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ECONOMIC GROWTH AND INTERSTATE CONFLICT: GROWTH AS A CATALYST FOR CONFLICT

A Thesis in

Political Science

by

Charles R. Boehmer

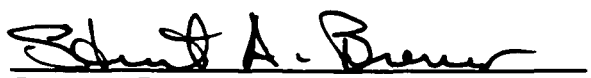
Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

May 2002

We approve the thesis of Charles R. Boehmer

Date of Signature



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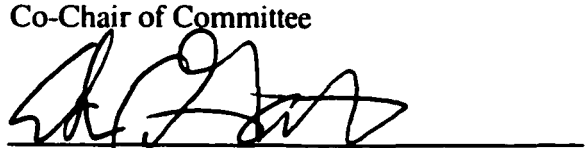

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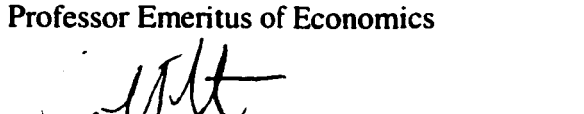

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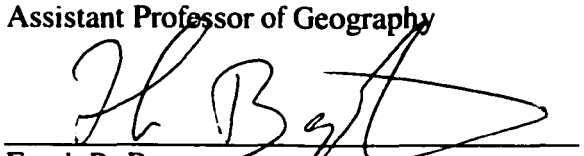

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ABSTRACT

Extant theoretical and empirical work on economic growth and international militarized conflict presents contradictory explanations and findings. Theories dating back several decades link high economic growth to more frequent international conflict but generally rely on anecdotal evidence, while most recent empirical studies present evidence to the contrary. These latter studies find that low economic growth increases international conflict, yet most are limited to the American case. I build upon theories claiming that higher rates of economic growth should increase the probability of international conflict by focusing on the domestic politics of states. By contrast, I argue that economic growth increases social optimism and military capabilities, which provide states with the means and willingness to participate in militarized international conflicts. I argue that lower rates of economic growth should act as a constraint on state involvement in foreign conflicts, especially those that entail the highest risk of fatalities. During these times, domestic opposition could seek to exploit a leader's possible political vulnerability. Additionally, lower rates of economic growth should reduce military spending and military readiness. I then extend this study to search for possible strategic behavior in relation to the differential growth rates between two states: states may initiate militarized action based on their own growth rate as well as that of potential opponents. Hence, economic growth should affect when wars and other militarized disputes occur.

I test my theory on a cross-national sample of 56 countries from around the world from 1870-1992. The findings support my theory that countries that have sustained

economic growth for several years are more likely to become involved in militarized international disputes, but this effect is particularly strong in regard to severe disputes such as wars. However, I also find that joint economic growth between two states may act as a pacifying or deterring effect. Finally, I find evidence suggesting that many studies of economic growth on the dyadic level of analysis (pairs of states) may suffer from selection bias resulting from missing data that may lead to incorrect inferences.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGMENTS

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I would also like to thank my fellow colleagues at Penn State and the University of Delaware, including David Sacko, Timothy Nordstrom, Chris Reenock, David Sobek, Cristian Harris, Donnie Hughes and others for providing assistance and camaraderie during the dissertation and through graduate school. Of course, I am grateful to many other colleagues in the field for providing data and commentary on my work, including John Oneal, William Thompson, Patrick James, Michael Ward, Andrew Enterline, Benjamin Fordham, Sean Bolks, Carmela Lutmar, and Ray Dacey.

It must also be stated that it takes a lot of support from family to get through graduate school. Several family members have provided assistance both emotionally and financially, making it easier to complete this sojourn, including my parents Charles and Carol Boehmer, my in-laws Samuel and Mary Harrar, my grandparents Richard and

Mabel Skidmore and Charles T. Boehmer Sr., my brother Jonathan and my sister Darcie. Last but not least, I would be lost without my wife Helena who has endured this project, and many others, by my side.

Chapter One

Introduction: Economic Growth and Interstate Conflict

In the years preceding the outbreak of World War One, the Russian economy had begun to grow, and this was true of several of the other belligerents of the "War to End all Wars." Russian growth had been on the upswing fueled by attempts to modernize the economy beginning in the 1890s. The industrialization of Russia grew rapidly at a rate of approximately eight percent per year through the 1890s before depression ensued in 1900, contributing to the revolution of 1905. These crises were followed by a period of six percent annual industrial growth that lasted until the outbreak of World War One. Improvements in infrastructure, particularly in rail transport, and other economic reforms led to large increases in mining and metal processing, as well as growth in textiles and chemicals relative to Russia's prior level of industrialization (Riasanovsky 1984). Russia was modernizing and growing rapidly.

An interesting counterfactual situation is imaginable if one thinks about how history might have changed if Russia, and Germany for that matter, had not been growing in the years preceding World War One. Would there have been a war, or at least one with the severity that occurred? Russia's economic growth was perceived as a threat by Germany, which saw war as inevitable with its giant neighbor to the east – delay would only allow the Russians more time and resources to modernize their military.

> The recovery from the defeat by Japan had been surprisingly rapid, and both the British and the Germans believed Russia would be capable of fighting a major war by 1916 or 1917... by 1914 some at least of the Russian ministers were confident that Russia, now that she had embarked on the big army and navy increases approved in 1913, was strong enough to confront Germany and Austria-Hungary without

> waiting till 1917. The Germans, on the other hand, believed that they had better have the expected war with Russia as soon as possible before the Russians were militarily even stronger. (Joll 1984)

Thus, as the eve of the Great War approached, German decision-makers calculated that it was better to fight Russia sooner than later, and this would in part be a preventive war.

Meanwhile, German growth and development also concerned other European countries, particularly Great Britain. Several decades of strong economic growth, spurred on by an efficient and growing industrial base, had transformed Germany into an economic powerhouse, which provided the resources to build a first-rate army and the rapid naval construction of primary concern to the British. German growth remained constant and steady in the years preceding the outbreak of the war, ranging from 4.4 percent growth from 1912-13 and averaging 3.3% over the prior decade, as presented in Table 1.1.[1]

Notice that out of the first three major military powers to become involved in the war, two were growing economically over the past five years and Austria-Hungary had recently enjoyed a single year of growth.[2] Would the war have spread if Russia or Germany had stayed out? I would argue that economic growth increased the chance that these two states would intervene in the conflict. Notice the moderate to strong growth for France, Italy, and the United States. Economic growth appears to have increased these states' ability and willingness to fight a major war. The major exception was British

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[1] Table 1.1 includes growth rates for World War One and World War Two for some of the major belligerents. These growth rates were calculated from the data I use in the empirical analyses presented in Chapters Five and Seven. I do not have data on the USSR or Russia prior to 1928 or during part of the period preceding World War Two and it is thus omitted from the table. Of course, not every growth rate depicted in Table 1.1 is very high, although it appears that the prospects of war increased when countries expected war sometime in the near future. This is particularly the case of Germany and Japan in the years preceding World War Two. If we were to calculate whether a country should fight a war based on its recent economic growth, it would appear that Austria-Hungary in particular should have avoided a large-scale military conflict.

[2] I do not have GDP data on Serbia for this period to explore if its economic growth may have affected its decision to stand up to the Austro-Hungarian threats.

growth, which was less than two percent in the years preceding the war. With the commencement of hostilities, Germany launched a two-front military strategy reliant on the mass mobilization and transport of soldiers across Central Europe that would not have been feasible a few decades earlier. The Russian army had similarly been expanded and was in the process of additional modernization. And with Russia and Germany already committed to a major military engagement, could decision-makers in France and England have realistically envisioned scenarios that would not have left them worse off if they had remained neutral?

Table 1.1 Economic Growth of Primary Participants of WWI and WWII

War	State	Year Prior	Avg. 5 year	Avg. 10 year
WWI	United States	13.0%	3.5%	3.9%
	United Kingdom	1.5%	1.1%	1.6%
	France	8.2%	3.1%	2.2%
	Germany	4.4%	3.5%	3.3%
	Austria-Hungary	5.0%	1.9%	3.1%
	Italy	4.2%	3.1%	4.2%
WWII	United States	7.7%	6.0%	3.8%
	United Kingdom	3.4%	4.2%	2.2%
	France	5.7%	2.6%	1.0%
	Germany	6.0%	8.7%	2.5%
	Japan (1940)	15.7%	7.4%	7.2%

Note: The growth rates above are for the years prior to entry into war, or prior to the attack on Pearl Harbor for Japan. For example, "Year Prior" for the United Kingdom is the growth rate from 1912-1913. The five-year average would be from 1909-1913.

These anecdotes of economic growth and war are meant to serve an illustrative purpose and should not be taken as a full case studies. While many scholars have highlighted a multitude of factors that seemingly *caused* World War One, economic growth may have played an important role by increasing the industrialization of the

primary combatants, allowing them to arm themselves in a manner that permitted their participation in the war.[3] Furthermore, the economic growth that fueled the expansion of military capabilities seems to have contributed to the perception of threat between the European major powers that made the polarizing alliances of the region dangerous and thus added to the severity of the war through contagion.

Moreover, economic growth may have allowed for the optimistic nationalism and jingoism that increased popular support for war. It may have been difficult for the war to erupt when it did without the primary combatants having experienced the necessary economic growth and boost in optimism to believe each would emerge victorious in a short war (Blainey 1988). It would appear plausible that the timing of wars and other interstate disputes are related to the process by which economic growth affects military power and social optimism. To participate in foreign militarized conflicts when a state may lack sufficient military preparedness or during domestic strife, may lower the chances of victory as well as potentially undermine the political standing of state leaders.

German generals, for example, perceived a shortening window of opportunity in which to wage war with Russia in the early twentieth century. Their decision appears to have been based on Russia and Gemany's growth rates, as well as other factors. Although this illustration provides a scenario of a possible preventive war (an attempt to defeat an enemy in the short-term before they become even more powerful in the future),

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[3] It is important to distinguish here between the terms development and economic growth. By development, I mean structural change in a country over time. Countries experiencing development are likely to become much more urbanized and industrialized, use more energy, experience increasing living standards, and utilize new and modern technologies in both production and consumption. By economic growth, I mean the rates of growth. Economic growth is of course likely to be higher during times when development is accelerating, although there may be moments of economic crisis occasionally interrupting this process. While the role of development is important, it is secondary for the purposes of this dissertation. Instead, I focus primarily on the effect of economic growth rates in the years immediately preceding militarized interstate conflicts.

what is centrally important to this thesis is that both states were growing to begin with. What may have been a possible attempt by Germany to check Russia's growing power was made possible by German growth over the prior two decades.

World War Two would seem to present similar anecdotal evidence. Again, higher rates of economic growth appeared to have provided additional resources for the military build-ups by Germany and Japan. Germany's GDP growth rate averaged almost nine percent from 1934 to 1938, whereas Japan's equaled more than seven percent between 1936 and 1940, prior to its attacks on Pearl Harbor and Southeast Asia. Would these two states have been capable of fighting major wars around 1940 without having experienced economic growth in the preceding years? It surely would have been more difficult and may have reduced their chance of winning even further.

Similarly, the effect of economic growth on a country's morale and willingness to fight could also be illustrated with anecdotes based on World War Two. For example, would the United States have intervened earlier in the war if it had not continued to struggle with the economic problems of the Great Depression through the 1930s? Had economic growth been stronger, it may have mitigated the isolationist tendencies that blocked entry into the war. Scholars including Klingberg (1952) and Pollins (1999) among others present evidence that the United States typically becomes involved in wars during, or immediately following, periods of economic growth, which implies that if it had been growing the United States may not have waited until it was attacked to have joined World War Two. Of course, geographic distance delayed the United States at least a few years from having to directly confront the expansionist policies of Germany and Japan. France, however, was not so lucky.

France was in a position to contain Hitler's militaristic expansion in the years prior to the outbreak of war in Europe. Why did France fail to fulfill this role? Clearly Germany was in violation of the treaties of Versailles and Locarno such as during the military reoccupation of the Rhineland. When Germany reoccupied this territory the French government indeed wished to act. However, the French military was given the autonomy to decide the matter and opted to do nothing fearing only a full military mobilization would have been required to remove the Germans. Clearly, the French military was pessimistic in its assessment of the situation and neither did the French government take stronger measures to force the issue.

It would appear that France's lack of military action was in part a symptom of its domestic conditions, including economic growth. France's economic growth rate from 1931-1935 averaged a negative 1.8 percent. The French economy had not grown in the prior decade, afflicted by the global depression. While the German military would have fled from the Rhineland with the first sign of French military force, the French could not muster the will to fight. William L. Shirer, author of *The Rise and Fall of the Third Reich*, referred to the French mood at the time as "...their nation already paralyzed by internal strife and their people sinking into defeatism." (291) Shirer also notes the German morale was similarly low a few years earlier prior to the economic growth that began after the early thirties, after Hitler's rise to power. It would seem that the French could have found more willingness to stand up to Hitler if they would have had stronger confidence in their economy and state power.

This thesis explores the possible link between economic growth and militarized interstate conflict. I examine economic growth and emphasize two ways that growth

could contribute to militarized interstate conflict, highlighted by the discussions of WWI and WWII above. First, economic growth may fuel increases in military power, especially when sustained for a decade or more. Second, economic growth could affect the timing of militarized interstate conflicts.

Lower rates of economic growth may also constrain leaders from engaging in interstate conflicts for two reasons. First, lower levels of economic growth may slow military spending, which may reduce troop levels, slow the acquisition of new equipment, and diminish military readiness. Second, leaders may face stauncher domestic opposition to their policies during periods of slow or negative economic growth, which could erode their political capital and even result in removal from office. Even in autocracies, factions within the military or other leadership bodies (communist parties, tribal leaders, etc.) could act to replace current leaders.

Some scholars disagree that economic growth is positively related to interstate conflict. There exist two theoretical perspectives that link poor economic growth to interstate conflict. First, John Hobson (1917, 1938) and World-System theorists following in the footsteps of Lenin contend that crises of capitalism (domestic over-production and under-consumption) lead to expansionist and imperialist behavior on the part of states for the pursuit of foreign markets and natural resources. And while most scholars no longer focus on just the capitalist major powers, the theme persists that economic turmoil and resource scarcity should lead to more conflicts in the coming years in areas such as the Middle East over water rights. Crises resulting from resource scarcity could also reduce economic growth, supposedly leading to violence within and between states (Gleick 1993; Homer-Dixon 1994, 1999; Mohammed 1997). Second,

some scholars theorize that state leaders may participate in, or initiate, foreign policy crises specifically to divert attention away from domestic economic problems (Leeds and Davis 1997; Fordham 1998; among others).

Let us further explore this example of economic growth and World War One while considering a role for domestic politics. Should internal strife contribute to or constrain participation in militarized interstate conflicts? If lower rates of economic growth lead to domestic conflict, it could have several effects on interstate conflict. First, domestic discord could either increase or decrease the probability that a state initiates or joins a militarized interstate conflict. Another possibility is that domestic conflict could also make states more tempting targets to opportunistic, predatory states.

In reality, the prime belligerents of World War One were not without internal pressures. German and French officials were concerned with the spread of socialism, while Great Britain struggled with the threat of Irish revolt and violence. In Russia, industrialization was upsetting social relations by increasing the proletariat while economic reforms placed new burdens on the peasantry.

We should examine a counter-factual, however: how would the probability of war have been affected if the main belligerents had each been experiencing economic problems that further increased domestic discord? I would argue that higher levels of domestic conflict would have posed an additional barrier to the onset and expansion of World War One. It is intuitive that leaders should attempt to time participation in wars and other serious contests to periods in which both military readiness and citizen optimism are high. If foreign war could be used as an outlet to externalize domestic turmoil, this would rely on a rally-around-the-flag effect (Mueller 1973). While some

studies associate improved presidential popularity ratings to foreign crises, this effect is still a matter of empirical debate and little evidence exists that it would pertain to other countries.

The timing of World War One coincided with at least moderate growth in many of the primary combatants. For states to attempt to fight a war of this magnitude in a period beset by economic hardship could potentially invite calamity – the citizens of the belligerent states could be less apt to support their states' war efforts. To enter into a war in times of slow growth and economic hardship could accelerate or exacerbate the potential for such tribulations. Though economic hardship resulting from the war contributed to the Russian Revolution, the collapse of the Austria-Hungarian and Ottoman empires, and increased risk of social and economic disintegration in Germany by 1918, one may ponder if similar conditions of economic depression existed prior to the war whether it would have been delayed several years (or ever fought at all). Would Germany have been prepared for war in 1914 if they had not sustained higher rates of economic growth the prior two decades? It might have made it more difficult to fight a war, which may have dissuaded German decision-makers from joining the war or allowing Austria-Hungary to believe that they could expect military support if they pressed their demands against Serbia. While several of the main combatants of World War One did face unique political pressures, none was so strong to immediately undermine the sitting regimes.

> Each of the European Great Powers was passing through a political and social crisis in 1914; and in some cases the problems that confronted them were solved or at least postponed by the outbreak of the war. It does not follow, however, that it was in order to solve or postpone these problems that governments declared war. Indeed, many of them were well aware that a declaration of war might create more social problems than it would

> solve. In the period before the war as well as the moment of its outbreak the governments of Europe had had to pay some attention to public opinion in formulating their foreign policies, but this does not necessarily imply that they used foreign policy primarily in order to manipulate public opinion or to achieve internal political aims. In some cases, notably that of Germany, as we shall see, foreign policy was sometimes used as a way of providing focus for national feelings so as to distract attention away from the divisions and tensions in German society. However, the relation between domestic and foreign policy was a very complex one; and it was often by no means clear whether a policy risked involving a country in war would be more likely to create a mood of national solidarity or to provoke a revolution. (Joll, 92)

The Theoretical Importance of State Economic Growth on World Peace

As the discussion above suggests, economic growth may be related to the timing of hostilities and thus an important consideration in strategic decision-making. Poor economic growth may lead to lower domestic morale and a decline in military readiness. However, it may be true that lower rates of economic growth more often lead to militarized interstate conflicts when people become aggravated and put pressure on governments for additional benefits. In the end, we should expect leaders to strategically consider economic conditions and their effects on popular support before becoming involved in foreign conflicts, particularly those that raise the risk of war.[4] This is the empirical question investigated in this thesis.

Moreover, economic growth has both monadic and dyadic qualities in regard to interstate conflict. Not only is it possible that domestic economic conditions may influence decisions when to start or intervene in interstate conflicts, leaders may also base their decisions on the economic situation of potential adversaries. In the above example of the German-Russian dyad, Germany waged a preventive war against Russia (they

[4] By strategic decision-making, I mean that leaders should choose to initiate or join foreign conflicts when domestically it is most supportive and it increases the chances of victory. This is not to mean that foreign policies that risk conflict during times when the potential costs are high (but the potential payoff is also high) could not occur, but only that they will be atypical compared to most conflicts.

perceived it preferable to fight Russia before it could become even stronger). Others such as Blainey (1978) suggest that states suffering from economic disruption, or other domestic problems, may be predatorily targeted by other states. Based on this strategy, Iraq appears to have attacked Iran in 1980, in the wake of the revolution that disrupted Iran politically, socially, and economically. Moreover, if economic growth increases the power and resolve of states, allowing them the means and willingness to engage in militarized conflicts, then another possibility is that dyads of growing states should not only face a higher risk of a militarized dispute, the chance of war occurring may likewise rise.

Nevertheless, any theory of economic growth and interstate conflict should focus primarily on the national level of analysis: economic growth is first and foremost a state level attribute.[5] But of course, interstate conflict always entails two sides of contending participants, which means that a state level explanation of the growth-conflict nexus should be able to offer some insight into disputes between pairs of states. We also know from a large body of literature in the field that several dyadic factors are important determinants of peace and conflict. Even though economic growth may affect the likelihood that states will engage in interstate militarized disputes, democracies appear less likely to choose a democratic opponent in a militarized dispute, and even less likely to escalate to war (Russett 1993; Ray 1995; Oneal and Russett 1997, 1999). The theory presented here specifically seeks to separate and measure monadic from dyadic factors in a single study. Most existing studies on this topic typically operate on only a single level of analysis.

[5] Note that I use the terms "national", "state", and "monadic" to mean analyses of single countries whereas dyadic studies focus on pairs of countries.

Theories linking economic growth to conflict are by no means new and have been postulated on both the national, dyadic, and systemic levels of analysis. Scholarship linking economic growth to interstate conflict can be traced back to at least the late nineteenth century. Yet, attempts to test these theories have been limited and are often imprecise and incomplete, until the last ten years or so. For many years, empirical research was hampered by insufficient economic data, particularly by a lack of comparable cross-national measures. Our ability to approach this subject in a systematic fashion and to test a large number of cases has increased over the last thirty years with large data collection efforts, advances in computer processing power, and the development of new statistical estimation techniques. Even then, with the exception of a handful of cross-national examinations, most empirical work has focused exclusively on the American case, whereas much of the older research concentrates on the major powers and tends to rely on historical case studies and anecdotal evidence.

