

T.C.
MARMARA ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
SİYASET BİLİMİ VE ULUSLARARASI İLİŞKİLER ANABİLİM DALI
İNGİLİZCE ULUSLARARASI İLİŞKİLER BİLİM DALI

THE FAILURE OF AGRICULTURAL TRADE LIBERALIZATION:
The Neorealist Framing of Agriculture

(Yüksek Lisans Tezi)

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İstanbul, 2002

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TEŐEKKÜR

Bu tezin yazılmasında beni yönlendiren ve anlayışı sayesinde pek çok zorluğun üstesinden gelebilmemi sađlayan tez danışmanım Prof. Dr. Cengiz Okman'a; araştırma aşamasından itibaren düşünce ve önerileriyle bana yardımcı olan Dr. Sean Cox'a; eleştirileri ve önerileriyle tezime değerli katkılarda bulunan Dr. Armađan Emre Çakır, Dr. Elif Çepni ve Dr. Jeffrey Berejikian'a; dersleriyle beni bir bilim insanı olmaya hazırlayan Prof. Dr. Ahmet Davutođlu'na; bana daima inanan ve güç veren Till Luge ve Serenad Yılmaz'a ve herkesten çok, beni yaşamımı düşlerim doğrultusunda yönlendirmem için cesaretlendiren ve her zaman olduđu gibi bu tezin yazım sürecinde de bana her anlamda destek olan anneme ve babama teşekkür ederim.

ABSTRACT

This thesis analyzes the liberalization process following the Uruguay Round Agreement on Agriculture signed with the establishment of the World Trade Organization. Agricultural trade has been problematic and resilient to liberalization since the establishment of the GATT in 1948. The reasons for the exceptionality of agriculture and high protectionism are examined in the framework of International Relations theory in this paper. The paper argues that international trade liberalization in agriculture has failed and security concerns lie at the root of this failure because agriculture is a security issue and can be categorized to some degree as a "high politics" domain. The findings support this hypothesis. If their self-sufficiency in agriculture is low, states try to maintain and increase their autonomy by resorting to protectionist policies. Therefore, it will be more appropriate to examine agricultural trade within a Neorealist framework, rather than a Neoliberal Institutional one.

ÖZET

Bu tezde Dünya Ticaret Örgütü'nün kurulmasıyla birlikte imzalanan "Uruguay Round Agreement on Agriculture" sonrası dünya tarım ticaretinde yaşanan liberalizasyon süreci incelenmektedir. 1948'de GATT antlaşmasının imzalanmasından günümüze değin tarım sektörü özgürleştirmeye direnç göstermiştir. Bu tez çalışmasında, tarımın bu ayrıksılığının ve tarımda yüksek koruma oranlarının varlığının nedenleri Uluslararası İlişkiler kuramı çerçevesinde araştırılmaktadır. Bu çalışma tarımda liberalizasyon çabalarının başarısızlıkla sonuçlandığını ve bu başarısızlığın altında yatan en önemli sebeplerden birinin devletlerin güvenlik kaygısı olduğunu ileri sürmektedir; çünkü tarım yalnızca bir ekonomi değil, aynı zamanda bir güvenlik konusudur ve bir noktaya kadar 'yüksek siyaset' alanında da sınıflandırılabilir. Çalışmadaki veriler ve bulgular da bunu destekler niteliktedir. Tarımda kendi kendine yeterlilikleri az ise, devletler korumacı siyasalara başvurarak, özerkliklerini sürdürme ve arttırma çabası içine girmektedirler. Bu yüzden tarım politikalarının incelenmesine diğer ticaret sektörlerine olduğu gibi Neoliberal bir çerçeve yerine Neorealist bir çerçeve içinde yaklaşmak daha doğru bir yaklaşım olacaktır.

Table of Contents

Abstract.....	i
Özet.....	ii
Table of Contents.....	iii
List of Tables.....	v
List of Graphs.....	vi
List of Abbreviations.....	vii
Introduction.....	1
CHAPTER 1 INTERNATIONAL REGIMES IN IR THEORY.....	3
1.1 International Regimes in Neorealist and Neoliberal Theories.....	5
1.1a Regimes and Cooperation in Neorealism.....	5
1.1b The Challenge of Neoliberal Institutionalism.....	6
1.1c Prisoner's Dilemma.....	7
1.1d The Neorealist Response.....	9
2. IR Theories and the Agricultural Trade Regime.....	11
CHAPTER 2 AGRICULTURAL TRADE REGIME UNDER THE WTO.....	13
2.1 History of the GATT/WTO.....	13
2.1a The GATT.....	13
2.1b The Establishment of the WTO.....	16
2.2 The WTO Principles: Free Trade and Comparative Advantage.....	17
2.3 The Exceptionality of the Agricultural Sector in the WTO.....	19
2.4 Current Phase of the Agricultural Trade Negotiations in the WTO.....	20
2.4a Member Positions.....	21
CHAPTER 3 THE FAILURE OF AGRICULTURAL LIBERALIZATION: ISSUES AND PROBLEMS IN THE IMPLEMENTATION OF THE URAA.....	23
3.1 Market Access.....	23
3.1a Tariffication.....	23
3.1b <i>Non-Ad Valorem</i> Tariffs.....	25
3.1c Import Tariff Rate Quotas.....	27
3.1d Special Emergency Actions.....	29
3.2 Subsidies.....	30
3.2a Domestic Subsidies.....	31
3.2b Export Subsidies.....	33
3.3 Summary.....	41

CHAPTER 4 WHY AGRICULTURAL LIBERALIZATION FAILED: A NEOREALIST FRAMING.....	43
4.1 Economic Sources of Protectionism: The Richer, The More Protective....	44
4.2 Non-Economic Concerns: Multifunctionality.....	45
CHAPTER 5 INTERNATIONAL SOURCES OF PROTECTIONISM: The Security Dimension and Relative Gains Concerns.....	49
5.1 War and Agriculture.....	49
5.2 Findings.....	51
5.2 a Regression Analysis Model 1.....	54
5.2b Regression Analysis Model 2.....	55
5.2c Regression Analysis Model 3.....	57
5.3 Analysis of the Findings.....	58
CONCLUSION.....	60
APPENDIX	
BIBLIOGRAPHY	



LIST OF TABLES

TABLE 3.1a	Annual % Change in the World Agricultural Trade measured in monetary value.....	35
TABLE 3.1b	Annual % Change in the World Agricultural Trade in Export Units	35
TABLE 3.2	Price Change in Products.....	36

APPENDIX

TABLE A1.1	Annual % Change in the Average Agricultural Support in the QUAD Countries.....	i
TABLE A1.2	Annual change in PSE/NPCp/NACp/CSE/NPCc/NACc levels in the Quad Countries.....	i
TABLE A3	Use of Total Aggregate Measurement of Support (AMS) commitments by Member, 1995-99 (per cent).....	iii
TABLE A4	Export subsidy use by Member, 1995-99 (per cent).....	v
TABLE A5	Regression Models.....	vi

LIST OF GRAPHS

GRAPH 3.1	% of GSSE in TSE.....	33
GRAPH 3.2	Agricultural Export Subsidies.....	34
GRAPH 3.3	World Export Unit Increase.....	36
GRAPH 3.4	TSE vs. Agricultural Product Price Levels Scatter Plot.....	37
GRAPH 3.5a	QUAD Producer NPC.....	38
GRAPH 3.5b	Quad Producer NAC.....	39
GRAPH 3.5c	Consumer NPC.....	40
GRAPH 3.5d	Consumer NAC.....	41
GRAPH 5.1a	Scatter Plot of Protection vs. Overall Self-Sufficiency.....	53
GRAPH 5.1b	Scatter plot of Protection level vs. Self-Sufficiency by Product	53
GRAPH 5.1c	Scatter plot of Protection level vs. Calorie % of Product in the Total Calorie Consumption.....	54

ABBREVIATIONS

AVEs	: <i>ad valorem</i> equivalents
Cairns group	: A group of countries lobbying for liberalization in agricultural Trade
AMS	: Aggregate measurement of Support
CAP	: Common Agricultural Policy
EEC	: European Economic Community
EU	: European Union
GATS	: General Agreement on Trade in Services
GATT	: General Agreement on Tariffs and Trade
GDP	: Gross Domestic Product
GNP	: Gross National Product
GSSE	: General Services Support Estimate
ITO	: International trade Organization
LDC	: Less Developed Country
MFA	: Multifiber Arrangement
MFN	: Most Favored Nation
MTN	: Multilateral trade negotiation
NACc	: Consumer Nominal Assistance Coefficient
NACp	: Producer Nominal Assistance Coefficient
NIC	: Newly Industrialized Country
NPCp	: Producer Nominal Protection Coefficient
NPCc	: Consumer Nominal Protection Coefficient
NTB	: Non-tariff barrier
NTM	: Non-tariff measure
OECD	: Organization for Economic Cooperation and Development
Quad countries	: Canada, European Union, Japan and the United States of America
TSE	: Total Support Estimate
TRIPs	: Trade related intellectual property rights

TRQs	: Import tariff rate quotas
URAA	: Uruguay Round Agreement on Agriculture
VER	: Voluntary export restraint
WTO	: World Trade Organization



INTRODUCTION

In my thesis, I analyze whether the World Trade Organization has been able to decrease cheating and increase predictability in the international agricultural trade regime since the signing of the Uruguay Round Agreement on Agriculture (URAA). The literature on agricultural trade suggests that liberalization is continuing, although the process is slow and problematic. The problems with liberalization are generally tied to domestic and economic issues. I have two main hypotheses. First, I hypothesize that agricultural trade liberalization efforts have mostly failed and protectionism prevailed in the agricultural trade as strongly as it did prior to the signing of the URAA. Second, I hypothesize that the failure of liberalization in Agriculture has an International Relations (IR) dimension that is a result of its realist framing by governments.

In the first chapter, I survey the Neoliberal Institutional and Neorealist approaches to international regimes. In the second chapter, I give a brief historical account of the international agricultural trade under the General Agreement on Tariffs and Trade (GATT) and the WTO regimes. In the third chapter, I analyze whether liberalization in the WTO agricultural regime has been successful or failed. The findings buttress my first hypothesis and suggest that the reforms did not succeed in decreasing protectionism. Building on this finding, in the fourth chapter I survey why agricultural trade liberalization may have failed contrary to Neoliberal expectations. In line with my second hypothesis, I argue that agricultural trade is framed in a Neorealist perspective

more than other sectors because of its security dimension. In the fifth chapter, I try to support the hypothesis that security concerns shape agricultural protectionism by a regression analysis. I measure whether protectionism in basic food staples in OECD countries can be explained by the self-sufficiency levels of these countries. The findings support the argument

To support my first hypothesis, in the second and third chapters I focus on Europe, Japan, Canada and the USA (the Quad countries) due to several reasons. Most importantly, together they account for most of the world agricultural trade as importers and exporters. Secondly, they are the most fervent proponents of trade liberalization in general and they constitute the main coalition of the WTO. Thus, their policies are likely to affect the rest of the members considerably and the success of agricultural liberalization depends largely on their efforts and compliance.

In the fourth chapter, I expand the focus of the study to all OECD countries. Since these countries form a relatively homogenous group, many factors such as the political system and the level of economic development are largely controlled for.

CHAPTER 1

INTERNATIONAL REGIMES IN IR THEORY

Among a plethora of regime definitions in Neo-liberal Institutional theory, Stephen Krasner's is the most commonly accepted one. Regimes as defined by Krasner are "sets of implicit or explicit principles, norms, rules and decision-making procedures around which actors' expectations converge in a given area of international relations. Principles are beliefs of fact, causation and rectitude. Norms are standards of behavior defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are practices for making and implementing collective choice."¹ Keohane further elaborates this definition of regimes developed by Krasner. Principles define "the purposes that their members are expected to pursue".² Norms define more clearly what is legitimate and what is illegitimate. Although the distinction between norms and rules is not a marked one, rules differ in defining rights and obligations in more detail and with greater specificity. Finally, decision-making procedures "provide ways of implementing their principles and altering their rules."³

Regime theorists saw GATT so much as an example of a successful autonomous regime that Krasner employed the GATT as a case for clarifying these four determining elements of regimes. Principles set the legitimizing ideology of the regime. GATT functions on liberal economic principles, arguing

¹ Keohane, Robert O. (1984) *After Hegemony* Princeton: Princeton University Press, p.52

² *Ibid*

that free trade is beneficial for improving global wealth. The basic norm is that tariff and non-tariff barriers should be reduced and finally abolished. Rules are less general than norms. In the GATT, less developed countries demand different rules for third world and advanced industrialized world states. Decision-making procedures which are much more specific are changed repeatedly as the regime evolves and consolidates. GATT decision-making procedures were changed with successive rounds. This was, in fact, the objective of these negotiations: to make the best rules for the realization of principles.

Regimes are not always voluntary. They can be imposed (deliberately established by dominant actors who succeeded in getting others to conform to the requirements of those orders through some combination of cohesion, cooperation and manipulation of incentives) as well as negotiated (explicit consent on the part of the participants). In the case of imposed regimes, direct imposition of institutional arrangements on subordinate elements coerce them into compliance or a dominant power may exert leadership in the formation and preservation of regimes that serve its interests but are widely accepted in the international system.⁴

A helpful typology of regimes is developed by Levy, according to the criteria of formality and convergence of the expectations about compliance with the rules. In an issue area where there are no expectations and no formal rules, there will be no regimes. Where they exist, regimes can be classified into three kinds. When there is a high expectation without any formal rules, it can be anticipated that informal rules will nevertheless be observed. This first kind is classified as a **tacit regime**. Secondly, there can be contrary cases where there is no expectation for the observation of rules, despite their highly formalized nature, which produces a **dead-letter regime**. Thirdly, when both the rules are formalized and the expectation that they will be followed is high, **full-blown**

³ *Ibid* p.53

⁴ Dougherty, James E. and Robert L. Pfaltzgraff, Jr. (1997) *Contending Theories of International Relations: A Comprehensive Survey*, New York: Longman.

regimes emerge.⁵ Although, this definition is highly useful, it should be noted that no formalized regime is purely formal.

Returning to Stephen Krasner's definition of regimes, we see that a regime can consist of "implicit and explicit principles, norms, rules and decision-making mechanisms". Explicit rules are those that are formalized. Implicit rules are those that are informal, but still followed. Therefore, a regime can be simultaneously formal and informal. Even in highly formalized regimes, there will be understandings among member states that are not written on paper, but are nevertheless obeyed, even those that bring exceptions to the principles and norms of the regime.

1.1 International Regimes in Neorealist and Neoliberal Theories

1.1a Regimes and Cooperation in Neorealism

Neorealist theory proposes that only a systemic approach would help us understand international politics. As Kenneth Waltz, the founder of Neorealist theory, explains "a system is composed of a structure and of interacting units. The structure is a system-wide component that makes it possible to think of the system as a whole."⁶ Structure determines the position of the units in relation to each other and makes it possible to understand the system abstracted from the unit attributes. "Political structure produces a similarity in process and performance so long as a structure endures."⁷

The system is state-centric meaning that the primary unit of international political society is the state. That is not to say that states are the sole international actors or that non-state actors - domestic or transnational - are not important or even crucial, but that even if non-state actors are becoming more significant, "system change ultimately happens *through* states. In that sense

⁵ Levy, M.A., Young, O.R. and Zurn, M.(1995) 'The Study of International Regimes', *European Journal of International Relations*, 1(3):267-330.

⁶ Waltz, Kenneth in Keohane, Robert O. (ed) (1986) *Neorealism and its Critics* New York: Columbia University Press, p. 73

⁷ *Ibid* p.80

states are still at the center of the international system.”⁸ As Waltz suggests, “when the crunch comes, states remake the rules by which other actors operate.”⁹ States share certain characteristics which make them similar. They are sovereign political entities.

