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# Table of Contents

Preface.................................................................................................................. 1  
I. Introduction ........................................................................................................... 2  
II. Current Literature ............................................................................................... 6  
   A. Historical Literature ....................................................................................... 6  
   B. Supply-Side Literature ................................................................................ 7  
   C. Demand-Side Literature .............................................................................. 8  
Section III: Import Data .......................................................................................... 11  
   A. Aggregated Data ............................................................................................ 13  
   B. Commodity Data ........................................................................................... 15  
   C. Importer Data ................................................................................................ 18  
Section IV: Import Trends ..................................................................................... 19  
   A. Argentina Import Quantity .......................................................................... 20  
   B. Developed Country Tea Trade .................................................................... 23  
   C. Japanese import prices .............................................................................. 27  
   D. Chinese Import Values ............................................................................... 30  
Section V: Consumption Data: In Brief ............................................................... 34  
Section VI: Conclusion .......................................................................................... 37  
References ............................................................................................................. 40
Table and Chart Directory

Figure 1: U.S. Tea Imports from China since 1991, with Trend lines _____________________ 4
Table 1: Per Capita Imports of 11 largest tea importers ________________________________ 5
Figure 2: Aggregated Import Value (nominal) and Netweight __________________________ 13
Figure 3: Weighted Average Price of General Tea Imports ____________________________ 14
Figure 4: Net Weight of Black and Green Tea Imports ______________________________ 15
Figure 5: Import Value of Black and Green Tea ______________________________________ 16
Figure 6. Weighted Average Price of Green and Black Tea ____________________________ 17
Figure 7: Net Weight of Imports by Country of origin (Select Years) ____________________ 18
Table 2: Black Tea Prices (nominal U.S. dollars) in Select Years _________________________ 21
Table 3: Canadian Black Tea Imports ____________________________________________ 25
Figure 8: Japanese Import Prices ________________________________________________ 27
Figure 9: Imported Amounts of Green Tea ___________________________________________ 28
Table 4: Chinese Green and Black Tea Imports as a Percentage of Chinese Tea Imports _____ 31
Figure 10: Black Tea Imports from China, Argentina, India, and Vietnam ________________ 32
Table 5: Black Tea Prices Since 2009 ________________________________________________ 33
Figure 11: Chinese Green Tea Imports ____________________________________________ 34
Figure 12: Consumption of U.S. tea, in gallons available for consumption (1991-2015) ____ 35
Figure 13: Consumption of U.S. tea, in gallons available for consumption (1909-2015) ____ 36
Preface

The primary reason I am writing this paper is the completion of a required academic thesis for my undergraduate degree at Western Michigan University. As for why I have chosen the topic that I have chosen, that is due to my interest in the market forces of a product and agricultural commodity to which I hold great renown and instance.

Tea is one of my favorite beverages, regardless of definition, style, or country of origin. I have a deep fascination with tea culture, including the tools and instruments of preparation, as well as traditional ceremonies, including the Japanese tea ceremony and the English tradition of afternoon tea. Due to its many different styles and preparations, as well as its immersion in the cultural identity of societies all across the world, tea is, in my opinion, one of the most intriguing commodities to study and understand.

As such, when given the opportunity to conduct research in economics, the study of tea markets was an obvious choice. Tea is increasingly more visible in the United States, due to its increased appearance on restaurant and café menus, as well as the emergence of retail loose leaf tea. This increased retail is visible in both traditional retail settings, such as high-end grocery stores and world-goods stores, as well as in specific tea stores, such as Teavana and Capital Tea.

However, there had to be some driving force behind this increased visibility in the tea market. There had to be some evidence that this was going to appear. Media tries to sell tea as the newest cultural phenomenon. Health organizations promote it as a healthy, yet flavorful, alternative to other beverages. Surprisingly though, there is a massive deficit of research on this topic. Therefore, the focus of this paper, as well as my own motivation, is to create an comprehensive review of the current state of the tea imports into the United States, and to find out whether this supposed growth is exactly that: growth.
I. Introduction

Tea is one of the fastest growing beverage markets in the United States today. The bulk of the tea consumed in the United States today is iced tea, at 85% of consumption, but hot tea has been growing in popularity (Tea Association of the U.S.A. Inc., 2016). Tea popularity is being driven by the Millennial (1981-1997) and Boomer (1946-1964) generations (Goggi, 2016). Ready-to-Drink tea consists of 48.6% of the market, with loose leaf (specialty) teas consisting of 17.5% of the market (Bailey, 2015). These two market segments both experienced large growth rates, while other market segments (instant, bagged, pod) are experiencing stagnant levels of growth (Goggi, 2016)

This paper focuses on these recent trends of tea demand in the United States, the industry’s second largest import market (Workman, 2016). The paper looks at two factors surrounding the U.S. tea market: short-run trends and long-run implications. Many industry experts claim that the tea market is expanding, usually at a rapid pace, such as 32% growth in industry sales between 2007 and 2014 (about $5 billion) and an expansion of nearly 8,000 additions tea focused retail locations between 2014 and 2018 (The Tea Business: Elixir for the Mindful, 2014) (Jage, 2014). Although tea has become more commonplace, the industry has accelerated nowhere near as quickly as coffee, the most comparable product. Thus it becomes a necessity to examine whether there really are short-run trends in the growth of the tea industry, and if so, how large are these trends in reality?

According to industry experts, the demand for tea has accelerated due to a number of factors. One of these factors is the transformation of tea into a luxury product available to everyone (Ellis, Coulton, & Mauger, 2015). This reasoning is boosted by the fact that many tea café’s and retailers in recent years have made pushes to educate their clientele about tea, where it
is sourced, the benefits of drinking tea, and how to properly brew tea. Due to this, loose leaf tea has seen a new relevance in the United States, bolstered by the widespread appearances of David’s Tea, Capital Tea, and Teavana in retail settings, as well as Republic of Tea on the online market. There are also regional and family businesses, and foreign companies like Jing and the English Tea Shop.

The other major factor contributing to tea’s immersion into modern American culture is due to the product’s health benefits. It is very commonly held that tea, and its natural vitamins and antioxidants, holds many health benefits (Ji et al., 1997). These benefits can sometimes be physical, such as disease prevention, detoxification, and energy rejuvenation, as well as mental benefits, such as soothing mental aches and lowering stress and anxiety. A myriad of research, combined with general trends towards health foods and organic products creates for an expanding market.

The first question that the paper will focus on is how fast the tea market is growing. Import data shows that tea imports (such as Figure 1 below) to the United States are expanding. However, there are two considerations missing from this data: the data is all in nominal terms, and the data ignores per capita imports and consumption. These factors need to be considered, as nominal gross imports use the value in current prices, but trend data is best measured in real terms or in terms that don’t fluctuate with price (such as weight). This paper will use the latter, measuring weight by using kilograms. Per capita information also needs to be considered, as that information determines if tea is increasing in popularity, or is expanding with population.

The second question regards the long-run impacts of these trends on the U.S. tea market. The tea market has existed in the United States since the colonial era. During the American Revolution, coffee became more popular than tea to Americans, and has continued to remain
popular ever since (Avey, 2013). However, it has not been until recent years that the U.S. tea market has really expanded, quintupling in total value (from around $2 billion to $10 billion) since 1990 (Ferdman, 2014). As such, these unprecedented levels of growth present an interesting dilemma: if the tea market continues to expand at the rate that it supposedly is, what will be the overall impact on the United States?