Economic Growth, Opportunities, and Willingness to Fight

The importance of economic growth is highlighted by how it affects the opportunity and willingness of states to engage in interstate conflict. Economic growth may contribute to interstate conflicts by supplying additional resources to expand military capabilities, which then provides state leaders the means with which to participate in conflicts, whether they start or join them. Increases in state power resulting in part from economic growth may not go unnoticed by other states. It is also possible that under the right circumstances economic growth may contribute to perceptions of foreign threat between rival states. Currently, there does not appear to be a consensus in the United States whether China is a friend or a foe, although if it is the latter its recent economic

growth and power potential may make it more dangerous in the future. In the same manner that England and Germany became rivals and eventually went to war with each other despite the lack of significant substantive issues of conflict dating back several decades, possible misperceptions and fear of China's future intentions and growing power may breed similar expectations that could lead the United States into a war with China.

Conversely, perhaps economic growth has the opposite effect of pacifying states and wars only become a possibility when states compete and clash over markets or strategic resources necessary to maintain sustainable growth and development. This appears to be the prevailing conventional wisdom, although evidence to support it is tenuous. Hence, further research is necessary.

Economic growth may also contribute to interstate conflict by increasing the willingness of states to either start, or become involved in, disputes with other states. As Blainey (1988) points out, the leaders and citizens of states that go to war typically believe that their side will win and that the war will not last long. In addition to other factors such as uncertainty, economic growth may contribute to the risk of militarized conflict by making people and decision-makers optimistic in a manner that may lead them to over-estimate their strength relative to opponents.[6] Additionally, while economic growth may lead to social optimism, or what Pollins and Schweller (1999) call "hubris", that could be related to war through nationalism or jingoism, this willingness to wage war or engage in lesser disputes may be amplified by the lack of constraints on some national

[6] Blainey theorizes that power parity between two states creates uncertainty as to which state is stronger. War is possible when one state initiates conflict believing it is stronger when this is not necessarily the case. Again, this appears to be a fitting explanation for the Iran-Iraq war. Iraq had assumed that Iran's domestic situation had fatally undermined its ability to fight a war, when this was clearly not the case. Consequently, the war went on for eight years without any significant change in territory or relative power.

leaders. Poor economic growth may reduce the material ability of the state (through a lack of military readiness) to fight, as well as undermine the confidence of citizens and social elites in the policies of the current government. It may nonetheless be true that some states become involved in militarized interstate disputes to help ameliorate domestic tensions. However, this may be a gambit that has a realistic chance of success for most leaders facing domestic opposition. Leaders that seek to participate in foreign conflicts not related directly to the survival of their state during periods of economic turmoil should face a higher risk or removal through election or coup de``etat (Lewis-Beck 1988; Londregan and Poole 1990).

A General Test of Economic Growth and Interstate Conflict

Again, this literature lacks an accepted central theory or set of works containing sufficient empirical evidence to determine if there is a relationship between economic growth and interstate conflict, and whether any existing association is negative or positive. This thesis takes a step in this direction. The multi-state examinations presented later incorporate explanatory variables from numerous theoretical perspectives. Three basic goals direct this study. First, I seek to provide a state-level theory depicting how economic growth is related to interstate conflict that includes an expanded role for domestic politics.[7] I do not present a completely new theory but instead elaborate on existing theories by focusing on the domestic politics within countries. Second, in the same manner that the field lacks a general theory explaining how economic growth

[7] This is not to say that economic growth does not play an important role in existing theories. For example, economic growth contributes to state power in Power Transition Theory, although theory itself is specifically focused on only a subset of potential conflicts where one country surpasses another country at the top of the international hierarchy. Economic growth is likewise important in Lateral Pressure Theory by providing the means for states to expand territorially, although other factors such as population growth and technological innovation are just as important, if not more so, in the occurrence of interstate conflict.

affects interstate conflict, more empirical evidence is required cross-nationally at the state level of analysis linking economic growth to militarized interstate conflict.

The final goal of this study investigates a separate but related question. Do states behave strategically in regard to their relative growth rates and militarized interstate conflict? The interaction of two economies may jointly increase the risk of conflict, or perhaps growing states are most likely to target states that are not growing. The dyads where there are large differences in the growth rates between two countries particularly provide interesting scenarios. Though the theory I present later in Chapter Three is formulated at the national level of analysis, it is desirable that a theory of economic growth provide expectations relevant to the dyadic level of analysis. This may help provide a broader picture of the role of economic growth and interstate conflict. While I contend that a monadic theory of economic growth is most appropriate, other bilateral factors also no doubt play a role in the likelihood of war and other militarized conflicts. Based on an extensive body of literature conducted over the last decade or so, we should expect that joint democracy or extensive commercial relations should in part mitigate any positive relationship between economic growth and interstate conflict. I maintain, however, that economic growth should still nonetheless play a role in interstate conflict even after controlling for these other factors.

Again, the purpose of this project is to investigate a *general* relationship between economic growth and state participation in militarized interstate conflict. This thesis neither attempts to directly test well-established theories such as Power Transition Theory where economic growth plays a role in specific types of situations, namely during power transitions, nor does it examine a relationship between economic growth and

domestic stability. For example, Mancur Olson (1963) theorized that rapid economic growth associated with transitions to capitalism could have destabilizing effects on social relations, as appeared to especially be happening in Russia and Germany at the start of the last century. While I do examine whether domestic discord constrains states from participating in interstate militarized conflicts, I leave the relationship between economic growth and domestic instability as an assumption here but worthy of future empirical study.

The Organization of this Dissertation

This dissertation is organized in the following manner. Chapter Two examines the literature concerning economic growth and interstate conflict to date. Attention is especially paid to gaps and inconsistencies in past theories and other empirical issues and elucidates why further research is required. I argue in Chapter Three that economic growth should increase militarized interstate conflict by increasing state military capabilities and social optimism. I base my arguments on similar theories advanced in the past but provide a more thorough discussion of domestic politics and decisions to initiate or participate in interstate militarized conflicts. I also offer a theoretical bridge between levels of analysis, allowing for an explanation of how a monadic based theory of economic growth and interstate conflict could provide expectations at the dyadic level of analysis. I then provide a research design to test my theory at the national level of analysis in Chapter Four for the analysis presented in Chapter Five. Chapter Six outlines the research design utilized to test the dyadic hypotheses examined in Chapter Seven. This latter analysis specifically seeks to identify the strategic interaction: the possibility

that the effect of joint economic growth or differential growth rates may affect interstate conflict. I then provide a synthesis of my findings and conclusions in Chapter Eight.

Chapter Two

Research on Economic Growth and Interstate Conflict

History provides examples of a theme linking economic growth to militarized conflict going back several decades, if not centuries. The kingdoms of Europe fought when revenue was ample and ceased combat when it was expended (Kennedy 1987). One can also trace popular variants of the diversionary conflict theme that governments seek to divert attention away from economic hardship, back at least to the turn of the century. Today we continue to theorize about how the economic growth of states affects the likelihood of war and other forms of militarized conflict. Some theories claim that the growth of the global economy influences the timing and severity of militarized interstate conflicts, others suggest that the growth of national economies increase or decrease the prospects of international peace.

There are three schools of thought on this subject. The first category, *Growth-as-Catalyst*, argues that economic growth increases state military capabilities that are then employed against other states. These studies postulate that when war-making capacities are high, interstate disputes become more frequent and severe. Many of these theories also claim that economic growth increases the psychological disposition of societies to favor militarized conflict as an option of obtaining state objectives and resolving interstate disputes. During these periods of growth, states become more optimistic, arrogant, and bellicose in a manner that precipitates the over-estimation of state power relative to possible foes.[1]

[1] Some classify research in this area under the school of realism. Although not entirely contradictory of the realist tradition, much of the work in this area is presented as separate and distinct themes. Realism is a

The next school predicts that conflict is likely to occur during times of low economic growth. I label this the *Crisis-Scarcity* perspective. These works argue that economic growth decreases the risk of militarized interstate conflict, while conflict rises during times of economic crisis and resource scarcity. Many of these works originate from Marxist and Social-liberal interpretations of unequal growth and exploitation. For instance, Marxists contend that wars, usually among the major powers, are tied to the desire and necessity to impose order on a dysfunctional and anarchic international economic system during long-term periods of economic stagnation, or at other moments when the capitalist classes of states are under threat. Also, according to the social-liberal John Hobson, when an economy is failing we should see higher levels of interstate conflict. Special interests such as social conservatives-reactionaries, the military, and industrialists that benefit from exports or the arms industry push for expansionist foreign policies, which inevitably leads to interstate competition and conflict.

The *Diversionary Conflict* perspective falls within the previous category and links conflict behavior to domestic conditions. The key distinction is that diversionary conflict implies leaders use foreign crises to distract key domestic groups from internal problems, whereas commercial interests advocate expansion in the scenario discussed above. It has long been theorized that states seek to initiate foreign conflicts during times of economic stagnation or in conjunction with other events and crises, such as elections, in order to deflect attention away from domestic political problems. Variations of the diversionary war theme, or sometimes referred to as externalization or 'scapegoat' behavior, have existed in both popular and academic forms for centuries.

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broad systemic level theory not primarily concerned with domestic variables. Economic growth is only of

Growth-as-Catalyst

The Growth-as-Catalyst view of conflict is composed of two themes. First, economic growth increases states war-making capabilities that increase the risk and magnitude of interstate conflict. Second, economic growth leads to a greater willingness to engage in international conflict on the part of society and the executive leadership of the state. Such factors seemingly accompany economic and political expansion. Individual works in this category tend to emphasize one if not both themes.

Economic Growth, War-Making Capability, and Political Expansion

In the twentieth century, a handful of economists noted a correlation between multiple-decade phases of economic growth and an increase in the frequency of wars, particularly among great powers. The Russian economist Nikolai Kondratieff (1926) claimed to have found a fifty or sixty year cycle in the capitalist economy composed of twenty to thirty year phases of expansion and contraction in prices, production, and wages.[2] He linked an increased frequency of wars and other social upheavals to these periods of global economic growth. Though he did not offer a causal explanation of these phenomena, he does speculate on the apparent empirical pattern.[3] According to Kondratieff, "wars and revolutions do not come out of a blue sky, and they are not engendered by the arbitrary acts of individual persons. They arise because of real- especially economic- conditions (83-84)." Kondratieff suggests that international conflict

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concern in this tradition to the extent that it contributes to national power and security.

[2] These long-term economic fluctuations were termed "Kondratieff waves" by Joseph Schumpeter.

[3] The origin of long-cycles is a source of debate. One side argues, including Kondratieff, that such cycles are endogenous to capitalism, while others contend that such rhythms are exogenous occurrences that result because of accidents (such as the discovery of gold in California 1848) or political behavior and events such as wars. Yet others such as Beck (1991) suggest these fluctuations are random walks.

is spurred on by the "increased tempo and tension of economic life and the intensification of the economic struggle for markets and raw materials (84)."

Kondratieff's work has influenced other scholarship in this area of research. Economist Simon Kuznets (1966) further elaborates on the expansionist tendencies of growing states. Economic growth and power lead to military power, and many wars result from political adjustments among states.[4] "It is hardly accidental that Japan was opened up by a squadron of steam warships – a relative innovation of the 1850's – and that Africa was partitioned only in the late nineteenth century, when its penetration by steam railroads became feasible and when the emergence of several major nations intensified international competition for spheres of influence (345)." Economic growth leads to further expansion, and this leads to the possibility of devastating wars if the system contains "several large and developed nations (346)."

Similarly, Alvin Hansen (1932) elaborates on the link between power and economic growth. He boldly asserts the alleged truth of the war chest theory:

> It is a significant fact that wars are bred on Kondratieff up swings of the long waves. Witness the Napoleonic wars in the first cycle; the Crimean War, the Danish-Prussian War, the American Civil War, and the Franco-Prussian War during the up swing of the second cycle; and the World War [WWI] towards the close of the last up swing. Nations do not fight wars after prolonged periods of depression. Following long periods of predominantly good times, in periods of the long wave up swing, war chests are accumulated, navies are built, and armies are equipped and trained. It is not the war that causes the up swing. Rather it is the long-wave up swing that produces favorable conditions for the up swing of war. (Hansen, 97)[5]

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[4] Kuznets' brief discussion of political adjustments is similar to Organski and Kugler's (1980) discussion of "power transitions."

[5] Note however that Thompson and Zuk (1982) find that wars do not create Kondratieff waves but do in fact accentuate the end of upswings and the beginning of downswings in the short-term. Decades later, Hansen reversed his position and claimed there is no relationship between war and Kondratieff waves.

The logic of this theme requires that something fill the war chest (increases war-making capabilities), which is most likely to occur during times of prosperity. The 'full war chest' may be representative of an expanding populace and country. Nazli Choucri and Robert North (1975) theorize that collisions between states occur with outward expansion, especially among great powers. They term this process "lateral pressure," which ranges from increased trade activity to imperialism.

Their microeconomic analysis focuses on domestic politics. In short, society demands action, which is not necessarily limited to the bourgeoisie. Crucial to this process is increasing rates of population, industry, income, trade, and technology. Growing economies tend to require further growth and expansion. And because states wish to defend their interests, the risk of conflict increases as they expand outward and collide with the interests of other states. Even lesser powers in the international system behave in this manner when the opportunity arises.

Through a series of simultaneous equations, these authors study the impact of alliances, military expenditures, colonial holdings, the interaction of population and GDP per capita growth rates, and international violence among six great power states. Population density explains expansion. Also, increases in international violence could be explained by increases in military expenditures and territorial expansion. Furthermore, their analysis demonstrates a sequential path between variables for particular states. For Great Britain, domestic growth led to colonial expansion that required increased military expenditures and eventually alliances, and finally international violence. Russia experienced a similar path. In contrast, though, Germany's path to war was a

consequence of the actions of the other great powers. Lateral pressure leads to the spread of militarism and interstate alliances.

Similarly, Charles Doran (1983, 1985) theorizes that great powers experience a life cycle of sorts consisting of development, maturation, and then decline over a period of decades. He refers to this as *power cycle theory*. The development of states (at least great powers) is not linear. Four points mark the rise and decline of a state's power where the rate of development of power capabilities shifts. It is at these moments that the risk of conflict and war increase. Essentially, states assess their relative position in the power hierarchy of the international system by making linear extrapolations and then adjusting their behavior accordingly. Yet, because state power follows a non-linear developmental path, states' attempts to act rationally are confounded. Power disparities among states result, and misperception is common. Crises are most likely to occur at the highest and lowest points of the power cycle. States may attempt to prevent their decline by risking war, or experience bouts of pessimism and/or nationalism and xenophobia. In any case, foreign policy is most likely to be out of step with the reality of the state's power capabilities.

How then do wars occur? The character of Doran's theory is structural. States are like ships at sea that are unable to alter their course in time to avoid major collisions. The basis of the power cycle for great powers is their development, especially economic growth. These are long-term processes that are not easy to detect and analyze to contemporary policy-makers and structure the environment in which leaders must operate. While a state may decide to make demands, seek compromise, cooperate, or

acquiesce to challengers, it is no longer possible to alter the balance of capabilities between two states once a crisis breaks out.[6]

What matters for the system is not the number of great powers (system structure) but instead the timing of the power cycles. When several great powers hit their critical points at the same time the risk of war increases greatly. According to Doran and Parsons (1980), concurrent inflection points occurred around 1910 and 1940. Hence, while the actual dates of the outset of hostilities could appear arbitrary and random, from Doran's perspective they fall within a danger zone where the behavior of states becomes more reckless than normal as a consequence of misperception and the fear of avoiding national decline and insecurity.

We see a similar link between domestic growth and the risk of international conflict between great powers in the work of Organski and Kugler (1980), albeit at the dyadic level of analysis (pairs of states). Their *Power Transition* theory predicts an increased risk of conflict when a growing state among the great powers becomes a challenger to the state(s) above in the international power hierarchy. The "transition" occurs when the challenger's trajectory of power capabilities nears or passes another great power.[7] The speed of this transition and position of each state are crucial elements in this process, as well as whether both states are democracies and accept the international status quo. If two states are both democracies and/or the rise of the weaker

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[6] Of course alliances are an attempt to shift the balance of capabilities in one's favor, although the deterrent effect of alliances is likely optimized when agreements are made preceding conflicts. For example, Iraq perceived no clear signal that the United States would intervene to save Kuwait in 1991.

[7] It seems that for Doran a power transition would be dangerous only if both states were at critical points in their development. For example, if one state begins to decline at the same time a new challenger is beginning to accelerate its power and development, we would have a power transition or inflection point where the risk of war rises. Of course, from a rational perspective the declining state should not confront the rising state since it would seemingly have little chance of altering the course of its developmental

state is slow relative to the stronger state, then the chance of conflict is reduced. Again, the root of this power transition lies in the economic and population growth of states accompanied by increased military capabilities.

Raimo Väyrynen (1983a) captures aspects of the above works in his theory. Economic upswings lead to uneven growth and increase international conflict. Changes in the distribution of power among the major powers is a structural phenomenon related to economic and political long cycles, which increases the chance of war. Major power wars are a consequence of the interaction of Kondratieff upswings in production, societal effects, the management of the international system, and power transitions among the major powers. The initiation of interstate wars takes place on these upswings. A rising tide raises all ships, but some rise higher than others. In contrast, wars to control colonial areas take place during downturns.

During economic downturns, decision-makers are more constrained than usual in regard to the initiation of conflict. However, upwardly mobile states are less affected by global downturns in the global economy and are prone to initiate conflicts in the next economic upturn. As with Doran's theory, the growth trajectories of nation-states are not individually alterable. Väyrynen asserts that alliances are one of the few means to avoiding large wars.

Returning to Kondratieff cycles, recent research has seemingly brought forth more support for the tie between long-term growth in the global economy and a higher probability of war and other militarized contests. Since the 1970s, such studies have once again become popular. Goldstein (1988) examined cycles in prices, production, wages,

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trajectory. But nonetheless the declining state is unlikely to recognize the inevitability of its fate and take

and technology and found these variables rise and fall in a sequential pattern. The peak in global production precedes price and wage peaks by a few years, while technological innovations tend to accelerate in number during economic downswings. Goldstein found that war severity (number of deaths) rises on upswings near the production and price peaks but found no evidence for the outbreak of increased conflict of wars and other militarized disputes.

However, Mansfield (1988) nevertheless shows that wars occur more frequently during Kondratieff upswings and Pollins (1996) and Pollins and Murrin (1999) demonstrate that the same is true for all forms of militarized conflicts (threats, displays of force, uses of force, and wars). The latter study explores both the effects of Kondratieff waves and Modelski and Thompson's long cycles of leadership (1996).[8] In regard to economic growth, their research shows that economic expansion leads to increased frequencies of conflict. "We are persuaded that the Long Wave may affect such behavior *indirectly* (by shaping the conditions of the global order) and *directly* (by influencing the material needs and capabilities of actors) (Pollins and Murrin 1999, 432)." Additionally, the authors found that colonial expansions occurred with Kondratieff upswings in the global economy. In other words, both systemic and national attributes affect the risk of conflict. Thus, this portion of *the Growth-as-Catalyst* literature offers a theoretical basis and some evidence in support of a positive relationship between economic growth and interstate conflict.

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measures to reverse its path, according to Doran's logic.

[8] Leadership cycles are similar to other systemic level theories that feature alterations in the global distribution of power. Briefly, one state will emerge as a leader in the international system in both the military and economic realms. Waves of technical innovation help propel the leading nation into a position of predominance. However, the ascendance of the leader is followed by an erosion of power relative to

Economic Growth, Psychological Moods, and Foreign Policy

Is a positive relationship between economic growth and military capabilities a sufficient condition for military conflicts? Kondratieff's early speculations, as well as Väyrynen's theory, suggest that at least one other factor is necessary. While economic growth may provide a greater opportunity to engage in foreign military conflicts (through increased military capabilities), it may not provide the willingness. Economic growth may act as a catalyst in other ways.

Some within this portion of the literature contend that the willingness to engage in international conflicts is a sociological and psychological by-product of economic growth. Macfie (1938) links international conflict with trade and business cycles. The risk of conflict rises with economic upswings. "The whole period may be best described as one of economic bumptiousness: one in which hope is alight and obstacles are impatiently confronted (Macfie, 95)." Macfie's point is to scientifically disprove popular theories of diversionary conflict. He supports his contention by empirically linking the outbreak of war to business cycles.[9]

Theoretically, Macfie states we should expect war when both capabilities are high and the national mood is confident. Wars should come at the height of upswings. But where does the source of conflict come from? Macfie argues disputes arise in economic *downturns* but are fought out in *upturns*. Others have mistakenly associated the start of

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other states, eventually resulting in another great power war to determine a new leader. This will be discussed later in the chapter.

[9] Thompson (1982) argues that Macfie's brief analysis is inappropriate because he uses British business cycles in the century prior to World War One with wars that did not include the British as a participant. While there is some credence to Thompson's point, it is clear that Macfie is using the British economy as a proxy for the world economy. This seems justified, with caution, if we remember that Great Britain was the leading national economy through most of his period under analysis. The British economy generally moved in tandem with the world economy, or vice versa.

disputes with their militarization. "...It is suggested that the unnatural heats of an excessive expansion are required to germinate the seeds of war – no matter when they are sown (96)."

