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Economic Analysis on Trade Policy and Trade Agreements

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Recent development of production fragmentation across countries (or global supply chains) generates the demand for deeper integration and more individualized trade agreements than those promoted by the World Trade Organization (WTO). The goal of this research project is to examine recent trade policy and trade agreements by focusing on issues such as outsourcing, FDI, natural persons' mobility, labor issues, and antidumping. Research topics studied in this project cover the following three categories: (i) firm-level transactions with market imperfections, (ii) foreign direct investment (FDI), and (iii) the effects of preferential trade agreements.

The research project produced the following eight research papers:

[1] "Outsourcing with home bias and trade policy" by Hitoshi Sato

[2] "Assortative Matching of Exporters and Importers" by Yoichi Sugita, Kensuke Teshima, Enrique Seira

[3] "Do International Flights Promote Foreign Direct Investment? The Role of Face-to-Face Communication" by Kiyoyasu Tanaka

[4] "Stability of Complementarity between Japanese FDI and Import of Intermediate Goods: Agglomeration Effects and Parent-Firm Heterogeneity" by Tadashi Ito, Toshiyuki Matsuura, Chih-Hai Yang

[5] "Trade Liberalization, FDI, and Movement of Natural Persons" by Yoshimasa Komoriya

[6] "A New Institutional Approach to Japanese Firms' Foreign Direct Investment under Free Trade Agreements" by Hikari Ishido

[7] "Labor Clauses in Regional Trade Agreements and Effects on Labor Conditions: An Empirical Analysis" by Isao Kamata

[8] "Preferential trade agreements and antidumping actions against members and nonmembers" by Hiroshi Mukunoki

Sato [1] proposes a simple model of foreign outsourcing with matching frictions and home bias in firms' acquisition of intermediate goods and shows that the government may use rent-shifting trade policy rather than mitigating production inefficiency caused by the home bias. Sugita et al. [2] develops a positive assortative matching model with firm heterogeneity to examine the matching of exporters with importers and the effect of the termination of the Multi Fiber Arrangement. Tanaka [3] empirically investigates the effect of the frequency of direct flights on the establishment of new foreign affiliates by Japanese firms and highlights the importance of face-to-face communication in the operation of foreign affiliates. Ito et al. [4] examines the duration of intermediate goods imports and its determinants for Japanese affiliates in China. Komoriya [5] proposes an international oligopoly model with FDI to examine the effect of liberalization of movement of natural persons on the feasibility of liberalization of goods trade. Ishido [6] empirically examines the distribution of FDI size in the presence of FTAs, using Japanese firm-level data. Kamata [7] studies the effect of “labor clauses” in trade agreements on working conditions and trade intensity between party countries. Finally, Mukunoki [8] addresses the question as to how preferential trade agreements would change the government usage of antidumping actions by developing a three-country oligopoly model. Each paper’s summary can be seen in what follows.

[1] Outsourcing with Home Bias and Trade Policy (H. Sato)

Trade in intermediate goods has been a global trend for decades. Observers argue that recent development of production fragmentation across countries (or global supply chains) generates the demand for deeper integration and more individualized trade agreements than those promoted by the World Trade Organization (WTO). However, it is not immediately clear in what aspects trade agreements need to be individualized in the era of international production networks.

This study attempts to address this question, observing two empirical facts. First, relation-specific transactions, rather than anonymous market transactions, prevail in the trade of intermediate goods because they are highly likely to be customized according to buyers' needs. Second, only a fraction of firms uses imported intermediate inputs (even within a narrowly defined industry). For this purpose, we examine a simple model of outsourcing involving matching frictions and home bias in firms' acquisition of intermediate goods. Two groups of seller firms---local sellers and foreign sellers---may face different degrees of search frictions even though they are identical in terms of productivity. Two groups of buyer firms are considered: one group accepts local and foreign sellers equally, whereas the other group accepts only local sellers and never acquires intermediate goods from foreign sellers (communication with foreign sellers may be too costly for this group).

The model predicts that the existence of buyers whose demand is biased toward locally produced intermediate goods allows unbiased buyers to exploit foreign sellers. Though only few buyers have biased demand, the entry of foreign sellers would be greatly deterred. In such an environment, the home government may adopt rent-shifting trade policies rather than mitigate production inefficiency caused by the home bias.

[2] Assortative Matching of Exporters and Importers (Y. Sugita et al.)