In contrast to the centralized and hierarchic nature of domestic political systems, the arrangement of the international structure is anarchic and decentralized. Anarchy in this context should not be understood as chaos, but as an absence of government. In the state, the government has a monopoly on the *legitimate* use of force and citizens do not need to defend themselves. However, in the anarchic international order the rule of conduct is self-help.¹⁰

While Neorealism accepts that cooperation under anarchy is possible, it maintains the reservation that it is very difficult to achieve and preserve. Therefore, Neorealism explains regimes as dependent variables that reflect the power structure and require a hegemon for establishment and effective functioning.

1.1b The Challenge of Neoliberal Institutionalism

The proliferation and success of some post-war institutions and regimes in 1970s in the face of perceived decline in the US hegemony, led some scholars of IR to question the hegemonic stability theory of Realism. Neoliberal institutionalism emerged as an attempt to challenge Neorealism. It distinguished itself from the prior rival theories of Realism by embracing its central premises—that the international system is an anarchic self-help system, the basic unit of analysis is the state, and states are rational interest-maximizers whose main goal is survival. However, starting from the same premises as Realism, neoliberal

⁸ Wendt, Alexander (2000) *Social Theory of International Politics* WENDT, Alexander (1999) *Social theory of International Politics* New York: Cambridge University Press. p.9.

⁹ Waltz, Kenneth in Keohane, Robert O. (ed) (1986) *Neorealism and its Critics* New York: Columbia University Press, p.89

institutionalist theory concludes that regimes are autonomous variables that have importance in and of themselves outside the power structure that gives birth to them.

Neoliberal institutionalism disputes the neorealist conception of hegemonic stability which proposes that order can only be created by a dominant power in world politics. In their refutation of the neorealist claims and explanation of cooperation in international relations, the regime concept is pivotal for Neoliberals. Neoliberal Institutionalism claims that "When shared interests are sufficiently important and other key conditions are met, cooperation can emerge and regimes can be created without hegemony,"¹¹ and furthermore, "regimes can be maintained and may continue to foster cooperation, even under conditions that would not be sufficiently benign to bring about their creation. Therefore, hegemony, although making cooperation easier to achieve, is not a precondition for the emergence of cooperation, and is less important for its continuation."¹²

1.1c Prisoner's Dilemma

Neoliberal theory derives the reasons for international cooperation from microeconomic theory and employs game theory in explaining cooperative and non-cooperative behavior of actors when their interests are not harmonious, yet still cooperation is more beneficial for both sides. The most commonly applied game to explain state behavior is Prisoner's Dilemma (PD).

PD is a hypothetical situation where a prosecutor makes a proposal to two prisoners who are partners in crime. However, the prisoners are kept in separate rooms and cannot communicate with each other. The prosecutor says that if one of them confesses and the other does not, the confessor will be set free and the non-confessor will be sentenced to 10 years. If the other prisoner also confesses, they will both be sentenced to 5 years. If neither of them confesses, they will both

¹⁰ *Ibid* pp.100, 108

¹¹ Keohane, Robert O. (ed) (1986) *Neorealism and its Critics* New York: Columbia University Press, p. 50

¹² *ibid*, 12

be sentenced to 2 years. In this case both actors have two options. They can either cooperate (not confess) or defect (confess).

PD MODEL

		ACTOR B	
		Cooperate	Defect
ACTOR A	Cooperate	(2,2)	(4,1)
	Defect	(1,4)	(3,3)

If prisoner A defects and prisoner B cooperates, the defecting prisoner A will receive maximum benefit from the situation (he will be set free), but the other prisoner will get the worst outcome. In this equilibrium, the defector A will get the maximum benefit (1) while the cooperator B will get the least preferred of the possible outcomes (4). A is the sucker and B is the suckered. Since each actor is afraid that the other side will defect and he will suffer the worst outcome if he cooperates, both opt to defect no matter what the other actor does. In this case, even if the other actor defects, too, actors will at least avoid the worst outcome (being suckered). However, trying to avoid the worst outcome, they both end up with the third preferred outcome because they both defect. If they could agree to cooperate, both would have the second preferred situation, they would neither be the sucker (most preferred) nor the suckered (least preferred). Yet, they cannot cooperate because they cannot trust the other actor.¹³ Lack of trust and communication is the main impediment to cooperation in this case. If the actors can communicate, they can come to an agreement and cooperate.

According to Neoliberal Institutionalism, the fear of being cheated as in the Prisoner's Dilemma situation is the main impediment against cooperation among states. Two rational actors make the most rational choice, but the outcome is below the optimal level for both sides due to imperfect information. This is why Institutionalism views regimes as essential in explaining cooperation

¹³ *Ibid*

among states. According to Neoliberal Institutionalists, regimes and institutions are able to solve this problem because they make cheating harder and less profitable. Regimes become intervening or autonomous¹⁴ variables in world politics between the independent variables (the system structure) and the dependent variables (the behavior of actors). They decrease transaction costs by increasing information exchange, creating a system of checks over the party states and punishing the cheater. Since any given game is played multiple times (even indefinitely) in international relations, the reiterated nature of the game makes cooperation easier than realists argue because defection is punished in the next round of the game whereas cooperation is rewarded. In such a situation past and present behavior will determine the future benefits a state will receive.

When we assume that states are rational actors, they should avoid defection if the punishment is quick and exceeds the benefit they will receive by defection. Therefore, a well-functioning regime discourages defection by an effective system of tits-for-tats. Added to the punishment is the concern for reputation in repeated games. States do not want to jeopardize future beneficial cooperation by acquiring a notorious reputation as a cheater state. Therefore reputation concerns facilitate cooperative behavior.¹⁵ The main function of the regimes is to render defection an unprofitable strategy for states by increasing the benefits of cooperation and the cost of defection, thereby producing a pareto-optimal outcome.

1.1d The Neorealist Response

Neorealists disagree with the liberal argument that cheating is the main impediment to cooperation. Neorealists aver that there is no direct linkage, theoretically or empirically, between eliminating cheating and fostering cooperation, as Institutionalists defend. In Neorealism, cheating - despite being

¹⁴ see Krasner, Stephen (ed) (1983), *International Regimes*, Ithaca: Cornell University Press, 195.

¹⁵ Axelrod, Robert and Robert O. Keohane (1986) "Achieving Cooperation under Anarchy: Strategies and Institutions" *World Politics*, Vol. 38, No. 1, pp. 226-254.

one of the impediments to international cooperation - is not the only obstacle or not even the most important one. From a realist perspective the structure of the international system constrains cooperation severely for two reasons that both emanate from survival concerns: relative gains considerations and fear of increased dependency.

For Neorealists, the first limit to cooperation is the problem of **relative gains**. Survival depends on the relative capabilities of a state vis-à-vis other states in the positional structure, so even when states have mutual gains in cooperation, they will be worried about the unequal distribution of the expected benefits, since an uneven distribution might strengthen the relative position of the rival states which may create a threat in the future.¹⁶ Neoliberal institutionalists challenge this view by focusing on absolute gains considerations of states. They maintain that regardless of what the other states are gaining, every state tries to maximize its own interests. Although neoliberals accept the significance of relative gains considerations in affecting state behavior, they confine relative gains concerns merely to security issues.

The second limit to cooperation in Neorealism is the **dependency** problem. In domestic society, the division of labor is developed and the interdependency of differentiated parts is high. Breaking integrated relations in domestic society has high costs. Kenneth Waltz calls domestic interdependency, integration. Although states are similar units with less specialization and less interdependency, a complex division of labor increases interdependency in the international arena, too, making states increasingly vulnerable to each other's actions. Especially for weaker states, increased interdependency implies increased dependency. Although, international division of labor may increase global wealth, the dependency it entails, makes it undesirable for many states that are very watchful of their autonomy for survival reasons.¹⁷

According to Neorealism, states perform such identical functions that they are almost functional duplicates of each other. What distinguish them are their

¹⁶ *ibid*, p.103

¹⁷ *ibid*

uneven capabilities.¹⁸ The distribution of these capabilities determines the power and position of states relative to each other. States are 'defensive positionalists'¹⁹ that try to defend their positions in the international structure. They are not merely rational egoists interested only in their own utility. "They are interested in achieving and maintaining relative capabilities sufficient enough to remain secure and independent in the self-help context of international anarchy."²⁰ Thus, regimes cannot be explained as a consequence of international cooperation, but as impositions by powerful states and the hegemon.

2. IR Theories and the Agricultural Trade Regime

As mentioned above, the GATT and its continuation, the WTO, are considered to be the most successful examples of well-functioning, full-blown regimes. However, the WTO trade regime is not as big a success story in all sectors. In the following chapters, international agricultural trade will be examined. The central argument of this thesis is that international agricultural trade has failed to liberalize until today and this failure can be explained by Neorealist theory. The alternative explanation is that liberalization has been successful (at least to some degree) and this success can be explained in Neoliberal terms. If international agricultural trade regime under the WTO fulfills Neoliberal expectations, then it is likely to increase information exchange and transparency, punish defection and reward cooperation and solve the Prisoner's Dilemma barrier to cooperation. As a result, agricultural trade is expected to become more liberal than before. If, however, Neorealism is the right theoretical approach to explain agricultural sector, then liberalization is expected to fail due to fear of dependency and relative gains concerns.

The confusing question is: why agriculture? Why does international trade in many industrial sectors successfully liberalize, while agriculture is

¹⁸ *ibid*, p.92

¹⁹ Grieco, Joseph M. "Understanding the Problem of International Cooperation: The Limits of Neoliberal Institutionalism and the Future of Realist Theory" in *Neorealism and Neoliberalism: The Contemporary Debate* ed. by BALDWIN, David A. New York: Columbia University Press, p.303.

²⁰ *ibid*: p.306

emphatically protected and why is Neoliberalism a more powerful tool to comprehend the regime in car trade than in wheat trade? There are many domestic political and economic reasons underlying this difference. However, this thesis focuses on the international relations dimension of the failure. I hypothesize that agriculture, as opposed to most other sectors, is closely linked to security considerations, and this is the main international source of protectionism. This close proximity to security separates agriculture from industrial goods and places it in the domain of Neorealism.



CHAPTER 2

AGRICULTURAL TRADE REGIME UNDER THE WTO

2.1 History of the GATT/WTO

Established on January 1, 1995, the WTO is an international institution that establishes rules and principles of international trade, with its stated aim being the removal of barriers to trade. Although a continuation of GATT, the WTO transcends its predecessor in coverage, membership and effectiveness. A brief examination of the history of GATT and the differences between the two organizations is essential to the understanding of the dynamics leading to the establishment of the WTO.

2.1a The GATT

GATT was a treaty signed in January 1948 that functioned as one of the Bretton Woods institutions with the official goal of advancing international free trade. GATT was born out of an attempt to establish an International Trade Organization (ITO) as a specialized agency of the United Nations in the aftermath of the World War II. With the protectionist trade measures of the pre-war period still in effect, the goal was to create an institution to regulate liberalization of the international trade as well as make its terms safe and predictable. However, the wide scope of the negotiated ITO Charter, including issues such as rules on employment, restrictive business practices, commodity agreements, international investment and services proved to be too controversial

and ambitious.²¹ In 1946, as the cumbersome ITO bargaining was still proceeding, 23 of the participating countries started a round of multilateral trade negotiations (MTN) on reducing and binding customs tariffs resulting with 45,000 tariff concessions that covered as much as 20 percent of the total world trade. These tariff concessions together with some parts of the ITO charter constituted the GATT treaty that was signed in January 1948. Although the ITO Charter was finalized several months later in March 1948 at a UN Conference in Havana, it was effectively dead when the US government eventually declared in 1950 that it would no longer seek for the ratification of the Havana Charter in the face of firm opposition from the US Congress. When a secretariat was formed, a *de facto* organization emerged, unofficially called the GATT after the agreement, to implement the terms of the Treaty.²²

Thus, the GATT, albeit initially intended to be 'provisional', remained as the only international agreement and organization providing rules and codes for world trade and until its replacement by the WTO in 1995. The GATT evolved through a series of seven multilateral negotiations known as 'rounds', first being the Geneva round that finally led to the creation of the GATT. Soon two other rounds were held, first in Annecy (France) in 1949 and second in Torquay (Britain) in 1951. Japan joined in the third round in Geneva that took place during 1955-1956. In each round more tariffs were bound and more countries acceded to the Treaty, although the accomplishments were rather modest in comparison to the drastic concessions of the 1947 round.²³

In 1960-1961, Dillon Round, named after the US Secretary of State who proposed the talks, was held in response to the establishment of the EEC. Since a regional customs union was against the Most Favored Nation(MFN) status granted by the GATT to all members, member countries who were adversely affected by the another member taking place in such a union had the right to be compensated under the GATT rules. As a result of the round and parallel

²¹ WTO (1999) *Trading Into the Future Geneva*.

²² Hubbel, Martindale (1996) "A History of Gatt and the Structure of the WTO" *International Contract Adviser*, Volume II, No1.

²³ Binding means that a GATT member determines a tariff ceiling for a certain good and that ceiling becomes a commitment that cannot be increased without prior negotiations for compensation with its main trading partners.

bilateral negotiations with the EEC and other members, a total of 4,400 concessions were concluded, but these concessions were less than satisfactory since they did not include the agricultural sector and many other sensitive products which were the areas where both tariffs and non-tariff barriers to trade were expected to increase the most with the establishment of the Community and especially, its protectionist Common Agricultural Policy.²⁴

In 1963, the Kennedy round, named after the American president, started and this extensive round continued until 1967. This MTN, differed from the former ones by its broader agenda. What was new in the Kennedy round was the coverage of trade issues beyond tariff reductions. Earlier rounds had focused solely on tariff reductions as tariffs were seen to be the main impediment against free trade. When the success of tariff concessions in the earlier rounds led many members to introduce non-tariff measures (NTMs) to protect their markets from the increasing amount of imports, a need to deal with NTMs arose. Kennedy round saw the introduction of an Anti-Dumping code, to counter this problem. This round also brought a new approach to tariff concession negotiations. Until then all concessions were negotiated item by item. This method was replaced by an across-the-board formula cut approach for industrial products among major OECD countries that yielded more successful results with an average of 35 percent reduction in such products.²⁵

Ninety-nine countries, accounting for ninety percent of the world trade participated in the next MTN that lasted for six years from 1973 to 1979, taking its name after the city of, Tokyo where the negotiations started. At the end of the Tokyo round, roughly 33,000 tariff lines were bound and tariff rates of Advanced Industrialized Countries (AICs) fell by 34 (measured in terms of tariff revenue) percent on manufactured products.²⁶

Over the course of these 47 years the growth in trade continuously surpassed the increase in production. The membership increased from an initial

²⁴ Hoekman, Bernard M. (1995) *Trade Laws and Institutions: Good Practices and the World Trade Organization* The World Bank, Washington DC, p.18.

²⁵ *Ibid* p.18

²⁶ *Ibid* p.19

of 23 countries to over 100 countries accounting for over 90 percent of the international trade by 1994.

2.1b The Establishment of the WTO

Despite its substantial success in reducing tariffs, the GATT regime started facing significant difficulties by the mid-1980s. Moreover, the treaty made exceptions to two major sectors that constituted 30 percent of the world trade: agriculture and Multi-fiber Agreement (textiles and footwear). The GATT's main accomplishment was the progressive lowering of tariffs. Yet as tariffs were being lowered, non-tariff barriers to trade were increasing in type and number. In the face of escalating imports from developing countries, protectionism had started to prevail in industrialized countries. Furthermore, less developed members were only nominally bound by GATT rules. Although its coverage was extended over the rounds, GATT provisions mainly dealt with trade in goods whereas trade in services, and intellectual property rights were gaining an increasing weight in international trade. However, a *de facto* organization, the GATT had a very ineffective decision making mechanism and an even less effective enforcement mechanism. All these factors added up, the GATT as it was, acquired an increasingly anachronistic nature and lost its relevance to the newly arising global trade issues and problems.