**Figure 1: U.S. Tea Imports from China since 1991, with Trend lines**

Figure 1 provides tea import data from China. In the graph, the solid line represents the actual data values, while the thinner line represents a linear trendline. As can be seen, the trendline has a positive slope, further proving the idea that U.S. imports are rising. Similar trends to those seen above are present in data from Japan, which has seen a similar rapid expansion in exports to the United States since 2005, and from India, Kenya, and Sri Lanka, where, collectively, tea exports to the U.S. have more than doubled since 2004, and nearly quadrupled since 1991. As such, it is easy to see where the initial trends have come from, as these five nations consisted of 50% of the U.S.’s total 2015 tea imports.
The United States is the world’s second largest importer of tea in 2015, with only Russia having a larger import market (Workman, 2016). However, per capita imports are different, with the United States having lower per capita imports ($1.44) when compared to other large markets; Russia, at about $4.31, and the United Kingdom at about $6.28. U.S. per capita consumption still lags behind many other nations, as seen in Table 1 and in Figure 2.

Table 1: Per Capita Imports of 11 largest tea importers

<table>
<thead>
<tr>
<th>Country</th>
<th>2015 imports (in Mil)</th>
<th>2015 imports per capita</th>
<th>Percent of Tea Imports 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>$611.90</td>
<td>$4.31</td>
<td>10.30%</td>
</tr>
<tr>
<td><strong>United States</strong></td>
<td><strong>$468.00</strong></td>
<td><strong>$1.44</strong></td>
<td><strong>7.90%</strong></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>$400.90</td>
<td>$6.28</td>
<td>6.80%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>$255.70</td>
<td>$8.55</td>
<td>4.30%</td>
</tr>
<tr>
<td>Iran</td>
<td>$251.30</td>
<td>$3.16</td>
<td>4.20%</td>
</tr>
<tr>
<td>Morocco</td>
<td>$232.70</td>
<td>$6.85</td>
<td>3.90%</td>
</tr>
<tr>
<td>Germany</td>
<td>$221.70</td>
<td>$2.69</td>
<td>3.70%</td>
</tr>
<tr>
<td>Japan</td>
<td>$174.00</td>
<td>$1.37</td>
<td>2.90%</td>
</tr>
<tr>
<td>France</td>
<td>$165.20</td>
<td>$2.54</td>
<td>2.80%</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>$163.00</td>
<td>$17.02</td>
<td>2.70%</td>
</tr>
<tr>
<td>Canada</td>
<td>$134.10</td>
<td>$3.74</td>
<td>2.30%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3,078.50</strong></td>
<td>--</td>
<td>51.8%</td>
</tr>
</tbody>
</table>

Source: Worldtopexports.com (Workman, 2016)

For this paper, tea is defined as products derived from the plant *Camellia Sinensis*. This includes all black, green, white, yellow, and oolong teas, and as such will not include herbal teas or rooibos, as these varieties all come from other leaves, herbs, and grasses. Growth will be defined as an overall trend of more tea being traded in later years over earlier years.

Section II of this paper will discuss the academic literature on the tea market, particularly demand and export markets. Section III will introduce the import data that will be employed in my analysis. Section IV analyze the import data and current trends in the import market. Section
V will take a brief look at some consumption data, and Section VI will summarize the major points of the article.

II. Current Literature

This section summarizes the somewhat limited academic literature on tea markets. Most of the literature on tea markets is older (published before 2000), or deals with earlier time periods, such as pre-1784 markets, looking at the colonial expansion of the market. Furthermore, most articles that discuss the tea trade often use it in tandem with other markets, such as coffee or other agricultural commodities.

A. Historical Literature

Some of these topics include cultural customs, environmental impacts, health benefits, and to a lesser extent, trade. The most popular subject pertaining to tea trade in academic literature is the historic trade of tea between Europe and Asia. While this is a topic has several modern implications, it has little relevance to the topic at hand, dealing with modern national demand and trends.

Most scholarly articles and books that do deal with trade focus on historical markets or track tea supply. The literature that focuses on historical values and events often looks at tea markets during European imperialism (most commonly during the 18th century, but sources cover the 17th and 19th centuries as well). A few select sources also looked at the first half of the 20th century. However, little literature deals with modern figures and trends. Articles from the 1970’s and 1980’s provide little backdrop, as the public perception of tea didn’t start to change until the 1990’s. Import data suggests that U.S. trade for tea didn’t pick up until the late 2000’s. Other articles that deal with the tea industry, although on more tangential terms, are still often dated within the 1990’s.
A lot of the literature that pertains to modern tea markets often looked at the supply-side of the market, and more specifically at the production of the good. In most cases, these articles were more applicable to agricultural production methods, advancements, and outputs. The other type of articles in this group are the articles that pertained more to generalized commodity prices and trade. In these articles, tea is used as an example, often alongside coffee, thus limiting their applicability to this study.

**B. Supply-Side Literature**

This section examines the supply-side literature on tea. Etherington and Foster (1989) discuss the pivotal point of the Chinese tea industry during the late 1980’s and early 1990’s. At this point, tea prices for black tea were declining, and other countries, such as India, Sri Lanka, and Kenya, were dominating the market, much as they do today. However, China, and to a much lesser extent Japan, uniquely produce green tea. This article outlines the development of the supply market, as more current literature suggests that these production trends remain true.

Kumarasinghe and Sachitra (2014) finds that factor markets, demand conditions, government support and finished-product brand loyalty all have significant effects on tea supply. Of these catalysts, they find that government support has a larger impact on suppliers than market demand.

Talukdar and Saheewalla (2010) addresses the supply side of the market in India. India’s efficiency in tea production is currently declining, due to a number of factors, including stiffer global competition and falling quality standards. India’s cost of tea production is higher than anywhere else in the world. This is attributable to the quality and condition of the land, but also the rising competiveness of India in non-agricultural industries. Additionally, India’s efforts have been having a lesser effect on the market, since India’s demand for tea has increased alongside
the amount of land used for production. As such, increasing levels of India’s tea export is being diverted to meet Indian demand (Talukdar & Sahewalla, 2010). Similar trends are also being seen in China, as can be seen by rising levels of Chinese tea imports (Workman, 2016).

India’s supply problems due to stiffer competition are also discussed by Dhiman (2011). This article also discusses the current troubled state of India’s tea production, this time concentrating on a specific mountainous province, Himachal Pradesh. The overall findings of the article agree with those of Kumarasingh et al (2014), part of the reason of India’s declining output is attributable declining levels government support in recent years.

C. Demand-Side Literature

Despite a panoply of articles dealing with tea supply, this paper focuses on the demand-side of the tea market. Below is a discussion of the existing demand-side literature.

Haq and Meilke (2011) look at whether or not the tea market is effected by the Linder Hypothesis, which states that countries with more similar production and wealth levels will have increasing levels of trade. Among other factors, the most important variables are per capita income, income inequality, and transportation costs. In the end, the article concluded that the Linder Hypothesis has little to no effect on agri-industry, of which tea is an example. This is important to keep in mind when looking at potential theories to explain and examine the data. This also shows that tea trade often occurs between countries with dissimilar factor conditions.

