AN ANALYSIS OF TRADE WARS IN RELATION TO THE PRODUCT CYCLE THEORY:
THE CASE OF AMERICAN AND JAPANESE COMMERCIAL INTERACTION

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF

MASTER OF SCIENCE

IN

INTERNATIONAL RELATIONS

SEPTEMBER 2003

Approval of the Graduate School of Social Sciences

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ABSTRACT

AN ANALYSIS OF TRADE WARS IN RELATION TO THE PRODUCT CYCLE THEORY:
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September 2003, 104 pages

This thesis analyzes the inherent significance of trade wars in a practical as well as in a theoretical sense. The preliminary intention of the present research is to provide three different understandings of the trade war concept. Firstly, a general understanding of trade wars is introduced, primarily focusing on the technical aspects of the issue and its political and economic dimensions. Secondly, trade wars are viewed in a specific case study context: the Japanese-American commercial relations and their bilateral trade disputes that escalated into trade wars are investigated, focusing on semiconductor and biotechnology industries. Thirdly, the trade wars concept is correlated to Raymond Vernon's Product Cycle theory, introducing the theoretical understanding of trade wars. The combination of these research themes endeavors to establish whether trade wars are primarily fought between successful industrial states over leading strategic core industries, those that are knowledge-intensive, and produce high-value-added products.

Keywords: Trade wars, Japanese-American commercial relations, Biotechnology, Semiconductors

ÖZ

TİCARİ SAVAŞLARI'NIN 'PRODUCT CYCLE' TEORİSİNE İLİŞKİN ANALİZİ:
AMERİKAN-JAPON TİCARİ İLİŞKİSİNİN ETÜT ÇALIŞMASI

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Mastır, Uluslararası İlişkiler Bolumu

Tez Yöneticisi: Yrd. Doç. Dr. M. Fatih Tayfur

Eylül 2003, 104 sayfa

Bu tezin amacı ticari savaşların anlamını pratik ve teorik yönden incelemek ve analiz etmektir. Bu araştırmanın temel amacı ticari savaş konsept'ini üç ayrı bakış açısından ele almaktır. İlk olarak, ticari Savaşları'nın genel anlamı tanıtılmıştır, özellikle konsept'in teknik yönü incelenerek, politik ve ekonomik boyutları vurgulanmıştır.

Bir sonraki aşamada ise, ticari savaşlar konsept'i belirli bir etüt çalışması çerçevesinde gözlemlenmiştir: semi-konduktor ve biyo-teknoloji endüstrileri üzerine odaklanarak, Amerikan-Japon ticari ilişkilerinin ve ikili anlaşmazlıklarının ticari savaş boyutuna nasıl vardığını açıklıyor.

En son aşamada ise, ticari savaşlar konsepti Raymond Vernon'un 'Product Cycle' Teorisi ile bağdaştırılarak konsept'in teorik bakış açısı ele alınmıştır. Tüm bu yapılan gözlem ve araştırmaların ana teması ticari savaşların genellikle güçlü endüstriyel ülkeler arasında çıkması ve bunun stratejik önem taşıyan sektörlerde daha fazla hak sahibi olmaya çalışmaları yüzünden çıkması tartışılmaktadır.

Anahtar Kelimler: Ticari savaşlar, Japon-Amerikan ticari ilişkiler, Biyo-teknoloji, Semi-konduktorler

To Mom and Dad...

ACKNOWLEDGEMENTS

I am exceedingly grateful to Assistant Professor Dr. Fatih Tayfur for supervising me on this research. His indispensable help together with his deep insight on international trade and its prevalent dynamics benefited this research substantially. I am also grateful for his patience, comprehensive feedback on my work and the amount of his time made available for my thesis. It was a pleasure working with him.

I am also very grateful to Mete Tuncoku, for his love for Japan and Asia which he generously shared with his students during his classes. He added much clarity needed to my understanding of Japan, and more so, inspired me to study Japan throughout my masters.

I would also like to express gratitude to my family, especially to my parents for believing in me and encouraging me to go on. I express my appreciation to my mom and dad for their love for the academic profession, which they nourished in me for so long and for providing me with their emotional and financial support. I am very grateful to my husband Jay, who put up with me all this time and helped a great deal with his understanding, patience and kindness.

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CHAPTER 1

INTRODUCTION

The core element of international economics is international trade. International trade represents a multidimensional framework within which international economic actors develop, prosper, and interrelate to each other, either in a cooperative or disputative manner. Trade binds various policy agendas together, such as labor, subsidies, and taxation, to name a few. Even though climate and natural resources are the preliminary ingredients which shape national and international trade landscapes and formulate the intrinsic patterns of trade, national political and economic interests, together with priorities in the domestic agendas, have to be referred to as well, in order to grasp the very logic and the nature of trade and its patterns.

International trade often occurs in cooperative and non-cooperative settings. Participants of international trade do not interact in an essentially harmonious fashion. In fact, in the last decades, due to some structural changes in the international trade landscape, such as the increasing level of transnationalism and interdependence between various national markets, states' mutual interactions have become highly strategic. States participate in intricate games, aiming to gain and sustain an advantage in world markets and preserve favorable conditions of trade for their exports, and they do so by utilizing various instrumentalities that are at their disposal. Such complex games result in equilibriums and mutually beneficial

agreements; however, in various instances, competitiveness in the framework of international trade, together with misunderstandings and misperceptions, can spark commercial conflicts. Such conflicts, if not resolved, lead to all-out trade wars.

Trade wars have received a great deal of attention, primarily from the economics discipline. However, it has been some what neglected in the academic study of international relations. Trade wars are frequently viewed, in economic as well as in political studies, as a purely economic phenomenon that is immune from political developments. Trade wars and their ramifications have not been fully understood in the framework of political analyses, even though trade wars provide the necessary tools and insights for a better understanding of the relationship between the political authority and the market. Trade wars, when integrated into the study of international political economy, are mainly introduced in the context of free trade arguments. In international relations study trade wars are occasionally touched upon in relation to game theory applications of international conflict resolution. However, a multidimensional study of trade wars that would combine political analyses together with the economic studies of the issue is rare.

Referring to Deardorff's *Glossary on International Economics* (2000), a trade war is generally a period in which each of two countries alternate in further restricting trade from the other. More specifically, trade wars center on the process of applying, and retaliating against, tariffs, even though other instrumentalities, including quotas and other measures that discriminate against products and services from the antagonist country, can also be implemented.

In the present research, the concept of trade wars shall be dealt with, methodically combining primarily three understandings of trade war concept. The three proposed aspects of trade war understanding shall be examined and

interrelated. Firstly, a traditional general understanding of trade wars in economic and political context shall be utilized, primarily focusing on the technical aspects of the concept. Secondly, trade wars in a specific case study context, Japanese-American commercial relations and their bilateral trade disputes that escalated into trade wars, shall be analyzed. Thirdly, trade war conceptology shall be viewed in relation to Raymond Vernon's Product Cycle theory. The combination of these research themes endeavors to establish whether trade wars are primarily fought between successful industrial states over leading strategic core industries, those that are knowledge-intensive, and produce high-value-added products.

The scope of this research is Japanese-American commercial relations in a specific time framework of two decades - 1970-1990, due to the fact that these two decades contain a host of numerous intensive trade conflicts between the two actors. The major strain in the commercial relations between the two countries occurred in the 1970's, one of the reasons being various political developments taking place in the context of Cold war. President Nixon's efforts to introduce new rapprochements with China and the Soviet Union, symbolized in part by the Strategic Arms Limitation agreement of 1972 signed between America and the Soviet Union, increased uncertainty in the political relations between Japan and America. Both sides latently questioned the future of the strong security alliance between America and Japan. The American dissatisfaction with Japan's passive foreign policy in the Asia Pacific region, mainly the Japanese 'free rider' attitude towards regional security and development commitments caused a great deal of concern on the American domestic front. Japan, on the other hand, was developing a strong sense of unease about the American military presence in its territory, especially the Okinawa region.

Moreover, in the early 1970's, fundamental changes were taking place in American foreign policy formulation. Strong interest groups such as the American Legions and the Veterans of Foreign Wars were rapidly gaining substantial influence in American foreign policy making in Asia, encouraging a larger security role for Japan in Asia, claiming that Japan had to share the burden of the American military and political involvement in Asia. Furthermore, strong labor and business lobbies were calling for a radical reform towards those Japanese imports that were posing a great threat to the crucial American industrial sectors. A rather evident example of the strong role of the American domestic interest groups over the foreign policy towards Japan was demonstrated in 1968, when Richard Nixon was running for President. Southern industrialists, who represented a strong lobby in the Republican Party, conditioned their votes for Nixon on a promise that, as president, Richard Nixon would introduce strong quotas on Japanese textile and establish credible safeguards for the American textile industry, due to the fact that the industry was in decline as a result of severe competition from the Japanese textiles. Through out the 1970-1980 period the Southern industrialists lobby played a rather strong role in formulating the American trade policy towards Japan. The period of 1970-1980 demonstrated a great deal of mistrust, misperception and misunderstanding in the Japanese-American relations. This unease between the two countries was mainly a product of the Cold war paranoia and the rapidly escalating tensions of the international environment.

After the 1990's the trade problems between Japan and America lost their intensity. The strategic priority assigned to the Asian continent during the Cold war by the American foreign policy was by a large degree modified to intensive economic cooperation. The hostile perceptions together with the notion of mistrust

gradually died out with the end of Cold war and the disintegration of the Soviet Union. With the transformation of the international system from the bipolar one to the multi-polar system, the level of cooperation between Japan and America expanded rapidly. Both countries share strong commitments towards economic development in Asia, and prioritize the sustainability of the Asian economic development. Joint projects between America and Japan, taking place in the framework of bilaterally established bodies together with some multilateral commitments; establish multi-issue agendas designed to enhance development, facilitate prosperity and ensure stability in Asia. Strong political, cultural, security and economic ties between the two societies rapidly expand in the new millennium. Japan and America remain large trading partners in the new millennium. The main example of this commitment was expressed in June 30th 2001, when both countries signed the U.S.-Japan Partnership for Growth Treaty. The uneasy commercial relations of the 1970s were discarded and were replaced by credible and multidimensional cooperation that is prioritized by both sides.

This study shall be primarily restricted to trade relations between the two countries. However, trade relations can not be viewed in a vacuum, holding other factors constant. Political and economic dynamics are firmly embedded into the inherent matrix of trade; therefore, in order to understand the patterns of trade together with the industrial and trade policies patched together under specific trade regimes, some linkages between the trade issues and the political and economic developments have to be made. Therefore in the present research some substantial ingredients of the bilateral interaction between the two states shall be briefly elaborated, making concise references to the Japanese and American domestic politics, establishing the linkages between the national political and economic

developments and the fashion in which such developments influence the trade domain. This shall be done in order to comprehend the essential internal dynamics of their commercial relations.

The analyses of the trade wars shall be restricted to two high technology industries: semiconductor and biotechnology, during the 1970-1990s, due to the fact that these two industries hosted a great deal of commercial disputes in the given time framework. It shall be argued that these high technology industries elevate tension between trade partners due to the fact that the lead in production and export in such industries entails industrial superiority over other national economies and more so due to the fact that comparative advantage in such strategic industries can be created. Mutually exclusive and contending agendas of the Japanese and American producers and suppliers shall be examined, primarily focusing on the conflicting policies pursued by the sides, and the motivating factors of non-cooperative and cooperative policies shall be investigated.

However, the preliminary intention of the present research is to ascertain the inherent significance of trade wars in a practical as well as in theoretical sense, aiming to determine weather trade wars are mainly a practice of core industrial states, seeking to establish viable leadership in strategic industries in a global context and to preserve such a position. Using the Japanese-American trade relations in the framework of trade disputes, the very nature of trade wars shall be transcended to a comprehensive analytical framework of Product Cycle theory.

Methodologically, the present research shall combine two case study analyses, taken from the commercial interaction of two leading economies Japan and America, and the context of their relationship shall be applied to and tested in a theoretical framework of the Product Cycle Theory. The Product Cycle theory with

its main postulates, utilized in relation to the Japanese-American trade wars, shall substantiate whether trade wars are fought over strategic core industries, making trade wars a 'core versus core' conflict and whether gaining comparative advantage over these strategic industries is the matter of preservation of national economic interests or whether supremacy in such strategic industries guaranties the conservation of a "core state" status. The proposed Product Cycle theory shall be utilized due to the fact that it is most useful in the intended scientific inquiry. The theory has been previously utilized in diverse interdisciplinary scientific inquiries; however, it has been rarely applied to the study of trade wars and has been hardly fully employed in the mainstream international relations study. In the academic study of international relations the account of a *product cycle* concept has been mainly made in the work of the Modern World Systems School. According to the theory, due to the division of labor within the world-economy different geographical units specialize in different productive tasks, embodying 'core-like' and 'periphery-like' production activities; however, the essential idiosyncratic components of any product produced in such production processes often change and such a change is attributed to *product cycles*[1]. Through product cycles the nature of production changes and in turn, the core or periphery-like attributes of the product. Besides the Modern World Systems theory, the Product Cycle theory has been, by large, overlooked in the conventional study of international political economy and international relations.

Case study methodology shall be applied in the present research, seeking to establish the preliminary internal dynamics of trade wars, centered on developments on the commercial and political fronts that ignite and motivate such occurrences. The

[1] Tayfur, F. "Systemic-structural approaches, world-system analysis and the study of foreign policy." *METU Studies in Development,* Vol. 27, No. 3-4, 2000, pp. 265-299.

reasons motivating trade wars, together with the phases of intensive disputes and measures taken during such incidents up to the concluding phase of conflict resolution shall be investigated in the proposed case studies.

In order to provide comprehensive and coherent answers to the preliminary research question some functional sub-premises shall be tested through out the research: Trade wars primarily fought over strategic core industries, such as high technology; trade wars in such industries are fought because comparative advantage in such industries can be self-engineered/created; comparative advantage in strategic core industries is conditioned by the presence of some inherent idiosyncratic features of core economies; trade wars in such industries occurred at a particular phase of a product cycle. These empirical research hypotheses are to be used as the primary analytical features in the present research. The amalgamation of these research hypotheses aims to construct conclusive evidence on the practicality of trade wars, their significance and the effects they have on bilateral relations between two core states. It shall be demonstrated that trade wars have a strong effect on the political and diplomatic relations of the parties involved in a trade war, influencing several areas of interaction, altering social perceptions of one another and so forth.

In the first half of the 1970's Japan was already a fully recovered economic actor with an unprecedented pace of growth and booming industrialization. The collapse of the Bretton Woods regime in 1971 did not affect the Japanese economic development substantially. In the 1975 Rambouillet meeting, Japan promoted even further its liberalization by making its financial regulations more flexible, which led to expansion of foreign direct investment together with the number of multinational corporations operating in Japan. Relaxed exchange controls, relatively open domestic markets, removal of some substantial trade barriers characterized the Japanese

economy after 1970s. In 1985 the Plaza agreement was concluded between the international economic actors on the international monetary system. This agreement ensured smooth monetary management, low interest rates and coordinated exchange market intervention. However, this agreement was rather crucial for Japan specifically, due to the fact that it solidified Japan's essential role as an international economic actor and promoted its liberalization further. Japan became a leading economic player and begun to assume some responsibilities in the management of the international economic system.

Together with these developments the very nature of the Japanese-American intercourse started to take a rather different shape. The inherent nature of the relationship after World War II was that of a donor- and- recipient. America played a role of a donor for Japan and its economy through channels of versatile aid. While keeping a low profile in the international political domain, Japan prioritized economic development and trade. Japan was also directly intertwined into the American security web. While being rather dependent on the American strategic position in East Asia and the Pacific, together with the nuclear and conventional security shield, provided by America, Japan was also very much dependent on the intensive technological transfers from America, which were vital for the speedy recovery of the Japanese economy.

However, in the first decade of the 1970s the role of a recipient was no longer suitable for the strong and credible economic actor, which Japan had become. The paternal nature of the relationship was transformed into a competitive coexistence of two strong economic giants. Even though the new framework of commercial interaction, established in the early 1970's, resulted in the largest trans-regional trade observed in the given time frame, hostile competition for the access to wider market

opportunities in various industries often became the main element shaping the commercial landscape between the two actors, altering the established political and economic perceptions of each other to a substantial degree. Struggle for economic dominance in strategic sectors often assumes assertive and constructive instrumentality, such as industrial policies, increasing level of protectionism, and so forth, - which often transform the commercial interaction into a trade war. According to various authors, the shift in the donor-recipient relationship that characterized the Japanese-American interaction after the World War II, transformed into a competition between two leading economies. Trade wars, apparently is a natural result of such a competition. According to P. Clapp and M. Halperin, (1974) trade wars and the essence of commercial disputes emerged from the very structure of the trade relations (what was imported and exported by Japan for instance) and the imbalances in commodity trade, which were represented by a huge disproportion: firstly, Japanese exports to the USA began to exceed imports, increasing continuously to an export surplus of $3.8 billion, secondly followed by a vast increase in Japanese exports to the USA, the U.S. exports remained constant. This dramatic increase in Japanese imports in America produced a reaction by many threatened American industries, such as cotton fabrics, ceramics, iron and steel, seeking to restrict these imports. Several other authors claim that this often hostile competition is interlinked with the Japanese innate ambition of catching up with the West at any cost.

The present research shall consist of four different parts, each with a separate function to the core research inquiry. Firstly, an introductory chapter on the trade wars and the Product Cycle theory shall be presented. A brief general understanding of trade wars shall be introduced, seeking to identify trade wars and their

idiosyncratic features, primarily focusing on the motivations and stimuli for the occurrence of trade wars, together with their essence and structurality. Moreover, the internal dynamics of trade wars shall be analyzed, illustrating the possible scenarios and stages of trade wars, primarily benefiting from the work of Gunnar Sjosedt[2], primarily his comprehensive chapter on trade wars due to its systematic and coherent analyses. The central task of the chapter is a construction of an adequate identification of the trade wars concept. The following undertaking shall be done with a help of several substantial issue analyses. In the framework of international trade and international trade policy formulation mechanisms shall be briefly investigated, seeking to understand the hypothetical situations that produce trade wars. In the following section instruments of trade policy shall be analyzed, briefly focusing on the theme of protectionism and the appropriate instrumentality evoked in various trade measures, pre-trade war stages in policy formulation shall be of particular interest. The Product Cycle theory with its main postulates shall be illustrated in the following chapter as well. However, the theory shall be viewed independently from the trade wars concept, due to the fact that the chapter functions as an introductory part to the concepts of trade wars and Product Cycle Theory and the substantial linkages between the two concepts shall be established throughout the research.