Blainey (1988) agrees that economic expansion increases the risk of militarized conflict. Nations with internal problems are either attacked or seek peace. Again, war-making capabilities are likely to increase during economic upswings, which also have the effect of increasing domestic optimism. Anything that causes optimism and the perception that a nation is powerful should be considered a cause of war.[10] Perceptions of power are perverted by optimism. "While there may be no clear pattern to war, one 'clue' we have is the optimism that abounds at their onset (41)..." Wars stem from miscalculation and a disagreement over each country's power, otherwise wars would usually be averted. Most countries believe they will win quick victories when they go to war. Economic growth is likely to distort these perceptions through increased optimism and lead to the intuitive sense (subconscious) that it is possible to press for the state's interest and initiate disputes during these periods.

Another portion of the *Growth-as-Catalyst* emphasizes 'foreign policy mood' as a characteristic unique to the United States. Gabriel Almond (1960) is an early writer on public opinion moods on US foreign policy. Frank Klingberg (1952), similarly, identified long-term phases of extroversion and introversion in the outlook of US foreign policy. These alterations in the degree of US international involvement are theoretically based on slow changes in the mood of public opinion. Extroversion is defined as "a nation's willingness to bring its influence to bear upon other nations, to exert positive

pressure (economic, diplomatic, or military) outside its borders (Klingberg, 239)." These foreign policy moods last from twenty to thirty years. The introvert phases are plateaus between periods of increased interaction, and not necessarily significant isolation. Moreover, the intensity of these moods is not consistent throughout the spell.

Klingberg provides evidence of these mood cycles through the content analysis of presidential addresses, party platforms, diplomatic warnings and treaties, annexations, naval expenditures, and armed conflicts. These activities and behaviors increase during extrovert phases. In particular, the amount of space devoted to foreign policy during presidential addresses is a key indicator of mood and presidents in the United States are often elected on their keen ability to tap into the current foreign policy mood.

Klingberg, however, does not provide a theory explaining these moods and their alterations. He offers several avenues of speculation, including business cycles. One of the leading explanations could be the need to consolidate after periods of extensive foreign policy activity, or when some policies turn out to be dramatic failures. Wilson's attempt to bring the United States into the League of Nations is a stark example of policy failure and mood change. In the end, though, some of his rationale in this early publication are tantamount to saying change occurred because people wanted change. Despite possible tautology, Klingberg uncovers another interesting point – an expansionist contagion in the international system. The United States, it seems, may have moved into extrovert moods in order to mobilize against other states that became active and expansionist. In other words, the extroverted or expansionist behavior of one or more states (particularly major powers) catalyzes additional states to take actions to

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[10] This would include nationalism, ideology, religion, and even the changing of the seasons to spring or

defend their national interests. However, he does not provide a clear role for economic growth or other economic conditions in his theory.

Jack Holmes, a former student of Klingberg, builds upon this research but also did not initially argue for a link between economic growth and foreign policy moods. Holmes (1985) argues that the American public and policy makers generally disbelieve that U.S. foreign policy could become extremely introverted. The apparent change from one foreign policy mood to another is a consequence of either extreme introversion or extroversion. Some event occurs that exposes this incongruity between policy and reality that forces a drastic alteration in foreign policy. Each phase tends to move to a point where US interests are harmed, such as prolonged involvement in Vietnam. Just prior to these turning points in moods, US foreign policy fails to reflect the present reality. Until these phases result in some dramatic crisis, presidents are limited in their ability to reverse societal sentiments. And those presidents that try stand a poor chance at reelection.

Holmes (1985) further develops the theoretical rationale behind Klingberg's cycles. During extrovert phases the President controls foreign policy. However, Congress tends to take control during introvert phases.

> During an extrovert mood phase, the public is not only willing, but anxious, for the United States to assume a significant role in international affairs, whether it be 'Manifest Destiny' or 'Guarding the Free World.' The sense of urgency implied by such stirring slogans allows little patience for the ponderous workings of a legislature divided by its numerous and diverse membership. (Holmes, 109)

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summer (most wars break out in these seasons).

Holmes incorporates Klingberg's dating scheme and then extends the data using many of the same indicators. His research reveals a mood cycle rose and fell during the Cold War and that a new extrovert phase began in 1989 (Holmes and Keck 1999). How does economic growth play a role in these mood cycles? Holmes (1985) originally discounted the impact of business cycles (both short and long-term), although his position soon changed. The same year Holmes' book was in print he also published an article studying the link between Kondratieff cycles and mood cycles (Elder and Holmes 1985). Using a dating scheme by Van Duijn (1983a), they show that Kondratieff and mood cycles matched 13 of 19 phases. They also find that extroversion and wars (especially increased battle deaths) move in tandem with economic upswing phases.

The link between American mood cycles and Kondratieff waves has recently undergone a more rigorous examination. Holmes and Keck (1999) empirically pair American mood cycles to Kondratieff waves using Goldstein's (1988) dating scheme. Similarly, Pollins and Schweller (1999) examine the impact of hubris, war chests, lateral pressure, and diversionary conflict on American involvement in militarized disputes. They show that militarized disputes occur most often in Klingberg's extrovert phases, and are unlikely to escalate during periods of introversion. Evidence is found to support the war chest and lateral pressure hypotheses as well.

Economic expansion has appeared to increase the risk of international conflict by leading to higher levels of militarism and optimism. Is this true today? Does the spread of liberalism and higher levels of economic interdependence on a global scale alter this dangerous propensity on the part of great powers toward international conflict? Can we generalize from theories mostly about major powers to the rest of the international

system? Choucri and North (1975) argue that their theory remains valid, as would the proponents of these other theories. Lateral pressure may take different forms and may not be limited to the great powers.[11] Moreover, these theories could potentially explain the behavior of great powers that arise in the future. The presence of several major powers in the international system would seemingly increase the dangers associated with lateral pressure and economic growth.

Crisis-Scarcity

> Sustained economic failure, in the global economy as a whole and in the poor 'undeveloping countries', will deprive us of the peace to enjoy whatever prosperity we can find. A crisis of the international political economy will also be a crisis of international security. (Russett 1983, 381)

As seen with the Growth-as-Catalyst view, the processes that lead to interstate conflict may not be the same for all states. Some of the above theories apply only to major powers while others apply to all states. We see a similar division in the Crisis-Scarcity perspective. Essentially, the form of crisis that leads to interstate conflict may be different for rich states than for poor states, for strong states than weak states. The two paths to conflict through economic hardship identified in the literature are crises of capitalism and deprivation induced diversionary conflict. The key distinction separating diversionary conflict from the rest of the Crisis-Scarcity literature is the presence of domestic unrest and instability.

[11] The authors link the Balkan War of 1912 to lateral pressure in the minor powers of the region, such as Serbia and Bulgaria.

Crises of Capitalism

Two types of theories fall within the purview of this subcategory. First, imperialism and militarism are related to economic crisis according to John Hobson (1917,1938) and Lenin (1939 [1916]). Common to both theses is the need for the leading great powers (mercantilists and capitalists) to expand and search for new markets during periods of economic stagnation and contraction. Second, neo-Marxist and social-liberal theories of hegemony emphasize a cyclical economic component that affects the timing of system-transforming great power wars.

Hobson's (1938) intent was to explain imperialism. Nevertheless, we can see in his writings elements of socio-economic dynamics that are generalizable to other times and places. Hobson asserts that nations as a whole did not benefit from imperialism. Why then does imperial expansion occur? Select special interests gain substantial influence over state policies for their own economic benefit, particularly certain industrialists and arms manufacturers.[12] Foreign policy, as well as domestic policy, becomes perverted for private gain. When domestic avenues for capital investments dry up and become unprofitable, which is a consequence of over-production and economic

[12] Hobson argues that most colonial holdings proved to be a drain on the homeland and that the most profitable economic activities were trade and investment with Great Britain's leading economic rivals such as the United States, France, and Germany. Moreover, Great Britain was unlikely to help its colonial holdings prepare for their own economic development and independence to any great extent. Canada and Australia were an exception. One is tempted to ask how this situation comes to be. Hobson (1917, 1938) argues an alliance is formed between social reactionaries and militarists in unison with industries that stand to gain from imperial policy and militarism in general. Domestic alliances of this type also pose a threat to democracy and pervert capitalism. Why then do not nations just trade with each other and open their borders to foreign capital? Hobson (1917) contends that the policy of great powers becomes captive of militarists and industrialists that results in: the armament trades and armed services, interests of capitalists to control labor and taxation, protectionism, colonialism and imperialism. Militarism begets conflict and more militarism, and is one aspect of a will-to-power through nationalism. This power is then used for economic ends. "The protection of property and industry disguises itself as 'conservatism' (Hobson 1917)." Moreover, industry seeks outright control over media outlets to serve its ends (Hobson 1938).

stagnation, new markets and outlets for capital are sought. These special interests also stand to gain from the expenditures associated with the defense of the empire.

How does this expansion lead to interstate conflict? Although Hobson did not fully develop this theme, we can see in his writings the characteristics of a contagion effect. When one major power seeks to obtain empire, it mobilizes other major powers to do the same. The early acquisitions of Spain motivated England and France to follow suit, and later Germany, the United States, and others traveled the same path. States must expand to maintain prosperity and security despite increased tension and conflict. Empire requires increased military expenditures that alarm other states, and conflicts occur as national interests clash and militarism pours fuel onto existing fires. "Where thirty years ago there existed one sensitive spot in our relations with France, or Germany, or Russia, there are a dozen now; diplomatic strains are of almost monthly occurrence between Powers with African or Chinese interests... (Hobson 1938, 127)."

Hobson's writings do not centrally focus on economic growth, which makes it difficult to present a concrete time-line of events in the path to interstate conflict. It appears that conflicts would likely occur as a response to crises that result from economic stagnation. However, this stagnation is a consequence of over-investment and production resulting in a glut of goods that lack buyers. It appears that these crises would be followed by periods of growth, which would allow the acceleration of militarization. Thus, conflicts appear to be most likely to occur during periods of low economic growth but states may be able to implement expansionist policies based on recent economic growth.

Lenin (1939[1916]) presents a very similar theory. Capitalism, in his view, would monopolize on the domestic level in states such as Great Britain and Germany and then be forced to seek foreign outlets for its surplus capital. Wealth generated from foreign colonial acquisitions could then be used to finance a higher standard of living for the citizens of the advanced industrial states, and thus delay the revolution by the proletariat. A major war would then result when the imperialist expansion of the leading capitalist nations collided, which would be most likely to occur when there remained no new markets to tap. This conflagration would expedite the downfall of capitalism.

Research at the system level has continued in this tradition. Neo-Marxist World-System theory agrees with much of Lenin's thesis but traces the exploitation of peripheral areas in the world-system to the beginnings of capitalism, not just since the nineteenth century. The "World-System" is united by a single world economy, divided by a division of labor into core, peripheral, and semi-peripheral regions, which are sustained by unequal exchange. This system is marked by four traits: a division of labor between high and low wage areas, a competitive state system in which individual states compete for hegemony, cyclical rhythms of economic growth and stagnation as the system develops, and secular trends that alter modes of production.

World-Systems theory (Hopkins and Wallerstein 1982; Chase-Dunn 1978; Frank 1978; Bosquet 1980; Bergesen 1983) also incorporates Kondratieff waves (referring to the upswings and downswings as "A" and "B" phases).[13] Wars and waves of colonial expansion follow global economic downturns. Firms also tend to expand domestically during times of prosperity and externally during economic contractions. One phase of the

cycle sets the stage for the next as upturns produce over-production that then leads to downturns. Violence is eventually used to remove barriers to further capital accumulation, allowing the system to proceed to yet another expansionary A-phase. However, with the next global downturn the system breaks down into a new crisis. Wars in the downswing launch new hegemons that rise to prominence in the next global economic upswing and then recast the system along their interests.

Clearly, the theories above apply mostly to the level of analysis of the world-system and do not necessarily present a cross-national explanation of economic growth and interstate conflict. Major powers may be led into conflict by economic hardship, and parts of the literature predict global system transformation. Additionally, beyond Hobson's theory, the vicissitudes and conflict states experience arise from fluctuations in the growth of the global economy.[14] How then does the Crisis-Scarcity perspective apply to other types of states? Obviously, a great number of states were affected by imperialism, but how is the decision-making of minor power states affected by their economic performance? Do modern states behave similarly? What literature does exist on this topic claims economic crisis leads to deprivation and instability on the domestic level, leading to the initiation of disputes to externalize or divert the attention of a nation's populace from domestic problems. Also, a related literature ties economic deprivation and potential diversion to resource scarcity and environmental crisis.

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[13] By 1983 however, Wallerstein had detached K-waves from the theory. Nevertheless, many World-System theorists still maintain some linkage with Kondratieff waves and longer economic cycles, logistic cycles, which incorporate K-waves.

[14] Later I explain this criticism applies to all the system level theories.

Scarcity, Deprivation, and Diversion

Theories of diversionary conflict are a specific variant of the broader *Crisis-Scarcity* perspective. The key distinction is the necessary condition of domestic discontent. Essentially, leaders seek to divert attention away from domestic problems such as a bad economy and political scandals, or to garner increased support prior to elections. Leaders then externalize discontented domestic sentiments onto other nations, sometimes as scapegoats using an in-group/out-group dynamic where foreign countries are blamed for domestic problems (Simmel 1955; Coser 1956). This process involves a "rally-round-the-flag" effect, where a leader can expect a short-term boost in popularity with the threat or use of force (Mueller 1973; Blechman and Kaplan 1978).

Scholars such as MacFie (1938) and Blainey (1988), however, have questioned the validity of this contention. As noted by Levy (1989), this perspective is rarely formulated as a cohesive and comprehensive theory, and there has been little or no knowledge cumulation. Later studies do not necessarily build on past studies. Moreover, evidence for diversionary behavior is mixed. Historical case studies revealed instances of diversion that eluded early quantitative studies. Since the 1980s though, quantitative research designs employing new statistical techniques provide more evidence. Especially for the United States, the use of military force in interstate crises appears related to domestic problems and elections (Ostrom and Job 1986; Russett 1990; James and Oneal 1991; Morgan and Bickers 1992; DeRouen 1995; Wang 1996; Fordham 1998).

However, only studies of diversion that include economic conditions are of interest here. Such studies postulate that leader approval is linked to economic variables. When economic growth slows or declines, deprivation increases. Most of the studies that

focus on the American case utilize a misery index (unemployment + inflation). The exception is Russett (1990) who uses two and three-year lags of GDP per capita growth.[15]

Some evidence suggests that when unemployment and inflation rise in the United States, deprivation and discontent increase and erode presidential popularity. Presidents then may use military threats or force to induce a rally effect to raise their approval ratings (Ostrom and Job 1986; James and Oneal 1991; Wang 1996; Fordham 1998). Yet, DeRouen (1995) finds using simultaneous equations that economic misery only has an indirect effect on conflict through domestic discontent, while Meernick and Waterman (1996) demonstrate that *low* misery and high approval *increase* the use of force by American presidents in foreign crises.

Interestingly, Ostrom and Job also demonstrate that high approval leads to the use of force. If their results are accurate, presidential approval is not determined by economic misery. Lastly, Russett (1990) presents evidence that US economic downturns in GDP per capita growth result in more militarized interstate disputes, but this effect is much weaker than that of domestic conflict. At least in most analyses of the United States case, survey data are mostly used to measure presidential approval instead of variables such as the number of strikes, riots, demonstrations, and rebellions. The role of domestic discontent or discord is theoretically central but is not measured directly in some of these studies.

Most of the studies on diversionary conflict make the same basic assumptions. First, leaders seek to remain in office. Second, leaders have free latitude to use military force. Third, leader approval is in part determined by the state of the economy. Lastly,

[15] Morgan and Bickers (1992) exclude the economy from their analysis.

the use of military force results in a rally effect that increases leader popularity. Yet, while these assumptions appear reasonable and help simplify their theories, they may not be the most appropriate or informative towards an explanation of the decision to engage in interstate conflict. From these pieces we cannot put together the whole diversionary puzzle. Other components of the story are missing and unaccounted for.

Such is the case when we examine formal models of diversionary decision-making. Focusing on a model of the American case, Hess and Orphanides (1995) deduce that presidents will use force when their approval ratings drop, which is linked to a poor economy. Yet, this model appears to be overly simplistic by omitting several important characteristics of American foreign policy and additional assumptions that would improve its explanation. Naturally, employing different models and adding assumptions changes the outcomes of diversionary models. The question then becomes how one improves these models with additional assumptions and variables. Using Bayesian updating games, Richards et al. (1993) and Smith (1996) demonstrate that while the use of force would appear to offer leaders a means to boost their popularity, a poorly performing economy acts as a signal to a leader's constituents about his or her competence. Hence, attempts to use diversion are likely to fail either because incompetent leaders will likewise fail in foreign policy, and/or people will realize the use of force is an attempt to divert their attention away from domestic problems. Instead, these two models conclude that diversion is probably a special case since competent leaders are unlikely to need to use diversion and incompetent leaders are unlikely to succeed if they make the attempt. The use of force then is most likely to be used by competent leaders for non-diversionary purposes. In addition, attempts to divert could

possibly be undertaken only by leaders that are risk-acceptant. Since it is difficult to identify and measure risk propensity, this may also explain why empirical analyses have yielded contradictory evidence. Of course, even these models rely on the assumptions that the economy can be used as a proxy for leader competency, and leaders that are competent economic managers are likewise successful in foreign policy.

Is diversionary behavior, if it exists, generalizable to other countries and regime types beyond the United States? How does economic growth, or lack of, play a role in this process? On the latter question, most cross-national studies of diversionary behavior show an inverse relationship between economic growth and interstate conflict (Russett 1987, 1990; Miller 1995, 1999; Bennett and Nordstrom 2000; Heldt 1999; Enterline and Gleditsch 2000). Yet, Leeds and Davis (1997) find no such relationship. Nevertheless, the evidence provided by these studies suggests that the American case is not generalizable to all countries. On the one hand, Russett (1987, 1990) and Gelpi (1997) find evidence that democracies are more prone to diversion, although Gelpi does not include economic conditions in his analysis. The basic premise is that democracies are more vulnerable than authoritarian regimes to popular discontent since leaders are more easily removed from office. On the other hand, Miller (1995, 1999), Heldt (1999), and Enterline and Gleditsch (2000) present evidence to the contrary -- less developed autocracies may be the states most likely to initiate interstate conflicts during times of low growth. Bennett and Nordstrom (2000) do not find any relationship between polity type and diversionary behavior.

The discrepancies between the above studies are difficult to unravel. "Studies have used a variety of research designs, different dependent variables (uses of force,

major uses of force, militarized disputes), different estimation techniques, and different data sets covering different time periods and different states (Bennett and Nordstrom 2000)." To these problems we should include a lack of theoretical precision and incomplete model specification. Consequently, the above studies are to a degree incommensurate. They offer a step in the right direction but do not provide a robust cross-national explanation of economic growth and interstate conflict.

By a lack of theoretical precision, I am referring to the linkages between economic conditions and domestic strife. Some of the studies above have explicitly included or excluded direct measures of domestic strife based on the conflict typology provided by Patrick James (1988). Conflict can either be *latent* or *manifest*. Latent discontent may become manifest if not quelled by either carrots (governmental benefits) or repressed by force (the stick).

A problem arises, however, if states are more or less prone to each form of domestic conflict depending upon regime type and level of development. More attention needs to be paid to the link between economic conditions and domestic conflict. Without a more developed theory of diversionary conflict, current studies are left to make choices about model specification that are debatable. For example, Leeds and Davis omit any measure of domestic conflict from their analysis of eighteen advanced industrial democracies. It may be defensible to claim that manifest measures of conflict are not fitting for countries such as the United States, although this assumption may be questionable cross-nationally, such as in Bennett and Nordstrom and Heldt. If Russett's findings are any indication, domestic conflict may play a larger role than economic conditions in the explanation of diversionary conflict.

However, only Russett (1987, 1990) and Miller (1995,1999) adequately tap into the dynamic effect of economic conditions on socio-political variables through the use of measures of economic growth or misery longer than a single-year lag. Perhaps manifest conflicts only appear after prolonged exposure to economic stagnation or decline. Miller (1995), for example, demonstrates that rebellions are more strongly related to diversion for autocracies than democracies, while non-violent protests are more likely to lead to externalization in democracies. Miller speculates that by the time violent internal crises break out in democracies, it is too late to use diversionary tactics to externalize the conflict, while autocracies are likely able to suppress non-violent domestic unrest. It seems only when discontent turns into manifest violence are dictatorships left with little option but to attempt diversion. In fact, Enterline and Gleditsch (2000) show that while domestic conflict leads to both repression and interstate disputes, repression is more common. Moreover, executive constraints have reduced interstate disputes more than repression. Democracies also engage in repression, but will repress and become involved in interstate disputes less often than states with fewer constraints. This is contrary to Gelpi's theory. Moreover, the threshold for deprivation may be different for countries by level of development, as suggested by Russett (1983, 1990) and Heldt (1999). In short, a theory of diversionary conflict should more fully specify how economic conditions are related to domestic discontent or discord and what forms of domestic unrest lead to externalization.