The Uruguay Round which started in 1986 in Uruguay was an attempt to solve these problems and extended the agenda further than any other round before. At the end of the Uruguay Round, with the signing of the Marrakesh Treaty in Morocco, in 1994, a new international trade organization, named as the World Trade Organization, was established to replace the GATT as an institution. Also, the round accomplished to raise percentage of bound products from 78 to 99 percent for developed countries, from 21 to 73 percent for developing economies and from 73 to 98 percent for transition economies.²⁷

The coverage of the WTO was expanded considerably to include “traded inventions, creations and designs”²⁸ and the trade in services. GATT, the agreement, became one of the three agreements the new institution includes along with the TRIPS (Trade Related Intellectual Property Rights) and GATS (General Agreement on Trade in Services). Unlike the GATT that was a provisional and *de facto* organization, the WTO is a full-fledged institution. The membership also increased to 142 in 2001 by the admission of China. WTO’s officially stated purposes are mainly to help trade flow as freely as possible, to serve as a forum for trade negotiations and as a dispute settlement body for trade conflicts. WTO, as its precedent, is located in Geneva, Switzerland. Its main decision-making body is the ministerial conferences, composed of government officials from all member countries, convening every two years. The secretariat staff, consisting of a small number of 500 hundred people, is responsible for implementing the decisions taken during these ministerials.

2.2 The WTO Principles: Free Trade and Comparative Advantage

The WTO principles are based on the *laissez faire* economics of Adam Smith and ‘the ‘comparative advantage’ concept of Ricardo. Comparative advantage means that even when a country is more efficient in producing all the goods than other countries, it is still beneficial for this more efficient country to trade with other countries.²⁹

“Economic liberalism is based on the belief that economic relations are basically harmonious both between domestic actors and ‘true national interests and cosmopolitan economic interest’³⁰. However, realists believe that economic development takes place in a world defined by the existence of rival nations and nation-states. List was the first economic theoretician to realize that Adam Smith’s economic theory in *Wealth of Nations* was built on two different levels of

²⁸ WTO (1999) *Trading Into the Future* Geneva.

²⁹ Ricardo, David. *On the Principles of Political Economy and Taxation*. London: John Murray, 1821. [Online] available at <http://www.econlib.org/library/Ricardo/ricP7.html>

³⁰ Gilpin, Robert (1987) *The Political Economy of International Relations* Princeton: Princeton University Press.p.26

analysis: the individual and cosmopolitan and excluded the 'national' economics in the intermediate level. List theorized that national and cosmopolitan interests conflicted more often than not. In case of such a conflict, a country will not be concerned whether trade contributes to the overall global welfare, but whether it contributes to its own welfare. List claimed that England developed because of and not in spite of the extensive intervention and mercantilist policies of the British government until it obtained productive superiority. He stated that unless a country was developed enough to compete in the world markets, participating in free trade would only serve to keep that country forever in an inferior position. Portugal may benefit from trade with England at any given point in time, but in the long run, that turns Portugal into the perpetual vineyard of England. Free trade can only be beneficial to both parties if they are equally competitive. Therefore, List believes that it is advantageous to participate in free trade after developing the necessary industrial base.

This seems to stand in sharp contrast to Ricardo's theory of comparative advantage concept, which points out that trade benefits all trading parties-even when one party is more efficient in the production of all the traded goods. However, this opposition results from the lack of a longitudinal dimension in Ricardo's theory. That trade will benefit both countries under all circumstances may be true if we take only one point in time. Yet, these transactions are continuous in reality. Continuing free trade in advanced goods may indeed cripple the weak (infant) industrial base of a country (or not let it develop in the first place).

The free trade argument is based more on ideological conviction than empirical facts because there is no country in world history that truly practiced free trade. Free trade advocacy requires consistency. However, England, France, Germany, Japan and the US all followed and still follow protectionist economic policies in some sectors. Also, many developing countries experienced their most vibrant economic development (Latin America in the 1930s and East Asia in the 1960s) when global economic institutions promoting economic openness were weak or non-existent.

2.3 The Exceptionality of the Agricultural Sector in the WTO

The share of the agricultural trade has been steadily declining over the decades as the unit value of agricultural products decrease vis-à-vis manufactured products. In the year 2000, agricultural trade constituted only 9% of all the merchandise trade in the world.³¹ Yet, this relatively small sector proves to be the most controversial and sensitive topic on the international trade liberalization agenda.

Agricultural trade, with its special status, has always presented a main aberration from the basic GATT disciplines since 1947. GATT 1947 allowed countries to protect their agricultural markets through high tariffs as well as non-tariff measures such as domestic subsidies and import quotas as well as export subsidies. However, over the next decades, the US together with countries such as Canada, Australia and New Zealand started to support the liberalization of trade. The burden of the agricultural support was too high, yet their removal would leave the US producers vulnerable, if the liberalization in the US was not matched by a parallel liberalization in other major agricultural producers, specifically the EEC. The EEC was not willing to compromise on agricultural protectionism since the Common Agricultural Policy (CAP) was one of the main pillars of the Community.

By late 1980s, pressures from agriculture-exporting countries for a multilateral liberalization of the sector were mounting. Agricultural sector liberalization was built into the agenda of the Uruguay Round negotiations of the GATT. The Uruguay Round also produced an agreement on agricultural liberalization known as the Uruguay Round Agricultural Agreement (URAA). The main goal of the URAA was to decrease market distortions progressively.³² "The Uruguay Round was a turning point in the evolution of agricultural policy. For the

³¹ WTO (2001) *International Trade Statistics*. Geneva p.97

³² Distortion in trade means that the price or quantity of a certain commodity in the market is more or less than it would be under totally free and fair market conditions.

first time, a large majority of countries agreed a set of principles and disciplines to reduce the trade distortions caused by agricultural policies.”³³

During the Uruguay Round, US, Canada, EU and Japan, also known as the Quad, dominated these negotiations with their large staffs of negotiators, lobbying groups and economic power. Developing countries made concessions in intellectual property and service areas and were promised further negotiations for liberalization of agriculture that would give them full access to the North American and European markets. Given their comparative advantage in agriculture and lack of capital required for advanced sectors, free trade in agriculture could provide a major opportunity for economic development to the agriculture-exporting developing countries.

However, by 1999 there was general discontent among the net agriculture exporting countries. They argued that the promised liberalization had not taken place and developing agricultural-exporters had not received any compensation for their concessions in other sectors, while developed countries without comparative advantage in agriculture continued to be major producers and exporters in the sector.

After the Uruguay Round, the next planned step was to start a new round of negotiations at the turn of the century to resolve the problems that were left to be solved from the last round. The Seattle Ministerial in 1999 was to be the initial meeting for discussing and determining the agenda of the next round. However, the Advanced Industrialized Countries and Less Developed Countries were divided over the most basic issues so profoundly that all efforts to set up an agenda and prepare for a new round proved futile.

2.4 Current Phase of the Agricultural Trade Negotiations in the WTO

The Doha Ministerial in Qatar (9-14 November 2001) was the first positive development for the liberalization in agriculture in a long time. At this ministerial, WTO members decided to move on to a new Round of talks in agriculture with

³³ <http://www.fao.org/trade/docs/ur.htm>

the aim of giving new momentum to agricultural liberalization. Doha Ministerial Declaration stated that: "substantial improvements in market access; reductions of, with a view to phasing out, all forms of export subsidies; and substantial reductions in trade-distorting domestic support"³⁴ were the new goals on the agenda. A time frame was prepared in Doha for the new Round. The Round is to be concluded by January 1, 2005 and will consist of 5 Rounds. In the First Phase, which ended in March 2001, member countries submitted their proposals for negotiations. The second phase (March 2001 to March 2002) defines the work schedule of the Round. The third phase (March 2002 to March 2003) will set the modalities and in the fourth phase (March 2003 to Autumn 2003 when the Fifth Ministerial will be held), these modalities will be fleshed into a comprehensive draft which will be finalized in the fifth phase (Autumn 2003 to January 2005).³⁵

2.4a Member Positions

Two of the most influential members of the WTO, Japan and the EU still argue in favor of protectionism in agriculture on the grounds that it is a unique sector where non-economic considerations prevail. Japan is the most fervent opponent of liberalization, while the EU has a more compromising position. Japan has established a program to increase its agricultural production and notified the WTO despite the requirement to increase government support to agriculture be able to do that. India also has a protectionist stance trying to secure food for its large and undernourished population. China, the newest member of the WTO, has promised to liberalize its extensively subsidized and protected agriculture, to be able to accede to the organization. However, it might align itself with the protectionist group and its policies are yet to see.

The Cairns group, composed of 14 agricultural product-exporting countries (Argentina, Australia, Brazil, Canada, Chile, Colombia, Fiji, Hungary, Indonesia, Malaysia, New Zealand, the Philippines, Thailand and Uruguay) is especially active in lobbying for liberalization in agricultural trade. The group defines its

³⁴ "Doha Ministerial Declaration" www.fao.org

goal specifically as “insuring that agricultural trade occurs on the same basis as trade in other goods”, with three specific targets: the elimination of export subsidies; market access must be on the same basis as other goods (i.e. protection only via tariffs the relaxation of tariff quotas and smoothing of tariff peaks) and major reductions in trade distorting domestic support³⁶. In other words, the goal is to end the aberrant status of agricultural trade and bring it into conformity with the other sectors. The US also supports liberalization efforts in the international arena, albeit not as zealously as the Cairns group. However, despite its liberal rhetoric, the new Farm Bill 2002 in the US has increased the funding on agriculture for the next ten years by \$82.5 billion from a base of \$107.6 billion to a total of approximately \$190 billion.



³⁵ www.wto.org

³⁶ Australian Parliamentary Report

CHAPTER 3

THE FAILURE OF AGRICULTURAL LIBERALIZATION: ISSUES AND PROBLEMS IN THE IMPLEMENTATION OF THE URAA

The WTO classifies trade-distorting practices in agricultural sector into three groups: use of market access barriers, export subsidies and domestic support. Uruguay Round negotiations in agriculture focused mainly on how to limit and decrease distortions caused by these factors. The period following the URAA has witnessed extensive efforts to end the anomaly of the sector by incrementally removing barriers to free trade. If market access barriers, export subsidies and domestic support have decreased in comparison to the pre-URAA period, then the liberalization attempts can be said to have succeeded. In this chapter the results of these attempts are analyzed. The findings suggest that there is no visible trend of liberalization in the Quad countries.

3.1 MARKET ACCESS

3.1a Tariffication

Prior to the Uruguay Round, market access in the agriculture sector was restricted by high levels of tariffs as well as many non-tariff measures such as quotas. The impact of non-tariff barriers on international trade was difficult to measure and compare, therefore they created a transparency problem and

allowed for concealed or non-measurable protection. URAA has four main pillars: tariffication, tariff binding and commitments to decrease trade distorting domestic support and export subsidies.

The major accomplishment of the Uruguay Round in the agriculture sector is assumed to be *tariffication*, or the process of replacing non-tariff trade barriers with tariffs to increase transparency and hence measurability. The second step was the binding of those tariff levels at the converted rate. **Binding** means that a GATT member determines a tariff ceiling for a certain good and that ceiling becomes a commitment that cannot be increased without prior negotiations for compensation with its main trading partners, so it inhibits protection by means of arbitrary raises in tariffs. While the aim of tariffication is to improve market access and transparency, that of binding is to increase predictability.

However, tariffication is not a success in terms of improving market access and accomplishing transparency. Tariff equivalents were determined as the difference between the internal and external price for the product concerned in the reference period between 1986 and 1988. Individual members were given the mandate to calculate the tariff equivalents of their non-tariff measures and make the conversion themselves. The authorization coupled with an obligation to bind those tariff lines at the converted rates and later decrease them, led many countries to cheat and resulted in the so called "dirty tariffication"³⁷. **Dirty tariffication** refers to the overrating of tariffs by many members.

After tariff rates were bound, all member states except for the least developed countries, made commitments to decrease their bound tariff rates. Developed Countries were obliged to decrease their tariff levels by 36% over six years and developing countries were obliged to make a 24% reduction over ten years starting from January 1, 1995.³⁸ However, as the bound rates in many country members do not reflect the applied rates, the commitment to reduce those bound rates is not of significant consequence on the part of these countries. Some critics of this situation argue that applied rates should be

³⁷ Hoekman, Bernard M.(1995) *Trade Laws and Institutions: Good Practices and the World Trade Organization*. The World Bank, Washington DC.

³⁸ WTO (1999) *Trading Into the Future*. Geneva.

accepted as bound rates for all members, but the criticized countries claim that such a measure would only mean punishing them for applying lower rates than they are obliged to.

Critics of dirty tariffication target mainly developing countries since the difference between bound and applied rates is clearly visible in their tariff lines. The general argument is that particularly in developing countries, inflated tariff rates led to a considerable gap between bound and applied rates. However, recent evidence suggests that 'dirty tariffication' was not confined to developing countries. The final bindings for the year 2000 in the EU is more than 60 % higher than the tariff equivalents of 1989-1993 protection levels and the US levels are bound at even a higher rate of more than 70% over the same period.³⁹ The calculation of the decrease in applied tariffs is also open to manipulation. Since it is the average rate that is bound, governments make bigger cuts in less important products while maintaining high levels in products that are politically important and still reduce the average tariff duty.

3.1b *Non-Ad Valorem* Tariffs

Another problem in tariffication is the use of complex and non-comparable measurement terms. Tariffs can be categorized into two basic types: *ad valorem* and *non-ad valorem*.⁴⁰ *Ad valorem* tariffs are defined in terms of a fixed percentage of the value of the imported items. *Non-ad valorem* tariffs (specific rate tariffs), on the other hand, are levied at a specific rate per physical unit of the particular item, in technical terms, e.g. according to the contents, or according to quotas. For example, an *ad valorem* tariff sets the tariff rate for wheat flour as 10% regardless of the quantity and specification of the product, but a *non-ad valorem* tariff sets the level as 10 cents per unit plus 4%, if the unit price is less than 1 dollar and 14% if the unit price is higher than 1 dollar. The *non-ad valorem* tariff can be complicated further by adding the condition that the

³⁹ Anderson, Kym, Hoekman B and Strutt A (1999) Agriculture and the WTO: Next Steps. Paper (revised version) presented at the Second Annual Conference on Global Economic Analysis, Avernoes Conference Centre, Helnaes Denmark, 20-22 June 1999.

⁴⁰OECD (2001) Agricultural policies in OECD countries: Monitoring and Evaluation, Rome, p. 263

product should be in packages not exceeding 2 kilograms. As this example illustrates, *non-ad valorem*s have no mathematical comparability unless they are converted into their *ad valorem equivalent*s (AVEs). Yet, conversion is a highly complicated process and AVEs are “simply not available, in particular for high value processed agricultural products that account for more than half of world trade in agricultural products”⁴¹.

Therefore, *non-ad valorem*s are opaque and do not lend themselves to scrutiny, since it is extremely difficult to determine whether those countries that use *non-ad valorem*s comply with their reduction commitments or not. Although only 25 countries employ *non-ad valorem*s, a small proportion of the WTO members, these countries are predominantly developed (including the Quad) and they constitute the major import markets. Approximately 20% to 50% of the EU, US and Canadian tariffs and less than 20% of Japanese tariffs are in *non-ad valorem*s terms. This shortcoming depicts the failure of the WTO to function as an institution that increases information exchange among members and make cheating less likely.