Manufacturing production has dramatically changed in the last two decades. Most goods are produced in global networks of buyers and suppliers in different countries. However, existing studies on trade agreements pay little attention to buyer-supplier relationships in global production networks. They conventionally assume anonymous markets where matching of buyers and suppliers is irrelevant as in centralized commodity markets.

This paper is the first empirical analysis on the effect of a free trade agreement on buyer-supplier relationships in international trade. Specifically, we analyze how the North America Free Trade Agreement (NAFTA) affects matching between Mexican suppliers (exporters) and US buyers (importers). First, we assembled matched exporter-importer data on Mexican textile/apparel exports to the US for 2004-2011. In this dataset, we can observe which Mexican firm exports to which US firm at each HS 6-digit level. Second, we analyze an exogenous opening of the US apparel/textile market to non-NAFTA countries, notably China, at the end of the Multifibre Arrangement in 2005. This opening of the US to China effectively reduces the preference of the NAFTA to Mexico. By analyzing how matching of Mexican exporters and US importers change, we can examine the effect of a free trade agreement on buyer-supplier matching across countries.

We find new facts on exporter-importer matching that contradict with the assumption of anonymous markets. First, product-level matching is approximately one-to-one. Second, in response to the entry of Chinese exporters into the US, matching of US importers and Mexican exporter changed systematically. US importers switch their main Mexican partners to those who had greater pre-shock exports, while Mexican exporters switch their main US partners to those who had smaller pre-shock imports. To explain these facts, we present a theoretical model combining Becker-type positive assortative matching of final producers and suppliers with the standard Melitz-type model.

The model interprets the observed changes in matching as evidence for a new form of trade diversion by a free trade agreement. The NAFTA induced high capability US buyers to match with low capability Mexican suppliers instead of high capability Chinese suppliers. This mismatching reduces the efficiency of global production networks.

[3] Do International Flights Promote Foreign Direct Investment? The Role of Face-to-Face Communication (K. Tanaka)

The spatial expansion of manufacturing production across borders has been driven by a reduction in transportation costs and trade barriers. While information and communication technologies have reduced communication costs involved in coordinating complex production tasks from a distance, there remain coordination costs such as face-to-face communication (Baldwin and Evenett, 2015).[1] In-person meetings are crucial for building business relationships and managing production activities. Visiting foreign countries is essential for personal contacts, and air transportation services facilitate international business trips, which should facilitate face-to-face interactions across borders.

This paper examines whether international flights promote foreign direct investment (FDI) through a reduction in face-to-face communication costs. Information collection in a foreign market through face-to-face communication is crucial for the managerial decision-making processes in making direct investment. International flights reduce travel time and costs for business visits, and encourage the decision to establish a foreign subsidiary through a reduction in face-to-face communication costs.

To assess the hypothesis, I estimate the impact of international direct flights on the new establishment of foreign affiliates by individual Japanese firms. A Poisson regression model is specified to account for determinants of FDI entry at the firm and host-country level. In particular, I examine that if flights reduce face-to-face communication costs, they should have a larger effect on new FDI entry in which face-to-face communication between the parent firm and foreign affiliate is more intensive.

I find that the weekly frequency of direct flights significantly increases the number of new foreign affiliates. Such a positive impact is greater for foreign affiliates with a higher share of Japanese workers. A weekly increase of 10 direct flights is associated with an increase in the expected count of FDI entry by 7.8% when the share of Japanese workers is zero. A 10 percentage point increase in the share of Japanese workers is predicted to increase the positive effect of direct flights by 12.7%. These results suggest that international direct flights promote

[1] Baldwin, Richard E., Evenett, Simon J., 2015. Value creation and trade in 21st century manufacturing. *Journal of Regional Science*, 55 (1), 31-50.

FDI entry through a reduction in face-to-face communication costs across borders.

[4] Stability of Complementarity between Japanese FDI and Import of Intermediate Goods: Agglomeration Effects and Parent-Firm Heterogeneity" (T. Ito et al.)

The concern regarding the hollowing out of the domestic economy by outward FDI flows has re-emerged in Japan, with both large and small firms relocating their plants to China since the late 1990s, in line with the development of global production fragmentation. This paper provides some facts for better debate on this issue and, from a dynamic perspective, analyses the duration of intermediate goods trade when it is accompanied by an increase in FDIs, using a unique parent-firm-affiliate-product level dataset for the 2000–2006 period.

