the partial tariff elimination scenario, net returns increase by \$6.27 in the short term and \$4.86 in the long term.

Overall, full and partial tariff elimination will lead to higher beef prices for both US producers and consumers. Producers would see much higher returns under both scenarios in the short run and even higher returns with full tariff elimination in the long run. Production would increase to meet the increased export demand while domestic consumption would fall slightly. With higher US prices, there would be an increase in imports to meet consumer demand and mitigate consumption effects.

Figure 5.3 – Quantitative Results from Tariff Elimination Scenario

Tariff Elimination Scenario						
	Full		Partial		Difference	
	2016-21	2022-24	2016-21	2022-24	2016-21	2022-24
<b>Supply</b>						
Imports	10	12	9	8	1	4
Production	17	66	17	60	0	5
Total	25	75	24	67	1	8
<b>Disappearance</b>						
Domestic Use	-64	-72	-60	-46	-4	-26
Exports	92	149	87	114	5	35
Total	28	77	27	68	1	9
<b>Per Capita Cons</b>	-0.1	-0.1	-0.1	-0.1	0	0
<b>Cow-Calf Returns</b>	\$ 6.71	\$ 7.54	\$ 6.27	\$ 4.86	\$ 0.43	\$ 2.68
<b>Prices</b>						
OKC Feeder Steer	\$ 1.36	\$ 1.46	\$ 1.27	\$ 0.91	\$ 0.09	\$ 0.54
Boxed Beef Cutout	\$ 0.92	\$ 0.99	\$ 0.87	\$ 0.63	\$ 0.06	\$ 0.36
Beef Retail	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.00	\$ 0.00

Figure 5.4 – Percentage Results from Tariff Elimination Scenario

Tariff Elimination Scenario						
	Full		Partial		Difference	
	2016-21	2022-24	2016-21	2022-24	2016-21	2022-24
<b>Supply</b>						
Imports	0.4%	0.4%	0.3%	0.3%	0.0%	0.1%
Production	0.1%	0.2%	0.1%	0.2%	0.0%	0.0%
Total	0.1%	0.2%	0.1%	0.2%	0.0%	0.0%
<b>Disappearance</b>						
Domestic Use	-0.2%	-0.3%	-0.2%	-0.2%	0.0%	-0.1%
Exports	3.0%	4.5%	2.8%	3.5%	0.2%	1.1%
Total	0.1%	0.3%	0.1%	0.2%	0.0%	0.0%
<b>Per Capita Cons</b>	-0.2%	-0.3%	-0.2%	-0.2%	0.0%	-0.1%
<b>Cow-Calf Returns</b>	5.4%	13.6%	5.0%	8.8%	0.3%	4.8%
<b>Prices</b>						
OKC Feeder Steer	0.8%	0.9%	0.7%	0.5%	0.1%	0.3%
Boxed Beef Cutout	0.4%	0.5%	0.4%	0.3%	0.0%	0.2%
Beef Retail	0.2%	0.2%	0.2%	0.1%	0.0%	0.1%

In both the full and partial tariff elimination scenario, market access for US beef enjoys a significant increase in exports to Japan, which has small spillover effects in other markets as outlined in figure 5.5 below.

**Figure 5.5 – Trade Effects by Country from Tariff Elimination Scenario**

<b>Tariff Elimination Scenario</b>						
	<b>Full</b>		<b>Partial</b>		<b>Difference</b>	
<b>Beef Exports</b>	<b>2016-21</b>	<b>2022-24</b>	<b>2016-21</b>	<b>2022-24</b>	<b>2016-21</b>	<b>2022-24</b>
Canada	-0.3%	-0.3%	-0.3%	-0.2%	-0.02%	-0.10%
Japan	12.9%	19.2%	12.2%	14.6%	0.73%	4.58%
Mexico	-0.6%	-0.5%	-0.5%	-0.3%	-0.04%	-0.19%
Korea	-0.6%	-0.5%	-0.5%	-0.3%	-0.04%	-0.18%
Rest of World	-0.2%	-0.3%	-0.2%	-0.2%	-0.01%	-0.08%
<b>Total</b>	<b>3.0%</b>	<b>4.5%</b>	<b>2.8%</b>	<b>3.5%</b>	<b>0.17%</b>	<b>1.05%</b>

Exports to Japan increase by almost thirteen percent in the short run and nineteen percent in the long run under the full tariff elimination scenario while under the partial elimination scenario export gains are about one percentage less in the short run and five percentage points less in the long run with full tariff elimination. For Canada, Mexico, South Korea, and the rest of the world, there is a small reduction in exports of about a quarter to half a percent in both the short and long run full and partial tariff elimination scenario with a very small difference in exports between the two tariff elimination scenarios. Overall exports increase by around three percent in both short run scenarios and by 4.5 percent in the long run full and by and 3.5 percent in the partial tariff elimination scenario.