Environmental Crisis, Scarcity, and Deprivation

A recent cluster of research has arisen that offers an explanation of how deprivation leads to diversionary conflict in less developed countries. While there is little

in the way of empirical evidence, much of this research predicts that in the future more interstate conflicts will arise as a consequence of scarcities of both renewable and non-renewable resources. Depending on the author, economic growth either plays an explicit or implicit role in this process.

Environmental crises can cause resource scarcities that especially destabilize less developed countries since they rely more closely on the land and sea than developed countries, which may result in domestic or international conflicts (Gleick 1993; Homer-Dixon 1994, 1999; Mohammed 1997). The process unfolds as follows. Resource scarcity reduces economic productivity and increases deprivation, which in turn causes the migration of poor people to urban areas as well as across borders to other countries. Domestic and international conflicts ensue from the resulting instability and discontent.

However, Homer-Dixon (1994, 1999) dismisses the possibility that resource scarcity leads to interstate conflict. He instead contends that ethnic conflicts and insurgencies are more likely when relative deprivation results. He bases this view on the lack of wars in his case studies. Yet, the author's focus solely on wars ignores the possibility that disputes over water rights and resources may lead to lesser forms of militarized and non-violent conflicts. Mohammed (1997) predicts increased interstate conflicts as poor states begin to compete for finite and dwindling resources.

How does deprivation cause interstate conflict? Deprivation may affect countries differently based on certain national characteristics. The population of some countries may be less likely to revolt as a consequence of relative deprivation because their culture may condition them to expect poverty (Homer-Dixon 1994, 1999). The lower castes of India are presented as an example. Additionally, Tir and Diehl (1998) present empirical

evidence that militarized countries with high population density are especially at risk to initiate interstate militarized disputes. States that have high population density could experience resource scarcity and environmental crises.

Yet, Homer-Dixon and Mohammed both point out that state efficacy in many poor countries erodes with environmental and economic crises. While domestic conflicts remain a real possibility, such states will be much too weak to engage in foreign adventure. Only those states that are left with resources and efficacy can initiate interstate conflicts. These countries are likely to be the strongest of the developing world, such as Egypt or Nigeria. Such crises often have an adverse effect on government structure as well. Mohammed and Homer-Dixon theorize that many countries become more authoritarian as a result of environmental crises. These *hard regimes* are especially dangerous since they tend to be militarized and more apt to use force both domestically and internationally. This is similar to a claim made by Väyrynen (1983b) that semi-peripheral countries, unlike advanced core nations, are most likely to become bellicose during economic downturns.

Summary and Critique

To recap, the Growth-as-Catalyst literature predicts that economic growth increases the probability that a state will become involved in an interstate militarized conflict, whereas the Crisis-Scarcity perspective, including deprivation induced Diversionary Conflict, predicts that the likelihood of a state engaging in conflict is lower during times of economic growth. However, both of these broad perspectives outlined above are further divided over the process of the growth-conflict nexus. The Growth-as-Catalyst perspective focuses on rises in material capabilities and/or phases of foreign

policy moods. Similarly, the Crisis-Scarcity literature is divided on the role of economic growth in relation to social factors and interstate conflict. Either the state is captive to special interests that demand action to diminish economic loses, or society as a whole must be distracted from their current economic woes through externalization. Additionally, most Growth-as-Catalyst theories pertain to major powers or are systemic level arguments. The same is also true for the Crisis-Scarcity theories of Lenin, the World-System school and arguably Hobson.

One commonality possessed by most of the theories reviewed here is a lack of conceptual precision. Overall, we need more developed theories in this area of research. Many of these studies are unclear on whether economic growth serves as the origin of conflicts or is just the spark to their onset. Macfie (1938), Russett (1983), and Bergesen (1983) theorize that downturns cause new conflicts. But most of the Growth-as-Catalyst literature contends that higher levels of economic growth are both the source of conflict as well as the factor providing states with the means to fight. Thus, more attention should be paid to the process between the origin of conflicts and their eventual escalation in relation to economic growth and other domestic factors. Theorists must be careful to differentiate initiation from escalation and non-violent disputes from militarized disputes. The processes that lead to conflict could potentially take many years to fester and become militarized.

An important implication of this conceptual shortcoming is that it is difficult to construct theoretically informed model specifications, which makes some of these theories difficult to test. Again, some theories spell out the basic ingredients to a conflict but are unclear on how variables should interact and processes unfold. Consequently,

three problems result. First, the temporal effect of economic growth is measured in a limited manner. Second, domestic conflict is treated simply and homogeneously across nations and its effects are often not empirically measured. Third, where theoretically appropriate, more attention needs to be paid to how domestic conflict is related to economic growth over time.

On the first problem, theories that include long-term economic cycles often risk committing an error of ecological fallacy when different levels of analysis are combined. For instance, it may be problematic to study the initiation of conflicts by states and argue that they are linked to an upswing in the global economy if we cannot substantiate a positive link between the economy of the initiator and the global economy. Theories that include economic long cycles often make an unstated assumption at the national level. This occurs in Pollins and Schweller (1999) and Pollins and Murrin (1999). In Pollins and Schweller, for example, conflicts involving the United States are linked to Kondratieff waves but without investigating whether the American economy moves in tandem with Kondratieff waves. These studies may draw incorrect inferences if particular conflicts are linked to Kondratieff upswings in years in which the American economy has a low or negative growth rate. The results of studies of this sort are consistent with the possible existence of Kondrateiff waves, but not evidence that these economic waves exist.[16]

[16] Furthermore, it is difficult to prove that economic long-cycles exist. Various debates wage over how to identify and measure such phenomena. For example, Beck (1991) claims that while we cannot dismiss the possible reality of Kondratieff waves, we cannot empirically demonstrate that such rhythms exist with rigorous statistical techniques. There are simply not enough observations (about 40 waves would be required – four are documented). This would require a rigid periodicity to define cycles. Goldstein (1991) claims a fixed periodicity is unrealistic and unnecessary. Instead he refers to "cycle time" as the proper means to distinguish cycles. This entails measuring a repeating sequence of events and their approximate duration. Hence, the identification and definition of cycles is less than concrete.

Second, while theories that postulate a long-term economic effect on conflict behavior may invite an ecological fallacy or are conceptually imprecise, the diversionary conflict literature may severely truncate the effects of economic growth on domestic and international behavior. Besides Miller (1995, 1999) and Russett (1987, 1990), no other study provides more than a one-year lag for economic growth to account for interstate conflict. This may not be a problem in studies that focus on approval of American presidents since it is plausible to expect short-term economic fluctuations to quickly affect public opinion, but if we expect that economic conditions affect more serious forms of domestic conflict cross-nationally, we may need to look back beyond one year. It may take several years for people to begin to demonstrate anti-government behaviors such as strikes and riots.

Third, many of these theories are vague or unclear about how economic growth affects domestic behavior. While some general diversionary conflict studies investigate the effects of regime type on domestic conflict and diversion, it has yet to include a more theoretically informed role for economic growth. Also, economic variables may not be an adequate proxy for *manifest* conflict if other data are available to directly examine these relationships. One would think that though people may be unhappy with a poorly performing economy, the process that initially leads them to strike and riot, and then later revolt against the government, may be complex and require multiple years for fruition. And at a minimum, variables should be included differentiating latent and manifest conflict. In short, more theoretical development and new measures are required.

Then, several questions arise once deprivation leads to conflict. For example, what type of domestic unrest is sufficient to prompt diversionary behavior, violent or

nonviolent behavior? How much domestic conflict is too much to externalize? Is military force required in order to successfully divert, or will threats suffice? Answers to these questions have yet to be fully incorporated into a diversionary theory. Studies of diversionary conflict started as empirical tests of a popular theme (some would say myth) that lacked the elements of a theory. As research has progressed on this topic, more attention has been paid to developing its theoretical content, but the theory is still incomplete.

Again, this does not imply that no theoretical development has occurred. We know a few key factors may play a role. First, the general diversion literature is probably correct that regime type plays an important role. Economic growth may cause problems for all leaders, but it could be dealt with in different ways. Autocracies may be likely to repress more often when democracies cannot, and it would not be surprising to find that this ability reduces low-level protests to begin with. Second, this may lead to different forms of diversion. There may be real distinctions between the terms divert, externalize, and scapegoat, and that these behaviors may or may not be substitutable for each other. Autocracies may scapegoat through propaganda and by making threats because they are likely to control the media and directly manipulate public opinion. Through the control of information such regimes are able to inhibit their citizens from evaluating the legitimacy of foreign policy. In contrast, some suspect that only the use of force is likely to gain the attention of the American public in a manner that influences presidential approval and provides legitimacy. Less severe actions or statements might not capture prominent media headlines, and this may be true as well for other states.

Chapter Three

A Theoretical Linkage between Economic Growth and Interstate Conflict

The theory presented here incorporates aspects of the Growth-as-Catalyst theme with its emphasis on the link between economic growth, foreign policy moods, and increases in military capabilities. I do not offer a new theory but instead build upon this tradition by elaborating on the effect of economic growth and other domestic factors on interstate conflict, and by explaining how these national attributes influence bilateral interactions. I theorize that economic growth increases the likelihood countries will become engaged in militarized disputes with each other. Also, war and the risk of fatalities in other disputes should rise during periods of prosperity associated with economic growth.

The theory presented here contends that higher rates of growth should increase the probability of interstate conflict and not that economic growth always leads to conflict. The process by which leaders and people enjoying higher rates of growth would desire or allow war to occur might seem implausible to some on the surface. However, I argue that economic growth provides a greater capability to fight and less resistance domestically to military conflict as a means to settle disputes. This does not mean that economic growth necessarily induces all countries to embark on expansionist foreign policies. I argue that militarized disputes should arise more frequently during periods of high economic growth from a dual process. Economic growth should increase both military capabilities and social optimism, providing leaders with greater latitude to engage in militarized conflicts. Growing states should become involved more frequently in militarized conflicts, many of which they may initiate, and these clashes may be more likely to result in fatalities than disputes that occur during less prosperous times.

Additionally, as I show later in the chapter, the risk of escalation should likewise increase between two states that are growing. This may be a key contributing factor to war.

This chapter is structured in the following manner. First, I argue that economic growth affects domestic politics and conflict propensity. The influence of public foreign policy moods, domestic constraints, and the growth of military capabilities are each discussed in detail. I then extend the state level theory described here to the dyadic level of analysis (pairs of states). Essentially, economic growth and other state attributes have implications for the relations between pairs of states. If it is true that economic growth increases the conflict propensity of states, then the risk of escalation in a dispute should rise when the opposing states in a dispute are both growing.

Mood and the Internal Decision-Making Arena

It is assumed here that all states are unitary-actors at the execution of policy. While the decision-making behind the formulation of policy is complex, the ultimate decision to engage in militarized conflict is most often executed by a single leader or group of individuals that yields a single policy. Still, factors affecting the propensity for conflict, and the chances for victory or defeat, remain in part beyond the direct manipulation of the leader. One such factor is the mood of society. At any given time, people are more or less apt to support foreign policies that risk militarized conflict. While the decision to engage in conflict can be assumed to follow a rational process, other factors that contribute to this decision are more generally affective. Whether people are optimistic or pessimistic affects decision-makers and their political opponents.

I argue here that foreign policy moods are linked to economic growth. Often no overt attention is paid to a factor such as economic growth, especially when its influence on interstate conflict may take several years to amplify. In this sense, people matter in the aggregate,

although they may lack a coherent view on foreign policy as a group during particular conflicts, especially if these fail to become high profile events. Rather, short-run public opinion may be affected by deeper moods that move with the health of the economy over many years. The Great Depression of the 1930s, for example, seemingly produced a feeling of pessimism in the United States and many of the countries of Western Europe that may have impeded effective foreign policy by lowering consensus and resolve. As a result, these states lacked the steadfastness to impede or depose Hitler in the years preceding World War Two.

Figure 3.1, below, provides a sketch of the theoretical linkages between economic growth, the domestic decision-making arena and external threat. Economic growth provides states with a greater *willingness* to engage in a foreign policy orientation that increases the risk of militarized conflict. This variation in willingness can be defined as *mood.* These foreign policy moods are in part a function of economic growth. Mood has two characteristics or components in regard to foreign policy and the decision-making of the leader. First, the popularity of the leader is linked to economic growth. Second, economic performance will affect whether a society is optimistic or pessimistic in regard to the chance of policy success. Mood has its origins in society and influences leaders from below.

When an economy slows down, the probability of unemployment and deprivation rises. Economic hardship reflects poorly on public perceptions of leader competence. According to Lewis-Beck (1988), a poorly performing economy results in an anti-incumbent vote in democracies. However, such behavior is not based on a strictly rational and self-motivated materialism (pocket book voting behavior). Poor economic conditions have an *affective* influence. People are more likely to hold the government accountable for the general state of the

economy by observing the conditions of friends, neighbors, and the country as a whole.[1] In effect, incumbent leaders and their parties are evaluated as economic managers (Richards et al., 1993, Smith 1996). Poor economic performance decreases the popularity of the incumbent leader and party and their ability to implement policy. Social class or state efficacy, moreover, does not dampen this behavior. Though many citizens vote ideologically, those that cast anti-incumbent votes based on the state of the economy are enough to turn elections.

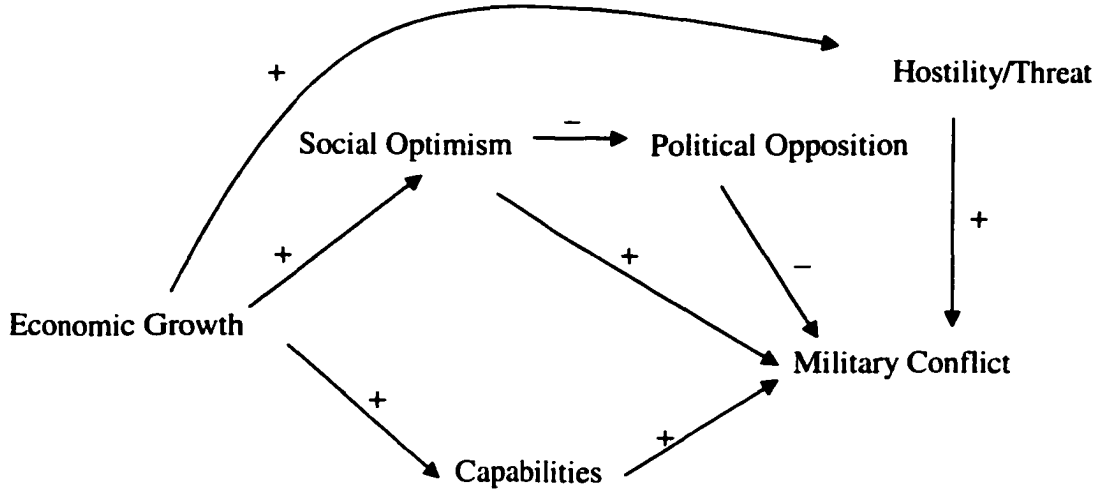

Figure 3.1: The Theoretical Relationship between Economic Growth, the Domestic Arena and External Threat.

Of course one might protest that studies such as Lewis-Beck's are generalizable only to advanced industrial democracies. But an essential commonality across all nations would seem to be concern for the welfare of one's family, friends, and community. Because we tend to treat states as unitary-rational actors, we sometimes treat them as 'black boxes'. While this assumption is often convenient in our discussions of complex processes, people clearly matter. People spend a large portion of their lives laboring for their survival, welfare, and material gain. It would be a strange world indeed if this aggregate labor was not in some manner associated

[1] Lewis-Beck's cases include the United States, Spain, France, Italy, Germany, and Great Britain. See his

with violent conflicts within and between countries. Their labor contributes to state growth and power, and their opinions are rarely ignored (even if not always heeded). Yet, certainly for there to be a connection between economics and politics in developing countries and non-democracies the processes would seemingly be different. Nonetheless, the general assumption that people respond politically to poor economic conditions can still be maintained.

All leaders can be removed from office through elections or other non-institutionalized means. There is evidence that economic deprivation leads to coups in poor countries and non-democracies (Londregan and Poole 1990). High levels of economic development and high growth rates are inversely related to coup attempts, but coup attempts do not lead to a decline in growth rates. Hence, even leaders of non-democracies are held accountable for the performance of the economy, and coups appear in part substitutable for elections. "In democracies, elections are used to motivate governments to spur economic growth; those that fail are likely to be turned out of office by the voters. In non-democratic countries, the threat of a coup appears to play a similar role (Londregan and Poole 1990)."

Leaders are allowed more latitude in foreign policy during a prosperous economy, which is reflected by the arrow leading from Social Optimism to Political Opposition (in figure 3.1). When the mood of society is optimistic, society may permit the state to defend national interests, broadly defined, because it is then that the people have the greater willingness to do so. And this is more likely when economic growth endures for multiple years. People are more likely to accept the leader's decision to conduct certain foreign policy actions, represented by the arrow leading from economic growth to mood (in figure 3.1).[2] This relationship is variable, however.

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book for a further examination of literature on this topic.

[2] Some use the terms such as isolationist/internationalist or interventionist to label such sentiments. But as discussed below, such terms may be too strong to reflect typical opinion on foreign policy matters. The

During periods of economic difficulty, leaders should be more constrained from engaging in foreign entanglements. Society's perceptions of the economy, state of the nation, and the political capital of the leader will fluctuate with economic growth. When the economy is growing, society will be optimistic; when it is not, people will be pessimistic. These sentiments are magnified by long periods of economic prosperity or hardship. A single year of extreme positive or negative growth may by itself fail to inflame interstate conflict. Thus, the sentiments of society should be affected by economic growth.

These sentiments form a foreign policy mood that varies from extremely isolationist at one pole, to rabidly nationalist and bellicose at the other pole. But frequently, society will only be either acceptant or resistant to military actions. Foreign policy is seldom the top priority and concern of a nation's population. While this may vary across time and space, foreign policy is often left to elites (Almond 1963). This is not to say that people cannot or do not directly influence foreign policy, although they are typically unlikely to do so except during high profile events. Instead, people usually express acceptance or resistance through other means. This of course depends in part on regime types and is discussed later in the chapter.

The Link between Economic Growth and Military Capabilities

I assume that higher rates of economic growth provide the means to build up armaments at a higher rate than during times of low growth. States with high war-making capacities may be more inclined to engage in militarized disputes than states less prepared to fight. In figure 3.1, we see an arrow connecting economic growth to capabilities. Economic stagnation and decline should decrease military capabilities by reducing military expenditures and possibly troop levels as well. The likelihood, then, that a state will become involved in an international dispute may

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terms optimistic/pessimistic and acceptant/resistant are more subtle and typically reflect foreign policy

be reduced. Such contractions in capabilities further constrain an executive's ability to engage a foreign rival. A slowdown in economic growth will result in less revenue for military expenditures, which may then decrease a state's ability to risk participation in a dispute that could lead to a protracted war. With a nation's morale sapped and its military less prepared to fight a drawn-out conflict (due to recent cuts in military spending), leaders should not risk their political standing or the security of their state by participating in foreign military ventures unless faced with threats so paramount that they cannot be diminished nor disregarded.[3]

But while economic growth should affect military spending, ceteris paribus, developing states should be most affected by these fluctuations. The budgets of these states are more vulnerable to economic fluctuations, especially when both domestic and foreign sources of credit are limited and insecure. Low levels of revenue should impede the growth of military spending. Meanwhile, high levels of development buffer some states from the immediate effects of poor economic growth. A developed state should be more able to support its military over a few years of slow or negative growth. Only after prolonged periods of economic hardship should major powers be affected as well. Thus, fluctuations in economic growth should have a stronger effect on developing states than on developed states.

Sustained Economic Growth, Military Capabilities, and Willingness

The links between economic growth, military capabilities, and foreign policy moods are likely multiple-year processes. Through time the people of a growing state may come to feel powerful as a collectivity. High levels of productivity and economic output could affect the

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moods.

[3] These are situations in which the very existence of the state may be threatened or that the cost of relinquishing something to the other side, such as territory, will have very detrimental effects on the country. Two prominent examples are Poland in 1939 and South Korea in 1950.

mood of a nation. Pride and nationalism may increase. Years of economic growth, for example, boosted Japan's optimistic outlook on the world. Japan was the new economic power to be dealt with, and some feared Japan might once again become a major military power. But in the same way that the United States was affected by economic problems through the 1970s and 1980s, since the 1990s the Japanese and others do not hold their economy and state in the same manner as before. The Japanese economic stagnation of the last ten years revealed weaknesses that were not apparent before. Today, attention is focused more on China instead of Japan. Many feel China's booming economy will make it more powerful in the near future, as well as more bellicose and apt to use force and coercion to obtain state goals. A key difference between Japan and China, however, is that the latter was already militarized prior to its economic boom, which potentially makes China more dangerous than Japan might have become in future decades.

