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ECONOMIC POWER CYCLES AND COOPERATION AMONG NATION-STATES

By

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Maristel

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ABSTRACT

ECONOMIC POWER CYCLES AND COOPERATION AMONG STATES

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Through an exploration of the political economy of trade, this study examines the causes of cooperative and noncooperative behavior between nation-states. It will be argued that either a purely international- or domestic-oriented analysis of state behavior towards or away from cooperation entails severe drawbacks. Such reductionism fails to explore fully the links between internal and external influences on policy. Rather, it is posited that the policy preferences of states for either protection or free trade are derived from both the varying international and domestic context and the degree of vulnerability of their economy. In this regard, a cooperative model, grounded on a state's power position and dependence, is linked to both systemic- and domestic-level theories. The former models a state's foreign economic policy as a function of its economic power within the international hierarchical structure. The latter explains preferences for (and against) liberalism through the sectoral make-up and international integration of a state. In other

words, by considering the ways in which international power position and economic linkages could affect the utility of various economic agents (individuals, groups, or nation-states) responsible for trade decisions, this study seeks to move beyond a unitary causal level of analysis. Research should employ variables at both the international and domestic levels. This is the only valid way to account for the amount of openness (or closure) in a state's international trade policy.

CHAPTER I

INTRODUCTION

Overview Of The Study

Over the past two decades research in international and comparative political economy has converged on the issue of cooperation -- most notably, free trade -- among nation-states.[1] The specific task that faces political economists is to explain why protectionist policies continue to exist in spite of agreement that an open market system is more efficient.

Through an exploration of the political economy of trade, this study examines the causes of cooperative and noncooperative behavior between nation-states.[2] It will be argued that either a purely international- or domestic-

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[1]Prominent examples include, Grieco (1990), Young (1989), Taylor (1987), Gowa (1986), Snidal (1985a, 1985b), Axelrod (1984), Lipson (1984), Wagner (1983), and Jervis (1978).

[2]Neoclassical theory argues that, the greater the degree of openness in the international trading system, the greater the level of aggregate economic income. In the pursuit of self-interest, however, particular states may be able to improve their situations through protectionism. Hence, the realization of mutual benefits requires states to coordinate their trading policies. For this reason, cooperation is defined here as open markets and unrestricted exchange between nations, i.e., a policy of free trade.

oriented analysis of state behavior towards or away from cooperation entails severe drawbacks. Such reductionism fails to explore fully the links between internal and external influences on policy. Rather, it is posited that the policy preferences of states for either protection or free trade are derived from both the varying international and domestic context and the degree of vulnerability of their economy. In this regard, a cooperative model, grounded on a state's power position and dependence, is linked to both systemic- and domestic-level theories. The former models a state's foreign economic policy as a function of its economic power within the international hierarchical structure. The latter explains preferences for (and against) liberalism through the sectoral make-up and international integration of a state. In other words, by considering the ways in which international power position and economic linkages could affect the utility of various economic agents (individuals, groups, or nation-states) responsible for trade decisions, this study seeks to move beyond a unitary causal level of analysis. Research should employ variables at both the international and domestic levels. This is the only valid way to account for the amount of openness (or closure) in a state's international trade policy.

This study draws on literature concerning the influence of cyclical-structural patterns in the concentration of capabilities and dependence. It is contended that the

determination of trade policy preference (and hence the strategies of foreign economic policy that states pursue) should be examined at the dyadic level. The choice of liberalization or protectionism depends upon both a state's capacity to alter the policy preference of its trading partner and its credibility to threaten (promise) to impose (lower) barriers.

There are three basic components within this enterprise. The first is an argument that the role and influence of states depend on their varying economic power position within the international economic structure. Moreover, in the present era of the "global" economy, strategies of foreign economic policy depend on the interplay of domestic and international forces. For that reason the second part of this inquiry consists of an analysis of the interactions of competing domestic groups -- free traders versus protectionists -- leading up to the ultimate policy adopted by a state. A simple, but effectively more comprehensive, game-theoretic model of international cooperation is developed.[3] The model

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[3]Although the terms analogy, model and theory sometimes are used interchangeably, distinguishing among them illuminates how the game-theoretic approach is related to empirical evidence. Briefly, a model's key distinguishing characteristic is a formal logic that is both deductive and internal, as opposed to the inductive and external logic of an analogy. A theory, on the other hand, contains a deductive structure plus an interpretation of fundamental assumptions and theoretical constructs. Thus, a model stands at the midpoint between an analogy and a theory (Snidal, 1985c:29-36). Three additional requirements are expected of a model: First, we would demand that it offer a highly accurate

begins with the assumption that the twin goals of power and wealth are inextricably linked in the presumed utility functions of rational actors (at both the international and state levels). It predicts both individual behavior and aggregate outcomes. The trade model is presented in the form of a few simple game structures, which help to isolate a set of outcomes. By implication, the kinds of processes that lead to those outcomes also are explained -- by highlighting the bargaining incentives created by different types of games. Third among the basic components of this project is the creation of a pooled time-series regression that examine bilateral trade flows. It is used to test the model. The principal conclusion of this analysis is anticipated to be that variation in national trade policy does not generally derive from divergent <u>interests</u> -- the pursuit of power and wealth -- but rather from differing <u>perspectives</u> on the benefits gained from the cooperative policy of openness. In other words, contrary to neoclassical economics, free trade may not be the optimal policy for every state under all circumstances.

The central task of this dissertation is to develop (and test) an integrated analytical framework that can help to

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description of the phenomena under consideration. Second, it should have the capacity to explain the relationships among the phenomena under investigation. (Here our concern is not so much with accuracy of description as with validity of explanation.) Third, and finally, we legitimately may demand that any analytical model offer the promise of reliable prediction (Singer, 1961:79).

explain and predict state (cooperative) behavior in the area of trade. If developed successfully it will enable a variety of trade relations to be set out in a common framework. In general, this should help to answer the interrelated questions of why trade cooperation (i.e., liberalization) occurs, how it is sustained, and what processes characterize evolution toward that outcome. In particular, this study should help to connect the various forms of observed liberalization with the economic and political environment in which they occur, i.e., interpret emerging changes in relation to the rules and norms that govern international economic relations.

Without answers to these fundamental questions, research on cooperation may be of little use in understanding the political changes now taking place in the international system. The remainder of this chapter is divided into five sections: First, the problem of international cooperation, framed within the neorealist and neoliberal debate, is addressed and delineated. Second, the significance of the study, taking into account both the relevance of the inquiry and contribution of knowledge, is discussed. In the third section the research approach and methodology to be used in the study is presented. The fourth section addresses the study's limitation and key assumption. Finally, the chapter concludes with a brief description of the plan of the dissertation.

The Problem: International Relations And Cooperation

The issue of cooperation divides two of the most influential contemporary approaches to international relations theory: neorealism (or structural realism) and neoliberal institutionalism. Neorealism argues that, due to the anarchic nature of the international system, cooperation among nations should be very difficult to attain, short-lived if achieved, and defensive in orientation (Waltz 1979; Grieco 1990; Mearsheimer 1990). The reason is that states worry that a potential adversary might gain relatively more under an agreement, leading them to eschew cooperation even when it would provide absolute gains to all parties. In other words, the concerns for relative gains are induced by the constraints that promote an opportunity for each state to exploit a relative gain to its own advantage and to the detriment of others (Powell, 1991:1315). Hence, realism views noncooperation as an equilibrium consequences of rational behavior under international anarchy.

In contrast, neoliberal institutionalism perceives that in addition to anarchy, economic interdependence -- whereby states are open to one another and are engaged in a large volume of economic transactions across national borders -- is also an important characteristic of the contemporary international political economy. Thus, liberal institutionalism suggests that cooperation is likely to emerge between interdependent states that benefit greatly from joint

actions and suffer seriously from mutual noncooperation. Indeed, since the end of the Second World War, extensive cooperation has persisted among nation-states, in the form of the Bretton Woods monetary system (through the early 1970s), the GATT trading system, the European Community and the OPEC oil regime, to name a few examples.[4]

To account for these cooperative ventures, political scientists have developed several theories. Within the neorealist school these include hegemonic stability (Gilpin 1975, 1981; Krasner 1976; Lake 1988) and game-theoretic solutions to cooperation under anarchy (Axelrod 1984; Oye 1985). Neoliberals counter with international regime theory (Krasner 1982; Keohane 1984) and their separate version of hegemonic stability (leadership) theory (Kindleberger 1973; Keohane 1980).

Before delineating their differing views about the prospects for international cooperation, it might be helpful to point out that neorealists and neoliberals do agree on several matters. First, both sides of the debate view international politics as anarchical. Second, each agrees that the institutional structure and cooperation found in international affairs are endogenous -- products of self-enforcing action on the part of a system's constituent parts.

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[4]GATT refers to the General Agreement on Tariffs and Trade while OPEC refers to the Organization of the Petroleum Exporting Countries.

Third, both recognize nation-states as the primary constituents of international systems. Finally, each side acknowledges the need to abide by the assumption that nation-states are strategic, goal-directed actors (Niou and Ordeshook, 1991:483).

Neorealism has been the dominant strain and encompasses four assumptions. First, the international structure is the principal force shaping the motives and actions of states. States are conceived of as unit-level actors in an international system in which systemic factors predominate over unit-level features. Neorealism deliberately disregards the internal politics of states, arguing that what matters most is not their characteristics, but rather their "positional relationship" to each other.

Second, states are the primary actors of world politics. They function as autonomous, sovereign agents in a global system that lacks any supreme governing authority and hence is anarchial in character. Their pursuit of power and security, their rivalries and conflicts, their alliances and interactions, are what international relations is all about. Third, states behave as unitary-rational agents whose behavior derives primarily from the linked imperative of power and security. As such, in the neorealist perspective, states are fundamentally motivated by relative gains because their major concerns are a relative measure such as power (Morgenthau 1967).

Fourth, and finally, though neorealism does not deny that there are other types of international actors -- international organizations, transnational corporations, individual leaders, social groups and classes -- it insists that these are subordinate to states. From this perspective, regimes are merely formal representations of the underlying power relationships that created them and keep them functioning. In this way regimes themselves are assumed to play a minimal role in constraining or compelling state behavior. For this reason, international institutions affect the prospects for cooperation only marginally.

Using the assumption that states are unitary, rational actors with invariant utility functions, neorealist scholars have been able to develop economical and powerful propositions about a state's trade preferences, i.e., the conditions under which cooperation is likely to emerge solely in terms of the nature of the international system.[5] The parsimonious explanations provided by system-level analysis, however, can be self-limiting in accounting for the different strategies that states actually pursue. Neoliberals question the four axioms that make up neorealism's world view for several

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[5]For examples of neorealist-oriented analysis of international cooperation, refer to Funabashi (1989), Young (1989), Feldstein (1988), Frankel and Rockett (1988), Conyebeare (1987), Putnam and Bayne (1987), Taylor (1987), Buiter and Martson (1985), Snidal (1985a, 1985b), Axelrod (1984), Keohane (1984), Lipson (1984), Wagner (1983), Jervis (1978).

reasons.

First, parsimonious, systemic explanations emphasize that the interest and behavior of states is conditioned primarily by the structure of the international political economy, e.g., anarchic, hegemonic, oligarchic, etc. Neorealists believe that it is possible to theorize about international relations without studying specific states whose unit-level features and nature are unimportant to the larger structural theory and therefore not essential to examine. However, since trade policy has a substantial domestic content, it is unlikely to be explained solely in terms of systemic factors. Indeed, as Haggard and Simmons (1987:501-2) caution, "if similarly situated states tend to respond differently to international constraints, then the primacy of structural theory is called into question." Consequently, because the international power structure alone is an imperfect predictor of national policies, neoliberals contend that explanations should take internal processes into account as a means of constructing bridges between international and domestic politics.

Second, Keohane (1986:183) notes that "sophisticated contemporary thinkers in the Realist tradition...understand that interests cannot be derived...from the external [power] position of states..." Despite this acknowledgement, the ambiguous relationship between power and interests remains a central conundrum of realist inquiry because its proponents have generally made little effort to theorize about its

origins, development, historical persistence, or probable future evolution. Such questions are usually seen as belonging to the realm of domestic politics and therefore consciously are excluded or neglected. Consequently, definition of state interests, and how these interests change, continues to be a liability within the realist framework (Nye, 1988:238).

Third, and closely related to the preceding point, neoliberals question neorealism's assumption that states are coherent, unitary, rational actors seeking to maximize income through trade. The main problem here is not so much the rationality assumption, but the presumption of unitary actors playing trade games. This perspective is misleading at best, because government policy choices typically are products of politically-mediated, coalitional bargaining. In fact, the process of building and sustaining domestic coalitions limits the capacity of modern states to devise and execute sophisticated strategies that may require plausible threats or commitments to a given policy. In addition, Cohen (1990) points out that governments are concern about more than income maximization. "At a minimum, they also care about the preservation of their political sovereignty and territorial integrity -- in short, their national security. At a maximum, there may be a whole range of additional values that they pursue, covering everything from domestic distributional objectives to the international prestige of their national

language and culture" (Cohen, 1990:272).

Fourth, and finally, neoliberals reject realism's pessimism about the role that international institutions can play in world politics. Keohane (1984) points out that neorealism's spare, structural definition of a system excludes international economic processes and institutions that also can have strong effects on a state's behavior. In the short-term, states may be the dominant units and play similar functional role, but over long periods other units may grow in importance and roles can alter. For example, multinational corporations and transgovernmental coalitions increasingly have played a more central role in the area of international political economy. One need look no further than OPEC to find an example of an international institution that had a profound effect on international affairs. Moreover, neoliberal scholars argue that once regimes are in place and their frameworks are understood, regimes constrain and condition the behavior of states toward one another, and continue to do so despite shifts in the distribution of capabilities; indeed even if the conditions which brought the regime about in the first place disappear.

As reviewed above, structural realism and neoliberal institutionalism advance substantially different assessments about the prospects for international cooperation. The difference hinges primarily on the differing level of analysis to explain state preferences postulated by the two approaches.

Neorealism has dominated the analysis of international relations theory, both as a normative model of rational choice and a descriptive model of state behavior, for decades. But it is rather weak with regard to explanation and prediction. Empirical anomalies led to the development of neoliberalism, which takes into account the impact of domestic society, interdependence, and international institutions in addition to power position. In fact, the more sophisticated variants of neoliberal theory provide a useful supplement to neorealism by directing attention to the ways in which domestic and international factors interact to change states' definitions of their interests (Nye, 1988:239).

Significance Of The Study

Relevance Of The Inquiry

Theory rarely keeps pace with history: serious lags develop and accumulate, but they remain more or less unnoticed until some shattering event (in this case the disintegration of the Soviet "Empire") forces recognition of the fact that theory is out of touch with reality. A period of profound intellectual questioning follows, in which the reign of complacency and dogmatism comes to an end (Kuhn 1962). True to Hegel's maxim that events rather than intellectuals force reorientation of theoretical perspectives, we stand at the beginning of what appears to be a new international system.

This sense of newness motivates a wish to make the

present system work more than a desire to return to some previous version. Consider the great and probably irreversible alterations in world affairs over the last four decades, manifested by the economic miracles of Japan and Western Europe, the rise of Newly Industrializing Countries (NICs), rapidly shifting patterns of international comparative advantage, and the enormous growth of different forms of international interdependence and transnational relations. These processes are punctuated by the collapse of the Soviet Empire, which brings forth accelerating change in the international security and economic systems and illuminates the weakness of established paradigms. From the relatively high level of certainty (at least with regard to the world agenda) that characterized bipolarity, the international system has become a more problematic, newly forming, multipolar milieu.

In addition to being politically relevant, the development of trade policy is interesting theoretically. The formulation of a nation's trade policy involves a struggle among domestic groups, the national government, and foreign governments. The complex interactions of these groups provide insights into the relationship between domestic and international politics. Furthermore, this struggle brings to light connections between politics and economics. It shows how the existing distribution of power and degree of interdependence among actors influence their ability to obtain

desired economic policies and thereby affects the distribution of wealth. By illuminating relationships not only between domestic and international forces but also between political and economic ones, analysis of trade policy-making can advance our knowledge of the dynamics of political economy.

Contributions To Knowledge

This study seeks to contribute to the study of IPE in three ways. First, within the subfield of IPE, consider the division among scholars over the relationship between the international and domestic political economies:

> Disagreements have arisen over how best to explain the sources of the foreign economic policies of individual states, or of nation-states in general. At one end of the international-domestic spectrum, some scholars believe that national foreign economic policies are essentially determined by the global environment. The actual room for national maneuvering of even the most powerful states is limited by the inherent nature of the international system. At the other end of the spectrum are scholars who see foreign economic policies primarily as the outgrowth of national, domestic-level political and economic processes; for them, the international system exists only as a jumble of independent nation-states, each with its own political and economic peculiarities (Frieden and Lake, 1991:11-12).

A selective focus on either the primacy of foreign policy and the "internalization" of international effects or on the primacy of domestic politics and the "externalization" of domestic conditions is mistaken. Such a selective emphasis overlooks the fact that the main purpose of all strategies of foreign economic policy is to make domestic politics

compatible with the international political economy. Since it captures both domestic and international inputs, the cyclical-structural model developed in this study is more compelling. It permits a penetrating analysis of the major constraints on cooperation operating at each level.

Second, this analysis may shed new light on the specific properties of domestic processes that underlie foreign policy making. According to Nye (1988:238), "one of the thought-provoking questions in international relations is how states learn. How do national interests become defined, and how do those definitions change?" These questions reveal a weakness in game theory cast at the systemic level:

> Can cooperation be learned? Realist [systemic] theories maintain that states learn by responding to structural changes in their environment; to put it in game-theory terms, they adjust their behavior to changes in the payoff matrix. When mutual interests or a long shadow of the future suggest that rewards for cooperation are great, states may adopt new strategies in pursuit of their interests. In that case, Realists admit that cooperation can be learned (Nye, 1988:238).

This explanation of changing state behavior is not adequate: it still does not directly address <u>how</u> the interests of states are conceived or redefined.

Moreover, since many unit-level factors, such as density of interactions, demographic trends, resource constraints, national ideologies, and political systems, can affect systemic outcomes, a theory of interests defined solely in terms of power is impoverished. Interactions among states and the shifts in relative capabilities combine with the domestic

politics of states to produce outcomes in an international system. This process, in turn, transforms national interests. Such connections clearly need to be addressed by a model of cooperation (Nye, 1988:238).

Third, and finally, this study suggests that, in certain circumstances, cooperation may be even more difficult to achieve than previously assumed. More specifically, some of the agreements that offer equal absolute gains cannot be sustained in equilibrium. The reason is that domestic forces prefer noncooperation (Powell, 1991:1305). A case in point is agricultural trade liberalization. According to data compiled by Grieco, the net winners would have been Japan (overwhelmingly) and the European Community (EC) (marginally). Yet the EC and Japan vigorously resisted the United States on the elimination of agricultural export subsidies during the 1980s (Grieco, 1990:180). The explanation for this outcome lies at the domestic level: because of their privileged political position, it would appear that losses for agricultural producers weighed more heavily than gains to consumers.

Taken separately or as a whole, the preceding three points should make it perfectly clear that systemic-level explanations of international relations have limited explanatory power. In sum, to deal with the complexity of international cooperation, a viable framework must integrate unit- and systemic-level elements.

Research Approach And Methodology

The model will be filled out with game-theoretic analysis. Game theory is a useful way to model the complexity of the real world. Setting out the "payoffs" to different players in the form of ordinally preferred outcomes, specified in the first instance by the pure theory of trade, serves several useful purposes in examining international cooperation. To begin, game theory parsimoniously delineates the central strategic choices available to states. Thus it helps to organize information about policy measures. It also provides the ability to discriminate between alternative interpretations of the motives, goals, or policies of a state's central decision-making process. Finally, insofar as outcomes vary across policies, and choices can be observed, game theory may supply clues about the different motives underlying actions (Conyebeare, 1987:11-12).

Moreover, through the use of multivariate regression, exploratory empirical analysis of the relation between power concentration, interdependence and openness of trade flows can be presented. This study will include an initial quantitative test of the influence that both international and domestic features of the international system have on trade. The results are expected to indicate that the distribution of power strongly affects international commerce, but that the nature of the relationship also is much different than is commonly thought.

Limitations And Key Assumptions

International trading relations are viewed as an internal-external bargaining process in which the parties to the external bargain, i.e., nations, are not unitary actors. Instead they are composed of domestic factions that share power but may or may not have common interests. Hence domestic factions negotiate internally over the positions they will adopt in the external negotiation.

The centerpiece of the model is recognition that a state's power position (defined as its competitive advantage based on its current stage of economic development and size) and degree of interdependence will vary substantially across economic sectors. Thus a state's trade policy preferences reflect its comparative advantage within particular economic sectors (Lake 1988; Milner 1988b).

Cohen (1990:262) notes that "the mercantilist element of trade [should not be treated as]...an aberrant exogenous variable to be deplored but, rather, [as] a central and systematic endogenous factor to be explained." Hence, if the role of power positions and interdependence as determinants of trade preferences are acceptable components in the explanation of trade policy, then protection and free trade as legitimate and effective instruments of national policy also must be recognized. This model clarifies the link, under conditions of anarchy, between domestic and international politics on the one hand and preferences of states related to cooperation on

the other. In addition, this study attempts to stimulate thinking about how domestic demands and constraints inhibit and/or encourage the willingness of states to work together. Thus the problem of cooperation amidst anarchy is reformulated comprehensively.

The Plan Of The Dissertation

This dissertation is divided into six chapters. Chapter I has introduced the problem to be investigated, central questions, importance of the topic, research approach, limitations and key assumptions, and contribution to be made by the research. Chapter II prepares the groundwork for analysis of international cooperation by examining the key theoretical approaches -- i.e., internationally-oriented theories, domestic level theories, and dyadic explanations. Thus it both critiques and modifies the neorealist perspective on international relations. Chapter III presents the main argument, which is embodied in a theoretical model that provides a multi-level perspective on international cooperation. It also suggests several hypotheses about the outcomes of international trade. The main conclusion of Chapter III is that a state's preference for openness versus closure of the international trading system follows a cyclical pattern that takes into account a state's position and interdependence within the international hierarchy. In chapter IV a game-theoretic analysis of the model. Chapter V

presents a pooled time-series regression analysis of the above-noted model. Specifically, this chapter tests the cyclical-structural approach to determine the causal relationship between a state's economic evolution and the openness of the international trading system. Chapter VI places the argument within broader debates in international and comparative political economy.

CHAPTER II

STATE OF THE ART

System, State, Dyad And Cooperation Reconsidered

International economic cooperation has been approached in a variety of theoretical and analytical ways. Based on orientation toward cause and effect, these strategies can be placed into three categories: (1) international, (2) domestic, and (3) dyadic. While each of these perspectives is well-represented in the literature, and has been instrumental in guiding the research program on international political economy, only material that most directly informs theoretical specification and measurement of the effects of power and (inter)dependence upon cooperation will be examined. Moreover, the three fundamental strategies should not be seen as competitive but, instead, as surveying the subject in various contexts and levels of analysis.

The remainder of the chapter is divided into three sections, which survey the main theories and empirical analyses of international cooperation most relevant on the analysis of trade policy. This literature review is organized as follows: The first section investigates explanations of international cooperation that rely exclusively upon the

structure of the international system. Section two focuses on the internal structural attributes and processes of the nation-state that seem to be associated with a liberal international economic order. The third section examines the effect of dyadic relations on cooperative (open) trade arrangement. The merits and deficiencies in each section of theorizing are brought out. The chapter concludes with some specific directives to guide model building.

Internationally-Oriented Theories

Systemic explanations locate the sources of state behavior and prospects for international cooperation at the level of the international system. Proponents of this approach argue that national policies cannot be inferred from intentions because the structure of the international system tends to mold state behavior "toward a common quality of outcomes even though the efforts and aims of agents and agencies vary" (Waltz, 1979:74). Rather, the causes of systemic openness or closure are to be found primarily in the processes and dynamics between forces that operate at the global level -- i.e., on the historical fluctuations in the concentration of power as reflected in the rise and decline of nation-states and the strengthening or breakdown in cooperation that attends these phenomena. At this level, it is not very useful to ask under what conditions a state would participate in a liberal order. Rather, a more illuminating

question for this level would be: Under what conditions can a significant change in the openness and stability of the international economic system be observed? Within the range of these historical-structural strategies, hegemonic stability, international economic structures, relative power cycle and economic exchange theories are the four most pertinent research traditions guiding this study.