## **5.4 Scenario II: Major Disease Incident with & without Improved SPS Measures**

In Scenario II, a major disease incident is examined in a case with and a case without improved sanitary and phyto-sanitary (SPS) measures in a final TPP agreement. For this research, the term “improved SPS measures” will be used to signify a TPP outcome with enforceable SPS measures based in science that are enforceable to the point where the measures will actually be strong enough to deter governments from basing their reaction to an SPS incident on measures other than those routed in sound science. However, SPS measures are much more difficult to measure and quantify as each type of disease incident and specific responses from each country can vary greatly. In this scenario, the 2004 BSE incident was used as a marker for the shock. Other less severe scenarios could have been designed as certain disease incidents with only an animal health concern would likely have lesser overall effects than an incident with human health implications like BSE. However, the BSE incident was chosen since it was a very recent and significant event that had major effects on US and world beef markets. In addition, there was a significant difference in the way different countries reacted based on their specific relationships with the US especially with respect to existing trade agreements.

Figure 5.6 outlines the real world response as a percentage of trade for the last twelve years as a percent of US exports in 2003, the last full year of data before the BSE incidence. While this is not a perfect measurement of actual effects due other factors at play in the beef market over the historical period, it is plain to see how different countries reacted very differently to the incident.

Figure 5.6 – US Beef Exports as a Percentage of 2003 Volume of Select Countries from 2003-14<sup>146</sup>

US Beef Exports 2003 to 2014 as Percentage of 2003 Volume for Select Countries						
	2003	2004	2005	2006	2007	2008
Canada	100%	26%	53%	105%	144%	169%
Mexico	100%	59%	85%	110%	107%	92%
Japan	100%	0%	1%	4%	12%	20%
Korea	100%	0%	0%	0%	10%	23%
Total	100%	25%	37%	51%	61%	70%
	2009	2010	2011	2012	2013	2014
Canada	156%	167%	208%	195%	190%	149%
Mexico	87%	74%	77%	58%	65%	73%
Japan	24%	33%	42%	41%	63%	64%
Korea	23%	46%	62%	51%	43%	48%
Total	70%	84%	101%	89%	92%	94%

In general developed Asian markets like Japan and South Korea almost completely shut off market access for three years to what had been a growing export market for US beef and reopened market access very slowly, never fully returning to the 2003 levels to date. Canada and Mexico dipped significantly in the short run due to a mid-year ban, but opened market access fairly quickly in the first three years. Overall exports dropped to a quarter of 2003 levels in the first year of the BSE incident and recovered slowly, not reaching 2003 levels until eight years after the incident.

For this research, a major disease incidence with similar effects of the 2004 BSE incident is applied in the first year of the forecast baseline. It is assumed that countries in the trade model will have one of three reactions to a major disease incidence: NAFTA response, Asian response, and a rest of the world response. In the NAFTA response, exports to countries that react like Mexico and Canada drop to 25 percent in the first year, 50 percent in the second year, and fully recover from the third year moving forward. In the Asian response, exports to countries that react like Japan and South Korea drop to zero percent for the first three years and steadily raise by 10 percent starting in the fourth year to

<sup>146</sup> USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

reach 70 percent by 2024. In the rest of the world response, all other countries experience a drop to 25 percent of exports in the first year, 40 percent in the second year, and recover by 10 percent each year starting in the third year before fully recovering in the 2022 to 2024 time frame. While these values do not follow the actual BSE incident exactly, these generalized trends attempt to remove other market forces that were affecting actual beef trade volumes over the historical period.

The scenario described above assumes that either no TPP agreement is reached or an agreement without enforceable SPS measures that increase market access following a major disease incident. In addition, an alternative scenario that assumes TPP includes enforceable SPS measures that would alter a country's behavior in the event of a major disease incident. In this scenario, the export equation for Japan is altered to show a NAFTA response as opposed to an Asian response, and the results are described below.

## **5.5 Results: Major Disease Incident with and without Improved SPS Measures**

Results from the major disease incident with and without improved SPS measures are outlined in figures 5.7 and 5.8 below. Figure 5.7 outlines the effects of the two scenarios and the difference between the two over the short run 2015 to 2017 time period where as the first three years is the time period with the largest impact from the major disease incident and the longer term 2018 to 2024 period where NAFTA response countries have returned to full market access and all other countries are slowly increasing market access. Supply and disappearance results are measured in millions of pounds. Per capita consumption is measured in pounds of beef, and prices and returns are measured in US dollars per hundred weight except for retail beef prices which are measured in US dollars per pound. Figure 5.8 analyzes the same results as a percentage change from the underlying baseline.

On the supply side, both production and imports see significant declines with a larger declines on both volume and percentage basis on US beef imports. Production drops in the short run by seven tenths of a percent without improved SPS measures and six tenths of a percent in the improved SPS scenario while continuing to decline in the long run by about 3.5 percent without SPS improvements and 2.5 percent with SPS improvements in the long run. Due to the long lag times in beef production, the market is unable to respond to the price impacts in the short run so most of impacts are felt in the out years as production decisions made in previous years take effect. US beef imports fall in the short run by 9.3 percent without improved SPS measures and 7.4 percent in the improved SPS scenario while imports continue to decline by about 2 percent without SPS improvements and 0.5 percent with SPS improvements in the long run. As the US loses export markets, especially the heavy decrease in the short run, the US market will see greater consumption of domestic production and lower beef prices, which will make the US a less lucrative market for foreign exporters like Canada, Mexico, New Zealand, and Australia, although a portion of imports will remain as the US does not produce enough lean beef needed to meet domestic demand. Overall, supply will decrease by about 1.5 percent in the short run

and 3.3 percent in the long run as a result of the major disease incident. An improved SPS scenario would mitigate these negative effects by 0.3 percent in the short run and 1 percent in the long run or about 70 million and 300 million pounds respectively.