An examination of the US tariff lines between 1997 and 2001 reveals how *non-ad valorem*s can be used as an escape mechanism from the URAA commitments⁴². The overall average tariff rates are decreasing during this period, but AVEs of the specific tariff rates show a marked increase of 36% in 1998. The average of the specific tariff rates falls back in 1999. However, this short-term deviation demonstrates that if desired, *non-ad valorem*s can easily be an important protectionist instrument since they are not transparent and cannot be bound. The WTO Trade Review on Japan for 2000, expresses similar concerns. Although Japan is complying with most of the tariff rate bindings, it protects its domestic market from foreign competition effectively by tariff rates veiled under *non-ad valorem* duties. The report states that the AVEs of these tariff rates are very high. More strikingly, in one third of the lines with *non-ad valorem* duties, there is no information since there are zero imports in these

⁴¹ WTO (2001) Market Access: Unfinished Business. Available at www.wto.org

⁴² www.amad.org brings together tariff data from over 50 countries. The data are compiled from different organizations such as the WTO, FAO and OECD and given in raw form. The information

products as a result of the extremely high levels of protection, This is a most telling example of how *non-ad valorem* duties can serve as import bans while declining applied tariff rates create an illusion of liberalization. The report states that in Japan “Available AVE estimates show that 90 of the top 100 tariffs entailed non-ad valorem duties whose *ad valorem* equivalents (AVEs) ranged from 40.1% to 983.7%.”⁴³

3.1c Import Tariff Rate Quotas

Import tariff rate quotas (TRQs) are another type of opaque tariffication system. An **import quota** sets a quantity ceiling and applies different levels of tariff rates for the product quantities within the quota limit and those exceeding the limit. In general, **in-quota-rates** (tariff rates applied to imports within the quota limit) are significantly lower than the **out-of-quota rates** (tariff rates applied to imports exceeding the quota limit). Where TRQs are applied, quota rents accrue and the allocation of these rents is a political decision affected by the choice of quota administration system.⁴⁴ Quotas can be distributed to specific countries according to historical allocation rule, or they can be based on first come, first served, licensing on demand, license distribution by state trading enterprises according to commodity and auctioning principles. Although some administration methods are considered to be more trade distorting than others, the net impact of the method on free trade is not measurable.

Historical allocation method undermines the alterations in the competitiveness of the supply sources by erecting entries to barriers to new comers. Under the WTO, some tariff quotas were set up to ensure the preservation of the present access opportunities where tariffication could lead to their deterioration and to create access opportunities where there were none during the base period. However, under fair and free market conditions,

regarding the USA is taken from this raw data and calculated by the author and it may be different from calculations made by the respective governments and organizations.

⁴³ WTO Trade Review on Japan for 2000 available at www.wto.org

⁴⁴ WTO (2001) Market Access: Unfinished Business. Available at www.wto.org

preservation of the present access opportunities may not be possible or preferable. The countries to which quotas have been allocated may lose competitiveness over time, while the others gain a comparative advantage. Since new exporters will face out-of-quota tariff rates, they will not be able to gain a share in the market in question, but if there are no significant variations on the supply side, this method will not be as trade distorting. The first come, first served principle has high transaction costs. It benefits geographically closer trading partners, or those that have more advantageous seasonal cycles, over more competitive countries. To by-pass this obstacle, exporters can choose to concentrate their sales in the earlier months of the year, but this is not feasible in agriculture since many goods are perishable and storage costs are high. Licensing on demand is a method that fosters cheating. Quotas are distributed according to the share of the demands of exporters. Each exporter has an incentive to inflate its actual demand to get a larger share of the quotas, and this may lead to an inefficient distribution. If the state enterprises are distributing the quotas, there is ample space for corruption and rent-seeking behavior. Auctioning does not distort trade in principle since quotas are allocated to the most efficient exporters; yet again there might be non-transparent practices and determining efficiency may not be possible or may have high costs.

As far as the liberal trade argument goes, by limiting access to markets, all TRQ combinations distort free trade to some extent and bring welfare burdens to both exporting and importing countries. Exporting countries are affected directly because their trading ability is constrained and consumers in importing countries suffer indirect welfare losses because regardless of the TRQ allocation method, they will always be paying for the inefficiencies and will be offered less variety of more expensive and possibly lower quality products⁴⁵.

There are 37 members that employ tariff-quotas, including the Quad countries. The average number of product categories per each of these members is 38. EU and the US have quotas in 87 and 54 agricultural product

⁴⁵ Herrmann, Roland; Kramb, Marc; Monnich, Christina (2001) "Tariff Rate Quotas and the Economic Impact of the Agricultural Trade Liberalization in the World Trade Organization", *International Advances in Economic Research*, 7:1.

categories respectively, both well above the mean. There is a downward trend from 66% to 62% in the already low simple average fill rates of tariff quotas in the years from 1995 through 1998, although agricultural trade did not decline during the same period.⁴⁶ This may imply either that the demand in the related markets is decreasing, or that the tariff-quota administration methods employed impede access to markets increasingly more. As the WTO does not provide an empirical study about the correlation between neither of these factors and fill rates, it is not possible to make a comprehensive analysis.

3.1d Special Emergency Actions

A WTO provision allows member states take **special emergency actions (Special Safeguards)** to protect their agriculture from drastic price decreases or upsurges in imports. Safeguards can only be applied by the countries that have explicitly reserved their right to do so and only to those products that have been designated in the schedule of the country concerned, but they cannot be used for in-quota rates. The country resorting to this clause does not have to show that imports caused any injury to its market. The pattern of the implementation of safeguards by member states reflects how the use of mechanisms can be monopolized by the Quad countries. Although 38 WTO members reserved their right to use the special safeguard clause, from 1995 through 1998 only 8 of them evoked it. For the most part the US, EU and Japan monopolized the use of the clause. The US single-handedly accounted for 72% of the price-based actions, while EU and Japan accounted for 93% of the volume-based actions. Together the three accounted for the 93% of all the special safeguard actions.⁴⁷

Liberal economic theory dictates that high dispersion of tariffs increases the cost of tariff protection on economic welfare of the protected country and the world. Yet, the tariff rates across agricultural product groups vary considerably. In a WTO study, the standard deviation of tariff rates across different product categories are calculated for agricultural and industrial goods in 28 countries.

⁴⁶ WTO (2001) *Market Access: Unfinished Business*, p54. Available at www.wto.org

While the mean of the standard deviations in agricultural tariff rates is 36.66, it is only 9.57 in industrial goods. Also, the standard deviation of the standard deviations of individual country tariff lines in agriculture is 36.57, whereas the same calculation in industrial goods gives a much lower figure of 8.38. These numbers display the high variance in agricultural tariff lines both in and among countries, signifying the persistence of inconsistency and lack of harmonization in agricultural tariffs compared to industrial tariffs⁴⁸. Escalating tariff lines is one of the main reasons for this high degree of dispersion. Escalation in tariffs is an explicit barrier facing developing countries that the WTO does not deal with. One of the key ingredients of agricultural-export-led development for developing countries is adding value to basic agricultural commodities by processing them before exporting. In some -and mostly politically important- products, the tariffs for product groups rise with stage of processing. This means effectively killing the opportunity of developing countries to expand their processing industries.

3.2 SUBSIDIES

Subsidies distort international trade in two ways. Domestic subsidies paid to support the production and purchasing of a good (domestic support), an agricultural product in this case, creates an incentive for the producers to produce more than they would under free market conditions, creating excess supply. The government then pays export subsidies, this time to maintain a low price for selling the produce in the world market. Consequently, the richer states can subsidize their products more and gain an advantage stemming not from efficiency in production, but from state intervention. On the other hand, poorer agriculture-producing countries, for which agricultural exports play a central role, cannot compete with these subsidized products and face a severe disadvantage against their developed competitors.

The share of government budget spent on agriculture is so immense in some developed countries (such as the EU) that it almost equals the share of

⁴⁷ calculated from the data in *WTO (2001) Market Access: Unfinished Business*. Available at www.wto.org. See Appendix Table 8

expenditures on education. The money that the Japanese government spends on agriculture exceeds the contribution of the sector to the GDP. Dumping is severely restricted in industrial goods. Even though export subsidies are the agricultural equivalent of dumping, the only restriction against subsidization in the GATT was a clause stating that such subsidies should not cause the subsidizing country to attain "a more than an inequitable share" of world trade⁴⁹, an ambiguous phrase at best that did not have any concrete effects. URAA aimed to limit and incrementally decrease domestic support and export subsidies. The post-URAA figures show that the WTO, too, falls short of achieving this objective so far.

3.2a Domestic Subsidies

The WTO classifies domestic support measures provided to agricultural sector into two categories: measures that cause excessive trade-distortion (**amber box measures**), and measures that do not have a direct effect on trade (**green box measures**), an analogy to traffic lights. While green box measures are tolerated under the current WTO rules, members commit to decrease their amber box measures. Trade distorting domestic support granted by governments distorts international trade by cutting product prices below competitive levels, encouraging over-production and creating artificially low price equilibria. WTO members calculated how much trade-distorting domestic support they granted, taking 1986-1988 as the reference period. This was called **Aggregate measurement of Support (AMS)**⁵⁰ and all governments providing

⁴⁸ *Ibid*

⁴⁹ Hoekman, Bernard M. and Michael M. Kostecki (1995) *The Political Economy of the World Trading System: From GATT to WTO*, Oxford: Oxford University Press, p. 200.

⁵⁰ "**Aggregate Measurement of Support, AMS**: The indicator on which the domestic support discipline for the *Uruguay Round Agreement on Agriculture* is based. It is determined by calculating a market price support estimate for each commodity receiving such support, plus non-exempt direct payments or any other subsidy not exempted from reduction commitments, less specific agricultural levies or fees paid by producers. The most important difference is that price gaps in the AMS calculation are estimated by reference to domestic administered prices and not to actual producer prices, and that external reference prices are fixed at the average levels of the 1986-1988 base period." OECD (2001) *Agricultural policies in OECD countries: Monitoring and Evaluation*, Rome p.263.

AMS made commitments to decrease them. Developed countries committed to make a 20% reduction in total AMS from 1995 to 2001 and developing countries committed to make a 13% reduction until 2005⁵¹.

The WTO statistics show that during the first year of the implementation period (1995), the average ratio of the notified AMS levels to the committed AMS levels is approximately 50%.⁵² This figure indicates that either the WTO members cut their AMS spending by half in one year, or they resorted to 'dirty measurement' in AMS, much after the fashion of tariff levels and over-calculated the base AMS levels. Since the notified levels of government levels are well below the commitment levels due to this over-calculation, governments have a free reign to maintain or even increase their actual AMS levels between 1995 and 1998. Indeed, notified AMS levels fluctuate over years in response to the market situation and does not show a consistent downward trend (Table A3).

URAA aims to increase the proportion of green box measures in domestic support. As the WTO figures for the AMS and green box measures are incomplete and cover only the period after 1995, this study uses the OECD data to demonstrate the annual changes in the proportion of the green box measures to the AMS. **Total Support Estimate (TSE)** is a measure similar to the AMS.⁵³

The **General Services Support Estimate (GSSE)** calculated by the OECD is a similar concept to the green box measures.⁵⁴

⁵¹ www.wto.org

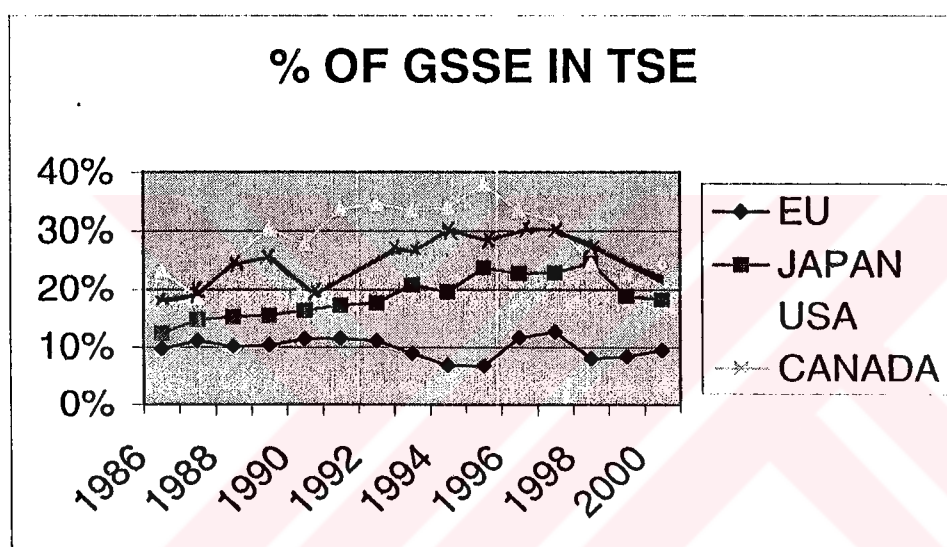
⁵² *Ibid*

⁵³ TSE is "An indicator of the annual monetary value of all gross transfers from taxpayers and consumers arising from policy measures which support agriculture, net of the associated budgetary receipts, regardless of their objectives and impact on farm production and income, or consumption of farm products. The TSE is the sum of the explicit and implicit gross transfers from consumers of agricultural commodities to agricultural producers net of producer financial contributions (in *MPS* and *CSE*); the gross transfers from taxpayers to agricultural producers (in *PSE*); the gross transfers from taxpayers to general services provided to agriculture (*GSSE*); and the gross transfers from taxpayers to consumers of agricultural commodities (in *CSE*). As the transfers from consumers to producers are included in the *MPS*, the TSE is also the sum of the *PSE*, the *GSSE*, and the transfers from taxpayers to consumers (in *CSE*). The TSE measures the overall transfers associated with agricultural support, financed by consumers (transfers from consumers) and taxpayers (transfers from taxpayers) net of import receipts (budget revenues). The percentage TSE is the ratio of the TSE to the GDP. The nomenclature and definitions of this indicator replaced the former Total Transfers as from 1999." OECD (2001) *Agricultural policies in OECD countries: Monitoring and Evaluation*, Rome, p.274

⁵⁴ GSSE is, "An indicator of the annual monetary value of gross transfers to services provided collectively to agriculture and arising from policy measures which support agriculture, regardless of their nature, objectives and impacts on farm production, income, or consumption of farm

As the Figure 1 illustrates, GSSE share of the TSE decreased since 1995 in Japan, USA and Canada. In the EU, which has the lowest level of GSSE share in the TSE, this level fluctuated and has been increasing slightly since 1998. Overall, the evidence suggests that the proportion of green box measures to the AMS are not increasing in the Quad countries contrary to the WTO commitments and expectations. This means that share of trade distorting support in the overall support is increasing in the four most influential members of the WTO.