Hegemonic Stability Theory

The central propositions of the theory of hegemonic stability form the basis for a powerful and parsimonious explanation of foreign economic policy in individual countries over time.[1] For this reason, hegemonic stability theory has probably received the most scholarly attention for explaining patterns of economic relations among states and has become the most preeminent approach in attempting to account for policy choices and changes in international trade.

The basic contention of the hegemonic stability thesis is that the international distribution of power -- in terms of economic (and implicitly, political) capabilities -- within the international system is the primary determinant of the economic order. Moreover, the thesis suggests that imbalances in power are conducive to cooperation. To elaborate,

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[1]See especially, Lake (1993), Webb and Krasner (1989) and Krasner (1976). For comprehensive critiques see Frederick (1987), Snidal (1985), Stein (1984), and McKeown (1986).

proponents claim that a peculiar type of international structure exists when one of the states within the system acquires capabilities that are vastly superior to its peers. This powerful state assumes the status of a hegemon and is allotted a greater role and influence in organizing the system. Following this line of reasoning, patterns of international economic openness and stability, and the structurally derived interest and behavior of states, are held to be a function of the demands made by the hegemon. It further is contended that, once secure in its favored position, a hegemon will impose and maintain an open trading order on the international system.[2] In both the benign and malignant view in which the hegemon provides or coerces the establishment of a liberal order, the underlying motive of the hegemon is the benefits it derives from doing so. As long as the hegemon remains dominant, the international system will be open and stable, resulting in higher levels of trade than otherwise would have existed.

Since its first formulation, most of the theoretical and empirical research that utilizes hegemonic stability theory

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[2]Maintenance of an open system requires the hegemon to perform certain functions: It must take the lead in organizing trade liberalization and in keeping its market open in times of recession; it must manage the international monetary system, supplying the international currency, providing liquidity to the system (especially in times of crisis), and managing the structure of exchange rates; and finally, it must supply investment capital and otherwise encourage development in the peripheral areas of the system.

can be separated into two analytically distinct groups. This division is based on the perceived role of the hegemon. The first variant, associated with Kindleberger (1973), focuses on the production of international stability and claims that a single leader is needed for establishment of a liberal international trading system in order to guarantee that cheaters will be punished, free riding will be detected and penalized, and that costs for the maintenance of the system are distributed proportionately. The argument is based on the assumption that a liberal international economic order is in the best interest of both the hegemon and other participating states, because that system provides a collective good that allows all participants to enjoy absolute gains, such as economic growth, higher levels of satisfaction, etc.[3] Despite the fact that they all would benefit from international economic liberalization and stability, this "collective goods version" contends that states are unable to achieve this common interest (in the absence of a hegemon) because of the institutional obstacles to the provision of collective goods. In other words, all countries benefit regardless of whether they contribute to its production.

Leadership, according to Kindleberger, is exercised when one actor persuades others to follow a given course of action

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[3]For literature linking collective goods with international cooperation see Snidal (1979), Sandler, Loehr and Cauley (1978), Ruggie (1972), Russett and Sullivan (1971), and Olson and Zeckhauser (1966).

which might not be in their short-run interest if they were acting independently. Even though Kindleberger views a successful hegemon as "altruistic," he also acknowledges that a true (good) leader may have to use strong-arm tactics such as arm-twisting and bribery; otherwise, an adequate amount of public goods will not be produced. Thus this variant of the theory emphasizes the economic leadership of the hegemon as it creates and/or promotes the type of international economic conditions that lead states to support a liberal trading order rather than isolation or autarky.[4] In short, the economic role of a hegemon is to provide leadership by making economic cooperation the policy of choice among self-interested states.

The second variant of hegemonic stability scholarship draws principally from the works of Gilpin (1975, 1977) and Krasner (1976). This strand emphasizes the overriding concern of the implications of international economic interactions for state power and national security. Whereas the economic version argues that states are motivated to follow the lead of

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[4]An alternative (institutionalist) version of this argument posits that once established by a hegemon, a liberal trading order, by serving the self-interest of states, "assume a life of [its] own." Thus they will continue to cooperate even when the hegemon is no longer willing or able to provide leadership (Keohane 1984: 184). This regime-based argument concerning international cooperation does not entirely preclude the hegemonic stability thesis, i.e., that a hegemon can maintain international economic stability. Rather, it supplements that viewpoint by claiming that cooperation is possible even beyond the decline of a hegemon, because of the regime established during the period of leadership. See, for example, Keohane and Nye (1989), Haggard and Simmons (1987), Keohane (1984), Krasner (1982), Young (1980).

the reigning hegemon because of the absolute gains that they receive, the political version claims more concern with relative gains. After all, the gains made by states participating in the liberal system also are the most important source of state power. Since international trade does not distribute economic gains equally, states are reluctant to engage in trade for fear that it will enhance the international political power of their trading partners even though they could have increased their absolute welfare by participating in a more open system. In short, it is the potential long-term effects of relative gains, which cause some states to become more powerful relative to others, that lead states to avoid trade that is beneficial in absolute terms (Grieco, Powell, Snidal 1993).

This theoretical viewpoint does not assume that states have a common interest in international economic liberalization and stability. International economic openness is not stymied by collective action problems. Free trade is seen as inherently excludable, rival and, therefore, not a public good. Here, the principal political problem is <u>not</u> free riding. Instead, noncooperative behavior arise because competing states possess different structurally derived preferences over trade policies.

International Economic Structures

Couched within the systemic orientation of hegemonic

stability theory, it has been posited that the foreign economic policy of a country is determined both by the international economic structure (IES) -- defined as the number and category of states within the international economy -- and by the state's location within it (Lake, 1983:125). By concentrating more intently on state positionality, the constraints and opportunities that shape a state's trade strategy can be more closely analyzed. More specifically, a state's power or capabilities relative to other states will lead it to promote, resist, or exploit commercial exchange with its trading partners.

Gilpin (1975, 1977) defines the IES in terms of political-military power and relative efficiency, and identifies three categories of nations within the international economy: hegemonic leaders, growth nodes, and peripheral states. Briefly, peripheral states, because of their small size, are inconsequential for the stability and maintenance of the liberal economic order; growth nodes, in contrast, can emerge as challengers to the liberal regime; and finally, hegemonic leaders, owing to their extremely large size and high level of efficiency, are expected to carry the burden of establishing and maintaining a liberal order.

Kindleberger (1981) defines the IES by the single dimension of relative size, which he too divides into three categories: small, middle and large sized nation-states. Given their size, small states have no economic power and,

therefore, have no responsibility for the economic system nor any necessity to exert leadership. Middle-sized states are at that "dangerous" position of being big enough to do damage to the system, but neither large or efficient enough to stabilize it. However, since they tend to act as if they were small states, middle-sized states are extremely destabilizing to the system. Like Gilpin, for Kindleberger, only large states have both the capability and responsibility to lead the international economy (Kindleberger, 1981:249-250).

Drawing on these two studies, Lake (1983, 1984, 1988), defines the IES along two dimensions of relative size and relative productivity, formulated six categories of states that make-up the international economic structure: protectionist free riders (PFR), spoilers (SP), imperial leaders (IL), liberal free riders (LFR), supporters (SUP), and hegemonic leaders (HL).

PFRs are analogous to Gilpin's peripheral states and Kindleberger's small states. These states lack international influence and, therefore, possess little ability to affect the policies of others. PFRs will be largely indifferent to the international economy since their attention will be directed inward and focused on their own economic development (Lake, 1984:151). SPs are "middle-size" or "growth node states" of relatively low productivity. These states do affect the degree of stability and the strength of the regime through their protectionist behavior. "Consciously or unconsciously,

they may even undermine the international economy by their protectionism" (Lake, 1984:151).

HLs, because of their large relative size must bear the burden of leadership in the international economy. It is from their high relative productivity, however, that HLs derive their interest in creating or maintaining a *liberal* international economy (Lake, 1984:151-152). LFRs and SUPs possess only a moderate to strong interest in free trade. What is of primary importance to these nations is the presence of free trade abroad, which is necessary for them to reap the export advantages derived from their high relative productivity (Lake, 1984:152).

Lake's analysis goes on to consider how each dimension of the IES affects the trade strategy of individual countries. First, in the presence of a hegemon, supporters will free-ride, protecting industry at home while expanding exports abroad. The reason for this behavior is the assumption by supporters that the hegemonic leader will carry the burden of preserving their export markets while they remain free to pursue purely self-interested policies at home (Lake, 1983:124).

In an international-economic structure of bilateral (or multilateral) support -- when no hegemonic leader exists and two or more supporters are present in the international economy -- supporters because of their mutual desire to export will constrain protectionism in each other. Bilateral support

can take the form of a stable system in which protectionist policies are moderated by mutual constraints between supporters, and in which a modicum of cooperation and collective international leadership exists. Considerable potential for instability does exist, however. Any supporter may try to "cheat" on the other, or one (or more) may be unwilling to carry an equitable share of the leadership burden (Lake, 1983:124-125).

Conversely, international economic structures with only one supporter are highly unstable. When no hegemonic leader exists and only a single supporter is present, there are no constraints on protectionism within the supporter. Although it will continue to value export markets and may attempt to lead the international economy, a single supporter will lack the resources to stabilize the international economy successfully, or to create and maintain a liberal international economic regime (Lake, 1983:125).

Doran's Power Cycle Theory

Although its primary focus is on war, the analytical orientation of the Doran's power cycle is that a state's role in the system is tied to its non-linear pattern of long-term evolutionary change. This potentially is very helpful to research on cooperation. The theory views states as passing through a common, cyclical pattern of relative power, in which

they ascend, mature and then descend.[5] This pattern of rise and decline results from differing rates of international economic and political development experienced by states.[6] The reasons for such variations are multiple: different (1) size and potential for economic development and growth; (2) temporal order in industrialization; and (3) levels of productivity and efficiency (Doran, 1983:423). Moreover, although every state theoretically is subject to the full cycle of growth, maturation and decay, many states have traversed only a small section of the curve in their entire existence.[7]

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[5]The power of a state is determined by its relative capability within the international system. Capability is composed of two principal dimensions: size, indexed by gross national product, territory, armed forces, military spending, and population; and development, which includes variables such as per capita income, urbanization, and technological sophistication (Doran and Parsons, 1980:947).

[6]The periodicity (length) and amplitude (height) of the cycle may vary from state to state, but the pattern of change remains the same across states. Additionally, the cycle may be asymmetric, with the decline of state power being more rapid than the rise, or vice versa (Doran, 1983:421, 423).

[7] Curve-fitting can be very misleading in the absence of an understanding of the dynamics of the generalized movement of relative power. Consider Spain and Britain as examples. Spain ascended to a position of eminence at the end of the sixteenth century challenging England for domination of the New World only to plummet to relative oblivion shortly thereafter. Similarly, the British Empire has been diminished to a time-share arrangement with the Chinese in Hong Kong and a few other mostly symbolic manifestations. The crucial point that these examples demonstrate is that each state must be assessed in terms of its individual dynamics. Although the paths followed are the same, the length and height of ascendancy is different for these states (Doran and Parsons: 1980:947, 949).

Conceptualization of the cycle of relative power as a generalizable pattern of long-term, evolutionary change is crucial to development of the theory. Power cycle theory asserts that the ability and credibility of a state to influence international politics and to play a principal foreign policy role is determined in large part by its position on the power cycle, i.e., "a function of the dynamics of the more fundamental state cycle of relative capability" (Doran, 1983:426). Accordingly, as a nation gains in power in comparison with others, its capacity to exercise a leading role on the world stage expands; as it falls behind, its ability to influence international politics diminishes.

It also should be emphasized that the theory in question, although based on the concept of the state cycle of relative power, is in fact a purported explanation of <u>systemic</u> evolutionary change. Collectively, the evolution of the power cycles of the leading states determines the structure of the international system, including efforts toward redefinition (Doran, 1983:427). By defining the sources of state behavior in these terms, a new theoretical focus is furnished for examining the causes for international cooperation - one in which the economic evolution (meaning the familiar pattern of rise and decline in national capability of the state) itself plays a key role. Moreover, by expanding the analysis to include the impact of a state's long-term, political-economic evolution, in addition to interactions between states, power

cycle theory implicitly recognizes that the causes and consequences of cooperation are very complex. Patterns will be produced by operation of the international political-economic system. The dynamics of relative capability encompass both the interacting state-units and the structure of the system. Origins and timing for cooperation are established in terms of a state's struggle to adjust to a new position and role in the international system.

Having described the major components of the political-economic power cycle, the dynamics of how the cycle relates to international economic cooperation now can be explored. An integral component of the cycle is the critical point: At four points of a state's power curve -- known respectively as the lower turning, rising inflection, upper turning, and declining inflection points -- a contradiction between a state's interests and aspirations on the one hand and its actual capability on the other, because of the difference between the linearity of one and non-linearity of the other, becomes strikingly apparent. t these points (or phases, to be less exact for now) the state must revise its foreign policy role to meet with its actual capability and the demands imposed by the systemic balance.

The lower turning point (ltp) marks the formal entry of the state into the world system. As a young state in terms of industrial evolution, its main economic interests and policy orientation are geared towards development and growth. As

such, the lower turning point may be characterized by a tendency towards economic nationalism, i.e., protectionism for fledgling industries. The rising inflection point (rip) denotes the first time that the state experiences a decline in the rate of increase of its relative capability. In other words, this marks the point at which the state enters its mature stage of development. Growth and development continue, but not at the same frantic pace.

At the upper turning point (utp), the power of the state is -- for the first time -- in actual decline relative to other states. The danger here is created by the prospect of having to adjust its interests to a situation where relative capability can no longer sustain its current role, which had entailed a sense of increasing importance. This realization could lead to potentially aggressive protectionist, non-cooperative foreign policy behavior (Doran, 1983:424). Finally, at the declining inflection point (dip), the level of the state's power relative to competitors continues to decline, but at a reduced rate. Doran posits that the second turning point will invite efforts to arrest further decline through a reactivated foreign policy. Such attempts are triggered by the profound hope that a reversal of fortunes at this point holds out the promise of a restored position in the system (Doran, 1983:425).

The collective significance of these critical points is that a change in slope, indeed, inversion within the

relationship (which occurs at each of the critical points), creates the need for a completely different role on the part of states. Moreover, by shifting the focus from interactions between states to the impact of a state's political-economic evolution, power cycle theory is potentially very helpful to research on cooperation. It implicitly emphasizes that the causes and consequences of cooperation are inseparable from the international political-economic system, as defined by structure and processes. It should be understood, however, that the explanation is not deterministic; the probability of involvement in an international economic conflict is simply inferred to be greater at these critical points than at other times in a state's history (Doran, 1985:294). In sum, the core of the theory is the notion of a dynamic cyclical pattern that underlies international relations, an idea that appears in a number of other contexts.[8]

Steuart's Theory Of Economic Exchange

Analogous to Doran and Parson's cycle of relative power in which states ascend, mature and then decline, Steuart (1767) posited that the exchange economy passes through three

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[8]Prominent effects toward concept formation that have some common ground with the power cycle as a concept include Modelski (1978), Thompson (1983) and Goldstein (1988) on long cycles of economic domination and change; and Olson's (1982) explanation of the rise and decline of states based on decimation versus accumulation of interest groups.

stages: infant trade, foreign trade, and inland trade.[9] Moreover, Steuart visualized an evolution of governmental, social and economic institutions across various stages. The main problems and proper policy prescriptions are noted in turn for each stage of the exchange economy.

The first stage, infant trade, occurs when a country finds itself in a relatively backward position. During this phase the main economic concern is growth and the objective of policy is to encourage industry. Steuart believed that "economic growth during the stage of infant trade is essential not only for promoting dexterity and emulation in invention and improvement but also as a basis for establishing foreign trade" (Principles:260-263 in Akhtar, 1979:283-284). Furthermore, although the economy experiences rapid growth of output based on hitherto unused or underutilized domestic resources, Steuart argued that protection must be given to infant industries. This policy, he thought, would be necessary in order to establish a developed manufacturing sector that will be able to compete with other nations when it enters the stage of foreign trade. For this reason the economy generally is expected to be closed. Steuart was

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[9]Steuart's views are of renewed interest because his approval of pervasive government intervention makes him a forerunner of neo-mercantilism and the mixed capitalism of the twentieth century. Indeed, many of the measures that he advocated are formally similar to those recommended by modern Keynesians for dealing with the trade cycle (for example, public works, variations in taxation, and changes in the rate of interest).

careful, however, to add that protection in and of itself is only beneficial while "there is forming a scheme for introducing industry" and that "the scaffolding must be taken away when the fabric is completed" (Principles:235 in Skinner, 1966:lxxvi).

The potential for growth is at a maximum during the open stage of foreign trade. The policies recommended are designed to preserve a state's competitive capability. But while the potential for growth is at a maximum at this stage, Steuart recognized that a flourishing foreign trade is but a temporary condition in a nation's life history. This supposition finds support in Steuart's skepticism concerning free trade on the one hand and belligerent nationalism on the other. Only if "industry and frugality" were "found to prevail equally" in every country, (or conversely, if "luxury and superfluous consumption" were "every where carried to the same height") could trade "be thrown entirely open" (Principles:296 in Johnson, 1937:231). In the long run, as measures to adjust the imbalance in trade become ineffective, the state enters the aged stage of inland trade.

As its name implies, inland trade refers to the realignment of the exchange economy. This stage represents a situation where a developed nation has lost its competitive edge as a result of how the balance of work and demand tends to be distributed in the historical long run. Trade becomes more intrastate in nature. Hence, at the stage of inland

trade, the economy once again is closed. The principal economic challenge is to maintain a full-employment level of economic activity despite the loss of foreign markets and frequent cyclical fluctuations. Accordingly, the emphasis of macroeconomic policy is on circulation and associated oscillations in the balance of wealth.

A Critique And Some Recommendations

To illuminate how international factors affect cooperation among nations, these theories are helpful. This international focus is problematic, however, in that it rests upon a series of unexamined assumptions about domestic politics that are crucial to the results. Hegemonic stability theory, international economic structures theory, relative power cycle theory and economic exchange theory, then, have the same limitation found in all systemic-level theories: abstraction from the myriad differences between states and details of domestic politics because of an exclusive focus on the structure of the international system. Non-systemic factors that go into actors' preferences are conveniently marginalized or rejected. The resulting outcome of this perspective is that propositions about state preferences are derived solely from the interrelationships and interactions among nation-states. If cooperation is inhibited or promoted, it is due solely to features of the international system. Yet there is good reason to believe that factors below the system

level are important. As Waltz (1979) points out, to explain how any single nation-state will respond to the constraints imposed by the international structure requires a theory of foreign policy.

While systemic factors clearly are important, they can explain only a portion of a given state's trade policy. Frieden (1988), for example, highlights the inadequacy of system-centered approaches by arguing that the United States failed to assume the leadership role commensurate with its dominant economic power. Consideration of domestic politics seems essential for understanding international cooperation for two reasons. First, domestic politics illuminates how preferences are aggregated and national interests constructed. Second, domestic politics can help to explain the strategies states adopt to realize their goals. Strategies may be suggested by a state's structural position, but the nature of its political system, bureaucratic politics, the influence of special interests, and public opinion may ultimately determine which strategies states can pursue internationally. This is true even though these theories are based on a solid foundation compatible with contemporary trade theory. Without some understanding of domestic politics, systemic-level theories alone cannot account for the international trade policies of individual countries. Although some explanation for system-level changes in international trade is offered, these theories cannot explain different trade levels and

apparent strategies of particular states within the international system.

In the explanation of foreign economic policy, some scholars argue that systemic theories deserve a certain primacy over other levels of analysis. As Robert Keohane writes:

> an international-level analysis...is neither an alternative to studying domestic politics, nor a mere supplement to it...On the contrary, it is a precondition for effective comparative analysis. Without a conception of common external problems, pressures, and challenges...we lack an analytic basis for identifying the role played by domestic interests and pressures...Understanding the constraints imposed by the world political economy allows us to distinguish the effects of common international forces from those of distinctive national ones (Goldthorpe, ed., 1984:16).

The international system, in this view, is a necessary "first cut" in any analysis of international or comparative politics. To offer an improved account of relative changes in the international trade of nation-states, it is necessary to complement these system-level theories with a theoretical foundation for the trade preferences of individual states. This will facilitate a more complete explanation of the relative international trade of states. Factors unique to each state and systemic properties must be addressed.

Domestic Level Theories

The unit level of analysis refers to the specific foreign policy actions of a state as a function of its attributes and/or certain processes that it has been experiencing. This

approach, then, focuses on the structure of the domestic policy-making system. The typical question at this level of analysis would be whether or not a state participates in a liberal order as a response to some internal or external challenge.

Another key point of domestically centered theorizing is that the utility (and by extension the behavior) of various economic agents (individuals, groups or nation-states) responsible for trade decisions is affected by political as well as economic factors. Indeed, the notion that international economics could be studied in isolation from its political underpinnings or consequences would have been quite alien to either mercantilist thinkers in the eighteenth or critics and advocates of imperialism in the nineteenth century. An inextricable intertwining of economics and politics was taken as a matter of course. Essentially, theories under this rubric examine the cultivation and exploitation of economic ties as instruments in the service of the state's larger foreign policy interests.[10]

Literature on domestic structures has burgeoned in the last fifteen years, producing an eclectic, often ambiguous conceptual array for students of international relations. For most purposes, domestic-level explanations of international cooperation falls under either state- or

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[10]The classic works in this area are Heckscher (1955) and Viner (1930).

society-centered approaches.

State-Centered Explanations

State-centered approaches view foreign economic policy as highly impacted by the institutional structures of the state, and also by the ability of state officials to maneuver within both international and domestic constraints (Ikenberry, Lake and Mastanduno, 1988:2). In recent social science literature, two broad approaches linking the state to policy outcomes have developed.

First, institutional theories of the state, such as bureaucratic and organizational politics or the "new institutionalism," focus on domestic decision-making structures. The state is conceived of primarily as an organizational structure, or set of laws and institutional arrangements. The national interest in this case depends on how political institutions shape actors' preferences and condition their access to decision-making forums. Indeed, the persistence of institutions enables them to influence policy even after the ideas and coalitions that initially gave rise to them no longer dominate.[11]

The second approach conceives of the state as an actor, and focuses directly on politicians and administrators in the executive as independent participants in the policy process.

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[11]See, for example, Ikenberry (1988), Katzenstein (1977a, 1977b), and Krasner (1976).

Its primary emphasis is on the goal-oriented behavior of politicians and civil servants as they respond to internal and external constraints in an effort to manipulate policy outcomes in accordance with their preferences. An underlying presumption is that these preferences are partially, if not wholly, distinct from the parochial concerns of either societal groups or particular governmental institutions, and are tied to conceptions of the "national interest" or the maximization of some social welfare function (Ikenberry, Lake and Mastanduno, 1988:10).

What these two state-centered approaches have in common is a focus on *policy outcomes*, rather than on structural and systemic effects. They tend to be descriptive or analytical in nature, rather than genuinely theoretical. Any true theory of the state must do more than analyze state behavior. It must offer broad, generalizable insights into state development and evolution, and interactions with the international system -- not merely with respect to behavior, but with respect to underlying patterns of order and change.

Society-Centered Explanations

Society-centered approaches explain foreign economic policy as either reflecting the preferences and interests of the dominant group or class in society, or as resulting from the struggle for influence that takes place among various

domestic social forces or political parties within the policy arena. In either case, this approach explains foreign economic policy essentially as a function of domestic politics. As such, state officials or institutions play neither an autonomous nor significant role in shaping or constraining policy. Instead, government institutions essentially provide an arena for group competition (Ikenberry, Lake and Mastanduno, 1988:1-2, 7).

While there are several variants of society-centered explanations, the interest group approach is particularly prominent in the foreign economic policy literature; it draws on pluralist theory and views policy as the outcome of a competitive struggle among affected groups for influence over particular policy decisions. This approach then, suggests that the preferences of interest groups and the dynamics of party systems have the greatest impact on the policy-making process. From this perspective, the national interest is determined by the sum of the preferences of different interest groups as weighted by their access to policy-making institutions.