Secondly, a review of the Japanese-American commercial relations shall be provided. The chapter shall investigate the main-course developments on the domestic as well bilateral levels, seeking to understand the course of developments that paved their way to the emergence of trade wars between the two countries. The

[2] Sjostedt, G. & Kremenyuk, V. *International Negotiations: models versus Reality*, Chapter 8, Edward Elgar, 2000.

chapter shall provide the contextual understanding of trade wars in the Japanese-American experience.

Consequently, two case studies from the Japanese-American commercial relations shall be illustrated, aiming to introduce some contextual insights to the comprehension of trade wars. Two cases shall be introduced and elaborated on, providing the fundamental understanding on the very nature and the practice of trade wars in the Japanese-American trade relations. Semiconductor and biotechnology cases shall be subjects to intensive analyses, focusing on the contending agendas of the Japanese and the American producers and suppliers. The primary political and diplomatic developments in the two cases shall be illustrated, seeking to understand the significance of trade wars and the ramifications they have on the commercial, political and the overall bilateral relations.

Fourthly, trade war concept shall be applied to an intensive analytical framework of the Product Cycle theory. The Product Cycle theory shall test the primary findings from the two understandings of trade wars introduced in the previous chapters. The following analysis shall establish the very logic and philosophy behind trade wars and provide a theoretical insight on the concept.

Finally, a concluding chapter shall be presented. The totality of the empirical and theoretical findings from the previous chapters is to be assessed and synthesized to a substantiated analytical framework of the primary research inquiry. The section shall summarize and evaluate the overall research process and the results of the research hypothesis. Most importantly, some recent developments together with the overall nature of the Japanese-American relations shall be briefly illustrated, emphasizing the main tenets of the bilateral interaction, in hopes of offering insights on the future of Japan and America.

Two different types of literature are utilized in the present research. Some classical texts on international economics, trade, trade wars and trade theories are utilized, in order to establish a coherent theoretical model on trade relations and trade wars. Moreover, concrete literature, specific to the Japanese-American commercial relations is utilized, primarily focusing on the analyses of trade disputes in the selected areas.

CHAPTER 2

TRADE WARS AND THE PRODUCT CYCLE THEORY

The aim of the present chapter is to review two prevalent concepts fundamental for the analytical framework of the present research: Trade Wars and the Product Cycle theory. Each concept with its primary constituents shall be briefly introduced and elaborated on. It should be noted that the two concepts shall be reviewed separately, as two independent issues, due to the fact that substantive links between the two concepts shall be provided in Chapter Five specifically, when the third, theoretical understanding of trade wars is developed.

Firstly, this chapter shall provide a general understanding of trade wars, focusing on the phenomenon and its basic features. The key terminology in the context of trade wars shall be briefly reviewed. Moreover, versatile discipline-oriented definitions of trade wars shall be illustrated. Consequently, the prevalent features of pure trade wars shall be focused on, primarily relying on the work of Gunnar Sjostedt[3]. Moreover, the various instrumentalities at disposal for fighting a trade war shall be highlighted as well as the existing mechanisms for the prevention of trade wars. In addition, motivations and stimuli for the occurrence of trade wars, together with the essence, structurality and the driving force of the participants of trade wars shall be briefly analyzed.

[3] Sjostedt, G. & Kremenyuk, V. *International Negotiations: models versus Reality*, Chapter 8, Edward Elgar, 2000.

Secondly, the Product Cycle theory, the production oriented macro level empirical explanation of shifting trade patterns, shall be viewed in the present chapter. The main postulates of the theory shall be introduced; however, the utilization of the theory in relation to trade wars analyses shall be performed in Chapter Five. The traditional understanding of comparative advantage concept shall be also briefly illustrated and juxtaposed against a modified understanding of comparative advantage proposed by the Product Cycle theory.

2.1 Trade Wars

Trade wars became a manifest phenomenon after the Great Depression of the early 1930. The increasing pressure to protect the domestic jobs from foreign imports resulted in most national economies adopting a comprehensive framework of tariffs.

> The Great Depression of the early 1930's generated 'beggar-thy-neighbor policies' and mounting protectionism in leading economic powers. Governments in these countries closed their borders to imports in order to achieve economic growth by means of domestic policy measures. Consequently, they exported unemployment. Instead of cooperating in order to expand international markets, governments resorted to unilateralism and engaged in an escalating trade war. Such trade policies exacerbated the world economic crises and increased tensions between the great powers.[4]

With the escalating protectionism there was a need to define and categorize the emerging phenomena that shaped the core developments of the economic and political reality of that era. The trade war terminology was introduced and investigated, in order to understand the reasons that had paved the way for the emergence of the hostile trade environment that prevailed until the end of World

[4] Sjostedt, G. & Kremenyuk, V. *International Negotiations: models versus Reality*, Chapter 8, Edward Elgar, 2000.

War II. After World War II the negative and unconstructive effects of trade wars on the international economic domain were critically scrutinized. A new thinking emerged in the aftermath of the war and this new system of beliefs was embedded into a refined framework of 'liberal internationalism'. A set of institutional norms, regulations, and management policies aiming to promote international economic cooperation was established and this new order was known as the Bretton Woods Regime. The number of trade wars following the establishment of the Bretton Woods order was substantially reduced due to the shared commitment to free trade.

A standard definition on trade wars does not exist due to the fact that the study of the issue is of an interdisciplinary nature. Various disciplinary domains focus on different elements of trade wars, hence dissimilar definitions and divergent research agendas. According to some economists[5] trade wars do not directly demonstrate the presence of a conflict of interests between trading partners, as they are determined by the perceptions, attitudes and actions of the trading partners towards a trade war. Often in some economic studies a trade war is viewed as an isolated phenomenon that does not substantively affect the complex organic set of social relations. Keeping other factors constant, trade wars are often viewed as an instance with its own philosophy. On the other hand, some authors of international relations discipline often view the term 'trade war' as a synonym of a conventional war, overstating the nature and the effects of a trade war. Very often the authors of international relations overlook the technical side of a trade war and *overpolemicise* the issue. The definition bellow provides a basic technical explanation of a trade war.

[5] Krugman, P. *Pop Internationalism*. MIT Press, Massachusetts, Cambridge, 1997

> Trade war- conflicts in which national governments with diverging interests try to monitor trade flows in order to achieve trade policy objectives other than attained on the market. A typical trade war situation is at hand when the government of nation **A** introduces illegitimate trade obstacles in order to circumscribe the penetration of **A's** domestic markets by companies from nation **B** and government **B** responds in kind. The trade policy measures of a country are illegitimate when they are inconsistent with the international obligations that this nation has accepted in GATT/WTO and other international agreements. [6]

Another general understanding of trade wars emanates from some of the writings of a purely economic nature. These view trade wars mainly as a conflict in tariff formation process, which according to the approach is the focal point of complex bargain between trade partners. "Nations sometimes set tariffs either cooperatively or competitively with other nations. Groups of nations regularly agree on mutual reductions in their trade barriers, either as part of mutual negotiations or in regional economic integration. The converse of cooperative reduction in tariffs is the antagonistic imposition of trade barriers- a trade war."[7] Some other definitions of trade wars exist in social sciences and economics; however, the definition developed by Gunnar Sjostedt and introduced in the previous page, fits best into the proposed research model, due to its comprehensive and applicable nature, since it can be synthesized into a wider analytical framework that is to be implemented in the following chapters.

There are some distinct features that are inherently embedded into the essence of pure trade wars. These features are clearly illustrated by Gunnar Sjostedt. Pure trade wars are mainly fought between two parties. When other problematic issues of international trade, such as trade conflicts or trade frictions, are usually

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[6] Sjostedt, G. & Kremenyuk, V. *International Negotiations: models versus Reality*, Chapter 8, Edward Elgar, 2000

[7] McMillan, J. "Trade Accords and Trade Wars." *Trade, Welfare, and Economic Policies*.P: 1, University of Michigan Press, Michigan, November 1990.

unfolded in a multilateral framework, pure trade wars are revealed in the context of a bilateral confrontation[8]. Particular issues typically ignite pure trade wars.

> Usually, they involve particular products or product groups as well as specific trade policy measures like tariff treatment, the regime for a special commodity (e.g. sugar), import measures, production aid or internal regulations with an impact on international trade. All sort of states have been engaged in emerging trade wars, industrialized as well as developing countries. However, larger economic powers seem to have been over-represented in potential trade wars and particularly the European Union and the United States[9]

A pure trade war starts when a credible intention of one country to harm another country, by evoking some retaliatory trade-policy measures. The instrumentality may vary. As in the traditional understanding of war this first offensive move is characterized in the trade war context as 'the first strike'. This 'first strike' represents a first stage of a potential trade war. The feasibility, occurrence and continuity of a trade war depend on the level of reaction from the targeted side and its perception of the 'first strike'.[10] According to Sjostedt, the targeted party has, in theory, several options: ignore, comply, retaliate, accept mediation or bargain. Consequently, these responses correspond to a host of action plans for further policy and attitude formulation towards the potential trade war. These action plans are assembled under the following scenarios.

An abortive trade war scenario is when a targeted nation does not perceive the offensive strike as a hostile action and does not sense the full impact of the action. In some occasions the targeted country is not even aware of the offensive strikes of its trade partner. This uninformed condition is occasionally the case for some developing countries, which may not be on alert concerning trade hostilities around them.

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[8] Sjostedt, G. & Kremenyuk, V. *International Negotiations: models versus Reality*, Chapter 8, Edward Elgar, 2000.
[9] Ibid
[10] It is important that the targeted party perceives the move as the 'first strike' move.

A blitzkrieg scenario corresponds to a brief, virtually non-existent incident. It involves a rather mild response from the targeted country. In such a setting, the aggressor intimidates the targeted country to a substantial degree and with its offensive first strike instantly succeeds, and the defeated party accedes to the demands. This brief encounter often results in voluntary bilateral agreements in which the principal aim is to limit the volume of exports of the targeted party, even though it harms its economic interests. Moreover, the agreements are rather specific in regard to their stipulations. The agreements are produced for a specified period of time; however, in time the agreements become more comprehensive and institutionalized. Voluntary Export Restrains agreements acceded to by the economically confronted countries have become as common in the everyday practice of international trade as import restrictions with a boarder range of coverage pursued by the offensive party.

Another scenario is multilateralization. On some occasions the issues that embody bilateral conflicts become integrated into some multilateral agendas and get solved in those multilateral frameworks. Sometimes trade wars between two parties get terminated due to some relevant developments on the multilateral institutional front. When the developments in the context of the World Trade Organization get transcended into the core matter of a trade war, then the entire trade confrontation is discontinued and becomes void.

Rule-based dispute settlement is another form of a consequent development after the first strike. The parties may acknowledge the presence of a particular conflict to the relevant international entity, which is the World Trade Organization. The organization functions as a credible instrument for settling complex trade related confrontations of bilateral nature, such as trade wars.

Moreover, rule-making is another scenario in the given context. This practice is to some degree similar to multilateralization due to the fact that it involves various parties into the problem-solving process. Negotiations take place in special negotiating bodies and are not interlinked to the concrete institutional establishments. The most substantial concrete issues of a given trade war are on the agenda in such negotiations. For instance, GATT rounds have functioned as a credible framework for solving various trade wars that could not have been solved in bilateral forums. Most importantly, as a product of such practices, some issue-driven rules are created in order to provide coherent and adequate solutions to the concrete trade problems.

The last scenario in the given context is escalation. The following scenario involves full scale retaliation on the behalf of the targeted country.

> Target party B's retaliation represents escalation if it will increase the *scope* (number of issues), *rate of participation* (number of actors) or *intensity* (higher costs or risks) of a conflict. Escalation may be understood as upward movement on a ladder, in which each rung passed represents action/response by one of the contenders, A or B… Escalation occurs only at the low end of the ladder. Threats and counter-threats are exchanged and actual sanctions start to become implemented.[11]

Escalation is rare; however, the intensity of a full blown trade war is enormous. An aggressive bilateral trade landscape affects various aspects of the bilateral interaction. Nevertheless the subject of full blown trade wars and their effects on the entire spectrum of bilateral interactions shall be fully covered in Chapter Three, using concrete examples from the Japanese-American trade confrontations.

In the following section the main instrumentality evoked during the trade wars shall be briefly touched upon. In order to provide such a sketch and understand

[11] Sjostedt, G. & Kremenyuk, V. *International Negotiations: models versus Reality*, Chapter 8, Edward Elgar, 2000

the trade war instrumentality there is a need to focus on some general trade policy formulation mechanisms and its tools.

Tariffs are the most basic and the oldest forms of trade policies. They are a form of a tax that functions as a vital tool of government revenue. "Specific tariffs are levied as a fixed charge for each unit of goods imported… Ad valorem tariffs are taxes that are levied as a fraction of the value of the imported goods (for example, the 25 percent U.S. tariff on imported trucks). In either case the effect of the tariff is to raise the cost of shipping goods to a country… Their true purpose, however, has usually been not only to provide revenue but to protect particular domestic sectors."[12]

As tariffs in their pure form are to some degree outdated in the present international context, governments prefer to evoke non-tariffs barriers instead. Non-tariff barriers (NTBs) usually refer to measures that discriminate directly against imports, without imposing direct taxes on products. These measures include quotas, by which government determines the volume of a commodity that can be imported, procurement policies, customs procedures, agricultural policies, health and sanitary regulations, national consumer and environmental standards, voluntary restrain agreements (VRAs), and a broad range of other laws and regulations that insulate the domestic economy from international competition.

Even though tariffs are not commonly used anymore, the large volume of non-tariff barriers represents the new understanding and practice of protectionism. They are not always subject to international regulatory policies and are perceived as

[12]Krugman, P. & Obstfeld, M. *International Economics, Theory and Policy*. P: 20, Little Brown. Glenview, 1988.

national prerogatives. In the context of trade wars such non-tariff barriers are considered as the preliminary instrumentality. Although such practices may not be inherently offensive, the level and the scope of non-tariff barriers in most cases define the settings of trade landscape, shape the nature of bilateral trade relations, direct the course of trade conflicts, escalate trade wars and more so construct trade identities of countries. The protectionist or free-trade identity of a particular state depends on the degree to which such trade policies are implemented. In the primary protection analysis the level of such policies is investigated.

Other instruments of trade policies are export subsidies. They, like tariffs, take two forms: specific and ad valorem. Export subsidies, in general terms, represent payments made available to exporting entities by the domestic government. Export subsidies are a mild form of protectionism and are one of the substandard instrumentalities evoked in the course of a trade war. Export subsidies are not the primary offensive choice of a weapon in the early stages of a trade war; rather, they are complimentary to even stronger measures.

Import quotas are a form of a non-tariff barrier. However there is a need to establish some concrete features of this trade instrumentality. Import quotas represent a quantative restriction on some imported commodities. Occasionally local authorities issue a special privileged list of some limited groups of people who are allowed to import a particular good, and such status is legitimized in some form of licensing agreement. Such a practice limits the amount of import and as a result raises the domestic price of the imported good. The governments do not usually earn revenues from such policies; rather, they gain long-term advantages in the domestic market structure by limiting imports and protecting the domestic producers from the outside competition.

Local content requirements are another example of trade measures evoked on daily bases and in the context of trade wars. This measure is an integral part of the domestic regulation. It requires a commitment from the importing parties to ensure that some specified portion of a final good is produced domestically. This way some domestic value-added final outcome is guaranteed. This policy is two-fold in its nature. Firstly, it affects the volume of imports entering the domestic premises. Secondly, such imposed standards directly involve the local producers and, in the long-run, may strengthen the domestic production by, for instance, allowing them to gain access to some exclusive production techniques.

There are some other trade tools that are utilized to shape trade policies and that are implemented in the context of trade wars. They are: export credit subsidies, national procurements and red-tape barriers. Export credit subsidies resemble export subsidies in their nature but vary to some degree since the aid to exporters is provided in the form of a credit. National procurements embody some degree of national bias towards the domestically produced commodities. Often governments or large corporations artificially stimulate domestic demand for the locally produced goods using various channels of propaganda, making the buyers shift from often cheaper imports to the locally produced products.

In some instances trade wars occur in a sporadic mode as it has been illustrated previously. However in other instances trade wars are not motivated by a particular offensive instance, but rather gradually emerge as a response to the general trade practices of the trading partner. Protectionist practices which become an idiosyncratic component of a particular trade regime stimulate gradual dissatisfaction which may transform it self into a trade war as a last resort. It is essential to know which particular constituents of a trade structure, grouped together

under a protectionist label, generate such disquiet from trading partners. In order to understand the primary parameters of trade protectionism, it is essential to focus on the general trade environment and the industrial policy of the perceived 'unfair trader'.

Often the presence of a comprehensive industrial policy paves its way to the emergence of trade disputes and even trade wars. The two issues can be complementary. The domestic trade environment is usually a result of the domestic trade regime, and the presence of an industrial policy is a product of the domestic trade regime. Industrial policy - its presence, scope and implementation - are vital components which measure the level of state involvement in trade, specify the general framework of state treatment of a particular industry and shape the general trade identity of the state. Industrial policy is primarily intended to counteract some sources of market failure, which occur in the production process[13]. Industrial policy is designed to tackle the problems, which are not manifestly caused by competition.