On the demand side, domestic use and per capita beef consumption increases in both scenarios while exports and overall disappearance declines in both the short and long run scenarios. The major decrease in beef exports in both scenarios drive the major changes in both supply and demand. Exports decrease by almost two billion pounds per year or 70 percent in the short run and 1 billion pounds or around 33 percent in the long run major disease incident scenario while falling moderately less in the improved SPS scenario by 1.5 billion pounds or 55 percent and 600 million pounds or 18 percent respectively. This decline in exports reveals the impacts of improved SPS measures are significant if they are actually enforceable.

In addition, domestic use increases by 6 percent in the short run and 0.3 percent in the long run major disease incident scenario leading to a per capita consumption of beef increasing by 3.2 and 0.2 pounds respectively due to a decline in exports and retail beef prices. The improved SPS scenario sees a more modest increase of about 5 percent in the short run and a decline by about 0.3 percent in the long run translating to a 2.5 pound increase in per capita consumption in the short run and 0.2 pound decrease in the long run. Overall disappearance declines in both the short and long run scenarios by 1.7 percent or 446 million pounds and 3.3 percent or 987 million pounds respectively in the major disease incident scenario. The improved SPS measures scenario sees an increase in overall disappearance by 0.3 percent or 87 million pounds in the short run and one percent or around 300 million pounds in the long run.

Prices and returns for beef fall in the short run under both scenarios but recover in the long run under the improved SPS scenario. Beef retail prices fall by 4.3 percent or 27 cents in the short run and show no change in the long run major disease incident scenario while sliding 22 cents in the short run

and increasing 2 cents per year in the long run under the improved SPS scenario as a lesser decline in Japanese imports in the short run and full recovery in the long run help to mitigate a drop in retail beef prices. Boxed beef prices fall by nearly \$24 per year or 10.3 percent in the short run major disease incident scenario and 58 cents or three tenths of a percent over the 2018 to 2024 time period. In the improved SPS scenario, boxed beef prices fall by \$18.75 in the short run but increase on average by \$1.51 in the long run. Oklahoma feeder steer prices see the most significant price declines in both overall value and on a percentage basis with a decrease of nearly \$35 or 16 percent in the short run major disease incident scenario and average of 58 cents or 0.3 percent decline in the long run. Feeder steer prices see a modestly lower decline of about \$27 in the short run and an increase in \$2.52 in the long run improved SPS scenario. Net cow calf returns fall significantly in both short run scenarios with a nearly 50 percent decline by \$34.39 in the major disease incident scenario and a 39 percent decline by \$27.05 in the improved SPS scenario. In the long run major disease incident scenario, net returns fall by 48 cents or 18 percent while increasing by \$7.74 or 16 percent in the improved SPS scenario.

Overall, US consumers are generally better off as a result of lower prices; however, this model is unable to account for domestic consumer's reaction to a major disease incident in the US which could react more strongly to perceived health and safety concerns and result in a much larger decrease in retail beef prices although this is outside of the scope of his research. In both scenarios, producers experience significant losses in the short run. The improved SPS scenario greatly mitigates the overall negative effects during the short run and pushes producers back into more positive returns over the baseline estimates in the long run.

Figure 5.7 – Quantitative Results from Major Disease Incident and Improved SPS Scenario

Major Disease Incident (MDI) & Improved SPS Scenarios						
	MDI		Improved SPS		Difference	
	2015-17	2018-24	2015-17	2018-24	2015-17	2018-24
<b>Supply</b>						
Imports	-255	-49	-203	-16	52	34
Production	-175	-947	-148	-672	26	274
Total	-381	-984	-308	-687	72	297
<b>Disappearance</b>						
Domestic Use	1,490	81	1,153	-87	-337	-168
Exports	-1,937	-1,068	-1,513	-596	424	472
Total	-446	-987	-360	-683	87	304
<b>Per Capita Cons</b>						
	3.2	0.2	2.5	-0.2	-0.7	-0.4
<b>Cow-Calf Returns</b>						
	\$ (168.43)	\$ (8.75)	\$ (132.69)	\$ 7.74	\$ 35.74	\$ 16.49
<b>Prices</b>						
OKC Feeder Steer	\$ (34.39)	\$ (0.48)	\$ (27.05)	\$ 2.52	\$ 7.34	\$ 3.00
Boxed Beef Cutout	\$ (23.77)	\$ (0.58)	\$ (18.75)	\$ 1.51	\$ 5.02	\$ 2.09
Beef Retail	\$ (0.27)	\$ (0.00)	\$ (0.22)	\$ 0.02	\$ 0.05	\$ 0.03

Figure 5.8 – Percentage Results from Major Disease Incident and Improved SPS Scenario