The paper examines determinants of the duration of intermediate goods imports for Japanese affiliates in China by focusing on the roles of products, affiliates, or parent-firm characteristics and agglomerations. Estimates obtained from the discrete-time hazard model show that intermediate goods, such as differentiated goods and products that belong to upstream industries, survive a longer time, which is consistent with previous studies. Intermediate goods imported from Japan have a stronger impact on lowering the hazard rate, suggesting they contain sophisticated technologies and are thus less easily substitutable locally. Using various measures of agglomeration indicators, we consistently find a positive relationship between agglomeration and the hazard rate of intermediate goods imports. The association of the size of parent firms in terms of the number of employees with the duration is not statistically significant, whereas SME affiliates and the characteristics of traded products imply that SMEs tend to engage in longer trade relationships. Moreover, parent firms' foreign production networks and their longer foreign production experience are found to reduce the duration. These findings also suggest that SMEs, which have a small number of workers by definition and usually do not have foreign production networks, tend to continue importing intermediate goods from the home country.

[5] Trade Liberalization, FDI, and Movement of Natural Persons (Y. Komoriya)

Like most Japanese economic partnership agreements, some trade agreements include agreements on the movement of natural persons (MNP). The main focus of this paper is on how trade liberalization mixed with liberalization of MNP restrictions affects economic welfare and on the feasibility of trade liberalization coupled with MNP liberalization.

The literature infers that difficulties in transmitting information affect the location of firms. This indicates an importance of short-term business travelers and the intracompany transfers of employees as a kind of MNP. Restrictions on short-term business travelers and the intracompany transfers of employees make foreign direct investment more costly and less profitable. Thus, when MNP is crucial for undertaking FDI, MNP restrictions have the same impact on FDI with investment restrictions.

Assuming this tight relation between MNP and FDI and using a policy-setting game between two governments, we explore the feasibility of trade liberalization and MNP liberalization in an international duopoly setting.

Simultaneous trade and MNP liberalization could be Pareto improving for welfare-maximizing governments, one of which uses a trade policy and the other a MNP policy. This result holds when the market size is relatively small and/or when the difference in marginal cost between two countries is relatively large. The simultaneous trade and MNP liberalization does not appear as a Nash-equilibrium of this policy-setting game. However, this liberalization could be practically achieved because the optimal tariff level downs to zero with FDI.

[6] A New Institutional Approach to Japanese Firms' Foreign Direct Investment under Free Trade Agreements (H. Ishido)

This paper examines the determinants of foreign direct investment (FDI) under free trade agreements (FTAs) from a new institutional perspective. First, the determinants of FDI are theoretically discussed from a new institutional perspective. Then, FDI is statistically analyzed at the aggregate level.

The results are summarized in the Table below. The results are mixed, to say the least. For Malaysia and Chile, the test for average difference is significant. For Indonesia, the Philippines and Vietnam, the test for the difference in variance is significant. For all other countries, the results are not statistically significant.

Overall, it seems that the impact of FTA on the size of the investing firms is somewhat non-linear. As for FTAs with South American countries (Mexico and Chile), it seems the existence of FTAs seems to promote larger-scale FDIs in order to establish industrial agglomeration. These results remain correlational instead of causal, and more statistical analyses is needed for further understanding. Among policy implications, participating firms should consider institutional aspects of FTAs, such as size as a determinant of FDI. Theoretically speaking, FDI is a non-market solution to market imperfection. To adapt to the local business environment, firms are seen to change in size. The empirical observations and the results of the statistical tests are only partially in line with the theoretical hypothesis. Future work along this line is therefore much needed, particularly with regard to firm heterogeneity as characterized by firm size.

Table. Result of the statistical test on the difference of firm-size distribution (in terms of paid-up capital stock)

FTA partner country	**Test for the difference of mean**	**Test for the difference of variance**
Singapore	Not significant	Not significant
Mexico	Not significant	Not significant
Malaysia	Significant	Not significant
Chile	Significant	Not significant
Thailand	Not significant	Not significant
Indonesia	Not significant	Significant
Philippines	Not significant	Significant
Vietnam	Not significant	Significant

[7] Labor Clauses in Regional Trade Agreements and Effects on Labor Conditions: An Empirical Analysis (I. Kamata)

The recent progress of economic globalization has been intensifying public concerns about the negative impacts of international trade on conditions of workers (such as a ‘race to the bottom’). These concerns are often linked to the idea of including in a trade agreement “labor clauses”—provisions that require or urge the signatory countries to commit to maintaining a certain level of labor standards, and an increasing number of bilateral or plurilateral trade agreements (or regional trade agreements: RTAs) include labor clauses. Are such labor clauses in RTAs effective to maintain or improve working conditions faced by laborers in the RTA signatory countries? This paper aims to answer to this question through an empirical analysis using macro-level data for a wide variety of countries.