Another strand within the society-centered explanations is known collectively as elite theory. Elite theories of politics look to the nature of national decision makers for sources of cooperation. In this approach, the national interest is shaped by calculations of political elites. According to analysts who focus on the emergence of new

corporate and elite interests, firms that are oriented toward exports and have increasing international relations will prefer fewer rather than more restrictions on their activities. And as the domestic importance of these businesses grows, political elites also will become increasingly sensitive to their preferences. The new business interests will seek to support and influence politicians who share their internationalist orientations (Thompson and Vescra, 1992:499).[12]

The main criticisms directed at society-centered approaches to explain foreign policy is that they run the risks of obscuring the critical intervening role that state actors and institutions may play in shaping the constellation and impact of interest groups in the policy process. An approach that focuses exclusively on societal groups captures only the "demand for policy, but not its supply;" to address the latter requires attention to the policymaking process (Ikenberry, Lake and Mastanduno, 1988:9).

Dyadically-Oriented Theories

The dyadic level of analysis refers to relationships between pairs of states. Typical questions at this level of analysis would be: which dyads, and under what circumstances,

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[12]See, for example, Frieden (1988), Milner (1988a, 1988b), and Ferguson (1984).

are most likely to find themselves engaged in an open trading arrangement? Which of the two states in the dyad is more likely to favor a liberal order?

Economic Interdependence

Past research concerning interdependence in international politics has been both wide-ranging and contentious. Differences abound about what constitutes interdependence, how it should be measured, its potential impact on interstate relations, and its value (or inadequacy) for understanding state behavior.[13]

For centuries liberal theorists have trumpeted the benefits derived from economic linkages. The positive benefits derived from economic ties are thought to produce spillover effects into the political arena, resulting in improved relations among trading states. According to this view, nations are less likely to resort to conflictual (protectionist) actions against states with whom they are united in jointly beneficial economic relations.[14]

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[13]See Keohane and Nye (1989), Rosenau and Tromp (1989), Dell (1987), Jones and Willetts (1984), Baldwin (1980), Goldman and Sjostedt (1979), Little and McKinlay (1978), Clark and Welch (1972), Cooper (1972), Morse (1970), Waltz (1970), Young (1968-69).

[14]Several authors provide empirical evidence in support of the negative relationship between dyadic trade and conflict (protectionism) and the positive relationship of trade and cooperation. See for example, Oneal et al. (1994), Polachek and McDonald (1992), Sayrs (1990), Domke (1988), Gasiorowski (1986a, 1986b), Gasiorowski and Polachek (1982), and Polachek

Economists normally accentuate the benefits of trade in economic terms, whereas political scientists more often consider the political costs or benefits of interdependence. Most recognize that there are costs associated with interdependence, but positive gains always are assumed.[15] The underlying assumptions of positive gains from trade and voluntary exchange are essential to the logic of liberal argument connecting trade and peace. These arguments fall along three lines of reasoning.

Polachek's (1980) expected utility model has been influential in dyadic trade-conflict studies, providing a framework to understand leaders' calculations of the relative costs and benefits of trade and conflict.[16] The model helps to enhance understanding of the basic assumptions guiding liberal views about the ability of economic interdependence to reduce conflict. It also is a useful starting point from which to consider factors that may alter the outcome of cost-benefit calculations. Polachek assumes that trade patterns emerge as a result of given heterogeneous factor endowments among

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(1980).

[15]Liberal theorists recognized that the gains from trade and the potential costs accompanying interdependence are not always equal. Still, they assume that the fact that states choose to trade implies that each partner derives positive utility from the relationship and therefore will be deterred from initiating intensive conflict.

[16]Conflict is defined here as behavior that results in protectionist policies.

nations. These trade patterns and the accruing benefits associated with trade affect rational leaders' foreign policy behavior, as they attempt to maximize social welfare. In a leader's expected utility calculus, the cost of conflict equals the lost welfare gains associated with potential trade losses. Even if conflict does not lead to the cessation of trade, it will lead to inferior terms of trade, such as lower prices for exports or higher prices for imports (Polacheck and McDonald 1992). Both barriers to, and cessation of trade accompanying conflict lead to welfare losses. Thus, increases in gains from trade in a particular relationship are believed to reduce incentives for conflict.

Following along these lines, Cooper (1968, 1980) provides an important assessment of how interdependence can both enlarge and confine the freedom of countries to act in accordance with their wishes. Small countries must accept the international environment and adjust their behavior according to the wishes of states they are dependent upon. Extensive economic interdependence, according to Cooper, threatens national autonomy and poses problems for domestic foreign policy makers. More importantly, what becomes clear is that the dynamics of symmetrical relations are different from asymmetrical relations, as the former are less subject to the play of power politics.

Problem Areas Within Dyadic Analyses

This past literature has illuminated two major issues for research in this area: How should interdependence be defined -- as sensitivity or vulnerability? And how does this concept of interdependence fit into common views on power in international politics -- is it a form of power or is it an alternative to power? Each of these issues are addressed in turn.

Perhaps the major disagreement that lies within the literature on interdependence is also the most basic: how to define the concept. For some, the terms interdependence, dependence, mutual dependence, and symmetrical or asymmetrical dependence, are used almost interchangeably. Others make a clear distinction between the constructs of interdependence and dependence. Two types of interdependence are generally distinguished in the literature: sensitivity and vulnerability.

Several analysts (Baldwin 1970; Waltz 1970; Hirschman 1945) have argued that interdependence should be seen as a question of a state's vulnerability: the cost it would face in breaking a relationship. Vulnerability dependence can be measured only by the costliness of making effective adjustments to a changed environment over a period of time. Interdependence is a case of mutual vulnerability, where two actors find themselves in a relationship that would create large costs for both of them should it break down.

Other analysts have offered an alternative view of interdependence, one that stresses the increased sensitivity states feel when their relations with one another increase (Whitman 1979; Deutsch 1978; Tollison and Willett 1973; Cooper 1972). Sensitivity refers to the costs states incur due to changes (actual or potential) within a stable framework of policies (regimes). It is measured not merely by the volume of trade across borders, but also by the costly effects of changes in transactions on the societies or governments.

Under such a definition, two states become more interdependent when events that take place within one state have an impact upon events taking place in another state. To elaborate, two countries with much mutual trade would still experience a low degree of interdependence if the value of that trade were not sensitive to price and income developments in the two countries; on the other hand, two counties would be highly interdependent if their transactions were greatly sensitive to economic developments, even if their mutual trade were initially at a low level. In other words, if vulnerability focuses on the costs of breaking relations, sensitivity can be said to focus on the costs of maintaining it (Keohane and Nye, 1989:12).

A second area of contention revolves around the question of whether interdependence should be seen as a form of power relations or as an alternative to power relations. The choice has important implications.

Theorists who see interdependence as an issue of vulnerability (and therefore is a case of mutual dependence), also see it as a form of power. Hirschman (1945) illustrates that states with few trading partners are more dependent on those with whom they trade heavily. Particularly when structural linkages exist, dependent states are less able to alter their trade patterns and may become subject to the manipulation of the partner on whom they depend. For Hirschman, the dependent state's fear of losing the gains from trade enables the less dependent, and thus, more powerful state to enjoy a disproportionate influence in the relationship. The leverage conferred to the more powerful state through asymmetrical economic interdependence provides a new form of power that can be used by less interdependent countries to gain concessions in either the political or economic domains from others that are more interdependent. In like manner, states with more partners are better able to diversify their trade patterns freeing them from the constraints of interdependence and according such nations a position of power with the dependent states. Thus, we see a connection established between dependence and gains from trade, threats of breaking trade ties, and the ability to some states to derive power through asymmetrical dependence. Independence in these analyses becomes the opposite of dependence; to increase one, you must decrease the other. One cannot both increase and decrease power at the same time.

Other theorists who focus on the sensitivity side of interdependence seem to be arguing for a conception that places it as an alternative to power. Burton (1972) rejects the "billiard-ball" model of international politics, with its image of states crashing against one another, their final trajectory to be determined by the force behind each actor's movement. Instead, he argues for a "cobweb" model of international politics, where the seemingly Lilliputian restraints of day-to-day enterprise are soon found to have so bound the traditional organs of the state Gulliver that the idea of *state* power becomes obsolescent. Interdependence is not a form of vulernability to other states, it is a new form of relationship with them, one in which neither state can act without some form of coordination with one other (Kroll, 1993:323-324).

Conclusions

Overall, then, a variety of existing approaches found in political science and economics informs the study of international cooperation. Thus far, however, none of these perspectives, alone or in combination with the others, has proven sufficient for the task at hand: to model international cooperation that simultaneously takes into account both systemic and unit-level factors. Since no such model presently exists, an inherent objective of this enterprise will be to transcend existing theory and synthesize these

frameworks into one (admittedly) eclectic package. The capabilities orientation of the systemic-level theories demonstrates an application of national attributes affecting the system. This is the general approach I have adopted. Domestic oriented theories opened the door that allows for the incorporation of expressly political determinants into models of international trade. This is the relationship I will explore. Finally, dyadic explanations point to ways in which changing relations of power and interdependence can affect international transactions such as trade. This is the threshold I plan to cross. Special emphasis is placed on the structural factors -- stage of development and degree of global integration at the international and domestic levels. The structural factors are divided into three groups: direct economic factors (such as macroeconomic cycles of power and interdependence), the linkage of trade games to political games (such as interest group demands for protection), and some general cognitive considerations.

Staniland (1985) observes that the study of international political economy involves both criticism of existing disciplines and proposals for innovation. A critique of the current theories was undertaken in this chapter. The main conclusions derived from this exercise is that the present corps of international political economic explanations have dealt satisfactorily with neither the "relationship between economic and political processes" nor with the interaction

"between international (or "external") forces and domestic (or "internal") processes" (Staniland: 1985:99, 104). Staniland explains these deficiencies in term of the theories' inability to keep pace with a changing world:

> Specifically, developments in international relations have not only undermined some key concepts and assumptions of particular approaches; they have also subverted the premises on which disciplinary separation itself rests (Staniland, 1985:100).

For this reason, correction of these deficiencies is the objective in the Chapter III.

CHAPTER III

THE ARGUMENT

State Behavior And International Cooperation: Toward A Cyclical-Structural Model Of Trade Policy

As noted in the preceding chapter, a variety of theoretical approaches already have been used to account for international economic policy. While different levels of analysis and alternative foci all have merit, something still is missing: a cognizance of the underlying systemic processes -- between, among and within international and domestic systems -- that motivate rational power- and wealth-seeking nation-states to pursue a policy of free trade, protection, or some combination of both. To correct that deficiency, this study develops a deductive, theoretical argument (underscored by cyclical economic structures) which simultaneously takes into account the underlying conditions and circumstances, at home and abroad, that influence policies toward and away from free trade. The resulting model centers on those aspects of economic policy that emphasize a state's relative position (defined by its stage of economic development and degree of integration) on a cycle of economic capability. Relative position is inferred to be an important predictor of preferences related to international and domestic political

economic relations. Thus, the central proposition is that protection and free trade are neither simply the result of domestic political pressures nor the reaction to varying international structures, but the considered response of self-seeking nation-states to the constraints and opportunities of its domestic and international environment. This study, then, attempts to build a structural model of national trade interest and strategy founded on both unit- and systemic-level analysis.

This chapter constitutes the theoretical core of the investigation and is organized as follows. The analysis begins with a presentation of the research agenda of International Political Economy (IPE) as a field, with special attention to state behavior.[1] This provides the background and effective justification for an integrated, cyclical-structural, political-economic framework of international economic policy discussed in section two. Section three, is devoted to the development of a structurally generated economic power cycle model of international economic relations. This effort to develop an analytical model of state behavior in the issue area of trade (market openness)

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[1]The research agenda of IPE focuses largely on two broad sets of questions. One set deals with actor behavior. What motivates state behavior in foreign economic relations, and how is it best explained and analyzed? The second considers system management. How do state actors manage (or fail to manage) their conflicts, and what determines whether or not they cooperate to achieve common objectives? (Cohen, 1990:264).

and policy develops out of two distinct phases: (1) the cyclical nature and causes of economic development; and (2) the impact of the cycle on state behavior and hence implications for international cooperation. Once these two steps are completed, it then will be possible to construct a typology of states that provides the basis for initial explanations of state behavior in international economic relations.

The Research Agenda Of IPE

A central area of inquiry within the research program of IPE is the behavior of actors: What are they trying to achieve and how is their behavior most effectively analyzed and explained? This discussion will be divided into two parts. The first focuses on the methodological issue of choosing among applicable levels of analysis. The second is more conceptual and examines the delineation of state interests (Cohen, 1990:264, 267).

Level Of Analysis

In whatever area of inquiry, the phenomena under study may be grouped and ordered in a number of ways. For example, the observer may choose to focus upon the parts or the whole, upon the components or the system (Singer, 1961:77). Typically, one of two approaches is employed within IPE to address the level of analysis question: (1) systemic or

"downward-looking" analysis looks at the implications for individual actors based on how the system as a whole is organized; and (2) unit or "upward-looking" analysis, which examines the consequences for the system based on the policy choices made by individual actors (Cohen, 1990:275). In essence, these two approaches represent the latest incarnation of the ongoing debate between those who view foreign economic policy as essentially determined by the global environment and others who see it primarily as the outgrowth of national political and economic processes. The advantages and disadvantages of each approach are examined below.

Over the long-term, the systemic (or international) level of analysis is perhaps the most popular within IPE. This research strategy focuses on the structural attributes of the international system and explains foreign economic policy as a function of the relative attributes or capabilities of states. From this perspective, the state is perceived as responding to the particular set of opportunities and constraints presented by its position in the international system.

Systemic analysis permits examination of international relations as a whole, with a comprehensiveness that necessarily is lost when the focus shifts to a lower, and more partial, level. For descriptive purposes, then, the systemic level of analysis offers the advantage of totality, although with a necessary lack of detail (Singer, 1961:80).

Any system-oriented model will pose some genuine difficulties with respect to explanatory capability. To begin, it tends to direct the observer into a perspective that exaggerates the impact of the system upon the national actors. Conversely, the influence of domestic forces on the system is discounted. Thus, notions of national autonomy and independence of choice are resisted, because of a more deterministic orientation.

Moreover, the system level of analysis almost inevitably imputes a high degree of uniformity to the foreign policy of national actors. By definition, little room is permitted for divergence in the behavior of the parts when the focus is on the whole. By eschewing empirical concern with domestic variation, the system-oriented approach tends to produce a sort of "black box" or "billiard ball" conception of national actors. In short, although the systemic model does not necessarily preclude comparison -- and even contrast -- among national sub-systems, it usually focuses on relative crude dimensions and characteristics (Singer, 1961:81, 83).

Domestic (or unit-level) research includes strategic interaction among all sub-systemic actors (inside or outside the government) with actual or potential influence on a state's foreign actions. Since it does not require the attribution of great similarity to the national actors, this level permits significant differentiation among actors in the international system. The most obvious advantage of selecting

the nation as the level of analysis is that it provides the ability to examine the goals, motivation, and purpose of national policy in greater detail. In terms of description, then, the atomized and less coherent image produced by the unit-level of analysis is balanced by its richer detail, greater depth, and more intensive portrayal. With respect to explanation, without question the unit or actor orientation is considerably more fruitful, permitting as it does a more thorough investigation of the processes by which foreign policies are made. In other words, this approach is able to go beyond the limitations imposed by the systemic level and to replace mere correlation with more significant knowledge about causation (Singer, 1961:89-90).

State Interests

Closely related to the level of analysis question is the issue of a state's interests. The interrelationship between the level of analysis issue and the appropriate definition of state interests should be obvious, in that the choice of analytic approach at least partially predetermines the range of goals potentially pursued by governments. A state that is understood to be responsive to domestic political pressures could have preferences quite different from those of a state conceived of as a unitary actor. It should be stressed, however, that the two issues are not identical. For example, two states treated exclusively as unitary actors may respond

to quite different notions of utility (Cohen, 1990:271).

Here, the question of how and why certain nations pursue particular sorts of policies and goals is formally addressed. Specifically, what fundamentally motivates the actions of a government in foreign economic relations? What determines whether or not it cooperates to achieve common objectives? In formal language, what is a state's preference ordering, and how is it formed?

The methodological value of the systemic-level approach is that it makes state preferences constants (i.e., exogenous) rather than variables (i.e., endogenous) for purposes of analysis. Since conceptions of self-interest thus may be assumed as given and unchanging, discussion can concentrate exclusively on constraints and incentives for government behavior that derive from the broader structure of interstate relations. Behavior is studied from the "outside-in" (Waltz 1979).

While the question of state interest may be ignored in the system-centered model or resolved by attributing identical goals to all national (systemic-level) actors, the national level approach demands that the processes by which state objectives are selected be investigated, i.e., the genesis and process by which they become the crucial variables in the behavior of nations must be accounted for. Thus, foreign policy is not merely postulated, but explained. Behavior is studied from the "inside-out" by concentrating on the internal

characteristics of the state (Waltz 1979).

Having examined the strengths and perils of previous explanations of state behavior, what should be the components of a model of trade and protectionism in a systemic context? The solution is not merely to acknowledge the importance and linkage of these two pivotal perspectives, but also to spell out and formalize their relationship -- to provide clear, systematic insight into how they fit together functionally in explaining actor behavior.

A Cyclical And Structural Framework

The respective attractions of either actor- or system-level analysis, from a methodological point of view, are clear. But it is equally obvious that neither type of analysis is likely to provide a thorough explanation of state behavior. Faced with a subject of great range and complexity, an effective framework of analysis must combine the comprehensiveness of the systemic-level with the rich detail and depth of the unit-level. To attain this objective, a viable research program should consider actor-level approaches and system-level perspectives simultaneously because the existing division is self-limiting.[2] Specifically, it is

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[2]Lakatos (1970:132-38, 173-80) explicated a research program as a set of methodological rules. A research program consists of two parts: a hard core, which is not subject to testing or investigation; and auxiliary hypotheses, which tell the scientist how to conduct empirical research. For Lakatos, the key test of a research program is whether these auxiliary

posited that an explicit focus on the location of states along their economic power cycles can provide an analytic paradigm for a greater understanding of international cooperation.

The rationale for the adoption of a cyclical-structural framework of analysis lies in its ability to consolidate the mutually directed -- but possibly asymmetrical -- influences exerted by the great conceptual opposites of international politics (actor versus system; static versus dynamic analysis; and complementary versus substitute interests and goals) into a single, coherent, dynamic explanation of state behavior.

First, a distinguishing feature of this analysis is the utilization of an evolutionary approach that encompasses the unit and the system simultaneously, generalizable across states and periods of history. At the actor level, the cycle traces a state's changing power relative to other states over time, and hence, in the broadest (simplest) sense, its rise and decline as an actor in international economic relations. In the long term these shifts in the existing power arrangement contribute both to the transformation of the international economic influence of states and the political structure of that system (Doran, 1991b:20). Systemically, then, the various state cycles (taken independently and in the aggregate) constitute the changing structure of the system.

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hypotheses are "progressive," that is, whether their invention leads to discovery of new facts that increase our capacity to understand reality. Useful applications of the concept of a research program in relation to theorizing about international relations appear in Keohane (1986) and Krasner (1985).

Thus the cyclical-structural framework is able to model both the international political development of the nation-state and its effect on the system's structure.

Second, this cyclical-structural framework unites the structural and behavioral aspects of a state's political-economic development into a single dynamic. As delineated above, in recording the economic development of the state as an evolving phenomenon, the cycle reveals at each stage the changes in state power and influence within the dynamic. This dynamic, however, involves much more than the mere structural rise and decline of the state. This cyclical orientation also takes into account that a state's position (as derived from its attributes and capabilities relative to others) decisively shapes its foreign policy role and international political status. As the cycle evolves, roles change accordingly with a state's capacity to exercise influence increasing as it gains in power or declining as it falls behind. According to this cyclical-structural framework, not only should there be variation in policy over time, but states are presumed to posses different trade policy preferences derived from their varying positions within the international economic structure. In sum, by placing state behavior into a cyclical orientation, preferences are allowed to vary according to the relative position and influence of states rather than operating on the assumption that all states' have uniform interests. In so doing, shifting policy preferences can now be fully examined

and explained rather than just assumed.

Third, the holistic framework of this cyclical-structural orientation fully acknowledges that states possess complex utility functions that include important interactions between and among domestic considerations (social stability and welfare maximization), economic imperatives (aggregate national income and growth) and political sovereignty (national security and territorial integrity). In practice, of course, the pursuit of power, domestic stability and wealth can be assumed to be in constant competition for the attention of policymakers. But to what extent are these goals regarded as substitutes rather than as complementary; what are the trade-offs between them? How and why these trade-offs change over time can now be formally addressed, for this framework disaggregates the forces within a country that help form and constrain the goals and behavior of the state into its component parts. It does not merely treat states as rational, unitary actors with invariant goals.

Finally, this postionally-based structural orientation recognizes the strategic nature of most trade policy decisions. Since the state is acknowledged as an actor embedded within domestic and international society, both domestic influences and systemic leverages on foreign policy are important. Thus no decision can be understood as a unilateral choice. In this regard, state positionality serves as an important independent (or intervening) variable between

domestic and international forces and constraints on the one hand, and international behavior on the other. It provides the tools to understand how both unit and systemic levels influence the policy preferences of states (Ikenberry, Lake and Mastanduno, 1988:2). "Each can be viewed analytically as a 'system' that exerts influence on exchanges and relations among nations (Choucri, 1980:121).[3]

In sum, the economic power cycle framework is comprehensive, encompassing state and system in a single historical dynamic. It is behavioral, showing how state role is tied to changes on its economic power cycle. Finally, it is strategic, taking into account that a state's ability to assume this role, and to achieve those interests depends on how skillfully the government conducts its internal and external relations. And in so doing, the economic power cycle paradigm unifies, simplifies and clarifies explanations for state behavior.

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[3]The strategic orientation of this cyclical-structural framework closely resembles Putnam's (1988:434) conceptualization of international cooperation as a "two-level process." According to Putnam's metaphor, statesmen or decision-makers are typically involved in two simultaneous negotiations or games, one at the domestic level and other at the international. In the domestic game, statesmen seek to mobilize domestic support by bargaining with various domestic groups. In the international game decision-makers negotiate international agreements that both satisfy domestic pressures while minimizing the adverse consequences of foreign developments.

An Economic Power Cycle Model Of State Behavior

There are two central components of the economic power cycle model of state behavior. The first focuses on the cyclical nature and causes of economic development. Key questions addressed here are: Why is it cyclical? Why is the cycle concave and not convex? Under what conditions does the cycle arise? The second element examines the impact of the cycle on state behavior and hence implications for international cooperation. The inquiry explores the relationship between production structure evolution and economic exchange, and the effect of the domestic distribution of capabilities on cooperation.

The Nature And Causes Of Economic Power Cycles

This analysis of the nature and causes of economic development rests on a cyclical model of evolution that views states as traversing through a common, non-linear dynamic pattern of growth and decay. Figure 3.1 provides three examples of the various forms that a state's economic power cycle can take.[4]

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[4]Although there is great variation among states regarding the rates of change along any portion of this trajectory (so that no two trajectories may match in period or amplitude even for any given portion of the trajectory), the general shape and dynamics of the curve are the same across states in the central system. Moreover, owing to the uneven growth rates in national power, the development curve will be concave downward (rise and then decline) for most states over sufficiently long time periods.