There are some special cases that require industrial policy formulation and implementation. Firstly, industrial policies are required in the cases of substantial inventions. In such an instance an appropriate state institution launches a patent system, which confers a temporary legal monopoly on the inventor. Secondly, the state establishment may promote research and development as a tool of their industrial policy. The state assumes a large portion of risk for the industry it helps, financing some substantial new projects and by doing so the government creates credible safeguards for that industry, bringing the probability of a potential failure down. Thirdly, state establishment may launch aid for its strategic industry if that

[13] Begg, D. *Economics.* P: 307, McGraw-Hill Book Company, London, 1994.

particular industry is suffering from a strong international competition. If there is a risk that such an industry is under a serious threat from a foreign firm in the domestic and international market, and the industry is strategically important, then launch aid is provided to such a firm. Fourthly, the state establishment might create special favorable conditions for the infant industries, which are considered strategic. Moreover, the state might encourage the formation of skills essential for the new industries and it can also provide subsidies vital for the rapid development in that industry. In regard to the outdated redundant industries the state can also initiate an industrial policy aimed to undercut it or relocate the main resources. To sum up, in the framework of industrial policy the state can have a rather strong involvement in the national and international trade. The amalgamation of various industrial policies characterizes the state as the active manipulator of market forces that creates a favorable environment for its national industries and firms, and in doing so creates unfair trade landscape for foreign goods and services. The trading partners usually perceive extensive industrial policies as the violation of some basic principles of free trade and in various instances such dissatisfaction paves the way to trade disputes, which often result in trade wars.

The primary instrumentality of trade policy and trade wars has been analyzed, specifying the preliminary logic behind such measures. However the aforementioned measures should be a subject to a more comprehensive analysis in relation to the specific context they are implemented in, other wise they remain strictly hypothetical. In order to provide such a contextual analysis there is a need to refer to the practicality of a trade war and the practical implementation of the mentioned measures; such an examination shall be conducted in Chapter Four in relation to the Japanese-American commercial interaction.

2.2 Product Cycle Theory

In the following section, Product Cycle theory shall be illustrated, primarily focusing on the main postulates of the theory. The issue of comparative advantage shall be elaborated on as well. The traditional understanding of comparative advantage shall be briefly compared to the Product Cycle theory's interpretation of comparative advantage.

Classical theories of trade were initiated mainly by the work of David Ricardo and his Comparative Advantage theory. Comparative advantage, by definition, refers to the special ability of a country to produce a particular product or service at a relatively lower cost than other products or services. The credo of the Ricardian model is that it makes sense to trade for all the actors of international trade. While international trade can and does take place on the basis of absolute advantage, claimed Ricardo, given the immobility of the factors of production there can be gains from trade on the basis of comparative advantage as well.[14] Since labor costs vary in different countries the total cost of production varies as well. According to Ricardo, comparative advantage is primarily determined by relative abundance or lack of key factors of production (e.g., labor, land, and capital). "It explains why a country that can afford to produce a wide range of products and services at a cheaper cost than any other country should concentrate on producing and trading in that product or service for which its cost advantage is greatest, leaving the production of other products and services, in which it maintains a

[14] Appleyard, D. & Field, A. *International Economics*. P: 32, Irwin. Boston, 1992.

positive but lower cost advantage, to other countries which have comparative cost advantages in them."[15]

The theory of the product cycle was formed by Raymond Vernon in1966. The Product Cycle theory assumes that knowledge is not a universal good; innovation and technological revolutions do create absolute and comparative advantage for a particular country with an intensive knowledge structure and a tendency to challenge the traditional methods of production. According to the theory, supremacy in knowledge is the engine that sets countries forward and makes national economies advanced. The Product Cycle theory originated from the Imitation Lag Hypothesis that was formed by Michael V. Posner, and its analytical postulates transformed into the Product Cycle theory later on. The Imitation Lag Hypothesis assumes that knowledge structures and the pace of progress are not standard - some countries develop certain products faster than others and start exporting the new product before other countries. The imitation lag is a period of time required for the other countries to learn, imitate and start selling a given product.

With substantial technological achievements, technology started to be considered as crucial factor of production as it has been mentioned previously. The emerging focus on technology and its effect on production structures started to promote intensive research and scientific inquiries. These analyses comprised together under a conclusive framework became the vital elements of the technological gap theory of trade. According to M. Meier, this theory stresses that

[15] Hart, J. & Spero, J. *The Politics of International Economic Relations.* P:373, Routledge, New York, 1997.

technology is not a free good and that the transmission of knowledge from one country to another occurs only after some time lag[16]. Due to the fact that information does not flow freely across national boundaries, three important conclusions can be drawn, according to M. Meier:"(i) innovation of products and processes is more likely to occur near a market where there is a strong demand for them than in a country with little demand;(ii) the producing firm is more likely to supply risk capital for the production of the new product if demand exists in its home market than if it has to go to a foreign market; and (iii) a producer located close to a market has a lower cost in transferring market knowledge into product design changes than one located far from the market". The core principles from the Lag Hypothesis together with the findings from the technological gap theory merged in a comprehensive theoretical model of the product cycle.

> The product cycle of Vernon represents the process of an advanced country developing and exporting a particular good, losing the export market share to other countries who imitate the innovation, and then ending up as a net importer of the good. The essence of the theory is the assumption that diffusion of new technology occurs slowly enough to generate temporary differences between countries in available production technology.[17]

The Product Cycle theory is mainly applicable to trade patterns in advanced technologies and in industries which tend to substitute labor with intensive amounts of capital. Some may find the Product Cycle theory reductionist since it explains dynamic trade patterns only in manufacture sector, and even then generalizations on the entire industrial platform remain to a large degree speculative. The theory is

[16] Meier, G. *International Economics: The Theory of Policy.* P:39, Oxford University Press, Oxford, 1980.

[17] Hong, W. *International Trade A Provisional Lecture Note*. Chapter 17, P: 2, Seoul University Press, 1998.

rather useful to the present research due to the fact that it is primarily dealing with knowledge-intensive technology sectors that are the focus of the research.

Product cycle theory demonstrates a rather pronounced systemic pattern in international trade. According to the theory, in regular instances, production of manufactured exports that have been originally designed and developed in America, often was gradually relocated to Europe and Japan and then to some less industrially-developed countries.[18] This cycle that demonstrates a systematic shift of production is divided into several phases. The names and some idiosyncratic attributes of the phases vary in the academic literature; however the inherent logic of the product cycle remains intact.

Product cycle consists of some phases and a different pattern of trade is assumed at each stage. (See Figure 1 below)

[18] Markusen, J. & Melvin, J. *The Theory of International Trade.* P: 194, Harper & Row Publishers, New York, 1988.

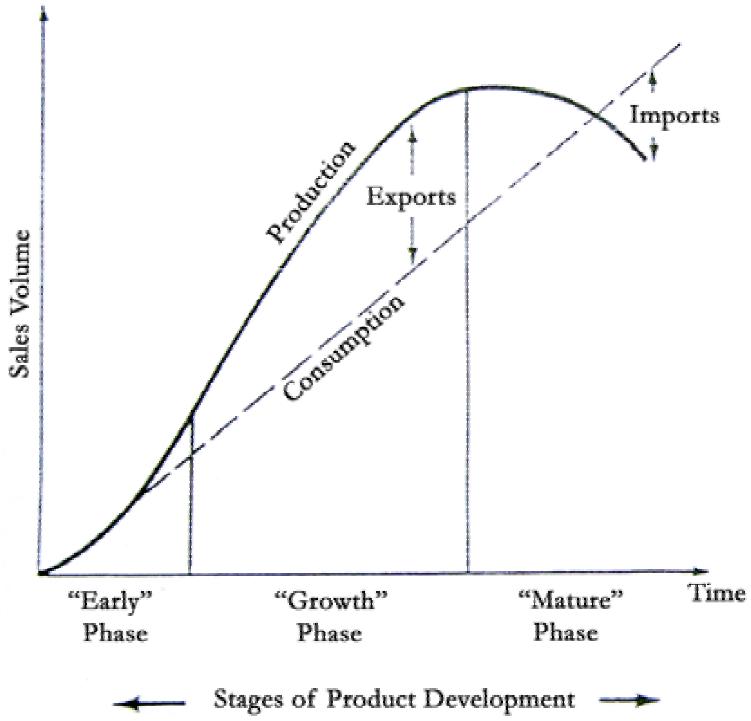

Figure 1 (Source: G.M. Meier, *International Economics The Theory of Policy*, Oxford, 1980, p: 39.)

Product cycle commences when a product emerges at a home market. 'Home market' in most of academic works, refers mainly to America, since most of the new products were pioneered there, and the original production was established there, for instance: radio, television, semiconductors, and so forth. The first 'early' phase of a product can be categorized as domestic development, which involves intensive research and foundation of the production methods, often through a 'trial and error' process. At this stage the design of the product is being adopted. At this stage the producers of the product struggle with high costs. The sales of the product at this point have not reached their full potential and remain low. The demand for the product is just being created, since a large portion of the consumers is still not aware of the product; therefore, the production of the product is concentrated on the 'home

market', since any problem related to production can be rapidly solved and since demand at 'home market' is less elastic.

The second phase is often referred to as the 'growth phase'. At this stage the production is substantially advanced, thus mass production and distribution are feasible. As a result of such changes in production, costs and prices go down to a large extent. At this point it becomes possible to export the product. Producers at this stage may seek to launch several foreign subsidiaries in order to expand production and sales abroad. During the third 'mature' phase, the product and manufacturing processes become standardized. Sales tend to level off and price elasticity is high. The exports of the product tend to diminish. The initial advantage gained during the previous phases disappears. The trading partners, who formerly imported the product, may now be able to duplicate its routine type of production. The technology may, at this point, be licensed to foreign producers, or the technology may have become publicly available. [19]

At the end of the third phase the original producer, America, becomes a net importer of its original product. The new overseas producers now gain comparative advantage in the production of the product. Then according to the transformation induced by the product cycle, countries such as Japan and the European countries become the main-line producers and exporters of the product. Consequently the comparative advantage is acquired by less advanced economies. Countries such as Taiwan, South Korea and China for instance, start producing the product. With the shifting patterns of trade the product travels from the core (advanced countries) to

[19]Meier, G. *International Economics: The Theory of Policy.* P: 39, Oxford University Press, Oxford, 1980.

semi-periphery (less advanced countries) and may even end up in the periphery (newly industrializing countries). As the products shifts through each stage of the product cycle, different input requirements characterize each stage therefore require different 'comparative advantage'. Lead in knowledge and innovation becomes redundant; low labor costs, on the other hand, may become critical at the given stage. For instance, South Korea and Taiwan may become more competitive with Japan in the more labor-intensive products, while Japan moves on to the more skill- and knowledge-intensive products.[20] According to the theory of product cycle, America, for instance, has some unique attributes in production. J.C Ingram and R.D. Dunn Jr., claim that America, as the leader in innovation, has a temporary comparative advantage in the latest products, but it steadily loses that advantage and must continually develop other new products to replace those that are maturing and being lost to foreign producers and exporters.[21] Some concrete features of the American economy correspond to America's temporary comparative advantage in new products.

> Using the United States as his frame of reference, Vernon suggests that because of the relatively high per capita income level and high per-unit labor costs in the United States, the most likely candidates for new products will be found among those consumer goods that appeal to high income levels and among labor-saving capital goods. The product, in its earliest stage, will typically be unstandardized, meaning that the producer is attempting to develop the product characteristics that best satisfy consumer preferences. Production of the newly developed product will more than likely be located in the country of origin, since there is an overwhelming advantage, early in the products life, in maintaining close communications with both customers and input suppliers. [22]

[20] Meier, G. *International Economics: The Theory of Policy.* P: 42, Oxford University Press, Oxford, 1980.
[21] Dunn, R. & Ingram, J. *International Economics.* P: 95, John Wiley & Sons Inc. New York, 1993.
[22]Herander, M. & Hodgson, J. *International Economic Relations* .P: 62, Prentice Hall Inc. Eaglewood, New Jersey, 1983.

The comparative advantage of America in new products is temporary however, as the new technology diffuses and is assimilated elsewhere, and the production process becomes to a large degree standard, as a result then the "basic determinants of comparative advantage begin once to dominate the location of production". [23] Factors such as low labor costs become more crucial as the product cycle progresses and shifts to the level of less advanced countries. Input necessities such as intensive research and development, concentrated communication networks, highly coordinated domestic market, design ingenuity and so forth become of secondary importance, whereas factors directly interlinked with production processes become crucial.

As the main attributes of the product change, so does the categorization of the product. It the 'early' phase the product was considered as the 'core' product due to the fact that it represented the fundamental features of an economically strategic industrial output that is knowledge-intensive and possesses a 'high-value-added' quality. The product at this stage can represent a dynamic young industry with high marginal returns on investment. The product is perceived as strategic since in the initial development comparative advantage in such industry means technological monopoly and industrial superiority over other economies. As the product shifts through the product cycle it loses its strategic importance as production moves to less advanced countries.

> In time however, the growth impulse of the innovation flags and the industry recedes as a generator of high rates of profit, wages, and employment. Eventually, the industry declines and is replaced by rapidly expanding industries beginning their ascent of the curve. [24]

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[23] Dunn, R. & Ingram, J. *International Economics*. P: 95, John Wiley & Sons Inc. New York, 1993.
[24] Gilpin, R. *The Political Economy of International Relations*. P: 98, Princeton University Press, Princeton, New Jersey, 1987.

At the end of the product cycle, when America becomes a net importer of its original product, the product with the industry it represents becomes ‘obsolete’ in strategic sense, and can be categorized as a declining industry, due to the fact that knowledge and the essential production-related ‘know-how’ becomes spread through various markets. After the end of a product cycle a new product cycle starts with America launching a new innovation.

So far the general definitions of the two concepts: trade wars and the product cycle theory, have been provided, illustrating the prevalent idiosyncratic constituents. The chapter introduced the basic insights on the two concepts facilitating a coherent and adequate understanding that shall be applied to a wider analytical framework, when the two concepts are investigated in an interlinked fashion on the later stages of the present research. The fundamental understanding of the two concepts shall be utilized in relation to the Japanese-American trade relations, functioning as the primary determinants of the nature of the commercial interaction between the two trade partners.

CHAPTER 3

JAPANESE-AMERICAN INTERACTION IN THE EVE OF THE 1970'S – A PRELUDE TO TRADE WAR

After the Second World War the scale of bilateral interaction between America and Japan grew immensely. The preliminary element shaping the Japanese-American relations is traditionally defined as a strategic partnership, which was produced in the early years of Cold war, functioning as a principal American national security instrumentality in East Asia and the Western Pacific regions. Strategic links between the two countries were prioritized in both foreign policy agendas for numerous decades. The inherent core of the bilateral relations was the credible strategic security arrangement, which, over the years, transformed itself into a close multidimensional interaction between the two cultures. This interaction has been affecting virtually every aspect of societal, political, institutional, intellectual and economic life in both countries. The Japanese-American bilateral framework, due to its multifaceted nature, has been a subject to intensive academic inquiry. However, the study of the Japanese-American relations remains to some degree limited. Even though a vast amount of literature has been produced in the present field, each study remains restricted to the academic domain that shapes such a research. A multidimensional study of the Japanese-American relations of an interdisciplinary nature is rather rare. This chapter shall combine some political inquiries together

with some economic analyses, seeking to highlight the bilateral foreign policy studies and the commercial relations analyses.

The chapter shall investigate domestic economic environment of the two countries and the framework of bilateral relations between Japan and America, primarily focusing on the commercial relations between the two states. Before investigating trade wars in the consequent chapters, it is fundamental to analyze the theme of bilateral trade between Japan and America, the major patterns of bilateral trade and the environment in which such practices occurred. Moreover, it is imperative to understand the course of main developments on the domestic, international as well as the bilateral domains that had paved the way to the emergence of trade frictions and trade wars. Some crucial developments in America, together with some essential domestic changes in Japan shall be illustrated, aiming to understand the changes on the bilateral front between the two countries that had produced, in a latent or manifest fashion, trade conflicts and frictions.

The Japanese-American interaction has been a multi-issue and a three dimensional one after the World War II. A broad range of issues has been integrated into the spectrum of the Japanese-American framework: security, regional development, bilateral trade, close political ties, and so forth. Interaction between the two countries is conducted on three different levels: bilateral, multilateral and regional. Active bilateral intercourse is complemented by a multilateral one, mainly performed in the context of the GATT rounds. Moreover, dynamic interaction is also felt on a regional level in the Pacific Asian region. Even though the primary scope of the present research is restricted to the bilateral interaction between the two countries, the importance of the other two channels of interaction should not be

undermined, despite the fact that they do not fall into the research parameters of the present paper.

Inherently, Japan and America are very different in terms of historical experience, culture, ethics, and organization of political life. After World War II different priorities also demonstrate the differences between the two countries. While America prioritized military security in its national interest doctrine, Japan inclined to emphasize private industrial economic development, which often is myopically defined as the "catching up with the West" obsession.

Despite the different priorities, both were equally committed to their strategic and economic partnership. The Peace Treaty signed in San Francisco in September 1951 marked a new beginning for Japan and America, effectively discarding the painful legacy of World War II. Japan became the core base of America's containment in the Asia-Pacific region. America provided Japan with military security, the American nuclear umbrella and facilitated the economic reconstruction of Japan, via diverse aid, loans and substantial technology transfers. Boosted by the Korean War, the Japanese economy benefited from an easy access to the American loans and to the American market. Then American Secretary of State John Foster Dulles was influential in persuading the Japanese political establishment to reject the Soviet offer of a peace treaty in 1956, ensuring the continuity of the Japanese-American strategic partnership. In 1960, the Japanese government signed a Security Treaty with America. This treaty marked the beginning of a constructive relationship between the two countries.

Economic partnership between the two prospered after the war and escalated the pace of the economic development in Japan during the reconstruction years. In the early 1970's the volume of trade between the two reached

unprecedented levels and both America and Japan became somewhat primary trading partners for each other. The mid-1970's, on the other hand, saw the collapse of the Bretton Woods order, abolishment of the gold standard, high technology revolution, the American unprecedented trade deficit, détente, the "Nixon shocks", oil crises, and many other changes that had a significant effect on the nature and the course of the Japanese-American relations.