Schwarz, Bischof, and Kunze (1994) look at the lifestyles often associated with coffee and tea. In total, tea is oftentimes seen to be the drink of choice among individuals who participate in healthier lifestyles. Such lifestyles include: less smoking, alcohol, fatty meats, and increased levels of exercise. Although the study in question was conducted in Austria, similar trends were found in many other locations, including the United States (Schwarz, Bischof, &
Kunze, 1994). This article, however, was published in 1994, and does not account for many recent developments and trends in both coffee and tea. These trends are evident in the import data presented in Figure 1. The uptick in tea’s popularity did not occur until 2004-2005.

Articles by George Jage (2014) and The Economist (2014) both reinforce these observations. According to The Economist, sales of tea in the United States did not start to pick up until 2007. The growth in tea consumption since 2007 is largely due to the increase in tea-based products from many major coffee houses, including Bigby’s and Starbucks (The Tea Business: Elixir for the Mindful, 2014). According to Jage, the value of tea product sales to coffee houses is approaching 30%. Jage also attributes sales growth to the increased willingness of grocery stores and supermarkets to sell tea based products, and to open up shelf space for them (Jage, 2014).

Other experts in the industry are also stating that these trends will continue into 2017. A web article, Tea Tastes in 2017: A Forecast (Gebely, 2017), compiled the opinion of seven industry experts about the tea industry. All seven people agree that the expansion of the tea market in the new year is all but inevitable. One trend cited is tea bars and cafés, locations where tea is served and brewed in a formal setting, which are expected to increase in popularity. Another expected trend is an increase in interest and consumption in Matcha, a type of green tea preparation typically renowned for its high quality. A final trend is the increase in tea mixing, or mixing tea with various elements, dry and liquid. One form of this is tea blending, which involves combing different preparations of tea (mixing black with white tea) or mixing tea with different herbal, floral, and fruit-based elements. Another style of tea mixing presents it as the new ingredient in mixology, the art of alcoholic drink mixing (Gebely, 2017).
*Empire of Tea* by Ellis, Coulton, and Mauger (2015), examine tea trends in modern times and their causes. One theory is that the tea industry, and especially the loose-leaf sector, is trying to emulate the revival of the artisanal wine and coffee industries. Like these industries, the tea industry is focusing on an emphasis of educating consumers, in both the product’s origin, as well as the product’s health and wellness benefits. This assertion is mirrored in the opinion of industry expert, Henrietta Lovell, who states that, like wine, tea is experiencing a revival. This revival is driven by the consumer desire for taste, expertise, and experience, and that consumers are becoming more discerning about processed and artificial foods and beverages (Gebely, 2017).

Ghosh and Ghosh (2013) analyze the factors that affect demand decisions for tea. Using Pune City in India as a case study, the paper found that four factors have a large impact on tea demand: tea brand, color, price, and aroma. The most powerful of these factors on influencing demand is the brand, both in prior experiences with the brand and in public perception of the brand (Ghosh & Ghosh, 2013). Zheng and Kaiser (2008) looks at the links between demand for non-alcoholic beverages and advertising. The article, as it pertains to tea, concludes that advertising often has strong effects on tea demand, and that total advertising for tea has decreased. In addition, the article also found a strong connection between the demand for tea and the demand for milk (Zheng & Kaiser, 2008). This is understandable, as a number of teas are defined as milk tea, a type of tea (usually black) steeped and brewed using milk instead of water.

Finally, an important resource that helps support one of this paper’s points is a 2013 GAIN (Global Agricultural Information Network) report on tea production in Kenya. The important point of this article is the point looking at U.S. demand and U.S. demand for Kenyan tea. The report clearly states that “total and average tea consumption in U.S. has been increasing.
since 2005.” When looking at the data chart outlining this, total consumption has expanded by about 15%, and per capita tea consumption has expanded by about 10%.

In summary, I have come to the conclusion that the topic of this paper is generally ignored. None of the articles examine the U.S. market or its growth. Magazine and news articles look at general trends, but often use nominal and aggregated data, which is misleading and does not address whether the product is actually growing in popularity. These articles often rely on anecdotal evidence, which is a poor indicator of trends in the overall market. In addition, these articles make a couple of predictions up until 2020, but nothing past. None of the articles address the long term implications or future of the trends discussed.

This leaves an opportunity to uncover a deeper story to the market of a major, yet oft overlooked, commodity. The United States is recognized as one of the few growing tea import markets (Bolton, 2016), and as such is an important subject to study.

Section III: Import Data

Tea data used consists of three different sets of data: aggregated data, green tea, and black tea. Aggregated data is the sum of all tea imported by the U.S., and approximates the sum of green tea and black tea imports. The corresponding Harmonized Code commodity search code (HS-10) is 902. Green tea is the sum of harmonized commodity search codes 90210 and 90220, which are green tea imported in amounts less than and greater than three kilograms, respectively. Black tea is the sum of harmonized commodity search codes 90230 and 90240, which are black tea imported in amounts less than and greater than three kilograms, respectively.

Three major import statistics exist: total import values, net weight of imports, and price. Total import values measures tea imports purchased in nominal U.S. dollars. Net weight of imports is the total weight (in kilograms) of all imports. Price data is divided into two categories:
average national price and weighted average price. A nation’s average national price is the 
average price paid for tea imports, and its weighted average price takes into account the weight 
of each countries imports when compared to the total. Both sets are measured in terms of U.S. 
dollars per kilogram.

The first data source used in this paper is a summary of aggregate tea imports taken from 
the United States Department of Agriculture’s Foreign Agricultural Service 
(https://apps.fas.usda.gov/gats/default.aspx). This dataset presents a large cross-section of data, 
but only provides import values. Therefore, a second dataset, is required to understand the nature 
of tea imports, and by extension, the tea industry.

The second data set employed in this paper is taken from the United Nations’ Comtrade 
Database (https://comtrade.un.org/data/), and compiled by the United Nations Department of 
Economic and Social Affairs. The data compiled is total value, weight, and price data for the ten 
largest tea exporters to the United States: Argentina, Canada, China, Germany, India, Japan, 
Kenya, Sri Lanka, the United Kingdom, and Vietnam. According to the USDA data set, these 10 
countries provide about 80% of all U.S. tea imports in 2015, and 78% in 2016. Import data for 
these countries are compiled from 1991-2015, with the exception of Vietnam, where data begins 
in 1994.
A. Aggregated Data

Figure 2: Aggregated Import Value (nominal) and Netweight

Figure 2 summarizes at aggregated tea data. The dashed line represents the value of product traded (left axis), while the bottom line measures the amount of tea traded (right axis). The most interesting fact about this graph is difference between the growth of the two lines. Tea import values are growing at a faster rate than import quantity. This is especially true after 2002. Total trade value has quadrupled over this time period (growing from $100.4 million to $401.2 million). However, the total amount of tea traded over the same time period less than doubled (growing from 58 million kilograms to 113 million kilograms). As a result it would be useful to look at the average price data.

Presented in Figure 4 below is the weighted average price for aggregated tea. This includes all tea, regardless of processing, quality level, or country of origin. As such, this is a general look at how prices in tea have moved in the industry.
Figure 3: Weighted Average Price of General Tea Imports

Figure 3 is comparable to the import value line in Figure 2. In both graphs, values are relatively stable until the early 2000's, when values start to increase dramatically. The total value of imports between 2002 and 2015 grew 190%, while weighted average price grew by 95%. Looking at the percentage growth in total weight between these two years (49%), it becomes apparent that price growth has a greater effect over this time period than an increase in import quantity.
B. Commodity Data

Figure 4: Net Weight of Black and Green Tea Imports

Presented are two graphs that deal with the difference in trade between black tea and green tea, both in terms of kilograms imported (Figure 4) and total import value (Figure 5). In both figures, the net weight of black tea exceeds green tea, an unsurprising detail considering the U.S.’s historical preferences, which dates back to the colonial era.