GRAPH 3.1 % of GSSE in TSE



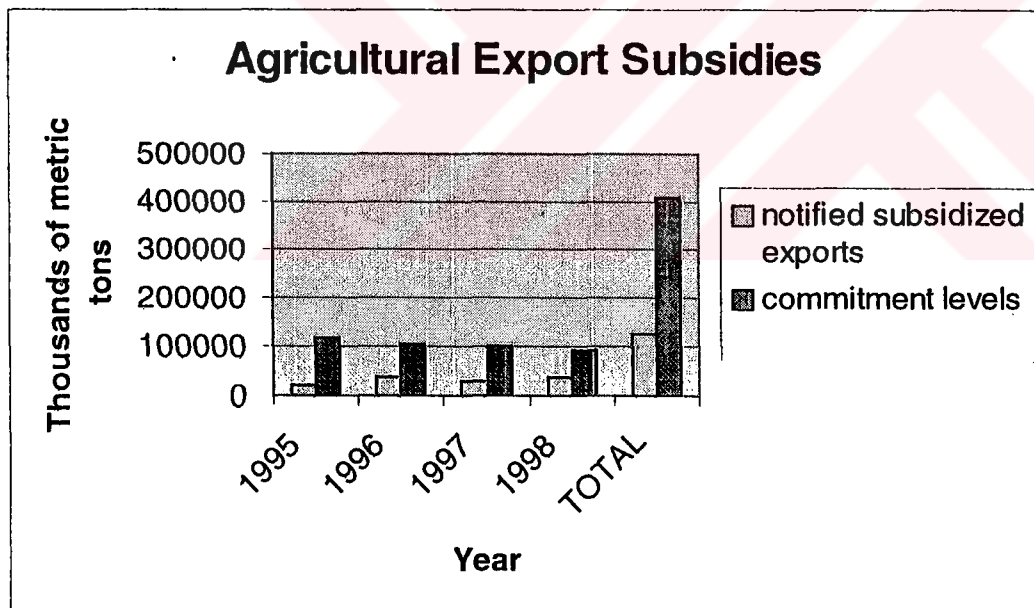
3.2b Export Subsidies

In the Uruguay Round, members also committed to decrease their export subsidies. Developed members have to reduce the money spent on export

products. It includes taxpayer transfers to: improve agricultural production (research and development); agricultural training and education (agricultural schools); control of quality and safety of food, agricultural inputs, and the environment (inspection services); improving off-farm collective infrastructures, including downstream and upstream industry (infrastructures); assist marketing and promotion (marketing and promotion); meet the costs of depreciation and disposal of public storage of agricultural products (public stockholding); and other general services that cannot be disaggregated and allocated to the above categories due, for example, to a lack of information (miscellaneous). Unlike the *PSE* and *CSE* transfers, these transfers are not received by producers or consumers individually and do not affect farm receipts (revenue) or consumption expenditure by their amount, although they may affect production and consumption of agricultural commodities. The percentage GSSE is the ratio of the GSSE to the *Total Support Estimate*." *ibid* p.274

subsidies by 36% over six years (24% over ten years for developing countries) and the quantity of subsidized exports by 21% over six years (14% over ten years for developing countries).⁵⁵ An examination of the committed levels and notified subsidized export levels for the years between 1995 and 1998 reveals that the former is significantly higher than the latter in many countries indicating that the bindings on export subsidies do not reflect real numbers as in the case of tariff and domestic support levels. Table 3.2 shows also that there is almost an inverse relationship between committed and applied subsidy levels in exports. As committed levels are decreasing, actual export subsidy levels are increasing. Simply put, although WTO members agreed on decreasing export subsidies, they are increasing them. Export subsidies have vastly distorting impacts on agriculture.

Graph 3.2 Agricultural Export Subsidies



Source: Data compiled from the WTO

The URAA was expected to accelerate the growth levels of agricultural trade that had been below the levels in other sectors, but after a tremendous

⁵⁵ FAO (2000) *Multilateral Trade Negotiations on Agriculture: A Resource Manual*. p.101.

expansion in 1995 and 1996, the value of agricultural trade started to decline (Table 3.1). Most of the literature on international agricultural trade focuses on this decline. However, if we look at the changes in the unit increase, we see that the volume traded increased from 1995 to 2000 (Table 3.1 and Graph 3.3). The case of the EU is especially striking. While the price weighted volume of its exports increased 17% from 1996 to 1999, the value of its exports declined by 5% in the same period. This inverse relationship implies that the EU is exporting an increasing amount of agricultural products at decreasing prices. This can be caused by a declining domestic demand in the EU, but it is more probable that the EU has been increasing its domestic and export subsidies. Since the EU alone constituted 41.2 percent of all the world exports in agriculture in the year 2000⁵⁶, it has the capacity to alter the market equilibrium and artificially pull the world prices down.

TABLE 3.1a

Annual % Change in the World Agricultural Trade (measured in monetary value) (Source: WTO (2001) *International Trade Statistics*)

	1980-85	1985-90	1990-95	1996	1997	1998	1999	2000
Annual %change	-2	9	3	5.5	-1	-5	-3	2

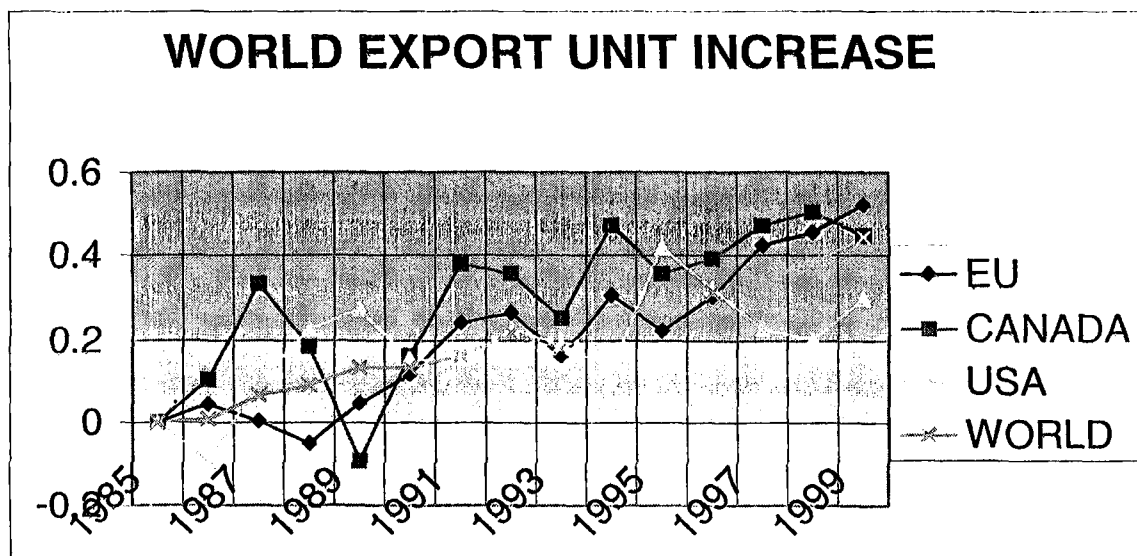
TABLE 3.1b

Annual % Change in the World Agricultural Trade in Export Units (Source: measured from data in WTO (2001) *International Trade Statistics*)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU	0	4%	-4%	-5%	10%	7%	11%	2%	-8%	12%	-6%	6%	9%	2%	5%
Canada	0	10%	21%	-11%	-23%	28%	19%	-2%	-8%	17%	-8%	3%	6%	2%	-4%
USA	0	-10%	21%	12%	4%	-9%	-1%	7%	-3%	-5%	25%	-7%	-7%	-2%	8%
Japan	0	18%	12%	-6%	2%	2%	0%	-3%	5%	-5%	5%	-9%	10%	60%	-19%
W															
Orld	0	1%	6%	2%	4%	0%	3%	5%	-3%	6%	3%	2%	2%	3%	4%

⁵⁶ WTO (2001) *Annual Report Geneva*

GRAPH 3.3 World Export Unit Increase



Increasing support in the developed countries can also explain why, agricultural commodity prices have fallen to record-low levels (Table 3.3) since the signing of the URAA in 1995 contrary to the wide-spread anticipation of a drastic increase in prices. A possible increase concerned mostly the net food importing countries that preferred the artificially low, subsidized prices to higher prices determined by market forces and were hesitant to support liberalization efforts.

TABLE 3.2

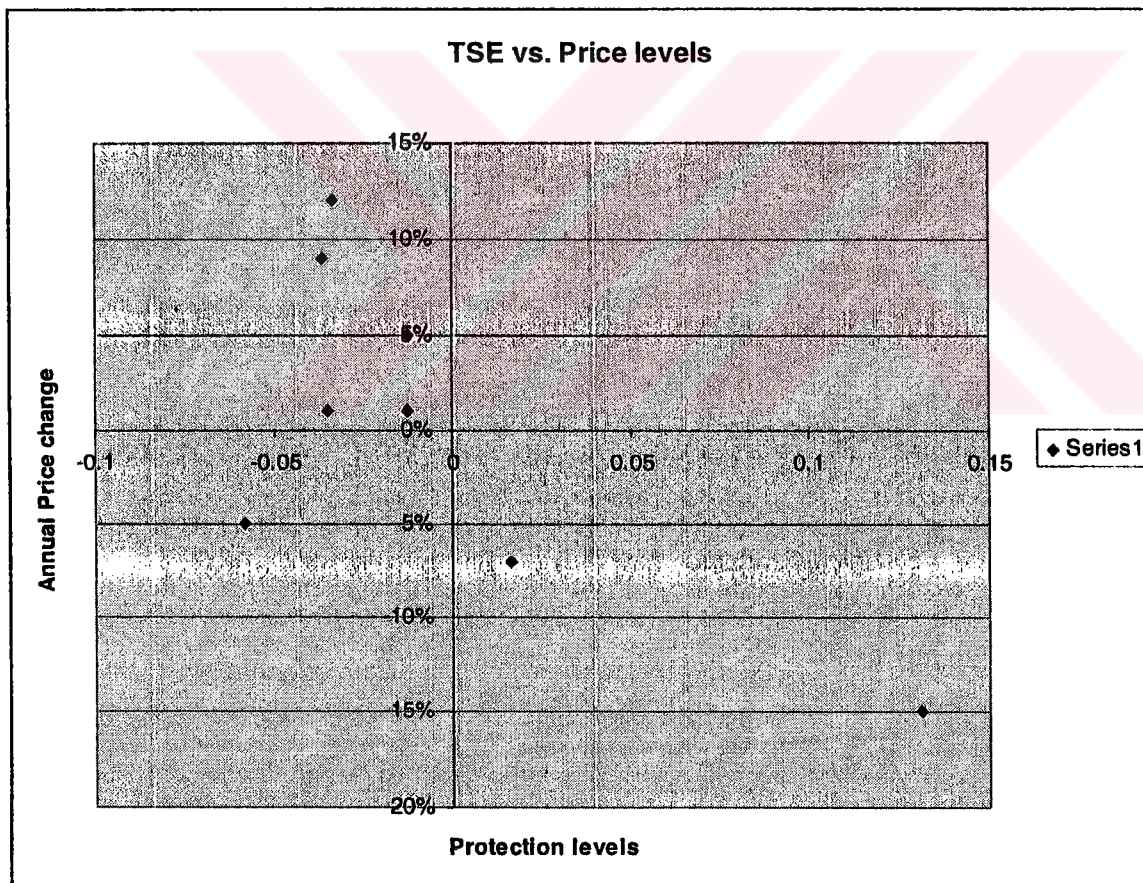
Price Change in Products (Source: compiled from WTO Annual Report 2000)

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Price change in agricultural products	195	197	214	240	253	255	242	205	191
% increase		1%	9%	12%	5%	1%	-5%	-15%	-7%
4 year-period % increase				91-95	30%			95-99	-25%

If international agricultural trade was indeed liberalizing and subsidies were decreasing, the decrease in the prices would be puzzling. Proponents of liberalization have even used this decrease to support their case that liberalization will not lead to higher prices in agricultural commodities. However, this is hardly the case. The annual fluctuations in the TSE average in the QUAD countries are very strongly and *negatively* correlated with the annual fluctuations in the world agricultural prices in the period between 1995 and 2000 (Pearson's r correlation coefficient is -0.72831). The scatter plot in Graph 3.4 demonstrates this negative relationship clearly. As the prices fall, protection rises.

GRAPH 3.4 TSE vs. Agricultural Product Price Levels Scatter Plot

Data compiled from www.SourceOECD.org

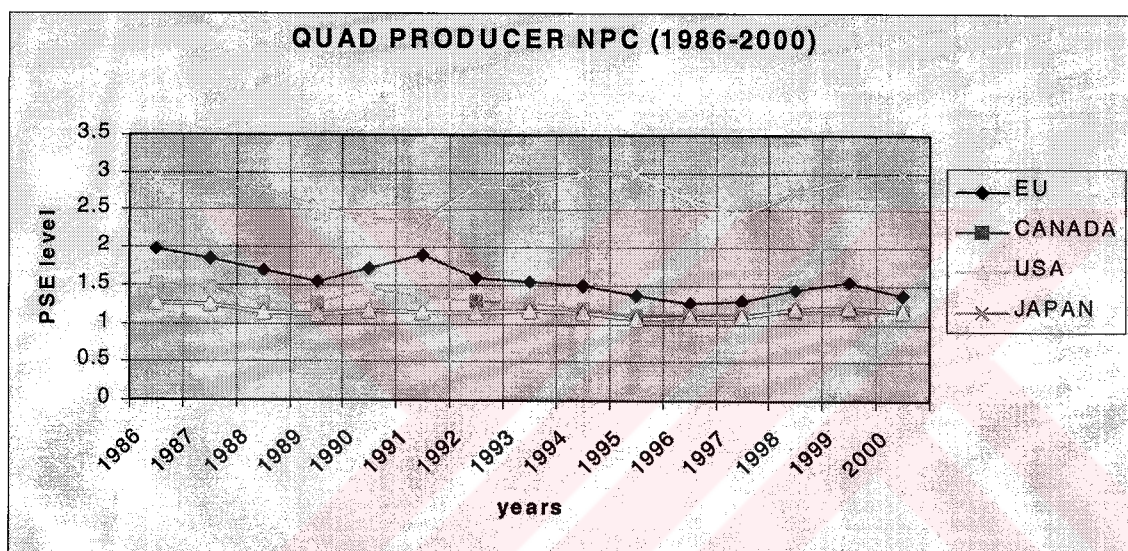


This high correlation indicates how heavily protected the Quad agricultural markets remain, despite all the talk about liberalization. The Quad governments respond to price declines in the world market by increasing their support to

agriculture in the same year and when the prices increase again, their expenditure on agriculture decreases. Therefore, the decreases in the support in some years are likely to reflect favorable price conditions rather than secular trends.

Other OECD measures show similar results of increasing or fluctuating support (Graphs 3.5. a-d).

GRAPH 3.5a QUAD Producer NPC

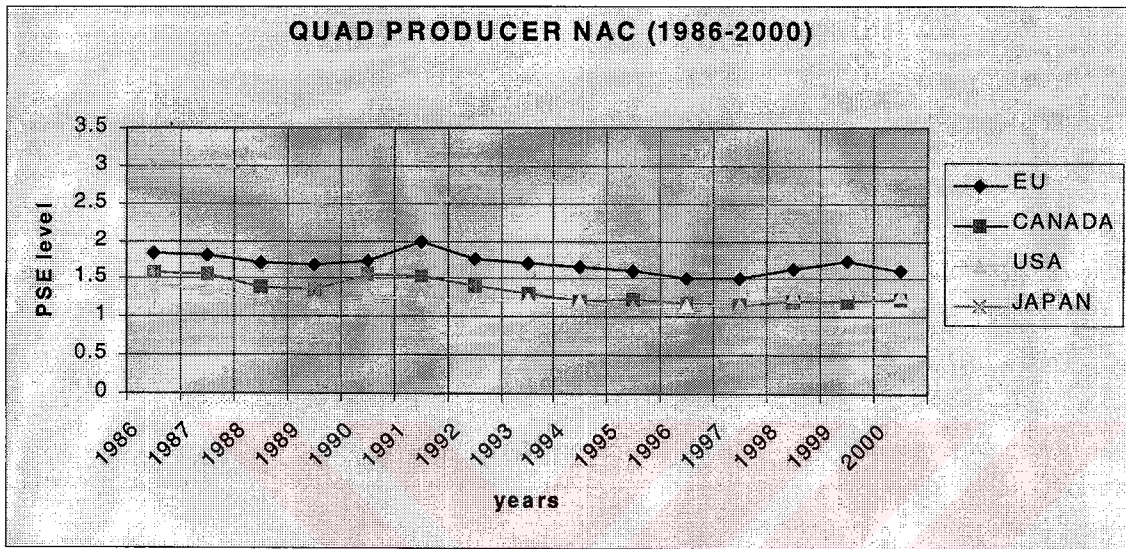


Producer Nominal Protection Coefficient (NPCp) is “an indicator of the nominal rate of protection for producers measuring the ratio between the average price received by producers (at farm gate), including payments per tonne of current output, and the border price (measured at farm gate level).”⁵⁷ When producers are not protected at all, the NPCp equals 1. An NPCp level of 2 shows that the domestic producer prices are twice as high as the unsubsidized world market price. The above table shows that there has not been a steady decrease in the NPCp levels in the QUAD countries after URAA (1995). Defiantly, there seems to be a decline from late 1980s until 1995, and an increase from 1995 to

⁵⁷ OECD (2001) *Agricultural policies in OECD countries: Monitoring and Evaluation*, Rome, p.272.

