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A PROPOSED Japan-U.S. FTA

Based on the KORUS FTA, Japan's Energy Needs, and U.S. LNG

Exporting Capabilities

by

Nathan Torreano

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Abstract

Although still very important trade partners, the relative significance of the U.S.' and Japan's economic relationship has dwindled over the years with the rise of China and other Southeast Asian nations. Also reducing the relative significance of the relationship has been a plethora of free trade agreements that the two nations have struck with other countries. This paper argues that two events, the U.S. shale gas boom and the Fukushima Daiichi nuclear power plant disaster, set up a capability and a need between the U.S. and Japan that can expose a beneficial economic opportunity for both nations.

For the U.S., the capability is exporting liquefied natural gas (LNG). Following the shale gas boom, today, the U.S. is the world's leader in shale gas production. Depending on future conditions, exporting will increase annual U.S. revenue by about \$2.6 billion to almost \$32.9 billion, with the high end of the range occurring in unconstrained LNG exporting scenarios, based on the government-commissioned NERA Economic Consulting macroeconomic study. The conclusion of the study is that exporting LNG has overall net benefits for the U.S. economy.

For Japan, the need matches the capability of the U.S. On March 11th, 2011, a 9.0 magnitude earthquake resulted in a nuclear crisis because of damage to several reactors at the Fukushima Daiichi nuclear power plant, spreading hazardous radiation levels into the nearby environment. This led to a public backlash and a public policy of avoiding reliance on nuclear energy, leaving Japan with large energy needs. The most viable replacement for nuclear energy is LNG.

With Japan's energy needs and with government studies lending support to the benefits of exporting domestic LNG, the U.S. has a unique opportunity to utilize its vast shale gas supplies not only to export to Japan, the largest importer of natural gas, but also to use this as leverage in forming a free trade agreement (FTA) with Japan. An FTA with Japan that includes national treatment of natural gas would better facilitate trade of U.S. exports to Japan, as exporting to non-FTA nations is subject to stricter U.S. government regulations. With current LNG pricing arbitrage opportunities between Asia and the U.S. and with one third of Japan's LNG contracts expiring in the next three to four years, the timing is opportune for a JUSFTA. If the U.S. acts quickly in negotiating a JUSFTA, it will enable U.S. exporters to capitalize on premium-ensured contracts that generally span twenty years or longer. Furthermore, the recently implemented South Korea – United States Free Trade Agreement (KORUS FTA) can serve both as an impetus and in many ways as a template for a JUSFTA.

For South Korea, the International Monetary Fund (IMF) bailout and the need to reform its economy was the impetus for negotiating an FTA with the U.S. Japan has a much different, albeit still noteworthy, circumstance that could propel it to undergo serious negotiations for a Japan-United States free trade agreement (JUSFTA) – its energy needs. According to one analysis, a full JUSFTA, assuming a conservative 10% liberalization of services, would roughly double trade between the two nations (according to a gravity model analysis) and would increase Japan's net welfare by 2.7% of GDP (about \$130 billion at 2007 levels) and the U.S.'s welfare by 1.1% of GDP (about \$150 billion annually). Thus, not only would a need best be matched to a capability via a JUSFTA, but also the resulting JUSFTA would have additional and significant

macroeconomic benefits for both nations – these two effects will help to strengthen the relatively weakened Japan-U.S. alliance.

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Introduction

Historically, the Japan-U.S. alliance has been vital in the post-World War II era, benefitting both countries economically and allowing the U.S. to have a significant security role and military presence in East Asia. Economically, among non-North American countries, Japan is the U.S.' second-largest export and second-largest import market.

Currently, Japan and the U.S. conduct trade using the United States-Japan Economic Harmonization Initiative that was agreed upon by President Obama and Prime Minister Naoto Kan in November 2010, which lays out that the two sides meet on many occasions (Cooper, U.S.-Japan Economic Relations). Although still very important trade partners, the relative significance of the U.S.' and Japan's economic relationship has dwindled over the years with the rise of China and other Southeast Asian countries as growing economies. In 1994, 38.6% of Japanese exports went to the nine largest economies in Southeast Asia – this figure grew to 52.8% in 2011. Although running a trade deficit with Japan, the U.S.' focus has shifted much more to China, with whom in 2010 the U.S. had a trade deficit of \$295.5 billion (Cooper, U.S.-Japan Economic Relations).

Also reducing the relative significance of the relationship has been a plethora of free trade agreements that the two nations have struck with other countries – for the U.S., this includes NAFTA (North American Free Trade Agreement), Jordan, Chile, Singapore, Australia, Morocco, Bahrain, the Dominican Republic and Central America, Oman, Peru, Panama, Colombia, and South Korea; for Japan, this includes Singapore, Mexico, Thailand, Indonesia, the Philippines, India, Chile, Brunei, Malaysia, and ASEAN (Association of Southeast Asian Nations).

This weakening of the Japan-U.S. alliance has manifested itself in many other ways. For example, the number of Japanese scientists doing research in the U.S. is half of what it was ten years ago; and the number of Japanese students at American universities is half of what it was ten years ago. These students are not avoiding English – in fact, the number of Japanese students going to other English-speaking countries has been increasing (Curtis). Although international universities have been improving, which is one factor for the departure of Japanese scientists and students from the U.S., the dramatic reduction in only ten years is nonetheless telling.

One popular proposal for strengthening the Japan-U.S. alliance is having Japan join the Trans-Pacific Partnership (TPP), a proposed free trade agreement currently being negotiated among eleven countries – Australia, Brunei, Canada, Chile, Malaysia, Mexico, New Zealand, Peru, Singapore, the U.S. and Vietnam. In late 2011, Japan announced that it was seeking counsel and exploring the possibility of joining the negotiations. Japan has completed discussions with six of the aforementioned countries, all of which support Japan's participation in the partnership. The Obama administration has said that Japan needs to address three main issues before it will lend its endorsement: Japanese restrictions on U.S. beef imports, regulations and policies that favor state-run insurance companies like Japan Post, and market access for the U.S. automobile manufacturers. If Japan were to address these three areas and join the TPP, it would be considered a de facto JUSFTA (Cooper, Japan's Possible Entry). With so many countries bringing their own demands to the table and Japan's weak political system, it is still questionable if leaders would be able to make this a reality for the Japanese. For the purposes of this paper, the assumption is made that Japan will fail to join the TPP; with this assumption, this paper argues for another way to strengthen the Japan-U.S. economic alliance.

This paper argues that two events, the U.S. shale gas boom and the Fukushima Dai-ichi nuclear power plant disaster, set up a capability and a need between the U.S. and Japan that can expose a beneficial economic opportunity for both nations. Specifically, this paper asserts that these events create an impetus for a free trade agreement between Japan and the U.S., and that the recently implemented South Korea – United States Free Trade Agreement (KORUS FTA) can serve as a template for such a deal. Other than easing LNG trade, another basis for a JUSFTA are the macroeconomic benefits that Japan and the U.S. will realize both from the increased LNG trade and from the increased trade and investment that free trade produces. An additional benefit of a JUSFTA would be to strengthen the Japan-U.S. alliance to secure national security objectives and for the U.S. to solidify its leadership in shaping the direction of the Far East, especially with a rising China and the nuclear threat of North Korea; however, that is beyond the scope of this paper.

U.S. Liquefied Natural Gas (LNG)

In the early 2000s, the decision whether to import a large amount of natural gas from foreign nations was a major public policy issue. Natural gas is transported between nations by two primary means – pipeline and liquefied natural gas (LNG) trade. If transportation is overseas, LNG must be used. LNG is natural gas that has been cooled to an extreme condensed liquid state for ease of storage and transport, until it is received and transformed back into an expanded, gaseous state. Major investments and facilities are required for the importing, exporting, liquefaction, and regasification of LNG. According to Luther, Parfomak, and Ratner, in its 1999 Annual Energy Outlook the U.S. Energy Information Administration (EIA) forecast a

growth in net natural gas imports between 1997 and 2020 from 12.9% to 15.5% of domestic consumption. In the latter half of the 2000s, with domestic natural gas supplies limited, five new LNG import facilities were built, and previously built ones were expanded.

However, in 2008, a technique to unearth new sources of natural gas called hydraulic fracturing, or “fracking”, which entails drilling deep into rock shale formations and blasting a mix of water and chemicals, unearthed an unforeseen supply of domestic natural gas. There has been concerns voiced by some about the environmental impacts of fracking by several groups, including the Sierra Club; thus far, the technique’s existence has come under no serious regulatory threat and this paper assumes that fracking will not be outlawed in the foreseeable future. With the shale gas boom, the domestic natural gas market soon became oversupplied and prices plummeted from the \$12/MMBtu (thousand cubic feet) range to the \$2/MMBtu range in less than half a decade. With European and Asian natural gas trading between \$11/MMBtu - \$15/MMBtu as of March 2012 (Levi, “A Strategy for U.S. Natural Gas Exports”), exporting, not importing, presented an arbitrage opportunity.

The following sections will discuss the capability that the United States now has that can lead to a free trade agreement with Japan. First, we will discuss the background and history of the shale gas boom in the U.S. and why the U.S. is in a unique position to capitalize on the U.S. shale gas boom. This section also explains the process the U.S. undergoes before it can export to FTA partner nations and non-FTA partner nations. Secondly, this section argues that the U.S. should export LNG for several reasons. Specifically, this paper looks at previous sources and studies that provided evidence of the benefits of exporting natural gas, including a study done by the EIA on exports’ effects on domestic prices, and then this paper explores the macroeconomic

benefits presented in a recently released government-commissioned study from NERA Economic Consulting.

Background of U.S. Shale Gas Boom

Fracking, as we know it today, originated in 1947, when Standard Oil of Indiana (later Amoco, now part of BP) used high-pressure liquids to break up limestone formation underground in southwestern Kansas (Truth Squad). In the 1970s, a partnership developed between private companies, the Department of Energy (DOE), and the Gas Research Institute (GRI) (Institute for Energy Research). The 1973 OPEC embargo of the U.S. and the oil shock following the 1979 Iranian revolution encouraged the government to invest in oil and gas production research (spending \$1.5 billion between 1978 and 2000) (Truth Squad).

In the 1980s and 1990s, Mitchell Energy and Development Corporation made shale gas production commercially viable in North-Central Texas after conducting experiments in Barnett Shale. By 2005, Barnett Shale was producing almost half a trillion cubic feet of natural gas per year. Other shale gas fields – Fayetteville Shale in North Arkansas, Haynesville in Southwestern Arkansas, Northwest Louisiana and West Texas, Marcellus in Pennsylvania and surrounding states, Woodford in Oklahoma, and Eagle Ford in Texas were developed. Such expansion was possible because small, independent companies were willing to take large risks, there was a large existing pipeline network in the U.S., there was availability of drilling rigs, and finally there was available geologic information from state regulators (Institute for Energy Research).

Today, the U.S. is the world's leader in shale gas production, with the world's second largest resource of shale gas (862 trillion cubic feet, 13% of the world's 6,622 trillion cubic feet,

according to a study by the EIA). Outside of the U.S., development of fracking and other shale gas technologies is slow because of a lack of knowledge regarding geology of shale formations, lack of infrastructure to drill and transport the fuel, and government ownership of the mineral rights. The shale boom in the U.S. happened due to a unique combination of private ownership of mineral rights, interest of small oil and gas developers, and availability of geologic data (Institute for Energy Research).

Fracking is neither a sufficient nor a necessary condition for natural gas production, but it is a relatively new, dynamic means by which the U.S. has become one of the lowest cost providers of natural gas in the world. Whether this U.S. competitive advantage can persist depends much upon the success of competing foreign nations to utilize the technology successfully. Among major countries with significant shale gas resources, possible contenders for increased fracking development include China, Argentina, and Poland. China has problems fully utilizing fracking technologies because its formations are located in arid or heavily populated areas. Fracking uses water with chemicals to break shale rock, and thus the lack of water is a problem. Argentina nationalized the assets of its major oil and gas producer, reducing interest from outside investors. Poland experimented with drilling but found low amounts of gas produced from the first few wells drilled, and further efforts have stagnated (Institute for Energy Research). Because of these foreign countries' limitations, the U.S. may very well have a competitive advantage in its access to shale gas supplies, especially if the aforementioned issues persist. This paper assumes that there is no major shift away from government ownership of mineral rights for these foreign competitors.