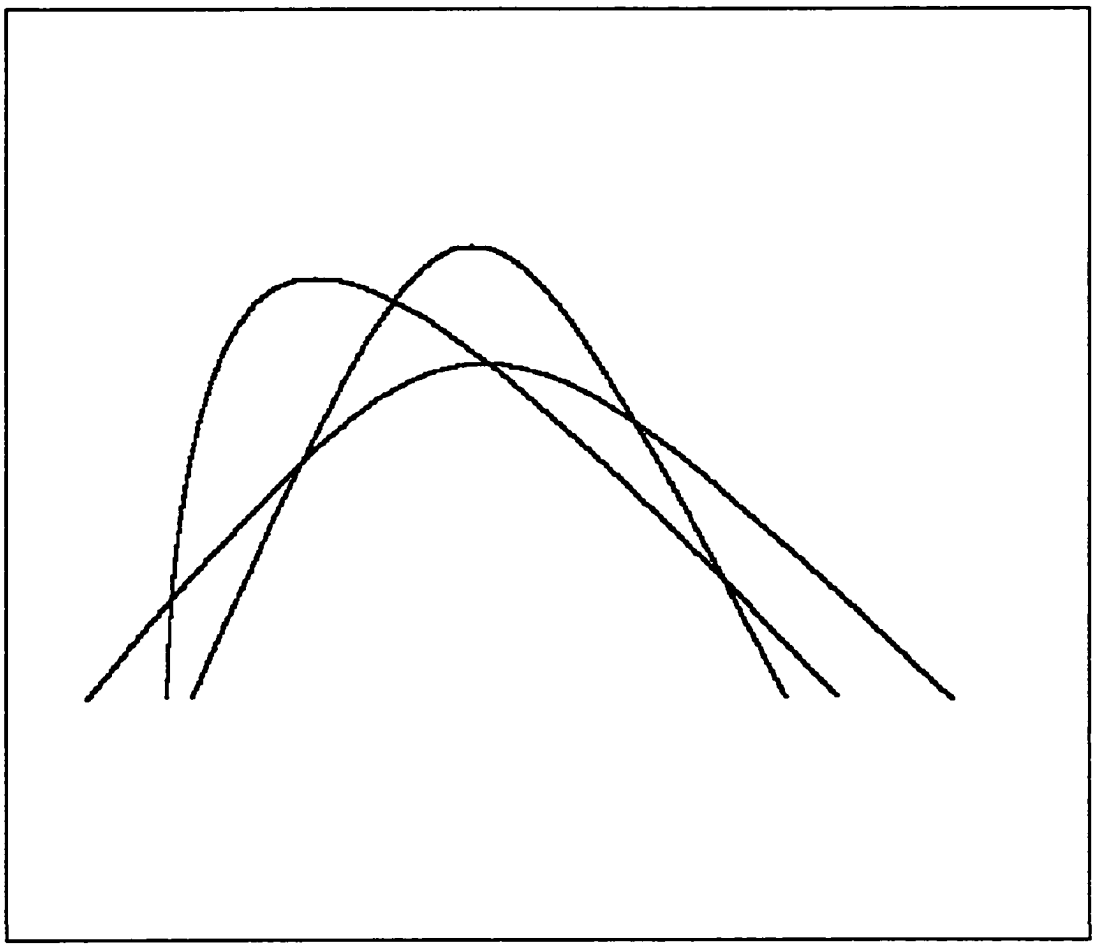

Figure 3.1

Various Economic Power Cycles

Contributions to this conception of cycle as a generalizable pattern of long-term evolutionary change has been subscribed to by a diverse set of analysts who span the ideological and theoretical spectrums of international relations in particular, Doran (1983a, 1983b, 1985, 1989, 1991a, 1991b), Doran and Parsons (1980), Gilpin (1981), Goldstein (1986, 1988), Modelski (1978, 1981, 1983, 1985, 1987), Thompson (1990) and Wallerstein (1974, 1978). These treatments, however, do not link the cycle framework to stage of development or international cooperation.

The cycle paradigm gives rise to two general and interrelated issues concerning economic development: (1) the dynamics of the cycle, and the (2) the degree of determination of development up and down the cycle. Let us now deal with each in turn.

This pattern of rise and decline is a function of the evolutionary path of a state's production structure, i.e., climb up the international division of labor ladder: Beginning with a specialization in primary products, a state eventually makes the leap to industrialization by developing labor intensive industrial products, next the state develops more capital intensive industrial products, the state enters the highest stage of development when it "steps up" to technology intensive industrial products, and finally, the state experiences relative economic decline when it is force to specialize more in service sector products (Leamer 1984).

The forces that move states up the ladder of development are based on the historic desire of states to ascend the international division of labor (and production) by developing comparative advantage in more capital- and technology-intensive leading edge industries and modes of production.[5] This view of technology by states as a key mechanism for attaining and maintaining economic power (and security) would appear to be an almost universal goal of state-builders. The logic here is that technology- and capital-intensive industries stimulate scientific breakthroughs and technological innovations which, in turn, facilitate the emergence of new commercial leading edge sectors that are highly significant in propelling industrial and economic growth, thus creating a virtuous cycle of rising economic progress.[6] Specifically, their massive investment spurts --

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[5]Examples of leading sectors are the cluster of cotton textiles, iron and water power (canals mills) from the 1780s to the 1820s; steel, steam engines, and railroads from the 1840s to the 1870s; industrial chemicals and electricity from the 1890s to the 1920s; and the internal combustion engine, petroleum and motor vehicles from the 1940s to the 1970s (Schwartz, 1994:70).

[6]It should be understood that no one is suggesting that leading sectors are the exclusive source of economic growth. Much economic growth is incremental and can be traced directly to activities that are not normally associated with leading sectors (for example, food processing, construction, and services in general). These same activities are likely to engage the lion's share of an economy's total resources. Whatever the proportional division of labor and capital, though, not all growth is incremental: technology- and capital-intensive production clearly appears to generate greater spin-offs than labor-intensive production. The attention given to leading sectors thus is an explicit attempt

resulting in rising economic growth, increases in productivity, and reductions in costs -- pulls existing firms along as they get reorganized and demand for their product increases which, in turn, drags the rest of the economy forward.

For example, no more is the dynamism of a leading edge sector's ability to energize the economy through new, highly profitable investments, evident than in the case of semiconductors. The semiconductor business has grown exponentially over the past 20 years by stimulating the development and growth of large new industries such as personal computers, while increasing productivity in others (such as the use of robotics in car assembly).

The benefits of leading edge industries are not confined to capital, however. Such industries also contribute to economic welfare by bring millions of workers to higher levels of skills and wages. That is, high growth often means rapid productivity gains, and industries with high productivity usually pay high wages. Like production, this cycle is self-reinforcing because such industries invest more in training to assure the high skills that yield higher wages. In sum, development of comparative advantage in these higher manufacturing sectors often creates significant external economies and, thereby, yielding enhanced security, economic

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to focus on the discontinuous sources of technological change and economic growth (Thompson, 1990:211-212).

growth and income -- three central objectives of state policy.

A key issue centers on the best way for a country to move up the division of production ladder. A common thread running throughout the literature on orthodox trade theory, in both its classical (Smith and Ricardo) and neoclassical (Heckscher-Olin-Samuelson) variants, is promotion of domestic development via an integrated world economy based on free trade, specialization and an international division of labor determined by comparative advantage. From this perspective, trade (through the diffusion process) can serve as an "engine of growth," giving states access to capital, technology and world markets. In sum, the pursuit of economic development and state strength requires policies designed to integrate the nation's economy as much as possible into the international market.

A related inquiry concerns the degree of determinism associated with a state's movement along its economic power cycle. Is a state's economic development fated to follow a cyclical pattern of rise and decline, or is there allowance for choice and decision flexibility involved with future position on the cycle?

Multiple explanations for the varying rates of development and growth (in absolute levels) are the subject of considerable debate. The divergent potential for economic development of states (as determined by differential attributes, capabilities and rates of industrialization) all

contribute to the rise (and decline) of states within the system. For example, later industralizers -- those states that adopted technology more recently -- have had advantages over early industralizers, i.e., have been more competitive than those who attempt to rely on older, now obsolete technology (Lewis 1978; Rostow 1978).

Like growth, the causes of decline also are multiple and highly intertwined. Indeed, whether decline is an inevitable consequence for a state is a central historical and theoretical question. Reasons advanced to explain the decline of a nation-state from the apex of its power curve include: (1) increased bureaucratic rigidity, creating greater government regulatory burdens and reduced productivity (Olson 1982); (2) slow-down in economic growth rate as optimal plant size and spatial relationships are exceeded; (3) rising consumption reflecting internal desire for more public and private goods and services (Veblen 1899); (4) declining productive investment because of low savings and scarcity of available capital; and (5) external diffusion of technology via the product cycle (Vernon 1971).

Cyclical Dynamic And International Cooperation

Having described the major components of the nature and causes of the economic power cycle, the dynamics of how the cycle relates to international economic relations can now be explored: What motivates states? What inclines leaders to

seek liberalization or protection, autonomy or interdependence, overall efficiency or minimum vulnerability? Finally, what are the effects on international cooperation associated with a cyclical model of economic growth and development?

This model of state behavior contains several steps which form a logical progression: First, the capacity of a state to influence international politics and play a principal foreign policy role is determined primarily by its structural attributes -- its position on its economic power cycle. Second, since power position underlines the role (interests and preferences) of a state, changes in location on the cycle have profound implications for state behavior and international relations. Third, change in international position and role also reflects a realignment in the domestic balance of power among sectors. Finally, realignment of domestic political and economic forces are projected onto the international political economy via a state's preferences about liberal policies.

Underlying the first two foci is the conviction that one answer lies at the structural (economic) level, based on a state's stage of development and resulting sectoral comparative advantage. Underlying the latter two foci is the equally strong conviction that a second, complementary, answer lies within domestic politics: States are agents of society and pursue goals in line with internal domestic pressures.

An examination of the former answer is undertaken in the Position And Role section while the Domestic Politics And Cooperation section addresses the latter answer.

Position And Role

Some contemporary scholarship assert that the most influential factor affecting the international behavior of a state is its location within the international structure. More specifically, a state's attributes and capabilities relative to other states will lead it to promote or resist commercial exchanges with its trading partners. Indeed, motivations and interests in participating in a liberal international economic system are derived and explained from a state's position along its economic power cycle.

Structurally, then, a state's preference-ordering will be a function of, and will vary in response to, the strategic environment -- stage of development -- in which the state finds itself. In these terms, derived preferences respond to changes in the structure of the environment. What varies in moving from one stage of development to another are the constraints and incentives under which a state attempts to maximize its goals of economic growth and development. To elaborate, when a state is able to "move up" the division of production ladder and realize comparative advantage in high technology sectors such as commercial jetplanes, it is unlikely also to possess comparative advantage in more labor-

intensive sectors such as textiles. Accordingly, its trade policy will vary across particular economic sectors.

Adopting a sectoral focus (e.g., textiles, electronics, and aerospace engineering) of economic activity over the more conventional and highly aggregated indexes of economic power, such as gross national product (GNP), warrants a certain degree of justification. After all, the mainstream of economic development and growth analyses and the majority of available data clearly favor the aggregated approach.

To begin, economies are characterized by uneven growth rates across sectors with some stimulating the development process while others retard the overall rate of growth. Recognition that a state's comparative advantage varies across sectors suggests that trade is not a single issue area, but a set of distinct sectoral issue areas. If this is true then a state-level focus on the attribute of states, such as GNP, will explain only a portion of state behavior. For while GNP provides an indication of the overall comparative position of a state -- its position in the international division of labor -- it does not convey the competitive position of particular sectors. Structuralists, therefore, need to disaggregate a state's economic dimension of power into sectors, and examine the relationship between competitive advantage and trade policy in each sector. In short, states do not have a single, over-arching trade policy. Rather, they have a set of trade policies across economic sectors.

Furthermore, as the cycle evolves, resulting in a shift in positionality, significant adjustments are required of the state to meet the changing distribution of power (and wealth) in the international system. Foreign policymaking, however, calls into question systemic approaches that attempt to derive national foreign policies solely from the position of the nation-state in the international structure. Indeed, experience powerfully demonstrates that a country's international position does not sufficiently explain its foreign policy. Rather, considerable attention also must be paid to the changing structural fabric of domestic economic activity: The movement from one stage of development to another is much more than a shift of economic magnitudes. The whole structural environment is undergoing serious changes which continuously complicate the framework of economic analysis. As the cycle evolves, shifts in the location of economic activity tend to undermine and transform the existing domestic balance of power by altering the returns to factors of production. This transformation, in turn, gives rise to changes in relations that reflect the interests of the economically ascendent sectors within a state. Hence, changing relative capability is, to a great degree, a determining and a limiting condition both for what is possible and for what is demanded in international and domestic politics. For these reasons, the foreign economic policy of states simply cannot be understood without a careful, rigorous

and systematic analysis of the interactions among the disparate socioeconomic and political forces at work inside the state itself. It is, therefore, important to probe the relationship between these structural changes and the behavior of states in the international political economy.

Thus, changes in its environmental constraints and opportunities account for variations in a state's preferences and hence behavior as it moves along its economic power cycle. In other words, changes in structural constraints leads to reformulation in preferences which, in turn, explains the variations in a state's behavior.

One final point should be discussed regarding the effects of position and role on state behavior. As already noted, trade by giving states access to capital, technology and world markets can serve as an "engine of growth." But more importantly, trade also increases an importing state's power over exporting states. In Hirschman's (1945) view, importing states wield power over exporting states by their potential for threatening the impoverishment of the exporter. The threat is based on the key to national power policies: the sovereign prerogative of regulating access to the national market. Seen from the reverse side, this power principle consists of the "trade dependence" of exporting states. The greater the gains realized from exporting, the more trade dependent the state. Gains from trade and dependence on trade are two sides of the same coin. According to this line of

reasoning, it is far easier to switch to another source of an imported good than it is to find a new market for exports. A dependence on export markets makes a state more vulnerable than a dependence on imports. The less costly it is for a state to risk retaliation and interrupt a competitor's exports, the more powerful that state is vis-a-vis others.

By defining the sources of state behavior in these terms, a new theoretical focus is furnished for examining state behavior and by implication, the causes of international cooperation -- one in which the economic evolution of the state itself plays a key role. Moreover, by expanding the analysis to include the impact of a state's long-term, political-economic evolution, in addition to interactions between states, the economic power cycle model implicitly recognizes that the causes and consequences of cooperation are very complex.

At the same time, however, this approach politicizes all international trade relationships because it poses a dilemma for policymakers. Although long-term economic benefits are to be reaped from participation in the liberal international trade system, short-term dislocations exert political pressure on the state. This observation leads to the next stage of the economic power cycle model: The political explanation of state interests.

Domestic Politics And Cooperation

The model developed thus far links trade policy preference (greater or lesser support for openness) with a state's structural position. In dealing with this issue of state preference, the argument has largely abstracted from how exposure to the global market can shape a country's domestic political struggles by altering the distribution of wealth across domestic political actors. Choices about the degree of openness of a state's market, however, have profound political implications. A state's calculation of the net costs or benefits of implementing either a liberal or protectionist trade policy depends on the aggregation of the domestic preferences of its constituents: interplay exists between domestic groups (free traders versus protectionists) pursuing their sectoral interests by pressuring the government to adopt favorable policies, and politicians seeking power by satisfying these pressures in exchange for political support. In other words, many economic actors are involved in trade matters, and they bring their complaints and pressures to bear on different political actors. For, as Mayer (1992:793) notes, "international agreements, no matter how much in the 'national interest,' inevitably have different effects on factional concerns."

Development of a theoretical model that can link the consequences of participation in the global market is critical to understanding how changes in the economic environment

engender political interests, alter political preferences, and create political opportunities for actors in the domestic polity. Any testable model of international political economy (or cooperation) therefore must be rooted in a theory of domestic politics, that is, a theory about the power and preferences of the major actors at the national level. Indeed, today's international political economy remains unintelligible without a systematic analysis of domestic structures.

To better understand the domestic component of international relations, the characteristics of the production structure and policymaking process must be examined. The most popular and well-used theoretical explanations of domestic-level analysis fall under either society- or state-centered approaches. Society-centered approaches explain foreign economic policy as essentially a function of domestic politics, i.e., reflecting the preferences of the dominant group or class, or as resulting from the struggle for influence that takes place among various interest groups or political parties. State-centered approaches emphasize the institutional structures of the state and the capacities of state officials to realize their objectives in light of both international and domestic constraints (Ikenberry, Lake and Mastanduno, 1988:1-2). Although each of these explanations is strong individually, a theoretical orientation is needed to integrate society-centered approaches (which explain

protection from the demand-side) with state-centered explanations (which concentrate on the supply-side) in order to provide a complete explanation of international economic policy.

In this regard, public choice models which focus on the interaction between the economy and the polity by explicitly analyzing the behavior of sectoral-level actors, provide the most complete explanation. The underlying theme of public choice theory is that, through a process of market exchange conditions, society and government determine the demand for, and supply of, policy (Frey 1984; Gallarotti 1985). The result is either market protection or liberalization.

This model divides domestic political actors into two categories: the foreign policy executive and societal groups. Charged with the overall conduct of foreign affairs, the foreign policy executive is the sole authoritative maker of foreign policy and the only national actor mandated to preserve and enhance the position of the nation-state within the competitive international system. The foreign policy executive cannot act unilaterally, however, and must bargain with the politically mobilized groups within society. For this reason, the foreign policy executive sits at the intersection of the domestic and international political systems and regulates the interaction between the two. It is this unique position of the foreign policy executive which renders it particularly sensitive to the national trade

interest and, in turn, to the international economic structure that shapes that interest.

The precise identity of the relevant societal group varies across issues and circumstances, encompassing interest groups, parties, legislators, civil servants, individual citizens, or any other domestic constituency whose support may be critical for the promulgation and implementation of policy. It is assumed here that individuals, who ultimately constitute society, pursue their material interests, defined as the maximization of their economic well-being. As these interests are pursued, society and the representative state elements are dominated by the politically mobilized groups within society. The representative elements of the state, are not truly "representative" of all societal interests. Rather, they principally reflect the interests of only those groups that have successfully overcome collective action problems.

Both the foreign policy executive and societal groups are assumed to have distinct and independent sets of preferences across the potential outcomes in an issue area. Hence, the relationship between these two groups can be seen as an ongoing set of bargains.

This sectoral public choice approach essentially link changes in trade policy to the overall type and level of economic activity within nations by means of a of market exchange process: Government, behaving as a rational, unitary actor, monopolistically dispenses trade policy (open or

closed) to competing organized interests (protectionist versus free traders) in return for some form of payment. Organized interests are viewed as purchasers of protectionist or liberal policy with political support.[7] This approach, then, suggests that changing economic conditions will alter the distribution of trade preferences through both supply and demand effects.

As for demand effects, comparative advantage in primary products and service sectors raises the value of protection for industry as a whole and reduces the relative voice of free traders. Demands for high trade barriers to expand and for low trade barriers to contract are the result. Comparative advantage in primary products and in the service sectors means that the manufacturing sector is either at its infant or mature stage. In either case, domestic producers favor protectionist policies -- i.e., attribute a greater value to high barriers to entry.

Conversely, a comparative advantage in manufacturing raises relative attention to the voice of free traders. This increases (reduces) demands for lower (higher) market barriers to entry. Here, preference for low or no domestic market barriers stems from a state's manufacturing sectors desire to open foreign markets. The rationale here is the hope that low domestic protection might serve to induce other nations to

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[7]It is generally assumed that interests are industry-specific, that capital and labor have the same position vis-a-vis protection and free trade (Frey, 1984:209).

open their markets to foreign products. Moreover, input cost will be reduced.

Turning to the supply side, government supply of either protection or free policy is stimulated by calculation of profits and costs. Hence, a state with comparative advantage in manufacturing raises the profits (increases political support) that government obtains from producing free-trade, while the provision of protection becomes more expensive -- most notably, it means loss of political support. Conversely, comparative advantages in primary and service sectors cause the profits obtained from production of free trade to decrease, thereby making it cheaper to allocate protection. The combined supply and demand effects of the economic power cycle would seem to indicate the following pattern: periods of economic ascent and expansion into manufacturing will stimulate a redirection of trade policy from protectionism to free trade, while periods of economic decline and contraction from manufacturing will stimulate a reorientation in the opposite direction.

It should be understood that modeling governmental policy changes in this fashion does not entail the argument that these constraints "force" the adoption of a given policy. The state is at least relatively autonomous and an active participant in policymaking or the supply process, i.e., the government does not simply respond to societal pressures. Indeed, governments may choose to ignore these demands in

formulating policy. Such behavior, however, normally has high political costs for a governing coalition, particularly in a competitive political system. The preferences of government officials usually are linked to their societies. In systems with some form of representation, the occupants of governmental posts will change along with evolution in the pattern of opinions and demands.[8]

Defining the model in these terms suggests a dynamic relationship between competing trade coalitions and the government as dictated by the state's sectoral comparative advantage. According to this argument, a process of market exchange transpires between government and organized interests. In this equilibrium, trade policy is sold by government and purchased by interest groups.

In sum, the sectoral public choice cycle enters into the causal process both as a shaper of the content of group interests and as a catalyst stimulating the realignment of groups between competing coalitions. To elaborate, as the cycle moves from a comparative advantage in industry to services, for example, the increase in the expected utility of high protection for manufacturing will cause protectionist groups to become more numerous. This increase in the expected

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[8]Support from society, and particularly from politically mobilized groups within society, is needed even in the most totalitarian countries. Coercion can substitute for societal consent, but it becomes extremely costly and decreasingly effective at high levels of state-society divergence.

gains from protection stimulates the realignment of groups from a free-trade to a protectionist coalition. This change can shift the balance of power (measured by the total amount of political support that a coalition might offer to government) in favor of highly protectionist interests.

The Problem Of International Cooperation

By categorizing states and their economies hierarchically along a technological gradient, and then again distinguishing sectorally where sources of power emanate, it is now possible to construct a typology of states that provides the basis for initial predictions about state behavior.[9] Based on their stage of development, a simple three-category typology of states can be deduced:[10] (1) infant states -- those in which industry is at the embryonic stage; (2) prime states -- those that specialize in capital and technology intensive industry; and (3) mature states -- those in which the manufacturing sector is in decline and its comparative advantage has moved

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[9]This typology, with its attendant premises and assumptions, represents a (generally implicit) statement or theory about how the economic power cycle and the position of nation-states within it create constraints and opportunities that shape the trade strategies of countries in important and predictable ways.

[10]The basic requirement of a typology is that their categories are mutually exclusive and jointly exhaustive of the selected range of cases (Hempel, 1952:51).

primarily in the service sectors.[11] Each of these types will be described briefly in turn.

Infant

For states at this stage of economic development, the term infant refers to the relatively embryonic and backward condition of industry. Attention is directed inward: The main economic concern is growth and the objective of policy is to nurture emerging industrial sectors not only for promoting development, but also in order to establish manufacturing sectors that will be able to compete globally. Hence, a producer- rather than a consumer-oriented set of goals characterized by (1) the protection of their own economic sphere via selective and constrained importation and (2) policies geared towards increasing market share and ultimately penetrating foreign markets is the strategy of these industrializing states.

Domestically, although the economy experiences rapid growth of output based on hitherto unused or underutilized domestic resources, it is argued that protection must be given to industries in the early stages of industrialization and that without such protectionism, these "infant" industries

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[11]These three categories are analogous to Gilpin's (1981) peripheral states, hegemonic leaders and growth nodes; Kindleberger's (1981) small-, large-, and middle-sized countries; and Lake's (1983, 1984, 1988) free riders, hegemonic leaders and spoilers.

(within developing economies) probably would not survive the rigors of international competition from the advanced economies.[12] For this reason, whether following a development policy of import-substitution or export-promotion, the economies' of states in this category generally is expected to be closed during this phase of development. In principle, both liberals and realists accept the rationale for protecting infant industries (Corden 1974). Both acknowledge that an industrial economy may have particular advantages over a non-industrialized economy that make it very difficult for the latter to establish its own industries.[13]

Internationally, as a result of their lack of influence (or to affect the policies of other nations) infant states posses little incentive to engage in the creation or maintenance of a strong free trade regime. Indeed, since "they have no responsibility for the economic system, nor any

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[12]Both politicians and political economists have articulated important rationales for protection based on the "public interest." Colbert's mercantilism, Hamilton's "infant industry" argument, the German historical school, and MITI technocrats in Japan all maintain that protection is in the national interest at certain stages in a country's economic development (Lake, 1988:20).

[13]Liberals and realists disagree fundamentally, however, on the specific purpose of protectionism as it relates to infant industries. Liberals regard protectionism at best as a necessary but temporary expedient and as a stepping stone to a system of free trade. Realists, on the other hand, tend to regard protectionism as an end in itself. For this group the foremost objectives, at least in the short run, are not free trade and wealth accumulation but state-building and industrial power (Gilpin, 1987:184-185).

necessity to exert leadership" (Kindleberger, 1981:249), infant states face no inherent constraints on protecting their least competitive (infant) industries. As a result, they can free ride -- adopt an international economic policy whereby their market is closed while exploiting the benefits of a liberal international trading system -- with relative impunity. Most of the Less Developed Countries (LDCs) and Newly Industrializing Countries (NICs) would fit under this category.

Prime

Prime states, at the top of their economic power cycle, epitomize the height of economic strength. The potential for growth is at a maximum during this stage of development and the policies are designed to preserve its competitive capability.