A new sense of optimism may spring from sustained economic growth. While short spans of economic growth may infuse needed resources into both social and military related government spending and mitigate short-term problems, growth over longer periods could lead to changes in the character of foreign policy. A greater sense of optimism may lead to higher levels of resolve. Higher levels of resolve may lead to more disputes with other states. Further, an optimistic state should be less likely to acquiesce to other states and more likely to pursue objectives through militarized means. Again, sustained economic growth increases the willingness of states to engage in militarized conflicts by increasing military capabilities and social optimism.

The Opportunity to Engage in International Conflicts

However, economic growth alone is unlikely to cause international conflicts. If such were the case, we would observe substantially more violence and bloodshed in world politics.

The theory set forth here is not deterministic but instead probabilistic and greater care must be taken to specify not only the processes that lead to conflict, but also other conditions that increase or decrease their probability. Past research on international relations often suffered from unclear and unrealistic predictions because state behavior was hypothesized in over-generalized and deterministic terms. Most and Starr (1989) point out that theories of international relations should take into account both the *opportunity* and *willingness* that modify state behavior. For example, for a state to enter into a war the state should both be willing and have an opportunity. Without either, we should not expect a war to occur. Although it is occasionally difficult to separate these concepts once we begin to operationalize variables, they provide a useful starting point for this theory. The chapter thus far has explained how willingness fluctuates with economic growth, but has yet to discuss opportunity. Naturally, while the probability of a state engaging in a militarized dispute could never be zero, where states have more opportunities to fight, there should be a higher probability of conflict.

It is when states seek to alter the status quo that the seeds have been sown for possible conflicts to bloom in the future. Yet, we need not think of this revisionism only as grand attempts to alter the balance of power within the international system, build empires, or dominate the world. Conflict can arise even without attempts to change the *international* status quo. While clearly history offers poignant examples of the above, revisionism can be subtle and less visible. Revisionism can be directed at both the international and domestic arenas. Examples of revisionism include positions staked in disputes over territory and resources, as well as attempts to squash domestic ethnic groups. The point is that the sources of international conflict are varied and often less than prominent, but nevertheless offer an opportunity for a contest.

But why do states seek to alter the status quo? Anderson and McKeown (1987) suggest that states experience a gap between expectations and present conditions. While this idea may not be unique, it offers the potential to improve our predictions of conflict onset and escalation.[4] Repeated attempts to change the status quo may lead to increased levels of threat and interstate rivalry. Revisionism can be thought of as the willingness of the initiator to engage in interstate conflicts, but this likewise provides opportunities for states that seek to protect the status quo or have alternative revisionist designs to engage in conflict. Growing states may initiate conflicts that set off contagion effects; other states may respond. Also, the chance of other states responding to a dispute initiation may rise when their economies have likewise been growing. In this manner, we may see more frequent and/or severe conflicts during periods when the global economy is growing (Kondratieff 1926; Macfie 1938; Thompson and Zuk 1982; Goldstein 1988; Mansfield 1988; Pollins 1996; Pollins and Murrin 1999). A prosperous global economy may act as a catalyst that increases the frequency of conflict initiations as well as expands the number of participants.

To some, the notion that economic growth increases conflict seems odd. Why would people that are enjoying higher levels of prosperity want to engage in conflict? One would think that people would be more content during these times. Yet, Growth-as-Catalyst theories do not state that economic growth directly makes people desire war and other militarized contests. Militarized conflicts remain rare events when one considers all the interactions between states within the international system. Most states probably do not seek to alter the status quo during times of economic growth in a manner that leads to military conflict. Still, economic growth may increase the risk that a minority of states will attempt to alter the status quo, and these states

[4] Other prominent discussions that include state propensity to change the status quo include Galtung (1964), Wallace (1971), Midlarsky (1975), Gilpin (1987), Organski and Kugler (1980), and Modelski

should be better armed than during periods of economic stagnation and decline. And once these militarized disputes are initiated, the chance of diffusion increases as well. Other states may join such disputes to aid allies or protect other national interests, especially following economic growth. While many countries may not be inclined to initiate conflicts, they should be more resolved and apt to respond to foreign threats. Economic growth should increase overall conflict propensity. The economic growth enjoyed by the United States through much of the 1990s, for example, has not sent it on a course to press for more territory from Mexico, invade Cuba, or directly dominate the world. But it did allow for military interventions in the Balkans (a region where direct American interests are questionable) and the continuing containment of Iraq.

Also, major powers are most likely to have more interactions with other states and thus more reasons to either change or defend the status quo, and higher levels of military capabilities allow for a greater ability to engage in militarized disputes. To fight, states require the means to do so (or at least strong allies). For this reason, major powers have more opportunity to engage in militarized conflicts because they have both the military wherewithal to do so and more interactions with other states (and thus more opportunities to make enemies). Hence, economically growing major powers should especially be at a higher risk of conflict when the mood of society is optimistic.

The Role of Domestic Political Opposition and Executive Constraints

Let us now return to the domestic arena. State conflict propensity may vary over time and space because of two factors. First, the strength of domestic opposition should generally decrease during periods of economic prosperity, when the leader's popularity should be relatively high. Of course all leaders will face some potential opposition to their policies, so it is

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(1983).

a question of the magnitude of domestic resistance. Optimistic societal mood should weaken, but not eliminate, a leader's opposition. This part of the process is signified by the arrows (in figure 3.1) from *social optimism* to *political opposition*, and then from *political opposition* to the decision to engage in *militarized conflict*. Each of these factors is explored below. Second, leaders always face potential opposition to their policies (Richards et al., 1993; Hagan 1994; Miller 1995, 1999; Heldt 1999), but this resistance varies from state to state based on government structure. For example, the policies of executives in parliamentary systems are more likely to constrain decisions to engage in conflicts than presidential systems (Auerswald 1999), while authoritarian regimes should have the most latitude of all. Also, depending on regime and governmental changes, executive constraints may vary over time.[5]

All leaders depend on a constituency of some sort. In democratic systems, opposition parties will seek to exploit foreign policies not deemed in the best interest of the nation and executives in democracies should be more constrained than their authoritarian counterparts. But during times of economic prosperity, society is less likely to be influenced by the rhetoric of parties and factions that stand in opposition to the leader. Assuming that popularity ratings are higher than would be the case during economic recession or depression, leaders should be more apt to initiate or reciprocate military actions. Economic growth similarly alters the foreign policy mood of the populace. This mood influences the behavior of the leader and other policy-making elites. Similarly, leaders in autocracies may need to heed the wishes of military or economic elites.[6] Thus, the leaders of most states are generally constrained from taking actions that may be deemed as risky during periods of economic hardship. The risk of foreign policy failure may be too high for vulnerable executives to participate in militarized interstate disputes.

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[5] Note however, that this dissertation does not seek to explain regime changes.

We are thus presented with a situation, represented in figure 3.1, where parties and other constituencies act as filters that can directly affect the decision-making of leaders, as well as indirectly, by influencing the mood of society.

A people suffering from economic hardship may become pessimistic, and this mood may spread to the upper echelons of leadership as a consequence of the constraints that arise from below. In democracies, the media, political institutions, and parties fulfill this role. This pessimism acts as a constraint on leaders and reduces their ability to initiate military conflicts. Although it is possible that some form of reciprocation may be undertaken as a response to foreign military challenges, they should be less likely to escalate to fatalities. If disputes escalate to this point, they have the potential to become domestic crises that could undermine governments. Essentially, the leader's political opposition is better able to detach the support of society away from the leader's policies during periods when society is generally pessimistic. While during times of economic prosperity the leader enjoys increased popular support, during economic hardship the political opposition may be able to tap into the lower popular support for the leader and exploit it for their political advantage. Consequently, if an opportunity for military conflict occurs during a period of economic stagnation, factions or parties in the domestic arena may be more able to resist the initiation and reciprocation of military conflicts. Of course, people in democracies have a more direct means to express support or disapproval through direct communications, elections, and the media compared to citizens of autocracies.

But again these same sentiments occur in societies governed by non-democratic forms of government, but in a different mode. Factions within institutions such as the military or the sole legitimate party (communist, Baath, etc.) may launch a coup d'état, or similar tactic aimed at

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[6] Even in the case of the Soviet Union and the military intervention into Afghanistan, a lack of support for continued fighting was apparent, especially from families that had lost a son or more.

removing current leaders, sometimes with the backing of elite business interests. In some instances, people may visibly begin to protest and demonstrate its displeasure with the economy or other matters related to the government's management of the social and economic realms. This may alter the propensity of states with different regime types to initiate disputes, but both democratic and non-democratic systems should be more constrained from fighting when national income has fallen. Overall though, autocracies face weaker internal constraints than democracies and should be more apt to participate in military contests during periods of recession or depression.

For example, would the countries of NATO intervene in Eastern Europe (Bosnia, Kosovo, etc) if their economies were performing poorly? Based on the theory presented here, the probability of this scenario would be reduced. Several years of economic growth, especially in the United States, improved the environment for intervention. The popularity of each nation's executive leadership would be diminished and vulnerable to the exploitation of other domestic actors. Such leaders may be in a vulnerable position vis-à-vis their electorates or populations as a whole, but even more so to particular opposition groups (clans, parties, other candidates, generals, etc.). In societies where there exist institutional checks on the power of the executive, foreign policy debates may become more partisan and hampered by resistant representative bodies during times of economic crisis and stagnation. Again, to engage in conflict in an environment when leaders are most vulnerable to their political opposition may expedite their removal from office by election or coup.

Economic Growth, Domestic Conflict, and Decision-making

There are many reasons why people rebel. Through history, however, economic hardship seems to have been a key factor explaining peasant rebellions, revolutions, and coup d'état. It

should not be controversial to assert that economics influences politics, although presently little general theory exists featuring a link between economic growth and domestic and international factors at both the monadic and dyadic levels of analysis that properly explains militarized interstate disputes. Domestic conflict should be included in such a theory. If we assume that economic growth in part conditions domestic stability, our next task is to link domestic turmoil to interstate conflict. As discussed in Chapter Two, numerous studies argue that domestic conflict catalyzes interstate conflict. Domestic groups must either be appeased or distracted, albeit by externalization or controlling other countries and extracting benefits. For reasons specified below, the theory presented here makes the opposite prediction. When governments face severe domestic discontent, they should be less likely to become involved in militarized interstate conflicts.

Attempts to measure domestic discontent are varied. The most direct measures are based on leader approval through polling. But other indirect measures are used as well. Pat James (1988) provides a useful categorization of domestic discontent and conflict. Societies that have begun to feel disgruntled with the policies of their current government are said to hold feelings that can be best expressed as *latent*. Such anti-government sentiments have not yet become visible. James admits this concept is somewhat abstract but can be measured through indicators such as growth of GDP, a misery index (inflation times unemployment), leader approval polls, and similar variables.[7] Only later does this discontent become *manifest* as it is expressed through various acts ranging from strikes and demonstrations to revolutions and civil wars.

I am interested here in domestic conflict and its externalization to the extent that it is related to economic growth. As mentioned earlier in the chapter, there is evidence linking poor

[7] Several authors studying the link between domestic conditions and international conflict follow this strategy, including Bennett and Nordstrom (2000) and Heldt (1999).

economic conditions to anti-incumbent votes and coup attempts. Although this study does not directly examine whether negative or decreasing economic growth causes domestic discontent, it is assumed for present purposes that there is a positive relationship between the two. I argue here that it is not only poor economic growth that hinders involvement in interstate conflicts, but that the presence of manifest domestic discord should pose a further constraint.

Yet, James' dichotomy of latent and manifest conflict is of course a simplification of reality. While clearly it is a difficult task to capture all that domestic conflict entails in its various forms, we can at least broaden the manifest category by breaking it into less and more severe categories. There is a great difference, for example, between riots and revolutions, but clearly the latter could be linked to the same factors that led to the former. In other words, manifest domestic conflict may arise from latent sentiments, but the magnitude of visible manifestations of these acts may vary in their ability to constrain the participation in foreign conflicts. Initially, latent feelings may be revealed in acts of *protest* such as riots and demonstrations. Later, protest may lead to attempts to overthrow the government. While I contend that manifest acts of domestic conflict should constrain leaders seeking to initiate or participate in interstate conflicts, the most severe form of manifest conflict, *rebellion*, should pose a stronger constraint.

Arguably, leaders may be able to externalize manifest conflict before it turns to rebellion, but beyond a certain point severe domestic discord involvement in foreign conflicts may do little to sway popular opinion. Gelpi (1997) essentially makes this point in regard to democracies. While authoritarian leaders have more ability to suppress manifest displays of discontent, democratic leaders are supposedly unable to follow the same strategy. Hence, their best option is to externalize the discontent. Scape-goating other nations for a state's internal problems, or at

least distracting a state's citizens from these problems, could potentially accomplish this objective. Meanwhile, since autocracies retain repression as an option they need not externalize internal conflicts.

However, attempts to repress or suppress protest, or other acts, are likely to be counter-productive in the long run. Suppression by all regimes is likely to lead to declines in popular support. With declines in support come decreases in state efficacy (Hagan 1994). Governmental legitimacy may fall with state efficacy, leading to the eventual downfall of the government. Even in cases where states have a limited ability to suppress their own people without losing all legitimacy and/or state efficacy, neither economic reforms nor diversion may be viable options. It is probably a misnomer that states facing economic and political crises have significant latitude to initiate foreign conflicts that have any chance of success. For example, none of the countries of South America could solve the extensive inflation and debt problems (which also reduced economic growth) facing their countries for many years. And beyond the Falklands war (which may be a rare case of diversion), there appears to have been a cool down in regional rivalries and conflict during this period. Relations began to improve between countries such as Brazil, Argentina, and Chile. In fact, while states may have alternatives to diversion, a possibility for some regimes is that they simply collapse.

Governments often fall, by vote or force, because they are unable to deal with seemingly intractable economic problems, and attempting to engage foreign rivals during these crises should only increase this risk. Conflicts against weak states may not alter the government's own domestic situation, while contests against strong states entail a lower probability of victory that could accelerate the government's downfall. Hence, this strategy would seemingly entail more risk than necessary to retain the stability of the government. As Ginkel and Smith (1999) point

out, strong governments are likely to succeed in suppressing severe domestic conflict and vulnerable states will neither be able to offer concessions in the form of economic or political reform, nor suppress discontent because these acts will only signal the weakness of the regime. Consequently, weak governments are likely to collapse suddenly. In fact, we could add that less severe acts of manifest conflict are unlikely to become acute where states have strong repressive powers to begin with. The best strategic option facing leaders in this situation may be to verbally scapegoat other external actors in a manner that does not invite some form of detrimental (especially military) reprisal. A perfect example was the verbal attack on the IMF and currency speculator George Soros by Prime Minister Mahathir of Malaysia during the economic crisis that swept through Asia in the late 1990s.

Diversion: The Last Available Gambit?

Can leaders become risk acceptant during periods of national economic hardship and seek to externalize domestic problems onto other nations, and in the process increase their own popularity? Chapter Two discusses many authors that believe as such, although the theoretical justification for this scenario is incomplete. Though diversion or externalization may occur, I argue it is likely a special case. The theory presented here offers a competing explanation of the process that connects economic conditions to interstate conflict. The diversionary conflict perspective does not account for other potentially important factors, such as long-term economic growth. Moreover, I disagree with some of the key premises that underlie diversionary studies.

While there are exceptions, most diversionary studies have proceeded to estimation without a coherent theory to guide testing. A few basic assumptions that underlie this research, and the general theme as a whole, deserve scrutiny. First, all leaders seek to remain in office. This assumption is often stated in bold terms, to the extent that leaders will stop at nothing to

remain in office, even if it means taking actions that one would think are not in the interest of their nation (Hess and Orphanides 1995). Clearly most leaders seek to retain their position and this assumption is a reasonable starting point that helps simplify the problem at hand, although I would argue that leaders of democratic governments are more constrained than their authoritarian (especially totalitarian) counterparts. Much of the literature in this area suggests that democracies should be more apt to employ diversionary tactics due to the desire to manipulate elections and a lower ability to repress and suppress society. The decision-making calculus used to retain power, however, may be complex because leaders do not exist in isolation from other actors. This is a problem unaccounted for in this literature. They must consider not only their own interest but also the prospects of their own party and other key supporters, not to speak of their legacy. Undertaking potentially risky foreign policy adventures could jeopardize other potential political gains.

Second, leaders can be removed from office, either through coup, impeachment, or election. Third, it is assumed that successful diversion attempts induce a rallying effect within society. Here I do not necessarily disagree, but instead adopt the same assumption and yet arrive at the opposite prediction. Because leaders can be removed, they will be less likely to attempt to manipulate the public. People must essentially be patriotic and naïve, or at least susceptible to manipulation, for diversion to work. The places where people are generally aware of the diversionary story, for example, should be the very same places that diversionary tactics should fail.[8] Oneal, Lian, and Joyner (1996) show that the American public is "pretty prudent" about the use of force and may not be as predisposed to the rally-round-the-flag as often as is popularly

[8] As a corollary, a coherent theory of diversion might need to explain why even people that are aware of government manipulation could still fall prey to these tactics. For example, many socialists fell into the nationalist ranks rallying to support the onset of World War One despite their own previous rhetoric that

believed. In fact, I speculate that the diversionary story arose from general popular skepticism of leaders to begin with. Distrust of politicians and other political leaders would not seem to be a characteristic unique to American society. It is arguably a common social characteristic in environments where most of society has no direct contact with their executive leader or other policy-making elites.

Lastly, it is assumed by these studies that leaders have wide latitude in foreign policy. Not only do leaders have a boundless desire to remain in office, they have the powers to manipulate the system to produce this outcome. This basic assumption is seemingly required to understand the diversionary thesis. Still, there is variation in this latitude among democracies (Auerswald 1999), and authoritarian regimes are even less constrained by their citizens. Although I argue that poor economic conditions constrain all states compared to periods of prosperity, the institutional constraints of democracies should lower their overall conflict propensity compared to non-democracies. During times of hardship, autocracies should have more latitude to engage foreign rivals than democracies.

There are other problems, nonetheless. Could we distinguish between diversion and uses of threats or force against states for other objectives, for example? When one adds more information about international disputes to the existing models on this subject, such as the geographic region, alliances, and the number of participants in disputes, there is little or no evidence left of diversionary behavior in the American case (Meernick and Waterman 1996). Similar results are a possibility for other cases as well. In fact, the problem of diversionary

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supposedly recognized that the current governments of Europe were not acting in the best interest of their peoples.

research is two-fold. First, the underlying assumptions may be questionable, and second, omitted variable bias may be substantial.[9]

However, for now let us assume economic hardship does induce diversionary behavior on the part of leaders. If diversion exists, I suspect that authoritarian regimes are the most likely to use tactics involving threats, displays of force, or uses of force since democracies face more institutional constraint and stable totalitarian regimes will have less need to do so. Also, autocracies should be less constrained to act in this manner considering the decreased sources of resistance, yet still not so strong that they need not worry about the maintenance of their power. For example, the Soviet Union under Stalin was stable through much of his regime and faced no serious threat from society. Militarized diversionary tactics were less necessary. However, such totalitarian regimes may be more likely to use diversionary rhetoric since there is little way for their society to verify the legitimacy of government statements. Instead, any constraint upon the leader of a totalitarian state is likely to come from the leader's inner circle, such as the top leadership of a communist party or the military.

Substitution for Diversion or Repression

As mentioned in Chapter Two, Enterline and Gleditsch (2000) and Bennett and Nordstrom (2000) investigate possible alternatives to diversion. The former study noted that leaders attempt to both repress and externalize manifest domestic conflict, while the latter theorizes that states end rivalries with other states in order to channel resources back to society in the form of economic benefits (tax breaks, subsidies, etc.) that quell domestic discontent.

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[9] Obviously assumptions cannot necessarily be wrong and are instead a necessary means toward founding and simplifying our theories, although one should scrutinize assumptions in order to gauge whether additional factors are required to make theories more coherent and complete. The question inevitably comes down to the explanatory power of the theory and whether it could be improved by adding additional assumptions or whether other contending theories explain more with different assumptions and variables.

Essentially, other tactics may be substitutable for diversion, although Enterline and Gleditsch present evidence suggesting that involvement in foreign conflicts is not substitutable for repression in the face of domestic conflict.

The theory presented here assumes that poor economic growth is related to domestic discontent and conflict. But a government's reaction to domestic discontent might vary by its magnitude. Latent discontent may be dealt with by increasing economic benefits to society (as discussed by Bennett and Nordstrom 2000), but beyond manipulation of the economy, other alternatives such as repression and diversion appear risky and potentially counter-productive. In any case, as discussed above, domestic conflict should constrain participation in foreign adventures because it further risks the stability and effectiveness of the government in power. Moreover, I also predict that states with growing revenue are thus more likely to become involved in conflicts than countries with low revenue growth since more funds will be available for military spending.

A situation where the need for diversion/externalization could potentially arise is when leaders have seemingly no other recourse. For example, the literature linking environmental crises to both domestic conflict and possibly diversion presents an intriguing scenario. States left with insufficient resources or other remedies to deal with domestic problems, such as the successful suppression of domestic opposition, might turn to diversion. Hence, diversion might be attractive to states with low levels of available revenue. In other words, high revenue is substitutable for diversion since certain societal interests can obtain additional benefits. Yet, this behavior may be a special case not generally applicable to most states most of the time. And again, the governments of these states may be more likely to collapse than divert.