Green tea consists of about 14% of tea imports by weight, which is consistent with industry estimates for total tea consumption. This value has also grown over this time period, since in 1991, green tea only accounted for 9% of all imported tea in terms of weight. This shows clearly that green tea has increased in popularity in the United States, or at least has grown when compared to other forms of tea (namely black). The most likely reason for this is due to health trends, as green tea was at the center of many health studies during the 1990's, with an overall conclusion that green tea can have a minor to moderate effect at improving health (Ji et al., 1997). Given the nature of health trends in the United States over the past 25 years, this is a
reasonable conclusion. The increased popularity of green tea can also be attributed to the increased popularity in East Asian cultures, especially among the Millennial generation. As stated previously, increased tea consumption is noticeable among the Millennial generation (Goggi, 2016).

**Figure 5: Import Value of Black and Green Tea**

A different story, or at least a more dynamic one, unfolds when looking at the overall value of imports in Figure 5. In 1991, green tea consisted of 7% of total import values. By 2015, that value grew to 28%. This is definitely a sign that green tea is purchased, on average, at a far higher price than black tea, since import value grew at a faster rate than net weight, and continued to grow even after green tea’s net weight plateaued.
When looking at the weighted average price, this appears to be the case. The only time black tea was more expensive than green tea was 1994, by a total amount of 12 cents per kilogram. Since then, the difference has grown, and in 2015, green tea was $5.70 more per kilogram than black tea. By country, green tea is also always more expensive. Even countries that historically produce green tea, such as China and Japan (Etherington & Forster, 1989), often command higher prices for green tea rather than black tea.

In conclusion, green tea has definitely benefitted more from the growth in the tea market than black tea, although both experienced growth in terms of both trade value and net weight. However, both instances are also heavily influenced by prices, as seen by how much faster import value has increased over net weight. The United States has also imported greater levels of tea from countries with high prices, two examples being Canada and Japan. Products from Canada are mostly reimported and finished products, which tend to command higher prices both
in imports and in retail. Tea from Japan tends to be a heavier concentration of green tea than most other countries. As presented in price data above, green tea usually commands significantly higher prices than black tea.

C. Importer Data

Figure 7: Net Weight of Imports by Country of origin (Select Years)
Figure 7 compares the net weight of imports coming from each of the 10 major suppliers in the years selected (1991, 1997, 2002, 2008, 2015). As can be seen above, Argentina and China, are the largest tea suppliers. As such, the values of many other countries appear to be near zero. However, the only value that is zero, or close to it, is Vietnam in 1991, as Vietnam import data is available starting in 1994.

Perhaps the most interesting detail is that Argentina is the largest U.S. supplier of black tea. This is true in each year presented except for 1991. In 2002 and 2015, Argentina accounted for nearly 50% of total U.S. tea imports. In addition, China's role as a tea exporter to the U.S. has declined, with China's largest share of tea imports occurring in 1991 (37.6%), and smallest share occurring in 2015 (16.5%). This is because the net weight imported from China has remained relatively stable since 1991 (moving from 21.8 million kg to 18.7 million kg), but total imports have expanded (moving from 58.1 million kg to 113.1 million kg). However, the combined share of exports for Argentina and China remain relatively stable, declining from 71.1% to 65.4%, with the highest share being in 1997 (73.1%).

In addition, several countries have expanded tea trade relations with the United States, as Vietnam and India are both supplying a large portion of U.S. imports. Japan's and Canada's share in U.S. tea imports expanded since 1991, although both declined in share since 2008. Canada's rapid growth is most easily explained by eased trade relations due to NAFTA, whereas Japan's explanation is not as simple. Meanwhile, Vietnam and India are easiest explained by the continued smoothing and expansion of trade relations.

**Section IV: Import Trends**

Looking at the data above, there are four major anomalies that need to be explained before the current state of the tea market can be understood in full. These are issues that are
either surprising given my initial assumptions about the tea market, a discrepancy in the data itself, or a combination of the two. These four anomalies are: the amount of tea imported from Argentina; the presence of Canada, Germany, and the United Kingdom as major U.S. tea suppliers, the decreasing share of tea imports from China, and the continued importing of Japanese tea despite high Japanese tea prices.

A. Argentina Import Quantity

One of the biggest surprises in the data presented above, and therefore one of the biggest questions, is about the large amount of imports from Argentina. From the outset, this fact doesn’t seem to make sense. Argentina is not a country that appears to have strong roots in tea culture. As such, tea production on a large scale is rather surprising.

However, Argentina has a history with tea production. Argentina’s tea industry started in the 1920’s, and though slow growing at first, started to rise after the price drought and an imposed import ban in the 1950’s (World Atlas, 2017). Today, Argentina is the tenth largest producer of tea in the world (World Atlas, 2017), and the fifth largest exporter of tea in the world (Bolton, 2016). This is due to a combination of two factors: a suitable climate in Northern Argentina, as tea grows best in mountainous, sub-tropical climates, and a low domestic demand for tea, with only 5-8% of tea production meant for domestic consumption (Parra, 2014). This is an exceedingly high export/import consumption ratio, as the global average states that 66% of tea produced is meant for the country it is grown in (Bolton, 2016). The reason for the low domestic demand for traditional tea (*Camellia Sinensis*) is that the primary tea of choice in Argentina is mate (Neilson, 2010), a tea-like drink made from the leaves of the *Ilex Paraguariensis*.
As Argentina is the primary supplier to the U.S. tea market, the United States is also the primary export market for Argentina. In 2013, 65% of all tea exports were for the United States, and accounted for 72.5% of export value (Parra, 2014). As such, there is a strong relationship between the U.S. and Argentine tea industries. Although conjecture, I believe there are five main reasons for this: Argentine tea is cheap, close, black, consistent, and shipped in bulk.