In the early 1970's the notion of cooperation between Japan and America came under strain. The relationship went through a major cataclysm of structural changes, bilateral changes and domestic ills, mainly on the American side. The two decades of the 1970's and the 1980's are traditionally characterized in literature as the trade wars period, dollar-yen problem, or even more radically, the turbulent years in the overall bilateral relation of Japan and America. Before the reasons for the changes in the nature of the relationship and all the literature "tags" are focused on there is a need to sketch a brief outlook of the domestic changes that were witnessed by the both sides. Certain domestic developments have ignited serious tensions in the bilateral relationship. Firstly, a brief review of the American domestic environment shall be provided, hoping to understand how the domestic problems, mainly of the economic nature, and some developments reflected on the bilateral outlook of the two countries. Secondly, the domestic environment of Japan shall be illustrated, primarily focusing on the Japanese economic performance and the Japanese increasing importance in the global economic context. Thirdly, the main features of the bilateral relationship shall be investigated in the light of the above mentioned developments.

3.1 The American Domestic Environment

In the early 1970's the American public opinion polls revealed that only one item of foreign policy (the problem of Vietnam) remained among the top six national concerns, in contrast to 1960's, when issues such as combating world communism and maintaining respect for the United States in other countries were the prevalent concern. In the 1970's the top six concerns were: rising prices and the cost of living; the amount of violence in American life; the problem of drug addicts and narcotic drugs; the level of crime in America; the problem of Vietnam; and the increasing pollution of the American waterways[25].

Decline in the perception of the communist threat which was a result of President Nixon's introduction of a new paradigm in dealing with the Union of the Soviet Socialist's Republics, (henceforth the U.S.S.R) and the People's Republic of China (henceforth the PRC), which was solidified in the Strategic Arms limitation agreement of 1972, resulted in some priority reconstruction in the American life. The communism related concerns were replaced by domestic economic ills. Inflation, which resulted in antibusiness and antimarket moods, declining living standards, declining levels of productivity, sharp dollar drop in the foreign exchange together with the Vietnam problem represented a dormant economic reality in the 1970's America.[26] This notion of economic decline culminated in the 1980's with a strong sentiment for governmental intervention.

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[25] Clapp, P. & Halper, M. (eds.) *United States Japanese Relations: The 1970's.* P: 37, Harvard University Press. Cambridge, 1974,

[26] Viksnins, G. "U.S. – Japanese Trade: Perceptions and Reality." P: 207, *Asian Survey,* Vol. 19, No. 3, March 1979.

Some of the domestic economic problems were directly interlinked with the changes taking place in the international domain. By the 1970's America was no longer the dominant economic power: Europe and Japan completed their economic recovery and could easily challenge America economically. Before the 1970's there was no need for America to engineer its domestic policy in accordance with the international position of dollar. In the 1960's the American national economic policy was not substantially affected by the international position of the dollar or by the main developments in the field of financial integration.

> Large capital flows had less effect on the huge U.S. economy than on the smaller European and Japanese economies. Furthermore, as long as other countries would absorb dollar outflows, the United States did not have to take domestic measures to balance international accounts. Thus in the 1960's the United Sates was able to rely on special balance of payments measures and avoid restrictive monetary or fiscal policy...By the late 1960's, the dollar was overvalued partly because of inflation induced by the expenditures on the Vietnam War and partly because other countries had altered their exchange rates to account for inflation, even though the value of the dollar has not been altered.[27]

The result of such experiences was an overvalued dollar, substantial investment outflows and an unprecedented trade deficit. The policy of benign neglect that had served the country faithfully for two decades was no longer suited to the state of the American economy. Some radical measures had to be taken to safeguard the American economy from further decline. The economic realities entailed a radical reform of the American economy and a new thinking was produced that the burden of international economic management should not be exclusively American.

A chain of radical developments had occurred in 1971. On August 15th, 1971 an intensive domestic economic program was introduced by the Nixon administration. The program was labeled as the New Economic Policy (NEP). The

[27] Hart, J. & Spero, J. *The Politics of International Economic Relations.* P: 39, Routledge, New York, 1997.

reforms package consisted of five core objectives, some short-run, and some long run. Koji Taira provides a rather comprehensive summary of these objectives[28]. Firstly, a long-run objective was to safeguard and enhance the American leadership on the international domain, due to the fact that the effectiveness of the American leadership was correlated to the Gross National Product and its growth. In effect, the American NEP demanded that other economies recognize the American need for faster economic growth and facilitate America in attaining its objective. Secondly, the program introduced a medium-run objective, which was to realize a surplus (a positive balance) in the current account of international trade (i.e., more exports than imports of goods and services) that would be big enough to finance the American overseas loans and investment and to guarantee a couple of billions of dollars' loose as a "safety margin". The desirable improvement in the current account would be large enough to clear out the existing and expected deficit and to bring about a preferred surplus of $13 billion. This objective required other economies to self-induced deficits in their current accounts. The medium-run objective was evidently designed as a complementing measure to the long-run objective. Thirdly, a short-run objective was introduced. It emphasized the need to promote and ensure a re-alignment of foreign exchange rates via the means of revaluations of other national currencies relative to the U.S. dollar at the rates that would facilitate the above mentioned objectives. For instance the German mark had to increase by 12 or 15 percent and the Japanese yen, had to increase even more, according to the American projections. Fourthly, an instantaneous goal to be achieved was to bring to a

[28] See Taira, K. "Power and Trade in U.S. – Japanese Relations." *Asian Survey,* Vol. 12, No. 11, November 1972, pp: 980-981.

standstill the dollar-gold convertibility. Moreover, a 10 percent surcharge on all dutiable imports to America was stipulated[29].

This new economic agenda was incompatible with the existing international system. The existing Bretton Woods logic had to be discarded and a new paradigm for the functioning of the international economic system had to be launched. On August 15th, 1971 the Bretton Woods regime ended. A new system was to be established, and the first attempts were made by the Group of Ten. These attempts were conceptualized at the Smithsonian Institution in December of 1971. The primary demands of the U.S. were solidified: the dollar was devaluated by ten percent and the realignment of other exchange rates and greater flexibility in rates were that would float within approximately 2.25 percent of parity was achieved. However, substantial structural transformations to replace the Bretton Woods regime were made in 1972, when the Committee on reforms of the International Monetary system and Related Issues was established. Together with the IMF, this committee was to ensure an adequate management of the international monetary system and to promote new-fangled adjustment mechanisms.

The new American economic doctrine required some alterations in the bilateral interactions between America and other economies. Moreover, the principles that shaped the American bilateral trade with other countries had to be changed to some degree. A new format for the bilateral trade had to meet the trade objectives stated in the New Economic Policy agenda. Some new expectations and special requirements were placed on America's trading partners. Japan became the principal subject to meet some special requirements. In a rather unequivocal and

[29] See Taira, K. "Power and Trade in U.S. – Japanese Relations." *Asian Survey,* Vol. 12, No. 11, November 1972, p:981.

explicit manner, Japan was blamed for the majority of the American trade deficit problems. Japan and America entered a rather tense phase in their commercial relations, the phase that corresponded to trade frictions and trade conflicts between the two economies.

3.2 The Japanese Domestic Environment

Post-1950s domestic environment in Japan was characterized by stability and continuity on political and economic fronts. Continuous economic development in Japan was primarily due to the strong and autonomous state establishment that, by mid-1960s, provided directional thrust to the operation of the market mechanism. The Japanese market was primarily guided by long-term national investment policy formulated and well coordinated by the Japanese state officials. The Japanese state bodies successfully managed to mediate between the various interest groups competing for funding and scarce resources. Well-defined sense of national unity and solidarity towards national development made the issue of economic recovery a matter of national priority. On the political front the primary developments were in line with the major national economic objectives. The state machine was running in tune with the progressive market forces in the country. Remarkable political stability since the beginning of the 1950's facilitated the progressive mode of business life and linear social relations in Japan. "With the single exception of Prime Minister Tanzan Ishibashi (who resigned because of illness), postwar prime ministers in Japan have enjoyed relatively long tenures in office, in sharp contrast to the prewar days when most tenures were short-lived. This has produced fairly

consistent policies in both foreign and domestic affairs"[30]. On the foreign policy front Japan maintained a low posture during its postwar period. Security dependence on America and the utmost caution in the conduct of foreign affairs to avoid giving offense were the primary objectives of the Japanese foreign policy agenda. During two decades, from 1950 to 1970 Japan's economic performance had changed dramatically. Japan's share of the world exports, excluding the communist block, doubled between 1960 and the early 1970s, reaching a rank of third largest after America and West Germany.[31]

As shown on the Table 1, provided bellow, the Japanese Gross National Product had increased by 16.5 percent from 1960 to 1970. Moreover, Japan accounted for 6.2 percent of world exports in 1970. The figures from Table 2 below demonstrate that Japan maintained a positive balance of trade throughout the 1970's.

Table-1: World Economy and Japan's exports/imports

	1960	**1970**	**1980**
World GNP ($ billion)	1.4	3.0	7.6
		(8.2)	(9.6)
Japan's GNP ($ billion)	43.0	196.0	957.0
		(16.5)	(17.2)
World Trade ($ billion)	128.0	311.0	850.0
		(9.3)	(10.6)
Japan's Exports ($ billion)	4.1	19.3	92.2
		(16.9)	(16.9)
Japan's Import's ($ billion)	3.9	15.7	75.5
		(15.0)	(17.0)
Ratio of Japan's dependency on imports	9.4	9.9	9.6
Ratio of Japan's dependency on exports	9.0	8.0	7.9
Elasticity of Japan's exports to world trade		1.8	1.6
Elasticity of Japan's imports to income		0.9	1.0
Japan's export share in world trade (%)	3.2	6.2	10.8

Source: Japan Economic Research Center. "Japan's Economy in 1980 in the Global Context,"March 1972, p.4.
* Figures in parentheses are ave. rates of increase in the preceding 10 years.

[30] Clapp, P. & Halper, M. (eds.) *United States Japanese Relations: The 1970's.* P: 19, Harvard University Press. Cambridge, 1974.

[31] Pepper, T. et al. *The Competition: Dealing with Japan.* P: 24, Praeger. New York, 1985.

Table-2: Balance of Trade, Major Industrial Countries, 1974-1977 (billions US$)

Country	**1974**	**1975**	**1976**	**1977**
United States	5.3	9.1	9.4	-31.1
United Kingdom	-11.7	6.5	-5.7	-2.4
Canada	1.9	-0.4	1.4	3
France	-3.9	1.5	-4.7	-2.7
Germany	22.2	17.7	16.7	19.3
Italy	-8.5	-1.1	-4	0.1
Japan	1.4	5	9.9	17.3
Other Industrial*	5.6	-3	7.2	-11.6
TOTAL	**9.4**	**22.2**	**3**	**-8**

US Commerce Department

Table-3: Difficulties in future US-Japanese trade ($ billion) 1960-70

		1960	**1970**	**1980**	**Growth: 1960-70**
Japan	GNP	44.9	196.2	798.3	15.9
	Export to U.S.	1.1	6.0	32.7	18.4
	Import from U.S.	1.4	4.6	15.1	12.4
U.S.	GNP	511.4	976.5	1865.1	6.7
	Export to Japan	1.4	4.6	15.1	12.4
	Import from Japan	1.1	6.0	32.7	18.4
Japan	Total Export	4.1	19.3	90.9	16.9
	Total Import	3.9	15.7	63.3	15.0
U.S.	Total Export	20.4	42.6	89.0	7.6
	Total Import	14.8	38.9	102.3	10.1
Japan	Export ratio to U.S. %	27.4	31.2	36.0	-
	Export ratio from U.S. %	37.1	29.4	23.9	-
U.S.	Export ratio to Japan %	6.9	10.8	17.0	-
	Export ratio from Japan %	7.4	15.4	32.0	-
Balance of U.S.-Japan trade		-0.3	1.4	17.6	-
Ratio of surplus to Japan's GNP %		-0.7	0.7	2.2	-
Japan	Export to U.S./GNP	2.5	3.1	4.1	-
	Import from U.S./GNP	3.1	2.3	1.9	-
	Total export/GNP	9.1	9.8	11.4	-
	Total import/GNP	8.7	8.0	7.9	-
U.S.	Export to Japan/GNP	0.3	0.5	0.8	-
	Import from Japan/GNP	0.2	0.6	1.8	-
	Total export/GNP	4.0	4.4	4.8	-
	Total import/GNP	2.9	4.0	5.5	-

Sources: Economic Planning Agency, "Annual Report on National Income Statistics, 1972"; Bank of Japan, "Balance of Payments Monthly"; US Department of Commerce, "Survey of Current Business"; and Japan Economic Research Center. "A Long-Term Outlook of Japanese and US Economies," March 1973. pp. 8-10.

The overall nature of the Japanese exports went through a great transformation since the 1950's. Intensive labor industries were declared outdated and the priority was given to capital-intensive and high-wage manufacture. By the 1970's Japanese exports in house hold appliances, tool machinery, consumer electronics and many other categories started to dominate the international market. Japan entered a phase in which it was rapidly outperforming other states. Being a small country with a virtually non-existent domestic natural resources base, Japan's export profile had to be that of intensive high-value-added manufacture.

Gaining comparative advantage in those industries cost a great deal for Japan. In some instances accusations of unfair trade; in some instances harsh branding such as "Japan Inc.", when Japan was perceived as merely an artificial money-making machine; in some cases hostile perceptions from other international actors, which lead to intensive trade conflicts, an in the case of America, trade wars, exhaustive diplomatic negotiations and the emergence of a notion of mistrust. With the expansion of the Japanese products in the global markets, a greater level of liberalization in the Japanese economy and the change in the status of Japan, (in 1970's Japan was classified as a successful industrial economy) and its new active role in the international economic domain, which refers to the then increasing importance of the Japanese economy in the global economy, the Japanese-American relations went through some radical changes.

3.3 The Japanese-American Commercial Relations

In 1971 it became obvious that the Japanese-American commercial relationship was taking a radically new form. It became apparent, in the early 1970's that a critical

problem existed between the two economies, the problem that became known as the "dollar-yen" problem at the early stage of unease and mild tensions between Japan and America in the 1970's.[32] This problem manifested itself in the figures of the Japanese current account surplus of $6 billion and the American rapidly increasing current account deficit. Table 3, illustrated on page 42, demonstrates that the Japanese export ratio to America accounted for 31.2 percent, whereas the Japanese export ratio from America accounted for 29.4 percent in 1970. The table demonstrates that the American export ratio to Japan accounted for 10.8 percent and the American export ratio from Japan accounted for 15.4 percent in 1970. The table demonstrates a clear imbalance in the Japanese-American trade, Japan exporting significantly more than importing from America.

> By 1971 it was clear to everyone that Japan's balance-of-payments surplus was not merely a brief respite from the pressure of its old deficit problem. It was a fundamentally a new problem, and one which urgently required corrective action. From Japan's own point of view, it meant a waste of precious resources in the piling up of foreign exchange reserves, resources which were badly needed for improving social services and social capital at home. For the world as a whole, the continued imbalance of Japan's international payments indicated a failure of the international adjustment mechanism. In particular, it contributed to doubts about the U.S. dollar and about the viability of an international monetary system which was based on the dollar as a reserve currency.[33]

This phenomenon of the rapidly increasing Japanese trade surplus was not easily explained at the time. Some claimed that the reason behind this trade imbalance was rooted in the international monetary system and its structural faults; others claimed that the problem occurred due to Japanese hypocrisy - its willingness

[32] Later on the problem between America and Japan had been referred to in the lexicon of trade wars.
[33] Hagan Kuwayama, P. "Japan's Balance of Payments and Its Changing Role in the World Economy," in Cohen J.B. (ed.), *Pacific Partnership*, pp:59-60, cited from Viksnins, G. "U.S. – Japanese Trade: Perceptions and Reality." *Asian Survey,* Vol. 19, No. 3, March 1979, pp: 207-208.

to benefit from free trade but ensure strong obstacles for others to enter its domestic markets; another view was that the structure of the Japanese-American trade.

Strangely, before Nixon's administration launched its New Economic Policy in August of 1971, aiming to tackle the American domestic problems, principally the trade deficit problem, the Japanese government announced its own program an "Eight-Point Program" in June of 1971, to correct imbalances in trade. The program consisted of the following points: continued removal of import quotas (which had already been reduced from 121 different categories to 60 by mid-1971 and to 33 by early 1972); preferential tariff for developing country imports; additional tariff reductions; liberalization of capital movements, including permission for Japanese residents to buy stocks in appreciable amounts; reduction of certain non-tariff restrictions, such as the 40% surcharge on large automobiles; increased aid to developing countries; elimination of preferential export financing and special tax treatment; more simulative monetary and fiscal policies[34]

The preliminary goal that was hoped to be achieved by these eight objectives was to reduce the Japanese current account surplus and to inspire normalization in the Japanese-American trade difficulties. However, the American New Economic Policy agenda had some "special" requirements for Japan, stretching far more than the eight points initiated by the Japanese, since America viewed Japan responsible for its trade imbalances and wanted some substantial commitments on the Japanese behalf to facilitate the American long-run objective. Taira claims that when the dollar was cut loose from gold, the first thing the Japanese policy-makers

[34] Viksnins, G. "U.S. – Japanese Trade: Perceptions and Reality." P: 208, *Asian Survey,* Vol. 19, No. 3, March 1979.

thought about evidently was how to minimize the losses of foreign exchange banks and trading companies in the event of the yen's floating.[35]

Until the August of 1971, it was the official policy of the Bank of Japan to acquire huge amounts of dollars at the old parity and to inflate the foreign exchange reserve to $12.5 billion.[36] As a result of the American initiatives of revaluation the yen was let free to float against the dollar. This action created a great deal of uncertainty and panic among the Japanese producers, who seriously feared that such an action would result in a substantial recession. The Japanese, together with some other economic actors, wanted to return to fixed exchange rates as fast as possible. America, on the other hand used its surcharge as a credible tool to ensure that its trading partners fulfilled its revaluation requirements, making the fixed exchange rates virtually impossible. The Nixon administration even threatened to evoke the "Trading with the Enemy" act to enforce unilateral quotas on textile imports from Japan. The Japanese had no choice but to give in, since the pressure coming from America was rapidly increasing. However, by September, the issue of revaluation and fixed exchange rates was no longer the critical dilemma, due to the new developments engineered by America - quotas on the Japanese textiles.