Exporting to FTA and Non-FTA Nations

Projects to export LNG, by Section 3 of the Natural Gas Act, must be approved by both the DOE (for the right to export) and the Federal Energy Regulatory Commission (FERC) (for the right to build the necessary facility). Most US FTAs include a clause for “national treatment” of LNG exports, meaning, by Section 3 of the US Natural Gas Act, exports from the US to FTA countries must be granted immediate approval by the US DOE. For Japan and other non-FTA countries, the DOE has to consider each application individually and determine if the exporting would be in the US public interest – this is followed by a wait period for public comments and replies. (Yoshii, et al.) Thus, it is more difficult for exporting firms to engage in trade with a non-FTA country, and conversely, having an FTA with a country makes exporting LNG there more simple and feasible. This is the first basis for the recommendation to engage Japan in an FTA – so that the number one importer of LNG in the world can easily trade with U.S. firms.

Although the U.S. exports by pipeline, liquefying and exporting natural gas overseas has only occurred at the ConocoPhillips-owned Kenai plant in Alaska, where small volumes were exported to Japan from 1969 to December 2011. Cheniere Energy’s \$10 billion LNG export facility at Sabine Pass, LA, has been the only continental export facility to receive authorization from both the DOE and FERC to export to non-FTA nations thus far (Luther, Parfomak, and Ratner). There were roadblocks because of environmental and economic concerns. Studies on the environmental impacts of fracking have been mostly inconclusive, whereas the majority of recent economic studies have lent credence to the prospect of exporting LNG. Notably, one government (EIA) study and another third party government-commissioned (NERA Economic Consulting) study, the former on exporting’s effect on domestic natural gas prices and the latter

on its macroeconomic effects, have overall shown support for the export of LNG, and thus more approvals are expected in the near future.

The facilities that have applied with the DOE for authorization to export LNG are Sabine Pass Liquefaction, Freeport LNG Expansion, Lake Charles Exports, Carib Energy, Dominion Cove Point LNG, Jordan Cove Energy Project, Cameron LNG, Freeport LNG Expansion, Gulf Coast LNG Export, Gulf LNG Liquefaction Company, LNG Development Company, SB Power Solutions, Southern LNG Company, Excelerate Liquefaction Solutions, Golden Pass Products, Cheniere Marketing, Main Pass Energy Hub, CE FLNG, and Waller LNG Services, which have all been approved to ship LNG to FTA countries, with Pangea LNG Holdings, Magnolia LNG, Trunkline LNG Export, and Gasfin Development USA pending approval. Outside of Sabine Pass Liquefaction, all of the rest are pending a DOE Review (Manger) to export to non-FTA nations or did not apply for the rights to ship to non-FTA countries. The total amount of non-FTA applications received in terms of volume is 24.80 Bcf/d (billion cubic feet per day) (as of January 11, 2013); FTA applications received total 31.41 Bcf/d (U.S. Department of Energy). Clearly, there is much interest from U.S. companies to export LNG, especially out of the Gulf Coast region. In the next section, this paper analyzes the reasons the U.S. government should swiftly begin approving these export applications.

Reasons the U.S. should export LNG

The following sections show first how previous studies – notably an EIA government study, a Deloitte study, and a The Hamilton Project study by Michael Levi - and the recently released NERA Economic Consulting macroeconomic study of exporting LNG demonstrate the

potential benefits of allowing LNG exportation. In a later section, this paper will explore the desire of the Japanese government to procure U.S. supplies of LNG, leading to the proposal of approaching Japan to negotiate an FTA with national treatment for LNG trade as an impetus for Japan to negotiate.

There are several reasons, even without considering the recent NERA macroeconomic study, that permitting U.S. LNG exports is advisable. First, the U.S. exportation of LNG will only cause a slight increase in domestic natural gas prices. Using its integrated North American Power, Coal, and World Gas Model, Deloitte MarketPoint found that domestic natural gas prices on a weighted-average basis would increase by only \$.12/MMBtu from 2016 to 2035, assuming a reasonable exportation of six Bcf/d of LNG, approximately two Bcf/d from three different export facilities – Sabine Pass, and the facilities pending authorization at Freeport and Lake Charles. This increase represents a change of 1.7% over the projected average natural gas price of \$7.09/MMBtu (one million British thermal units) from 2016 to 2035 (Adams, Dunn, Choi, and Ihne). The price impact of exports is marginal since future exports will be estimated in advance, and all parties will respond accordingly, mitigating the price impact.

Additionally, LNG export projects are likely to be backed by long-term contracts. According to Das, Japan places much emphasis on mutual trust when engaging in long-term contracts. Given the relatively strong post-WWII alliance between Japan and the U.S., this bodes well for U.S. LNG exporters attempting to reach significant deals with Japan, especially in comparison to some other potential partners with whom Japan has territorial disputes, such as Russia. Long-term deals for the U.S. will find precedent with the long term contract agreed upon from Cheniere's Sabine Pass. Cheniere's contracts price the exported natural gas at 115 percent of the benchmark Henry Hub spot price plus a fixed liquefaction fee of \$2.25-\$3/MMBtu (Levi,

“A Strategy for U.S. Natural Gas Exports”). This keeps Cheniere’s exposure to changes in domestic or overseas gas prices at a minimum, ensuring profits in the future. In his report for the Baker III Institute for Public Policy, Medlock also recognized that due to the elastic supply (especially after the shale boom) of U.S. natural gas, domestic prices would be minimally affected by exports. Since electricity and gas bills account for only 4% of U.S. consumer spending (Philips), the modest price increase should not deter from exporting LNG.

There is likely an abundant amount of shale natural gas available in the United States, which will help keep domestic prices low even with exports. Since the shale gas boom created an oversupply of natural gas, producers have been trying to cease drilling. Only 484 natural gas rigs are currently open, half the amount of rigs open at the same time one year earlier (Philips). Likely, exports would allow producers to fully utilize supplies that would otherwise have to stay in the ground. Since shale gas is a new development, one can speculate there is potentially much that has yet to be discovered – much like the ever increasing discovered world oil reserves. The EIA estimates that shale gas will make up 47% of total U.S. production in 2035, much more than the 23% share it made up in 2011. Also, major energy companies have invested significant amounts of capital in shale gas exploration. For example, ExxonMobil purchased the shale gas development company XTO for \$34.9 billion. Purchases like these lower the marginal cost of future production, and hinting at increased future shale production. The incremental 2.2 Tcf (trillion cubic feet) of annual LNG exports are trivial in comparison to the EIA’s latest estimate of technically recoverable U.S. gas, 2,587 Tcf (Conti).

Exporting means increased production means increased U.S. revenue. According to Michael Levi, senior fellow for the Council on Foreign Relations, the six Bcf/d level of exports estimated in many studies could net domestic producers, exporters, and suppliers more than \$10

billion per year. Levi estimates that for a full six Bcf/d of exports, the U.S. economy would gain roughly \$3.1 billion to \$3.7 billion each year: annually gaining about \$1 billion from selling gas at a higher price overseas rather than domestically, about \$2.5 billion from the new gas production, about \$420 million because of utilizing current import infrastructure rather than building export facilities from scratch, and losing about \$400 million due to lower domestic consumption (“A Strategy for U.S. Natural Gas Exports”). The EIA, in its report, estimate that between 2015 and 2035 producers would net between \$14 billion and \$32 billion from exports, depending on the scenario. The EIA also notes that since natural gas exports would lead to more coal production, domestic coal producers would also benefit from exporting LNG, with coal revenues increasing by at most 6.2% from 2015 to 2035 (Conti).

Exporting LNG could give the U.S. leverage in trade negotiations. The U.S. joined Japan and Europe at the World Trade Organization (WTO) in lodging complaints against China for restricting exports of its rare earth metals, which are vital to various segments of the U.S. clean energy industry (Levi, “A Strategy for U.S. Natural Gas Exports”). If the U.S. were to limit exports of LNG, it would seem hypocritical in challenging China. Furthermore, the largest importer of natural gas is Japan, a non-FTA nation. After the March 2011 tsunami disaster at Fukushima, Japan’s need for natural gas and non-nuclear forms of energy has skyrocketed. If the U.S. were to help Japan in its time of tragedy, the U.S. would have leverage to gain concessions from Japan. Under U.S. regulations, it is a much simpler process to gain approval to export LNG to FTA nations, a major reason to consider forming an FTA with Japan. Nonetheless, as currently stands, U.S. non-FTA countries comprise 91% of global GDP (Philips) – it could help international business and relations if the U.S. traded with these nations, whether they become

FTA partners or more non-FTA export licenses, despite the more rigorous application and approval process, are approved.

Exports could help lower the current account deficit. The U.S. has a current account deficit with Japan in particular, and exporting to the number one importer of natural gas would help in this case. Six Bcf/d of exports would net export revenue of about \$20 billion, about five percent of the 2010 and 2011 current account deficit (Levi, “A Strategy for U.S. Natural Gas Exports”). The actual impact would be smaller, as exports of products that used natural gas as an input would decrease, and U.S. consumption (and thus imports) would increase. Nevertheless, there would be a net reduction in the current account deficit.

LNG exports could also lower global greenhouse gas emissions. By exporting natural gas, we lower the price of natural gas for foreign nations, thus encouraging them to switch from less clean forms of energy such as coal. For example, currently China fulfills only 4% of its energy needs with natural gas, as opposed to the average of 16% (Sotolongo). Levi estimates that with six Bcf/d of natural gas exports, the avoided climate damages, setting damages for emissions at \$21 per ton of carbon dioxide, would be \$2 billion annually.

LNG exports would create more jobs than jobs it would cause to be lost. According to Levi, exporting natural gas would create a large amount of temporary jobs. Cheniere’s facility alone will take roughly two years to build and support 3,000 jobs at its peak. Thus, for six Bcf/d of exports, as many as 8,000 temporary jobs would be created. Levi also estimates that for six Bcf/d of gas exports, approximately 25,000 jobs in the natural gas industry would emerge, along with 40,000 jobs along the supply chain. Higher natural gas prices due to exports would, however, cause an estimated loss of about 6,000 manufacturing jobs. These are only rough

estimates, but the takeaway is that job gains due to exporting natural gas are likely to exceed job losses (“A Strategy for U.S. Natural Gas Exports”).

Beyond economics, by exporting gas overseas, the U.S. is competing with foreign competitors, like Russia and the Middle East. Although beyond the scope of this paper, strategically and politically the U.S. would benefit from stealing a share of global influence from these competitors. Although some argue that by exporting LNG we are helping oil exporters, some of whom tend to be hostile to us, these same oil exporters, like Iran and Russia, often are exporters of natural gas, and thus we would be lessening their revenue from natural gas (Levi, “A Strategy for Natural Gas Exports”).

David Ricardo’s law of comparative advantage is widely assumed among economists; this theory states that the ability to freely trade delivers net economic benefits to all parties involved, and that governments barring trade create negative economic consequences. When trade becomes unprofitable, companies will withdraw the number of exports – no government restrictions are necessary. This is a theoretical reason for having no constraint on LNG exports. If companies can lock in long-term, market-based contracts like Cheniere Energy has done, U.S. profits will be guaranteed for decades, with only counterparty risk (which can be insured against). FERC, before approving facilities to be built, can check how the companies plan to sell the LNG. If they have sound, profitable plans, especially if they have agreed-upon contracts that are tied to spot markets and guarantee a premium, they should be approved.

This section addressed some of the commonly held reasons of supporting the export of U.S. LNG before the NERA Economic Consulting study of December, 2012. The previous discussion provides solid evidence that by treating LNG no differently than other market products (in other words, by not restricting the export of LNG), many benefits could be realized.

If the approval process to export LNG to non-FTA nations remains as vigorous as it is today, the above further provides reasons that reaching an FTA with energy-needy Japan, the number one importer of LNG, would help the process of U.S. exporters agreeing to long-term LNG contracts with Japanese importers, and thus help the U.S. economy to lock up profits. Although convinced from the EIA study that there would be no domestic price increases due to the exportation of LNG, the U.S. government wanted solid evidence, beyond the then-available studies and reports. Thus, the EIA commissioned NERA Economic Consulting to conduct an analysis on the specific macroeconomic effect of the U.S. exporting LNG. This study's results are explained in the following section.