Table 2: Black Tea Prices (nominal U.S. dollars) in Select Years

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>$1.02</td>
<td>$1.00</td>
<td>$0.89</td>
<td>$0.79</td>
<td>$0.93</td>
<td>$1.10</td>
<td>$4.61</td>
<td>$1.59</td>
<td>$1.77</td>
</tr>
<tr>
<td>Canada</td>
<td>$4.70</td>
<td>$13.83</td>
<td>$45.17</td>
<td>$6.69</td>
<td>$4.35</td>
<td>$5.28</td>
<td>$11.66</td>
<td>$15.32</td>
<td>$15.58</td>
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<tr>
<td>China</td>
<td>$2.04</td>
<td>$2.38</td>
<td>$2.05</td>
<td>$2.73</td>
<td>$1.89</td>
<td>$1.79</td>
<td>$5.08</td>
<td>$6.71</td>
<td>$8.35</td>
</tr>
<tr>
<td>Germany</td>
<td>$3.08</td>
<td>$5.02</td>
<td>$6.55</td>
<td>$5.78</td>
<td>$6.52</td>
<td>$7.62</td>
<td>$6.58</td>
<td>$8.89</td>
<td>$8.87</td>
</tr>
<tr>
<td>India</td>
<td>$2.87</td>
<td>$2.30</td>
<td>$3.09</td>
<td>$3.23</td>
<td>$3.15</td>
<td>$3.77</td>
<td>$5.64</td>
<td>$5.02</td>
<td>$4.15</td>
</tr>
<tr>
<td>Japan</td>
<td>$4.46</td>
<td>$7.82</td>
<td>$10.36</td>
<td>$7.47</td>
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<td>$10.44</td>
<td>$8.35</td>
<td>$16.02</td>
<td>$26.68</td>
</tr>
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<td>Kenya</td>
<td>$2.26</td>
<td>$2.42</td>
<td>$2.20</td>
<td>$2.29</td>
<td>$2.04</td>
<td>$2.21</td>
<td>$5.40</td>
<td>$4.22</td>
<td>$4.30</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>$3.00</td>
<td>$4.19</td>
<td>$6.07</td>
<td>$4.89</td>
<td>$5.10</td>
<td>$5.61</td>
<td>$6.24</td>
<td>$5.98</td>
<td>$6.33</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>$5.09</td>
<td>$6.31</td>
<td>$7.87</td>
<td>$8.33</td>
<td>$7.39</td>
<td>$10.47</td>
<td>$12.67</td>
<td>$8.10</td>
<td>$7.55</td>
</tr>
<tr>
<td>Vietnam</td>
<td>$2.33</td>
<td>$1.58</td>
<td>$1.97</td>
<td>$1.02</td>
<td>$1.59</td>
<td>$4.52</td>
<td>$1.49</td>
<td>$1.80</td>
<td>$2.10</td>
</tr>
</tbody>
</table>

Data taken from the United Nations Comtrade database

As seen in the table, Argentine tea is cheap, especially when compared to other countries. Table 2 above shows the price of the 10 major importers across nine different years. Argentina had the lowest price for black tea in seven of the nine years above. Argentina had the second lowest price the other two years. Except for 2008, Argentina’s prices did not exceed $2 per kilogram. As basic principle states, lower prices results in higher quantities demanded, other factors being equal. Thus, Argentina’s low prices will result in higher U.S. imports from Argentina.

Geographically, Argentina is the second closest country to the United States from the major importers, and the closest provider of bulk tea. The closest provider of tea is Canada, whom which the United States shares a border. The next closest country is the United Kingdom,
who like Canada is trading in reimported and manufactured goods. A shorter distance can result in any number of advantages, including speed of delivery and cost of delivery.

Tea exports from Argentina consist of mainly black tea. According to Argentina’s Ministry of Agriculture, Livestock, and Fisheries (AMALF), 97% of Argentine tea exports are black tea (Parra, 2014). This information is supported by the Comtrade dataset. In 2015, Argentine black tea imports were 54.76 million kg, whereas Argentine green tea imports were 464,000 kg. The fact that Argentine tea is primarily black would increase U.S. imports, as 85% of all tea consumed in the U.S. is black tea (Tea Association of the U.S.A. Inc., 2016).

The tea from Argentina is often consistent in quality, being able to maintain its color well and remain clear when used to brew cold beverages (Parra, 2014). This makes Argentine tea ideal for U.S. consumption, as 85% of U.S. tea consumption is iced tea (Tea Association of the U.S.A. Inc., 2016). Additionally, Argentine tea has a history of producing off-grade tea, making it ideal for the production of instant tea and ready-to-drink tea (Luxner, 1995). Once again, this matches stated statistics on U.S. consumption, as 48.6% of consumed tea is ready-to-drink tea (Bailey, 2015). Ready-to-drink tea brands often prefer using cheap tea to be able to boost profit margins, and manufacturers prefer consistency in both taste and color to ensure a standard product.

Most of the tea shipped from Argentina is bulk, loose-leaf tea. This fact is presented by AMALF, who state that Argentine tea meant for external markets is not blended or packaged and is shipped in bulk (Parra, 2014). This makes sense, as many conventional and identifiable tea brands are blended, packaged and prepared in the United States. This includes brands such as Lipton and Arizona.
These five facts taken into account, Argentina is an understandable supplier of the U.S. tea market. The most popular type of tea beverage in the United States is ready-to-drink, iced black tea. Given the information presented above, this is a market segment that Argentina could continue to capitalize on, due to low prices and relative geographic proximity.

**B. Developed Country Tea Trade**

The next major anomaly in the data is the presence of developed countries. Whereas the presence of countries such as China, India, and Kenya are to be expected, and Argentina still produces tea plants, the same cannot be said of Canada, Germany, or the United Kingdom. It is impossible for these countries to be able to produce tea, with the exception of one small region in coastal British Columbia. Even so, this region cannot produce tea in the amounts that are imported. The reason for this is that tea plants require mountainous soil, a large amount of water, and moderate temperatures, factors usually found in subtropical regions.

As such, tea imports from these countries have to be re-imports or manufactured products. In this sense, manufactured products are any products that have gone through any form of value-added activities, such as blending, packaging, grinding, or preparation. Blending tea is a process where tea leaves are mixed with other types of tea, herbs, fruits, or flowers, to create a tea blend with a unique taste. Packaging is defined as tea that is divided into fixed quantities and bagged, or “packaged,” before being sold. Grinding is when tea is grinded into a powder, referred to as instant tea. Preparation is the creation of ready-to-drink tea, liquid products which are bottled and sold in stores.

In 2015, the United Kingdom supplied 1.44 million kg of tea to the United States, making the country the smallest of the ten major suppliers. Tea from the United Kingdom is often considered to be of a high quality. Whether the reason for this is colonial connections, intelligent
advertising and branding, or some other factor, that is unknown. However, the United Kingdom does supply a large amount of tea to the United States, which is often sold in grocery stores. The most popular brand for which this is true is Twinings. This brand is seen in many grocery stores across the United States. In addition, all tea from Twinings is blended and packaged in the United Kingdom. One of the most popular tea brands in the United States is completely imported from the United Kingdom, providing an explanation for why U.S. imports from the United Kingdom are so high.

Canada does not have the same reasoning. Although Canada does have some major brands, only one of those, and a rather minor one at that, can be found in the United States. This brand is the Red Rose tea brand, a black tea produced and packaged in Canada. So if Canada’s tea trade is not driven by a power brand, why is Canada’s tea imports so high?
Table 3: Canadian Black Tea Imports