Major Disease Incident (MDI) & Improved SPS Scenarios						
	MDI		Improved SPS		Difference	
	2015-17	2018-24	2015-17	2018-24	2015-17	2018-24
<b>Supply</b>						
Imports	-9.3%	-1.8%	-7.4%	-0.6%	1.9%	1.2%
Production	-0.7%	-3.5%	-0.6%	-2.5%	0.1%	1.0%
Total	-1.4%	-3.3%	-1.1%	-2.3%	0.3%	1.0%
<b>Disappearance</b>						
Domestic Use	6.1%	0.3%	4.8%	-0.3%	-1.4%	-0.6%
Exports	-70.9%	-32.9%	-55.4%	-18.4%	15.5%	14.5%
Total	-1.7%	-3.3%	-1.3%	-2.3%	0.3%	1.0%
<b>Per Capita Cons</b>						
	6.2%	0.3%	4.8%	-0.3%	-1.4%	-0.7%
<b>Cow-Calf Returns</b>						
	-49.2%	-17.9%	-38.8%	15.9%	10.4%	33.8%
<b>Prices</b>						
OKC Feeder Steer	-15.8%	-0.3%	-12.5%	1.5%	3.4%	1.8%
Boxed Beef Cutout	-10.3%	-0.3%	-8.1%	0.7%	2.2%	1.0%
Beef Retail	-4.3%	0.0%	-3.5%	0.4%	0.8%	0.4%

In both the major disease incident scenarios with and without improved SPS measures, US beef exports decrease significantly, but the increase in both short and long term Japanese market access in the improved SPS scenario has some interesting spillover effects in other markets as outlined in figure 5.9 below.

**Figure 5.9 – Trade Effects by Country from Major Disease Incident and Improved SPS Scenario**

<b>Major Disease Incident (MDI) &amp; Improved SPS Scenarios</b>						
	<b>MDI</b>		<b>Improved SPS</b>		<b>Difference</b>	
<b>Beef Exports</b>	<b>2015-17</b>	<b>2018-24</b>	<b>2015-17</b>	<b>2018-24</b>	<b>2015-17</b>	<b>2018-24</b>
Canada	-42.7%	0.6%	-43.8%	0.0%	-1.1%	-0.6%
Japan	-100.0%	-60.4%	-42.8%	-1.6%	57.2%	58.8%
Mexico	-43.6%	-1.6%	-46.0%	-2.8%	-2.4%	-1.2%
Korea	-100.0%	-61.0%	-100.0%	-61.1%	0.0%	-0.2%
Rest of World	-75.4%	-38.0%	-75.7%	-38.5%	-0.3%	-0.4%
Total	-74.0%	-34.1%	-60.2%	-19.9%	-13.9%	-14.3%

US beef exports to Japan are completely cut off in the short run and remain suppressed at around 43 percent on average in the long run major disease incident without improved SPS measures while only falling by about 43 percent in the short run and only 1.6 percent in the improved SPS scenario. Korea and the rest of the world remain largely unchanged in both long and short run improved and unimproved SPS scenarios and see less than a half a percent change in trade flows in all scenarios. The most interesting effects in trade flows between the two scenarios exist with Canada and Mexico who experience a decrease in exports as increased exports in the improved SPS scenario to Japan mitigate the negative price effects of the major disease incident and lead to a decrease in exports to Canada by about one percent and almost 2.5 percent to Mexico in the short run. In the long run, improved SPS measures lead to a half a percent decline in exports to Canada and a 1.2 percent decrease in exports to Mexico. In the absence of improved SPS measures, Canada actually realizes an increase in US beef exports on average in the long run as US prices remain depressed significantly in the out years after a major disease incident without improved SPS measures. Overall, exports fall by nearly 75 percent in the short run and 35 percent in the long run with a major disease incident. Improved market access to

Japanese markets due to improved SPS measures would mitigate the decrease in exports by about 14 percent in both the short and long run scenarios leading to only a 60 percent decrease in the short run and 20 percent decrease in US beef exports in the long run. Lower price volatility should increase efficiency and therefore generate welfare gains.

## 6: SUMMARY AND CONCLUSION

### 6.1 Summary

In 2014 the overall US beef production and consumption nearly equal at 11.2 million metric tons while the US was also the world's largest importer and fourth largest exporter of beef<sup>147</sup>. America's beef producers are very reliant on trade and have traditionally been strong supporters of free trade agreements including the Trans-Pacific Trade Partnership (TPP) agreement; and the US would not be the only country to benefit from increased access to southeast Asian beef markets. Of the 12 countries participating the TPP agreement, beef producers from the US, Canada, Mexico, Australia, and New Zealand have the most to gain from increased access to the highly protected and developed Japanese beef market and to a much lesser extent several developing beef markets in southeast Asia. Japan maintains high tariffs on imported beef with fresh and frozen beef tariffs at 38.5 percent and beef offal tariffs ranging from 12.5 to 50 percent<sup>148</sup>. Japan and Australia entered into a free trade agreement that began to take effect in 2015 lowering Australian beef exports to Japan, which have lowered in quota beef tariffs by at least six percent and will expand the quota and lower the tariffs over the next 15 years<sup>149</sup>. This agreement has given Australia a competitive advantage in the Japanese beef market and put pressure on the other four main beef exporting countries to push for meaningful market access in the TPP agreement.