The Combined Effect of Mood and Capabilities on Decision-making

Assume that a leader is placed in a position where he or she may make a decision to initiate or reciprocate a military action. Among the numerous factors the leader must weigh include the nation's military readiness (and ratio of capabilities), the salience of the foreign policy issue, and the level of support of the populace. Whether the populace will support a military action is dependent upon several factors linked to the leader. First, as stated previously, economic growth affects the mood of the populace. Though individuals may act rationally on their own, long-term movements in economic growth may alter the populace's outlook on foreign policy in a manner that sometimes ignores the specifics of individual events and crises. To this extent, the foreign policy mood of the citizenry may not adequately reflect the necessity of acting in specific situations. In a sense, these sentiments are affective. But again, these moods are more than short-term, event-specific, opinions; they are multiple-year long-term trends. When the citizenry are generally pessimistic they are more likely to resist participation in a foreign conflict.

The populace praises the leader for a prosperous economy and blames him or her when it is stagnant or in decline. Thus, he or she is evaluated on their ability as a manager in general. A leader could appear as competent when the economy is strong and incompetent when it is weak. Second, the populace may remember past scandalous or unpopular deeds, especially repression. Such acts on the part of the leader endogenously affect mood. Repression by the leader further erodes the effects of a strong economy and further undermines the leader's ability to carry out foreign policies that might require military action. Leaders that have proven incompetent in the past or have repressed society are less likely to receive support. Additionally, many states will lack the resources to confront both internal and external problems concurrently. For these

reasons, countries with high levels of domestic discord should be ill prepared to engage other countries in military actions. Engaging in foreign conflict in these situations entails higher costs that should yield sub-optimal, if any, benefits.

Third, foreign policy issues may directly capture the attention of the populace. In the more extreme cases, society may then prod the leader to take action to either defend or change the status quo. Backing down in a conflict, or not initiating, may entail political costs on the leader.[10] The reputation or the interests of the nation may be at stake and nationalism may come into play, as represented by the arrow between *hostility/threat* and *mood* in Figure 3.1. In such situations, it is difficult to turn away from domestic pressures. The leader must then balance these factors and make a decision whether to initiate or reciprocate a militarized dispute. The desire to change the status quo may not be the leader's alone. Clearly society may support or advocate revisions in the international system that will benefit their nation, although it would be difficult to isolate such sentiments in either society or the leader. The process likely contains feedback.

Economic Growth, the International Environment, and Interstate Conflict

During periods of prosperity, conflict may occur in at least three ways. First, economic growth may lead to new conflicts, as represented by the arrow leading from economic growth to hostility and threat on figure 3.1. States may seek to increase their territory and influence through expansion into areas under the influence of other states, which increases tension directly with target states as well as with other states in the interstate system (Choucri and North 1975). Such a process is long-term. Second, existing on-going disputes may escalate and cross the militarized threshold. This should especially be the case with developing states that have

[10] Fearon (1994) refers to these costs as "audience costs."

difficulty maintaining high levels of military preparedness. Also, societal support may waver when an economy begins to stagnate or decline, but then renews interest when economic problems recede. Third, the attempt of one or more states to change the status quo may lead to the activation of other states in order to defend their interests. A contagion effect external to the nation may lead to an interventionist/internationalist foreign policy. A dangerous situation may arise when more than one country's economy is expanding and multiple countries are willing and able to initiate and reciprocate militarized conflicts. In other words, economic growth at either the systemic or regional levels may increase the diffusion of interstate conflicts. This dissertation will focus primarily on the first two scenarios mentioned above.

It Takes Two to Fight...

This monadic theory allows for predictions at the dyadic level of analysis (pairs of states). Interstate conflicts do not occur randomly. Some issue precedes the onset of a militarized dispute. At least one of the states in a conflict seeks to change the status quo and has an opponent in mind; targets are not be selected randomly. Additionally, many militarized disputes will occur between pairs of states that have been rivals and share a history of past conflict. I theorized earlier that economic growth acts as a catalyst that speeds up or slows down the conflict processes between states. High economic growth should make states more apt to participate in, and initiate, militarized disputes, whereas low growth should dampen these effects. This monadic effect is potentially deadly if more than one state is growing.

When measuring militarized conflict by analyzing single states, we ignore the possibility of strategic behavior and other interactive effects. I am theoretically interested in how economic growth affects the behavior of two states in a dyad. I predict that not only does economic growth increase the likelihood that a state will initiate or participate in more militarized disputes when it

is growing, but that the risk of escalation to war is increased when both states in a dyad are growing. Also, I am interested in whether states behave strategically in regards to their economic growth and that of potential opponents. For example, growing states may attack non-growing states. I will test hypotheses related to these questions in Chapter Seven.

The interaction of two growing economies may have deadly consequences. My theory predicts that wars and other military disputes with fatalities are more likely to occur when the economies of both states in a dyad are growing. The most dangerous scenario arises when two societies are rearmed and each optimistic that it could win a potential military contest. The least dangerous situation should occur when the economies of both states are stagnant or in decline since military readiness and social optimism should be reduced.

States have an incentive to manipulate the perception of risk in their favor through threats and bluffs. However, fewer states are willing to pay the costs associated with high-level military conflict. States experiencing low or negative economic growth may be particularly disinclined to fight. Their societies should be even less willing than the average state to engage in conflicts that entail serious costs (money and lives), and reduced military capabilities may make escalation risky and overly dangerous. To continue on past threats and displays of force when a country does not have the resolve to fight and when the military may be unprepared, would put one's own state at a disadvantage. Hence, we should especially see very few violent military clashes when pairs of states are affected by economic problems. I predict that the presence of two growing economies should increase the frequency of conflict, but more importantly the incidence of severe and costly contests between pairs of states. In this situation, both belligerents should be more apt to fight, since the probability of one state initiating and the target resisting a

militarized action should both rise with economic growth. By contrast, if one state has low growth, it should back down.

Table 3.1 illustrates four possible scenarios and my predictions regarding the relationship between economic growth and interstate conflict at the dyadic level of analysis (pairs of states). States **A** and **B** refer to the two states in a dyad. I make both directed and non-directed predictions at the dyadic level of analysis.[11] The growth of state **A**'s economy is represented in rows and state **B**'s by columns. Each cell also delineates a hypothesis. State **A** is the potential initiator and State **B** the potential target in the directed scenarios. The four scenarios are explained as such:

1. The economies of both states are growing: This is the most dangerous scenario. Here I predict that state **A** is most likely to initiate and reciprocate militarized actions compared to the other scenarios. I also theorize that escalation to war is highest in this scenario. Again, if economic growth raises the resolve of both states (as well as allow them to rearm), the risk of escalation and fatalities should increase. It should be noted, however, that I am assuming that the behavior of both states are independent from each other; hence, the states are behaving non-strategically in regard to the other's economic performance.
2. State **A** is growing (high or medium), **B** is not (stagnant or in decline): If we think of this dyad in a directed format, state **A** may initiate a militarized dispute against state **B**. State **A** may act strategically exploiting the perceived weakness of state **B,** which may be less resolved relative to state **A**. The target, state **B**, may not only be suffering from a poor

[11] A prediction in a directed-dyad format depicts whether one state takes an action against another state. A non-directed-dyad prediction examines whether an event or act occurs between two states without specifying which state exclusively committed a certain behavior. For example, in a directed-dyad study we identify which state initiated a militarized dispute and whether the target responded with a militarized action. In a non-directed study we only measure the occurrence of a militarized conflict between two states without identifying an initiator and a target.

economy, we might also find that its internal arena is unstable due to discord. In addition to potential low military readiness, the leader of state **B** may also face strengthened domestic opposition. This is the scenario depicted by Blainey (1988).

3. State **A** is not growing (stagnant or in decline), state **B** is growing (high): According to the theory presented here (based on the Growth-as-Catalyst literature), state **A** should be disinclined to initiate a militarized dispute. However, this situation provides the incentive to initiate diversionary conflict from the Crisis-Scarcity view. This is the strategic interaction predicted by Leeds and Davis (1997). If it is true that states with poor economic growth should be more conflict prone, then it follows that states with strong economic growth should be averse to militarized conflict. But according to my theory, I would expect that the risk of a militarized dispute initiation by state **A** is lower than the previous two scenarios. In a nondirected-dyad framework, the probability of the occurrence of a militarized dispute should be the same as scenario 2.
4. In this case, both states have low or negative growth and should be less likely to initiate a militarized dispute according to my theory: However, much of the Crisis-Scarcity literature, especially Hobson (1917, 1938) and World-Systems Theory contend that this is the most dangerous scenario, although they do not predict a specific form of strategic behavior in a directed-dyad format. I predict that this scenario should entail the lowest risk of a militarized conflict of the four scenarios discussed here.[12]

[12] It is still possible within the diversionary context that the action's of state **A** could still be labeled strategic, although I am not assuming that this is necessary for diversion.

Table 3.1 Four Scenarios of Economic Growth at the Dyadic Level of Analysis

	State B growth High	State B growth Low
State A growth High	**1**	**2**
State A growth Low	**3**	**4**

To summarize Table 3.1, the risk of militarized dispute initiation in a directed dyad format is 1,2>3,4, but the rank ordering of the risk of militarized dispute occurrence in a non-directed format is 1>2,3>4.[13] In a non-directed dyad format study, scenarios two and three are the same since we cannot assign directionality to the states in the dyad. The rank orderings of risk for wars and other disputes that result in fatalities would also be 1>2,3>4. Economic growth should increase the resolve and military power of both sides of a dispute and thus increase the risk of escalation. I will later argue in Chapter Six that we should measure war onset in a nondirected-dyad research design considering that different processes may affect the initiation of militarized disputes and their escalation to war.[14]

The expectations presented above follow from my theory based on the Growth-as-Catalyst perspective. However, I do not specifically theorize any potential strategic behavior by

[13] One could argue that the rank ordering for the directed-dyads could be 2>1>3,4 if one theorizes that the initiating state should attempt to maximize the chance of victory by targeting a state that is perceived to have been weakened by poor economic growth, although I do not make this claim.

[14] Extant game-theoretic literature demonstrates that the path from conflict initiation to escalation to war depends on multiple decisions on the part of both sides in a dyad. The decision to escalate a dispute to war or similar degree of severity is affected by factors perhaps not anticipated at dispute onset. Also, Bremer and Cusack (1995) claim that wars should be thought of as hurricanes, momentous rare events that result

leaders regarding the state of their own economy relative to potential opponents. Blainey (1988), for example, theorizes that growing states are likely to initiate disputes and wars with states that are not growing in order to exploit potential weakness. Of course, the Crisis-Scarcity view presents contrary expectations, which in general predicts that scenario four will be the most dangerous and scenario one the least. The work in this tradition does not typically specify dyadic level effects, such as World-Systems Theory and the thesis advanced by Hobson linking imperialism to economic performance. An exception is Leeds and Davis (1997) who provide a detailed rank ordering of the risk of conflict. Essentially, states that seek to divert attention away from domestic problems such as a bad economy initiate conflicts, but it matters which state is selected as a target. Since a diverting state wants to increase its chance of success, it should seek an opponent that is less likely to respond. Diversionary tactics should be less costly against such an opponent.

If states behave strategically in regard to the economic performance of potential targets, I would suspect that the scenario depicted by Blainey is more likely than the one presented by Leeds and Davis. I disagree with Leeds and Davis theoretically. They assume that growing states are generally more satisfied and less conflict prone and thus predict that when state **A** is experiencing low growth it should initiate conflict against state **B** when it is experiencing high growth. From this we can derive the following rank ordering of the risk of initiating a militarized dispute: 3>4>2,1. While it follows that high growth should produce the inverse effect of low growth, a lower propensity to participate in militarized disputes, I contend that the ability of states to behave in this manner should be inhibited by the effects of low growth.[15]

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from many small factors interacting in a particular sequence and manner that would normally not produce the same effect otherwise.

[15] I repeat that the diversionary story relies heavily on the assumptions that leaders will attempt to retain power and that foreign policy can fully be manipulated towards this end. While the first assumption is

Leaders attempting to employ this tactic should face higher domestic opposition and lower popular support, which would raise the domestic costs associated with policy failure. It would seem then that Richards et al. (1993) and Smith (1996) would be correct in their conclusion that diversionary behavior requires risk-acceptant behavior and is normally a special case.

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often true, it ignores the importance of political parties and other powerful factions whose interests could be hurt in the leader's quest to maintain office. Hence, the first assumption may be overly simplistic. As for the second assumption, while some leaders may have wide-discretion over foreign policy (but many do not), leaders may be constrained by heightened domestic opposition. If leaders embark on diversionary tactics, the costs of failure are likely to rise domestically as the benefits evaporate. In other words, diversionary tactics depend on a naïve and easily manipulated populace.

Chapter Four

State-Level Hypotheses and Research Design

The goal of this dissertation is to test the theory presented in the last chapter, as well as theories from the two perspectives discussed in Chapter Two. This chapter introduces the hypotheses and research design for the first empirical analysis, the monadic level study, of the dissertation. The results are reported in Chapter Five. I am particularly interested in whether economic growth increases the onset, initiation, and reciprocation of militarized interstate disputes, as well as wars and other disputes that lead to fatalities. This chapter begins with a statement and a discussion of hypotheses at the monadic level of analysis.

Monadic Hypotheses

The Growth-as-Catalyst school predicts that economic growth increases the probability of militarized interstate disputes and wars, while the Crisis-Scarcity approach, including studies of diversionary conflict, predicts the opposite. Hence, I test the contradictory predictions from the perspectives to evaluate which one provides more explanatory power. A test of one is generally a test of the other.

Here I discuss the hypotheses specifying the relationships between economic growth and interstate conflict. Most of the studies reviewed in Chapter Two do not specifically discuss whether economic growth increases the initiation of, or overall involvement in, conflicts by states. The exceptions are mostly works on diversionary conflict, which tend to concentrate specifically on initiations. Also, most of the literature, again excluding diversionary conflict studies, focuses on wars rather than less severe

militarized disputes. The theory presented here examines multiple conflict dependent variables. I posit that economic growth increases the frequency *and* severity of interstate conflicts. The hypotheses presented are phrased from the context of the Growth-as-Catalyst literature.

I predict that economic growth increases the frequency in which states become involved in militarized conflicts. The occurrence of militarized conflicts should be higher when the economies of belligerents are growing. This proposition is rooted in the Growth-as-Catalyst approach (Kondratieff 1926; Hansen 1932; Macfie 1938; Kuznets 1966; Blainey 1988; Choucri and North 1975; Thompson and Zuk 1982; Väyrynen 1983a; Elder and Homes 1985; Goldstein 1988; Mansfield 1988; Pollins 1996; Holmes and Keck 1999; Pollins and Murrin 1999; Pollins and Schweller 1999). Again, the Crisis-Scarcity view theorizes the opposite to be true.

H1: Economic growth increases the likelihood that a state will enter into a new militarized interstate conflict in a given year.

If economic growth increases the occurrence of militarized conflict, it could also be the case that particularly the states that *initiate* such conflicts are growing. Beyond Blainey (1988), however, there is no explicit discussion of conflict initiation within the Growth-as-Catalyst perspective. Blainey theorizes that growing states, while generally more apt to engage in interstate disputes than states that are economically stagnant, may specifically attack states that are not growing in order to exploit perceived weaknesses. Both the Growth-as-Catalyst and Crisis-Scarcity approaches implicitly argue that whether wars begin in economic downturns or upturns, some country, or group of countries, is more likely to initiate a dispute that may become militarized. The exceptions are again studies of diversionary conflict where the decision to initiate conflict during times of

economic hardship is clearly posited. In keeping with the theory presented in the last chapter, I predict that economic growth increases the likelihood that a growing state will initiate militarized action in a conflict.

H2: Economic growth increases the likelihood that a state will initiate a militarized interstate conflict in a given year.

Yet, the theory presented here also predicts that economic growth increases the likelihood that states will respond in kind when other states initiate militarized conflicts. This proposition is not clearly identifiable in the literature; nevertheless, it can be extracted from those works that focus on foreign policy moods and social optimism as contributing factors to interstate conflict. Implicitly, if economic growth increases the frequency of conflict, especially wars, then it is possible that militarized initiations and militarized responses are both typically higher during these periods.

H3: Economic growth increases the likelihood that a state will reciprocate the initiation of a militarized conflict in a given year.

The theory presented in Chapter Three predicts that economic growth not only increases the frequency of conflict but the severity as well. When people are optimistic or war-making capacities have recently grown, fatalities may be more likely to result from militarized conflicts. By contrast, when a state is experiencing low or negative growth, executive leaders should face more political opposition to risky foreign policies from other political parties or factions in their domestic arena, and so will seek to avoid fatalities. And with the exception of most diversionary conflict studies, the literature generally argues that economic growth increases the severity of international conflict (Kondratieff 1926; Hansen 1932; Macfie 1938; Kuznets 1966; Blainey 1988; Choucri and North 1975; Thompson and Zuk 1982; Väyrynen 1983a; Goldstein 1988; Mansfield

1988) or decreases it (Hobson 1917,1938; Lenin 1939 [1916]; Hopkins and Wallerstein 1982; Chase-Dunn 1978; Frank 1978; Bosquet 1980; Bergesen 1983).[1] Many of these studies specifically concentrate on war. I examine both wars and conflicts that result in fatalities short of war[2].

H4: Economic growth increases the likelihood that a state will become involved in a militarized conflict that entails fatalities in a given year.

H5: Economic growth increases the likelihood that a state will become involved in a war in a given year.

Research Design

This section presents the research design for the monadic level analysis. The unit of analysis is the state (monad) year. By monadic, I mean that I will observe the economic growth and individual conflict behavior of nation-states for each year. The spatial domain of this analysis spans from 1870 to 1992 and includes 56 countries.[3] The spatial domain is shaped by the gross domestic product (GDP) data provided by Maddison (1995). These data are based on purchasing power parity (PPP), which makes it possible to side step the problems associated with inflation and exchange rates. Thus, cross-national comparison is greatly facilitated. In fact, though using Maddison's data diminishes the spatial domain, the comparability of the economic data are a significant

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[1] Economic growth also contributes to war in Doran (1983, 1985), Doran and Parsons (1980), and Organski and Kugler (1980) depending on other factors related to the environment of the international system and whether other states are also growing. For example, Doran only predicts the occurrence of a war if two countries happen to move through their own critical points concurrently, while for Organski and Kugler economic growth helps propel a challenger to the top of the international power hierarchy.

[2] I define war later in this chapter.

[3] In actuality, the first year at the beginning of each state's time series, as well as the first year after a gap in the series, is not included in model estimation due to the calculation of the growth rate variables. Also, the time series for some countries begin after 1870 either due to later dates of independence or missing data. Data are available for the major powers back to 1870 with the exception of Russia (1929), and most other states independent before 1950 going back to approximately 1900. The countries and dates covered in the Maddison (1995) data are listed in the appendix at the end of the dissertation. Appendix A lists the countries included.

improvement over data used in the past. This sample includes many of the countries of South America and South and East Asia, but only includes about ten from Africa and only Mexico from Central America. The countries included in the sample are listed in Appendix A.[4]

Dependent Variables –Militarized Interstate Disputes and Wars

The conflict dependent variables examined in Chapter Five all originate from the *Militarized Interstate Dispute* data set provided by the Correlates of War Project. Briefly, a militarized interstate dispute (MID) occurs when one state threatens, displays, or uses militarized force against another state (Gochman and Maoz 1984; Jones, Bremer, Singer 1996). One should think of MIDs as conflicts that cross a militarized threshold. MIDs do not capture all interstate conflicts or which state was the first to raise a grievance against another state, but only those disputes that become militarized. In other words, these data can not tell us why two states first disagree on an issue, but only indicate the point at which the dispute becomes militarized through threats, displays of force, or uses of force.[5] All of the conflict dependent variables are dichotomous.

The data used here are derived from the Dyadic MID (DYMID 1.0) data set.[6] These data were transformed from a dyadic to a monadic pooled time series by parsing out each state's participation in each militarized interstate dispute and then aggregating these by year. I then coded the dispute with the highest hostility score for each state-year.

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[4] The data includes about a third of all MIDs. The reporting of MIDs from different parts of the world for the period covered is not an issue, unlike MIDs that may have occurred earlier in the nineteenth century.

[5] These data are limited in their ability to inform us with great precision about the issues over which states dispute. While there are a few categories such as "territorial claims", these are limited and lack additional detail.

[6] These data are available from Zeev Maoz at http://spirit.tau.ac.il/~zeevmaoz/ and provide additional variables useful for constructing the dependent variables used in this study and minimize the chance of anomalous conflicts that never occurred but that are just artifacts of coding problems identified within the MID 2.10 data set.

The first conflict variable, *MID Onset*, is the onset of a MID and is taken from the Maoz data set. MID Onset equals one when a state becomes involved in a new MID in a given year, otherwise it equals zero. This variable is used to test whether economic growth increases the likelihood that a state will become involved in an interstate militarized dispute (H1).