Results of NERA Economic Consulting study

The long-awaited second and final government-commissioned study on the macroeconomic impacts of LNG exports from the United States, titled *Macroeconomic Impacts of LNG Exports from the United States*, was submitted to the public on December 3, 2012. W. David Montgomery led the project. The study was contracted for by the Office of Fossil Energy of the U.S. DOE (DOE/FE), and was conducted by NERA Economic Consulting, a third party consulting firm. The first study, done by the EIA, had assessed the effects different levels and rates of LNG exports would have on domestic natural gas prices. The EIA study, however, did not assess any of the macroeconomic effects, nor did it determine if exports could be sold in the global market at prices high enough to support the domestic prices. NERA used the domestic price results established in the first EIA study as inputs for its own study. After NERA's study became public, a period for public initial comments was allowed. Over 30,000 initial comments

were issued, some from prominent politicians, others from everyday citizens. There were both criticisms and praises made of the work NERA conducted and the models NERA utilized. Reply comments to these initial comments were accepted until February 25, 2013. The NERA study, initial comments, reply comments, and other related documents can all be viewed on the U.S. DOE Office of Fossil Energy's website.

The NERA study set out to determine the price levels at which U.S. LNG could be sold in the world market, given different scenarios of global and domestic conditions. Each situation has a price point at which the next unit of natural gas would be more economically supplied by a region other than the U.S. A worldwide natural gas supply and demand model was used to help determine under what situations said pricing point is met. In addition, the NERA study set out to determine the economic impact on the U.S. of choosing to allow LNG exports. Revenue streams include additional profit to producers for selling higher volumes of natural gas, an improvement in the U.S. balance of trade, any foreign direct investment (FDI) for the construction of LNG liquefaction facilities, additional wealth for U.S. households, and increased investment values for those who hold stock in natural gas producers. The costs include the increased price of domestic natural gas and electricity for consumers, increased energy costs for production in certain domestic industries, and the costs that said industries pass on to their customers.

NERA uses the partial-equilibrium model called Global Natural Gas Model (GNGM) to estimate the amount of natural gas production, consumption, and trade by each of twelve regions. NERA then used its own proprietary macroeconomic "NewERA" model to forecast the impact of policy, regulatory, and economic factors on the energy sectors and the economy. The model inputs all of the producing regions and their LNG export plants, and final demand of the economy both for natural gas and for its substitutes (crude, refined petroleum, etc.). The model

accounts for all real-life impactful activity that can be estimated, like pipeline imports into the U.S. from Canada. The “NewERA” model then outputs the demand and supply of all goods and services, prices for all the commodities, and the resulting trade effects (imports and exports). The model also computes gross regional product, consumption, investment, disposable income, and changes in income from labor, capital, and resources.

Many scenarios were run through the model for simulation; there were different U.S. supply and demand conditions assumed, different caps on exports and rate of export introduction simulated, and different assumptions of global supply and demand. In total, there were 63 distinct scenarios that were simulated.

First, there were three different world outlooks simulated: International Reference, Demand Shock, and Supply/Demand Shock. As seen below (courtesy of the NERA report), the International Reference is a realistic case of plausible conditions. The Demand Shock Case is different only in that it assumes Japan retires all of its nuclear plants due to the March 11 tragedy. Supply/Demand Shock takes this a step further, assuming South Korea follows suit in eliminating nuclear power and that planned future facilities in Oceania, Southeast Asia, and Africa do not build liquefaction plants that are currently in planning. For the sake of this paper, we will assume the Demand Shock case, as recent developments support the theory that Japan may retire its nuclear energy program. However, unlike the past prime minister, Japan’s current Prime Minister, Shinzo Abe, has expressed an interest in maintaining some role for nuclear power in Japan’s energy future. The end of this section will address the hypothetical scenario in which nuclear power returns to prominence in Japan.

Figure 11: International Scenarios

Case Name	Japan Nuclear Plants Retired	Korean Nuclear Plants Retired	Planned Liquefaction Capacity in Other Regions Is Built
International Reference	No	No	Yes
Demand Shock	Yes	No	Yes
Supply/Demand Shock	Yes	Yes	No

The full range of U.S. scenarios that were inputted into the model is based on U.S. supply and LNG export quotas. For U.S. Supply, the Reference case is the EIA's estimate; High EUR (Estimated Ultimate Recovery) is the case where domestic natural gas supplies in new, undrilled wells are 50% than reference estimates; and Low EUR is the case where natural gas supplies per shale gas well for new, undrilled wells is assumed 50% lower than the reference estimate.

For LNG export quotas, there are seven different combinations:

- Low/Slow: 6 Bcf/d, reached at a rate of 1 Bcf/d per year
- Low/Rapid: 6 Bcf/d, reached at a rate of 3 Bcf/d per year
- High/Slow: 12 Bcf/d, reached at a rate of 1 Bcf/d per year
- High/Rapid: 12 Bcf/d, reached at a rate of 3 Bcf/d per year
- Low/Slowest: 6 Bcf/d, reached at a rate of 0.5 Bcf/d per year
- Unlimited: No limits set on U.S. LNG exports
- No-Export Capacity: All exports banned

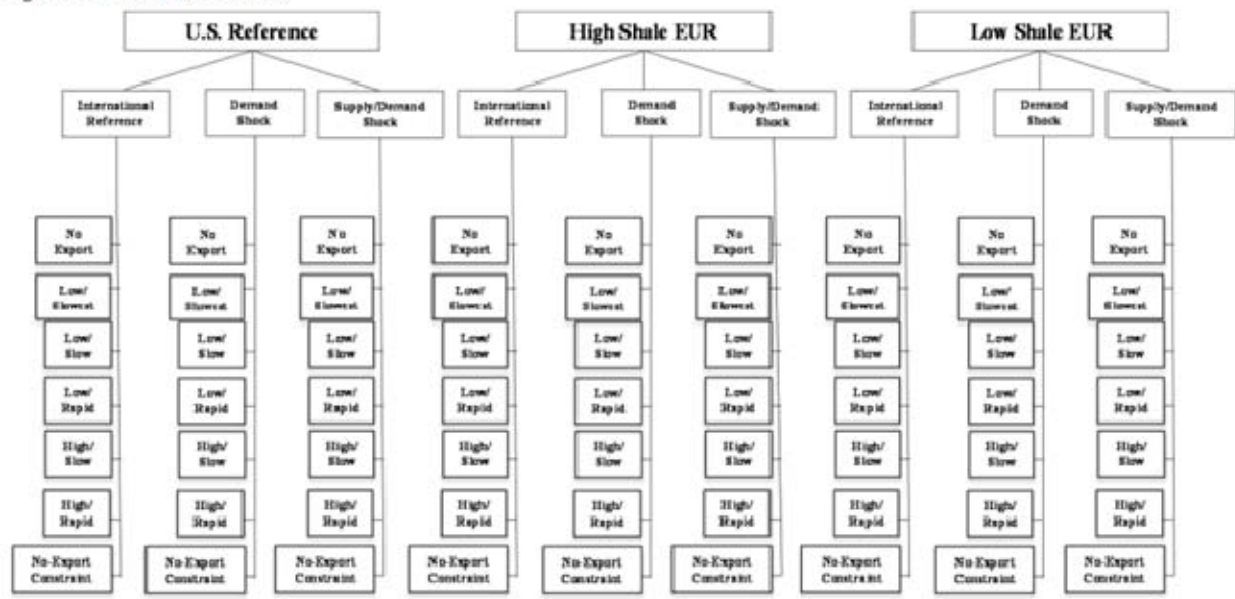
Figure 12: Matrix of U.S. Scenarios

U.S. Supply	LNG Export Capacity	U.S. Supply	LNG Export Capacity	U.S. Supply	LNG Export Capacity
Reference	Low/Slow	High EUR	Low/Slow	Low EUR	Low/Slow
Reference	Low/Rapid	High EUR	Low/Rapid	Low EUR	Low/Rapid
Reference	High/Slow	High EUR	High/Slow	Low EUR	High/Slow
Reference	High/Rapid	High EUR	High/Rapid	Low EUR	High/Rapid
Reference	Low/Slowest	High EUR	Low/Slowest	Low EUR	Low/Slowest
Reference	Unlimited	High EUR	Unlimited	Low EUR	Unlimited

In addition, we created a “No-Export Capacity” scenario for each of the three U.S. supply cases.

As you can see, the three U.S. supply cases and the seven LNG Export Capacity scenarios (including the No-Export Capacity cases) created a matrix of 21 combinations. This, combined with the three International Scenarios, created a total mix of 63 different scenarios that were analyzed:

Figure 13: Tree of All 63 Scenarios



For the sake of brevity, the big picture results are summed up as follows (if you would like to learn more about the procedures, details, or intermediate details, the study is available online for the public):

- The U.S. can profitably export if the global demand exceeds the Reference case or if the U.S. costs of production are lower than the Reference case. Since this paper assumes the Demand Shock case, the U.S. will be able to profitably export LNG.
- Macroeconomic Impacts of LNG Exports are positive in all cases. Some of the cases with no constraints also led to more than 12 Bcf/d as the ideal amount for U.S. exports. In any case, for every scenario there was no greater benefit attained than the No-Constraint case. Across all scenarios, U.S. real GDP remained the same or increased as the volume of LNG exports increased.
- Sources of income shift, but for the average U.S. consumer the benefit from export expansion trumps the losses from any wage losses in manufacturing sectors
- Any negative employment effects that allowing LNG exports causes would be in a very narrow segment: One-half of one percent of U.S. employees works in manufacturing jobs that have energy expenditures more than 5% of their output – these would be the only industries threatened by foreign competition because of LNG exporting

Depending on the scenario, exporting will increase annual revenue by about \$2.6 billion to almost \$32.9 billion, with the high end of the range occurring with the unconstrained scenarios. Under the U.S. Reference cases, GDP increases range from \$5 billion to \$20 billion; for High Shale, 2020 GDP could increase by \$10 billion to \$47 billion; and for Low Shale, 2020

GDP could increase by \$4.4 billion. The conclusion of the study is that exporting LNG has overall net benefits for the economy.

This paper assumes that nuclear power, due to the disaster of March 11, 2011 and mass public sentiment opposing its reinstatement, will not return to prominence in Japan. The previous prime minister was in support of banning nuclear power; the current prime minister is in support of some role for nuclear power. Given the short terms of prime ministers in modern day Japan (there have been eight prime ministers since 2000, with one, Junichiro Koizumi (2001-2006), breaking the mold by serving more than two years), the sentiment of the current prime minister likely will not determine Japan's nuclear future. The public uproar, as demonstrated by opinion polls and protests, against nuclear power is a more telling sign. However, the current prime minister's stance cannot be ignored and the possibility of nuclear power regaining a significant place in Japan's energy future must be considered.

There are two reasons this paper still recommends the U.S. government placing no constraints on LNG exports even with uncertainty regarding Japan's nuclear future. First, across any scenario in the NERA Economic Consulting study, the U.S. economy will not be negatively affected by allowing LNG exports. In fact, the study found that all export scenarios are welfare-improving for U.S. consumers, and although causing the highest rises in domestic prices, the largest welfare improvements result from the high export scenarios across the differing U.S. and International conditions (the export revenues and the return on investment from liquefaction plants exceed the cost of increased domestic natural gas prices). Furthermore, in each scenario having no caps on the U.S. LNG export quantity is either tied for or is the best case scenario for real U.S. GDP – meaning that given the uncertainty of future conditions in Japan and in shale gas resources, the safest bet when considering U.S. real GDP is to not constrain export quantity.

Secondly, regardless of the future uncertain scenarios, the Cheniere Energy's LNG export contracts, the first U.S. Gulf Coast LNG export contracts finalized, set a precedent for future long-term contract. Cheniere's contracts are tied to U.S. prices, plus a sufficient premium that guarantees a premium for producers. Since Japan likely is interested in long-term contracts, and the bulk quantity of export contracts is generally long-term, if the U.S. acts quickly to export LNG, U.S. exporters could finalize contracts guaranteeing premiums and thus guaranteeing macroeconomic benefits for the U.S. (for twenty years or more). Japan, as the number one importer of LNG and an industrialized nation with an undecided energy future, would be eager to negotiate LNG contracts with its ally, the U.S., since Japan values mutual trust and reliability of supply when agreeing to long-term contracts. Having detailed the energy exporting capabilities of the U.S. and the resulting macroeconomic gains resulting from these capabilities, the energy needs of Japan are discussed in the next section.