In 2014, US exports by value to TPP countries accounted for 82 percent of the fresh or chilled beef by value, 25 percent of the frozen beef, and 60 percent of beef offal; and Mexico, Canada, and Japan accounted for 95 percent of the share of all US beef exports in the TPP region. With almost complete

---

<sup>147</sup> Cook, Rob. *United States Beef & Cattle Statistics*. <http://beef2live.com/story-united-states-beef-cattle-statistics-89-108399>. Beef2Live Website. Accessed June 13, 2015.

<sup>148</sup> Japanese Customs Website. *Japan's Tariff Schedule (Statistical Code for Import)*. Japanese Ministry of Finance. <http://www.customs.go.jp/english/tariff/>. Accessed June 14, 2015.

<sup>149</sup> Japanese Ministry of Foreign Affairs Website. *Agreement between Japan and Australia for an Economic Partnership. Annex 1 Schedules in Relation to Article 2.4*. Japanese Ministry of Foreign Affairs. September 30, 2014. <http://www.mofa.go.jp/files/000044323.pdf>. Accessed June 20, 2015.

integration of the North American beef markets stemming from NAFTA, the main US interest in TPP is increased market access to Japan through elimination of tariffs and reduction of non-tariff trade barriers especially in regard to SPS measures. Japan imports nearly 100 percent of all its beef from the US, Australia, Canada, Mexico, and New Zealand with over 90 percent coming from the US and Australia alone. Australia has been the largest beef exporter to Japan since 2002 and continues to work aggressively to build and maintain market share in Japan. However, US and Australian beef are not perfect substitutes as the US maintains a competitive advantage in higher quality fresh beef and offal. Due to lingering BSE concerns, Japan mostly imports boneless US beef accounting for 24 percent of fresh and 21 percent of frozen of all US beef traded. Japan is the US's most significant beef offal export market by far consisting of 90 percent of the US \$103 million fresh and chilled beef offal and over 50 percent of the \$94 million in frozen beef tongues traded. The US has historically preferred to export low volume, high value grain fed beef along with lower value, high volume offal products not generally consumed in US markets and backfill domestic demand for lean ground and grass fed beef countries with a comparative advantage such as Australia and New Zealand.

In order to lay a foundation for analysis of a final deal, this research employed the US beef model maintained by AMAP at the University of Missouri to examine the impacts of both a partial and full tariff elimination scenario along with a major disease incident scenario with and without improved SPS measures. The equation simulating US beef exports to Japan was altered to show the results of tariff elimination and reduction in the first scenario. In the SPS scenario, all export equations were altered to show the results of a major SPS incident followed by an alternative outcome with improved SPS measures in Japan assuming enforceable, science based measures were included in the TPP agreement.

In the tariff elimination scenario, both a full (consistent with USDA approach<sup>150</sup>) and partial tariff elimination scenario (consistent with Japanese historical position full market access<sup>151</sup>) were examined. In both scenarios, tariffs were gradually reduced from 38.5 percent in 2016 to zero percent by 2022 in the full tariff elimination and to 9 percent by 2020 in the partial tariff elimination scenario. This quick elimination schedule was used to examine the full impacts of the agreement in the 10 year forecasting window of the model. As the phase out schedule was almost identical in the short run from 2016 to 2021, results from the both the elimination scenarios were very similar although results from the full tariff elimination scenario were more significant in the long run period from 2022-2024 as to be expected. Overall effects on the domestic consumers was minimal with a 0.1 to 0.2 percent increase in domestic retail prices and a constant decrease in consumption across the board by approximately 0.1 pounds per capita each year compared to the baseline. Exports increased by about three percent in the short run, 3.5 percent in the long run partial elimination, and 4.5 percent in the full tariff elimination scenario while imports increased by 0.3 to 0.4 percent overall. Japan receives the lion's share of the increase in US beef imports ranging from 12 to 19 percent across the scenarios while other countries like Canada, Mexico, and Korea experience a decrease in US imports by 0.2 to 0.6 percent. Domestic producers experience very positive gains with Oklahoma feeder steer prices increasing by 0.5 to 0.9 percent in the various scenarios with the largest gains in the full tariff elimination scenario showing a \$1.36 increase in the short run and a \$1.46 increase in the long run over the baseline. Cow-calf returns also see a significant increase of around five percent in the short run as well as a 13.6 percent increase in the long run full elimination and an 8.8 percent in the long run partial elimination scenario.

---

<sup>150</sup> Burfisher, M. et. al. *Agriculture in the Trans-Pacific Partnership*. Economic Research Service Report 176. US Department of Agriculture. October, 2014.

<sup>151</sup> Kyodo. *Japan TPP Offer Chops Beef Tariffs to 9% over 15 Years*. Japan Times. January 30, 2015. <http://www.japantimes.co.jp/news/2015/01/30/business/japan-tpp-offer-chops-beef-tariffs-9-15-years/#.VZBLdUYkpUN>. Accessed June 28, 2015.

The model is unable to forecast the tariff line data that corresponds to the increase in beef trade with Japan. However, by eliminating or reducing tariffs in Japan, consumers in that market will essentially experience a reduction in price, which will result in an increase in quantity demanded, ceteris parabis. The US and Australia, which constitute over ninety percent of the market will likely see the largest increase in exports to the Japanese market. The US will likely hold its relative advantage in higher value products like fresh beef and offal while Australia will continue to be a larger exporter to Japan in the aggregate with much larger exports of lower value frozen beef. New Zealand, Canada, and Mexico will likely see an increase in the volume of exports to Japan as its import market grows and the US market as demand for beef will likely remain strong due to the inelastic demand for beef.