First, prime states being at the highest stages of economic development, possess comparative advantage in capital- and technology-intensive industrial sectors. The increasing costs of research and development (and therefore of innovation), however, have forced these states to seek additional markets abroad to reap the profits necessary to amortize their investment in order to remain competitive for the next technological wave. In this way, a prime state's interest in expanding and organizing trade is a by-product of its interest in exporting technology- and capital-intensive

goods and services for they gain economically from the impact of trade as well as from the act of trade expansion.

Second, since these exporting states are quite successful in selling their products abroad while facing relatively limited import competition, they prefer that domestic trade barriers be kept low so as to minimize input costs and preserve their international competitiveness. Moreover, a policy of free trade on the part of these prime states might serve to induce other nations to open their markets to foreign products.

Finally, free trade is used by prime states as an instrumental strategy for preserving their favored positions within the international economy. A trading order based on comparative advantage perpetuates the current international division of labor. In so doing, a prime state is able to maintain its comparative advantage in the production of capital- and technology-intensive goods while keeping other states at the lower rung of the production ladder by inhibiting the industrial development of other countries. The rationale here is, with open access to the capital- and technology goods of the prime states via imports, there is no need to develop those goods domestically.

Taking these factors into account, it is not surprising that prime states have the greatest interest in promoting and preserving a liberal international economy in order to access foreign markets and, thereby, generate a large volume of goods

and services globally. Indeed, a prime state will desire "freer economic relations so strongly that it is [sometimes] willing to bear the high costs of creating and then maintaining a liberal international subsystem" (Brawley, 1993:6). The United States and Germany and Japan since the 1960s are current examples of states at the "prime stage" of their economic life.

But while the potential for growth is at a maximum at this stage, it is recognized that a flourishing foreign trade is but a temporary condition in a nation's life history. This supposition finds support in the fact that economic preeminence tends to be ephemeral, resulting from "technological imitation, diffusion, and transfer" (Thompson and Vescra, 1992:518). Ironically then, by extending the open international market, a prime state alters its own position over time. In the long run, as other economies "catch-up" to the technological leader, the state enters the mature stage of development.

Mature

This stage represents a situation where a prime state has lost its competitive edge as a result of the increasingly rapid rate of global changes in comparative advantage. As newly industrializing countries catch up with the established industrial countries, the former enjoy the benefits of lower wage rates, of being able to adopt advanced and efficient

technologies, and other advantages (Gerschenkron 1962). Under these circumstances, an industry may find itself caught "in a process of change and adaptation so profound as to put it in a position akin to that of an infant industry," (Whitman, 1981:22, quoted in Gilpin 1987).

According to this "senile" or declining industry argument domestic producers faced with shrinking markets at home and abroad will increase their demands for protection. Confronted with the aggressive and "unfair" tactics of the newcomer, the former strategy of maximizing competitive edge is abandoned in favor of merely trying to protect existing market share, or of extracting monopoly rents from that share.

Internationally, the motivation for joining a liberal trading order results from the gains attained by participating in such a system. If for any reason these benefits are lost, the incentives for policies of liberalism also are lost. The erosion of liberal trade principles results from a mature state's declining stage of economic development. This creates the tendency to free ride by participating in the liberal system without a commitment to the overhead costs of providing order.

In many ways, the strategic orientations of states in this category are the most complex. To be sure, growth and development continue, but not at the same heady rate to which

the government and society have become accustomed.[14] States at the mature stage of development do not possess a clearly dominant strategy of either free trade or protection. What is of primary importance to these nations is the presence of free trade abroad, which is necessary for them to reap the export advantages derived from their still competitive industries (Lake, 1984:151). But at the same time the state is willing to give some protection to sectors as long as this does not lead to retaliations harming other more competitive sectors.

In sum, given the downward slope of their overall competitiveness, strategic preference would lean more towards protectionism at home while supporting free trade internationally. In essence, mature states are the prisoners of circumstance: following a strategy of free trade and knowing that they actually should be seeking greater protection for their increasingly uncompetitive industries creates an uncomfortable situation -- just ask the United Kingdom.

Three elements of this cyclical-structural model of state behavior need to be highlighted. To begin, it should be noted that this description of development cannot be linked with any particular policy recommendations. Policies such as free

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[14]According to Cipolla (1970:160), "[i]n a mature economy, the largest fraction is in the so-called service sector (the professions, banking, etc). Although a service economy continues to grow through its investment in the creation of knowledge and human capital, service industries tend to have a lower rate of productivity growth than manufacturers."

trade or protection are to be applied wherever they are useful; whether or not they would best serve the national interests depends on the conditions of a particular case. Thus, for example, a policy of complete, unrestricted free trade would be desirable and feasible for those nations at the prime stage of development, but not for those at the stages of infant or mature along their cycle.

Moreover, this model does not regard the mature stage of development, once attained, as the final point so much as the last stage in the cycle. Specifically, a prominent aspect of this hypothesis about industrial maturity is the observed ineluctable trend away from manufacturing toward the service economy which is much less growth-oriented (Petit 1986). To be sure, some industries are obsolete. Yet what is more significant is how many industries, through technological innovation, remain competitive and an important part of the economy. For example, the Japanese did not concede the steel industry to low-labor cost competitors; they used innovative lower cost methods of production and retained their price advantage. And the Germans did not move out of the machine tool industry in the face of cheaper output from Taiwan; they found better ways of making high-quality instruments, better adapted to consumer needs, at less cost. Comparative advantage, with improved product design and technological innovation, can be retained (Scott 1985). In short, it is argued, that, provided a nation going through the mature stage

of development took care to monitor and thus be responsive to its environment (i.e., trends), production capabilities and market share once lost might be regained.

Finally, it is obvious from the foregoing that this typology of states takes full shape during the mature stage of development. In both the infant and prime stages of development, the simplifying assumption of the state as a unitary, rational actor with a single, unified policy interest is possible. For all intents and purposes, the policy preferences at both the national and international levels of analysis for infant and prime states can be generalized as one favoring closed and open international economic systems, respectively. In the mature stage of development, one characterized as involving both closure and openness, however, the unitary actor model must be opened up.

Hypotheses To Be Tested

From the model and typology presented above two general hypotheses can be derived. These propositions pertain to whether, and under what conditions, stages of development are likely to increase the probability that dyads engage in trade cooperation can be deduced.

H_1 INFANT and MATURE states prefer protectionist policies because their specialization in primary products and services are characterized by low development potential (for the former) and slow economic growth (for the

latter).

H_2 States with comparative advantage in capital- and technological-intensive industrial sectors prefer free trade. These PRIME states historically realize higher growth and better development opportunities under the operation of the free market.

These two hypotheses will be filled out with game-theoretic analysis. Game theory is a useful way to model the complexity of the real world. Setting out the "payoffs" to different players in the form of ordinally preferred outcomes, serves several useful purposes in examining international cooperation. To begin, game theory parsimoniously delineates the central strategic choices available to states. Thus it helps to organize information about policy measures. It also provides the ability to discriminate between alternative interpretations of the motives, goals, or policies of a state's central decision-making process. Finally, insofar as outcomes vary across policies, and choices can be observed, game theory may supply clues about the different motives underlying actions (Conyebeare, 1987:11-12).

Conclusions

To reiterate, this model of state behavior in international trade relations can be conceived of usefully as a two part process: Structurally, the economic capability and attributes of individual states -- meaning their position on

the economic power cycle as dictated by stage of economic development -- act as primary determinants of their policy preferences. Politically, trade policy outcomes are conceived of as reflections of the balance of power in society between high- and low-protectionist interests. Specifically, trade policy is modeled as a function of the constraints imposed on governmental decisionmakers by the demands of actors in society. Both of these aspects are critical to the central argument, which suggests that a state's trade preferences should be shaped strongly by both its position in the international economy and other, more domestic (political-economic) factors. Placed in this framework, international cooperation is viewed not only as the outcome of relations among states (viewing the state as a player of games in the international system), but as a resultant of domestic and international games. Neither of the two levels can be ignored by central decision-makers, so long as their countries remain interdependent and sovereign.

CHAPTER IV

PLAYING GAMES

Infant, Prime And Mature: A Game-Theoretic Analysis

Game theory represents an important methodological approach and a useful analytic tool for understanding state behavior. It provides important insights into an actor's strategies and tactics as it attempts to choose among alternatives options to maximize its payoff. In so doing, game theoretic analysis forces a closer examination of the goals and pressures facing an international actor which determine the role it takes.

In this chapter, game theory is used mainly in an instrumental fashion. The goal is not to develop game theory itself, but rather the technique and language is used to model this economic power cycle paradigm of state behavior. The chapter is structured as follows: The first section presents a delineation of state preferences. This lays the groundwork for a game-theoretic test of the model in section two. An application of the model to Brams' (1994) Theory of Moves is the focus of section three. The chapter concludes with some hypotheses for empirical testing in Chapter V.

State Preferences

The preceding chapter presented a typology of states and their interests based on stage of development. The present chapter translates these objectives into specific policy strategies. These strategies may be thought of as simplified representations of alternative courses of action that (covering all contingencies including random exogenous events as well as endogenous behavior by others) the players might choose. State preferences will be examined in terms of payoff structure and the shadow of the future.[1]

Infant

The policy preferences for these import-sensitive states which export little yet face substantial import competition are P/F > P/P > F/F > F/P.[2] In light of the embryonic stage of its industry, INFANT states understandably place the

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[1]Each player's payoff can be determined by the utility it receives as a function of the strategies chosen by itself and its playing partner. The shadow of the future refers to the value that players place on future relations.

[2]Even though protection and free trade are continuous concepts, the choices available to a nation can be simplified to greater free trade (FT) or greater protection (P) (Lake, 1984:151). Preferences are presented as an ordinally ranked series of pairs because nations have preferences for trade both at home (first term) and abroad (second). For example, if a nation-state's first choice was for liberal or free trade both at home and abroad and its second choice was for protection at home and free trade abroad, the preference ordering would be presented as free trade at home/free trade abroad is preferred to protection at home/free trade abroad. In Lake's notation this becomes FT/FT > P/FT.

highest value to the protection of its market. INFANT states, therefore, pursue protection at home regardless of the policies of other nation-states unless induced or coerced to do otherwise, i.e. (P/F).

INFANT states also have a preference for high foreign trade barriers, as these increase input costs for foreign exports. For this reason, (P/P) is preferred over (F/F). The last preference, of course, is (F/P), because both import-competitive and export-oriented sectors would be dissatisfied with this outcome.

Finally, INFANT states' interest in protecting their embryonic industries lead them to place greater weight on present returns and devalue possible but uncertain future gains. For these states, the temptation to defect is huge, largely because the shadow of the future seems so small. Indeed, irrespective of whether the players engage in a single-play situation or an iterated environment, defection (or cooperation) in the present neither decreases nor improves the likelihood of cooperation (or defection) in the future for INFANT states. Protectionism (defection) is an acceptable policy choice for these states given the infant (non-competitive) stage of their industry.

Prime

PRIME states have the strongest preference for universal free trade (F/F). First, by expanding trade levels through

liberalization, a PRIME state increases the demand for its high value-added capital- and technology-intensive products.

Second, being technological leaders these states have little in the way of import competition and, therefore, can afford to reduce unilaterally its own barriers to trade in order to cut the costs of its own resource imports. Indeed, even in the absence of free trade abroad, PRIME states still possess few incentives to adopt domestic protection, which will only further restrict their exports. This suggests a strategy of free trade at home regardless of the policies of others (F/P). Third, if PRIME states do adopt protectionist policies, they are likely to prefer that others remain open for their exports (P/F). Understandably, an autarkic world of universal protection, (P/P), would be the worst case scenario for these states.

In contrast to infant states, relations of PRIME states with other states, are greatly affected by the shadow of the future. Being export-oriented, PRIME states know that they will be heavily and repeatedly involved in international economics. Hence, for states at the PRIME stage of development, in both single-play and iterated conditions, defection in the present will decrease the likelihood of cooperation in the future. The rationale here is that since these states are perceived to be at the highest stages of their development, protectionism is not used for defensive, "nurturing" purposes, but rather as an offensive tool for

unfairly increasing market share. Hence, a policy of protectionism on the part of PRIME states in the present will be meet with protectionist policies by their trading partners in the future.

In sum, a state's rise in the international division of labor ladder from primary products to industry increases the perceived benefits of universal economic openness over mutual closure (F/F > P/P), while reducing the perceived rewards from asymmetric defection relative to unilateral cooperation (P/F < F/P). The preference-ordering for PRIME states, as a result, can be ranked as F/F > F/P > P/F > P/P.

Mature

Mature states which possess only a moderate to strong interest in free trade but face increasingly strong import competition, have the standard Prisoners' Dilemma preference ordering: P/F > F/F > P/P > F/P.

The shift in comparative advantage from the manufacturing to the service sectors alter national tastes for protection and, thereby, heightens the perceived rewards of asymmetric defection, i.e., increases its preference for (P/F) over (F/P) so as to protect its least competitive industries. Hence, the (P/F) preference, satisfies both protectionist and free trade sectors. That is, those sectors in decline will receive the protectionist policies they desire, while those still competitive sectors can continue to export their products.

In like manner, the decline in manufacturing strength changes a MATURE state's evaluation of the future trading system. The shadow of the future of the perceived gains from following a policy of universal free trade (F/F) has gotten smaller since these states are more and more likely to pursue narrow short-term interests (P/F) in order to protect, prop-up if you will, their increasingly non-competitive sectors.

But, despite the decrease in the perceived benefits of mutual openness relative to mutual closure the merits of an open trading system are not total abandoned since some sectors remain competitive. For this reason, a policy of mutual free trade is still preferred over mutual protection (F/F > P/P). Finally, much like infant states, the (F/P) preference is the least preferred outcome since it leaves both import-competitive and export-oriented sectors dissatisfied.

Development Stage And Classical Game Theory

The ordinal preference functions based on stage of development are listed for the players (row *R* and column *C*) in Table 4.1. Note that both Row (RF and RP) and Column (CF and CP) have two strategies, making these 2x2 games, i.e., there are two players, each with two strategies.[3]

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[3]This study takes the position that the decision to raise or lower barriers on trade should be determined dyadically. Although each decision is made as though the individual actor faces the world collectively, international relations is played out as a series of dyadic, one-on-one decisions. Relatedly, with respect to capability and salience, bargaining

Table 4.1

Preference Orderings

	4	3	2	1
Prime (P):	F/F	> F/P	> P/F	> P/P*
Mature (M):	P/F	> F/F	> P/P	> F/P
Infant (I):	P/F	> P/P	> F/F	> F/P

F - preference for free trade
P - preference for protection

4 - most preferred outcome
3 - next best outcome
2 - next worst outcome
1 - least preferred outcome

* - actor preference / partner preference

PLAYERS' STRATEGIES		ROW PLAYER PREFERENCE			COLUMN PLAYER PREFERENCE		
ROW PLAYER	COLUMN PLAYER	P	M	I	P	M	I
FREE TRADE	FREE TRADE	4	3	2	4	3	2
	PROTECTION	3	1	1	2	4	4
PROTECTION	FREE TRADE	2	4	4	3	1	1
	PROTECTION	1	2	3	1	2	3

power necessarily varies across types of trading partners, i.e., a state may be vulnerable vis-a-vis one trading partner but invulnerable with respect to another. This alone demonstrates that the preference ordering for protectionism and liberalism can differ for each type of partner. It therefore is impossible to describe international trade as an n-person multilateral game. The inadequacy of this multilateral focus is apparent given that the significant trade agreements since the mid-1950s have been fundamentally bilateral (Yarbrough and Yarbrough 1992; and Aggarwal 1985). It therefore is appropriate and necessary to examine trade strategy dyadically rather than multilaterally.

The choice of a strategy by R and C leads to an outcome, with an associated payoff, at the intersection of these strategies in the payoff matrix. This study further assumes that the players can strictly rank the outcomes as follows (i.e., there are no ties): 4=most preferred, 3=next best, 2=next worst, 1=least preferred. Thus, the higher the number, the greater the payoff; but these payoffs are only ordinal: they indicate only an ordering of outcomes from best to worst, not the degree to which a player prefers one outcome over another. That is, the payoffs describe only the preferences of players. Games in which players strictly rank outcomes from best to worst are called strict ordinal games (Brams, 1994:20).

The three preference functions listed above generate 3x3=9 games when paired with each other. However, of these nine games, there are only six non-equivalent games.[4] That is, there are only six games that cannot be created by transposing rows and columns of another game.

The six non-equivalent games show what behavior is expected for each possible pairing of preference function. By convention, the payoff value for the row player is listed first in the ordered pair. Each game is shown below in normal

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[4]There are 78 2x2 strict ordinal games that are structurally distinct in the sense that no interchange of the players, their strategies, or any combination of these can transform one of these games into any other. For a complete listings of the 78 games, see Rapoport and Guyer (1966) and Brams (1977).

form, in which players are assumed to make simultaneous strategy choices in the game. (If their choices are not literally simultaneous, the normal form assumes them to be independent of each other, so neither *R* nor *C* knows the other's choices when it makes its own (Brams 1994).)

Three additional points must be noted regarding the character of the games. First, in all the games both players have a dominant strategy. That is, a course of action that is unconditionally better than another strategy because it maximizes an actor's payoff regardless of what its partner chooses. Consider, for example, what strategy is rational for *R* to choose in game I. If *C* selects (CF), *R* has a choice between (4,4) and (2,3) in the first column; its payoff will be (4) if it chooses (RF) and (2) if it chooses (RP). On the other hand, if *C* chooses (CP), *R* has a choice between (3,2) and (1,1) in the second column; its payoffs will be (3) if it chooses (RF) and (1) if its chooses (RP). Clearly, *R* is better off choosing (RF) whatever contingency arises -- that is, whichever strategy *C* chooses (CF or CP). *R*'s strategy of (RF) is dominant, whereas its strategy of (RP) is "dominated," or unconditionally worse than (RF), because it always leads to inferior payoffs.[5]

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[5]In contrast, when a player does not have an unconditionally better strategy, independent of its partner's choice, then its two strategies are termed "undominated." In this case, one player's better strategy depends on its partner's choice (Brams, 1994:21).

Second, all the games assume a "complete information" environment in which both players have full knowledge of all actions available, potential outcomes, and each other's payoffs. For example, as will be shown in game III, *C* knows that *R*'s dominant strategy is (RF). Because (RF) is always better than (RP) for *R*, *C* can surmise that *R* will choose (RF). Given that *R* chooses (RF), it is best for *C* to choose (CP), yielding (3,4) as the anticipated outcome of the game.

Finally, the equilibrium is isolated for each game. The Nash equilibrium cell is the one in which each player receives its highest payoff obtainable given the actions of the other. The Nash equilibrium (Nash 1951), therefore, is an outcome from which neither player would unilaterally depart because it would do worse, or as least not better, if it did. Thus, in game V if *R* chooses (RP) and *C* chooses (CP), giving (2,3). *R* will not switch to (RF) because it would do worse at (1,4); and (C) will not switch to (CF) because it would do worse at (3,2). Hence, (2,3) is stable in the sense that, once chosen, neither player would have an incentive to switch to a different strategy, given the other player does not switch.

The Games

Game I: Prime Versus Prime

In game I, both PRIME states have a dominant strategy for free trade (RF) and (CF) respectively. Row player prefers (RF) whether column player chooses (CF) or (CP) and column

prefers (CF) regardless of row's decision. The result of their independent choices, (RF,CF), is an equilibrium outcome, one from which neither actor can shift unilaterally to better its own position, i.e., there are no gains to be derive from cheating. The equilibrium outcome of (4,4) leaves both PRIME actors satisfied; hence, there are no incentives to defect. In so doing, the actors reach what is for both the optimal result from their independent choices. Game I is what Rapoport and Guyer (1966) call a "no-conflict game," meaning that the single Pareto optimal outcome is achieved and no player feels aggrieved by obtaining less than its maximum possible value.

Game II: Prime Versus Mature

For this game, preference for free trade (RF) dominates preference for protection (RP) for the PRIME (row) player while the MATURE (column) player prefers a policy of protection (CP) over a policy of free trade (CF). The solution is (RF,CP) and the value of the game is (3,4). The PRIME state opens its market while the MATURE state does not. The solution to game II -- threat vulnerable -- is far from stable, however, for its leaves one player dissatisfied. That is, if the PRIME actor could credibly threaten to discontinue providing the good of an open market, the resulting environment would lead to the MATURE state's second worst outcome. Faced with this scenario, the MATURE player would

Table 4.2

Game I: Prime Versus Prime

Prime	Prime	
	Free Trade (CF)*	Protection (CP)
Free Trade (RF)*	**4,4**	3,2
Protection (RP)	2,3	1,1

Key: x,y = payoff to row player, payoff to column player
* = dominant strategy
bold = Nash equilibrium

Table 4.3

Game II: Prime Versus Mature

Prime	Mature	
	Free Trade (CF)	Protection (CP)*
Free Trade (RF)*	4,3	**3,4**
Protection (RP)	2,1	1,2

Key: x,y = payoff to row player, payoff to column player
* = dominant strategy
bold = Nash equilibrium

logically move to participate in the provision of the good (open its market) thus obtaining a score of (3) over the score of (2) that would be obtained if the threat is carried out and the PRIME state was to discontinue providing the good. The problem with such a strategy, of course, is establishing credibility. Would the PRIME state's threat to act irrationally in the short term, defecting if the MATURE player does, be taken seriously by the MATURE state? In any case, the possibility of this "threat" makes this game very unstable.

Game III: Prime Versus Infant

Similar to game II, free trade (RF) dominates protection (RP) for the PRIME (row) player while for the INFANT (column) player protection (CP) dominates free trade (CF) in this game. The solution, once again, is (RF,CP) and the value of the game is (3,4) with the PRIME state providing the good of an open market while the INFANT state does not provide the good by closing its markets. The solution this time, however, is stable. The INFANT actor's dominant strategy of protection, (CP) results in its most preferred outcome (4) and next best payoff (3) when the PRIME actor chooses free trade (RF) or protection (RP) respectively. Given these results, there is no need for the INFANT player to abandon its dominant strategy of protection. Consequently, although the PRIME player is aggrieved, it can do nothing within the bounds of the game to

Table 4.4

Game III: Prime Versus Infant

Prime	Infant	
	Free Trade (CF)	Protection (CP)*
Free Trade (RF)*	4,2	**3,4**
Protection (RP)	2,1	1,3

Key: x,y = payoff to row player, payoff to column player
* = dominant strategy
bold = Nash equilibrium

Table 4.5

Game IV: Mature Versus Mature

Mature	Mature	
	Free Trade (CF)	Protection (CP)*
Free Trade (RF)	3,3	1,4
Protection (RP)*	4,1	**2,2**

Key: x,y = payoff to row player, payoff to column player
* = dominant strategy
bold = Nash equilibrium

induce its INFANT partner to participate in a free trade system. Indeed, the PRIME state would only succeed in making itself still worst off by being the only one to forgo rational self-interested calculation, i.e., move from its second worst (2) to its worst (1) outcome by switching from (RF) to (RP).

Game IV: Mature Versus Mature

In game IV, row (RP) dominates row (RF) and column (CP) dominates column (CF). The solution is (RP,CP) with a value of (2,2), which is a deficient equilibrium. Neither player provides the good of participating in an open trading system. This is the prisoners' dilemma. The dilemma is that while each state can obtain its next-best payoff of (3) by choosing free trade both actors have dominant strategies of choosing a policy of protectionism and hence, bringing upon themselves their next-worst outcome (2,2). Consequently, the (RP,CP) outcome is the Nash (stable) equilibrium, because neither player has an incentive to depart unilaterally from this outcome because it would do worse if it did. Should (3,3) somehow manage to be chosen, however, both actors have an incentive to defect from this state to obtain their best payoff, (4), by choosing protectionism when their partner chooses free trade. The prisoners' dilemma illustrates how two self-interested players following their own interests will come to an outcome which generates less value than a cooperative outcome. For to arrive at the Pareto-optimal

outcome requires that all actors eschew their dominant strategy.

Game V: Mature Versus Infant

In game V, row (RP) dominates row (RF) and column (CP) dominates column (CF). The solution is (RP,CP) with a value of (2,3), which is a deficient equilibrium. Neither player cooperates by participating in an open trading system. The solution, however, is strongly stable, meaning that there is nothing that either player can do within the context of the game to induce the other player to cooperate. Much like its relationship with a PRIME state, for the INFANT state *C*, irrespective of whether its MATURE partner *R* chooses a policy of protectionism (RP) or free trade (RF), its dominant strategy of protectionism results in its most preferred (4) and next best (3) payoffs. Consequently, the INFANT player has no incentive to abandon its dominant protectionist strategy. Indeed, it would be irrational for it to do so.