Japan's Energy Needs

This section follows the previous section by establishing that the U.S.' capability of exporting LNG could directly benefit Japan because of Japan's energy needs. Discussed are a history of the March 11th Japanese tsunami and Fukushima Daiichi nuclear disaster, and the resultant energy needs that Japan is faced with.

March 11, 2011

On March 11th, 2011, a 9.0 magnitude earthquake struck the coast near Japan's Tohoku region (Garvizu). The resulting tsunami claimed 20,000 lives, over half a million buildings, and a half million Japanese were displaced. To make matters worse, a nuclear crisis occurred because of damage to several reactors at the Fukushima Daiichi nuclear power plant, spreading hazardous radiation levels into the nearby environment. The Japanese government called for a nuclear emergency, evacuating 80,000 residents within a 20 kilometer radius of the plant. The earthquake caused physical damage, not including the Fukushima Daiichi disaster, estimated to be between \$195-305 billion (Chanlett-Avery, Cooper, and Manyin).

In the 1990s there were many nuclear accidents, including a 1999 incident in Tokaimura that killed two workers, which fueled public disapproval of nuclear energy. The amount of people who felt "very uneasy" because of nuclear energy increased from 21% to 52% from before to after this incident. The Fukushima crisis has generated an even greater antipathy towards nuclear energy. An Asahi Shimbun poll in June 2011 indicated that 74% wanted to gradually phase-out all dependence on nuclear energy. (Adams) Concerns have especially arisen over the government's dependence on Tokyo Electric Power Company (TEPCO), owner of the Fukushima Daiichi nuclear power plant, due to the close relations between regulators and utilities (Chanlett-Avery, Cooper, and Manyin). For decades, the ten Japanese vertically integrated utilities claimed monopoly control of the generation and distribution of electrical power. All of Japan's 54 nuclear reactors were shut down; when one was reopened in June of 2012, the largest public protest rallies in Tokyo since the 1960s ensued (Cantwell, et al.).

Before March 11, 2011, Japan's 54 nuclear power plants supplied 30 percent of the nation's electricity (Garvizu), and the government planned to build 20 more reactors by 2030 (Chanlett-Avery, Cooper, and Manyin). Japan had planned on expanding its dependence on nuclear energy from one-third to one-half of electricity generation by 2030 (Adams). After the accident, in July 2011, then-Prime Minister Naoto Kan announced that Japan intended to rid itself off of all reliance on nuclear energy to meet its energy needs (Garvizu). In 2012, only one of the 54 Japanese nuclear reactors was operating (Adams).

Japan and LNG

Worsening the energy situation for Japan, household and transport energy costs are rising – increasingly more Japanese own automobiles and demand for air conditioning has risen. Although many want to replace the nuclear energy with renewables, cost remains a significant obstacle (Adams).

The most viable replacement for nuclear energy is LNG. LNG is popular among fossil fuels because it has relatively low carbon emissions. The Economist Intelligence Unit, which conservatively believes that nuclear energy will continue to play a significant role in Japan's energy future, still predicted that natural gas demand in Japan will double between 2011 and 2020, as a proportion of the energy mix rising from 19% to 26% in that time span (Adams). From March 2011 to October 2012, the value of Japan's imports of LNG increased by 37.5%. (Garvizu)

Even after including nuclear power, Japan's domestic energy resources are very limited, amounting to about 16% of its own energy needs. In the 1970s and 1980s, Japan would have preferred to rely on natural gas imports from neighboring countries, but the most logical provider, the Soviet Union, was, by alliance, its opponent in the Cold War that time. Among its natural gas use in 2009, 91% came from LNG. Today, Japan is the world's number one importer of LNG, importing 3.18 Tcf in 2009; this number is expected to rise to 4 Tcf by 2035. In 2015, it is projected that Japan's LNG import share will be 35% of the Pacific and 16% of the world market. (Das) In fact, due to the disasters at the Fukushima 1 nuclear power plant, it is a strong possibility that Japan will look to weave itself off nuclear power, and those estimates of LNG use could increase.

In 2009, Japan imported roughly 70% of its LNG from Indonesia, Malaysia, Australia, and Qatar (descending, in that order) (Das). Japan stresses its desire to diversify its sources of imports for pricing and stability reasons; reliability of its suppliers is key. Qatar, Australia, Malaysia, and Russia are the main current suppliers that are possible choices to supply increased amounts of future LNG to Japan. Russia's supply will most likely increase, but by how much is unknown due to the question of the reliability of Russian supply. In times of dispute in the past, Russia has threatened to cut its supply of LNG, and there is a risk of price gouging by the state-controlled gas company, Gazprom (Belogolova). In addition, it is likely that Russia will not want to ship its entire supply to East Asia, but rather will want to balance its gas exports between East Asia and Europe. Australia and Malaysia already supply 20% each, and it is unlikely Japan, given its desire to diversify, would want to source more from them if there was another source that offered Japan the ability to diversify. Qatar, the world's largest exporter of LNG, seems to be the logical choice; however, the Persian Gulf's political stability can be disconcerting. This

leaves the U.S. as a natural choice, a choice that none of the previously mentioned contenders stack up to on all criteria. TEPCO Trading Corp. and Chubu Electric Power Co. officials have already demonstrated interest in importing U.S. LNG. (Das) Beyond natural gas, concerns about Japan's reliance on volatile oil supplies from the Middle East has many in Japan calling for the U.S. to export its relatively cheap LNG (Chanlett-Avery, Cooper, Manyin).

“From all the aspects, U.S. LNG is a very, very shining treasure...for us,” said Hirohide Hirai, director of policy evaluation and public relations at Japan's Ministry of Economy, Trade and Industry. “As you know, without nuclear power, LNG is the most promising, most reliable...alternative resource for us,” Hirai said (Belogolova).

To smooth out a diversified supply of LNG, the Japanese government has provided financing and incentives to fund LNG facility projects – not only is this a benefit in the obvious way that it is a source of financing, it is also beneficial because it increases Japanese FDI and further strengthens the U.S.-Japan relationship.

Recent development clouded Japan's energy independence future even further. There were active faults near atomic plants in Fukui and Aomori prefectures discovered, creating more pressure for the Japanese government to stay away from nuclear energy. With such pressure, LNG has become a great choice to meet Japan's energy needs – Japan's LNG imports have steadily increased with all but two of Japan's 50 nuclear reactors shut down. Japanese LNG imports surged by 18% from 2010 to 2011, and further increases are expected over the coming years (Das).

As aforementioned, East Asian nations like Japan place a large emphasis on mutual trust when engaging in significant long-term contracts. Since 1969, ConocoPhillips and Marathon

have been supplying Japan with LNG from Alaska's Kenai plant. (Das) These companies have established positive long-term relationships that other U.S. companies could also benefit from.

Asia contributes 55% of the world LNG trade presently (Tham). Over the next 3-4 years, approximately one third of long term contracts in Japan are expiring representing a window of opportunity for new gas indices to be used (Tham). With the vital abundance of LNG the U.S. now has between its Gulf Coast and Alaskan North Slope, importing LNG from the U.S. provides an area that can help strengthen the vital alliance and provide economic benefits to the two nations. In 2011, Alaska provided 7% of Japan's LNG needs (Johnston). However, with pending approvals to greatly expand U.S. LNG capacity to export, Japan will likely be very interested in greatly increasing this number from the U.S. The current facility - Kenai - is shutting down, but Alaska's North Slope is hoping to have exporting capabilities by 2019 (Johnston). Additionally, as aforementioned, a myriad of companies are waiting to gain approval to export LNG out of the U.S.' Gulf Coast region.

Outside of Alaska, Japan hopes to purchase about 30 million metric tons per year of LNG from Louisiana, Texas, and Maryland terminals. Osaka Gas Co. and Chubu Electric Power Co. already reached a deal last summer with Freeport (in Texas) to liquefy 4.4 million tons annually of LNG that should begin arriving in Japan in 2017, supposing Freeport is granted regulatory approval from the DOE in 2013 (Johnston).

Tying it Together

With a glut of natural gas, the U.S. likely would be more than willing to become a major LNG supplier for Japan if exporters could be guaranteed sufficient margin. Most of the LNG

terminals are located on the Gulf Coast, not the Pacific Coast, making shipments to Japan more costly. However, with the opening of the Panama Canal to LNG ships in 2014, LNG shipments will have a much quicker and more cost efficient access to Japan by the time export facilities have been completed (Das).

The Freeport LNG liquefaction project, expecting to begin LNG shipments in 2017, alone will create over 1,000 construction jobs in two to three years, and require over \$2 billion of direct investment. According to Altos Management Partners, in total 17,000 to 21,000 jobs created in exploration and production and \$2.7 billion spent annually on salaries, exploration, and production would occur just due to this one project. In July, Freeport signed contracts to supply Japanese companies – the utilities Osaka Gas Co. and Chubu Electric Power – with LNG. Recently, Freeport signed an agreement allowing a BP subsidiary to export these 4.4 million tons of LNG per year – bringing the current U.S. gas exports committed to 5 Bcf/d (Lefebvre). Randy Bhatia, an analyst with Capital One Southcoast, sees the previous export projections of 6 Bcf/d as underestimates now, “Consensus thinking on about 6 billion cubic feet a day probably needs to move up some” (Lefebvre). Clearly, demand for U.S. LNG contracts, especially from Japan, has exceeded previous expectations, an impetus to find the most convenient and effective way to engage the number one importer of LNG, Japan, to agree to more long-term contracts. The Sabine Pass project, with almost 30% higher capacity, would provide even more benefits to the economy (Das).

In terms of breaking even, Das estimates that the delivery cost to the liquefaction facility is \$0.32/MMBtu, the liquefaction cost is \$1.58/MMBtu, the LNG shipping cost is \$0.89/MMBtu, and storage and regasification cost is \$0.38/MMBtu; adding these to an estimated break-even cost (among different shale gas basins) of \$4/MMBtu, our estimated break-even price, delivered

at a Japanese LNG facility, will be about \$7.17/MMBtu. In April 2011, the average price paid, according to Platts Japan/Korea Marker, for LNG shipments into Japan or Korea was \$10.95/MMBtu (Das). Obviously, there is currently plenty of margin available to U.S. producers.

With government studies lending support to the benefits of exporting domestic LNG and with Japan's energy needs, the U.S. has a unique opportunity to utilize its vast shale gas supplies not only to export to Japan, the largest importer of natural gas, but also to use as leverage in obtaining a free trade agreement with Japan. An FTA with Japan that includes national treatment of natural gas trade would make ensuring U.S. imports much easier.

Economic Opportunity

Having established the energy capabilities and energy needs of the U.S. and Japan, respectively, this next section discusses how matching that need and the opportunity creates an economic opportunity for the two nations. Specifically, this section argues that a free trade agreement between the two nations is a suitable method to match the need and capability, and also discusses additional benefits of the proposed Japan-U.S. Free Trade Agreement (JUSFTA). The section begins with a discussion of free trade agreements and their benefits in general. Then, it explains why the timing for a JUSFTA is opportune, how the KORUS FTA can in some ways serve as both an impetus and a template for a JUSFTA, and concludes with a discussion of research that demonstrates strong potential macroeconomic benefits of a JUSFTA.

Free Trade Agreements

According to export.gov, an FTA is “an agreement between two or more countries where the countries agree on certain obligations that affect trade in goods and services, and protections for investors and intellectual property rights, among other topics) (U.S. Free Trade Agreements).” Free Trade Agreements (FTAs) open up foreign markets to U.S. exporters. The U.S.’ objectives in making FTAs are to reduce barriers to U.S. exports, guard U.S. interests competing abroad, and to improve the rule of law in the FTA partner country (U.S. Free Trade Agreements). The reduction of barriers, such as the reduction or elimination of tariffs, and a more transparent trading/investment system make it cheaper for U.S. companies to export goods/services to FTA partners. Other keys in an FTA include documenting rules of origin – designating which products qualify for FTA treatment based on where it originated from or was procured from.

Countries form FTAs for a host of reasons – often economic or political. Recently, one reason countries have decided to form FTAs is because of the slow process of trade in multilateral negotiations. The recent surge in FTAs globally coincided with the failure to implement the Doha Development Agenda round of negotiations in the WTO (Cooper, Free Trade Agreements).