In the major disease incident (MDI) scenario, the results of a major disease incident modeled after the 2004 BSE incident were examined with and without improved sanitary and phyto-sanitary (SPS) measures in a final TPP agreement. During the 2004 BSE incident, US beef market access was essentially eliminated in Asian markets for three years and has recovered slowly though never fully returning to the 2003 levels while Canada and Mexico dipped significantly in the short run but opened market access fairly quickly in the first three years. The MDI without improved SPS measures assumes Japan will act similarly to a disease incident as it did to BSE while the MDI with improved SPS measures scenario assumes Japan will react more like Canada and Mexico and reopen markets sooner and to a greater extent. Unlike the previous tariff scenario, the short run in this scenario is the first three years from 2015 to 2017 and the long run refers to the 2018 to 2024 time period. In both scenarios, domestic consumption increases significantly due to a drop of beef retail prices by 3.5 to 4.3 percent in the short run with a 6.2 percent increase in short run without improved SPS measures and a 4.8 percent increase in per capita consumption with improved SPS measures in the short run as well as a 0.3 percent increase in the long run without and 0.3 decrease in domestic consumption in the long run with improved SPS measures due to a slight increase of 0.4 percent in long run beef retail prices. Exports and imports fall in

all scenarios; however, with improved SPS measures exports are 15.5 percent higher in the short run and 14.5 percent higher in the long run while imports are 1.9 percent higher in the short run and 1.2 percent higher in the long run. Production falls under all scenarios while cow-calf returns, Oklahoma City (OKC) feeder steer price, and boxed beef prices fall under all scenarios except for the long run improved SPS measures scenario. Without improvements, cow calf returns fall by almost 50 percent in the short run and 18 percent in the long run while OKC price falls 15.8 percent and boxed beef cutout price falls by 10.3 percent in the short run. In the improved SPS scenario, cow calf return and domestic prices adjust to lower production and increased exports to a point where the market prices begin to recover in the long run. Lower price volatility should increase efficiency and therefore generate welfare gains.

## **6.2 Conclusion**

This research lays a foundation for additional economic analysis of the US beef industry in a final TPP agreement and provides insight into various scenarios that could play a significant role in the potential agreement. Pressure from the implementation of the Japan-Australia Economic Partnership Agreement has given the US beef industry an added incentive to push for meaningful market access in the TPP agreement. As TPP discussions continue to progress towards a final agreement, livestock economists should begin to consider both the tariff and non-tariff impacts of a final agreement on domestic producers and consumers.

In the tariff scenario in this research, full and partial tariff elimination show strong positive impacts for US producers and an overall increase in beef trade. US consumers see a negligible decrease in consumption and a very small increase in price due to the inelasticity of domestic beef demand. However, no insight into the change in quality of beef consumed can be gleaned from this model, and US consumers could change their preferences from more expensive, higher quality cuts to lower quality, less expensive cuts as overall aggregate prices increase. In future research, analysts could perform additional sensitivity analysis and should work to incorporate the type of beef traded between TPP

countries to better analyze the economic impacts of the agreement and can start with the six and nine digit tariff line data contained in this research.

Quantifying results of improved SPS measures in free trade agreements continues to be very difficult, and the current geo-political climate of the day and state of affairs between trading countries often plays a large role in various non-tariff trade events. However, the results from the crude methods used in this research are significant and speak to the importance of setting up a proper framework for dealing with such issues as they will inevitably arise in the future in the beef industry and beyond. While building a model to analyze such results has eluded many economists, providing a thorough qualitative analysis of the results of the final agreement is necessary to understand if the proposed changes will in fact be enforceable when an SPS incident does indeed arise.

## 7: Bibliography

Agriculture & Livestock Industries Website. *Livestock and Livestock Products*. Japanese Ministry of Finance & United States Department of Agriculture.

<http://lin.alic.go.jp/alic/statis/dome/data2/enstatis.htm>. Accessed August 9, 2015.

Australian Government. *Red Meat Quotas*. Department of Agriculture.

<http://www.agriculture.gov.au/ag-farm-food/meat-wool-dairy/quota/red-meat>. Accessed June 14, 2015.

Brester, G, Wohlgenant, M. *Impacts of the GATT/Uruguay Round Trade Negotiations on US Beef and Cattle Prices*.

Burfisher, M, Et Al. *Agriculture in the Trans-Pacific Partnership*. US Department of Agriculture Economic Research Service Report Number 176. October, 2014.

C.R. Why did the Economist Favour Free Trade. *The Economist*. September 6, 2013.

<http://www.economist.com/blogs/freeexchange/2013/09/economic-history>. Accessed September 2, 2015.

Canadian Foreign Affairs, Trade and Development Canada Website. *Canada-Japan Economic Partnership Agreement*. Updated November 2014. <http://www.international.gc.ca/trade-agreements-accords-commerciaux/agr-acc/japan-japon/index.aspx?lang=eng>. Accessed June 17, 2015.

Cook, Rob. Beef2Live Website. Accessed June 13, 2015.