Game VI: Infant Versus Infant

When two INFANT states face one another a policy of protection is the dominant strategy for both, row (RP) dominates row (RF) and column (CP) dominates column (CF). The solution is (RP,CP) with an ordinal value of 3,3. There is nothing that either player can do within the context of the game to induce the other player to cooperate: Should both

Table 4.6

Game V: Mature Versus Infant

Mature	Infant	
	Free Trade (CF)	Protection (CP)*
Free Trade (RF)	3,2	1,4
Protection (RP)*	4,1	**2,3**

Key: x,y = payoff to row player, payoff to column player
* = dominant strategy
bold = Nash equilibrium

Table 4.7

Game VI: Infant Versus Infant

Infant	Infant	
	Free Trade (CF)	Protection (CP)*
Free Trade (RF)	2,2	1,4
Protection (RP)*	4,1	**3,3**

Key: x,y = payoff to row player, payoff to column player
* = dominant strategy
bold = Nash equilibrium

players somehow adopt a policy of free trade, they would receive their next worst (2) payoff. Moreover, the (2,2) payoff give both players the incentive to move from this outcome to obtain their best payoff of (4) by choosing protectionism, and thereby, resulting in an even worst (1,4) outcome for the row player and (4,1) payoff for the column actor.

The results of the game-theoretic analysis support both hypotheses derived in Chapter III: PRIME states are free traders while INFANT and MATURE states are generally protectionists. The results also make it clear, however, that the static framework of classical game-theoretic analysis leave some questions unanswered about state behavior.

For example, the threat vulnerable solution to game II is deemed unstable for it leaves one player dissatisfied. The analysis further paints an alternative outcome in which the aggravated player PRIME can gain satisfaction by threatening to close its market until the MATURE state abandons its protectionist policies. In so doing, it is inferred that the MATURE state would then be forced to open its market in order to avoid receiving its second worst payoff if the threat were carried out. The static framework of classical game theory, however, does not allow us to see the viability and legitimacy of this threat. Instead we are left "hanging" with an unstable solution. Indeed, one of the main criticism of game

theoretic analysis of state behavior is its static orientation. Though most games and actual strategic problems are dynamic, we still lack a clearly correct way to handle them.

Thus, in an attempt to supplement the game theoretic analysis of state behavior, a second model of state behavior is proposed that relies on combined assumptions of game theory and bounded rationality. Specifically, in the section that follows the issue of actor behavior is analyzed in more dynamic terms through Brams' (1994 Theory of Moves. In the process, potential extensions of and qualifications to the basic model are examined.

Theory Of Moves (TOM)

Bram's Theory of Moves (TOM) is designed to bring a dynamic dimension to the classical theory of games, which its founders characterized as "thoroughly static" (von Neumann and Morgenstern, 1953:44 quoted in Brams, 1994:1) The game is dynamic because rather than assuming that each player has a single decision which must be made simultaneously, TOM posits that play involves a sequence of choices in which the players start at an outcome -- at which they receive payoffs -- and compare this with possible future outcomes they and other players can engender by tracing out the consequences, in term of payoffs, of switching their strategies, in an attempt to move to a better payoff outcome (Brams, 1994:7, 13).

The advantages of TOM with its assumption of a dynamic (or sequential move) game rather than a static (or simultaneous move) game (Gibbons 1992) in explaining state action is two-fold: First, in strategic settings such as these, actors choose courses of action based on preferences and expectations of how others will behave. Thus, when an actor undertakes a certain action, it does not necessarily follow that the immediate result is itself a preferred end for that state. Rather, it could just be a strategically planned means to some other objective. This possibility requires us to consider how each choice is interrelated with prior and subsequent choices, and to understand national goals independently from observed behavior.

Second, by postulating that players think ahead not just to the immediate consequences of making moves, but also to the consequences of all possible moves and countermoves from that initial state, TOM extends strategic thinking into the more distant future than most other dynamic theories do (Brams, 1994:1, 13). In so doing, the analysis of sequential moves in games reflects the view that most real-life games are ongoing and do not necessarily terminate after the players make their initial strategy choices (Brams and Hassel 1984).

The ability of TOM to provide a deeper analysis of state behavior which ultimately leads to its choice of action can be seen by examining TOM's rules of play. First, play starts at an outcome called the initial state. This "state" describes

the current type of relationship between the two players. For our purposes, are these two actors currently following a policy of universal free trade (F/F), mutual protection (P/P), or is one following a policy of unilateral protection (P/F) or perhaps even unrequited free trade (F/P). Since international political-economic relations do not occur in a vacuum, by delineating what type of relationship the two actors are currently engaged in, it will be helpful in determining where they are going. The key point to rule one is that it asks each state to assess their current state of relations with its trading partner. In so doing, it provide some clues as to the reasoning behind each actors ultimate choice to continue the relationship as it currently stands, or to renegotiate, so to speak, the contract.

Rules two and three refer to the ability of either player to unilaterally switch its strategy, and thereby change the initial state into a new state, with each successive move, counter-move and so-forth. So having evaluated its current relationship, each player is presented with the opportunity to improve its payoff, given the possibility that its trading partner also has the option to move from that subsequent state, and so on.

While rules two and three refer to the initiation and continuation of the game respectively, rule four refers to the termination of play. The alternating responses continue until one player decides not to switch its strategy. At this

juncture, the game terminates in a final state, which is the outcome of the game. At some point in the game, therefore, a player decides that either it has reached its most preferred outcome or to continue play would lead to a more detrimental payoff. In either case play stops.

Rules five and six set the "boundaries" of the games. According to rule five, "[a] player will not move from an initial state if this move (i) leads to a less preferred final state (i.e. outcome); or (ii) returns play to the initial state (i.e., makes the initial state the outcome)" (Brams, 1994:27) The former stresses the irrationality in moving if it leads to an inferior outcome: In fact, if and when a player is at a state in which it receives its best payoff (4), it will not move from this state. The latter stresses the folly of engaging in play if it ultimately leads back to the original situation.

The latter rule is modified to accommodate the possession of "threat power" by one or both of the players. Threat power assumes that one player can threaten the other with the possibility of a Pareto-inferior state -- without necessarily moving there -- by communicating its intentions in advance. In making a compellent or deterrent threat of its intention to suffer, along with its opponent, at some Pareto-inferior state, the threatener who possesses threat power can induce its opponent to choose a preferred state, which the threatener also prefers (Brams, 1994: 140). Hence, a player can depart

from an initial state, even if play returns to this state and repeatedly cycles, if it can induce a better outcome for itself via "threat power."

Finally, rule six states that if it is rational for one player to move and the other player not to move from the initial state, then the player who moves takes *precedence*: its move overrides the player who stays, so the outcome will be induced by the player who moves (Brams, 1994:28). This rule is consistent with the strategic orientation of TOM.

Having reviewed TOM's dynamic framework, let us now apply this model to the economic-power cycle model.

Theory of Moves Game I: Prime Versus Prime

Initial State (4,4) --> Outcome (4,4). When (4,4) is the initial state, there is no need for either *R* or *C* to move in an attempt to improve their payoffs. Since both achieve their most preferred outcomes (4,4), there is blockage for both at the start.

Initial State (2,3) --> Outcome (4,4). Both players eventually receives their most preferred outcome in this game. If *R* makes the first move, it would occur at State 2: *R* would move the game from state 1 and an outcome for itself of (2) to state 2 in which it would receive a payoff of (4). *C* would terminate play at this point since it too receives a payoff of (4) at state 2. If *C* initiates the game, both players would

Prime	Prime	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	*4,4*	3,2
Protection (RP)	2,3	1,1

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (4,4)	->¦	C (2,3)	->	R (1,1)	->	C (3,2)	->	(4,4)
C starts:	C (4,4)	->¦	R (3,2)	->	C (1,1)	->	R (2,3)	->	(4,4)

Key:
- R = row (prime) player
- C = column (prime) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.1a

TOM Game I: Initial State (4,4)

Prime	Prime	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	**4,4**	3,2
Protection (RP)	*2,3*	1,1

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (2,3)	->	C (4,4)	->¦	R (3,2)	->	C (1,1)	->	(4,4)
C starts:	C (2,3)	->	R (1,1)	->	C (3,2)	->	R (4,4)	->	(4,4)

Key:
- R = row (prime) player
- C = column (prime) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.1b

TOM Game I: Initial State (2,3)

engage in a series of moves and countermoves untill the most preferred outcome for both (4,4) is reached at state 4.

Initial State (1,1) --> Outcome (4,4). Beginning with a payoff of (1), both players would have no inhibitions about moving the game to the next state whereby the payoff are (3) for the initiating player. The countermove by the partner results in attaining the most preferred outcome for both players. Hence, irrespective of which player makes the first move, both would receive their most preferred outcome (4,4) at State 3.

Initial State (3,2) --> Outcome (4,4). If *R* makes the first move both players would engage in a series of moves and countermoves until the most preferred outcome for both (4,4) is reached at state 4. If *C* initiates play the game would move from state 1 and an outcome for itself of (2) to state 2 in which it would receive a payoff of (4). *R* would terminate play at this point since it too receives a payoff of (4) at state 2. Hence, both players eventually receives their most preferred outcome, (4,4), in this game.

In sum, irrespective of what state the relationship is in, the relationship between two prime states will always result in a mutual policy of universal free trade (F/F) with each receiving its most preferred payoff.

Prime	Prime	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	**4,4**	3,2
Protection (RP)	2,3	*1,1*

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (1,1)	->	C (3,2)	->	R (4,4)	->¦	C (2,3)	->	(4,4)
C starts:	C (1,1)	->	R (2,3)	->	C (4,4)	->¦	R (3,2)	->	(4,4)

Key:
- R = row (prime) player
- C = column (prime) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.1c

TOM Game I: Initial State (1,1)

Prime	Prime	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	**4,4**	*3,2*
Protection (RP)	2,3	1,1

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (3,2)	->	C (1,1)	->	R (2,3)	->	C (4,4)	->	(4,4)
C starts:	C (3,2)	->	R (4,4)	->¦	C (2,3)	->	R (1,1)	->	(4,4)

Key: R = row (prime) player
C = column (prime) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.1d

TOM Game I: Initial State (3,2)

Theory of Moves Game II: Prime Versus Mature

Initial State (3,4) --> Outcome (4,3). If *R* initiates the game the goal is to terminate play at state 4 where it would receive its most preferred outcome of (4). The choice of terminating play, resulting in a (4,3) outcome, or moving and returning the game to its initial (3,4) state is *C*'s decision to make, however. Should *C* move the game to its initial state (where it would receive its most preferred payoff), *R*, according to rule 5, can cycle the game indefinitely until it can induce "a better outcome for itself" (Brams, 1994: 96). *R*'s ability to implement this strategy derives from its threat power to choose (RP) which results *C*'s two worst states (1 and 2). By virtue of this capability, *R* can induce *C* to choose CF when it chooses RF resulting in a (4,3) outcome. Indeed, even though *C* has an incentive to move from (4,3) to (3,4), it would be deterred from doing so by the threat that if it did, *R* would choose its RP strategy resulting in either a (2,1) or (1,2) outcome. If *C* has the option of initiating the game, there is blockage at the start because it attains its most preferred outcome (4). In short, if *R* starts, (4,3) is the "power threat" rational choice, but if *C* starts (3,4) is. But because *R*'s move takes precedence over *C*'s staying, the outcome is that which *R* can induce -- namely, (4,3).

Prime	Mature	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	4,3	***3,4***
Protection (RP)	2,1	1,2

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (3,4) ->	C (1,2) ->	R (2,1) ->	C (4,3) ->	(4,3)
C starts:	C (3,4) ->¦	R (4,3) ->	C (2,1) ->	R (1,2) ->	(3,4)

Key: R = row (prime) player
C = column (mature) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.2a

TOM Game II: Initial State (3,4)

Initial State (4,3) --> Outcome (4,3). *R* would terminate the game right from the start since this initial state provides it with is most preferred result (4). Should *C* have the option of making the first move, it too would terminate play at state 1. By virtue of *R*'s power threat, continuation of the game would just result in either a cycling back to the initial state, or worst yet, termination of play by *R* at a Parato-deficient outcome -- i.e., (2,1). Given this scenario, *C*'s best strategy would be to abandon its inattainable, most preferred, (dominant), threat vulnerable, payoff in favor of it next best (4,3) outcome. Hence, regardless of which player initiates play, the rational choice for both is to remain at the initial state.

Initial State (2,1) --> Outcome (4,3). Irrespective of whether *R* or *C* makes the first move, (4,3) is the rational choice for both players. Given that *R* has threat power, then, it is rational for *C* to accede to this threat, enabling *R* to implement a (4,3) outcome. *C* refusal to accede to *R*'s threat power would result in repeat cycling by *R*. Indefinite cycling would be tantamount to a noncooperative strategy by *R* resulting in either a (2,1) or (1,2) Parato-deficient outcome.

Prime	Mature	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	*4,3*	**3,4**
Protection (RP)	2,1	1,2

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (4,3) ->¦	C (2,1) ->	R (1,2) ->	C (3,4) ->	(4,3)
C starts:	C (4,3) ->	R (3,4) ->	C (1,2) ->	R (2,1) ->	(4,3)

Key:
- R = row (prime) player
- C = column (mature) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.2b

TOM Game II: Initial State (4,3)

Prime	Mature	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	4,3	**3,4**
Protection (RP)	*2,1*	1,2

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (2,1)	->	C (4,3)	->	R (3,4)	->	C (1,2)	->	(4,3)
C starts:	C (2,1)	->	R (1,2)	->	C (3,4)	->	R (4,3)	->	(4,3)

Key:
- R = row (prime) player
- C = column (mature) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.2c

TOM Game II: Initial State (2,1)

Initial State (1,2) --> Outcome (4,3). Once again, for both players, (4,3) is the rational outcome. For *R* (3,4) is clearly a better result than the initial state (1,2), and hence will make the move to State 2. Even though *C* has an incentive to terminate play at this state and not move from (3,4) to (4,3), it would be deterred from doing so by the threat that if it did, *R* would choose its (RP) strategy and -- by virtue of possessing threat power -- stay there. For this reason, *C* would move the game to state 3 where it would still receive its next best (3) payoff. When *C* is given the choice of engagement it will terminate play at state 3. *C* knows that if it were to continue play by taking the game to state 4 (where it achieves its most preferred outcome), this outcome will only be temporary since *R* will counter-countermove *C* and thereby return the game back to the initial state. Given *R*'s threat power, this cycle could conceivably continue indefinitely. Rather than engage in what would, in essence, be a noncooperative game, *C*'s most prudent choice would be to settle for it next best payoff.

Prime	Mature	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	4,3	**3,4**
Protection (RP)	2,1	*1,2*

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (1,2)	->	C (3,4)	->	R (4,3)	->	C (2,1)	->	(4,3)
C starts:	C (1,2)	->	R (2,1)	->	C (4,3)	->	R (3,4)	->	(4,3)

Key: R = row (prime) player
C = column (mature) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.2d

TOM Game II: Initial State (1,2)

Theory of Moves Game III: Prime Versus Infant

Initial State (3,4) --> Outcome (3,4). When (3,4) is the initial state, there is no conflict between *R* and *C* about staying there. Yet while neither player has an incentive to move from (3,4), each has a different reason for termination of play at this juncture. If *R* initiates the game there will be a cycling back to (3,4): Should the moves and countermoves reach state 4, *R* would receive its most preferred outcome of (4). *C*, however, has the option of terminating the game, in which case it would receive its next best outcome or moving and returning the game to its initial state (3,4) and receive its most preferred payoff. Without question *C* would move the game to its initial state. If *C* has the option of initiating the game, there is blockage at the start because it attains its most preferred outcome (4). In any event, there will be a consensus on the part of both players for staying at (3,4).

Initial State (4,2) --> Outcome (3,4). *R* would terminate the game right from the start since this initial state provides it with is most preferred result (4). Should *C* have the option of making the first move, it would move the game to state 2. Having full knowledge to the proceeding moves available to *R*, *C* knows that *R* will terminate play at state 2 since continuation of the game will result in a lower payoff for itself (1,3). Moreover, should the game reach state 3, *C* itself will terminate play since continuation would either

Prime	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	4,2	*3,4*
Protection (RP)	2,1	1,3

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (3,4)	->¦	C (1,3)	->	R (2,1)	->	C (4,2)	->	(3,4)
C starts:	C (3,4)	->¦	R (4,2)	->	C (2,1)	->	R (1,3)	->	(3,4)

Key:
- R = row (prime) player
- C = column (infant) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.3a

TOM Game III: Initial State (3,4)

Prime	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	*4,2*	**3,4**
Protection (RP)	2,1	1,3

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (4,2) ->¦	C (2,1) ->	R (1,3) ->	C (3,4) ->	(4,2)
C starts:	C (4,2) ->	R (3,4) ->¦	C (1,3) ->	R (2,1) ->	(3,4)

Key: R = row (prime) player
C = column (infant) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.3b

TOM Game III: Initial State (4,2)

lead to a lower payoff (2,1) at state 4 or (4,2) at state 1 or a circling back to the (3,4) outcome of state 2. In short, if *R* starts, (4,2) is the rational choice, but if *C* starts (3,4) is. But because *C*'s move takes precedence over *R*'s staying, the outcome is that which *C* can induce - namely, (3,4).

Initial State (2,1) --> Outcome (3,4). For both players the rational outcome is (3,4). With *R* making the first move, the outcome moves from (2,1) to (4,2). *C* naturally counters by moving to (3,4). At this point, *R* stops the game since continuation to State 4 result in a (1,3) payoff - giving *R* is least preferred outcome and C is next best outcome. If *C* were to initiate play, the moves and countermoves would continue until State 3. A this juncture, *C* would stop the game since it would achieve its most preferred outcome.

Initial State (1,3) --> Outcome (3,4). Once again, (3,4) is the rational outcome for both players. With *R* making the first move, the outcome moves from (1,3) to (3,4). At this juncture, *C* would stop the game since it would achieve its most preferred outcome. When the choice of engagement is given to *C* the game will be played out to state 4 where *C* achieves its most preferred outcome. With an initial state payoff of (3) *C* could very easily choose to terminate the game at state 1. However, the game is structured so that the choice for engagement takes precedence over the preference for

Prime	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	4,2	**3,4**
Protection (RP)	*2,1*	1,3

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (2,1)	->	C (4,2)	->	R (3,4)	->¦	C (1,3)	->	(3,4)
C starts:	C (2,1)	->	R (1,3)	->	C (3,4)	->¦	R (4,2)	->	(3,4)

Key: R = row (prime) player
C = column (infant) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.3c

TOM Game III: Initial State (2,1)

Prime	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	4,2	**3,4**
Protection (RP)	2,1	*1,3*

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (1,3)	->	C (3,4)	->¦	R (4,2)	->	C (2,1)	->	(3,4)
C starts:	C (1,3)	->	R (2,1)	->	C (4,2)	->	R (3,4)	->	(3,4)

Key:
- R = row (prime) player
- C = column (infant) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.3d

TOM Game III: Initial State (1,3)

non-play. Knowing that *R* would engage in play and having full information of *R*'s preferences, there is no question *C* will move the game to state 2. Although *R* knows that movement from state 2 and a (2) payoff to state 3 and a payoff of (4) will only be temporary since *C* will counter-countermove the game to state 4, *R* will still counter *C*'s move because the final outcome results in attainment of its next best payoff (3).

Theory of Moves Game IV: Mature Versus Mature

Initial State (2,2) --> Outcome (2,2). The rational outcome for both players is (2,2). Should either player make the first move, the resulting state would result in the most preferred outcome for their partner and the least preferred outcome for themselves. Hence, there is stoppage for both players at state 1.

Initial State (1,4) --> Outcome (2,2). If *R* starts, (2,2) is the rational choice, but if *C* starts (1,4) is. *C* would terminate the game right from the start since this initial state provides it with is most preferred result (4). Should *R* have the option of making the first move, it would move the game to state 2. Having full knowledge to the proceeding moves available to *C*, *R* knows that *C* will terminate play at state 2 since continuation of the game will result in a lower payoff for itself (1). Moreover, should the game reach state 3, *R* itself will terminate play since it achieves

Mature	Mature	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	3,3	1,4
Protection (RP)	4,1	*2,2*

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (2,2) ->¦	C (1,4) ->	R (3,3) ->	C (4,1) ->	(2,2)
C starts:	C (2,2) ->¦	R (4,1) ->	C (3,3) ->	R (1,4) ->	(2,2)

Key:
- R = row (mature) player
- C = column (mature) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.4a

TOM Game IV: Initial State (2,2)

Mature	Mature	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	3,3	*1,4*
Protection (RP)	4,1	**2,2**

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (1,4) ->	C (2,2) ->¦	R (4,1) ->	C (3,3) ->	(2,2)
C starts:	C (1,4) ->¦	R (3,3) ->	C (4,1) ->	R (2,2) ->	(1,4)

Key:
R = row (mature) player
C = column (mature) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.4b

TOM Game IV: Initial State (1,4)

its most preferred payoff (4). *R*'s decision for engagement takes precedence over *C*'s choice of non-action because movement by either player changes the game environment.

Initial State (3,3) --> Outcome (3,3). The rational outcome for both players is (3,3). Much like the (2,2) initial state, should either player choose to move, the resulting state would result in the most preferred outcome for their partner and the least preferred outcome for themselves. A policy of non-action, however, results in each receiving its next best outcome.

Initial State (4,1) --> Outcome (2,2). *R* would terminate the game right from the start since this initial state provides it with its most preferred result (4). Should *C* have the option of making the first move, it would move the game to state 2. Having full knowledge to the proceeding moves available to *R*, it knows that *C* will terminate play at state 2 since continuation of the game will result in a lower payoff for itself (1). Moreover, should the game reach state 3, *C* itself will terminate play since it achieves its most preferred payoff (4). In short, if *R* starts, (4,1) is the rational choice, but if *C* starts (2,2) is. Once again, because *C*'s move takes precedence over *R*'s staying, the outcome is (2,2).

Mature	Mature	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	*3,3*	1,4
Protection (RP)	4,1	**2,2**

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (3,3) ->¦	C (4,1) ->	R (2,2) ->	C (1,4) ->	(3,3)
C starts:	C (3,3) ->¦	R (1,4) ->	C (2,2) ->	R (4,1) ->	(3,3)

Key:
- R = row (mature) player
- C = column (mature) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.4c

TOM Game IV: Initial State (3,3)

Mature	Mature	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	3,3	1,4
Protection (RP)	*4,1*	**2,2**

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (4,1) ->¦	C (3,3) ->	R (1,4) ->	C (2,2) ->	(4,1)
C starts:	C (4,1) ->	R (2,2) ->¦	C (1,4) ->	R (3,3) ->	(2,2)

Key: R = row (mature) player
C = column (mature) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.4d

TOM Game IV: Initial State (4,1)

Theory of Moves Game V: Mature Versus Infant

Initial State (2,3) --> Outcome (2,3). For both *R* and *C* (2,3) is the rational outcome. Should either decide to engage play it would result in the most preferred outcomes for their partner's and the least preferred outcome for themselves. By not moving, however, *C* receives its next best payoff while *R* receives only its next worst outcome.

Initial State (1,4) --> Outcome (2,3). *C* would terminate the game right from the start since this initial state provides it with is most preferred result (4). Should *R* have the option of making the first move, it would move the game to state 2. Having full knowledge to the proceeding moves available to *C*, it knows that *C* will terminate play at state 2 since continuation of the game will result in a lower payoff for itself (4,1) or (3,2). In short, if *R* starts, (2,3) is the rational choice, but if *C* starts (1,4) is. But because *R*'s decision for engagement takes precedence over *C*'s non-action, the outcome is (2,3).