<table>
<thead>
<tr>
<th>Year</th>
<th>Shipped in Amounts &lt; 3 kg</th>
<th>Percent of Total Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>199,437</td>
<td>87.73%</td>
</tr>
<tr>
<td>1992</td>
<td>384,250</td>
<td>94.97%</td>
</tr>
<tr>
<td>1993</td>
<td>197,199</td>
<td>93.76%</td>
</tr>
<tr>
<td>1994</td>
<td>156,343</td>
<td>99.17%</td>
</tr>
<tr>
<td>1995</td>
<td>207,761</td>
<td>99.77%</td>
</tr>
<tr>
<td>1996</td>
<td>175,316</td>
<td>98.25%</td>
</tr>
<tr>
<td>1997</td>
<td>126,617</td>
<td>99.93%</td>
</tr>
<tr>
<td>1998</td>
<td>109,992</td>
<td>98.54%</td>
</tr>
<tr>
<td>1999</td>
<td>189,289</td>
<td>86.73%</td>
</tr>
<tr>
<td>2000</td>
<td>319,619</td>
<td>97.69%</td>
</tr>
<tr>
<td>2001</td>
<td>524,262</td>
<td>98.98%</td>
</tr>
<tr>
<td>2002</td>
<td>578,553</td>
<td>91.07%</td>
</tr>
<tr>
<td>2003</td>
<td>698,938</td>
<td>58.93%</td>
</tr>
<tr>
<td>2004</td>
<td>1,284,785</td>
<td>80.63%</td>
</tr>
<tr>
<td>2005</td>
<td>1,123,766</td>
<td>83.00%</td>
</tr>
<tr>
<td>2006</td>
<td>802,138</td>
<td>81.27%</td>
</tr>
<tr>
<td>2007</td>
<td>1,564,498</td>
<td>99.11%</td>
</tr>
<tr>
<td>2008</td>
<td>2,518,446</td>
<td>99.59%</td>
</tr>
<tr>
<td>2009</td>
<td>1,637,478</td>
<td>98.04%</td>
</tr>
<tr>
<td>2010</td>
<td>1,619,285</td>
<td>98.16%</td>
</tr>
<tr>
<td>2011</td>
<td>1,280,781</td>
<td>97.76%</td>
</tr>
<tr>
<td>2012</td>
<td>1,267,453</td>
<td>95.62%</td>
</tr>
<tr>
<td>2013</td>
<td>1,456,964</td>
<td>99.71%</td>
</tr>
<tr>
<td>2014</td>
<td>1,348,600</td>
<td>99.88%</td>
</tr>
<tr>
<td>2015</td>
<td>1,492,264</td>
<td>99.11%</td>
</tr>
</tbody>
</table>

Source: UN Comtrade

In Table 3 presented above, one trend becomes clear. Tea imported from Canada is primarily shipped in small amounts. In 2015, 1,492,264 kg of tea were shipped in amounts less than 3 kg, whereas only 13,460 kg of tea were shipped in amounts greater than 3 kg. Using this information, it is reasonable to assume that most Canadian tea imports are the result of mail orders and web orders by U.S. consumers at Canadian companies. Many small tea shops sell blends across both countries. In addition, some companies also supply U.S. businesses. One example of this is Shanti Tea, a Canadian wholesaler who specializes in blending and packaging
organic tea for restaurants and hotels. Unlike other countries, this sort of small scale operation is reasonable due to the geographic proximity of the countries. The United States and Canada share a border, making delivery costs fairly low. With low delivery costs and close distance, small scale operations are relatively easy and are able to accumulate to a large amount of product.

German tea is a rather simple story as well. According to a report by the Tea Association of Germany, Germany is a leading center for tea not only in Europe, but the world as well. As such, Germany re-exports a large amount of its tea imports. In 2013, Germany imported 55,201 tons of loose tea (50,077,519 kg), primarily from Kenya and Sri Lanka. Of this, 47.4%, or 23,716,537 kg, is re-exported. The largest market for German tea is Western Europe, notably France. However, the United States is a fairly large market for German re-exports, consisting of 15%, or 3,557,480 kg, of tea re-exports (Deustcher Teeverband e.V., 2013). This value is also close the GAIN data value for U.S. tea imports in 2013, which is 3,669,482 kg. The remainder can easily be explained by small-scale operations and reporting errors. I have found little evidence to believe that this tea is branded, so most of the United States’ imports from Germany is processed loose tea, probably separated along the terms of quality, color, cut, and origin. Considering many tea brands have a tendency to create their own tea blends, it is also likely that German tea imports are not blended. This would also explain why German tea prices per kilogram are lower than either the U.K.’s prices or Canada’s prices.

In essence, all three of the developed countries the U.S. imports heavily from are in the business of re-exports, however all three have different circumstances. Tea from the United Kingdom is dominated by the trade of a handful of powerful brands, such as Twinings, which are produced in the United Kingdom and shipped to the United States. Tea from Canada is characterized by shipments in small amounts, usually mail orders or web orders, sometimes to
services and business, and sometimes to individuals. Tea from Germany is loose tea that has been processed and organized, and is later sent to the United States for blending and branding.

C. Japanese import prices

Japanese tea is consistently more expensive than those of other countries. The only other country where tea prices are equally expensive is Canada. However, as stated earlier, Canadian tea is processed, packaged, small scale operations, so Canada’s prices are not surprising. Japan produces tea plants though, as it is consistently one of the world’s top ten producers of tea (World Atlas, 2017). Figure 8 below shows the green tea import price for Japan, and the global weighted average price for green tea.

**Figure 8: Japanese Import Prices**

As evidenced by Figure 8, Japan’s green tea price is significantly more expensive than that of the rest of the world, excepting a few years in the mid-2000s. Green tea is used as the measure here, since 99.9% of Japanese tea production is green tea (World Atlas, 2017). The value between the two lines would be greater if the aggregated weighted price would have been
used. Normally, rising prices wouldn’t be of interest. However, while Japanese import prices have been rising, so have Japanese imports. Figure 10 shows the growth in Japanese imports.

**Figure 9: Imported Amounts of Green Tea**

As shown in Figure 9, Japanese tea imports have grown more than 1300% over the past 25 years. The data also shows that the laws of demand and supply are in effect, as shown by the import quantity spikes in 2003, 2004, and 2008, which align with price dips. So there are two questions that the data presents: why are Japanese import prices so high, and why does the United States continue to expand exports from Japan?

First, why are Japanese tea prices so high? Looking at retail shops in Japan, such as Hibiki An, a tea store in Uji, Kyoto, Japan, tea prices are relatively expensive, even in Japan. Some of Hibiki An’s cheapest prices are about $18 for 200 g of tea. This is a relatively high price. This is important to note, as it means that prices are high at its source, and are caused by production and market factors. In the end Japanese tea is expensive because it is a high-quality, highly-demanded, premium good.
The Chado Tea House, a Canadian tea store that specializes exclusively in Japanese tea, provides evidence that Japanese tea is of a high quality. All of their products meet Japanese certification standards, which is a way of saying that their products comply with the Japanese Agricultural Standards (JAS). The JAS are a set of long-standing agricultural production standards for food products produced in Japan, or being imported into Japan. These standards are incredibly strict set of standards enforced by Japan’s Ministry of Agriculture, Forestry, and Fisheries (http://www.maff.go.jp/e/policies/standard/jas/index.html). Seeing as tea produced in Japan is held to this standard, Japanese tea is typically a high quality product.

Japanese tea is also highly competitive, in the sense that many countries are competing for the same product. Despite being one of the world’s largest tea producers, Japan produces mainly for domestic markets. Over the time period of 1990-2013, Japan, on average, exports only 2% of their tea crop per year (World Atlas, 2017) (Bolton, 2016). In total, this is a little over 1.5 million kg in 2013. Seeing as how U.S. imports from Japan that same year was 1.7 million kg, Japan is obviously re-exporting product as well. However, assuming the United States is not the only country in the Japanese tea trade, the market is highly demanded. As such, higher levels of demand will drive market prices higher.

Finally, Japanese tea is primarily green tea. As previously stated, 99.9% of Japanese tea is green tea. Figure 6 makes it clear that green tea is generally more expensive as well. As such, green tea could be considered a premium product, which will sell at a higher price. Taken together, these three facts make it clear that simple market forces provide an explanation for why Japanese tea prices are growing at a rapid rate.