1971 entered the Japanese experience in the framework of several shocks, later referred to as the "Nixon shocks". The first shock occurred in July, when President Nixon, without taking Japan into consideration, decided to visit Peking. The Japanese were insulted that the American political cabinet did not consider Japan before taking such an action, since Japan and America were the strategic partners in the Asian region, and China was the ideological and political nemesis.

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[35] Taira, K. "Power and Trade in U.S. – Japanese Relations." P: 995, *Asian Survey,* Vol. 12, No. 11, November 1972,
[36]Ibid, pp: 995-996.

The second shock occurred with the announcement of New Economic Policy and the quotas for Japanese textiles. Tensions ran high on both the political and economic fronts. From strategic partners and prevalent trading associates, Japan and America were on the way to become antagonistic adversaries. For the first time Japan, whose economic intensions were not altogether clear, was referred to as a dangerous rival. The Japanese 'unwillingness' to meet the special needs of America, mentioned previously, together with the often expressed public view that Japan wanted to benefit from trade at the cost of the American economy or it had a hidden agenda of conquering the American markets, made the public perception of Japan in America rather offensive. It was claimed that the imbalance in bilateral trade was the result of unfair treatment of imports in Japan. The American media labeled Japan as a protectionist state, whose domestic economy was one non-tariff barrier, since access to the American exports was implicitly denied. Japan was accused of numerous free-trade violations such as industrial policy in most strategic industries, strong national procurement policies, numerous quotas, arbitrary and burdensome customs procedures, discriminations against imports while conducting certification of standards and design requirements and so forth. American perception of the Japanese trade landscape was indeed very gloomy.

Before concrete trade problems between the two countries are stated and examined, there is a need to focus on the trade structure between the two trading partners and the idiosyncratic factors that constituted the trade frictions between the two.

Table-4: US-Japan Commodity Trade, 1977 (millions US$)

US Imports from Japan		**18.547**	**US Exports to Japan**		**10.414**
(0)	Food and live animals	**238**	(0)	Food and live animals	**2.236**
(1)	Beverages and tabacco	**5**	(1)	Beverages and tabacco	**296**
(2)	Crude materials, inedible	**63**	(2)	Crude materials, inedible	**2.391**
(3)	Mineral fules and other	**6**	(3)	Mineral fules and other	**1.11**
(4)	Oils and fats	**5**	(4)	Oils and fats	**60**
(5)	Chemicals	**463**	(5)	Chemicals	**977**
(6)	Manufactured goods by chief material	**4.29**	(6)	Manufactured goods by chief material	**549**
(7)	Machinery and transport equipment	**10.625**	(7)	Machinery and transport equipment	**1.672**
(8)	Misc. mfd. Articles	**2.693**	(8)	Misc. mfd. Articles	**526**
(9)	Other	**159**	(9)	Other	**23**

Source: US Department of Commerce

Apart from the above mentioned problem of trade imbalance there is another problematic feature of the Japanese-American trade landscape - evidence from Table 4 demonstrates the nature of the Japanese exports and the American imports. The table demonstrates that Japan had been mainly importing food and live animals, crude materials, mineral fuels and the like, while exporting manufactured goods that are mainly manufactured by chief material, such as machinery, transportation, consumer goods and so fourth. According to Viksnins[37], the trade structure is inherently a neo-mercantilist one. Viksnins claims that the trade structure illustrated in the Table 4, demonstrates a trade structure of a core state trading with an underdeveloped state. The table demonstrates that America exports primarily natural resources and the products of basic consumption, such as food live animals, the line of export common to less industrialized countries, and imports manufactured products, such as machinery and transport equipment. It seems rather strange that

[37] Viksnins, G. "U.S. – Japanese Trade: Perceptions and Reality." P: 209, *Asian Survey,* Vol. 19, No. 3, March 1979.

this trade structure exists between two industrialized trade partners. It seems that America, a successful industrial economy, according to the given table, has a primary advantage in exporting mainly raw materials, food and live animals, rather than final strategic manufacture.

The increasing volume of the Japanese imports has been alarming America for some time together with the reality of the American exports and the problems facing such practices. Viksnins claims that the American exporters that are able to maintain their exports to Japan are mainly small scale representatives of not "politically strategic industries"; therefore the level of political leverage is rather low in such industries. On the other hand, strategic industries that are large scale and are more politically prioritized, such industries would be consumer electronics, automobiles, tools and machinery and so forth, meet a harsh competition from the Japanese producers and are not able to maintain their export identity. This unfortunate trade pattern, in the American understanding, is mainly due to the Japanese trade obstacles that prevent entry of strategic American industries into the domestic market. Japan relies on imported products primarily as long as they are not produced in Japan or incorporate technology that is not yet available in domestic production. The Japanese trade structure, according to the American trade officials remained by the 1970's as rather protective.

The role of the Japanese government in trade, more specifically, the Ministry of Trade and Industry, (MITI) was far too active, according to the American businessmen and the American policy-makers. American authorities together with the American producers complained about the fact that Japan often stimulates artificial comparative advantage in various strategic industries by a comprehensive industrial policy, intensive state funded R&D, special treatment, creation of cartels

and mainly by selling at the rates below the total cost of production. When producing various manufactured goods is cheaper in America, Japan apparently was determined to prevent the preference of the American imports in its domestic markets by selling its own domestic manufacture at impossibly low rates. Moreover, a system of controls governing the flow of foreign capital into Japan was rather strong in 1970s, preventing foreign direct investments by a large degree. The inherent fear of foreign capital in Japan, according the American authorities through out the 1970s and the 1980s, was due to the national panic of loosing the self-sufficiency and the national identity. Due to these difficulties engineered on the Japanese behalf, gradually the inherently "American" industries, such as semiconductors, (chips produced from silicon) which shall be explained in the consequent chapter three, machine and tool industry, consumer electronics and so forth lost their comparative advantage in the world markets at the end of the 1980s. The American inability to sustain its comparative advantage in its strategic industries and inability to face the Japanese competition put a great strain on the bilateral framework of the two countries, escalated to trade wars and produced a great amount of heated political dialogs.

The commercial relations between Japan and America throughout 1970-1990 remained highly problematic due to some reasons: firstly, due to the American domestic problems, mainly the large trade deficit; secondly, due to the trade imbalance in the American-Japanese trade relations; thirdly, due to the very nature of the trade structure between the two countries and the contending trade priorities, specifically the American new Economic Policy and the Japanese trade program; and thirdly, due to some developments taking place in the international economic domain, such as the collapse of the Bretton Woods regime and the abolishment of

the gold standard. The combination of these developments, together with some political issues, primarily the American rapprochement with China, paved their way to the emergence of serious bilateral problems, predominantly trade related. In order to comprehend the essence of the problematic nature of the Japanese-American commercial interaction, there is a need focus on two concrete industries which shall provide the understanding of trade wars and trade conflicts in the Japanese-American context. The two selected industries, semiconductors and biotechnology, shall underline the prevalent dynamics in the Japanese-American trade discord and provide an understanding on how the problematic issues were perceived and dealt with by both America and Japan.

CHAPTER 4

TRADE WARS IN THE JAPANESE-AMERICAN CONTEXT: SEMICONDUCTOR AND BIOTECHNOLOGY INDUSTRIES

"Foreign trade is a war in that each party seeks to extract wealth from the other"

Rimei Honda. Tokugawa Philosopher. 1744-1821[38]

The present chapter seeks to explain the second, contextual understanding of trade wars, proposed in the present research. The contextual understanding of trade wars in the Japanese-American commercial relations shall be presented in the present chapter and the following task shall be fulfilled by illustrating two examples from the commercial interaction between the two countries. Two cases shall be introduced and elaborated on, providing the fundamental understanding on the very nature and the practicality of trade wars in the Japanese-American trade relations.

The cases focused on shall be from the high technology sector, due to the fact that these two "inherently American" industries witnessed the most attention because of intensive trade wars and trade conflicts fought in these sectors. It shall be demonstrated that these two sectors are economically strategic for both America and Japan, and that preserving comparative advantage in these sectors is vital for highly industrialized countries such as America and Japan. The findings from these two cases shall be later on synthesized into a wider analytical inquiry, when tested again

[38] Cited from Prestowitz, Jr. C. *Trading Places: How America is Surrendering Its Future to Japan and How To Win It Back.*P:373, Charles E. Tuttle Company. Tokyo, 1991.

the main postulates of the Product Cycle theory, presented in Chapter Five, when the findings from the two cases shall facilitate a theoretical understanding of trade wars.

Firstly, semiconductor case shall be investigated. Consequently, biotechnology case shall be examined, whilst constructing some parallels to semiconductor case. The contending agendas of the American and the Japanese producers and exporters shall be demonstrated. The policies and agendas of the political establishments together with their roles and priorities in relation to the industries selected shall be demonstrated, primarily by comparing and contrasting the Japanese and the American understandings and implementations of industrial policy. Moreover, the following analyses shall incrementally assemble a shifting pattern of trade witnessed in the international trade framework and be projected to a comprehensive theoretical analysis, as has been stated previously.

The high technology industry has been selected due to its strategic importance and the intensity of development and industrial policies implemented by Japan and America. The high technology industry has been the focal point in the trade relations between the two countries; it is often blamed for the intensifying trade wars and the rise of bilateral tensions between America and Japan. Various assets are considered vital for a national economy. Usually territorial and climate factors determine such essentials. However, aside from industrial raw materials, such as oil, access to technological innovations and their potential application is equally important in the century of technological progress. High technology industries are considered as the leading industries in global market. Moreover, high technology is an economically strategic sector, due to two reasons. Firstly, a country has to produce the products that are in demand in the global market and ensure that such

products are able to face international competition. Secondly, high technology is interrelated to various critical sectors such as defense, health and care systems, education, agriculture and so forth. This phenomenon of inter-industry externalities (an externality exists when the production or consumption of a good directly affects business or consumers not involved in buying and selling it and when those spillover effects are not fully reflected in market prices[39]) generates and stimulates new frontiers and developments in most imperative economic sectors. Furthermore, high technology is a priority for large industrial nations, that are the "core" of the global economic system, therefore, expansion of high technology is perceived as the primary tool to expand their respective economic power. High technology is labeled as the future or the "new industry"; therefore maintaining comparative advantage in the sector has major long-run benefits. Japan and America, as the leading global economic actors, prioritize high technology for the stated reasons. Gaining comparative advantage in high technology was solidified as a priority in the national economic doctrines of both countries.

In the present research the conceptual understanding of high technology has been adopted from the work of H. Patrick[40], in which high technology is defined concretely in terms of specific industries such as microelectronics, biotechnology, new materials, and new sources of energy. However, some other definitions of biotechnology shall be introduced as well. Two cases from two sub-fields of high technology: the information technology or the microelectronics sector, that

[39] Begg, D. *Economics.*P: 52, McGraw-Hill Book Company, London, 1994.

[40] Patrick, H. (ed.), p: xiii, *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* University of Washington Press. Washington, 1986.

correspond to semiconductors, and the biotechnology sector shall be presented in the present chapter.[41]

Even though prevalent theme of the present chapter is the trade wars that have been fought between the two countries during the 1970's and the 1980's in the specified sectors, intensively focusing on the semiconductor case and the biotechnology case, some coherent links between the trade issues and practices and the foreign policy agendas that constitute the essence of bilateral interaction shall be made. The main hypothesis to be tested is as follows: Is high technology a strategic industry that is vital for the lead in international trade, and are trade wars in this sector primarily motivated by the preservation of the comparative advantage in this industrial domain.

4.1 Semiconductor Industry: A Story Of How "American" Became "Japanese"

Semiconductors are defined as the core element of the modern electronics. Semiconductors are small, rectangular "chips" produced from silicon. Each chip is the approximately a centimeter in size and crammed with microscopic circuits capable of storing and processing enormous amounts of information – operate products ranging from digital watches and videocassette recorders to supercomputers and the telephone network, and recently have even become the vital constituents of children's toys and washing machines[42]. Moreover, semiconductors are essential to advanced weapons systems this application of semiconductors,

[41] In some academic literature high technology is defined as the "new industries", see Pepper, T. et al. 1985.

[42] Prestowitz, Jr. C. *Trading Places: How America is Surrendering Its Future to Japan and How To Win It Back.* pp: 120-121, Charles E. Tuttle Company. Tokyo, 1991.

together with various other versatile utilization fields, make the industry fundamentally strategic.

By the middle of the 1970's the semiconductor industry was facing some serious competition from the Japanese firms and was about to follow the way of the automobile and television industries. By the middle of 1970's the production of semiconductors was standardized and mass production of the product was widely practiced. It shall be argued later on, in chapter four, that credible competition and trade wars emerge at the mature stage of a product, and this stage was fully completed by the mid-1970s in semiconductor products.

This precedent had some drastic implications for the national security of America, due to the fact that the industry is core for many sophisticated military systems. By the end of the 1970's from the twenty-five critical semiconductor industries Japan lead in twelve, and national security networks in America came rely on the accusation of semiconductor technology from Japan.

Before the industry was lost to the Japanese it was the embodiment of America's future. The birth of the semiconductor industry dates back to 1948, when three American scientists working at Bell Laboratories - facility of AT&T, invented the transistor. These pioneers were: John Bardeen, Walter Brattain, and William Shockley[43]. This discovery marked a revolution, a totally new horizon for technological opportunities and a fresh approach to the existing traditional technological approaches. The revolution had to be spread via diverse channels in order to facilitate a broad scope of developments. One of the principal means of spreading the discovery was the licensing policy introduced by AT&T. The policy

[43] Prestowitz, Jr. C. *Trading Places: How America is Surrendering Its Future to Japan and How To Win It Back.* P: 123, Charles E. Tuttle Company. Tokyo, 1991,

regulated the monopoly in the framework of the American antitrust law. The findings were made available to a broad range of firms - domestic and foreign. A Japanese firm, called the Sony Corporation, was among the first to benefit from the discovery. In the early 1960's, promising scientists, such as Shockley and Noyce started their own company in Paolo Alto, California. These two men joined their efforts with the Fairchild Camera and Instrument Company, and established the Fairchild Semiconductor Company. This creation marked the beginning of Silicon Valley[44]. A new market in information technology all over America had attracted new entrepreneurs. The existing credible and large corporations such as General Electric, IBM, and RCA were enthusiastic about the new market as well. The intellectual boom in the new information technology sector rapidly produced a new intellectual phenomenon - the invention of the integrated circuit by Noyce and Kilby.

> This introduced the second electronic revolution, which led to a host of new products, such as the hand-held calculator, and a host of new companies to make them. NASA chose Noyce's chips for the Apollo moon rocket, and total industry sales grew rapidly to over $100 million by 1969. Noyce himself left Fairchild in 1968 to found the Intel Corporation. With no chain of command and with regular corporate culture sessions, at which attendance was mandatory, even for Noyce, the company based its phenomenal success on another revolutionary device: the dynamic access memory known as the DRAM or D-RAM, or often simply as RAM… This keystone product - capable of storing about 1,000 bits (1K) of information accessible from outside…- became the memory bank for all electronic products and established fundamental technological directions for the next two decades, dramatically increasing computing power and reducing costs.[45]

This discovery was followed by the consequent invention of the microprocessor. Consequently, in 1973, Intel introduced their new generation 4K RAM and in 1975 16K RAM was promoted. At this early stage, the industry was

[44] Ibid, p: 125.
[45] Prestowitz, Jr. C. *Trading Places: How America is Surrendering Its Future to Japan and How To Win It Back.* P: 127, Charles E. Tuttle Company. Tokyo, 1991.

solely American; it was the subject of national pride. The new market was not shattered by any competition just yet. In another part of the world a scrupulous process of catching up had been started. Intensive technology transfers from America together with the AT&T patents made available for the Japanese firms triggered rapid developments in Japan. The Japanese MITI made the semiconductor industry a top priority and actively encouraged rapid developments in the given field. The ministry initiated a new regulation under which it was directed to select products and projects in research and development for special promotion, to set production, quantity and cost targets, and to ensure adequate funding of the programs both for providing subsidies and by directing bank lending activities, moreover an Electronics Industry Deliberation Council was set to provide the vital guidance and assistance[46].

The matter of national pride in Japan was to produce superior electronics to the American ones. Ignoring all the traditional doctrines of comparative advantage the Japanese were determined to make their comparative advantage in the given field. A new national procurement "Buy Japanese computers" was actively promoted, even though the American ones were cheaper and better. The second offensive strike launched by the MITI was to raise computer tariffs. It was not permitted to IBM to initiate production in Japan, unless it was to license its primary patterns to a dozen of the Japanese firms. It was also compulsory that an American firm producing in Japan could only target 10 percent of the domestic market; this was the case for Texas Instruments. The ministry selected a group of Japanese firms which were destined to lead the industry in the future, among these firms were:

[46] Ibid, p: 129.

Hitachi, Fujitsu, Nippon Electric Company, Mitsubishi Electric, Toshiba, and Oki Electric.

In the early 1970s two incidents transformed what seemed to be a computer war into a full-blown semiconductor trade war[47]. Firstly, IBM introduced its third generation 370 computer, and this development of new RAM memory chips created a great deal of apprehension and distress in Japan, due to the fact that the Japanese were still pacing to catch up with IBM's second generation of computers. Consequently, during the diplomatic negotiations between America and Japan regarding the American occupation of Okinawa after the World War II and the revision of the American presence there, the Japanese government complied with the American wish to start removing its restrictions on foreign access to its information technology and electronics markets. As a result of the diplomatic settlement regarding the return of Okinawa back to the Japanese, as return gesture the Japanese political authorities promised to initiate a comprehensive liberalization reform in the Japanese economy.