In addition to its current TPP negotiations, the U.S. has 14 FTAs with 20 different countries (U.S. Free Trade Agreement)) – Korea, Panama, Colombia, Australia, Bahrain, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Israel, Jordan, Morocco, Canada (NAFTA), Mexico (NAFTA), Oman, Peru, and Singapore. In 2010, 41% of U.S. goods went to partner FTA countries, and those FTA countries comprised only 9% of the

world GDP. In addition, exports to those countries grew at a faster rate from 2009 to 2010, 23% to 20% (Free Trade Agreements). This is evidence for the increased amount of trade and cooperation among countries with FTAs, demonstrating how an FTA would be a viable option for restoring the weakening Japan-U.S. alliance.

The 1980s began an era of private enterprises in an increasingly globalized context, and this increased the desire of firms to discover access to foreign markets. Multilateral agreements, especially those established by the WTO, were already in place, but oftentimes the pace of multilateral trade negotiations, with a standard template for many nations to follow, was too slow. Thus, bilateral free trade agreements started to spring up as a way to gain market access in foreign countries not only for goods but also for services. Free trade agreements also ease LNG trade under current DOE and FERC regulations.

According to Brown and Stern, the most serious objection to free trade agreements is preferential treatment. Since any given agreement only applies between two countries (a bilateral agreement), then a country that forms free trade agreements with many different countries plays by different rules with all the said countries – the differences can make it more confusing for companies and could be costly if not understood. Free trade agreements, as noted by Brown and Stern, cause both trade liberalization (a good thing) and trade diversion (not such a good thing). Trade diversion occurs when the reduction of a tariff leads to more imports from a less efficient producer of a good and less of the goods from the more efficient producer (whether domestic producer or a rival foreign importer facing higher tariffs).

Free trade agreements help solidify transparency and standard setting between nations, building on the work of the WTO. They also frequently establish a formal process or committee for dispute settlement. Trade disputes and a lack of transparency – in the Japanese system from

the perspective of U.S. firms – has been one of the major problems in Japan-U.S. relations, a reason an FTA between the two countries would be beneficial.

According to Manger, FTAs coincide with large increases in FDI. Bilateral trade agreements (unlike regional or multilateral) generate economic rents by discriminating against non-members. This is why strict rules of origin are often placed into FTAs, and non-members are forced to settle for most favored nation (MFN) tariffs if they wish to export. Bilateral agreements offer a compromise between consumer and producer – the import prices fall because of lower tariffs and thus more efficient production from the FTA partner, but competition is restricted, and producer surplus also rises. These economic rents would be mutually beneficial for both Japan and the U.S.

Cross-border disputes dealing with competition policy have often come up between Japan and the U.S., especially in regards to market access for the U.S. in Japan. FTAs try to establish standards for competition laws that borrow from both countries' current laws, and harmonize them to create one set of laws between the two parties. FTAs often establish national competition agencies that assist each other in both understanding and enforcing competition laws, reducing conflict between the two countries (Brown and Stern).

The WTO is no longer the main player in promoting free trade – the torch has been passed to individual nations negotiating bilateral and regional free trade agreements. Another development is the emergence of developing nations and rival economic powers to the United States – the U.S. is no longer the sole dominant power that can dictate the rules of trade, and has reacted to the changing, globalized world by interacting more and establishing ties with developing nations and powers in strategic regions.

If a multitude of regional and bilateral free trade agreements liberalize trade in products and services, and move tariffs to zero, this could deliver multilateral free trade, as envisaged by the WTO, to the world for many products.

Free trade agreements also increase trade between nations by lessening the regulatory burden that domestic regulations oftentimes place on foreign competition. FTAs accomplish this by facilitating cooperation between each party's regulatory agency and increasing the level of trust in their relationship. This leads to the development of best practices in regulations, not only between two countries like Japan and the U.S., but eventually also worldwide.

For all of the above reasons, and given the issues in the Japan-U.S. alliance, a free trade agreement between the two nations would have many benefits. Generally, free trade agreements have also been shown to increase trade and facilitate economic benefits for both parties.

According to Baier and Bergstrand, in a study published for the *Journal of International Economics*, the gravity equation has not been the best way to judge if free trade agreements increase members' international trade, because trade policy is an endogenous, not an exogenous, variable. After their analysis Baier and Bergstrand conclude, "Accounting econometrically for the FTA variable's endogeneity yields striking empirical results: the effect of FTAs on trade flows is quintupled. We find that, on average, an FTA approximately doubles two members' bilateral trade after 10 years."

JUSFTA

Timing

In this subsection, the discussion revolves around why the time is opportune for a JUSFTA. We will first analyze past situations that led to Japan agreeing to free trade, and compare that to the current proposed JUSFTA. Then, we will look at the various factors which now make it an appropriate time to engage in a JUSFTA. There are many political and national security factors in the present time that serve as an impetus to a JUSFTA, but because of the scope of this paper, the focus will be mostly on the economic factors. In the next subsections, we will compare the potential JUSFTA to the completed KORUS FTA, and then analyze research demonstrating quantifiable economic benefits of a potential JUSFTA.

Mike Mansfield, the US Ambassador to Japan, first proposed a JUSFTA in the late 1980s (Nakano). However, at this time there was much tension between the two countries, and Japan was seen as the preeminent threat to the American economy, especially in the auto industry, essentially rendering any free trade deal impossible. In the past couple decades, China's rise and Japan's stagnating economy has lessened the threat of Japan to the U.S. and the former tension. As China and the U.S. had an aggressive FTA strategy in the early 2000s, Japan saw itself falling behind. The two major events that prompted Japan to aggressively pursue an FTA Program was the United States entering into the North America Free Trade Agreement (NAFTA) in 1994 and China negotiating an FTA with ASEAN countries in 2001 (Ahearn). Because the U.S. and the EU had lower tariffs on most goods relative to the Far East, Japan decided to focus mostly on FTAs with in Southeast Asia. Committed to competing with China for leadership of the Far East,

Japan negotiated its first FTA with Singapore, implemented in November 2002. Since Japan does not conduct much agricultural trade with Singapore, there were not many concessions made and the deal did not have too large of an impact on either country's economy. However, it gave Japan experience in how to negotiate and structure an FTA.

Japan's next FTA was signed with Mexico and went into effect in April 2005. This was a reactive FTA – Japan had been at a competitive disadvantage versus the U.S. ever since NAFTA went into effect in 1994. After the Japan-Mexico FTA was concluded, Japan went from facing an average Mexican tariff of 16% to a complete phase-out of tariffs on 90% of goods (comprising 96% of trade volume) through 2015 (Ahearn). With the elimination of these tariffs, the auto and steel companies in Japan especially benefited. This agreement was also significant because it was the first time Japan significantly reduced protection on some agricultural products, which would be required in a JUSFTA.

In order to understand how a JUSFTA would become a reality from the Japanese perspective, we have to understand the Japanese political system. With frequent turnover and elections, Japanese politicians, much more so than American politicians, are in constant threat of losing their positions. Because of this constant turnover in Japan's system, trade policy is more influenced by the long-standing bureaucrats, not the elected politicians. For METI bureaucrats, their main concern is their constituents; especially since lucrative positions at manufacturing firms are often awarded to loyal, retired bureaucrats (Manger). More importantly, in electing Japanese House representatives, a rural vote has more than double the amount of influence of an urban vote (Nakano). Because agriculture would be the most negatively affected domestic Japanese industry in any free trade deal completed with a more efficient agricultural producer, Japanese politicians have in the past lost their seats for proposing free trade deals with countries

such as the U.S. and Australia – and thus, there is much caution for politicians to engage in such talks, even if the free trade deals have clear economic benefits. Japan has bicameral parliamentary system with a constitutional monarchy (Nakano), lacking the strong presidents found in other democracies, such as the U.S. and South Korea, who have more ability to push for free trade deals than Japanese prime ministers, who essentially represent their legislature. Demands of multilateral firms in Japan will outweigh those of protectionist agricultural forces when competitive pressures warrant great lobbying efforts – the case when existing FTAs by other countries impose costs on firms with FDI overseas. Bilateral agreements trigger counter-agreements by affected third parties, known as defensive FTAs, as opposed to proactive FTAs (Manger).

Japan's policy shift resulted because of a defensive reaction to the effects of NAFTA. NAFTA put Japanese investors at a disadvantage in Mexico with their U.S. competitors. Japan had used its US subsidiaries to import products into Mexico to take advantage of cheap labor, process the products, and then re-export. With the conclusion of NAFTA, however, strict rules of origin clauses left US subsidiaries to Japanese companies in the dark and at a competitive disadvantage to US companies. Unable to reduce tariffs to import products into Mexico, and pressured by lobbyists from both Toyota and Nissan, Japan decided that negotiating an FTA was a viable policy, even if some agricultural concessions were necessary (Manger). Just as NAFTA urged Japan to engage in an FTA with Mexico, so also the recently implemented KORUS FTA will serve as an impetus for Japan to engage in free trade talks with the U.S. After NAFTA, Japan was at a competitive disadvantage in Mexico; likewise, the South Korean government was motivated to sign a free trade agreement with the U.S. to gain a competitive advantage, via lower tariffs, over Japan in exporting autos and electronics to the U.S.

Furthermore, China's aggressive FTA moves have fueled Japanese policymakers to try and keep pace, perhaps even fueling enough of a pro-FTA base in Japan to overcome staunch domestic resistance.

Exports are more important to the Japanese economy than imports; the opposite is true of the U.S. This is also true in the relations between the two nations. U.S. imports from Japan consist mostly of passenger cars and parts, computers and components, office machinery parts, and electrical machinery; U.S. exports to Japan are much more diverse. The U.S. imports many more goods than it exports to Japan; in 2011 the U.S. exported \$66.2 billion of merchandise to Japan, and imported \$128.8 billion, a trade deficit of \$62.2 billion (Cooper, U.S.-Japan Economic Relations). The U.S. consistently runs trade deficits in its trade with Japan; this is partially due to Japan having a more protected, closed market. An FTA between the two nations, especially with the national treatment of exporting LNG from the U.S. to Japan, would help reduce the U.S.' trade account deficit in goods.

The amount of portfolio investment and FDI – defined as investments in which the foreign investor owns at least 10% of the entity - exceeds the value of goods and services traded between Japan and the U.S. The U.S. has consistently been Japan's largest source of FDI, in 2010 investing \$113.3 billion. The Japanese economy is relatively closed for a developed nation, and its amount of FDI from outside nations consistently ranks at the bottom of the developed world. In the 1980s, Japan was the largest source of FDI in the U.S.; today Japan ranks second, behind the United Kingdom. In 2010, Japan contributed \$257.3 billion in FDI to the U.S. (Cooper, U.S.-Japan Economic Relations). As mentioned earlier, FTAs increase the amount of FDI between nations – this would be especially beneficial for opening up Japan's market and growing its economy.

Since Japan's markets, especially agricultural, are so heavily protected, and because they have to import the majority of their energy sources, the Japanese have to pay very high prices for both food and fuel, and this is reflected in their lower standard of living when compared to Americans - measured in purchasing power parity (PPP) per capita/GDP (Cooper, U.S.-Japan Economic Relations). An FTA with the U.S., if Japan were to open up its agricultural markets in any significant manner, would help solve this problem for Japanese citizens as well.

It is not sufficient to rely on the WTO in facilitating bilateral trade because of the organization's lack of full scope; for example, the WTO does not regulate anything to do with competition policy, a major tension between Japan and the U.S. in trade matters – thus, an FTA is advantageous from this standpoint as well.

A free trade agreement allows both parties to address concerns and policies that they find relevant. Also, an FTA is viable between Japan and the U.S. because tariffs between the two countries are already relatively low, and the alliance is fairly strong.

According to The Australian, Australian officials believe that newly re-elected Japanese Prime Minister Shinzo Abe's (who is also the former Liberal Democratic Party prime minister who, in his first term, had unsuccessfully pushed for a free trade deal with Australia) appointments of Harvard graduates Toshimitsu Motegi and Yoshimasa Hayashi as trade and agriculture ministers is a welcome sign for trade liberalization and agricultural reform (Wallace) – such change could be an impetus for a free trade agreement with the U.S. as well.

KORUS FTA

In this subsection, we look at the free trade agreement reached between the U.S. and South Korea, and see how it can serve as an impetus and a template for a JUSFTA. Japan and South Korea, more so than any other U.S. FTA partners, have a similar culture and economy, and many of the issues that have kept a JUSFTA from coming to fruition were also obstacles for the eventual KORUS FTA – especially the automotive, agricultural (especially rice), and insurance sectors.