Initial State (3,2) --> Outcome (2,3). If *R* starts, (3,2) is the rational choice: For *R* (3) is the highest payoff it can receive when the initial state has a (3,2). Moving from state 1 to state 2 will result in the automatic countermove by *C* to state 3 since state 2 gives *C* its least preferred payoff. *R*, in turn, will terminate the game at

Mature	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	3,2	1,4
Protection (RP)	4,1	*2,3*

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (2,3) ->¦	C (1,4) ->	R (3,2) ->	C (4,1) ->	(2,3)
C starts:	C (2,3) ->¦	R (4,1) ->	C (3,2) ->	R (1,4) ->	(2,3)

Key:
- R = row (mature) player
- C = column (infant) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.5a

TOM Game V: Initial State (2,3)

Mature	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	3,2	*1,4*
Protection (RP)	4,1	**2,3**

	State 1		State 2		State 3		State 4		Outcome
	R		C		R		C		
R starts:	(1,4)	->	(2,3)	->¦	(4,1)	->	(3,2)	->	(2,3)
	C		R		C		R		
C starts:	(1,4)	->¦	(3,2)	->	(4,1)	->	(2,3)	->	(1,4)

Key:
- R = row (mature) player
- C = column (infant) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.5b

TOM Game V: Initial State (1,4)

Mature	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	*3,2*	1,4
Protection (RP)	4,1	**2,3**

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (3,2) ->¦	C (4,1) ->	R (2,3) ->	C (1,4) ->	(3,2)
C starts:	C (3,2) ->	R (1,4) ->	C (2,3) ->¦	R (4,1) ->	(2,3)

Key: R = row (mature) player
C = column (infant) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.5c

TOM Game V: Initial State (3,2)

state 3 since continuation would result in its least preferred payoff (1) in state 4 where *C* would terminate the game since it receives a payoff of (4). Given the choice between non-engagement and an outcome of (3,2) at state 1 versus a payoff of (2,3) at state 3, *R* most surely will choose non-engagement. *C* faced with the decision of whether or not to move would choose to move the game to state 2 and thus receive its most preferred payoff. State 2, however, results in *R*'s least preferred outcome. *R*, therefore, moves the game to state 3. Here *C* terminates the game since continuation would result in its least preferred payoff. C's move, however, takes precedence over R's staying, resulting in the (2,3) outcome.

Initial State (4,1) --> Outcome (2,3). *R* would terminate the game right from the start since this initial state provides it with is most preferred result (4). Should *C* have the option of making the first move, it would move the game to state 2. Having full knowledge to the proceeding moves available to *R*, it knows that *R* will terminate play at state 2 since continuation of the game will result in a lower payoff for itself (1,4) or (2,3). In short, if *C* starts, (2,3) is the rational choice, but if *R* starts (4,1) is. Once, like the (3,2) initial state, *C*'s move takes precedence over *R*'s staying resulting in the (2,3) outcome.

Mature	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	3,2	1,4
Protection (RP)	*4,1*	**2,3**

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (4,1) ->¦	C (3,2) ->	R (1,4) ->	C (2,3) ->	(4,1)
C starts:	C (4,1) ->	R (2,3) ->¦	C (1,4) ->	R (3,2) ->	(2,3)

Key:
- R = row (mature) player
- C = column (infant) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.5d

TOM Game V: Initial State (4,1)

Theory of Moves Game VI: Infant Versus Infant

Initial State (3,3) --> Outcome (3,3). The rational outcome for both players is the initial State with a payoff of (3,3). Should either player continue to move, the resulting State would result in the most preferred outcome for their partner and the least preferred outcome for themselves. By not moving, however, each receives its next best outcome.

Initial State (1,4) --> Outcome (3,3). *C* would terminate the game right from the start since this initial state provides it with is most preferred result (4). Should *R* have the option of making the first move, it would move the game to state 2. Having full knowledge to the proceeding moves available to *C*, it knows that *C* will terminate play at state 2 since continuation of the game will result in a lower payoff for itself (4,1) or (2,2). In short, *R*'s decision for engagement resulting in a (3,3) payoff takes precedence over *C*'s non-action outcome of (1,4) because movement by either player changes the environment.

Initial State (2,2) --> Outcome (3,3). The rational outcome for both players is State 3 with a payoff of (3,3). Should either player continue the game, however, the resulting state would result in the most preferred outcome for their partner and the least preferred outcome for themselves. By terminating the game at this state, each receives its next

Infant	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	2,2	1,4
Protection (RP)	4,1	***3,3***

	State 1	State 2	State 3	State 4	Outcome
R starts:	R (3,3) ->¦	C (1,4) ->	R (2,2) ->	C (4,1) ->	(3,3)
C starts:	C (3,3) ->¦	R (4,1) ->	C (2,2) ->	R (1,4) ->	(3,3)

Key:
- R = row (infant) player
- C = column (infant) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- **bold** = outcome
- ¦ = blockage

Figure 4.6a

TOM Game VI: Initial State (3,3)

Infant	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	2,2	*1,4*
Protection (RP)	4,1	**3,3**

	State 1		State 2		State 3		State 4		Outcome
R starts:	R (1,4)	->	C (3,3)	->¦	R (4,1)	->	C (2,2)	->	(3,3)
C starts:	C (1,4)	->¦	R (2,2)	->	C (4,1)	->	R (3,3)	->	(1,4)

Key: R = row (infant) player
C = column (infant) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.6b

TOM Game VI: Initial State (1,4)

Infant	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	*2,2*	1,4
Protection (RP)	4,1	**3,3**

	State 1		State 2		State 3		State 4		Outcome
	R		C		R		C		
R starts:	(2,2)	->	(4,1)	->	(3,3)	->¦	(1,4)	->	(3,3)
	C		R		C		R		
C starts:	(2,2)	->	(1,4)	->	(3,3)	->¦	(4,1)	->	(3,3)

Key:
- R = row (infant) player
- C = column (infant) player
- x,y = payoff to row player, payoff to column player
- italic = initial state
- bold = outcome
- ¦ = blockage

Figure 4.6c

TOM Game VI: Initial State (2,2)

Infant	Infant	
	Free Trade (CF)	Protection (CP)
Free Trade (RF)	2,2	1,4
Protection (RP)	4,1	**3,3**

	State 1	State 2	State 3	State 4	Outcome
R starts:	R *(4,1)* ->	C *(2,2)* ->	R *(1,4)* ->	C *(3,3)* ->	**(4,1)**
C starts:	C *(4,1)* ->	R *(3,3)* ->	C *(1,4)* ->	R *(2,2)* ->	**(3,3)**

Key: R = row (infant) player
C = column (infant) player
x,y = payoff to row player, payoff to column player
italic = initial state
bold = outcome
¦ = blockage

Figure 4.6d

TOM Game VI: Initial State (4,1)

best outcome.

Initial State (4,1) --> Outcome (3,3). *R* would terminate the game right from the start since this initial state provides it with is most preferred result (4). Should *C* have the option of making the first move, it would move the game to state 2. Having full knowledge to the proceeding moves available to *R*, it knows that *R* will terminate play at state 2 since continuation of the game will result in a lower payoff for itself (1,4) or (2,2). Here, the reasoning for the results (3,3) are the reverse of the (1,4) initial state: *C*'s move takes precedence over *R*'s staying.

Conclusions

In four of the six games, the resulting outcomes for TOM matched those of the standard game. The two exceptions both involves MATURE states. First, in a game involving two MATURE states, TOM found that in addition to the (2,2) outcome of the standard game, there is also the possibility for a (3,3) payoff -- i.e., a scenario in which both players cooperate by enacting a policy of free trade. Second, in a PRIME-MATURE game, TOM found that PRIME state do have the ability to induce MATURE states to implement a cooperative policy of open markets. As Brams (1994:9) stresses, however, the purpose of TOM is not to give a "better outcome" but to provide a more plausible model of a strategic situation that mimics actual

behavior in such an environment.

One additional testable hypothesis emerged from the analysis in this chapter. In addition to the two previous hypotheses, it can be added that MATURE states behave as free traders in their dealings with PRIME and other MATURE states. Formally:

H_3 MATURE states are induced to prefer free trade when their trade partner is either another MATURE state or PRIME state.

A regression analysis of these hypotheses via a gravity model of bilateral trade is undertaken in the next chapter.

CHAPTER V

TESTING THE MODEL

Capability, Salience And Development Stage: An Empirical Analysis

Employing the "gravity" model of international trade, this chapter empirically test the relationship between bilateral trade, power, dependence, and development stage (infant, prime, mature). The gravity model offers a systematic framework for measuring patterns of bilateral trade. Gravity models of bilateral trade flows have been used by Leamer and Stern (1970), Aitken (1973), Pelzman (1977), Anderson (1979), Deardorff (1984), and Hamilton and Winters (1992).

The empirical investigation of the model is conducted using multiple regression analysis of a pooled, cross-sectional, time-series matrix of data for the OECD countries. The time frame is from 1960 to 1990, inclusive, with annual data.

Pooled data arrays lend themselves nicely to the study of international state behavior via economic performance. Their strength lies in their ability to combine temporally lively indicators of development and growth such as GNP with temporally inert (systemic) factors such as the international

political economic structure. They can also augment otherwise scarce observations by generating a substantially larger number of regressors than is possible within either individual country time-series or cross-national analyses. Furthermore, they are useful for analyses of data both on short periods such as years and on longer, more highly aggregated periods such as phases of the economic power cycle.

The next section of the chapter involves the delineation of the research design that is the basis of the empirical analysis presented here. Succeeding sections pertain to the operationalization, method of analysis, tests and results of the effects of capability, salience and development stage on bilateral trade.

Research Design

The Basic Model

By analogy to Newton's formulation for the gravitational attraction between two bodies, gravity trade models predict that the flow of trade between two states will be a function of the economic size and population of each partner and inversely related to the distance between them. Supply-(demand-) side factors are represented by the size and population of the exporter (importer) while the distance term represents a trade resistance factor. This formulation has a fairly long history and stands firmly in the mainstream of trade flow models (Frankel, Stein and Wei 1993; and Pollins

1989a).

The strength and attraction of the gravity design lies in its flexibility in incorporating a variety of factors that affect trade flows via the "resistance" term. This feature allows easy incorporation of hypotheses about nation-state capability, salience and development into the model.

Case Selection

The most promising group of cases for our purposes are the member states of the Organization of Economic Cooperation and Development (OECD) established in 1960. Confining the analysis to this group, while limiting the number of cases, has both practical and theoretical advantages. First, it allows us to assemble data on a wide range of indicators of performance for all the states under consideration.

Second, in opting for a "most similar systems design" (Przeworski and Teune, 1970:32-34), we control for two variables, membership in an international organization and historical period. All of the countries included in the study adhere to the OECD goal of economic promotion through the coordination of policy. In addition, limiting the study to the postwar system also removes the possible impact of historical period.

Third, countries are examined that vary in ability to substitute trade partners. As Hirschman (1945) points out, importing states wield power over exporting states by their

potential for threatening the impoverishment of the exporter. Variation in the potential for substitution produces differences in the value of a partner's openness. When substitution of an importing state is easy, then that trading partner is less valuable than when substitution is difficult.

Finally, as presented in the preceding chapter, the contemporary global economy can be characterized as encompassing three worlds of development (Wallerstein 1974, 1978; Gilpin 1981, 1987; Kindleberger 1981; Lake 1983, 1984, 1988). If the development stage hypothesis holds for countries at the infant, prime and mature stages of development, then that lends additional support to the model.

Two representatives of each type of trading state are chosen in order to provide a preliminary means of assessing any possible differences among the three types. Additionally, this simple comparison may offer insight into any role that power, dependence and development stage might play in conditioning the key relationship of interest. Finally, by selecting two representatives of each stage of development, it becomes possible to judge whether the model applies only to certain types or to all. Categorization of states is based on the World Bank Debt Tables. Representing the two INFANT importers are Portugal and Turkey.[1] The United States and

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[1]The World Bank classifies these two economies as diversified exporters meaning that no single SITC (Standard International Trade Classification) category (primary products, manufactures and services) accounts for 50 percent

Japan are the two representatives of the PRIME state category.[2] Finally, the two states at the MATURE stage of their development are Greece and the United Kingdom.[3]

In addition to the six importers that are the focus (test cases) of this study, the data set includes three additional INFANT countries (Iceland, New Zealand and Spain), four additional PRIME nations (Canada, Finland, Germany, and Norway) and ten additional MATURE states (Australia, Austria, Belgium, Denmark, France, Ireland, Italy, Netherlands, Sweden and Switzerland).[4] Though this clearly is not a random sample of nations, these states include the major actors in the contemporary global political economy during this period. Indeed, given such broad-based coverage, there is no reason to expect any bias in estimation results due to case selection. Table 5.1 presents a classification of economies -- INFANT,

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or more of total exports. An examination of the SITC breakdown, however, indicates that a major portion of these states' economy is in primary products and labor intensive manufacturing.

[2]An examination of the SITC breakdown reveals that a major portion of the United States' economy is in capital- and technology- intensive manufacturing. For this reason, the United States is categorized as a PRIME state.

[3]The World Bank classifies these two economies as exporters of services. This means that 50 percent of Greece's and the United Kingdom's total exports are in the service sectors.

[4]It should be noted that Germany was coded as an infant state 1960-1964, Japan was coded as infant 1960-1966, Norway was coded as infant 1960-1966, and France was coded as a prime state 1960-1972.

Table 5.1

Classification of States

INFANT[a]	PRIME[b]	MATURE[c]
Iceland	Canada	Australia
New Zealand	Finland	Austria
Portugal	Germany	Belgium
Spain	Japan	Denmark
Turkey	Norway	France
	United States	Greece
		Ireland
		Italy
		Netherlands
		Sweden
		Switzerland
		United Kingdom

Notes:

[a]An examination of the SITC category indicates that a major portion of these states' economy is in primary products and labor intensive manufacturing.

[b]An examination of the SITC breakdown reveals that a major portion of these states' economy is in capital- and technology-intensive industries.

[c]The World Bank classifies these two economies as exporters of services.

Source: World Bank Debt Tables

PRIME, MATURE -- by major export category.

The data set is restricted, in the interest of time and manageability, to the 23 OECD countries over a thirty year period, 1960 to 1990.[5] The time series ends in 1990 purely for reasons of data availability. Dyads were established by pairing state (i) with every other state (j) in the data set over a thirty year period. These pairings produce 4092 cases.

The Economic Power Cycle Model

In the generalized gravity formulation, the dependent variable is the level of trade between two countries. The independent variables employ a well-known variant of the model that includes the economic power -- capacity and size of the importer and exporter -- and "resistance." "Resistance" includes geographic distance, and most important, measurement of the dependence between trade partners and development stage. Finally, because some of the theoretical variables are not directly measurable, proxies related to the conceptual variables are used. Each is examined more fully in turn.

Dependent Variable

Conforming directly to all other models in this tradition, the behavior to be explained (the dependent

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[5]There are only 23 states rather than the 24 because IMF trade data combines the exports and imports of Belgium and Luxembourg.

variable) is the relative quantity of imports of state (i) from state (j), or (j's) exports to (i).[6] A high volume indicates low barrier on imports and a policy of free trade and cooperation.[7] Thus, the level of trade flows can be used as an indicator of both cooperation and conflict. Relative trade has been selected because of the emphasis that this study gives to relative changes rather than absolute changes. It is assumed that most industrialized countries will experience an increase in international trade as their domestic economies grow. Given the assumption that growing economic activity will be accompanied by absolute increases in international trade, this is not surprising. More revealing, however, are changes in a state's international trade relative to changes in its domestic economy.

Independent Variables

Power, which reflects both the wealth and population of a state, is defined by its economic capability and market size. A popular method of determining a state's wealth is to

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[6]Bilateral export and import figures (millions of dollars) were obtained from the International Monetary Fund's Direction of Trade Statistics. Export data does not match parallel import data because the former is reported f.o.b. (free on board) while most of the latter is reported c.i.f. (cost, insurance and freight). Moreover, trade flow covers international movements of goods only across customs borders.

[7]The reverse cannot be made (i.e., a low volume indicates high barriers on imports and a policy of protectionism and conflict) because low trade flow between states could be a simple reflection of comparative advantage.

examine aggregate measures of its economic capabilities (Kindleberger 1973; Gilpin 1975; Krasner 1976; Webb and Krasner 1989). Operationalization of the capability variable is fairly straightforward. Following previous gravity models, gross domestic product (GDP) is employed as the economic capability indicator for exporters as well as importers.[8]

Also incorporated into this design is consideration of market size. Assuming economies of scale, the larger the population, the more lines of production for which the country will meet the minimum market size for efficient market production (Linnemann 1966). GDP and population are good proxies for power for two related reasons. First, they reflect the quantity of goods the country as a whole is producing and consuming, and thus summarizes the overall level of economic activity. Second, increases in GDP reflect an increased ability of the state to purchase and market goods that have an impact on its international influence.

Treatment of the trade "resistance" term in the gravity model is central to this study. In addition to the distance variable, the specification of trade resistance is shaped by the central interest in measuring the effect of dependence, and stage of economic development (infant, prime, mature) upon

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[8]GDP is an annual measure of the total goods and services produced within the borders of a country. GDP figures were obtained from the International Monetary Fund's International Financial Statistics. The national currencies were converted to US dollars using the exchange rates (rf or rh).

the level of bilateral trade.

As noted by Pollins (1989a:747), "geographic distance carries little theoretical interest...[though] some have employed [it] as a surrogate for transport costs." The simple fact is that previous gravity studies have consistently revealed that proximate dyads are correlated with higher levels of trade between nations than other types of dyads, presumably because of low transportation costs. If this is true, the exclusion of this variable could bias the estimate of the effect of all the other variables in the model upon trade flows (Pollins, 1989a:747). Hence, though geographic distance carries little direct theoretical implication, its presence as a control variable in this study is important in order to be certain that the influence on economic cooperation being measured results from economic power, dependence and development stage, and not geographic proximity.[9]

Two other components of the "resistance" term, the central focus of this study, concern the measurements of dependence and development stage. As discussed in Chapter III, an exporting state is "trade dependent" on importing states to purchase its goods: The greater the gains realized from exporting, the more trade dependent the state. In this study, a state's degree of dependence in a dyadic relationship

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[9]Data on geographical distances are found in Fitzpatrick and Modlin (1986). For each pair of states, the shortest distance between ports or rails centers was used to measure the distance (in miles) between states (i) and (j).

is defined by market vulnerability. Market vulnerability is calculated by (i's) exports to (j) divided by (i's) gross domestic product. If (j) is an important market for (i's) goods then the quotient will be high, and the costs and benefits that (i) derives from trading with (j) are susceptible to the policies adopted by (j). If (j) is not a significant importer of (i's) goods, (j) has little capacity to either help or hurt (i) through reciprocation or retaliation (Klassen and Werner 1994). Measuring a state's international trade relative to its gross domestic product accounts for the fundamental shifts in the extent to which trade composes the domestic economy, thereby making it possible to measure relative changes in a state's amount of trade over time. This relative measure of international trade shows the degree to which the domestic economy is dependent and/or exposed to international trade.

Finally, dummy variables are employed to test what effect, if any, development stage has on the volume of bilateral trade flows. Dummy variables are used to represent, in an approximate way, phenomena which are difficult to measure. In this study that phenomena is to categorize states and their economies hierarchically along a technological gradient, i.e., measure stage of economic development in a disaggregated, sectoral fashion. In this regard a state's stage of development can be divided into three cyclical phases: (1) infant states (I) -- those in which industry is

concentrated at the primary products and labor intensive sectors; (2) prime states (P) -- those that specialize in capital and technology intensive industry; and (3) mature states (M) -- those in which the manufacturing sector is in decline and its comparative advantage has shifted primarily to the service sectors.

Hence, the model is represented by Equation 1:

$$(1)\quad \log T_{ij(t)} = \log B_0 + B_1 \log C_{i(t-1)} + B_2 \log C_{j(t-1)} + B_3 \log S_{i(t-1)} + B_4 \log S_{j(t-1)} + B_5 \log G_{ij} + B_6 \log D_{ij(t-1)} + B_7 P_{j(t-1)} + B_8 M_{j(t-1)} + u_{ij}$$

Operationalization

Dependent Variable

Log $T_{ij(t)}$ is the volume of imports by state (i) from state (j) in year (t). It measures the degree of a state's openness on a dyadic basis.[10]

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[10]All values are expressed in U.S. dollars. Moreover, in all the cases, each country's trade openness is represented by the base 10 logarithm of their total imports, as reported by the International Monetary Fund's Direction of Trade Statistics. The log-linear specification of this model is used because it is consistent with many previous studies of trade that have used gravity models and because it has number of advantages relative to a linear specification (Leamer and Stern 1970). In particular, logarithms are preferable to raw numbers because they make it possible to draw conclusions about percentage changes in variables, rather than assume a constant effect of an increase of one billion dollars. By logging imports (the endogenous variable of interest), estimates can be made of the percentage increase or decrease that results from changes in the right-hand-side variables.

Independent Variables

Log $C_{i(t-1)}$ is the nominal GDP of state (i) in year (t-1); while log $C_{j(t-1)}$ is the nominal GDP of state (j) in year (t-1).[11] The economic size of each partner is expected to contribute positively to the volume of imports by (i) from (j). This is because higher income in the importer is expected to result in a higher level of total demand, while higher income in the exporter should indicate greater export capacity.

Log $S_{i(t-1)}$ is the population of state (i) in year (t-1); while log $S_{j(t-1)}$ is the population of state (j) in year (t-1). Consistent with previous research based on this model, the nominal value of bilateral trade is expected to be inversely related to the population of both the importer and exporter. The larger the domestic market to foreign market ratio, the smaller the potential export supply of the country.

Log G_{ij} is the geographic distance between states (i) and (j). Since geographic distance is associated with transportation costs and other inhibitors of trade (G_{ij}) is expected to carry a negative sign.

Log $D_{ij(t-1)}$ is the nominal value of exports by state (i) to state (j) divided by (i's) total exports in year (t-1). The flow of trade between two nations will be measurably affected by the general level of dependence between them. Other things

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[11]Since it is generally assumed that these variables exert a lagged effect on the value of imports, and in order to avoid problems of simultaneity, a lag of one year is implemented in equation 1 for each variable.

being equal, greater dependence (log D_{ij}) between two nations will mean greater trade between them.

Finally, $P_{j(t-1)}$ is a dummy variable that equals 1 if state (j) is at the prime stage of its development in year (t-1) (and 0 otherwise); and $M_{j(t-1)}$ = a dummy variable that equals 1 if state (j) is at the mature stage of its development in year (t-1) (and 0 otherwise). These dummy variables categorizing stage of economic development could be associated with both higher (P_j and M_j) and lower (M_j and I_j) levels of trade: Positive coefficients are expected on (P_j) and negative coefficients on (I_j). The expected coefficients for (M_j), however, could be either negative or positive depending on the trading partner involved. Specifically, positive regressors are expected for (M_j) in its dealings with prime and mature states while negative coefficients are expected for (M_j) in its trade relationship with infant states.

Method OF Analysis

Conventional empirical approaches cannot be used in exploring the effects of power, dependence and development stage on trade openness. A cross-national analysis would suffer from limited degrees of freedom needed for reasonably precise estimates because of the small population size of OECD states, N=24. Furthermore, since the OECD was established just in 1960, relevant econometric data for these nation-states are largely confined to the past three decades (i.e.,

to about 30 annual observations). Finally, neither conventional cross-sectional nor time-series techniques represent a satisfactory method of examining dynamic relationships (Griffin, Walters, O'Connell and Moore 1986; Griffin, O'Connell and McCammon 1989). For these reasons, the present study seeks to exploit the advantages of a research technique that pools cross-sectional and time-series observations for six OECD countries paired with their trading partners between 1960 and 1990.

First, a pooled time-series approach substantially mitigates the problems of restricted degrees of freedom. It allows the inclusion of a much larger number of observations to be employed in parameter estimation than simple cross-sectional analysis or conventional time-series approaches alone.

Second, Stimson (1985) maintains that pooling data across both units and time points can be an extraordinary robust research design. Resulting regression estimates will have smaller sampling variability, thereby increasing both the statistical significance of the coefficients and the confidence in the parameter estimates of the model.

Finally, combining cross-sections and time series in this manner has the added advantage of capturing variations both across temporally inert variables in space such as nations as well as those that emerges over time like years. These advantages are important to the study, given the simple nature

of the model and the relatively short time series available.

Despite these advantages, pooled analyses are also known for their special statistical problems. Specifically, this approach is subject to estimation difficulties pertaining to non-random variation in the residuals, i.e., the errors estimated for regression equations from pooled data tend to behave in a number of ways that violate ordinary least squares (OLS) assumptions (Hicks, 1994a:171).