The paper starts with an extensive examination of more than 200 currently-effective RTAs in terms of the existence and contents of their labor provisions. It follows the author’s previous work, but more focuses on the coordination of domestic labor standards between the RTA partners as well as the enforceability of the labor provisions. More specifically, the paper classifies the RTAs according to two criteria: (i) whether or not the agreement urges or expects the signatory countries to harmonize their domestic labor standards with internationally recognized standards, and (ii) whether or not the agreement stipulates the procedures for consultations and/or dispute settlement on labor-condition issues between the signatory countries, and defines 22 RTAs that satisfy both of these criteria (plus another 9 RTAs that satisfies (ii) only) as "RTAs with labor clauses" to distinguish them from the other "RTAs without labor clauses."

The paper then estimates the impacts of RTA labor clauses on working conditions in countries. The paper employs two empirical specifications. The estimation takes into account possible time length for domestic labor conditions to be adjusted complying labor clauses in RTAs. The estimation is also extended to consider potential difference in the impacts across income-group pairs of trading partners. The estimation is performed with the sample covering 136 countries or economies and years from 1995 through 2011.

The empirical results shows that for any of the four labor-condition measures (mean monthly earnings, mean weekly work hours per employee, fatal occupational injury rate, and the number of the ILO's core conventions ratified), almost none of the coefficient estimates on the labor-clause-inclusive RTA indexes is significant, which suggests that the expected effects of labor provisions in RTAs to maintain or improve the domestic working condition of the RTA members are not evident. This result may be consistent with (or supporting) the argument among economists and some national governments (particularly of developing countries) that doubts the relevance of using trade policy as an instrument to improve labor conditions. However, considering the limitation in the sample of labor-clause-inclusive RTAs—only 22 (or 31) of over 200 RTAs are with labor provisions, and many of them were signed and became into force in the late 2000s or after 2010—, it should be desirable to have the empirical analysis supplemented with a close investigation of some case(s) of a labor-clause-inclusive RTA(s) with a relatively long history to confirm the conclusion.

[8] Preferential Trade Agreements and Antidumping Actions against Members and Nonmembers (H. Mukunoki)

Recently, we have observed a rapid growth in regional trade agreements (RTAs) such as free trade agreements, customs unions, and partial scope agreements. With respect to import tariffs, many existing theoretical and empirical papers found that member countries, which eliminate tariffs imposed on other member countries, are willing to reduce tariffs against outside countries. The effect is called the tariff complementarity effect and widely accepted in the literature.

However, there are a few evidences that RTAs may come with an increase in the number of AD filings against non-RTA members. These contrasting evidences suggest that the tariff complementarity effect is not directly applicable to countries' use of AD measures. If RTAs induce countries to apply AD rules more frequently against nonmembers, RTAs can hurt nonmembers more. Despite these concerns, there are no theoretical analyses on this subject and I believe this paper is the first attempt to examine the relationship between the formation of an RTA and AD policies. Specifically, I explore under what conditions RTAs invoke members' AD actions.

I found that an RTA intensifies the competition and lowers product prices in the member countries. This effect widens the dumping margin of the nonmember firm and narrows the dumping margin of the member firm. As the dumping margin becomes larger, countries' AD actions become more effective to protect the domestic producers. However, the increased dumping margin also enlarges the welfare loss from AD actions. Consequently, if the government is more concerned with the domestic firm's profit in its AD decision, the RTA may invoke the member's AD action against the nonmember.

To prevent an AD-induced, trade-diversion effect, the WTO rule on RTAs should include the restriction on the use of AD actions. Also, the government should be less dependent on the political pressures from the domestic producers. If the governments attach a sufficiently high value on social welfare, I found an RTA may prevent AD actions against the nonmembers, though it instead induces AD actions against the members.