More specifically, the free trade deal completed with South Korea serves as a great template for one with Japan due to the many similarities between the two countries. Japan and South Korea are both democratic countries, both primarily ethnically homogenous, and both are divided into two major parties. The South Koreans are divided by region into the Grand National Party and the Democratic Party. The Japanese are divided via an urban-rural split into the Liberal Democratic Party and the Democratic Party of Japan. Both countries have strong agricultural industries that have experienced slowing relative growth in recent decades, both politically have strong farm lobbies, both claim rice as their primary crop, both have highly protectionist policies to protect its rice farmers, and both have rural areas that are overrepresented politically. In terms of economic ties with the U.S., both countries were at once highly protectionist and closed markets, but have both embraced neoliberal trade policies in recent decades due to sluggish economies in the 1990s. Both consider the U.S. as one of their top trading partners, and both rely on the U.S. for security and military support. South Korea, obviously, has taken things a step further by agreeing to the KORUS FTA and opening up its market beyond what Japan has because it was particularly hit hard in the 1997-1998 Asian Financial Crisis and wished to better

compete with Japanese autos and electronics in the U.S. Nevertheless, both countries encourage savings and investment over consumption. Also, South Korea and Japan tend to import and export (for example, both export manufactured goods, like many automobiles and electronics) similar products from and to the U.S. Lastly, both have relied on the U.S. for military support and for help in reforming their respective economies, but both have also begun to strengthen their economic ties with China (Nakano). For all of these reasons, the recent KORUS FTA serves as a great template for a JUSFTA.

The free trade agreement reached between the United States and South Korea that was put into force on March 15, 2012 serves as a great template for what is possible between Japan and the United States, and in many ways is a historical first for the United States. Just as Japan is an important trading partner for the United States, and just as Japan and the United States have many disagreements that make an agreement difficult to complete, the same conditions were true between the United States and South Korea. Just as with Japan, the U.S. has a trade deficit with South Korea (of \$10.9 billion). For South Korea, at the time of the signing in 2010, the United States was its third largest trading partner (following only China and Japan), and for the United States, South Korea was its seventh largest trading partner. Up until 2003, the United States was South Korea's largest trading partner (Cooper, et al., KORUS FTA).

The United States sought the free trade agreement to gain market access for its imports, especially in agriculture, medical devices and pharmaceuticals, services, and FDI. U.S. exporters often cited structural issues, especially missing transparency in South Korea's regulations and trading system, as the major barrier to trade. In some industries, especially automobiles, the U.S. believed South Korea had regulations that discriminated against foreign competition – the same is true of how many U.S. firms (especially in automobiles) perceive the Japanese system today.

For South Korea, the main motivation was to use the agreement as a way to make necessary economic reforms and also to be more competitive with the Japanese within the United States, especially in autos and some manufactured goods (like electronics). In response to this deal, Japan will have a similar motivation to strike a free trade deal with the U.S. – to eliminate the advantage that South Korea obtained over Japan in autos and electronics exports. Plus, Japan's economy and especially its agricultural industry, which has kept its food prices at relatively high prices for an industrialized nation, is in need of reform, much like South Korea's was. South Korea was not interested so much in getting more market access in the United States (the U.S. already has a relatively very open market), but were more interested in preserving its share of the market in response to all the free trade deals the U.S. was undertaking, especially with other Southeast Asian nations. Also, South Korea wanted to improve its own services industry, and bringing in U.S. competition would do just that. Both the United States and South Korea also saw the free trade agreement as a way to strengthen their diplomatic and national security ties – something that would be beneficial to both the Japan and the U.S. in a time of a threatening North Korea and a rising China. Japan is concerned about its regional security and its economic prowess – an FTA and the easier access to U.S. LNG as a result would help accomplish this; the U.S., on the other hand, is concerned with counterbalancing a rising China whose economic relationship with Japan has grown stronger – a concern that could be assuaged with the completion of a JUSFTA and the accompanying LNG trade.

An agreement like the KORUS FTA would have been almost impossible to reach in the 1980s and 1990s. South Korea, much like Japan, was also somewhat closed to foreign competition and market access. However, in 1997 its economy nearly collapsed, and the follow-up bailout by the International Monetary Fund (IMF), with large commitments for help made by

the United States, prompted South Korea to reform its economy. After the bailout, South Korea opened up its markets to large amounts of FDI and loosened some significant barriers to trade.

The agreement was first signed on June 30, 2007. The original negotiations were conducted under the trade promotion authority (TPA) of 2002, which gave President Bush the authority to submit the final deal as legislation to Congress. This expired under President Obama and was not renewed. However, some disagreements between the two countries, especially following a new Congress and an Obama Administration, kept it from being implemented until three years later. After much negotiating, President Obama and Korean President Lee Myung-bak announced on December 3, 2010 that necessary concessions had been made and that they were ready to send the final deal to their respective legislations. The negotiations resulted in some key differences from the 2007 agreement, mostly centered around tariffs, concessions, and provisions on autos. It was the second largest free trade agreement reached by South Korea and the United States at the time (a free trade agreement with NAFTA being larger for the United States and a free trade agreement with the European Union being larger for South Korea). Public opinion, much like it is for a JUSFTA, was not always positive during the process – during the talks, there were often massive anti-FTA demonstrations by South Korean farmers and union members (Cooper, et al., KORUS FTA). The same could be expected in the case of a JUSFTA, given the Japanese agricultural industry's strong opposition to trade liberalization with the U.S. Nevertheless, the South Korean government was able to work past this, and, although a different political system, it is possible for Japan to follow the same mold, especially by using the anti-nuclear energy public sentiment to fuel acceptance for accepting a JUSFTA and the resulting LNG trade.

In the following sub-subsection, we will analyze specific roadblocks to a JUSFTA and how these roadblocks were addressed in the KORUS FTA:

Japan-U.S. trade issues

As aforementioned in the introduction to this paper, Japanese restrictions on U.S. beef imports, regulations and policies that favor state-run insurance companies like Japan Post, and market access for the U.S. automobile manufacturers, are three major areas Obama cited that need improvement before the U.S. would endorse Japan's entry into the TPP.

Although this paper assumes Japan does not enter the TPP, the same three criteria will be important before a JUSFTA can be reached. Below, we outline some of the historical differences that have caused frictions preventing a JUSFTA.

In Japan, the most vocal critic of a JUSFTA would be the agricultural industry. The TPP's most vocal dissenter in Japan is, unsurprisingly, JA, the national agricultural cooperative and powerful lobbying force. JA has teamed with Japan Medical Association. JA wishes to protect its small, inefficient farmers' operations and keep subsidies and tariffs in place. Japan Medical Association claims that open market access will lead to higher prices for medicine and medical equipment, and also threaten universal healthcare (Cooper, U.S.-Japan Economic Relations).

One of the major areas of trade friction between Japan and the U.S. has been in the agricultural sector, with one of the highest profile conflicts of this millennium between the countries occurring in the beef sector. Japan banned all U.S. beef imports from the U.S. in December 2003 upon the discovery of "mad cow disease" in some cattle in Washington State. It

was not until July 2006 (save for a brief month long period in between when imports were allowed) that Japan resumed importing U.S. beef, but only from cattle 20 months or younger. The U.S. has implored Japan ever since to lift its stringent restrictions; South Korea, in a similar position, imports cattle 30 months and younger, for example. The issue is ongoing, and talks continue between the two nations. The U.S.' goal is that Japan allows imports of U.S. beef that conform to international standards as set by the World Organization for Animal Health (OIE) (Cooper, U.S.-Japan Economic Relations).

The services industry has also been a major concern between Japan and the U.S. One major area of discussion has been market access for U.S. insurance companies in Japan. U.S. insurance companies have asserted that there is a lack of transparency with how Japan makes regulations and that public information is not easily found. U.S. insurance companies currently do business in Japan based on agreements made in 1994 and 1996 ensuring competitive conditions for foreign providers. However, U.S. insurance providers have complained that Kampo, the government owned insurance company under the Japan Postal Service, and other state-run insurance cooperatives have an unfair advantage because they do not have to comply with the same regulations as do private insurance companies. On October 1, 2007, legislation was introduced that would lead to the privatization of the Japanese insurance market within ten years. However, with a change of government, on March 30, 2012, a bill was introduced into the Japanese Diet (legislature), which is believed to have the effects of essentially rolling back the progress that was agreed upon in 2007 (Cooper, U.S.-Japan Economic Relations).

In the U.S., the most vocal critic of a JUSFTA would likely be the automobile industry. The U.S. automobile industry has a very bitter relationship with Japan, dating back to the 1970s and 1980s when surges in Japanese automobiles, especially smaller vehicles by companies like

Toyota and Honda, into the U.S. threatened its operations. In response to restraints, many of these Japanese car companies moved some of their operations into the U.S. In addition, U.S. automobile companies believed that the Japanese employed several methods to restrict the success of foreign-made cars in Japan. In 2010, U.S. car sales accounted for 0.2% of all automobiles sold in Japan, palling in comparison to the 26% market share captured by the Japanese for light vehicles in 2010 in the U.S. These allegations of a lack of transparency and biased safety/certification regulations continue to this very day, a major reason why Chrysler, Ford, and General Motors - the Detroit Big Three – have disapproved Japan’s possible entry into the TPP (Cooper, U.S.-Japan Economic Relations).

Currently, issues raised by the U.S. include encouraging more competition and transparency in the communications sector, improving intellectual property rights protections, improving competition in the information technology sector, leveling the playing field for private insurance companies with the services of the Japan postal system, and reforming policies on reimbursements for pharmaceuticals and medical devices to promote innovation (Cooper, U.S.-Japan Economic Relations).

Ending the economic stagnation, high debt, and deflation of the past decades, reforming the domestic economy, maintaining influence in East Asia, and avoiding economic discrimination are the major reasons Japan has begun to seriously consider multiple free trade agreements, and would be major general reasons for Japan to agree to a JUSFTA.

KORUS FTA solutions

For two thirds of U.S. agricultural products, South Korea agreed to eliminate all tariffs immediately, with most other agricultural tariffs gradually being reduced to zero over a ten-year period. The USITC (United States International Trade Commission) estimates that U.S. agricultural exports will be \$1.9 billion to \$3.8 billion higher because of the agreement. Because South Korea exports so little agricultural products to the U.S., it was agreed that all tariffs on U.S. imports from South Korea would be removed (at most within 15 years) (Cooper, et al., KORUS FTA). In negotiations, the main area of disagreement and negotiation centered on beef, rice, and oranges. Given the importance of beef and rice to Japan, this paper will focus on the KORUS FTA's handling of these two agricultural products.

South Korea had experienced the same problem Japan experienced with U.S. beef imports during the outbreak of mad cow disease. By 2007, Korea resumed importing U.S. boneless beef from cattle that was 30 months old or younger, more generous than the Japanese 20 month limit. During negotiations, it was decided that South Korea would reduce its 40% tariff on beef imports to zero over a 15-year period, but the United States was unable to convince South Korea to open up access to all U.S. beef imports deemed safe by international standards. The 15-year phase out includes a safeguard, where South Korea can re-impose the original tariff if U.S. imports increase beyond a certain amount (with the specified trigger amount increasing by 2% each year over the 15 years). The U.S. beef sector has voiced its approval for the deal. Almost half of the aforementioned increase in agricultural products was estimated to be in the beef sector (Cooper, et al., KORUS FTA). Japan remains stricter with the U.S. on beef imports; following the precedent set in the KORUS FTA will help persuade Japan to lighten its

restrictions on U.S. beef imports, increasing trade between the two nations, satisfying one of the Obama administration's chief concerns, and leading to a JUSFTA.

Rice, an integral staple of the Korean culture, was an issue that South Korea refused to budge on. Although the United States wished to open up market access for its rice producers, the deal risked being completely niched if the United States did not make this exception. Karan Bhatia, a top U.S. trade official, said, "Ultimately, the questions that confronted us was whether to accept a very, very good albeit less perfect agreement or to lose the entire agreement because South Korea refused to move on rice" (Cooper, et al., KORUS FTA). Therefore, any reduction or elimination on tariffs of rice imports was excluded from the deal. This is important because rice is also the primary and most protected agricultural product in Japan; and realistically the U.S. would have to accept excluding changes in rice tariffs from a JUSFTA. Following this precedent set by the KORUS FTA will help overcome one of the largest potential obstacles to agreeing on a JUSFTA.