First, the assumption that the conditional variance of the error term for each independent variable is equal (homoskedasticity) is likely to be violated. Instead, the errors tend to be *heteroskedastic*; that is, they tend to have differing variances across ranges or subsets of nations or years. For example, nations with higher values on variables tend to have less restricted and, hence, higher variances on them. Meanwhile, heteroskedastic residuals imply inefficiency in parameter estimates, for the variance of the sampling distribution is greater using OLS than if other estimation approaches are employed.

Second, the assumption that the residuals are uncorrelated (no autocorrelation) is easily violated. This is because observations and the traits that characterize them tend to be interdependent across time. For example, temporally successive values of many national traits such as population size, tend not be independent over time. The existence of autocorrelated error causes the coefficients to

be inefficient, estimated standard errors to contract, and significance levels to inflate. Consequently, the results of an insignificant equation may appear to be significant.

As a result of these complications, defining mathematically tractable, empirically realistic, good, best linear unbiased estimators (BLUE) is problematic. Indeed, because the residuals probably will not conform to the assumptions that make OLS estimation the best technique, an auxiliary model of the residuals is required, a model that will make generalized least squares (GLS) estimation possible.

Fortunately, a number of solutions have been developed to deal with these problems (Kementa 1971; Hannon and Young 1977; and Judge, Griffths, Hill, Lutkepohl and Lee 1985). Stimson (1985) tested the applicability of four statistical techniques to pooled time-series analysis and concluded that, when the temporal units in a pooled array of data are more numerous than the spatial units -- which fits the case of our data set (i.e., 30 years with 24 countries) -- and no between-unit effects are expected, the array is then regarded as "temporally dominant" and the technique most suitable to use is GLS-ARMA.[12]

Analyses were executed using the Cochrane-Orcutt GLS procedure to control for error and bias. This method was

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[12]Conversely, when the distinct cross-sectional units that contribute to a pool are more numerous than temporal units that contribute to it (e.g., 60 nations over 5 time periods), the pool is regarded as "cross-sectionally dominant."

chosen over simple regression with a lagged dependent variable because it allows for the inclusion of variables that might be highly correlated with lagged dependent variable. Moreover, it was chosen over ARIMA models, which need at least 50 cases, and may be statistically so conservative that notable effects are suppressed (McCleary and Hay 1980; and Jennings 1983).[13]

Empirical Results

Cochrane-Orcutt generalized least squares estimates of the parameters in equation 1 are presented in Tables 5.2 through 5.8. Primary interest, of course, is in the sign and statistical significance of development stage in the determination of international trade flows. These estimation results are best assessed on two broad dimensions: (1) how the model performed overall and (2) the effect of dependence and development stage on level of trade flows relative to the impact of other determinants in the model on an individual case basis.

These findings indicate that the model explains between sixty to eighty-six percent of the variance in the value of

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[13]There are three standard ways of dealing with this problem: (1) ordinary least squares regression with a lagged endogenous variable, (2) differencing variables in the equation, and (3) using a generalized least squares (GLS) procedure (e.g., the Cochrane-Orcutt method) (Janosk and Isaac, 1994:33).

imports.[14] The indicators for importer (actor) and exporter (partner) capability prove to be highly significant. The regression coefficient of log C_i is positive in five cases and statistically significant in four instances; and the regression coefficient of log C_j is positive and statistically significant in all six cases. This is consistent with all other published studies that employ the gravity approach. Similar explication can be made regarding the geographic distance variable. The regression coefficient of log G_{ij} is negative and statistically significant in all six cases. Consistent with past theorizing, this model also finds that distance inhibits trade.

Moving to population, the regression coefficient of log P_i (actor) is negative in only three cases, none of which are statistically significant. However, the regression coefficient of log P_j (partner) is negative in five cases and statistically significant in four instances. Turning to dependency, the results indicate that the regression coefficient of log D_{ij} point in the expected positive direction and are statistically significant in all six cases.

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[14]It should be noted that in time-series analysis with trending data, R^2 values tend to be higher than in cross-sectional research. For instance, a cross-sectional researcher may be satisfied with an R^2 of .40, but a time-series researcher may be unhappy with an R^2 of .80. Indeed, R^2 values of .90 are fairly common with time series, especially those for "trends" as opposed to "change" data. However, because time-series data are typically aggregated, they tend to generate high coefficients of determination for valid as well as nonfactual reasons.

Table 5.2

Combined Results

Variable	Predicted Sign	Significant
Actor	5	4
Partner	6	6
PopulationA	3	0
PopulationP	5	4
Distance	6	6
Dependence	6	6
Prime	4	4
Mature	4	5
Infant	2	1*

Notes

Actor - positive predicted sign
Partner - positive predicted sign
PopulationA - negative predicted sign
PopulationP - negative predicted sign
Distance - negative predicted sign
Dependence - positive predicted sign
Prime - positive predicted sign
Mature - negative predicted sign for trade with infant states; positive predicted sign for trade with prime and other mature states
Infant - negative predicted sign
* significant but with wrong predicted sign

Findings for the prime (P_i) coefficients roughly conform to theoretical expectations with four of the six cases being positive and statistically significant. The remaining two cases, though having signs contrary to prediction were not statistically significant. The regression coefficient of M_i (the mature stage) is statistically significant in five instances, three of which the signs are negative. Finally, the infant development stage variables (I_j) did not perform nearly as well as the other two development variables. The constant, which represents the infant stage of development, is statistically significant in only one of the six cases and it has the wrong (positive) sign at that.[15]

Before examining the parameter estimates for the individual test cases, two points must be made regarding heteroskedasticity and autocorrelation. First, the test for heteroskedasticity was done by examining the residuals of the model. Though crude, examination of the residual variance is an essential diagnostic technique for detecting any source of contamination in pooled designs. Individual examination of each test case found no evidence of heterskedasticity. Second, the Durbin-Watson h-statistic is used to test for the presence of autocorrelation. The pooled Durbin-Watson h-

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[15]Overall, the model most accurately predicts the coefficients for mature states. However, there is insufficient information due to small sample size to make a judgement about the relative predictive accurracy of the model for INFANT, PRIME and MATURE states.

statistic for all the cases range from (1.95) to (2.16) which indicates either the absence (or elimination) of serial correlation.[16]

Individual States[17]

The results of the regression analysis of Portugal are reported in Table 5.3. In seven of the nine variables the coefficients are in the predicted direction though only five are statistically significant. The coefficients for actor and partner power and dependence all have stimulative (positive) effects; while estimators for actor and partner population, distance and mature development stage all have the expected dampening (negative) effect on bilateral trade. Of these regressors, only actor power and population are not statistically significant. As to the remaining two variables, prime development stage has a negative effect, but this result

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[16]The regular Durbin-Watson d-statistic test for autocorrelation is not appropriate for pooled data for it yields an estimate of the autoregression in a single time series only. In contrast to the d-statistic, the pooled h-statistic is calculated for each cross section and then averaged, yielding an estimate of the autoregression, on average, in all the time series in the pool.

[17]For all the states under study: Actor refers to the GDP of state (i); Partner refers to the GDP of state (j); PopulationA refers to the population of state (i); PopulationP refers to the population of state (j); Distance refers to the geographic distance between (i) and (j); Dependence refers to the exports by (i) to (j); Prime indicates a PRIME state trade partner (j); Mature indicates a MATURE state trade partner (j); and the Constant indicates an INFANT state trade partner (j).

Table 5.3

Portugal

Variable	Coefficient	Standard Error	Standard Coefficient	Predicted Sign
Actor	0.69	0.08	0.41	yes
Partner	1.40*	0.09	0.99	yes
PopulationA	-1.39	0.92	-0.04	yes
PopulationP	-0.84*	0.91	-0.36	yes
Distance	-0.96*	0.07	-0.26	yes
Dependence	0.12*	0.42	0.05	yes
Prime	-0.08	0.05	-0.03	no
Mature	-0.13**	0.05	-0.05	yes
Constant	4.68*	0.91		no
R^2	0.77			
Adjusted R^2	0.77			
Durbin-Watson	1.98			
N	682			

*p < 0.001; **p < 0.01

is not statistically significant. Perhaps most surprising is the result for the constant. The constant which indicates the infant stage of development, not only has the wrong (positive) sign, but is statistically significant. Of the six cases this is the only one in which the infant variable has a statistically stimulative effect on trade.

Table 5.4 shows the results of the estimates for Turkey. Two-thirds of the regressors (six of nine) in the model conform to theoretical expectations and, of these, four are statistically significant. The regression shows that there is a positive, statistically significant relationship between partner power and Turkey's import level. The stimulative effect for dependence and prime development stage are also in accordance with theoretical expectations. The estimate for the partner power, distance and mature development stage variables are negative, a result that is consistent with the inhibitive effect that these variables are predicted to have on trade flows. Once again the positive coefficient for the infant development stage variable runs counter to theoretical prediction, though it is not statistically significant in this case.

The results of the regression analysis for Japan are reported in Table 5.5. Seven of the nine coefficients are in the predicted direction, six of which are statistically significant. Consistent with expectations, actor and partner power and dependence remain conducive to bilateral trade.

Table 5.4

Turkey

Variable	Coefficient	Standard Error	Standard Coefficient	Predicted Sign
Actor	-0.33	0.16	-0.14	no
Partner	1.25*	0.12	0.90	yes
PopulationA	0.40	0.72	0.04	no
PopulationP	-0.14	0.12	-0.07	yes
Distance	-0.80*	0.10	-0.21	yes
Dependence	0.31*	0.05	0.15	yes
Prime	0.21**	0.10	0.08	yes
Mature	-0.05	0.09	-0.02	yes
Constant	1.94	1.08		no
R^2	0.61			
Adjusted R^2	0.60			
Durbin-Watson	1.95			
N	682			

*p < 0.001; **p < 0.01

Table 5.5

Japan

Variable	Coefficient	Standard Error	Standard Coefficient	Predicted Sign
Actor	0.44**	0.17	0.33	yes
Partner	1.43*	0.09	0.87	yes
PopulationA	-3.65	2.73	-0.17	yes
PopulationP	-0.93*	0.09	-0.28	yes
Distance	-4.04*	0.74	-0.09	yes
Dependence	0.18*	0.04	0.07	yes
Prime	-0.00	0.08	-0.00	no
Mature	-0.21*	0.06	-0.07	no
Constant	-8.02	5.95		yes
R^2	0.83			
Adjusted R^2	0.83			
Durbin-Watson	2.16			
N	682			

*p < 0.001; **p < 0.01

Actor and partner population, distance and infant development stage have the negative impact hypothesized by the model, though infant and actor population are not statistically significant. Only the negative, statistically significant regressor for mature stage of development runs counter to theoretical expectations.

Table 5.6 reports the results of the analysis for the United States. The regression shows that, in accordance with theoretical expectation, actor and partner power, dependence, prime stage of development all have a positive, statistically significant influence on the United States' import level. Moreover, as predicted, the coefficients for the partner population and distance variables are negative and significant. The negative and significant coefficient for the mature variable, however, run counter to theoretical prediction. Finally, the two regressor having opposite signs, actor population and infant stage of development are not statistically significant.

For the most part, the results for Greece are consistent with the model's predictions. As reported in Table 5.7, the coefficients for actor and partner power, distance, dependence, and prime and mature stages of development are all in the expected directions and are all statistically significant.

Of the six cases under study, the results of the analysis for the United Kingdom (reported in Table 5.8) provides the

Table 5.6

United States

Variable	Coefficient	Standard Error	Standard Coefficient	Predicted Sign
Actor	0.36**	0.12	0.22	yes
Partner	1.05*	0.06	0.98	yes
PopulationA	0.28	0.07	0.02	no
PopulationP	-0.38*	0.05	-0.17	yes
Distance	-0.56*	0.07	-0.11	yes
Dependence	0.57*	0.07	0.27	yes
Prime	0.10**	0.04	0.04	yes
Mature	-0.16*	0.03	-0.08	no
Constant	1.37	1.38		no
R^2	0.86			
Adjusted R^2	0.86			
Durbin-Watson	2.04			
N	682			

*p < 0.001; **p < 0.01

Table 5.7

Greece

Variable	Coefficient	Standard Error	Standard Coefficient	Predicted Sign
Actor	0.78*	0.18	0.49	yes
Partner	0.52*	0.09	0.43	yes
PopulationA	-2.92	2.60	-0.12	yes
PopulationP	0.06	0.09	0.03	no
Distance	-0.43*	0.08	-0.12	yes
Dependence	0.16*	0.03	0.10	yes
Prime	0.30*	0.09	0.12	yes
Mature	0.38*	0.08	0.16	yes
Constant	3.73	2.33		no
R^2	0.67			
Adjusted R^2	0.66			
Durbin-Watson	1.99			
N	682			

*p < 0.001

Table 5.8

United Kingdom

Variable	Coefficient	Standard Error	Standard Coefficient	Predicted Sign
Actor	0.30*	0.09	0.20	yes
Partner	0.64*	0.04	0.60	yes
PopulationA	3.80	2.44	0.09	no
PopulationP	-0.17*	0.04	-0.09	yes
Distance	-0.22*	0.03	-0.10	yes
Dependence	0.44*	0.04	0.17	yes
Prime	0.20*	0.05	0.08	yes
Mature	0.23*	0.04	0.11	yes
Constant	-4.76	4.08		yes
R^2	0.82			
Adjusted R^2	0.82			
Durbin-Watson	2.01			
N	682			

*p < 0.001

strongest confirmation of the model. In line with expectations, actor and partner power, dependence and prime and mature development stages play strong determinate roles in level of imports. Furthermore, the negative coefficients for partner population, distance and infant development stage conform to the restrictive impact these variables are projected to have on trade flow.

Conclusions

For the most part, the empirical analysis supports the argument. For the basic gravity model, it demonstrates that actor and partner power position, partner population and distance each has a direct, statistically significant, and large effect upon bilateral trade. Moving to the inferences regarding dependence and development stage, it shows that dependence and prime stage of development both play a positive and statistically significant role in the trade flow between states. The regressors for the mature development stage reflects the complex strategic orientation of states in this category alluded to in chapter three. In three of the six cases the behavior of the mature state conformed to theoretical expectation, two of which were statistically significant. In the other three cases, the estimators were contrary to predictions and statistically significant. Of the three developmental stages, however, the impact of infant stage were the most disappointing: in only one of the six

cases did it behave as predicted and it was not even statistically significant.

Overall, the results are encouraging. The analysis makes clear that the model captures an important association between development stage and state behavior in the issue area of trade. As evidenced by the consistency of prime states to follow a liberal trading orientation irrespective of its trading partner; and the mature state to be free traders with other mature states while implementing protectionist policies with infant states, this relationship is not idiosyncratic or random. The contradictory results for the infant stage and mature states' relationship with prime state, however, also makes clear that more work needs to be made regarding further refinement of the stage of development variable. Further refinement and extension of the model along with the model's implications for the study of international relations are main subject areas of the concluding chapter.

CHAPTER VI

CONCLUSION

And This Is Important Because...

The purpose of this study has been to increase understanding of the political economy of trade in general and state behavior in particular. In the process, some conceptual and empirical properties of state action have been identified. Specifically, the analysis yields important insights on state behavior that may help provide an understanding of international cooperation.

This final chapter is organized as follows: First, a summary of the main points of the previous five chapters are discussed. Next, the theoretical and empirical implications of the findings are probed. The chapter concludes with elements of a research program that might extend our understanding of the preferences and behavior of states in international relations.

Chapter Highlights

Chapter I sets-forth the problem set: The central task of this dissertation is to develop an integrated analytical framework that can help to explain and predict state

preference and behavior in the area of trade. In the process of developing this framework a series of fundamental theoretical issues in the field of international relations were touched upon, i.e., the neorealist-neoliberal debate and the level of analysis problem.

The literature review in Chapter II revealed that the current paradigms explaining state behavior from either a strict systemic- or unit-level perspective are grossly inadequate. The key drawback in each is the exclusion or neglect of the other: international-level analyses tend to "black-box" state preferences, while domestic-level investigations ignore systemic factors in their explanation of state action. Despite such limitations, the paradigms reviewed did isolate the main explanatory component of state behavior in their respective levels of analysis. The key problem, therefore, is how to synthesize what can be learned from each level.

This synthesis was undertaken in Chapter III and took the form of an economic power cycle model of state behavior. To reiterate, it is argued that, by placing a state's orientation toward the international political economy within a cyclical framework, behavior can be explained in terms of relative position. At the unit-level, realignment of domestic political and economic forces is projected onto the international political economy via a state's relative preference for liberal policies. Systemically, since power

position underlines the role (interests and preferences) of a state, changes in location on the cycle have profound implications for state behavior and international relations. Two testable hypotheses emerged from the initial presentation of the model: (1) prime states will prefer to follow a policy of free trade; while (2) infant and mature states are more likely to implement protectionist policies.

In Chapter IV the two hypotheses were confirmed theoretically when the model was subjected to a game-theoretic analysis. Moreover, a third hypothesis surfaced when the model was assessed using Brams' Theory of Moves (TOM): mature states are hypothesized to adopt a policy of free trade when their partner is a prime or mature state. The dynamic framework of TOM allows prime state to credibly threaten mature into abandoning its dominant protectionist strategy and adopt a policy of free trade. TOM also helps mature states to overcome the prisoners' dilemma and adopt a policy of mutual cooperation -- open markets.

These three hypotheses were tested empirically in Chapter V using data drawn from a sample of six states paired with their OECD partners over a thirty-year period. In general, the results of the data analysis support the basic arguments about the relationship between capability, salience, development stage and trade, as well as the argument about the effects of dependence. The analyses demonstrate that development stage and dependence do have a direct and

statistically significant effect on bilateral trade. Although the analysis here is not exhaustive, it seems clear that an attempt to tie trade-policy to development stage and dependence can be a profitable strategy to pursue. These findings, of course, need to be confirmed by further analysis using more exact measures of comparative advantage. Should these results hold up under further testing, they imply that structural variables measured at the sectoral level are a better indicator in explaining state preference and action.

Empirical and Theoretical Implications

What have we discovered from this exploration of state behavior in trade, guided by the economic power cycle model? This study contributes to two different research traditions: theoretical and empirical. Theoretically, there is a considerable body of formal, deductive modeling that treats the distribution of power among state as a strong predictor of a government's decision toward or away from international cooperation. The present effort directly complements work in that tradition, most notably by Lake (1983, 1984, 1988), Kindleberger (1973, 1981), Gilpin (1975, 1977, 1981) and Krasner (1976).

These explanations, however, attach little importance to process-level factors. By focusing solely on the effects of the system's structure, however, structural theories are unlikely to fully explain patterns in the incidence of

international cooperation. As the argument in chapter III indicates, although structural approaches offer considerable insights into the conditions under which state behavior is explained, supplementing structural models with certain process-level factors improves substantially their explanatory power. In this regard, the economic power cycle approach appears promising, since explanations of this sort emphasize the importance of both the distribution of capabilities and other process-level factors in state behavior.

A second benefit of the economic power cycle model is its ability to systematically explain how national interests become defined, and how those definitions change (Nye, 1988: 238). The model based on power cycles views stages of development as marking points for continuity and transition in a state's life history. In so doing, it focuses on the capacity of changes in stage of development to alter and reshape past patterns and levels of state action. Changes in development stage take on political significance not because they transform the individual state's characteristics in any immediate or straightforward way, but because they resituate the state in a new set of circumstances and social networks.

Specifically, the model calls attention to the very different strategies that make sense for infant and mature states versus those that make sense for prime states. In particular, the three-stage model can help account for (1) why primes states direct their trade-related attacks primarily on

each other and mature states, and not against infant states; (2) why mature states inherently increase the complexity of explaining state behavior; and (3) why it makes sense for infant states to concentrate so much on growth and development rather than on free trade.

This study then, offers a sectoral-level economic explanation for the variance in mobilization and preference of domestic lobbies for protection based on the environment in which a state finds itself. Previously, groups have been assumed to be universally rent seeking, their success being contingent on size and access to select incentives. Alternatively, the economic power cycle model shows that societal preferences for trade policy vary depending on their environment -- stage of development.

Empirically, this dissertation also contributes to the literature on the gravity theory of bilateral trade relations. The findings suggest that, instead of analyzing orientation toward or away from protectionist policies, it may be more fruitful to visualize state preference as a series of separate stages, each with its own logic and strategy.

To elaborate, the economic power cycle model permits us to go beyond the standard gravity model in two ways. First, by moving to the sectoral level, the model establishes a mechanism that links competitive advantage to state behavior. Second, by moving beyond the basic model and encompassing development stage, we approach an understanding of the

disparities in activity (and, hence, interests) among the varying stages of development.

In short, a model that includes a disaggregation of a state's comparative advantage offers several advantages in explaining state behavior. In particular, sectoral level analysis allows us to determine more accurately a state's development stage that, in turn, provides greater insight to state behavior. Indeed, the empirical trigger for the study comes from the deficiency in employing aggregate sources of data to capture state power.

Furthermore, the model has empirical implications that are broader than those related to any single country. The results are compatible with both "commonsense intuition" and a considerable body of evidence that prime states (being at the highest stages of development, and thereby, having the most to gain from an open trading system) are much less likely to engage in protectionist policies than are mature states. Similarly, the results help to account for a pattern, frequently observed by students of international economics, of increased protectionist policies by states whose economic might is on the downward slope.

Of course, in no way is it claimed that the present effort toward modeling of the factors that influence state behavior is conclusive. While the model seems to capture many critical sources of state behavior, there are limits on its ability to capture important subtleties. In particular, if

any empirical evidence to the contrary is treated as a disconfirmation -- even if the overall pattern is one that generally supports the results of the model -- then some predictions of the model must be considered falsified.

For example, according to a strict interpretation of the model, there should have been no negative relationship between prime and mature states. Yet that is exactly what the results indicate. Such peculiarities of dyadic relations can be captured by assigning different vulnerability parameters across relationships. Although the characteristics of individual states are important in actual interstate relations, this study largely abstracted from them in order to concentrate on tendencies and regularities in bilateral trade flows that hold independently of individual attributes.

In sum, the theoretical and empirical steps taken in this study move us in a promising direction. The results of this study clearly indicate that development stage, as defined by a state's comparative advantage, helps shape state behavior. This study also shows that it is possible to integrate models that incorporate political and economic objectives with those that focus on international economic exchange. At the same time, it is clear that we have much more to learn about the relationship between international trade and domestic politics, for many important questions cannot be addressed at the level of aggregation that has been employed here.

A Research Program For International Cooperation

This study suggests that the economic power cycle model of state behavior offers a more complete and compelling understanding of the problem of cooperation than does either a strict systemic- or actor-level analysis. This model builds directly on current empirical trade theory, and it utilizes the "public choice" paradigm, which prevails in many subfields of political science. For these reasons, it is hoped that this study might contribute to efforts by both political scientists and economists to understand the connections between international and domestic politics and trade. Two possible directions readily suggest themselves.

First, the model tested in this study is specified at a high level of aggregation and generality. By using stage of development as a proxy for competitive advantage, some explanatory details are sacrificed for parsimony. Although these estimates are sound, there may be important, patterned variation across dyads that such a "proxy sectoral" design cannot pick up. For example, the responsiveness of bilateral economic exchange to changing political conditions may vary, say, between infant states at the threshold of prime stage status and those that are truly infant whose industry is at the embryonic phase, or between mature states just entering maturity and those that have reached the lower end of their economic power cycle. Plausible ideas such as these (and others) deserve specification and testing.

Second, the rapidly developing literature on the absolute-relative gains debate of protectionism offers a promising area of inquiry for greater elucidation of state action. The economic power cycle model can address this important component of commercial policy via the "vulnerability/sensitivity" distinction within the interdependence literature (Keohane and Nye 1987). Incorporating the theory and findings of these two schools presents the possibility of directing us toward a more complete understanding of trade flows. Finally, integration of these paradigms may be facilitated by the fact that the formal approach in theory building and empirical testing is the same in both cases.

While this chapter illuminates some of the theoretical and empirical implications of this study's findings, and potential research programs of the model; it is also obvious that much additional research still needs to be conducted before the importance of the model for explaining state behavior in international economic relations is clear. Toward that end, further interdisciplinary research between political scientists and economists needs to be conducted, in order to foster a fuller understanding of the relationship between economic power cycles, dependence and international cooperation.

Just as Keohane's work on international regimes launched a body of research that has enhanced our understanding of the

political economy of international cooperation, it is my hope that the present study will lead to more interest among political scientists and economists in describing and modeling state behavior.

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