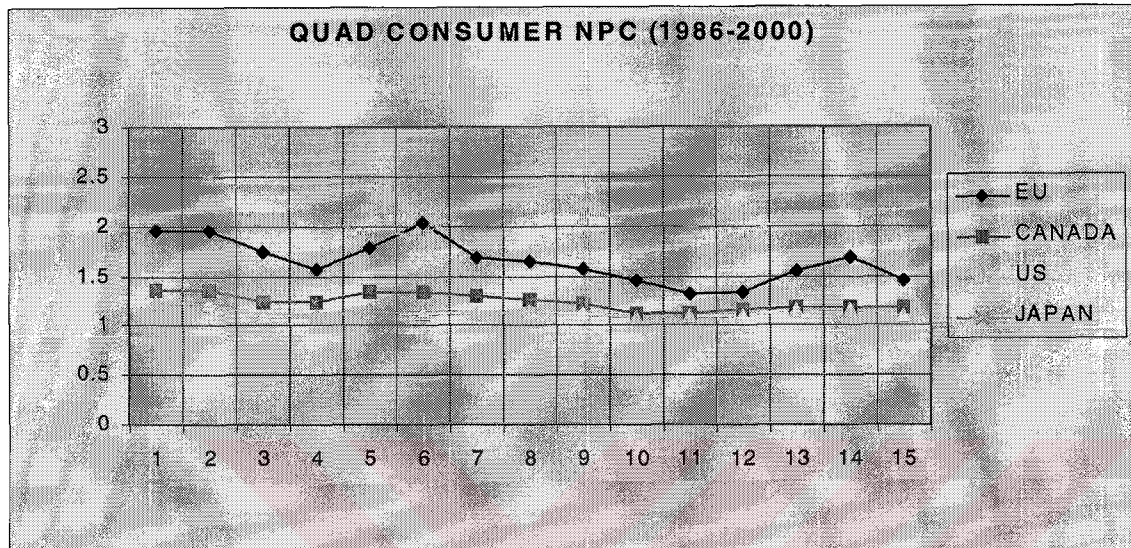
2000 in EU, US and Canada, and Japan's NPCp levels fluctuate widely. If there is any trend in NPCp levels after the URAA, it is one of an increase.

GRAPH 3.5.b Quad Producer NAC



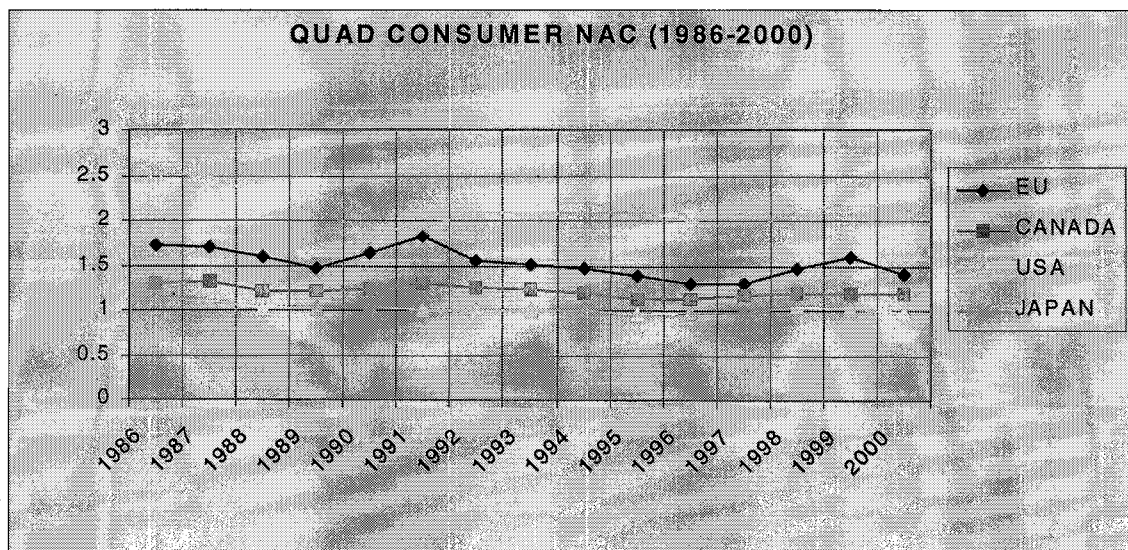
Producer Nominal Assistance Coefficient (NACp) is “An indicator of the nominal rate of assistance to producers measuring the ratio betw

GRAPH 3.5.c Consumer NPC



Consumer Nominal Protection Coefficient (NPCc) is an indicator of the nominal rate of protection for consumers measuring the ratio between the average price paid by consumers (at farm gate) and the border price (measured at farm gate level).⁵⁹ Graph 3.5.c illustrates that NPCc levels in the QUAD countries are also fluctuating or stagnating. The period before 1995 shows a more stable trend of decline in NPCc levels than the period after it.

GRAPH 3.5.d Consumer NAC



Consumer Nominal Assistance Coefficient (NACc) is “an indicator of the nominal rate of assistance to consumers measuring the ratio between the value of consumption expenditure on agricultural commodities domestically produced including support to producers and that valued at world market prices without support to consumers.”⁶⁰ According to Graph 3.5.d NACc levels have not decreased in the second half of the decade, either.

3.3 Summary

This chapter demonstrates that agricultural liberalization efforts under the WTO regime since URAA have failed. As reviewed in the first chapter, according to Neoliberal arguments, WTO is expected to decrease cheating by increasing flow of information and effectively imposing punishments to defectors. However, the WTO could not effectively increase transparency and information exchange. Due to continuing opaque methods of protection, such as AVEs, flow of information cannot increase. Domestic and export subsidies are not decreasing but fluctuating in response to the fluctuations in the price levels. The basic measures of agricultural protection used by the OECD imply that the period after

⁵⁹ *ibid* p.266

the URAA is at least as highly protected as the period prior to it. Defectors are not subject to significant punishments. More than a regime of cooperation, WTO agricultural regime is one of non-compliance, in other words, it is a dead-letter regime.

Neoliberal Institutionalism and Neoliberal Economics are unable to explain this failure because liberalization is highly likely to increase welfare in most countries including the Quad by decreasing the economic burden of subsidizing agriculture. If the only obstacle in the way of liberalization was the Prisoner's Dilemma, the WTO should have solved the problem. Therefore, there is more than a Prisoner's Dilemma problem in agricultural trade. In the next chapters, alternative explanations and whether Neorealism can address these barriers to cooperation in the agricultural sector will be explored.



⁶⁰*ibid* p.266

CHAPTER 4

WHY AGRICULTURAL LIBERALIZATION FAILED: A NEOREALIST FRAMING

Net agricultural exporters of the developing world had high expectations about agricultural trade, which would fuel their development. However, as the graphs and numbers above indicate these expectations went unfulfilled. The basic stated principle of the WTO is improving free trade because it is beneficial for all countries that participate. This ideology is based on the laissez faire economics of Adam Smith and 'comparative advantage' concept of Ricardo. Agriculture is probably the sector that the principle of comparative advantage best applies to. While in other sectors, comparative advantage can shift over time to different countries or regions, comparative advantage in agriculture is rather permanent. Siberia can never become a major producer of bananas and coffee and Sub-Saharan Africa is not the ideal location for growing rice. Yet despite the apparent benefits from liberalization and the plain violation of basic WTO principles and norms, agriculture maintains its irregular status as a highly protected and controlled sector in world trade. This distortion denies many nations the opportunity to enjoy comparative advantages in goods that they would if agricultural trade adhered to strictly free market principles. It is easier to explain the continuing protection in sectors such as the textiles or steel, where the most influential members of the WTO are least competitive and liberalization has economic costs for the rich countries. However, the costs of protection in

agricultural sector are higher than the costs that could incur from liberalization for the developed countries. "Recent data from the OECD, shows that total transfers to agriculture in these countries amounted to US\$327 billion in 2000, compared with US\$298 billion in 1986-88, and exceeded the value of world trade in agricultural products."⁶¹

Moreover, the cost of agricultural protectionism by the US, Japan and the EU to the developing world is even higher, amounting to almost half of the total international aid to the developing world.⁶² Calculations using the Global Trade Analysis Project shows that the percentage contribution from removing distortions in agricultural protectionism to the developing world after the Uruguay Round can reach 44% in 2005.⁶³ The gains from liberalization is even more than the textiles sector. The contribution to the developing world is expected to be 21% even from the liberalization in the textiles sector. Economically, developed countries are also beneficiaries of liberalization in agriculture. They are expected to gain 29% from the removal of agricultural barriers.⁶⁴ Thus, liberalization seems to be a win-win situation for both the developed and the developing world, yet despite the economic advantages, agricultural production and trade are markedly resistant to liberalization.

4.1 ECONOMIC SOURCES OF PROTECTIONISM: The Richer, The More Protective

How can the continuing protectionism be explained? One explanation for the high subsidies in rich countries is purely economic:

"Kym Anderson (1993a) argues that this can be explained as follows. In a poor country, food accounts for a large share of total household consumption, whereas in rich countries food accounts for only a small share of expenditure. Moreover, agriculture is the main source of employment in a poor country, while

⁶¹ <http://www.fao.org/trade/docs/ur.htm>

⁶² HOEKMAN, Bernard M. and Michael M. Kostecki (1995) *The Political Economy of the World Trading System: From GATT to WTO*, Oxford: Oxford University Press, p.198.

⁶³ made by Anderson, Hoekman and Strutt (1999)

⁶⁴ (Biswanger and Lutz, 2000:6)

it typically accounts for less than 5 per cent of the labour force in a rich one. In poor countries, agriculture is much less capital-intensive than in rich ones.”⁶⁵

These facts indicate that if poorer nations support agriculture, this will increase food prices, which in turn will lead to an increase in labor wages and services, but laborers will not be able to enjoy the increase in their wages due to a parallel increase in the food prices. Yet, the industrial sector will suffer since their profits fall down as wages rise. Therefore, poor countries should not have any economic incentive to support their agriculture. On the other hand, subsidization in a rich economy does not have significant impacts on wages, services or industry since the sector is small. Another factor for the persistence of agricultural support is purely political. While the benefits from support are tangible, the costs are diffused to the whole population. Therefore, decreasing subsidization has high political costs, since the producers will lobby against liberalization, while there are no organized interests to oppose agricultural subsidies.⁶⁶ That is, even when they allocate a small proportion of their income, richer countries provide huge amounts of support in comparison to poorer ones.

4.2 NON-ECONOMIC CONCERNS: MULTIFUNCTIONALITY

The argument adopted by the WTO is the multifunctionality of the agricultural sector that refers mainly to non-economic concerns. Those countries that make an exception to agriculture base their arguments on the multifunctionality of agriculture, which necessitates supporting this sector, despite its trade distorting effects. Multifunctionality means that agriculture has many non-economic functions for society and the benefits derived from these functions can override economic concerns. These functions are classified into three main categories by the WTO.

1. Every government wants to secure that “enough food is produced to meet the country’s need.”⁶⁷

⁶⁵Hoekman, Bernard M. and Michael M. Kostecki (1995) *The Political Economy of the World Trading System: From GATT to WTO*, Oxford: Oxford University Press.p.199

⁶⁶ *ibid*

⁶⁷ WTO (1999) *Trading Into The Future* Geneva

2. Governments want to guard farmers against the price fluctuations and undesired climatic conditions.
3. Industrial societies want to protect their rural population, which they believe is the backbone of tradition and is indispensable for the continuity of their genuine local culture that is mostly disintegrated in the industrialized urban centers.⁶⁸

Therefore, the multifunctionality proponents argue, agriculture, unlike other sectors, has a pivotal role in any country for the preservation of its culture and the trading system should allow for an exceptional status for agriculture.⁶⁹

Multi-functionality is not a novel concept for economists. It refers to the *positive externalities* of the agricultural sector. An externality is the economic or non-economic side-product of an activity that is distributed to the general public and not to the producer. Every economic activity has externalities. Environmental pollution is a dramatic example of a negative externality. When a factory pollutes the air, the costs are spread out to the whole globe. Market failure occurs when negative externalities cannot be prevented by the market dynamics in a *laissez faire* economy. The most common solution to this type of problem is government intervention to the market and internalization of the costs to the producer. Internalization of costs means that the costs are paid by the producer of the externality. Environmental laws that require filtering pollution and cleaning by the factory are an example of the internalization by government intervention.

However, not all externalities are negative. Kym Anderson⁷⁰ argues that agriculture is a case in point for a sector that produces positive externalities, of which many are listed under the multifunctionality argument. However, portraying agriculture as a unique sector that has indispensable positive externalities is open to debate. There is no question as to whether agriculture generates collective goods, but since many other sectors also create non-economic collective goods, there are certain criteria that the agricultural sector

⁶⁸ *Ibid*

⁶⁹ *Ibid*

⁷⁰ Anderson, Kym (2000) "Agriculture's 'Multifunctionality' and the WTO", *Australian Journal of Agricultural and Resource Economics*, 44:3.

should meet in order to be defined as a *unique* sector that requires an irregular status:

1. Agriculture should produce more positive externalities than other sectors.

$$\text{CPE (Agriculture)} > \text{CPE (Other Sectors)}^{71}$$

Otherwise, other sectors have positive externalities as high as agriculture and therefore they are also entitled to special protection.

2. The positive externalities agriculture creates should negate the current welfare losses from protectionism.

$$\text{CPE (Agriculture)} + \text{CNE (Protectionism)} > 0$$

If not, then protectionism creates higher negative externalities than positive externalities and therefore it is more beneficial to liberalize.

3. Positive externalities should also surpass the expected benefits from trade liberalization.

$$\text{CPE (Agriculture)} > \text{EB (Liberalization)}$$

If the expected benefits are higher than the current positive externalities of protection, then it is more profitable to liberalize.

If these conditions are not fulfilled, there are no grounds to argue that agriculture is more special than other sectors. These conditions will change from country to country. As in every other sector, there will be countries that are harmed by liberalization in agricultural trade and there will be others that benefit from it. Therefore, the overall global effects should take precedence over the interests of individual countries. The question is whether agriculture fulfills these conditions on a global scale. In other words, do the benefits of protectionism in international agricultural trade surpass the benefits of liberalization and do so more than other sectors?

Proponents of the multifunctionality argument present their case as a truism without providing information on the net economic and non-economic effects of agricultural protection and how these effects are allocated. However, these functions enlisted by protectionist countries are controversial. Protectionists, e.g. Japan, foresee that there will be a global food scarcity in the following decades

⁷¹ Current Positive Externalities is denoted by CPE, Current Negative Externalities is represented by CNE and Expected Benefits is symbolized by EB.

as a result of the fast growing population in the developing countries and global environmental problems. Therefore, the contemporary agricultural exporters will decrease their proportion of agricultural exports in order to supply adequate food for their own populations⁷². Even some of the current net agricultural exporting countries (such as the US) are expected to become net importers. Added to the population pressure is the concern for environmental problems. The possible effects of global warming on agriculture are not fully clear and protectionist countries contend that environmental problems will also augment future food scarcity problems.