Discussions over the automobile sector were some of the hardest areas for negotiators to find agreement, and there were many changes in the 2010 agreement that took place in order for the deal to get U.S. Congressional support and also support from the three major U.S. auto companies. The U.S. was concerned about policies that discriminated against U.S. auto imports. In the new 2010 agreement, it was agreed that, unlike the immediate elimination of tariffs in the 2007 agreement, the United States would eliminate its 2.5% and 8% tariffs on South Korean imports five years after deal completion. South Korea reduced its 8% tariffs on U.S. passenger cars to 4% immediately. Tariffs on electric cars will be phased out over a five-year period. The immediate elimination of South Korea's 10% tariff on trucks remained the same from the 2007 deal. The United States, on the other hand, gained extra time to keep its 25% tariffs on trucks in

place – eight years, with a complete elimination of the tariff not occurring until after ten years. There was also a snapback provision added that gave the United States the right to bring back its 2.5% tariff on passenger cars if U.S. automakers deemed there had been a breach of the free trade agreement by South Korea in regards to safety and environmental standards (Cooper, et al., KORUS FTA).

Additionally, U.S. automakers were concerned about a large increase in South Korean auto imports. In order to address this, in 2010 special motor vehicle safeguard was agreed upon. If “any harmful surges in Korean auto imports due to the agreement” happened, the U.S. would have the right to re-impose its passenger car and truck tariffs. The 2010 agreement also raised the threshold for the number of vehicles U.S. automakers could export to South Korea from 6,500 per automaker to 25,000 per automaker, annually (Cooper, et al., KORUS FTA).

Before the agreement, South Korea had taxed discriminatorily high rates on vehicles with large engine capacities, the very type that was imported from the United States. As part of the agreement, these discriminatory effects were reduced and more transparency promised. In addition, South Korea promised to be more transparent about new auto regulations, giving U.S. companies one year after passage to comply with any new regulations. U.S. automobiles were also given exemptions from meeting newly implemented South Korean environmental standards. Finally, the agreement created an Automotive Working Group that was to meet annually to discuss and resolve any relevant issues (Cooper, et al., KORUS FTA).

The USITC estimates that U.S. auto exports to South Korea will increase by \$300 million-\$400 million, whereas South Korean imports into the U.S. will increase by \$1.3-1.7 billion. However, many of the increased South Korean imports will replace other, mostly Japanese, imports (Cooper, et al., KORUS FTA).

Of the big three Detroit automakers, only GM did not voice opposition to the original 2007 deal. However, Ford expressed approval of the modifications that were made in the 2010 version. Automotive parts suppliers and broader industry groups were mostly supportive, while labor groups were split. The United Auto Workers (UAW), one very important labor group, announced support for the agreement, whereas the AFL-CIO opposed it, citing concern for U.S. jobs (Cooper, et al., KORUS FTA). Nevertheless, the KORUS FTA established provisions that will protect U.S. automakers in the case of surges in South Korean auto imports, and also established regulation changes in South Korea so that U.S. exports would not face discrimination. Given market access for U.S. automobile manufacturers was one of Obama's three listed priorities before engaging in free trade talks with Japan, the KORUS FTA sets up a precedent to eliminate a major hurdle for a JUSFTA.

As mentioned earlier, two major U.S. concerns with Japan are reforming policies on reimbursements for pharmaceuticals and medical devices to promote innovation, and improving intellectual property rights protections. Prior to the KORUS FTA, U.S. exporters of pharmaceuticals had cited many grievances against the South Korean government for unfair regulations that favored domestically produced, generic drugs and other regulations hampering market access. Makers of innovative pharmaceuticals were happy that the agreement improved upon intellectual property rights protection, disallowing generic drugs from copying original drugs as soon as they are introduced. In these two areas, the KORUS FTA certainly sets a precedent for a JUSFTA.

In terms of foreign investment, the major issue between South Korea and the U.S. was that South Korea had restrictions in place in some sectors making foreign investment more difficult – especially in communications and in any sector where intellectual property rights were

an issue. The FTA made a lot of improvement in these areas by establishing a national treatment principle, meaning that foreign investors from one country will be treated just as favorably as domestic investors, and any exceptions needed to be stated in the FTA. For any exceptions, the most-favored-nation treatment would apply – that foreign investors would be treated just as well as investors from any other third-party nation, a principle established by the WTO. In addition, each government agreed to extended national treatment to the other in terms of intellectual property rights, and agreed on principles that increased the transparency for and rights of intellectual property holders. The USITC estimated that U.S. investors in financial services will likely gain from this agreement (Cooper, et al., KORUS FTA). These agreements in the KORUS FTA set a precedent for a JUSFTA since two major U.S. concerns were reforming intellectual property rights protections and encouraging more competition and transparency in the communications sector.

For services, the U.S. and South Korea agreed to a “negative” list, where all services would be liberalized unless said otherwise, and any new services would be liberalized unless a special exception was agreed upon between the two countries. Before the agreement, South Korea’s insurance market, the world’s seventh largest, regulated private-sector foreign and domestic insurance companies, but there was no regulation of the state-owned Korea Post and the cooperative insurance providers. The KORUS FTA, however, established that they are to be regulated by an independent state regulator, assuaging many of the complaints from U.S. insurance companies in South Korea. Overall, U.S. services providers largely approved the agreement (Cooper, et al., KORUS FTA). Given that regulations and policies that favor state-run insurance companies like Japan Post was the one remaining criteria that Obama cited as needing improvement before engaging in trade talks with Japan, the KORUS FTA’s treatment of Korea

Post sets a great precedent for a JUSFTA's handling of Japan Post. With this third and final major criterion addressed, the KORUS FTA sets a great precedent for satisfying U.S. concerns and engaging in a JUSFTA. Additionally, transparency, competition laws, and conflict resolution were addressed in the KORUS FTA, setting precedents for necessary provisions in a JUSFTA.

Upon completion of the agreement, South Korean President Lee was pleased because he believed the KORUS FTA would help revitalize the Korean economy, and especially better compete with Japan in the U.S. (Cooper, et al., KORUS FTA). Both the U.S. and South Korea signed the agreement in part to also strengthen their foreign policy and national security alliance. How to deal with North Korea and how to position U.S. troops in South Korea had resulted in past disagreements between South Korea and the U.S., and this agreement strengthens their relationship and will help in such matters. Likewise, Japan desires influence in the East Asian area and would ideally like to counter South Korea's gains over Japan in the U.S. – both of which could be accomplished in a JUSFTA. Using the KORUS FTA as an impetus and a precedent to engage in a JUSFTA, it is important to note that the domestic opposition that has stifled a JUSFTA since the 1980s will not be absent. The special circumstance that can serve as the main impetus for Japan to engage in a JUSFTA and overcome domestic opposition is a perfect match of a need and a capability – Japan's energy needs and the bountiful supply of LNG in the U.S.

There are two key takeaways from this discussion. First, because of the KORUS FTA, Japanese firms now are discriminated against in their trade with the U.S., relative to South Korea, because Japanese firms are FTA non-members with the U.S. The higher tariffs put them at a competitive disadvantage – just as becoming more competitive with Japan in the U.S. was an

impetus for South Korea to implement the KORUS FTA, so also the KORUS FTA serves as an impetus for Japan to implement a JUSFTA. The second key takeaway is subtler, and is one of the major points of the paper. We have seen that major free trade agreements have often required a special event or circumstance to propel their completion. For South Korea, the IMF bailout and the need to reform its economy was the special circumstance. Japan has a much different, albeit still noteworthy, circumstance that could propel it to undergo serious negotiations for a JUSFTA – its energy needs. With the U.S.’ capability of exporting LNG, and the U.S.’ reliable and trusted position in Japan, the Fukushima Daiichi disaster and the resulting energy crisis could serve as an impetus to a JUSFTA just as the IMF bailout served as an impetus for the KORUS FTA.

The Benefits of a JUSFTA

The previous sections and subsections have established the ideal match between U.S. LNG exporting capabilities and Japan’s energy needs, the benefits of FTAs in general, and the precedent that the KORUS FTA has set for a JUSFTA. This subsection analyzes the potential quantifiable benefits of a JUSFTA. Although research is limited on a hypothetical JUSFTA, there have been some professors who have undertaken the task of quantifying the benefits that would result from such a deal. This subsection explains the findings, especially the findings behind a detailed study conducted by Scott Bradford, Professor at Brigham Young University. Overall, a JUSFTA would result in political, diplomatic, national security, and economic benefits. Although beyond the scope of this paper, a JUSFTA will help solidify political and diplomatic ties between Japan and the U.S. – this is especially important for Japan in regards to security and to the U.S. in regards to power and influence with the rise of China and the threat of

a nuclear North Korea. However, the focus of this subsection, in accordance with this paper, will be the potential economic benefits.

As aforementioned, free trade agreements between two nations in practice discriminate economically against non-partners who are at a disadvantage due to the resulting relatively higher tariffs and imposed restrictions in the non-partners' trade with the host country. South Korea's recent FTAs with the U.S. and another with the E.U. (tentatively went into effect July 1, 2011 and at the time of completion was the second largest FTA in history, following NAFTA) combined will negatively affect Japan's economy (Nakano), and could serve as an economic impetus for Japan to welcome JUSFTA negotiations.

In August 2006, the Chairman of the Japanese Economic Foundation (JEF), an organization formed in 1981 to promote Japanese economic and technological exchange in the international community, strongly supported the negotiation of a JUSFTA and also asserted that, if completed, the KORUS FTA should compel Japan to engage in free trade talks with the U.S. (Hatakeyama).

Based on fitted values from a standard gravity equation, Moore and Bellotti find that only the European Union stacks up as having higher potential than Japan in trade and investment potential among over 150 individual countries. As an individual country (since the E.U. is a collection of nations), Japan ranked highest in providing the greatest level of U.S. trade and investment opportunities, one aspect that is important when considering different free trade partners. One limitation is that the study uses older data – FDI data and GDP data, for example (respectively obtained from the U.S. Bureau of Economic Analysis and the World Bank's World Development Indicator table) are from 2002. Although this is not ideal, Japan ranking the highest among free trade partners in investment and trade potential in 2002, coupled with Japan and the

U.S. today still ranking among the world's top economies, indicates that one decade later, it is safe to assume Japan likely ranks among the highest of all potential U.S. FTA partners.

However, this study, and the gravity equation generally, does not quantify the effect a JUSFTA would have on U.S. GDP.

A more robust study, *An analysis of a possible Japan-US trade agreement* by Scott Bradford, was presented to the JEF on November 27, 2007. Although the study and the presentation are several years old, Japan and the U.S. still remain two of the world's great economies and the study can still be viewed as an estimate for potential benefits that would accrue to each nation due to a JUSFTA. In his analysis, Bradford demonstrates that an FTA between Japan and the United States would have potentially large economic benefits as well as pave the way for a stable global trading system. Both Japan and the U.S. would benefit, as well as the world economy, by freeing up important markets and enabling important domestic reforms in Japan. According to the analysis, a full JUSFTA, assuming a conservative 10% liberalization of services, would roughly double trade between the two nations (according to a gravity model analysis) and would increase Japan's net welfare by 2.7% of GDP (about \$130 billion at 2007 levels) and the U.S.'s welfare by 1.1% of GDP (about \$150 billion annually). Due to the heavy protectionism of Japan's rice industry, and from the precedent that was set in the KORUS FTA, it is likely that Japanese rice would be excluded from the potential free trade agreement.

Interestingly, the study reveals that excluding rice does not greatly change the benefit for the U.S.; rather, the U.S. slightly gains in the model from the FTA if rice is excluded – mostly due to the fact that the U.S.-subsidized rice and opening up of Japan's market to the U.S. would shift many resources to this sector. In the likely case that rice is excluded from a JUSFTA (like it was in the KORUS FTA), Japan would gain 2.3% of GDP (\$110 billion) and the U.S.'s gains would

not change significantly. If 30% of services were liberalized, the gains could be much greater, estimated to be 7% of GDP (\$350 billion) for Japan and 2.6% GDP (also \$350 billion) for the U.S., annually (Bradford).

Dropping the liberalization of services greatly diminished the benefit estimates in the study. Liberalizing services would help diminish the negative effects of layoffs from sectors hurt by the opening up of free trade. Secondly, liberalizing services would be an impetus to help Japan make necessary domestic economic reforms.