After the diplomatic agreement between Japan and America, it was quickly realized in Japan that the solution to the superiority in producing new chips was rooted in the semiconductor industry. With a rapid pace the MITI diverted its attention to the semiconductor industry, while safeguarding the industry from the American competition. The primary tool in safeguarding the protection of the Japanese semiconductor industry was dumping - price instrumentality of selling below the cost or cheaper in foreign markets than in the domestic ones, in order to compete on better grounds with the American outlets. Threatened by numerous law

[47] Prestowitz, Jr. C. *Trading Places: How America is Surrendering Its Future to Japan and How To Win It Back.* pp: 132-133, Charles E. Tuttle Company. Tokyo, 1991.

suits Japan tried to minimize such practices. In 1982 the American firms struggled to redesign their chips and the Japanese took 65 percent of the semiconductor market and in the late 1980's, as a result of MITI's hard work, the Japanese producers finally made a first prototype - 256K RAM, before the Americans. Intensive government support, comprehensive state funded research together with coordinated market policies designed by the Japanese political establishment did pay off for the Japanese rapid advantage in producing and exporting semiconductors.

Having lost the semiconductor industry, America finally decided to take action against, what the American media deemed as "closed markets" in Japan. Various American firms were about to take legal action against a number of Japanese firms and the Japanese government on the issue of unfair trade and dumping practices. Some official warnings have been made to the Japanese companies by the American Commerce Department. Other threats of retaliation against Japan were taking place as well. Some heated discussions between the governmental representatives of the two countries were taking place. The Japanese offered to initiate a High Technology Working Group, aiming to resolve the escalating trade war. After some efforts to solve the problem, it was assured by the Japanese Prime Minister, Zenko Suzuki, in 1982, that the Japanese market will be open for American firms. The American trade representatives, on the other hand asked for a system of gathering statistics on semiconductor shipments. The First Semiconductor Agreement of November 1982 sought to establish an open Japanese market, favorable market conditions for the American firms and the presence of the system of collecting statistics on semiconductor shipment. However, desirable

results did not emerge out of this agreement due to bad coordination between the two sides and continuous misunderstandings, primarily of a cultural nature.

In 1983 the Second Semiconductor Agreement was produced, and tensions between the two sides were even higher. Although the basic goals of this second agreement were the same as the initial agreement, the second agreement provided a commitment to encourage the major Japanese chip users to acquire more American manufactured chips. The 1983 agreement did, however, work only for a short period before being disturbed by a sharp decline of Japanese demand in semiconductors.

The American producers decided to concentrate on more sophisticated outlets such as EPROMs (Electrical Programmable Read-Only Memories) and logic chips, since they still possessed comparative advantage in such a production. However, in 1985 the Japanese firms initiated a price war in the sector. Alarmed American producers grouped together and approached Washington, demanding an immediate official response to the practices of the Japanese companies and Japanese government.

> They filed a dumping action on EPROM and a blanket unfair trade petition, under section 301 of the U.S. Trade Act of 1974, charging the Japanese with illegally nullifying negotiated tariff and quota concessions by consciously taking countermeasures to protect their domestic industry. The petition further claimed that the Japanese had reneged on the two recently negotiated high-tech agreements. Section 301 gives the president power to take any step necessary to prevent or retaliate against the unfair trade practices of foreign countries which harm U.S. commerce. The industry did not ask for retaliation or protection. Rather it once more asked the President Reagan to negotiate for a commitment from Japan to encourage its companies to buy more U.S. chips and to observe the U.S. and international dumping laws[48].

The views in Washington were very different. The national Security Council was against any serious retaliation, due to the fact that Pentagon was relying on the Japanese chips itself and any instability in the intercourse of chip politics could

[48] Prestowitz, Jr. C. *Trading Places: How America is Surrendering Its Future to Japan and How To Win It Back.* P: 159, Charles E. Tuttle Company. Tokyo, 1991.

seriously threaten the national security, especially in the context of the SDI (the Strategic Defense Initiative) project. The commerce department, on the other hand was strongly for the enforcement of U.S. anti-dumping law, claiming that the American industrial base was at risk. The Japanese offered to initiate an export floor price and to promote the sales of the American chips by 25 percent. However, the offer was not perceived as an adequate solution to the problem. In January 1986 America was pursuing a dumping case of its own on 256K RAMs, one dumping petition from private industry on 64K RAMs and one on EPROMs, and a 301 unfair-trade case against Japanese semiconductors[49].

This was an unprecedented moment in the bilateral relations in the Cold War era. For the first time America decided to focus on the Japanese trade practices and to launch such an action. Before, trade tensions and disputes never affected the foreign policy formulations to such a degree. For the first time, it seemed that America was risking its strategic friendship with Japan for its own economic objectives. Another agreement on semiconductors was signed in September of 1986; it had a rather comprehensive agenda regarding a long-term relationship between the Japanese users and the American suppliers. The sales in Japan were to be improved, and Japan agreed to monitor its domestic environment and safeguard against any dumping actions. The agreement was to ensure the commitment in the part of the Japanese and to suspend the dumping cases and the unfair trade case. The provisions of the agreement did not seem to work, the American producers, together with the American political establishment were not convinced that Japan had created a favorable domestic environment for the presence and practices of the American

[49] Prestowitz, Jr. C. *Trading Places: How America is Surrendering Its Future to Japan and How To Win It Back.* , P: 166, Charles E. Tuttle Company. Tokyo, 1991.

firms and their products. On the 27th of March, tensions once again were high. Despite intensive efforts on the Japanese behalf, the American president announced sanctions in the form of 300 percent on various Japanese imports. This harsh response proves the effect trade wars have on the course and the nature of bilateral relations. However, despite the firm measures taken, it was too late to save the American industry. The global dominance in semiconductors and electronics belonged to Japan after the 1980's and remains so nowadays.

With the loss of the semiconductor industry the overall Japanese influence over the American market increased immensely. America in the 1980's developed a dependency on Japanese imports and Japanese capital investments in America. Japanese electronic components became vital for the development and production of some crucial American weaponry. American defense to a large degree became reliant on the Japanese imports and American financial market became dependent on the Japanese flows of capital and vulnerable to any reduction in such flows. The semiconductor wars resulted in an increased power of Japan in material terms vis-à-vis America. Japanese firms became able in the early 1990's to influence American exchange rates and monetary condition[50]. The semiconductor wars had caused a great deal of tensions in bilateral relations between America and Japan.

However, with the intensity of semiconductor wars, problematic trade conflict resolutions, the very logic of bilateral trade between the two did not change. Both countries resumed "business as usual" mode. America and Japan remain up to the present day the largest trading partners. Geun Lee stresses the fact that, despite changes in relative material capabilities of America and Japan, that were rather

[50] Lee, G. "A Constructivist Reading of Japan's Adaptive Responses to US Trade Demands: Power in Trade Dispute Resolutions", P: 83, *Journal of International and Area Studies*, Vol.7, #1, 2000.

evident during and after the semiconductor trade wars, and despite changes in the structure of international system due to some position shifts among major international actors, the resolution of trade disputes between America and Japan followed a recurrent pattern that only marginally reflected the structural changes, and the influence of international institutions. The present case of semiconductors demonstrates that trade wars have a strong effect on bilateral relations; they influence political dialogs and may alter diplomatic status quos, together with societal perceptions of each other. For instance during and after the semiconductor saga there has been a substantial change in both volume and content of media outlets on Japan in major American communication channels; the majority of the Japanese newspapers on the other hand, introduced comprehensive economic reviews into their volumes during and after the trade frictions with America. This phenomenon demonstrates how trade wars affected the level societal awareness on economic and political realities between the two countries. General public in both countries became aware of the commercial problems between the two countries, and to some degree changed the general perception of the other. Trade wars are important, and can some times be prioritized over established strategic alliances, as in the case of the Japanese-American experience. However, the effects of trade wars are momentary. Trade wars in the present case did not pave their way to permanent political and trade hostilities. As it has been mentioned previously, Japan and America resumed their usual level of bilateral trade that carried on in a stable fashion, and the political relations between the two recommenced and alleviated.

The finding from the semiconductor case might appear somewhat exceptional. In order to make sound generalizations about the trade wars in the Japanese-American context there is a need to focus on one more case. In the

following section the case of biotechnology trade wars shall be investigated, due to the high profile attention given to this sector by most core states, including America and Japan.

4.2 Biotechnology Industry: R&D Rivalry, Industrial Policy Tensions And Trade

Before introducing biotechnology in the context of Japanese-American commercial relations, it is essential to begin with some general facts about the industry. Biotechnology still remains a rather vague concept. In simple terms biotechnology represents a form of applied biology. According to the American Dietetic Association, biotechnology can also mean the use of living organisms to make a product or run a process[51]. Utilizing this particular definition, the practices and techniques involved in fermentation, enzyme purification, plant and animal breeding, cross-breeding, production of cheese, yogurt and vinegar are considered as examples of biotechnology. Moreover, biotechnology is regarded as the field in which the tools of genetic engineering are widely employed to remedy the undesired conditions of living organisms. The unlimited application of biotechnology is astonishing- agriculture, pharmaceutical industry, alternative energy sources, and food sector - are just a few examples of evident utilization of biotechnology. Specific applications of genetic engineering are plentiful and escalating rapidly in number. Genetic engineering is being incorporated into the production processes of pharmaceuticals, gene therapy, and the development of transgenic plants and animals.

[51] http://www.eatright.org/abiotechnology.html

1. Pharmaceuticals: Human drugs such as insulin for diabetics, growth hormone for individuals with pituitary dwarfism, and tissue plasminogen activator for heart attack victims, as well as animal drugs like the growth hormones, bovine or porcine somatotropin, are being produced by the fermentation of transgenic bacteria that have received the appropriate human, cow, or pig gene.
2. Gene Therapy: The first clinical gene therapy is underway to correct an enzyme deficiency called ADA in children. Bone marrow cells are removed, defective DNA in bone marrow cells is supplemented with a copy of normal DNA, and the repaired cells are then returned to the patient's body.
3. Transgenic Plants: Transgenic plants that are more tolerant of herbicides, resistant to insect or viral pests, or express modified versions of fruit or flowers have been grown and tested in outdoor test plots since 1987. The genes for these traits have been delivered to the plants from other unrelated plants, bacteria, or viruses by genetic engineering techniques.
4. Transgenic Animals: Presently, most transgenic animals are designed to assist researchers in the diagnosis and treatment of human diseases. Several companies have designed and are testing transgenic mammals that produce important pharmaceuticals in the animal's milk. Products such as insulin, growth hormone, and tissue plasminogen activator that are currently produced by fermentation of transgenic bacteria may soon be obtained by milking transgenic cows, sheep, or goats. [52]

According to G.R. Saxonhouse, biotechnology is viewed as "reaching a stage of development at which, during the next five, ten, and twenty years, its many commercial applications, together with complementary developments, will yield an extremely high rate of return on resources committed"[53]. Knowledge intensive high technology sectors such as biotechnology received a great deal of attention by major industrialized countries. Biotechnology with its high profile attention became a subject to versatile public policy in America and Japan in the mid 1970's, aiming to enhance and encourage rapid development in the sector, facilitating biotechnology's impact on national economy and safeguarding large return rates in future.

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[52] Principles of Biotechnology, Biotechnology Information Series (Bio-1) North Central Regional Extension Publication Iowa State University - University Extension

[53] Saxonhouse, G. P: 98, in Patrick, H. (ed.) *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* University of Washington Press. Washington, 1986.

The birth of biotechnology made its historic mark in the early 1970's in America and immediately attracted other industrialized countries such as UK, Germany, France and Japan. Public awareness about biotechnology and its enormous potential created a shared belief that biotechnology and its potential developments are too significant to ignore and such industry has to be established and actively encouraged through various instruments of public policy. Comprehensive agendas on biotechnological development were rapidly designed and implemented. Such initiatives were primarily inspired by successful research in biotechnology field in America, and rapidly stimulated interest in Japan.

> While the areas that came to be known as biotechnology elicited Japanese government interest before such historic events as the first gene cloning in 1973, the first expression of a gene cloned from a different species in bacteria in 1974, and the creation of the first hybridoma in 1975, systematic consideration of biotechnology's place in the future of the Japanese economy by policy makers in either the private sector or the public sector is no more recent than late 1980. This acceleration in interest was fueled first by the extraordinary favorable reception received by biotechnology-related companies in the American equity markets. In October 1980 the initial public offering by Genentech, the first American firm founded to exploit recombinant DNA technology, set a Wall Street record for the fastest price per share increase by doing from $35 a share to $89 a share in twenty minutes.[54]

For countries such as Japan, biotechnology came to be the key to some inherent and unique problems, such as alternative energy sources for economies with no vital natural resources base. However, the primary interest in biotechnology was triggered by the enormity of long term returns provided by the biotechnology developments.

The birth of biotechnology added a new flavor to the Japanese-American commercial interaction, it brought a new dimension to bilateral commercial cooperation, it modified the bilateral trade landscape and it brought some new trade

[54] Saxonhouse, G. P: 98, in Patrick, H. (ed.) *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* University of Washington Press. Washington, 1986.

discords. Some crucial developments took place in both economies; some contending industrial policy agendas concerning biotechnology have emerged in both countries. In the following analysis it shall be demonstrated that the tenet of trade discord between America and Japan is the issue of industrial policy and its scope, particularly the role of government and the volume of state funded research and development in both countries in relation to biotechnology problems.

The history of biotechnology starts in a rather similar fashion to the semiconductor case. A significant American discovery, - transistor paved its way to the emergence of a new industry and fueled substantial interest from Japan, as has been previously illustrated. However, prior to the semiconductor trade war America was willing to share its scientific finding with the rest of the world when the American Telephone and Telegraph allowed the Japanese firms to benefit from the research at Bell Laboratories. The biotechnology example, on the other hand, established a different precedent. In 1980 a patent court case *Diamond vs. Chakrabarty*, made a historic landmark. The Supreme Court ruled that the inventor of a new micro-organism, whose intention otherwise was consistent with the legal prerequisites vital for obtaining a patent, could not be denied a patent solely because the invention was alive[55]. This ruling resulted in granting a rather exclusive patent to Stanford University and the University of California at Berkley, for the findings of Herbert Boyer and Stanley Cohen.

This patent represents a shift in the American technology policy. America was not going to allow biotechnology to follow the example of other industrial

[55] Saxonhouse, G. P: 99, in Patrick, H. (ed.) *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* University of Washington Press. Washington, 1986.

findings such as in the case of semiconductors. The Cohen-Boyer patent marked the beginning of an unprecedented compound of protective patents. This shift in the American technology policy alarmed Japan. Two weeks after the facts about the Cohen-Boyer patent became public an urgent meeting of the Committee on Life Sciences of the Japanese Federation of Economic Organizations (Keidanren) was held. The primary aim of the meeting was to devise an adequate Japanese response regarding the new developments. The meeting was attended by the president of Mitsubishi Chemicals, the chairman of Kyowa Hakko (a chemical company with significant involvement in pharmaceuticals), the president of Toray (a leading synthetic fiber producer), and the representatives of thirty other Japanese companies with an interest in biotechnology[56]. The new patent, or rather the way the patent was implemented distressed the Japanese a great deal, since the patent would affect virtually every application of genetic engeneering. It was a shared view during the meeting that America selected its new strategic national industry – biotechnology and was to implement an unprecedented comprehensive framework of protective patents. The Japanese were seriously concerns about the ramifications of such an attitude of America, regarding biotechnology.

Rapidly, both countries designed comprehensive industrial policies targeting the promotion and rapid development in the field of biotechnology. The American industrial policy towards biotechnology primarily relied on the legislative measures regarding the patents and the information sharing with foreign firms. Technology transfers, sharing of know-how was not to be widely practiced in relation to biotechnology, due to the fact that preserving and maintaining the comparative

[56] Saxonhouse, G. P: 99, in Patrick, H. (ed.) *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* University of Washington Press. Washington, 1986.

advantage in biotechnology were perceived as a national industrial priority. In the Japanese case, it was also the establishment of the new industry. However, before industrial policies in biotechnology, the role of government, R&D funding, and trade interactions in the given sector are focused on there is a need to illustrate some fundamental understanding of industrial policy in the American and the Japanese contexts. It shall be argued later on that contending understandings of industrial policy in these two economies produced the main trade frictions in the biotechnology case.

4.3 Japanese Industrial Policy Vs. American Industrial Policy

Industrial policy has been always perceived as the crucial instrument of national economy. Even though industrial policy agendas have changed dramatically since the 1930's they are still perceived as the essential component of the Japanese industrial development, they remain comprehensive, coordinated and coherent with other economic policies. However, the American policy makers since the 1970's to the present day often attack the scope and the implementation of the Japanese industrial policy, claiming that being a major industrialized country, Japan does not need industrial policy in most of the cases in which it is implemented. A great deal of research on the Japanese industrial policy has been conducted over the last three decades and views on the fundamental need of the Japanese industrial policy and its implementation remain very versatile. However, most opinions expressed in academic literature are to some degree parallel on the idiosyncratic features of the Japanese industrial policy. According to H. Patrick, Japanese industrial policy can be characterized as enhancive in regard to economic growth, since it pragmatically and efficiently allocates resources via instrumentality of price

creation mechanisms[57]. Japan has been rather successful in its selection of industries for special treatment; knowledge-intensive, high value-added manufacture that involves skilled labor did pay off.

Japan had in most cases selected the most high-potential, strategic industries, that would, with the help of an intensive industrial policy, ensure Japanese industrial superiority over other national economies. Comprehensive design and coordinated implementation of industrial policy were promoted in a generally conducive and supportive domestic policy environment. Japan had conducted its industrial policy on a general consensus on what was to be done and its general economic policies and conditions were conducive to success due to pragmatic planning and active commitment by government institution like the MITI. The process of selection of the industries that were to benefit from industrial policy was rather complex, carefully scrutinized and monitored by the MITI. The preliminary goal in such a selection was to encourage and maintain the necessary environment vital for the productive capacity and rapid growth by accelerating the transfer of resources to the major strategic industries of the future, while smoothing the process of decline of the old and uncompetitive industries.

According to the MITI, the potential strategic industries that deserved the special treatment had to meet some essential criteria. Firstly, the new industry had to be of a substantial size, ensuring Japan future comparative advantage as the relative supplies and costs of its factors of production changed with domestic development

[57] Patrick, H. (ed.) *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* P: 9, University of Washington Press. Washington, 1986.

and growth[58]. The new industry would have to have a strong potential to compete on the international level, even when the learning curve economies have been achieved on the international domain. Secondly, it was fundamental for the new industries to have a domestic and international demand of high income elasticity. Finally, it was vital for the new industries, according to the MITI, to ensure that Japan would be internationally price competitive in such industries.