The United States purchases Japanese tea in large volumes for cultural reasons. First, the Sadou Ceremony (traditional Japanese tea ceremony) is one of the most well-known tea-based
cultural customs is the world, equivalent to the English Afternoon Tea. There are also a number of locations across the United States that performs these ceremonies, such as the Japanese Tea Garden in San Francisco. The Sadou Ceremony is a very traditional Japanese custom, and as such, the hosts and hostesses of said ceremonies will be ethnic Japanese, or have been trained in Japan. As such, these ceremonies will use tea imported directly from Japan. Also, advertising green tea as being “Japanese” is a mark of quality, and this designation has grown with the rise of loose-leaf stores. Due to the stringent nature of U.S. advertising law, tea advertised as being “Japanese” will have to either come from Japan, or be approved by the Japanese government.

Additionally, green tea is growing in popularity in the United States. Data shows that green tea has grown from 9% to 14% of U.S. tea imports and consumption. This means that green tea demand is growing. The health trend is the leading cause of this. Tea, and green tea in particular, is seen to help prevent and lessen several forms of cancer (Bu-Tian Ji et al, 1997), as well as promote heart, brain, and bone health (Tea Association of the U.S.A. Inc., 2016). In addition, the number of countries that produce green tea is relatively small. Out of the major importers to the U.S. market in 2015, only four countries shipped more than 500,000 kg of green tea to the United States: China, Japan, Vietnam, and India. India mostly produces and exports black tea, and Vietnam still sold more than twice as much black tea to the United States than green tea. Due to growing demand, a limited number of suppliers, as well as cultural factors, it makes sense that the United States would continue to import more tea from Japan, despite a steep rise in prices.

**D. Chinese Import Values**

The last question presented by the data is the shrinking share of Chinese imports in the U.S. tea market. As presented earlier in Figure 7, the net weight of tea imported from China has
not changed significantly over the past 25 years. Figure 1 shows that the value of imports from China has been increasing over the past 25 years. This is due primarily to price changes, as shown on page 14. However, the share of Chinese imports in the U.S. market has been steadily decreasing, falling from 37.6% to 16.5% from 1991 to 2015.

To explain this, it is necessary to look at how Chinese tea imports are composed. Table 4 below shows the percentage of black tea and green tea from China as a percentage of total Chinese tea imports.

**Table 4: Chinese Green and Black Tea Imports as a Percentage of Chinese Tea Imports**

<table>
<thead>
<tr>
<th>Year</th>
<th>Green Tea Imports</th>
<th>Black Tea Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>23.7%</td>
<td>76.3%</td>
</tr>
<tr>
<td>1992</td>
<td>20.8%</td>
<td>79.2%</td>
</tr>
<tr>
<td>1993</td>
<td>17.9%</td>
<td>82.1%</td>
</tr>
<tr>
<td>1994</td>
<td>20.5%</td>
<td>79.5%</td>
</tr>
<tr>
<td>1995</td>
<td>22.5%</td>
<td>77.5%</td>
</tr>
<tr>
<td>1996</td>
<td>22.6%</td>
<td>77.4%</td>
</tr>
<tr>
<td>1997</td>
<td>15.1%</td>
<td>84.9%</td>
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<td>1998</td>
<td>24.9%</td>
<td>75.1%</td>
</tr>
<tr>
<td>1999</td>
<td>32.9%</td>
<td>67.1%</td>
</tr>
<tr>
<td>2000</td>
<td>31.7%</td>
<td>68.3%</td>
</tr>
<tr>
<td>2001</td>
<td>46.2%</td>
<td>53.8%</td>
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<tr>
<td>2002</td>
<td>41.2%</td>
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<td>2003</td>
<td>47.2%</td>
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<td>2004</td>
<td>44.4%</td>
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<td>2006</td>
<td>55.4%</td>
<td>44.6%</td>
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<tr>
<td>2007</td>
<td>51.9%</td>
<td>48.1%</td>
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<td>2008</td>
<td>32.3%</td>
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<tr>
<td>2009</td>
<td>39.8%</td>
<td>60.2%</td>
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<td>2010</td>
<td>56.8%</td>
<td>43.2%</td>
</tr>
<tr>
<td>2011</td>
<td>51.5%</td>
<td>48.5%</td>
</tr>
<tr>
<td>2012</td>
<td>49.4%</td>
<td>50.6%</td>
</tr>
<tr>
<td>2013</td>
<td>57.1%</td>
<td>42.9%</td>
</tr>
<tr>
<td>2014</td>
<td>46.7%</td>
<td>53.3%</td>
</tr>
<tr>
<td>2015</td>
<td>47.4%</td>
<td>52.6%</td>
</tr>
</tbody>
</table>

Source: UN Comtrade
As can be seen in Table 4, the percentage share of black tea in Chinese tea imports has declined, from around 80% in 1992, to over 50% starting in 2006. Whereas green tea has risen from consisting of around 20% of Chinese tea imports, up to about 50%. Since Chinese exports to the United States has remained relatively stable, this means that the United States is importing more green tea from China than in the past, while also importing less black tea. This is not surprising, as China produces more green tea than it produces black tea. This was true back in 1989 (Etherington & Forster, 1989), as well as in 2013 (Zhi, 2014).

**Figure 10: Black Tea Imports from China, Argentina, India, and Vietnam**

As can be expected, the total value of Chinese black tea imported into the United States has declined. In Figure 10, China is the only major exporter of black tea to export less black tea to the United States between 1991 and 2015. India is now the U.S.’s largest exporter of black tea, and in 2014, Vietnam exported about an equal amount of black tea as China did. What is the reason for all of this: price. Out of the four major black tea importers, China’s has the highest price. Table 5 shows a price comparison between these four countries over the last several years.
In Table 5, China has higher prices for black tea than Argentina, India, or Vietnam for every year except 2009. Since Chinese black tea became more expensive as time passed, the United States started to import less black tea from China, and started to import black tea from countries with cheaper prices.

This is harder to do with green tea, since as noted in Section IV-C, green tea is only grown in a select number of countries. Of these, China is the most significant producer of green tea. China is the world’s largest producer of tea (World Atlas, 2017) (Bolton, 2016), and two-thirds of this production is green tea (Zhi, 2014). China is one of the world’s largest tea exporters, and green tea consists of the majority of tea exported from China (Bolton, 2016). As has been mentioned several times, U.S. demand for green tea has been increasing as well. Figure 11 below shows U.S. green tea imports from China.

### Table 5: Black Tea Prices Since 2009

<table>
<thead>
<tr>
<th>Year</th>
<th>Argentina</th>
<th>China</th>
<th>Vietnam</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>$1.77</td>
<td>$3.22</td>
<td>$1.37</td>
<td>$4.09</td>
</tr>
<tr>
<td>2010</td>
<td>$1.36</td>
<td>$4.95</td>
<td>$1.46</td>
<td>$4.55</td>
</tr>
<tr>
<td>2011</td>
<td>$1.59</td>
<td>$6.71</td>
<td>$1.49</td>
<td>$5.02</td>
</tr>
<tr>
<td>2012</td>
<td>$1.63</td>
<td>$7.66</td>
<td>$1.72</td>
<td>$4.90</td>
</tr>
<tr>
<td>2013</td>
<td>$1.98</td>
<td>$7.36</td>
<td>$1.43</td>
<td>$4.88</td>
</tr>
<tr>
<td>2014</td>
<td>$5.00</td>
<td>$8.68</td>
<td>$1.93</td>
<td>$4.57</td>
</tr>
<tr>
<td>2015</td>
<td>$1.77</td>
<td>$8.35</td>
<td>$1.80</td>
<td>$4.15</td>
</tr>
</tbody>
</table>

Source: UN Comtrade
Despite a fair degree of variation, green tea imports from China have increased. The three peak years in Figure 11 match up with peak years for green tea in Table 4. In total, Chinese green tea imports have been increasing, while Chinese black tea imports have been decreasing. As such, the two values will partially counterbalance each other. This counterbalancing causes total imports to remain relatively stable, but allows for a large decrease in market share.