With Japan seeking free trade agreements with the European Union and many countries in Southeast Asia, as well as considering a trilateral trade agreement with South Korea and China, a free trade agreement with Japan would greatly benefit the U.S. by avoiding trade discrimination, especially in the East Asia region. If free trade is not sought with Japan, then the U.S. will be at a disadvantage in trade to Japan, forced to pay higher tariffs than its competitors.

The analysis asserts that there is now a unique opportunity to seek a free trade agreement with Japan. Economic friction between Japan and the U.S. is at a recent historic low. With the rise of China and recent Japanese economic struggles, the U.S. no longer sees Japan as the threat it once perceived in the 1970s, 1980s, and early 1990s. Japan, still the most closed market of the developed economic super weights, has also made many economic reforms in the past decades that make negotiating more possible. In the Uruguay Round of the WTO, Japan eased up on its agricultural barriers to trade. Japanese financial markets are much more accessible to U.S. investors than they were in the 1990s, and antitrust and merger standards have been modernized. Most importantly, the KORUS FTA laid down a foundation for a very real possibility at what a JUSFTA could be. Furthermore, South Korea is a major rival to Japan in the manufacturing industry and autos, and Japan would be interested in returning to competitive parity with its East

Asian neighbors in the U.S. markets. Both countries have also undertaken a proliferation of bilateral free trade agreements in the past couple decades. Japan's FTA with Mexico was significant in that it was the first time Japan agreed to significantly open up its agriculture. Furthermore, Japan has held significant discussion for a free trade agreement with agriculture powerhouse Australia, which, if the deal gets done, would require Japan to open up its agriculture markets significantly.

In his analysis, Bradford used a multi-sector, global applied general equilibrium (AGE) model – the model has 39 sectors, five factors of productions, and eight regions. A standard economic structure was used: perfect competition, constant returns to scale, full employment, and factors more between sectors but not regions. Some domestic sectors are negatively affected, but this could be handled by both governments through adjustment assistance. Japan especially can look towards the Korean plan to buy out its farmers over 10 years for \$135 billion – the U.S. could possibly consider assistance for its autoworkers (Bradford).

Bradford is not unsupported in his positive assessment of the economic benefits of a JUSFTA. At the November 27, 2007 JEF conference, Shujiro Urata, a professor at Waseda University who specialized in international economics, presented a separate study that also had results of strong benefits arising for both Japan and the U.S. if a JUSFTA was enforced. The benefits go beyond GDP economics as well - a JUSFTA would be an impetus for well-needed reforms of Japan's intellectual property system and other regulatory systems and standards, and also would lead to an exchange of people, students, and ideas. Urata's simulation asserted that Japan and the U.S. would both benefit economically from a JUSFTA, with Japan realizing the relatively higher GDP percentage increases. Urata also recommended that a JUSFTA provide

temporary relief for negatively affected workers (for example, farmers in Japan and auto/steel workers in the U.S.) in each country as a means to overcome domestic opposition to a JUSFTA.

Although there has been an insufficient amount of studies done on the potential benefits of a JUSFTA to reach any conclusive, definite remarks, the few studies that have been done by respected professors demonstrate that free trade would lead to likely large potential benefits for both Japan and the U.S. Certainly, it would lead to a large increase in trade and investment opportunities between the two nations, which would invariably strengthen the important but weakening alliance, at the least a political goal for both nations.

Conclusion

With long-term contracts expiring, Japan has a current need to negotiate new LNG long-term contracts and has expressed a desire to import a significant amount of LNG from the U.S. As of now, only one of the U.S. LNG export facilities has been approved to export to non-FTA countries. Forming an FTA with the U.S. would help Japan accelerate the LNG trade process and ensure this reliable LNG supply, assuming it fails to join the TPP negotiations. The Japanese energy crisis can serve as an impetus for a JUSFTA, just as the IMF bailout was an impetus for the KORUS FTA. Furthermore, the KORUS FTA in many ways can serve as an impetus and a template for a JUSFTA. There is much support that demonstrates the political, diplomatic, and macroeconomic – the focus of this paper - benefits of a potential JUSFTA. Because of this, and because of the matching of a capability and a need, a JUSFTA is an ideal means to satisfy the end of fortifying the important, but recently weakened, alliance between Japan and the U.S.

Bibliography

- Adams, Gary, Andrew Dunn, Tom Choi, and Roger Ihne. Made in America: The Economic Impact of LNG Exports from the United States. Rep. Deloitte Center for Energy Solutions and Deloitte MarketPoint LLC, Dec. 2011. Web. 27 Aug. 2012.
- Adams, Martin. "Japan's Energy Future: The EIU View." Economist Intelligence Unit. The Economist, 2012. Web. 29 Jan. 2013.
- Ahearn, Raymond J. Japan's Free Trade Agreement Program. Rep. no. RL33044. Congressional Research Service, 22 Aug. 2005. Web. 29 Jan. 2013.
- Baier, Scott L., and Jeffrey H. Bergstrand. "Do Free Trade Agreements Actually Increase Members' International Trade?" Journal of INTERNATIONAL ECONOMICS 71 (2006): 72-95. Journal of INTERNATIONAL ECONOMICS. Elsevier, 15 Feb. 2006. Web. 29 Jan. 2013.
- Belogolova, Olga. "Japan Is Eager to Tap U.S. Natural-Gas Supply." National Journal 24 Nov. 2012: n. pag. NationalJournal.com. National Journal Group Inc., 24 Nov. 2012. Web. 29 Jan. 2013.
- Bradford, Scott. "An Analysis of a Possible Japan-US Trade Agreement." Lecture. Joint

Conference of the Japan Economic Foundation and the Peterson Institute for International Economics on "New Asia-Pacific Trade Initiatives" Washington, D.C. 27 Nov. 2007.

Peterson Institute of Economics. 27 Nov. 2007. Web. 29 Jan. 2013.

Cantwell, Kerin, Miles Killingsworth, Gregory Puff, and Andrew Abernethy. "Snapshot: Japan's Post-Tsunami Energy Market." Law360 (5 Sept. 2012): n. pag. Law360. Portfolio Media, Inc., 5 Sept. 2012. Web. 29 Jan. 2013.

Chanlett-Avery, Emma, William H. Cooper, and Mark E. Manyin. Japan-U.S. Relations: Issues for Congress. Rep. no. RL33436. Congressional Research Service, 4 May 2012. Web. 29 Jan. 2013.

Conti, John, ed. Effect of Increased Natural Gas Exports on Domestic Energy Markets. Rep. U.S. Energy Information Administration, Jan. 2012. Web. 27 Aug. 2012.

Cooper, William H. Free Trade Agreements: Impact on U.S. Trade and Implications for U.S. Trade Policy. Rep. no. OMB No. 0704-0188. Congressional Research Service, 23 Feb. 2010. Web. 29 Jan. 2013.

Cooper, William H. Japan's Possible Entry Into the Trans-Pacific Partnership and Its Implications. Rep. no. R42676. Congressional Research Service, 24 Aug. 2012. Web. 29 Jan. 2013.

Cooper, William H., Mark E. Manyin, Remy Jurenas, and Michaela D. Platzer. The Proposed U.S.-South Korea Free Trade Agreement (KORUS FTA): Provisions and Implications. Rep. no. RL34330. Congressional Research Service, 1 Mar. 2011. Web. 29 Jan. 2013.

Cooper, William H. U.S.-Japan Economic Relations: Significance, Prospects, and Policy Options. Rep. no. RL32649. Congressional Research Service, 29 May 2012. Web. 29 Jan. 2013.

Curtis, Gerald L. "Future Directions in US-Japan Relations." Proc. of New Shimoda Conference, Tokyo, Japan. N.p., Feb. 2011. Web. 29 Jan. 2013.

Das, D.K. "Issues Facing U.S. Shale Gas Exports To Japan." Pipeline & Gas Journal 238.12 (2011): n. pag. Pipeline & Gas Journal. Dec. 2011. Web. 29 Jan. 2013.

"Free Trade Agreements." International Trade Administration. N.p., 1 Jan. 2012. Web. 29 Jan. 2013.

Garvizu, Nicolas. "Japan's Energy Policy after Fukushima : Nuclear or Not ?" Perspectives Internationales. N.p., 26 Oct. 2012. Web. 29 Jan. 2013.

Hatakeyama, Noboru. "Thoughts on a Japan-US FTA." Japan Spotlight. Japan Economic Foundation, Aug. 2006. Web. 23 Feb. 2013.

"Institute for Energy Research | U.S. Leads World in Natural Gas Production from Hydraulic Fracturing." Institute for Energy Research. N.p., 6 Dec. 2012. Web. 29 Jan. 2013.

Johnston, Eric. "LNG Gains Political Value as Japan's Needs Soar." The Japan Times. The Japan Times Ltd., 3 Jan. 2013. Web. 29 Jan. 2013.

Lefebvre, Ben. "UPDATE: Freeport LNG Signs Long-Term LNG Tolling Contract With BP." Bloomberg Businessweek. Dow Jones and Company, Inc., 11 Feb. 2013. Web. 23 Feb. 2013.

Levi, Michael A. A Strategy for U.S. Natural Gas Exports. Rep. The Hamilton Project, June 2012. Web. 27 Aug. 2012.

Manger, Mark. Competition and Bilateralism in Trade Policy: The Case of Japan's Free Trade Agreements. Review of International Political Economy. Routledge, 16 Aug. 2006. Web. 29 Jan. 2013.

Montgomery, W. David, Robert Baron, Paul Bernstein, Sughandha D. Tuladhar, Shirley Xiong, and Mei Yuan. Macroeconomic Impacts of LNG Exports from the United States. Rep. NERA Economic Consulting, 3 Dec. 2012. Web. 29 Jan. 2013.

Moore, Michael O., and Alissa Bellotti. "Initiating U.S. Free Trade Agreements: How Do

Potential Partners Stack Up?." International Trade Journal 21.2 (2007): 161-189.
Business Source Complete. Web. 18 Feb. 2013.

Nakano, Ryoko. "An FTA with the US: Comparison between South Korea and Japan."

Philips, Matthew. "Strange Bedfellows Debate Exporting Natural Gas." Editorial.

BloombergBusinessweek Global Economics. Bloomberg L.P., 22 Aug. 2012. Web. 27
Aug. 2012.

Sotolongo, Kristie. "Abundant Shale Gas Driving U.S. LNG Exports." Exploration &
Production. Hart Energy, 3 Jan. 2012. Web. 27 Aug. 2012.

Tham, Eric. "Singapore as a Gas Trading Hub in Asia: Opportunities and Challenges." Web log
post. Of the Environment Energy Economics Blog. N.p., 25 Dec. 2011. Web. 29 Jan.
2013.

U.S. Department of Energy. Office of Fossil Energy. Applications Received by DOE/FE to
Export Domestically Produced LNG from the Lower-48 States (as of January 11, 2013).
N.p., 11 Jan. 2013. Web. 29 Jan. 2013.

Urata, Shujiro. "Japan-US EPA: Benefits and Obstacles." New Asia-Pacific Trade Initiatives.
Peterson Institute for International Economics, Washington, DC. 27 Nov. 2007. Speech.

Wallace, Rick. "New Hope for FTA with Japan." *The Australian*. *The Australian*, 27 Dec. 2012.
Web. 29 Jan. 2013.

Yoshii, Michael J., Joseph A. Bevash, Hiroki Kobayashi, Kenneth M. Simon, and Michael J.
Gergen. "Update: US LNG Exports to Japan." *Client Alert 1406* (30 Sept. 2012): n. pag.
Latham & Watkins, 30 Sept. 2012. Web. 29 Jan. 2013.

Appendix of commonly used abbreviations:

ASEAN - Association of Southeast Asian Nations

Bcf/d - Billion cubic feet per day

DOE - United States Department of Energy

DOE/FE - Office of Fossil Energy at the U.S. Department of Energy

EIA - Energy Information Administration

FDI - Foreign Direct Investment

FERC - Federal Energy Regulation Commission

IMF - International Monetary Fund

JEF - Japanese Economic Foundation

JUSFTA - Japan-United States Free Trade Agreement

KORUS FTA - South Korea-United States Free Trade Agreement

LNG – Liquefied Natural Gas

MMBtu - Million British thermal units

NAFTA - North American Free Trade Agreement

Tcf - Trillion cubic feet

USITC - United States International Trade Commission

WTO - World Trade Organization