The American industrial policy is strikingly different from the Japanese one. Firstly, the inherent difference profoundly lies in the national priority attribution. Over decades American industrial policy has been targeting military and space industrial bases, whereas Japan prioritized civil industries. American industrial policy has been also applied to some civil areas such as steel, textiles, and automobiles; however, the primary reason for such "special treatment" was initiated primarily by the incentive to tackle unemployment problems and safeguard jobs in such large industrial sectors.[59] However, the above mentioned industries were not helped through various comprehensive programs, intensive findings of research and development or intensive national procurement policies. The main instrumentality evoked on the American behalf was numerous import restrictions. According to Patrick, the main difference between industrial policies of these countries is the fact that Japan in its industrial policy is emphasizing efficient resource allocation, while America in its industrial policy mainly pursues income redistribution.

4.4 Why Trade Frictions In Biotechnology?

[58] Patrick, H. (ed.) *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* pp 10-11 , University of Washington Press. Washington, 1986.
[59] Patrick, H. (ed.) *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* P: 11, University of Washington Press. Washington, 1986.

By the 1980's Japan established a proper biotechnology sector, which primarily consists of 12 chemical companies, 13 pharmaceutical companies, 20 food companies, 8 animal breeding companies, 15 construction plant engineering companies, 17 electrical device and machinery companies, and 5 textile and paper companies- these companies were the main corporations that had succeeded in commercializing biotechnology products. With the establishment of the biotechnology sector Japan received a great deal of criticism from America and some European countries. Trade frictions emerged due to primarily American accusations of strong protectionism of the sector and the large amount of state funded research and development. The main criticism has been directed towards the Japanese protectionism of the pharmaceutical industry.

Biotechnology case is rather different from the previously illustrated semiconductor case. Semiconductor case demonstrated a clear example of a trade war. However, in a sector such as biotechnology, which primarily produces knowledge rather than a final product such as semiconductor, it is rather hard to observe the usual dynamics of a trade war. Accusations of high tariffs and quotas can not be sound in biotechnology, since the products produced in the industry are not standardized yet. However, an intensive use of non-tariff barriers can be applied in such an industry. Pharmaceuticals, which remain as the major application area for the new biotechnologies can be substantially protected with a help of diverse regulations, therefore by protecting pharmaceuticals, an indirect protection of biotechnology is implemented, and such indirect protectionism has been frequently applied by Japan. On numerous occasions European and American pharmaceutical companies have been criticizing the practices of the Japanese Ministry of Welfare.

The policies regulated and monitored by the Ministry such as the product approval policies, product standards, testing requirements and procedures, are, according to the European and the American firms, designed to hurt the interests of the foreign firms and to safeguard the Japanese firms. These policies are too costly and time consuming, and in their essence discriminate against the European and the American pharmaceutical products. The European and the American firms claim that such a practice of unfair treatment is due to the inability of the Japanese pharmaceutical companies to compete internationally. American companies, supported by the Office of the U.S. Trade Representative, have argued since at least the mid-1970s that the Ministry of Welfare procedures are extremely bureaucratic and work to make it difficult and costly for foreign drug manufactures to introduce new products into the Japanese market. [60]

The large amount of complains from the American companies paved their way to some unrest in the Japanese political establishment. Japanese authorities did not want another blow to the economic prestige of Japan, like in the previously illustrated semiconductor case. More than anything a new image of Japan as a free trader, that has been intensively advertised as a defense against numerous criticisms directed towards Japan, mainly by the American firms, was at threat. Japanese political establishment ensured the international domain that its domestic market is substantially liberalized and that numerous policies have been designed and implemented aiming to create and maintain a favorable domestic environment for foreign products. Prestige and national economic identity were at stake, thus a prompt and adequate measure was essentially vital at the time.

[60] Saxonhouse, G. P: 103, in Patrick, H. (ed.) *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* University of Washington Press. Washington, 1986.

The then political cabinet drafted a response to the American complains, stating that the results of the American pharmaceutical tests were not fully applicable to the Japanese people, the Japanese people being physiologically different from the American people. This justification produced by the Japanese authorities aimed to demonstrate that there was nothing unfair about the treatment of the American pharmaceutical products, the problems that the American firms experienced were just a technicality that arose due inapplicability of some results produced by the American drug tests in Japan. However, the response was not sound for the American companies, determined to introduce their new products to the Japanese market. Confronted by the escalating diplomatic pressures from America, primarily from the American Commerce Department, some legislative response had to be introduced on the Japanese behalf. A new measure came in 1983 as an amendment of sixteen Japanese standard and certification laws. Moreover, in addition to some amendments targeting the pharmaceutical industry some legislative changes had been made in fields of chemical agriculture and toxic chemicals, since those industries were also the principal application fields for biotechnological developments[61].

Furthermore, in 1985 it was decided by the Diet, the Japanese parliament, that a new market access package in biotechnology and related fields had to be accepted, in order to prevent any potential accusations from the American and the European companies. Together with the commitment to create a favorable environment for the presence and activities of foreign firms, the Japanese government decided to accept the majority of the test results from the American

[61] Saxonhouse, G. P: 103, in Patrick, H. (ed.) *Japan's High Technology Industries, Lessons and Limitations of Industrial Policy.* University of Washington Press. Washington, 1986.

pharmaceutical companies, as long as they were not based on some unique features of the American physiology and had no potential secondary effects on the Japanese people.

Another issue that caused a great deal of American skepticism was the extensive role of the Japanese government in biotechnology development and in the related fields. However, these accusations often do not have substantial grounds. The American firms complain of the large amount of subsidy into the sector. However, strangely enough the only sectors the Japanese government is continuously subsidizing are mining, agriculture and transportation. Sectors such as pharmaceuticals together with some other related sectors receive approximately 0.1 percent of the total funding[62]. However, since biotechnology is a rather interdisciplinary field and it is closely interconnected to areas such as agriculture, pharmaceuticals, and chemical industry it is rather hard to track the exact amount of governments funding of the sector. Moreover, Japanese government is often criticized for the volume of research and development funds made available to biotechnology sector. In 1984 for instance, the total amount of R&D in biotechnology amounted to around $35 million, when the American government spends $522.3 million on biotechnology on regular bases[63].

The constant barrage of American criticism of the Japanese treatment of biotechnology continues. The American firms still feel that they are treated unfairly in Japan, and their market opportunities are limited by the fact that the Japanese government still strongly protects the biotechnology and the related fields in its

[62] MITI, Japan
[63] MITI, Japan

domestic environment. However, a manifest retaliation step was never taken on the American behalf. Dissatisfaction with biotechnology never transformed itself into a serious and profound trade war. However, it is too early to make predictions, concerning biotechnology, since the full potential of the industry had not been realized yet. The products of biotechnology are not fully standardized and they have hardly reached a serious level in mass production. It shall be argued in the following chapter that trade wars occur during a specific phase of a product cycle and that stage has not been reached yet in biotechnology sector, therefore predictions regarding the escalation of the illustrated above trade frictions into a full scale trade war remain to a large degree speculative.

CHAPTER 5

COMPARATIVE ADVANTAGE, PRODUCT CYCLE AND TECHNOLOGY

In the 20th century a phenomenon of shifting patterns of trade became rather apparent. Even though it is perceptible that geography, climate and natural recourses pre-determine substantial trade landscapes for countries, making some vine exporters and some oil exporters, development of trade patterns is a dynamic process, with trade relationships among countries substantially changing over time; in the manufacture sector such changes are rather manifest. Orthodoxy of international trade to some extend assumes stable patterns of trade based on patterns of comparative advantage, even though it acknowledges the fact that production functions are not identical in every country. With the rapid pace of modern developments, scientific and technological innovations it is now apparent that technology is now perceived as an important factor of production. A more detail analysis of returns of scale, product age, and product differentiation became essential.[64]

With the realization of the importance of technology and technological change and the numerous ways it transforms production structures and the vital role it plays in modifying world trade patterns, some new theories that assume dynamics in comparative advantage, primarily in manufacture sectors have emerged in the late

[64] Meier, G. *International Economics: The Theory of Policy.* P: 38, Oxford University Press, Oxford, 1980.

1960's. One such theory- Product Cycle theory with its main postulates has been previously illustrated in chapter one together with the concept of comparative advantage. In the present chapter these two concepts shall be utilized in relation to trade wars, seeking to establish a theoretical understanding of trade wars. By utilizing the contextual analysis of trade wars in the Japanese-American example investigated in the previous chapter the primary changes in the world trade patterns shall be clarified. Moreover, the concept of comparative advantage shall be elaborated on in relation to trade wars, seeking to establish whether comparative advantage in strategic economic sectors, such as high technology, is dynamic and can be self-engineered. It shall be argued that trade wars in high technology sectors appear because of product cycles, or what may speculatively be referred to as the technology cycles. It shall be demonstrated that trade wars usually appear at a specific phase of a product cycle, the case studies of semiconductor and biotechnology from the previous chapter shall be tested in the framework of product cycles. The main hypothesis to be tested in the present chapter is that trade wars are primarily fought over leading strategic core industries that are knowledge-intensive, and produce high-value-added products, mainly between successful industrial states, due to the fact that comparative advantage in such areas can be self-engineered during product cycles. It shall be also tested weather the stimuli for a trade war is maintaining/gaining comparative advantage over such strategic industries, and what such comparative advantage entails: whether it is a matter of preservation of national economic interests or is it the fact that supremacy in such strategic industries guaranties the conservation of a "core state" status.

The semiconductor case illustrated in the previous chapter can serve as a relevant example of the shifting patterns of trade through product cycles. Though

product cycles are to some degree shaped and determined by the historic and social settings they occur in and some unique 'epochal' idiosyncratic features might be observed, the prevalent logic of the patterns of product cycles remains intact.

As it has been demonstrated in the previous chapter, America made an 'epochal' discovery of the transistor at Bell Laboratory in 1948. Due to the historical setting – the eve of the Cold War, and America's prominent role of the hegemon, the revolution had to be spread via diverse channels in order to facilitate a broad scope of developments. The 'public good'- transistor, was spread between other countries that were America's strategic partners. The findings were made available to a broad range of firms - domestic and foreign. Licensing agreements made the discovery and the essential 'know how' available to foreign firms. Despite the fact that the knowledge traveled across American boundaries, America enjoyed a comparative advantage in semiconductors. Only the first stage of the semiconductor product cycle is to some degree different from the theoretical model of product cycle. Usually a longer technological gap is assumed by the theory. However, the American policies narrowed the knowledge gap. The second and the third phases of the semiconductor product cycle are in line with the theoretical assumptions. On the second phase of the product cycle, semiconductor production was almost established in Europe and Japan. By the end of the third phase mainly the Japanese suppliers became the mainline exporters of semiconductors. At the end of the third phase America lost its comparative advantage in the production of semiconductors and became a net importer of the product.

Slowly the production of semiconductors shifted to less developed countries such as Taiwan and the product lost its initial strategic importance. However, a new product cycle was triggered by another American discovery in 1973 – that of the

microprocessor. The new product cycle followed a similar pattern and ended with America launching a new product - computer software, and this product cycle is still an ongoing process. Nowadays, the software product cycle is on its third phase. Countries such as Japan and Europe acquired the essential knowledge for the development of software and are a strong competition for the American producers. However, America still has not lost its comparative advantage in computer software that is why companies such as Microsoft enjoy the largest segment of the market in computer software.

> A major objective of states in the modern world is to be the locus of the growing sectors of the international economy. States aspire to be the source of technological innovation and to acquire industrial superiority over other societies. The possession of a technological monopoly in the expanding sectors of the world economy enables a state to extract "technological rents" from other economies in the system. In the language of contemporary economics, every state, rightly or wrongly, wants to be as close as possible to the innovative end of "the product cycle" where, it is believed, the highest "value added" is located.[65]

States such as America seek to maintain their superiority in the new product for as long as possible. The length of the first two cycles is essential in that sense. The longer the knowledge and technological lag the longer the monopoly over the new product can be maintained and the longer the benefits of industrial superiority can be enjoyed. Naturally, in the second half of the second phase innovator - states such as America, may introduce some protectionist measures to prolong superiority in the export of the product.

Contending interests and objectives of states to promote their leading industries or to safeguard and protect their declining industries often result in trade conflicts and trade wars. Each advanced economy has a generic primary objective of

[65]Gilpin, R. *The Political Economy of International Relations.* P: 99, Princeton University Press, Princeton, New Jersey, 1987.

maintaining/gaining comparative advantage in strategic leading economic sectors. This objective in most cases functions as the main drive for trade wars. Comparative advantage in leading economic sectors apart from the obvious economic advantages can be also linked to two fundamental issues: preservation of national economic interests and conservation of the 'core' economy status. What does comparative advantage in strategic industries entail? Firstly, comparative advantage in the given fields means a leading position in the world market, ability to meet international competition and consequently, a strong domestic industrial base and a high level of national prosperity - which are directly in line with the fundamental national economic objectives of every advanced economy. Secondly, does comparative advantage in such industries preserve the 'core' state status? Theoretically speaking, comparative advantage in strategic economic sectors is the primary ingredient of a 'core' economy. However, according to the product cycle theory, America being the leading economic actor in the international economic arena, quite often loses its comparative advantage in the production of various strategic goods, however does not end up with a status of a semi-peripheral or a peripheral actor. Core states, such as America, due to the inherent economic specifications have the ability to introduce one new product after another and initiate one product cycle after another. Temporary comparative advantage in new strategic products seems to be enough to keep the American economy in a good shape and to preserve its role as a core economic actor in the international economic system.

Trade conflicts and trade wars tend to emerge in most cases during the middle or the end of the third phase of the product cycle. The trading partners, who formerly imported the product, may at this point be able to imitate its routine type of production and confront the original producer with credible competition. A struggle

for the dominance in production and export of the product leads to often offensive policies implemented by the both sides.

The same occurrence can be observed in the previously analyzed semiconductor case. The trade frictions that paved their way to the trade war occurred at the end of the second phase when the product has fully matured and been standardized. At that stage the full potential of the product was realized, therefore an intensive competition for the production and export of the product emerged. The mainstream of the frictions between America and Japan occurred primarily on the base of 'unfair production costs', when Japan was selling its semiconductors at a price bellow the actual production cost. The anti-dumping law suits filed by America corresponded to unfair competition, which denied the American producers and exporters from a large proportion of the semiconductor market.

The biotechnology case presented in the previous chapter supports the same assumption that trade wars occur during a mature phase of product cycle. Even though biotechnology stands as a rather unique case if applied to gross product cycle theory some inherent logic of the product cycle can be observed. Firstly, the theory is primarily applicable to industrial manufactured goods that tend to replace labor with capital. Biotechnology, on the other hand does not create manifest final products. Biotechnology has its final products such as the biomass and genetic clones and so forth; however, mass production and mass distribution of such products is not feasible at this stage. Biotechnology does not produce standardized products yet. The full market potential of the bio-products is not fully realized. The industry with its products is still at the first stage of the product cycle; the experimental nature of the product, together with the ongoing research and

development constitute that bio-products, their inputs, processing and final specifications are not fully standardized.

It is true that frictions and tensions appear between America and Japan regarding various issues of biotechnology. Specifically each party is apprehensive about the amount of state funded research and development is available to the opposite party. The American side blames the Japanese side for large governmental involvement in the development of biotechnology and the large volumes of R&D sponsoring. The same protests are coming from Japan. Both sides are accusing each other for the 'original sin'. However, these trade frictions do not represent a trade war. Two explanations can be produced at this point.

Firstly, biotechnology does not really produce manufactured goods; it rather produces knowledge, therefore traditional instrumentality of trade wars such as quotas, tariffs, and so forth can not be fully implemented. Since the full potential of biotechnology is not fully realized yet, any prognosis regarding potential full-blown trade wars in biotechnology is very speculative. Protectionist measures such as national procurement, subsidies, active state involvement, special tax treatment, and intensive R&D can be implemented in relation to biotechnology; however the main offensive instrumentality such as import restrictions can be hardly implemented in the given field.

Secondly, if assumed that biotechnology is a subject to an ongoing product cycle, then clear-cut trade war can not occur at this stage for the simple reasons that the mass production and mass distribution are not realized at this stage. America still maintains a strong comparative advantage in the given field. All the findings from biotechnology experiments together with the essential knowledge did not become fully 'universal' at this stage. If one expects biotechnology to meet all the

criteria and requirements of a traditional product cycle, then it can be expected that in the future it will follow similar patterns to other products such as semiconductors. However, since biotechnology is a unique area and the demand for its products can not be strictly categorized, there is still a great deal of ambivalence about the future of biotechnology and the probability of trade wars in the given sector.

In the mainstream academic work on Japan and America regarding the problems of biotechnology, a potential trade war is not viewed as an immediate and feasible option. However, a great deal of literature questions feasibility of a trade war in biotechnology between EU and America, especially in the field of genetically modified crops and genetically modified beef. M.A. Pollack and G.C. Shaffer in their work seriously question interaction between America and EU in the issue of genetically modified organisms (GMOs); they aim to establish whether biotechnology is the 'next transatlantic trade war', however any categorization and prognosis regarding biotechnology are too early and remain speculative at this point[66]. The authors conclude that:

> The U.S. – EU dispute over GMOs is genuine, rooted in long-standing – and largely opposing – philosophies of food safety regulation and has significant economic stakes for farmers, businesses, and consumers on both sides of the Atlantic. Nevertheless, the transatlantic GMO dispute is likely to be contained and not escalate into a WTO legal battle or a larger trade war. Despite their very different approaches to food safety regulations, both sides have demonstrated some signs of convergence in their approach to GMOs and food safety issues... Ultimately, both sides seem to agree that the fragile global consensus in favor of trade liberalization would be severely tested by a WTO ruling that impinged upon a subject as universal, and as emotionally charged, as the safety of food. Thus, despite the stakes in the GMO conflict –or rather, because of them – the United States and the EU are likely to avoid an all-out confrontation and continue to seek a transatlantic compromise in this most difficult international trade issues.[67]

[66] Pollack, M. & Shaffer, G. "Biotechnology: The Next Transatlantic Trade War?" *The Washington Quarterly*, Autumn 2000, pp: 41-54.
[67] Ibid, P: 53.