Cottle, David and Kahn, Lewis. *Beef Cattle: Production and Trade*, ed. Malau-Aduli, A.E.O. and Holman, B.W.B. Chapter 4 World Beef Production. (CSIRO Publishing, Collingswood, Vic, Australia. 2014.)

Deardorff, Alan. *Deardorffs' Glossary of International Economics*. <http://www-personal.umich.edu/~alandear/glossary/q.html>. Accessed August 28, 2015.

Dorobat, C. E. A brief history of international trade thought: From pre-doctrinal contributions to the 21st century heterodox international economics. *The Journal of Philosophical Economics*, 8(2), 106-137. Spring, 2015. Retrieved from <http://search.proquest.com/docview/1683745594?accountid=14576>. Accessed September 2, 2015.

Ellis, P. *Senate Finalizes TPA, Sends to President's Desk*. National Cattlemen's Beef Association Website. <https://www.beefusa.org/newsreleases1.aspx?NewsID=5009>. Accessed Sept. 25, 2015.

FAPRI Website. *About FAPRI*. Food and Agricultural Policy Research Institute. Accessed August 8, 2015.

Fergusson, I, et. al. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Page 22. Congressional Research Service Report R42694. November 19, 2014.

Fergusson, I, et. al. *The Trans-Pacific Partnership (TPP) Negotiations and Issues for Congress*. Congressional Research Service Report R42694. March 20, 2015.

Fergusson, I. et. al. *Trade Promotion Authority (TPA)*. Congressional Research Service Report IF10038. July 2, 2015.

Five Nations Beef Alliance Website. *Five Nations Beef Alliance Urges High Quality, Comprehensive TPP Outcomes*. February 6, 2014. [http://fivenationsbeefalliance.com/pdf/WGTN\\_DOCS-155406-v2-FNBA\\_TPP\\_Statement\\_February\\_2014.pdf](http://fivenationsbeefalliance.com/pdf/WGTN_DOCS-155406-v2-FNBA_TPP_Statement_February_2014.pdf). Accessed June 28, 2015.

Five Nations Beef Alliance Website. *Home Page*. <http://fivenationsbeefalliance.com/>. Accessed 5/30/15

Houck, J. (1986). *Elements of Agricultural Trade Policies*. Macmillan Publishing Company.

IHS Global Insight Website. *About Us*. IHS Global Insight. <https://www.ihsglobal.com/about/index.html>. Accessed August 8, 2015.

Japanese Customs Website. *Harmonized Schedule of Tariffs – Japan*. April 1, 2015. <http://www.customs.go.jp/english/tariff/>. Accessed June 14, 2015.

Japanese Customs Website. *Japan's Tariff Schedule (Statistical Code for Import)*. Japanese Ministry of Finance. <http://www.customs.go.jp/english/tariff/>. Accessed June 14, 2015.

Japanese Customs Website. *Outline of Tariff and Duty Rates System*. Japanese Ministry of Finance. [http://www.customs.go.jp/english/summary/tariff.htm#Temporary\\_Rate](http://www.customs.go.jp/english/summary/tariff.htm#Temporary_Rate). Accessed June 27, 2015.

Japanese Customs Website. *Trade Statistics of Japan*. Japanese Ministry of Finance. [http://www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm). Accessed June 14, 2015.

Japanese Ministry of Foreign Affairs Website. *Agreement between Japan and Australia for an Economic Partnership. Annex 1 Schedules in Relation to Article 2.4*. Japanese Ministry of Foreign Affairs. September 30, 2014. <http://www.mofa.go.jp/files/000044323.pdf>. Accessed June 20, 2015.

Japanese Ministry of Foreign Affairs Website. *Japan-Mexico Economic Partnership Agreement. Protocol Amending the Agreement between Japan and the United Mexican States for the Strengthening of the Economic Partnership*. Japanese Ministry of Foreign Affairs. September 22, 2011. <http://www.mofa.go.jp/region/latin/mexico/agreement/pdfs/protocol1109e.pdf>. Accessed June 21, 2015.

Japanese Ministry of Foreign Affairs Website. *Joint Statement on the Entry into Force of the Agreement between Japan and Australia for an Economic Partnership*. Japanese Ministry of Foreign Affairs. January 15, 2015. [http://www.mofa.go.jp/page3e\\_000283.html](http://www.mofa.go.jp/page3e_000283.html). Accessed June 20, 2015.

Johnson, R. *Sanitary and Phytosanitary (SPS) and Related Non-Tariff Barriers to Agricultural Trade*. Congressional Research Service Report R43450. March 31, 2014.

Kim, A. *Tax Freedom*. <http://www.heritage.org/index/trade-freedom>. Heritage Website. Accessed September 21, 2015.

Kyodo. *Japan TPP Offer Chops Beef Tariffs to 9% over 15 Years*. Japan Times. January 30, 2015. <http://www.japantimes.co.jp/news/2015/01/30/business/japan-tpp-offer-chops-beef-tariffs-9-15-years/#.VZBLdUYkpUN>. Accessed June 28, 2015.

McMinimy, M. *Major Agricultural Trade Issues in the 114<sup>th</sup> Congress*. Congressional Research Service Report R43905. February 10, 2015.

New Zealand Meat Board. *USA Beef and Veal Quota Management*. <http://www.nzmeatboard.org/main.cfm?id=20>. Accessed June 14, 2015.