I also created a variable measuring MID initiations, as stated by H2. *Initiate* equals one when a state initiates any militarized dispute against any other state in a given year (i.e. a participant on the side of a dispute that first crosses the militarized threshold), otherwise it equals zero. This variable was constructed using the *Role* variable for state A from the Maoz data set. Initiate equals one when Role equals one, meaning that the state is an original participant in a conflict on side A.[7] By initiate, I do not mean that the state in question started a feud or disagreement with another state, but that only they were on the side of the dispute that first crossed the militarized threshold.[8]

Similarly, I created a variable marking the reciprocation of militarized behavior for states that are attacked or threatened. *Reciprocation* equals one if a state responds to a MID initiated against it in any given year with its own militarized action (threat, display or use of force). Reciprocation equals one when Maoz's Role variable equals three, which means the state in question is a *Primary Target* and responds with a threat, display,

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[7] Maoz uses the terminology "Primary Initiator" in his codebook.

[8] An excellent discussion of the differences between conflict initiation versus involvement can be found in Bennett and Stam (2000). Essentially, the term initiation is often problematic since it is very difficult to examine how disputes originate and which state started the feud. Often, both states in a dispute wish to alter the status quo. Moreover, some leaders are successful at baiting other states to initiate military actions when they wish to fight but do not want to accept blame. Hence, we need to be careful with how we use and measure this concept.

or use of militarized force. Reciprocation is used to examine whether economic growth increases the likelihood that a state will respond militarily in a MID (H3).[9]

Of course, we are also interested in not only the frequency of militarized interstate disputes but also participation in severe conflicts. I construct two variables for this purpose. First, *Deadly MID* equals one when a state becomes involved in a MID that involves fatalities in any given year, otherwise it equals zero. In other words, Deadly MID equals one if a state is involved in any MID onset in which the fatality level is greater than one (fatality level is from the MID data set and is scored on a scale of one to 6, one being no casualties and six at least 1,000) in any given year, otherwise it equals zero. This variable is used to test whether economic growth increases the likelihood states will become involved in disputes that entail fatalities in a given year (H4).

Finally, I constructed a variable, *War*, which is used to examine whether economic growth increases the likelihood of war onset (H5). War equals one when a state becomes involved in the onset of a war in any given year, otherwise it equals zero.[10] The definition of war is borrowed from the Correlates of War Project and is defined as a military clash between the forces of at least two members of the interstate system that entails at least 1,000 battle deaths in the conflict. Also, to be defined as a war participant a state must have had at least 1,000 soldiers participate or at least 100 battle deaths in the conflict (Sarkees 2000). I constructed War from the MID data set, and it equals one when *Hostlev* (hostility level) equals 5.[11]

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[9] It is possible for a MID to occur where a target state does not respond with some militarized action but instead may take diplomatic or other actions.

[10] By onset, I mean the first year a given state becomes involved in a war, whether the war itself is ongoing or not.

[11] The coding for the hostility levels is as follows: 1= no militarized action, 2= threat to use force, 3= display of force, 4= use of force, 5=war.

Independent Variables

As my primary explanatory variable, I operationalize economic growth by using GDP growth based on continuous 1990 Geary-Khamis dollars found in Maddison (1995). These data are calculated in purchasing power parity (PPP), which makes it possible to side step problems associated with inflation and exchange rates, facilitating cross-national comparison. Again, these data are available for some states as far back as 1870, but the time series for most states begin after 1900 due to later dates of independence or missing data. GDP growth equals $(GDP_t - GDP_{t-1}/GDP_{t-1})$. The growth rate variable is then lagged one year.[12] For example, when measuring whether a state engages in conflict in 1990, I examine the effect of the growth rate from 1988 to 1989. Lagging at least one year is necessary both theoretically and econometrically. Theoretically, we should not expect the effects of economic growth to be contemporaneous. People only react to their state's economic performance when figures are made public or when problems are felt on a large scale. Since one quarter of a year cannot easily be used to generalize about the performance of an economy over a whole year, there will exist a lag in perceptions of economic performance. Also, it may take at least a year for economic growth to affect other factors such as increases in military expenditures, household income, employment levels, changes in government budgets, etc. Essentially, decision-makers assess their options in relation to economic growth after some delay in time, and the effects of these decisions follow later. For this reason, at least a one-year lag is desirable. Also, four

[12] Furthermore, we must take care to specify our models in a manner that allows for their proper measurement. The theory presented here does not specify a spontaneous relationship between economic growth and the dependent variables. In fact, it is argued here that it will most often take more than a single year of economic growth to affect the dependent variables. Hence, to avoid simultaneity between the dependent and independent variables, which would require a different estimation procedure than employed here, I lag several of the independent variables.

additional GDP growth variables lagged five and ten years are again generated using moving averages, and are employed in the models to test the long-term effects of economic growth on interstate conflict.[13]

Control Variables

The control variables included in these models fall into two categories. The variables included in the first set are theoretically relevant, as discussed in Chapter Three. The second set control for potential bias in the sample. In regard to the second set of control variables, roughly half of the states included are either economically developed or are located in Europe. Thus, there is good reason to suspect that other factors are important that must be controlled for. Many European states, for example, are densely populated. According to Choucri and North (1975), population density is one component of lateral pressure, which they theorize should be related to more frequent interstate conflict since these states should be more apt to engage in expansionist policies.

The theory presented in Chapter Three predicts that economic growth should increase military expenditures, which in turn increase interstate conflict. The variable *Militarization* measures the growth in military expenditures for a state in a given year. I create a set of variables measuring the growth of military expenditures for time spans of one, five, and ten years (in the same manner as the GDP growth variables) using data from the National Capabilities Data Set provided by the Correlates of War Project. [14]

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[13] Stata version 6.0 was used for this process. Because Stata's moving average command does not seem to work with pooled time series and/or instances of missing data, the procedure had to be carried out manually. Lagged values of GDP growth were created for up to ten years and then summed and averaged to create the economic growth variables. The most current year of growth, however, is not included to avoid problems of simultaneity. A three-year averaged growth rate used to examine cases in 1990, for example, averages the growth from 1986 to 1989 and excludes 1990 from the calculation.

[14] The COW military expenditures are denoted in British pounds up to 1914 and then in US dollars for the rest of the series. But there is no standardization at the transition point between the currencies. Hence, I

Also, all variables do not include the current year's military expenditures but instead are constructed with a single-year lag built in. In this manner, I examine both the short and long-term effects of economic growth on military spending.[15]

Next, high levels of state development should reduce conflict (Rosecrance 1986; Mueller 1989). These countries are apt to enjoy high levels of economic benefits by maintaining peaceful relations with other states. Prosperity and development are no longer necessarily tied to the conquest and control of land for such states. Also, there should be less domestic impetus for foreign conflicts in states that are wealthy enough to avoid problems such as extensive unemployment combined with high population density. While it is true that developed states are more capable of maintaining large militaries, many developed states are less militarized than states with less income.[16] Mueller also theorizes that war is increasingly seen as an illegitimate means to settle disputes by the citizens of developed states and points out that two developed states have not fought a war against each other since World War Two. Finally, the sample here is skewed toward the developed nations of the world. *Development* is measured by taking the natural log of a state's energy consumption per capita for each year.

Of course, states may also be limited from engaging in militarized conflict for other reasons. Involvement in militarized disputes, for instance, should be lower for

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converted the years from 1870 to 1914 from pounds into dollars. Ideally, I would examine growth of military expenditures in PPP figures in relation to movements in GDP growth, but these data are not available at this time. Hence, cross-national comparisons of the type conducted here could invite additional measurement error. Furthermore, all of the operationalizations of this variable I considered included some form of potential measurement error or other problem. Thus, the military expenditure data here is less comparable across nations in comparison with the GDP data. In future projects, I hope to obtain or construct data based on either PPP transformed military expenditures or non-fiscal indicators of military power.

[15] As discussed below, GDP growth is likewise lagged one, five, and ten years for each state in the study.

[16] In my preliminary research I included each state's GDP as a variable to control for the size of the economy. However, this variable was highly collinear with major power status. This variable was dropped in subsequent models.

states that are constrained domestically, such as by democratic institutions. As I theorize in Chapter Three, executive constraints should reduce leaders' latitude to engage in militarized disputes. *Executive Constraint* measures these potential barriers to conflict and is found in Polity III (Jaggers and Gurr 1995). This index ranges from one to seven, although I reverse the scores so that seven is the most constrained.[17]

The next series of control variables originate from the Banks Cross-National Time Series Archive (1999). First, *Population Density* equals total land area for each state divided by its total population, and is included to test this aspect of Choucri and North's (1975) Lateral Pressure theory -- densely populated countries may be more likely to engage in militarized conflicts. Moreover, considering that nearly half the states in the sample are located in Europe, a region that is densely populated compared to the Americas and Australia. Next, *Revenue Growth* measures the rate of change in revenue growth for a state from one year to the next. This variable is included to test the diversionary conflict theme and whether revenue growth is substitutable for conflicts that arise from deprivation. States with full coffers need not necessarily engage in militarized conflicts if they are able to undertake economic reforms or provide additional economic and social benefits to society. While I would expect that revenue growth should rise with economic growth, and that its relationship with interstate conflict should be positive, we would expect that this relationship should be negative from the Crisis-Scarcity view.

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[17] I also run the models with democracy as an alternative to executive constraints measuring whether democracies in general are more peaceful or conflict prone than autocracies. Though the correlation between the two variables is high, they essentially measure different concepts. *Democracy* is mostly based on political participation instead of the degree of structural constraints faced by executive leaders. The theory in chapter three specifically features the effects of constraints on decision-making. *Democracy* equals *Democ* minus *Autoc* from Polity III (Jaggers and Gurr), and is then transformed into a scale ranging from 1-21 (1= most autocratic and 21= most democratic).

Two variables were constructed to measure domestic discord. I point out in Chapter Two that it may be inappropriate theoretically and econometrically to include a single measure for domestic conflict (or none at all). For example, the presence of guerilla warfare in a country may have a different effect on conflict initiation or involvement than anti-government riots and demonstrations. Theoretically, I suspect that there is a difference in the magnitudes of the events used to measure domestic turmoil. Hence, *Protest* measures low levels of domestic conflict while *Rebellion* gauges severe acts of anti-governmental conflict.

A priori, six domestic conflict variables from Banks (1999) were separated into the categories above. *Strikes*, *Riots*, and *Anti-government Demonstrations* compose the protest category while *Guerrilla Warfare*, *Government Crises*, and *Revolution*s comprise rebellion. I then conducted a factor analysis on the events constituting the two categories to measure the interrelationships of the variables (using a promax oblique rotation technique), confirming that the components of the variables generally fit together. The top of Table 4.1 presents the factor analysis of all six variables as a base comparison, whereas the last two sections contain the results of the analysis on the specified Protest and Rebellion variables.

Only one factor or pattern exists for the Protest variable. These three variables all cluster together as one factor but still maintain a high degree of individual uniqueness. This is evident when all six variables are included together because the factor loadings for the three severe types of events are negative while the three less severe types are positive. However, when the six variables are divided *a priori* into two categories, two factors were revealed in the low category. The Strikes variable arguably fits into a

separate category, although its effect is rather weak.[18] With the categories confirmed by the factor analysis, the two variables were then created and weighted from the factor loadings of each component. The three high-scale types of domestic turmoil were weighted about equally. The Strikes variable was assigned a small weight within the Protest variable.[19]

Table 4.1: Domestic Conflict Factor Loadings

(oblique rotation)

Variables	Factors		Uniqueness
All six domestic conflict variables	**1**	**2**	
Strikes	0.13371	0.44163	0.75934
Guerrilla warfare	-0.01051	0.48451	0.76753
Government crises	-0.03009	0.39681	0.84725
Riots	0.69218	0.16097	0.44263
Revolutions	-0.08276	0.4103	0.84076
Anti-government demonstrations	0.71248	-0.03799	0.50365
Low-scale Domestic Conflict			
Strikes	0.07836	0.27966	0.88577
Riots	0.66919	0.10307	0.44752
Anti-government demonstrations	0.72478	-0.04521	0.51734
High-scale Domestic Conflict			
Government crises	0.36007	n.a.	0.87035
Guerrilla warfare	0.40333	n.a.	0.83733
Revolutions	0.44298	n.a.	0.80377

[18] I later found that it removing the Strikes component from the Protest variable does not affect the results.
[19] The weights were about equal for the variables Riots and *Anti*-government Demonstrations. Separately, many of these variables are correlated with each other, but this is not the case for the two re-scaled composite domestic conflict variables Protest and Rebellion. The factor analysis and variable weighting was conducted using Stata version 6.0. For more information on factor analysis see Jack E. Vincent, *Factor Analysis in International Relations* (1971) and Gary King, *Unifying Political Methodology* (1989).

Theories at the monadic level can also benefit by employing the opportunity and willingness framework advanced by Most and Starr (1989).[20] Though we may find cases where economic growth leads to new conflicts, this effect may be more likely where countries are major powers, have rivals, or allies.[21] And again, states with these attributes are well represented within the sample.

Because their significant military power provides more opportunity to come into conflict with other states, and that they tend to interact more with other countries, major powers have a higher probability of engaging in conflict. *Major power* is a dichotomous variable created from Correlates of War data set available through EUGene that equals one when a state is a major power and zero when it is a minor power. Three other variables are also used to measure opportunity and willingness. The first is a sum of each state's military alliances in a given year, which is created by collapsing the dyadic alliance data also available from COW through EUGene, to the monadic level and summing each state's alliance commitments to other states.[22] States that have many allies should have a higher number of opportunities to engage in conflict relative to states with none or few allies.

Finally, states that are geographically contiguous should also share a higher opportunity for conflict than states that are not within close proximity of each other. A direct test of this proposition is possible at the dyadic level of analysis but not at the

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[20] Admittedly, the opportunity and willingness conception can be slippery when actually applying it to concrete situations. Nevertheless, its application to these control variables would appear not too problematic.

[21] In theory, opportunity would seem to be a necessary condition for conflict. If this were the case, then our independent variables would need to be interacted with some concise measure of opportunity so that when there is no opportunity for conflict other explanatory factors would be nullified. But this contention is overly stringent. Our indicators cannot capture opportunity perfectly. For this reason, the variables I introduce to control for opportunity are included to measure a probabilistic change in the risk of conflict. The risk of a state engaging in conflict in any given year theoretically cannot be zero if other states exist.

[22] All three levels of alliances are coded equally.

monadic level. At the monadic level, we might expect that states that share numerous borders with other states should have potentially more states to fight (and potentially more issues over which to fight). *Borders* equals the number of borders each state shares with all other states in a given year.[23]

Model Estimation of Economic Growth and Interstate Conflict

The base model, below, is used to test the models with the five conflict dependent variables (MID Onset, Initiation, Reciprocation, Deadly MID, and War). Again, GDP growth is measured with a lag of one year, as well as 5 and 10-year- averaged lags, in separate models. Also, three variables based on the BTSCS method provided by Beck, Katz, and Tucker (1998) are included in every model to control for temporal dependence. Since I have a dichotomous dependent variable, I cannot use an ordinary least squares regression (OLS) due to the violation of the assumption of linearity. Logit analysis is used instead with estimated robust standard errors to control for heteroskedasticity (Huber 1967; White 1978). The base model tested in Chapter Five is specified below. However, recall that each dependent variable will be tested using three models (for one, five, and ten-year lags).

$$L(\text{conflict}) = \beta 0 + \beta 1\,(\text{GDP Growth}) + \beta 2\,(\text{Militarization}) + \beta 3\,(\text{Development}) + \beta 4\,(\text{Borders}) + \beta 5\,(\text{Major Power}) + \beta 6\,(\text{Allies}) + \beta 7\,(\text{Population density}) + \beta 8\,(\text{Executive Constraints}) + \beta 9\,(\text{Revenue Growth}) + \beta 10\,(\text{Protest}) + \beta 11\,(\text{Rebellion}) + \mu I$$

[23] EUGene was used to generate a population of cases of all directed dyads (one observation each for state A and B's interactions in a given year) including the variable for contiguity. This sample was collapsed to non-directional dyads before summing contiguity. Contiguity is defined using a distance of up to 400 miles when states do not border by land.

Economic Growth, Interstate Conflict, and Sample Heterogeneity

The models specified above provide most of the tests necessary to examine the explanatory power of the theory presented in Chapter Three and the literature reviewed in Chapter Two. However, an additional test is in order that examines the potential for heterogeneity in the sample. Regional characteristics may play a role in conflict propensity.

The theory presented here predicts that developed countries may be less likely to engage in militarized conflicts than less developed countries. States may pass through a period in their development when they are at a higher risk of involvement in militarized conflicts that may be reflected regionally (Rostow 1960; Doran 1983, 1985). This may be due to either instability following political independence or stem from the beginning of economic development. Such countries may possess the ability to acquire extensive militaries but may not have yet forged significant ties (such as substantial commercial relations) with friendly nations in a manner that binds their common interests together. There is no shortage of international organization in the Third World, but a host of other factors such as a lack of democratic norms of exchange and legal adjudication may weaken attempts to cooperate. Since states are often born in bunches, such as during de-colonization and the collapse of empires, it is possible that they may share similar conflict propensities. Clusters of peaceful or violent states may be identified on a regional basis. Also, economic growth may at times be region specific. For example, most of Latin America suffered high inflation, debt crisis, and low economic growth for most of the 1980s. In contrast, many Asian nations experienced increasing levels of economic growth from the 1980s into the 1990s before experiencing a contagious

economic crisis in 1996. Hence, this economic growth, or lack of, may fuel or constrain interstate conflicts across an entire region.[24]

In an auxiliary analysis I divide the sample into European and non-European states. The European state-system appears unique in comparison with other regions. No other region has contained more than one indigenous major power at any given time. This seems to have historically led to an entangled system of alliances that may have resulted in more frequent military conflict and the diffusion of wars. The Correlates of War Project codes each country as belonging to one of six regions: The Western Hemisphere, Europe, Asia, Africa, the Middle East, and Oceania. However, because of missing data I combine all the non-European regions into one category.[25]

The Order of Presentation of the Analyses

Table 4.2, below, breaks down the analyses by specifying the dependent variables and the sample of cases. Each line of the table represents at least one battery of tests. The first column lists the analyses. The classification of "ALL" under population of cases is as follows: the spatial-temporal domain extends from 1872 until 1992 (after lags are included with economic growth), depending on the country, and will include time series from up to 56 countries (based on Maddison's GDP data). The spatial domain is delineated by the availability of GDP data.

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[24] Spatial regression would seemingly offer a means to directly test for the regional diffusion of economic growth or crisis, although this would require the reduction in missing data that is common in some of the poorer regions of the world, such as in Africa and central Asia. This is a very interesting question that will need to be left to future research.

[25] I did run the regional analysis on the six regions. However, missing data in Africa and insufficient variation in some of the covariates for Australia and New Zealand hamper an accurate inference of these regions.

Table 4.2 Model Order of Monadic Level Analyses

Dependent Variable	Sample of Cases
MID Onset	All State-years
MID Initiation	All State-years
MID Reciprocation	All State-years
Deadly MIDs	All State-years
War Onset	All State-years
War Onset	State-years by Region

By "Base Model", I mean all the theoretically important independent variables and other control variables discussed above. I also run a second analysis that excludes the variables constructed from Banks (1999) -- Protest, Rebellion, and Revenue Growth-- in order to utilize the entire temporal domain. These variables suffer from missing data, particularly the domestic conflict variables, which truncate the sample to 1920-1992. I lose approximately 700 of 3,000 observations when these two variables are included. The results of these analyses are reported in Chapter Five in the order presented in Table 4.2.

Chapter Five

A State-Level Analysis of the Effects of Economic Growth on State Conflict Propensity

This chapter provides tests of the theory presented in Chapter Three, as outlined by the research design in Chapter Four. I first investigate whether growing states are more apt to participate in militarized interstate disputes (MIDs) than states that have experienced slow or negative growth. I then attempt to identify if states with growing economies are more likely to initiate and reciprocate these militarized actions. Finally, I analyze the link between a state's economic growth and participation in severe conflicts—wars and other disputes that entail the loss of life.

The next sections report the results of the models estimating the effects of economic growth on militarized interstate conflict at the national level of analysis. I examine five conflict dependent variables in this chapter based on militarized interstate disputes (MIDs) as described in Chapter Four. Models with varying time lags for economic growth are run on each dependent variable with a base model of control variables. However, I also run a version of these models minus the variables created from Banks (1999), the domestic conflict and revenue growth variables, since they truncate the sample from a starting year of 1870 to 1919. Hence, I could potentially throw away useful information (approximately 700 of 3,253 observations). The additional tests on the larger sample allow me to compare the results with the narrower sample.