The advocates of free trade in agriculture counter the multi-functionality argument by asserting that open world markets for agricultural products will - contrary to the protectionist line of reasoning- increase national food security by diversifying the food sources and guaranteeing more stability and efficiency in production and allocation. In case of a drought or war in one part of the globe, importers can turn to other suppliers and ensure a steady flow of agricultural goods. Opponents of protectionism also claim that agricultural subsidies encourage environmentally harmful practices and excess production that would otherwise be too expensive⁷³.

Multifunctionality argument is viewed as an excuse for protectionism by agricultural net exporters. The common opinion is that domestic political pressure is the main force behind the enduring protectionist policies in developed countries. However, the multifunctionality argument has more merit than being a façade. Of the three functions listed by the WTO, the first one (securing enough food for the population) is directly or indirectly perceived as a national security issue by governments. Non-economic concerns take precedence over economic factors in agriculture. In the fifth chapter, this security function of agriculture will be discussed.

⁷² www.maff.go.jp

⁷³ www.cairns.org

CHAPTER 5

INTERNATIONAL SOURCES OF PROTECTIONISM: The Security Dimension and Relative Gains Concerns

5.1 War and Agriculture

All the economic and non-economic reasons analyzed have their part in blocking agricultural liberalization. Yet, I argue that, the security function of agriculture is a significant factor and the international source of protectionism. Since security brings agriculture, albeit indirectly to the domain of high politics, it results in the framing of agricultural policy decisions in a Realist perspective. Although Neoliberalism can explain the functioning of the WTO and other international regimes and institutions in general, Neorealism serves as a better instrument to comprehend the dynamics of the agricultural trade regime because of its special nature. The principles and norms of the WTO are disregarded in the case of the agricultural sector, rules are not followed and decision-making procedures are ineffective. The WTO agricultural trade regime lacks the vital elements of a regime as defined by Neoliberal Institutionalism. The Neoliberal impediment to cooperation, that is, the fear of being cheated by the trading partners, is not the main reason for defection from compliance. However, it is not the Neorealist relative gain considerations that impede cooperation, either.

My main contention is that countries that cooperate for liberalization in other sectors cannot cooperate for agricultural liberalization in international trade

because agriculture is more similar to security areas as a 'good' than other economic sectors. Guns and butter both have immediate survival value in the self-help world of Realism and state strategies in these areas are governed more by survival concerns than in other areas. States do not prefer to be dependent on other countries' food resources any more than they want to be dependent on other countries' armies for defense. Therefore, liberalization in agriculture is likely to encounter resistance because interdependence in the agricultural sector is viewed as dependence on other countries for survival. The decline of agricultural autonomy is highly undesirable for a state even when it has economic benefits.

When designing their agricultural policies, governments are likely to pursue policies that would not make them more dependent on food imports. In international agricultural trade, dependency on the resources of other states is not desirable even when there is no possibility of conflict. States want to guard themselves against possible fluctuations in the food sources, and do not wish to be at the mercy of their trading partners. Yet, a liberal global market implies a decrease in self-sufficiency for countries that are not naturally competitive. Basically, states, like their citizens, can survive when trade in TVs, cars, or even energy resources halts. Yet, a country dependent on food imports will suffer immeasurably if trade stops.

Interdependence in other sectors may be desirable since it does not threaten survival, but 'self-sufficiency' is the motto in agriculture for many states, even when it causes a loss in welfare. The most poignant example is Japan. The Japanese government has started a program that would increase the level of self-sufficiency from the 1998 level of 40% to 45% until 2010⁷⁴, although this objective is in direct conflict with its liberalization commitments under the WTO and does not make any economic sense.

Critics of protectionism argue that states can avoid dependence by diversifying their sources. They also argue that decreasing consumption during a war or at periods of food scarcity can be a more efficient and cheaper solution

⁷⁴ WTO Trade Review on Japan, 2000 available at www.wto.org Also, see www.maff.go.jp for a detailed discussion of Japanese agricultural stance and policy.

than spending enormous amounts on an uncompetitive sector forever just in case there is a war or world wide famine. However, in the case of agriculture the current policies defy every liberal economic principle.

Even for countries that generally defend liberal ideology, Realist concerns for survival and autonomy become the frame for devising policies in agriculture. More than any other reason, this is why agriculture is protected even by the proponents of liberalization such as the US and Canada and it is not surprising that the sector is most eagerly protected by the two regions, the EU and Japan that both witnessed the devastating effects of war only half a decade ago. The memories live on to this day. Switzerland is a showcase for the impact of war concerns on official agricultural policy. "After World War II, the fear of another war drove Switzerland to focus on achieving self-sufficiency in food production,"⁷⁵ and Switzerland made this policy official by passing a law making self-sufficiency a national goal (this law was abolished in 1992). Switzerland is probably the country that is least likely to get involved in a war or even an international conflict in the world. Also its economy is highly dependent on foreign trade and in non-agricultural sectors, Switzerland is one of the most liberal and least protective countries in the WTO. Yet, like Japan, Switzerland regards self-sufficiency in food a national priority. The level of protection in these two countries is visibly high. This could be a result of their concern for self-sufficiency. If low self-sufficiency increases such concerns and in turn fosters protectionism, then self-sufficiency level of a country should be an important determinant in its protection levels in agricultural sector. In the next section, whether such a relationship exists will be tested.

5.2 FINDINGS

I argue that agricultural liberalization fails because of security concerns. Therefore self-sufficiency in food supply should be an important variable in explaining the variance in agricultural protection for a food staple in a given

country. When a country is self-sufficient in food production, it can be truly secure in case of a war and it can maintain its independence. Therefore, I hypothesize that the lower the self sufficiency level is, the higher the protection level will be. The dependent variable is the protection level. I measure protection as a combination of the NACc, NPCc, NACp, NPCp and MSE levels in 2000.⁷⁶ These measures are first standardized and then added up to reach a protection level index. The main independent variable is the level of food self-sufficiency in 1999.

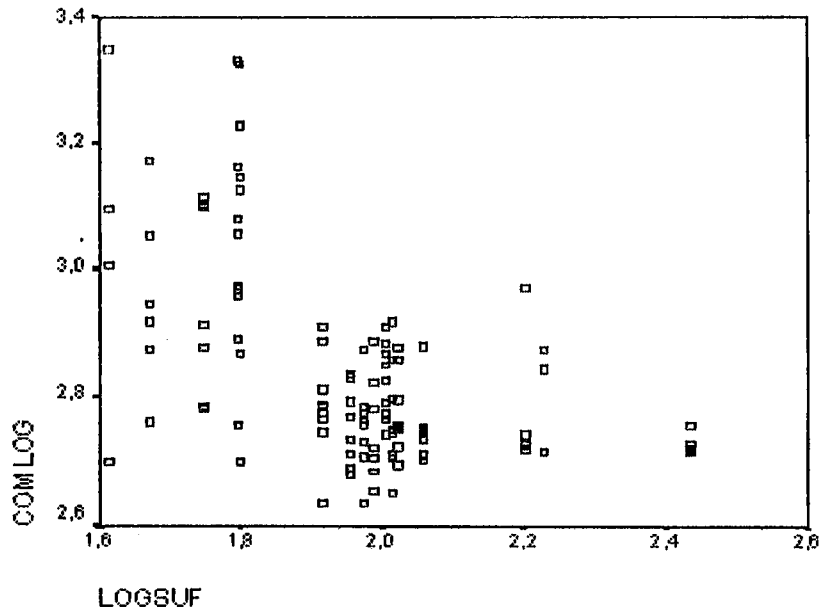
Self-sufficiency is measured at two levels: self sufficiency in the product concerned and overall self-sufficiency of the country. Overall self-sufficiency is measured as the ratio of domestic production to domestic supply and product weighted by the calorie percentage of the products. As a control variable, GNP/capita level⁷⁷ in 1999 is added. As discussed previously, the higher the GNP/capita level, the higher the protection level is expected to be. Other control variables are the importance of the staple in the national diet (measured as a percentage calorie of the staple in the total national calorie consumption), and the ratio of the agricultural population to the total population in the country. The higher the importance of the staple and the ratio of the agricultural population, the higher the level of protection is expected to be. A linear regression method is applied. Since the relationships between the dependent and independent variables are not linear, the dependent variable as well as the sufficiency and GNP/capita variables are transformed by logarithmic transformation. The scatter plots below show the relationships between the dependent variable and the important independent variables (Graph 5.1.a-c).

⁷⁵ Erwin Stucki, a rural economist from the Institut d'economie rurale at Lausanne quoted in Anju Sharma, "Keep on the Grass" (2001) *Down to Earth* Vol 10, No 8.

⁷⁶ These measures are taken from OECD databases for all OECD countries. EU is considered to be one country because of its Common Agricultural Policy.

⁷⁷ measured by the World Bank in Atlas Method for 1999. GNP/capita measurement is replaced by GNI/capita after 2000.

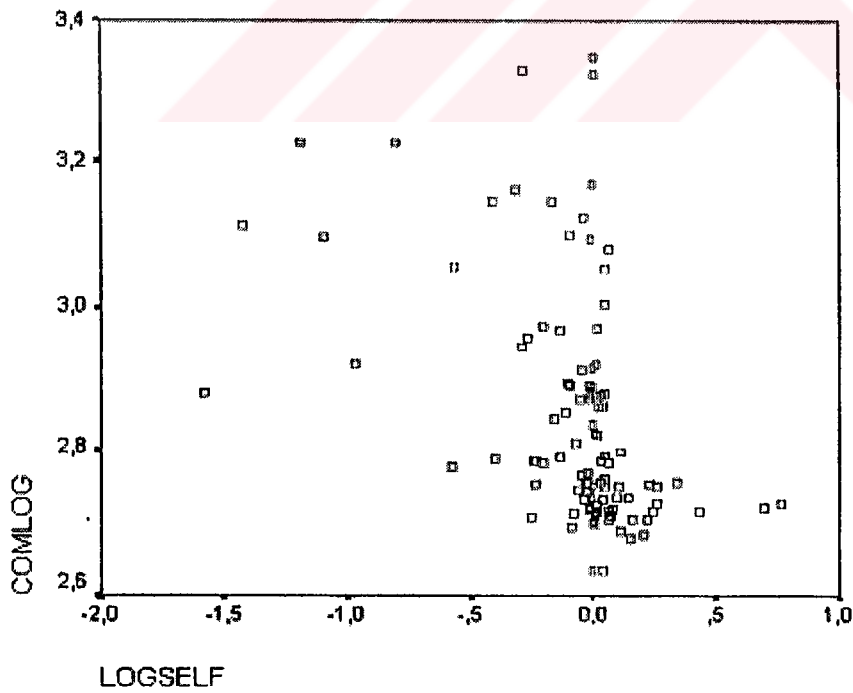
Graph 5.1a Scatter plot of Protection level vs. Overall Sufficiency



Pearson's correlation coefficient = -566

Significance (two-tailed)= 0.00

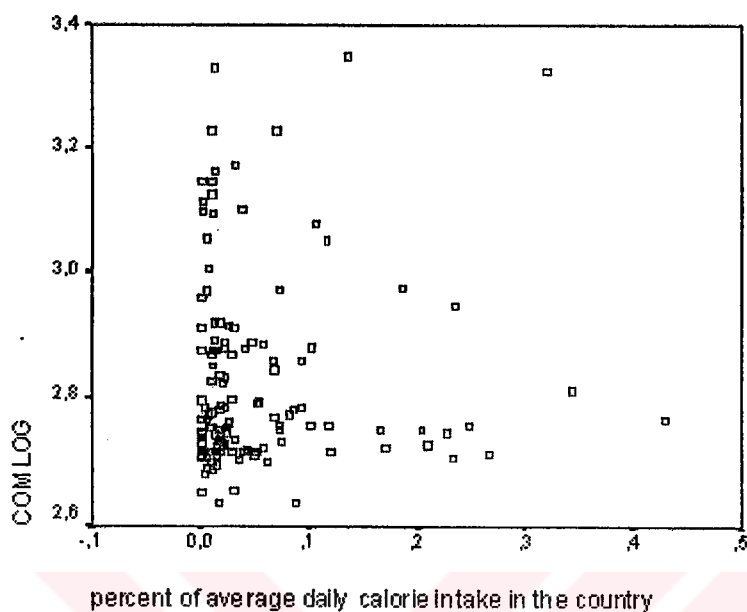
GRAPH 5.1b Scatter plot of Protection level vs. Self-Sufficiency by Product



Pearson's correlation coefficient = -442

Significance (two-tailed)= 0.00

Graph 5.1c Scatter plot of Protection Level vs. Percent of Daily Calorie



Pearson's correlation coefficient = 0.247

Significance (two-tailed) = 0.05

Ordinary Least Squares method is used in the following cross-sectional regression analyses. The statistical computer package used is SPSS. The staples included in the regression analyses are Barley, Wheat, Maize, Coarse grains, Sorghum, Soy bean, Oil Seeds, Sunflower seed, Sheep meat, Milk and Eggs. The yearly protection levels for these products are calculated separately for each OECD country (by the OECD). All OECD countries are included in the sample. Bovine meat is excluded from the analysis because protection levels are exceptionally high due to the outbreak of bovine diseases in Europe the last years. All aqua products including fish are also left out of the sample due to lack of OECD data. These products are also excluded from overall self-sufficiency level calculations. This is because sea food does not contribute to national security as other food staples. Those countries which produce and consume sea

products lose their access to the seas and oceans during war time. Therefore, high production in sea food cannot secure autonomy to a state.

5.2 a Regression Analysis Model 1

Regression model 1 explains almost 37% of the variance in the dependent variable and all independent variables are highly significant. As predicted there is a negative relationship between self-sufficiency and protection levels. The lower the sufficiency level is, the more protective the country is likely to be. GNP/capita variable also confirms the expectation. The higher the GNP/capita level is, the more protective the country tends to be. The Beta level is a measure that tells us which variable affects the dependent variable more. Since Beta is a standardized measure, it allows us to compare the relative importance of each independent variable. When we look at the Beta variables we see that overall and commodity specific sufficiency affect protectionism more than GNP/capita levels. The significance level is listed under the sig. column. This measure tells us whether the results are statistically significant. In other words, it measures whether these results can be purely coincidental. The standard significance level accepted in Political Science is .05. All three variables are below that level. This means that all the variables are statistically significant in this model. Overall self-sufficiency variable is even below the .01 threshold.

Model Summary

R	R Square	Adjusted Square	R	Std. Error of the Estimate
,620	,384	,367		,1280

a Predictors: (Constant), sufficiency by product, GNP/capita, Overall Self Sufficiency

Coefficients

	Unstandardized Coefficients	Standardized Coefficients

	B	Std. Error	Beta	t	Sig.
(Constant)	3,214	,190		16,895	,000
Self-Sufficiency by product	-,106	,042	-,217	-2,520	,013
GNP/capita	7,227E-02	,031	,180	2,357	,020
Overall Sufficiency	-,341	,068	-,434	-5,037	,000

a Dependent Variable: Protection Level⁷⁸

5.2b Regression Analysis Model 2

In the second regression analysis, 'the price changes in the agricultural crops from the year 1998 to 1999' and 'the ratio of agricultural population to the whole population' variables are introduced to the model. The model explains as high as 48% of the variance in the dependent variable. However, the statistical significance levels of the dependent variables except that of the main independent variable (overall self-sufficiency) drop drastically. This is most likely a result of the small sample size in this model. Since the prices of many products are not available and those that are available have to be collected from different sources, price differential variable is not a reliable variable and decreases the statistical significance levels making the model unstable and unreliable.