Office of the Chief Economist Website. *How the WASDE is Prepared*. US Department of Agriculture. Office of the Chief Economist. <http://www.usda.gov/oce/commodity/wasde/prepared.htm>. Accessed August 8, 2015.

Office of US Trade Representative Website. *Trans-Pacific Partnership*. <https://ustr.gov/tpp>. Accessed 5/30/2015.

Office of US Trade Representative Website. *US Trade Representative Ron Kirk and Agriculture Secretary Tom Vilsack Announce Agreement to Further Open Japan's Market to US Beef*. <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2013/january/ustr-kirk-ag-sec-vilsack-japan-beef-announcement>. Jan. 28, 2013. Accessed June 6, 2015.

Overview. World Trade Organization Website. [https://www.wto.org/english/thewto\\_e/whatis\\_e/wto\\_dg\\_stat\\_e.htm](https://www.wto.org/english/thewto_e/whatis_e/wto_dg_stat_e.htm) Accessed June 27, 2015.

Peel, D et. al. *Trade, the Expanding Mexican Beef Industry, and Feedlot and Stocker Cattle Production in Mexico*. ERS Report LDP-M-206-01. US Department of Agriculture. August 2011.

Radio New Zealand. *Snow no respite for drought afflicted farmers*. May 25, 2015.

Ricardo, D. (1951) [1821]. *On the Principles of Political Economy and Taxation*. Cambridge University Press.

Sedgman, P. *Beef Seen Declining by ANZ as Australia Defies Trend on Drought*. Bloomberg Business. May 18, 2015. <http://www.bloomberg.com/news/articles/2015-05-18/beef-seen-declining-by-anz-as-australia-defies-trend-on-drought>. Accessed June 14, 2015.

Smith, A. (1993) [1776]. *Inquiry into the Nature and Causes of the Wealth of Nations*. Oxford University Press.

Suranovic, S. *Policy and Theory of International Trade*. V. 1.0. <http://2012books.lardbucket.org/books/policy-and-theory-of-international-trade/s10-12-import-quota-large-country-wel.html>. Accessed September 21, 2015.

Takada, A. and Suzuki, I. *US Beef Sales to Japan May Decline on Australia Deal*. Bloomberg. April 8, 2015. <http://www.bloomberg.com/news/articles/2014-04-08/u-s-beef-sales-to-japan-may-decline-on-australia-deal>. Accessed June 21, 2015.

Takada, A. *Australian Beef Gains Ground in Japan as Trade Deal Buys Sales*. Bloomberg. May 12, 2015. <http://www.bloomberg.com/news/articles/2015-05-12/australian-beef-gains-ground-in-japan-as-trade-deal-buoys-sales>. Accessed June 21, 2015.

*Terms of Trade*. Export.Gov Website. [http://export.gov/exportbasics/eg\\_main\\_017485.asp](http://export.gov/exportbasics/eg_main_017485.asp). Accessed August 28, 2015.

US Meat Export Federation Website. *US Beef Export Statistics 2004-2014 Summary*. <https://www.usmef.org/downloads/Beef-2005-to-2014.pdf>. Accessed June 1, 2015.

USDA Foreign Agriculture Service Website. *Global Agriculture Trade System Online Database*. <http://apps.fas.usda.gov/gats/default.aspx>. Accessed June 1, 2015.

USITC Website. *Harmonized Tariff Schedule*. US International Trade Commission. <http://hts.usitc.gov/?query=beef>. Accessed June 27, 2015.

USTR Website. *US Trade Representative Ron Kirk and Agriculture Secretary Tom Vilsack Announce Agreement to Further Open Japan's Market to US Beef*. US Trade Representative. <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2013/january/ustr-kirk-ag-sec-vilsack-japan-beef-announcement>. Jan. 28, 2013. Accessed June 6, 2015.

Vidot, A. *Quota restrictions could be triggered, as Australian beef exports to US continue to grow*. ABC Rural. June 3, 2015. <http://www.abc.net.au/news/2015-06-04/australian-beef-exports-could-trigger-quota-restrictions/6521112>. Accessed June 14, 2015.

Villarreal, A. *Mexico's Free Trade Agreements*. Congressional Research Service Report R40784. July 3, 2012.

Westhoff, P. et al. *U.S. Baseline Briefing Book – Projections for Agricultural and Biofuel Markets*. March 2015. Food and Agricultural Policy Research Institute. <http://www.fapri.missouri.edu/wp-content/uploads/2015/03/FAPRI-MU-Report-01-15.pdf> Accessed August 8, 2015.

Williams, B. *The Trans-Pacific Partnership (TPP) Countries: Comparative Trade and Economic Analysis*. Congressional Research Service Report R42344. June 10, 2013.

Yu, D. *The Harmonized System – Amendments and Their Impact on WTO Members' Schedules*. Economic Research and Statistics Division. World Trade Organization. February 2008. [https://www.wto.org/english/res\\_e/reser\\_e/ersd200802\\_e.pdf](https://www.wto.org/english/res_e/reser_e/ersd200802_e.pdf). Accessed June 27, 2015.

Zahniser, S. et Al. *NAFTA at 20: North America's Free-Trade Area and its Impact on Agriculture*. US Department of Agriculture. February 2015.