As it has been demonstrated previously, trade wars are primarily fought over leading strategic core industries that are knowledge-intensive and produce high-value-added products. High technology industries such as semiconductor and biotechnology are the prime examples of such occurrences. Trade wars in such industries are also fought primarily between successful industrial states. It might appear puzzling as to why sectors such as high technology are the primary battle ground for the successful industrial states. The main reason for this phenomenon is that comparative advantage in such industries can be to some degree self-engineered. For instance comparative advantage in the production of oil can not be self-induced, since oil is resource specific to certain geographic areas and its emergence or production can not be encouraged. However, comparative advantage in producing computers can be promoted and encouraged, providing intensive R&D, active subsidy to the sector, efficient industrial policy, coordinated market and national procurement policies. However, creating comparative advantage in the strategic industrial industries remains as an option available only to successful industrialized states. Some vital ingredients essential for the creation of a self-reinforcing comparative advantage are inherent to strong national economies: strong domestic industrial base; efficient policy coordination promoted by the domestic institutional networks; presence of a stable specialized labor; good communicational network; high level of literacy and a progressive domestic knowledge structure; generally high level of productivity and so forth.

To sum up, comparative advantage in strategic high technology industries can be self-engineered, however this phenomenon is to a large degree conditioned to particular economic specifications. Emergence of successful external economies is

dependent on a host of factors; most importantly it pre-assumes an already existent strong industrial base in the national economy. High national savings rate, intensive R&D, high level of national education, efficient policy formulation, strong commitment from political establishment and many other prerequisites are vital for the creation of self-engineered comparative advantage, there for such a phenomenon remains as a practice exclusive mainly to advanced economies.

For instance the creation of comparative advantage by Japan is rather evident in the semiconductor case. Comprehensive industrial policy, active involvement of the MITI, strong national procurement policies, creation of the domestic demand for semiconductors, protection of the domestic producers, rapid pace of production related developments and systematic promotion of high technology through various channels of subsidies and strong spillover of knowledge tendencies between the Japanese firms - created comparative advantage in semiconductors production in Japan. However, all the above mentioned efforts would not be possible if Japan did not have a reliable industrial base. If the Japanese economy did not have all the vital idiosyncratic features of a successful economy, creation of such a comparative advantage would not be possible.

Due to the fact that a lead in production of high technology can be created, trade conflicts and trade wars in the given field are more frequent and more manifest than in other sectors. Competition is nerve-racking in high technology not only because the lead in the sector is hard to maintain and comparative advantage in the sector is hard to sustain since other advanced economies can gradually promote a lead in production and export of the products, but also because stakes are rather high in high technology.

> As Schumpeter argued in *The Theory of Economic Development*, profits and high rates of return on investment are due to the existence of monopoly. In a system of perfect competition, profit would not exist. Monopoly profits tend to be highest in the expanding sectors of the economy before an initial technological advantage diffuses to economic competitors. .. For this reason, interstate competition for growth and high value-added sectors is a major aspect of the dynamics of the international political economy.[68]

To sum up, it can be concluded that trade wars are primarily fought over leading strategic industries, such as high technology, that are knowledge-intensive and produce high-value-added products. The phenomenon occurs primarily for two reasons: comparative advantage in such industries can be created and because lead in such industries ensures industrial superiority over other economic actors and promotes a rapid pace of national prosperity. However, creation of comparative advantage in such strategic industries is possible in the system of an advanced national economy. Shifting patterns of trade and the prevalent dynamics in the international economy occur primarily because of product cycles. International interaction between the trading partners such as cooperation, conflict and trade wars happen in the framework of product cycles.

[68] Gilpin, R. *The Political Economy of International Relations.* P: 101, Princeton University Press, Princeton, New Jersey, 1987.

CHAPTER 6

CONCLUSION

The three diverse understandings of trade wars have been illustrated in the present research. Firstly, a general technical understanding of trade wars was introduced, highlighting the fundamental features of trade wars and their versatile scenarios. Secondly, trade wars have been introduced in practical sense in the context of the Japanese-American commercial relations, introducing the contextual understanding of trade wars. The political aspect of trade wars has been briefly elaborated on in chapters four, primarily focusing on the after effects produced by trade wars. It has been illustrated that the Japanese-American bilateral interaction went though a rather dynamic phase during the 1970-1990. Strategic cooperation, discord, trade conflicts and shifting patterns of trade in their bilateral framework have been dealt with.

However, it would be myopic to reduce the comprehensive cultural, economic and political ties between the two societies merely to the level of economic struggles and trade wars. Very often relations between these two countries are reduced merely to the level of an economic struggle. Trade wars between the two countries should not be categorized as an aggressive economic struggle of two economic giants or an intensive political conflict, trade wars in such a context should be viewed as a normal and often unavoidable reality of economic competition that is a common phenomenon to appear in the international economic environment. The effects of the semiconductor trade war for instance, might appear harsh since for a brief period of time America retaliated to what was perceived as offensive Japanese measures, however, both countries resumed “business as usual”

mode briefly after the diplomatic talks ended. America and Japan remain up to the present day the largest trading partners. It is important to note that trade war fought over semiconductors never escalated into a full scale political conflict between the two countries. Even though some changes in relative material capabilities of Japan and America have occurred and some substantial shifts in the patterns of bilateral trade had occurred, the volume of trade between America and Japan was never reduced and in fact up to the present day keeps rapidly expanding.

The case of semiconductors might demonstrate that trade wars have a strong effect on bilateral relations; they influence political dialogs and may alter diplomatic status quos, together with societal perceptions of each other. Trade wars are important, and some times can be prioritized over established strategic alliances, as in the case of the Japanese-American semiconductor experience. However, the effects of trade wars are momentary. As it has been mentioned previously, Japan and America resumed their usual level of bilateral trade that carried on in a stable fashion, and the political relations between the two recommenced and alleviated. A new agreement on semiconductors was produced in 1996 between America and Japan. The two sides expressed a view that bilateral cooperation is vital in regard to the semiconductor industry. The two governments expressed a joint view that cooperation in the field of semiconductors should be primarily based on three principles: the importance of market principles should not be undermined when dealing with semiconductors; the cooperation and the treatment of the semiconductor industry should be consistent with the WTO rules; the international cooperation regarding the issue of semiconductors is fundamentally important. To deal with the global challenges facing the semiconductor industry in the coming years, as well as to facilitate the sound development of the semiconductor industry,

both governments called for the creation of a Global Governmental Forum (GGF), and expressed a desire for other governments to participate in such an establishment.[69] These above mentioned bilateral activities represent only a small portion of versatile and comprehensive agendas regarding the treatment of semiconductors that are taking place in the new millennium. The importance attributed to the smooth functioning of the semiconductor trade is evident nowadays. After the turbulent past of the semiconductor issue, it seems that credible safeguarding mechanisms are being established by both America and Japan, aiming to prevent any potential trade discords. It also undisputable that the role of WTO nowadays is essential in establishing credible prevention mechanisms in relation to trade wars. The establishment of standards of conduct in the framework of bilateral trade, enforced by the WTO, sets a comprehensive guidance for trading partners and to a large degree prevents the emergence of potential trade wars.

It is hard to predict the potential scenarios of the biotechnology trade dispute; however it can be predicted that even if biotechnology trade frictions escalate to a potential trade war, it will have a small or no effect at all at the nature and the course of Japanese-American relations. The semiconductor case occurred in the tense environment of the Cold war, when tensions ran high and the level of misperceptions, mistrust and misunderstanding was exceptional. Nowadays both Japan and America enjoy the benefits of free trade and carry out their bilateral trade relations in the established system of 'open doors'. Moreover, the credible role of the WTO in the prevention of trade wars would, indisputably, prevent such an instance.

[69] http: //www.mac.doc.gov/japan/source/menu/semiconductors/semis.html

Japan and America still remain as large trading partners in the new millennium. The main example of this commitment was expressed in June 30th 2001, when both countries signed the U.S.-Japan Partnership for Growth treaty. The main principles emphasized in the treaty are listed in the Appendix section. The comprehensive treaty aimed at stimulating further bilateral ties between the two countries. The treaty emphasized the need for intensive economic cooperation between the two countries, hoping to achieve high levels of sustainable development in both economies and in the world.

With comprehensive bilateral agenda both parties decided to tackle some problematic sectors of their bilateral trade specifically. For instance, Representatives from Japan and the United States convened the Ninth Meeting of the Joint High Level Committee (JHLC) on Science and Technology on April 21, 2003 at the International Conference Room "Mita Kaigisho".[70] Both parties realize the importance of coordination and cooperation in a field of science and technology, aiming to promote further cooperation in the given field and to establish credible mechanisms to safeguard against any potential trade frictions in the given field. Both sides share the view that cooperation in science and technology between Japan and America, which are leading countries in the fields of research and development, will not only be beneficial for the development of both countries, but will also play a vital role in coping with global challenges common to all mankind.

Japan's share in the American trade deficit has dropped from a peak of 65 to less than 20 percent in 2000, according to the American Department of Commerce. Both parties prioritize a healthy flow of their bilateral trade and emphasize the

[70] US Department of Commerce

importance of their “early-warning” mechanisms established in the framework of the Partnership for Growth treaty, and hope that any potential trade imbalance or specific sector-related problems shall be tackled with constructive and apt measures. Both parties actively promote adequate environment for foreign direct investment in their national economies, emphasizing the importance of a coordinated financial dialog between the two parties.

The bilateral interaction between Japan and America remains multidimensional and comprehensive. Both parties realize the importance of their cooperation in the development of the Pacific. Current realities such as the rise of China, the emerging threat of North Korean missiles and weapons of mass destruction and economic interdependence between the two countries, stress the need for the maintenance of the strategic cooperation between the two countries. In 1998, the reaffirmation of the US – Japan security alliance was a manifest indication of this reality. Various joint projects aiming sustained development in the Pacific demonstrate a strong commitment of Japan and America to promote peace, stability and prosperity in the region and such a strong commitment necessitates strong multidimensional cooperation between the two countries. Joint projects of America and Japan, under the framework of World Bank, targeting the issues of poverty in Asia are just a small example of the versatile cooperative work between the two partners.

To sum up, it is obvious that the substantial trade frictions between the two countries were left in the past and the future of the Japanese-American commercial relations is rather optimistic. Despite mild trade-related difficulties both countries maintain a healthy bilateral framework and prioritize their multi-level cooperation.

The concluding chapter of the present research established a theoretical correlation between the concept of trade wars and the Product Cycle theory. The shifting patterns of international trade have been linked to product cycles, which in the present research are speculatively referred to as the technology cycles. Using the primary postulates of the Product Cycle theory it has been substantiated that trade wars are primarily fought over strategic core industries such as high technology, which produce knowledge-intensive, high-value-added products, principally because comparative advantage in such industries can be artificially created. Trade wars can be essentially referred to as a 'core versus core conflict'. Trade wars are primarily fought between successful core economies due to the fact that comparative advantage in such industries is preconditioned by the presence of the idiosyncratic features exclusive to core economies. The two high technology cases analyzed in the present research demonstrate that trade wars tend to occur during the third phase of a product cycle, mainly when the product is fully matured and the production process is mastered. Due to this tendency the illustrated semiconductor case can be categorized as a trade war, however biotechnology has not reached the mature phase of the product cycle, therefore can be only described as a trade dispute.

The preliminary intention of the present research was to ascertain the inherent significance of trade wars in a practical as well as in a theoretical sense by constructing a comprehensive and multidimensional analysis of trade wars, correlating the concept of trade wars to the Product Cycle theory. The study illustrated some conclusive links between the shifting patterns of trade and the emergence of trade wars. The bilateral framework of commercial relations between Japan and America was applied to a rather unconventional scientific inquiry, testing

the semiconductor and biotechnology cases in a relation to the main postulates of the Product Cycle theory. The issue of trade wars and their potential repercussions has not received a great deal of attention from the mainstream study of international relations. Hopefully, this study can inspire such research in future.

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APPENDIX A

THE MAIN PRINCIPLES OF THE U.S.-JAPAN PARTNERSHIP FOR GROWTH TREATY OF JUNE 30TH 2001

1. Recognizing the growing interdependence of the economies of the United States and Japan, the opportunities and challenges facing the two economies, and the need to support prosperity in the United States, Japan, and the world, the President of the United States and the Prime Minister of Japan announce the establishment of the U.S.-Japan Economic Partnership for Growth ("Partnership"), as described below.

2. The objective of the Partnership is to promote sustainable growth in both countries as well as the world by addressing such issues as sound macroeconomic policies, structural and regulatory reform, financial and corporate restructuring, foreign direct investment, and open markets and by providing a structure for cooperation and engagement on bilateral, regional and global economic and trade issues.

The Government of the United States and the Government of Japan ("the two Governments") recognize that private sector input could be beneficial to realizing the objective of the Partnership.

The Partnership will be based on the principle of two-way dialogue that enables either government to raise issues of concern and interest. Measures taken by either government under the Partnership will be within its scope and responsibility and will be applied on a most-favored nation basis.

3. To realize the objective of the Partnership, the two Governments establish the fora described below. The two Governments recognize the need to focus on important issues and will avoid, to the utmost extent, overlap and duplication of issues in more than one of these fora.

4. The U.S.-Japan Subcabinet Economic Dialogue ("Subcabinet") will set the direction of the Partnership. Informal and flexible in style, the Subcabinet will meet at least once a year to address the full range of bilateral, regional, and multilateral issues. The Subcabinet could, for example, exchange views on global and regional issues; enhance cooperation in multilateral and regional bodies; review developments in the two economies, such as macroeconomic issues, structural and regulatory reform, and financial and corporate restructuring; and advance the bilateral economic relationship, including, as necessary, discussing issues raised in other bilateral fora, keeping in mind meetings between the President and Prime Minister.

6. The Regulatory Reform and Competition Policy Initiative ("Reform Initiative") is designed to promote economic growth by focusing on sectoral and cross-sectoral issues related to regulatory reform and competition policy. The Reform Initiative replaces the "Enhanced Initiative on Deregulation and Competition Policy" ("Enhanced Initiative"), established by the United States and Japan in their Joint Statement of June 19, 1997. Recognizing the progress made under the Enhanced Initiative - particularly in reducing regulations, enhancing competition, and improving market access - the Reform Initiative will build upon the work of the Enhanced Initiative and focus on key sectors and cross-sectoral issues in which important reforms are being undertaken.

A. High-level Officials Group: The two Governments establish a High-level Officials Group to review and advance the work of the working groups (established and described below). The High-level Officials Group will strive to resolve any outstanding issues forwarded by the working groups. The High-level Officials Group will be chaired by a Deputy USTR for the United States and a Deputy Minister of MOFA for Japan and will include officials from other agencies and ministries, as

appropriate. Meetings of this group will be held annually, or more frequently as agreed by the two Governments.

B. Annual Reports: On an annual basis, the High-level Officials Group will transmit a report in writing to the President and Prime Minister specifying the progress made under the Reform Initiative, including measures to be taken by each government. For this purpose, the working groups will report the progress of their work to the High-level Officials Group. As appropriate, this report will include progress in financial sector liberalization achieved under the Financial Dialogue (established and described below).

C. Working Groups: The two Governments establish four "sectoral working groups" and one "cross-sectoral working group" to address in detail measures to promote regulatory reform and competition policy. Additional working groups may be established in the future as agreed by the two Governments. The working groups will meet during the year to address proposals submitted by each government. Officials from the two Governments (including independent government agencies) most relevant to the specific topics addressed by each working group will participate in the working groups.

1. Sectoral Working Groups: The two Governments establish four sectoral working groups in the areas of telecommunications, information technologies, energy, and medical devices/pharmaceuticals. Given the progress made under the Enhanced Initiative in addressing housing issues, the two Governments disband the Housing Expert-level Group established under the Enhanced Initiative and will address housing-related matters in other bilateral fora.
    a. The Working Group on Telecommunications will focus on fostering greater innovation, investment, and competition in the telecommunications sector. This group will be chaired by USTR for the United States and MOFA and the Ministry of Public Management, Home Affairs, Posts and Telecommunications for Japan.
    b. The Working Group on Information Technologies will focus on improving the environment for growth and investment in information technologies, leading to greater use of e-commerce and the Internet. This group will be chaired by USTR and the Department of Commerce for the United States and MOFA for Japan.
    c. The Working Group on Energy will focus on the further promotion of competitive, efficient, and innovative wholesale and retail energy sectors. This group will be chaired by USTR for the United States and MOFA and the Ministry of Economy, Trade and Industry (METI) for Japan.
    d. The Working Group on Medical Devices/Pharmaceuticals will focus on issues related to medical devices, pharmaceuticals, and nutritional supplements. This group will be chaired by the Department of Commerce for the United States and the Ministry of Health, Labour and Welfare for Japan.
2. Cross-Sectoral Working Group: To more effectively address the increasingly complex cross-sectoral issues related to regulatory reform and competition policy, the two Governments establish a working group to address topics that have a widespread impact on the economy, including competition policy, transparency, legal reform, commercial code issues, distribution, customs clearance procedures, business facilitation and other cross-sectoral issues not directly addressed in the Sectoral Working Groups. Considering the breadth and complex nature of these issues, the two Governments will ensure that this working group will have sufficient time to cover thoroughly and conduct in-depth discussions of these issues. This group will be chaired by USTR and the Department of Justice for the United States and MOFA for Japan.

D. Private Sector Component: The two Governments will identify issue(s) addressed in the Reform Initiative that could benefit from private sector input. On this basis, the two Governments

will, as appropriate, invite private sector representatives to join the government working groups on an ad hoc basis to offer their input - including expertise, observations, and recommendations - on such issue(s). The two Governments will seriously take into account this private sector input in conducting their work under the Reform Initiative.[71]

[71] http://www.mofa.go.jp/region/n-america/us/pmv0106/joint_e.html