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
,745	,555	,481	,1291

⁷⁸ All the dependent and independent variables in Model 1, 2 and 3 are logarithmically transformed.

a **Predictors:** (Constant), ratio of agricultural population, self-sufficiency by product, price difference from year 1998 to 1999, percent of average daily calorie intake in the country, overall self-sufficiency, GNP/capita

b **Dependent Variable:** Protection level

5.2c Regression Analysis Model 3

Model 3 explains .364 of the variance in the protection levels. This model has a lower Adjusted R² model than the first two levels, but includes another relevant variable, "what percent of the average total calorie intake in the country the commodity has". The model is significant and main independent variables are statistically significant. This is the model that explains protectionism best among the three models presented here.

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
,622	,387	,364	,1283

a **Predictors:** (Constant), percent of average daily calorie intake in the country, overall self-sufficiency, GNP/capita, Self-sufficiency by product

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	3,190	,193		16,494	,000
Self-sufficiency by product	-,110	,043	-,225	-2,581	,011
GNP/capita	7,491E-02	,031	,187	2,420	,017
Overall self-sufficiency	-,338	,068	-,431	-4,973	,000
Percent of	,112	,157	,055	,713	,477

average daily calorie intake in the country					
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a **Dependent Variable:** Protection level

5.3 ANALYSIS OF THE FINDINGS

These findings buttress the hypothesis that protection in the agricultural sector is triggered by security concerns more than other factors. The regression analyses show that even with strong control variables as GNP/capita and agricultural population, sufficiency remains the most important variable in explaining the variance in protectionism. If the "price change variable" can be added, the explanatory power of the model is likely to increase significantly. However, it is not possible to find reliable price data for all the products in the sample.

The countries with the highest levels of protection in agriculture are Iceland, Japan, Korea, Norway and Switzerland. These countries also have the lowest levels of self-sufficiency (between 60% and 70%)⁷⁹. These countries are geographically rather isolated (islands, mountainous areas) and depend on food imports (especially in grains) and fishing. Until 1992 Switzerland had a law that required it to be self-sufficient in agriculture. This law was passed after the devastating experience of the World War II. Japan tries to increase its self-sufficiency. South Korea has always been overly concerned about its security since the division of Korea and the establishment of the communist North Korea. The least protective countries are Australia and New Zealand. Australia approaches zero protection in agricultural trade. This is not surprising given its extraordinarily high self sufficiency level exceeding 200%. EU is self-sufficient, but its self sufficiency is likely to be a result of its long history of protectionist support policies under the Common Agricultural Policy.

⁷⁹ These levels are different from the levels declared by the states themselves. This is due to different methods of calculation. More than reaching a perfect sufficiency measure, the aim of the calculation here is to be able to compare sufficiency levels of different countries. The measurement here is based on the data taken from the FAO.

These results suggest that the international security function of agriculture is indeed an important explanatory factor for protectionism and states protect their agriculture for the rainy days. Governments also tend to protect those staples that constitute bigger parts of the national diet (e.g. rice in Japan and South Korea or wheat in Turkey.) If self-sufficiency is low in one product, it is also likely to be protected more than others. However, when the self-sufficiency level approaches zero in a particular product, protection becomes futile because there is nothing to promote or protect and tends to decrease despite the low-level of sufficiency.



CONCLUSION

The Realist framing of the agricultural sector is likely to be the most important international source of protectionism in agriculture. This is the reason why Neoliberal expectations fail to be fulfilled in this sector. Like security, agriculture remains in the domain of “high politics” despite the economic pressure. This does not suggest that the chances for liberalization are null, but that they are rather dim. The new round of Multilateral Trade Negotiations and more importantly, its implementation will determine the prospects for future. The economic burden, increasing pressure from exporting countries, and the developing-world strategy of linking agriculture to liberalization in other sectors might make protection too costly to bear, but the most important shift would be a change in the framing of agriculture to a Neoliberal perspective as an economic good, instead of a security good. This is a cognitive shift that is not likely to come about easily.

As long as governments try to secure the basic staple supply for their populations, they will strive for self-sufficiency and liberalization in agriculture will be the luxury of self-sufficient countries. Furthermore, being defensive-positionalists, countries will compare their self-sufficiency levels with that of other countries and not try to fall behind.⁸⁰ Therefore, it should be realized that agriculture is not just another sector, but it has a significant security dimension. Expensive or not states protect their security.

⁸⁰ Japanese Ministry of Agriculture publishes papers comparing the longitudinal self-sufficiency levels of Japan to other OECD countries. The Japanese concern is not only the decline in its self-sufficiency, but also the relative decline vis-à-vis its ‘rivals’. See www.maff.go.jp

APPENDIX

TABLE A1.1

Annual % Change in the Average Agricultural Support in the QUAD Countries

Averages	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
PSE	-2%	-12%	-6%	7%	3%	-4%	-3%	-6%	-5%	-6%	-4%	17%	6%	-4%
NPC	-2%	-8%	-6%	4%	1%	1%	-1%	1%	-4%	-7%	-3%	9%	5%	-2%
NAC	-1%	-7%	-7%	2%	3%	1%	-2%	0%	-1%	-6%	-4%	9%	5%	-2%
CSE	-1%	-16%	-8%	6%	6%	-7%	-2%	-6%	-12%	-7%	1%	27%	6%	-13%
NPC	-2%	-9%	-6%	3%	4%	-3%	-1%	-2%	-4%	-4%	-1%	9%	4%	-5%
NAC	-1%	-8%	-5%	1%	4%	-2%	-1%	-2%	-3%	-3%	-1%	9%	3%	-4%
TSE	-5%	-7%	-2%	18%	13%	-7%	-1%	-4%	-6%	3%	-1%	12%	7%	-5%

TABLE A1.2

Annual change in PSE/NPCp/NACp/CSE/NPCc/NACc levels in the Quad Countries

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
EU	%PSE	45.54	45.02	41.59	40.62	42.73	50.09	43.62	41.65	39.52	37.85	33.8	33.93	39.14	42.85	38.34
	NPCp	1.99	1.86	1.71	1.54	1.73	1.9	1.59	1.55	1.49	1.38	1.27	1.29	1.44	1.55	1.37
	NACp	1.84	1.82	1.71	1.68	1.75	2	1.77	1.71	1.65	1.61	1.51	1.51	1.64	1.75	1.62
	CSE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	NPCc	1.96	1.95	1.74	1.56	1.79	2.03	1.69	1.64	1.56	1.45	1.32	1.34	1.54	1.69	1.45
	NACc	1.73	1.71	1.59	1.47	1.64	1.82	1.55	1.52	1.46	1.39	1.29	1.3	1.47	1.6	1.41
	%CSE	23.05	24.26	17.48	18.02	19.38	23.02	20.91	19.45	16.38	11.62	11.69	14.08	15.93	-15.9	16.13
CANADA	NPCc	1.36	1.35	1.24	1.24	1.34	1.33	1.29	1.26	1.21	1.13	1.13	1.16	1.19	1.19	1.19
	NACc	1.3	1.32	1.21	1.22	1.24	1.3	1.26	1.24	1.2	1.13	1.13	1.16	1.19	1.19	1.19
	%PSE	36.91	35.84	27.71	26.61	35.49	34.77	28.63	24.41	18.25	18.38	15.95	13.93	16.85	17.4	19.5
	NPCp	1.51	1.48	1.28	1.28	1.45	1.35	1.3	1.26	1.2	1.11	1.12	1.15	1.15	1.15	1.16
	NACp	1.58	1.56	1.38	1.36	1.55	1.53	1.4	1.32	1.22	1.23	1.19	1.16	1.2	1.21	1.24
	%CSE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

USA	%PSE	29.44	27.01	19.6	17.53	19.92	18.58	18.16	19.49	16.47	11.32	13.63	14.06	22.67	25.02	21.94	
	NPCp	1.28	1.25	1.13	1.11	1.16	1.14	1.14	1.16	1.13	1.07	1.09	1.09	1.19	1.21	1.17	
	NACp	1.42	1.37	1.24	1.21	1.25	1.23	1.22	1.24	1.2	1.13	1.16	1.16	1.29	1.33	1.28	
	%CSE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	NPCc	1.24	1.21	1.11	1.11	1.15	1.13	1.13	1.15	1.13	1.08	1.1	1.1	1.17	1.16	1.11	
	NACc	1.12	1.11	1.02	1.02	1.04	1.01	1	1.01	0.99	0.95	0.97	0.97	1.04	1.03	0.98	
JAPAN	%PSE	67.07	67.28	65.5	60.19	57.2	57.31	63.79	63.41	65.56	65.72	61.75	57.62	61.71	64.01	64.06	
	NPCp	2.92	2.92	2.76	2.53	2.35	2.36	2.81	2.79	3	2.99	2.64	2.43	2.73	2.91	2.97	
	NACp	3.04	3.06	2.9	2.51	2.34	2.34	2.76	2.73	2.9	2.92	2.61	2.36	2.61	2.78	2.78	
	%CSE	-60.8	59.55	56.35	51.87	47.48	47.83	52.67	51.87	51.99	52.43	49.67	47.49	52.49	54.44	53.69	
	NPCc	2.58	2.49	2.3	2.09	1.91	1.93	2.12	2.09	2.09	2.11	1.99	1.91	2.11	2.2	2.17	
	NACc	2.55	2.47	2.29	2.08	1.9	1.92	2.11	2.08	2.08	2.1	1.99	1.9	2.11	2.19	2.16	

Source: OECD Agricultural policies in OECD countries: Monitoring and Evaluation 2001.

TABLE A3

Use of Total Aggregate Measurement of Support (AMS) commitments by Member, 1995-99 (per cent) source: www.wto.org

Member	1995	1996	1997	1998	1999
Argentina	144	100			
Australia	27	26	25	23	
Brazil	28	35	30		
Bulgaria	n.r.	n.r.			
Canada	15	12			
Colombia	15	1	4		
Costa Rica	0	0	0		
Cyprus	63	62	45	39	
Czech Republic	7	11	7	7	
EC	64	67			
Hungary	51				
Iceland	79	71	74	178	
Israel	72	79	83		
Japan	73	72	71		
Jordan	n.r.	n.r.	n.r.	n.r.	n.r.
Korea	95	91	95	80	
Mexico	5				
Morocco	12	32	12		
New Zealand	0	0	0	0	
Norway	71	79	82	88	
Papua New Guinea	n.r.				
Poland	6	6	8	8	
Slovak Republic	58	59	73	70	

Slovenia	94	96	99	98	
South Africa	67	82	97		
Switzerland-Liecht	83	74	72	71	
Thailand	72	60	79	78	
Tunisia	87	77	81	94	
United States	27	26	29		
Venezuela	42	26	36		

The figures in this table represent notified Current Total AMSs as a percentage of the Total AMS commitment levels for the respective implementation years. With respect to Argentina's percentage figure in 1995 see G/AG/N/ARG/4 and WT/Let/292. With respect to Iceland's percentage figure in 1998 see G/AG/N/ISL/14.

(ii) Commitment levels relate only to export subsidy commitments for which a notification has been received for the year in question. A comparison of notifications received (zero and non-zero) with the information in Table 2 shows the number of notifications outstanding for each product or group of products.

Table A4

Export subsidy use by Member, 1995-99 (per cent)

source: www.wto.org

Notes: (i) For each implementation year, the three columns for budgetary outlay and volume commitments, respectively, contain the following information:

Column 1 – Simple average use of export subsidy commitment levels across all relevant product groups in per cent (excluding zero-use notifications); **Column 2** – Number of non zero-use notifications included in the simple average calculation and **Column 3** – Number of zero-use notifications.

(ii) The information for each Member is based on the notifications for all relevant product groups.

Member	1995						1996						1997						1998						1999											
	Budgetary outlay commitments			Volume commitments			Budgetary outlay commitments			Volume commitments			Budgetary outlay commitments			Volume commitments			Budgetary outlay commitments			Volume commitments			Budgetary outlay commitments			Volume commitments								
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
Australia	00	0	5	00	0	6	00	0	5	00	0	6	00	0	5	00	0	6	00	0	5	00	0	6	00	0	5	00	0	6	00	0	5	00	0	6
Brazil	00	0	16	00	0	16	00	0	16	00	0	16	00	0	16	00	0	16	00	0	16	00	0	16	00	0	16	00	0	16	00	0	16	00	0	16
Bulgaria	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.			
Canada	58	2	9	58	2	8	8	2	9	5	2	8	00	0	11	00	0	10	00	0	11	00	0	10	00	0	11	00	0	10	00	0	11			
Colombia	15	11	7	59	11	7	20	11	7	78	11	7	17	10	8	125	10	8	22	9	9	152	10	8												
Cyprus	164	3	6	86	3	6	50	4	5	44	4	5	46	4		129	4		75	3		89	3													
Czech Republic	28	2	14	51	2	14	32	2	14	34	2	14	38	4	12	34	4	12	38	4	12	33	4	12												
European Communities	54	19	1	65	18	1	61	19	1	85	18	1	51	18	2	92	17	2	69	17	3	91	16	3												
Hungary	58	13	3	23	13	3	31	11	5	22	11	5	20	9	7	18	9	7	73	8	8	21	8	8												
Iceland	26	1	1	61	1	1	4	1	1	10	1	1	1	1	1	1	1	1																		
Indonesia	00	0	1	00	0	1	00	0	1	00	0	1	00	0	1	00	0	1	00	0	1	00	0	1	00	0	1	00	0	1	00	0	1			
Israel	44	4	2	69	4	2	31	4	2	63	4	2	13	4	2	20	4	2	9	1	5	15	1	5	13	1	5	23	1	5						
Mexico	00	0	5	00	0	5																														
New Zealand	0	0	1	n.r.	n.r.	n.r.	00	0	1	n.r.	n.r.	n.r.	00	0	1	n.r.	n.r.	n.r.	00	0	1	n.r.	n.r.	n.r.	00	0	1	n.r.	n.r.	n.r.	00	0	1			
Norway	68	9	2	69	8	2	44	7	4	45	8	4	83	7	4	94	6	4	65	7	1	79	6	1												
Panama	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.				n.r.	n.r.	n.r.				n.r.	n.r.	n.r.				n.r.	n.r.	n.r.						
Poland	0.2	1	16	1	1	15	36	1	16	118	1	15	21	1	16	149	1	15	21	2	15	63	2	14												
Romania	00	0	13	00	0	13	00	0	13	00	0	13	00	0	13	00	0	13																		
Slovak Republic	12	6	11	32	6	11	23	5	12	28	5	12	32	5	12	58	5	12	29	6	11	56	6	11												
South Africa	15	56	6	15	56	6	51	23	39	52	23	39	35	13	49	45	13	49	28	1	61	3	1	61												
Switzerland-Liechten.	70	5	0	81	4	0	73	3		81	2		45	6	0	34	4	0	66	5	0	56	4	0												
Turkey	47	20	24	71	20	24	92	5	39	89	5	39	71	16	26	72	18	26	66	15	29	70	15	29												
Uruguay	00	0	3	00	0	3	00	0	3	00	0	3	00	0	3	00	0	3	00	0	3	00	0	3												
United States	22	4	9	35	8	6	56	4	9	50	4	9	50	6		70	5	8	74	5		73	5	8												
Venezuela	19	54	18	37	54	18	49	44	27	29	44	27	11	36	36	25	36	36																		

TABLE A5**REGRESSION MODELS****MODEL 1****ANOVA**

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1,092	3	,364	22,224	,000
Residual	1,753	107	1,638E-02		
Total	2,846	110			

a Predictors: (Constant), LOGSUF, LOGGNP, LOGSELF

b Dependent Variable: COMLOG

MODEL 2**ANOVA**

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	,748	6	,125	7,477	,000
Residual	,600	36	1,667E-02		
Total	1,348	42			

MODEL 3**ANOVA**

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1,101	4	,275	16,719	,000
Residual	1,745	106	1,646E-02		
Total	2,846	110			

a Predictors: (Constant), percent of average daily calorie intake in the country, LOGSUF, LOGGNP, LOGSELF

b Dependent Variable: COMLOG

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