**Section V: Consumption Data: In Brief**

A second data set does exist for the measurement of consumption data. This data set is from the United States Department of Agriculture’s Economic Research Service (https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/). The primary statistic in this data set is the amount of tea available for consumption, measured in both dry weight and liquid weight. For the sake of its analysis, I will be looking at liquid weight in gallons (kg multiplied by 1200, divided by 128). Essentially, this is the amount of tea available in
gallons in the United States. Data in the data set dates back to 1909, however, the figure below will focus on 1991 to 2014.

**Figure 12: Consumption of U.S. tea, in gallons available for consumption (1991-2015)**

![Availability of Tea Per Capita: 1991-2015 (In Gallons)](source: USDA)

Figure 12 shows that the amount of tea available for consumption, and thus U.S. consumption, has not expanded greatly since 1991. In 1991, 7.4 gallons of tea were available and consumed per person. By 2014, this value only rose to 8.1 gallons. The amount of tea available for consumption peaked in 2010, at 9.2 gallons. Going back one year, to 1990, sees tea consumption at 6.9 gallons per person, a fairly average value for U.S. tea consumption dating back to the 1960’s, where tea consumed was even lower. However, in Figure 12, it shows tea consumption rising and falling in cycles. This appears to be true in the past as well, peaking in 1923, 1941, 1954, 1976, 1993, and in 2010, as can be seen below in Figure 13.
So what are some of the significant points of U.S. consumption data? Tea consumption in the early 2010’s is one or more gallons higher than the early to mid-1990’s, assuming 2014 is a low year. Even being a low year, tea consumption in 2014 is still about equal to the high years in the 1990’s, and is higher than any value between 1925 (8.1 gallons) and 1993 (8.3 gallons). The most recent peak value in tea consumption, 2010’s 9.2 gallons per person, is the largest amount of tea consumed per person in a year in the United States since 1918.

Altogether, U.S. tea consumption is increasing. From a total consumption perspective, values have increased tremendously. In 1991, total tea available for consumption was 1.865 billion gallons. By 2002, this value had increased to 2.239 billion gallons, and in 2014 was 2.580 billion gallons, peaking in 2010 at 2.902 gallons. Between 1990 and 2014, total tea consumption increased by about 38%. However, Figure 8 presents that per capita consumption has not increased as heavily, rising only 9.5%. In all, this means that the largest factor behind the growth in tea consumption is due to the U.S.’s natural population growth. In essence, total tea
consumption in the United States is a lot higher, but not because people are drinking significantly more tea or changing cultural customs. Total tea consumption in the United States is increasing by large amounts because the U.S. population is increasing by a large amount (about 65 million people) over the same time period.

Section VI: Conclusion

Tea is the second most consumed beverage in the world, has rich cultural traditions in numerous countries, and is only becoming more popular as time passes. Consumption for tea has increased heavily in production countries, such as China and India, as well as non-production countries, like the United States. As seen in the data, tea consumption per capita in the United States has increased to its highest levels since the 1920’s. The amount of tea imported into the United States is also at record values. The United States has expanded its consumption of black tea, and green tea has been becoming far more popular drink in the United States. These two products consist of about 99% of all U.S. tea consumption.

Tea in the United States is imported from many countries. The largest exporter of tea to the United States is Argentina, a country with large tea production that’s dependent on an expanding U.S. market. China remains the U.S.’s second largest importer, but has declined in market shared by 21% over the last 25 years. The United States imports heavily from Japan despite high prices, due to the quality of the Japanese product. India, Sri Lanka, and Vietnam have all expanded as important exporters of tea to the United States. The United States also buys a large portion of processed and pre-prepared tea as well, as signified by U.S. imports from Canada, Germany, and the United Kingdom.

It is not debatable that U.S. demand for tea has risen. It is noted that U.S. tea consumption is on the rise, not only by the tea industry, but also by third party sources as well
(Bolton, 2016; Chang, 2015; Bailey, 2015; Tea Association of the U.S.A. Inc., 2016). The tea industry finds that sales grew by 32% between 2007 and 2014, and import values support this. In 2007, the import value of all tea in the United States was $265.86 million, and the import value in 2014 was $390.76 million. However, the industry within the U.S. makes the claim that tea is becoming more popular in the United States. And while it is, consumption data suggests that the change is not as significant, with the amount available per person falling by .3 gallons over that period. Thus, consumption, although it is increasing is not behind the change in profitability of the U.S. tea market. The factor most important for this change is price.

In the United States, import price has increased twice as much as quantity imported. This increase in price is also not surprising. One of the fastest growing market segments in the United States is loose-leaf (specialty) teas (Bailey, 2015; Chang 2015; Tea Association of the U.S.A., Inc, 2016). This tea tends to be of a higher quality, charging higher premiums on imports. Other market segments with traditionally lower prices, tea bags and instant tea, have declined in relevance (Goggi, 2016). In addition, green tea, which as shown in Figure 6, charges a higher price than black tea. At the same time, U.S. imports of green tea, and its subsequent consumption, have grown from 9% to 15%.

Although the U.S. tea market is expanding, it is more attributable to people demanding more expensive and higher quality products, whether it be pre-made, or loose leaf. Over the past 25 years, tea consumption has expanded to its highest point in nearly a century. This growth can be attributed to a number of factors, including recent health trends in the United States (Bu-Tian Ji et al, 1997) and changing generational tastes (Goggi, 2016).

In going through this paper, there are two questions that arose that will require additional research. The first regards shifts in consumer consumption. Although this paper has proven and
explained the trend towards green tea, it has not looked at changes in market segmentation. This includes explaining the shift away from instant tea and tea bags and towards ready-to-drink and loose-leaf. It is likely that the rise in low-quality Argentine tea and the ready-to-drink market segment, or that the rise in high-quality imports, such as those from Japan, are connected to the increased popularity in loose-leaf tea. It also is possible that the rise in loose-leaf tea could be indicative of increasing popularity of hot tea, where the United States traditionally drinks iced tea. These statements are nothing more than conjecture, and are only based off of what has been presented so far.

The other question is whether the rise in import prices is connected to the rise in revenue and profitability in the tea industry. Although there is a definite connection, profits is defined as revenues minus costs. Tea import costs are only one of the costs that would be incurred by the tea industry. Some other costs would include labor and expertise, maintenance of manufacturing equipment, and marketing and advertisement. As such, further research will need to be conducted into the cost structure of the industry.

In total, tea is becoming more popular in the United States, but the real rise in value in the United States, and thus the rise in tea culture, is due to rising prices and shifting market segmentation, not a rapid expansion in consumption.
References