A few words are in order about the sample before I begin to discuss the results of the models to follow in the remainder of this chapter. The restricted number of cases in this study proves to be a problem in a few ways. First, the results are sensitive to the number of cases dropped when the Banks variables, mentioned above, are included in the models. Second, the data do not contain enough power to inform us of any long-term effect of economic growth and conflict beyond five to seven years. Over four hundred observations are required to generate the ten-year averaged variables for GDP growth and long-term militarization. Thus, I do not present the models that lag and average economic growth ten years in tabular form. The results of these latter models provide estimates supportive of neither the Growth-as-Catalyst nor the opposing Crisis-Scarcity view. I also do not present the models including GDP growth lagged a single year since these yield little new insights beyond the models with growth lagged and averaged five years. Third, the sample is divided into European versus non-European countries in the regional analysis presented later in this chapter instead of the COW defined regions since missing data are particularly a problem in the Middle East, Central America, and Africa. Anticipating the results, I will find that economic growth matters only for severe MIDs and wars.

Economic Growth and the Onset of Militarized Interstate Conflict

The most general of the hypotheses outlined in Chapter Four examines whether economic growth increases a state's overall likelihood of becoming involved in a militarized interstate conflict in a given year (H1). I find only modest evidence to support this hypothesis. While GDP Growth averaged five years is positive, it is not

statistically significant at below a probability of .05, based on a two-tailed test, in models one and two, as shown in Table 5.1.[1]

Table 5.1 Five-Year Average Economic Growth and the Onset of Militarized Interstate Disputes

	Model 1			Model 2		
MID onset	Coef	Robust SE	Signif	Coef	Robust SE	Signif
GDP growth	0.5464	1.9060	0.7740	0.3511	1.0441	0.7370
Militarization	-0.4113	0.2301	0.0740	-0.1685	0.1784	0.3450
Development	-583.23	169.65	***0.0010***	-661.63	174.57	***0.0000***
# Borders	0.0433	0.0250	0.0830	0.0295	0.0265	0.2660
Major Power	0.6520	0.2380	***0.0060***	0.5411	0.1982	***0.0060***
# Allies	0.0066	0.0053	0.2080	0.0056	0.0046	0.2170
Population Density	0.0000	0.0000	0.2150	0.0000	0.0000	0.3130
Executive Constraint	-0.0030	0.0263	0.9090	-0.0152	0.0272	0.5760
Revenue Growth	0.0164	0.0200	0.4110	0.0148	0.0215	0.4900
Protest	-0.0185	0.0453	0.6820			
Rebellion	0.0164	0.0279	0.5560			
$Spline_1$	0.0002	0.0001	0.0720	0.0002	0.0001	0.0790
$Spline_2$	0.0099	0.0017	***0.0000***	0.0096	0.0015	***0.0000***
$Spline_3$	-0.0039	0.0008	***0.0000***	-0.0038	0.0008	***0.0000***
Constant	-0.6732	0.2905	**0.0200**	-0.4597	0.2877	0.1100
N		2572			3099	
Wald Test		281.31			403.62	
p-value		0.0000			0.0000	
Log likelihood		-1363.17			-1631.61	
Pseudo R2		0.1178			0.1274	

Note: p<0.10 are italicized, p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-tailed

[1] As discussed in Chapter Four, I also ran models with GDP growth lagged and averaged three and seven years. The seven-year averaged models were very similar to the five-year models while the three-year models were less supportive of both the Growth-as-Catalyst and Crisis-Scarcity perspectives. As discussed in Chapter Three, the effects of economic growth theoretically should take more than one year to have an effect on interstate conflict. This appears to be the case since GDP growth lagged one year is often insignificant in the models presented here.

We should be interested in the substantive impact of economic growth. How much does high economic growth alter the probability of a new MID? Although GDP growth is not statistically significant, there is only a minimal conflict catalyzing effect associated with GDP growth. An increase in GDP growth from approximately four percent (mean value of the sample) to nine percent (a one standard deviation increase) raises the probability roughly nine percent that a new state will participate in a new MID in a given year.[2]

There appear to be two reasons why the relationship between economic growth and MID onset is not stronger. The first is theoretical and the second econometric. It appears (to be shown later) that not all disputes are affected by economic growth, particularly disputes that do not involve uses of force or fatalities. These disputes may not catch the attention of domestic audiences within states. For example, a dispute that escalates from a feud over fishing rights or a cross-border narcotics raid might not appear as leading news of concern to most people. I argue that foreign policy moods should have their strongest effect in scenarios where the risk of combat is apparent. I demonstrate later in the chapter that the severity of disputes needs to be taken into account. States may make threats or display military force, but shun the actual use of force if they seek to avoid war. If this is the case, we should expect a weaker link between economic growth, militarization, and overall participation in conflicts compared to MIDs that involve fatalities. Second, the sample may not have enough power to provide enough information to reject the null hypothesis with a higher degree of

[2] All the marginal probabilities are computed from the models including GDP growth averaged five years in this chapter. The baseline probability is calculated by setting the continuous variables to their means and the dichotomous variables to minimum values. I do not present a full table of the change in probabilities of all the variables here to reserve space, although I present full tables of the marginal effects later in the chapter for Deadly MIDs and Wars.

confidence. Additional observations could potentially lend further support to either of the two broader theoretical perspectives.

Economic Growth and the Initiation of Militarized Interstate Conflict

In this section I specifically test whether growing states initiate such conflicts, and the next section similarly focuses on MID reciprocation. Recall that much of the literature does not clearly hypothesize that economic growth should specifically increase the initiation of military conflict, with the particular exception of the diversionary conflict perspective. This proposition often seems implicit. Still, I hypothesize that economic growth should increase both MID initiations and reciprocations.

The empirical results, presented in Table 5.2, still indicate that economic growth does not significantly increase the probability that a state will initiate a MID in a given year. The coefficients for GDP growth averaged five years (models 3 and 4) are again positive but insignificant. The results here are neither strongly supportive of the Growth-as-Catalyst perspective nor the Crisis-Scarcity view. On the latter, if diversionary tendencies exist, they would appear to be generally unrelated to economic growth and militarized interstate conflict since the coefficients, albeit insignificant, are positive in these models.

In particular, if states engage in diversionary behavior, the use of this tactic appears unrelated to economic growth or low-scale political protest.[3] However, higher levels of internal rebellion appear to increase the probability of MID initiation. My

[3] We should remember that while militarized threats or actions may catch the attention of the media and citizens of states, and that for this reason it would appear vulnerable to manipulation, leaders may engage in other means of diversionary tactics such as non-militarized scape-goating.

theoretical expectations regarding the conflict-constraining effects of domestic discord are thus not supported in these models.

Table 5.2 Five-Year Economic Growth and the Initiation of Militarized Interstate Disputes

	Model 3			Model 4		
MID Initiation	Coef	Robust SE	Signif	Coef	Robust SE	Signif
GDP growth	0.2997	2.6507	0.9100	0.6926	1.6514	0.6750
Militarization	0.0495	0.3317	0.8810	0.2989	0.2999	0.3190
Development	-911.05	315.26	***0.0040***	-878.94	267.40	***0.0010***
# Borders	-0.0001	0.0383	0.9990	-0.0022	0.0297	0.9410
Major Power	-0.0996	0.4356	0.8190	0.0635	0.2675	0.8120
# Allies	-0.0014	0.0081	0.8680	-0.0006	0.0079	0.9380
Population Density	-0.0001	0.0001	0.1260	0.0000	0.0000	0.4040
Executive Constraint	-0.0330	0.0404	0.4130	-0.0165	0.0385	0.6680
Revenue Growth	-0.0812	0.0636	0.2020	-0.0528	0.0484	0.2750
Protest	0.0275	0.0672	0.6830			
Rebellion	0.0632	0.0363	0.0820			
$Spline_1$	0.0031	0.0007	***0.0000***	0.0031	0.0005	***0.0000***
$Spline_2$	-0.0012	0.0003	***0.0000***	-0.0012	0.0002	***0.0000***
$Spline_3$	0.0002	0.0001	***0.0030***	0.0002	0.0000	***0.0010***
Constant	-0.6474	0.5088	0.2030	-0.8582	0.4314	**0.0470**
N		2572			3099	
Wald Test		104.02			121.62	
p-value		0.0000			0.0000	
Log likelihood		-624.809			-791.477	
Pseudo R2		0.1683			0.1601	

Note: p<0.10 are italicized, p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-tailed

Table 5.3 Five-year Economic Growth and the Reciprocation of Militarized Interstate Disputes

Deadly MID onset	Coef	Model 5 Robust SE	Signif	Coef	Model 6 Robust SE	Signif
GDP growth	-4.0359	4.1774	0.3340	-1.4844	3.1519	0.6380
Militarization	0.3333	0.2977	0.2630	0.2183	0.3109	0.4830
Development	-763.87	335.02	**0.0230**	-789.29	265.61	**0.0030**
# Borders	-0.0025	0.0437	0.9540	0.0077	0.0428	0.8580
Major Power	0.1844	0.5020	0.7130	-0.2335	0.4006	0.5600
# Allies	-0.0074	0.0115	0.5190	-0.0057	0.0103	0.5810
Population Density	0.0000	0.0000	0.1310	0.0001	0.0000	**0.0260**
Executive Constraint	0.1142	0.0468	**0.0150**	0.1063	0.0485	**0.0290**
Revenue Growth	-0.0207	0.0217	0.3390	-0.0128	0.0186	0.4910
Protest	0.0044	0.0680	0.9480			
Rebellion	-0.0897	0.0539	0.0960			
$Spline_1$	0.0014	0.0003	***0.0000***	0.0014	0.0003	***0.0000***
$Spline_2$	-0.0007	0.0002	***0.0000***	-0.0007	0.0002	***0.0000***
$Spline_3$	0.0001	0.0000	**0.0200**	0.0001	0.0000	**0.0040**
Constant	-1.8241	0.6206	***0.0030***	-2.0023	0.5209	***0.0000***
N		2572			3099	
Wald Test		115.30			107.36	
p-value		0.0000			0.0000	
Log likelihood		-426.740			-515.325	
Pseuedo R2		0.1661			0.1585	

Note: p<0.10 are italicized, p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-tailed

Economic Growth and the Reciprocation of Militarized Interstate Conflict

In this section, I examine whether economic growth raises the likelihood that a state will reciprocate a MID in a given year. By *Reciprocate*, I mean that a state militarily targeted by an initiator counters with a militarized response (threat, display or use of force). I theorize that if economic growth increases social optimism and the propensity to engage in conflict, the probability of both MID initiations and

reciprocations should increase. The decision to engage in militarized actions should be less constrained by domestic audiences in this situation.

However, the theory I presented earlier does not explain MID reciprocations. Table 5.3 presents the estimates of the MID reciprocation models. Economic growth does not significantly affect MID reciprocation. The estimates are statistically insignificant across the models. In sum, the Growth-as-Catalyst perspective does not adequately explain MID reciprocations, yet the evidence is also not very supportive of the Crisis-Scarcity view. I suspect that when states are threatened or attacked it matters less in the face of domestic audiences whether the economy is growing or not when a decision is made to respond. If social optimism plays any role in a state's conflict propensity, it appears to lead to more frequent conflict involvement, but not necessarily initiations or reciprocations in particular.[4]

Economic Growth and the Onset of Deadly Militarized Interstate Conflict

To this point I have evaluated the effects that economic growth may have on conflict behavior without taking into account the severity of MIDs. At the most general level, economic growth has no significant effect on MIDs. In this section and the next, I examine whether economic growth in particular raises the risk that states will engage in MIDs that result in fatalities and wars. I noted earlier that states occasionally attempt to bluff when confronted with foreign military contests. This cheap talk may not be indicative of a state's true willingness to escalate a conflict. If faced with the possibility of escalation such states should be likely to acquiesce or seek a compromise settlement.

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[4] I speculate that this finding may be related to audience costs. Leaders may not be able ignore foreign challenges that gain the attention of their citizens and especially opposition groups. Leaders may be prompted to take action regardless of the state of the economy in some instances. Recent events regarding the September 11th terrorist attacks on the United States are further evidence of this situation.

Yet, I expect that economic growth should both increase state willingness and the opportunities to fight. Economic growth should lead to higher state resolve making participation in foreign military conflicts permissible, and higher rates of military spending should provide states with an increased wherewithal to engage in combat. These are the states we should most expect to fight.

Indeed, the results indicate that economic growth has its most robust conflict-producing effects in regard to MIDs that involve fatalities. In fact, approximately 75% of these conflicts are wars as defined by the Correlates of War project. Here is where the Growth-as-Catalyst theory is most successful at explaining the effects of economic growth on interstate conflict. Table 5.4 reports the estimates of the models of *Deadly* MIDs that include the domestic conflict variables, in model seven. Note however, that the inclusion of the domestic conflict variables affects the results. In the fully specified version of the model (model 7), I find that GDP growth does not statistically affect the onset of Deadly MIDs. However, if we exclude the domestic conflict variables, economic growth is positive and significant in model eight.[5]

[5] I further explored whether the difference in results stemmed from the inclusion of the domestic conflict variables or the difference in samples based on the expanded temporal domain. I found that my findings were not sensitive to the difference between the samples shaped by the temporal domains (1870 or 1919 beginning dates). Thus, the difference in results for these models is attributable to the inclusion of the domestic conflict variables and the cases lost in the process.

Table 5.4 Five-year Economic growth and the Onset of Deadly Militarized Interstate Disputes

	Model 7			Model 8		
Deadly MID onset	Coef	Robust SE	Signif	Coef	Robust SE	Signif
GDP growth	3.3172	3.4458	0.3360	0.4027	0.2056	**0.0500**
Militarization	-0.0607	0.2942	0.8370	0.0052	0.0515	0.9200
Development	-1276.81	380.57	***0.0010***	-1559.8	401.9	***0.0000***
# Borders	-0.0039	0.0325	0.9050	0.0012	0.0281	0.9660
Major Power	-0.1787	0.3693	0.6280	-0.2778	0.3423	0.4170
# Allies	0.0051	0.0097	0.5990	0.0050	0.0084	0.5520
Population Density	0.0000	0.0000	0.1830	0.0000	0.0000	0.0940
Executive Constraint	-0.0247	0.0531	0.6430	-0.0358	0.0509	0.4820
Revenue Growth	-0.0751	0.1221	0.5390	-0.0469	0.0864	0.5870
Protest	0.0125	0.0480	0.7940			
Rebellion	0.0361	0.0436	0.4070			
$Spline_1$	0.0009	0.0003	***0.0030***	0.0007	0.0003	**0.0250**
$Spline_2$	-0.0005	0.0002	***0.0070***	-0.0004	0.0002	**0.0460**
$Spline_3$	0.0001	0.0001	**0.0230**	0.0001	0.0001	0.0900
Constant	-1.9074	0.5697	***0.0010***	-1.7440	0.4419	***0.0000***
N		2572			3099	
Wald Test		65.34			58.52	
p-value		0.0000			0.0000	
Log likelihood		-345.766			-430.641	
Pseudo R2		0.1496			0.1355	

Note: p<0.10 are italicized, p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-tailed

Table 5.5 reports the marginal probabilities of the onset of Deadly MIDs (based on model 7). GDP growth (with a one standard deviation increase, approximately an eight percent growth rate) increases the risk of Deadly MID onset by about 22 percent. Growing states are thus a higher threat to interstate peace and the conflicts that they become involved in are more likely to turn deadly. However, higher levels of development have the highest substantive pacifying effect, but constraints on executives also provide some barrier to involvement in Deadly MIDs.

Table 5.5 Economic Growth and the Probabiliy of Deadly Militarized Dispute Onset

Deaths (model 7)	Pr.(Onset)	Change in % of Prob*
Baseline	0.0162	
GDP Growth	0.0191	18.0
Development	0.0057	-64.6

*Calculated by increasing each variable by one standard deviation while holding all others at zero or their mean.

Economic Growth and the Onset of War

Beyond diversionary conflict studies, the bulk of the literature prior to the 1990s generally focuses on the relationship between economic growth and war. Much of the evidence produced by these studies is contradictory and tends to rely on anecdotal evidence. Not until recent decades did scholars working in this area begin to theorize and search for a link between state economic performance and interstate conflicts that fall short of war.

Based on the results presented in Tables 5.6 and 5.7, there is evidence to support the Growth-as-Catalyst's emphasis on war. Economic growth appears to increase the likelihood that a state will participate in a war in a given year. GDP growth is positive and significant in models 9 and 10.

Table 5.6 Five-year Economic growth and the Onset of War

War onset	Model 9 Coef	Robust SE	Signif	Model 10 Coef	Robust SE	Signif
GDP growth	13.2541	4.6998	***0.0050***	2.7357	1.2302	**0.0260**
Militarization	0.1293	0.3337	0.6980	0.3013	0.3069	0.3260
Development	-165.38	313.84	0.5980	-508.61	330.82	0.1240
# Borders	-0.0385	0.0406	0.3430	-0.0180	0.0278	0.5160
Major Power	1.2728	0.4307	***0.0030***	0.9017	0.3047	***0.0030***
# Allies	0.0070	0.0129	0.5860	0.0089	0.0099	0.3680
Population Density	0.0000	0.0000	0.8690	0.0000	0.0000	0.5960
Executive Constraint	-0.0701	0.0707	0.3220	-0.1290	0.0751	0.0860
Revenue Growth	-0.9101	0.4632	**0.0490**	-0.6991	0.3846	0.0690
Protest	0.0397	0.0446	0.3730			
Rebellion	0.1225	0.0510	**0.0160**			
$Spline_1$	0.0001	0.0002	0.7540	0.0000	0.0002	0.8990
$Spline_2$	0.0000	0.0002	0.8950	0.0000	0.0002	0.9840
$Spline_3$	0.0000	0.0001	0.9420	0.0000	0.0001	0.8730
Constant	-3.9913	0.6750	***0.0000***	-3.2729	0.4594	***0.0000***
N		2572			3099	
Wald Test		115.21			81.49	
p-value		0.0000			0.0000	
Log likelihood		-205.405			-262.542	
Pseudo R2		0.1096			0.089	

Note: p<0.10 are italicized, p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-tailed

Based on the results presented here, the Crisis-Scarcity perspective does not generally explain war onset.[6] Yet, the Growth-as-Catalyst argument likewise does not perform well on its prediction that growth of military capabilities, through increased expenditures, should increase war. The conflict catalyzing effects of economic growth appear to be linked to potential social-psychological effects relating to increased optimism and the willingness to engage in conflict. I have controlled for alternative

[6] I ran an additional analysis on economic growth and the conflict propensity of core versus non-core states from the perspective of World-Systems theory, repeating the models discussed in this chapter. The results, however, failed to lend consistent support to any of the theories discussed here. These results are available from the author.

factors featured by the Crisis-Scarcity view, such as domestic conflict, and economic growth still has a positive effect on the risk of war and other fatal disputes.

War is a complex phenomenon affected by several processes and is generally rare because most states lack the capability to engage in prolonged battle, and it takes at least two states to fight. Some MIDs below the threshold of war do not involve militarized actions from participants on both sides of a dispute. One state, for example, may use force and inflict fatalities and it is possible that the response of the targeted state may not be of a military nature. This is not the case for war, however. Escalations to war require militarized force by both states in a dispute. The decision to escalate a conflict to war by state **A** alone is an insufficient condition because the actions of state **B** can either increase or reduce the risk of war. State **B** may acquiesce to a challenge from state **A** and end a crisis, or it may refuse to back down, forcing state **A** to reconsider its options. Either state could make a decision, possibly selecting non-military options, that defuses the crisis at hand. Hence, the finding that economic growth (averaged over five years) of one state in a conflict increases the likelihood of that state participating in a war is important and seems to signify that the effects of this relationship are strong.

To be sure, economic growth does not have a deterministic effect on MIDs, including wars, but it does seem to heighten the risk surrounding the context in which state leaders make decisions to wage war or peace. Table 5.7 presents the changes in the probability of war with an increase of economic growth (based on model 9). A one standard deviation increase in GDP growth (roughly 8%) doubles the risk of war onset for a state in a given year. It is likely that strategic behavior and other dyadic interactions (as well as effects related to more than two states) play an important role in interstate

conflict, but monadic effects may set the stage for these events by increasing the conditions faced by states in conflict situations. Economic growth should provide states with greater military capabilities as well as increase their resolve when confronted by a foreign challenge.

Table 5.7 Economic Growth and the Probabiliy of War Onset

War Onset (model 9)	Pr.(Onset)	Change in % of Prob*
Baseline	0.0102	
GDP Growth	0.0199	94.6
Major Power Status	0.0354	295.0
Revenue Growth	0.0024	-69.3
Rebellion	0.0126	16.6

*Calculated by increasing each variable by one standard deviation while holding all others at zero or their mean.

In some instances, growing states may even push harder for their objectives vis-à-vis other states, which may result in a desire to alter the status quo. Economic growth is theorized to have this effect in other theories, including Power Transition Theory (Organski and Kugler 1980) and Lateral Pressure Theory (Choucri and North 1975). It is also possible that growing states are perceived as potential challengers in the future to then current major powers, whether warranted or not. This often fits the views ascribed to China in recent years. Economic growth has made China more powerful, and some fear that China will begin to flex its muscles in Asia, or even globally, in the coming decades.

The variables that I theorize should reduce conflict likewise show interesting results. First, Executive Constraints do indeed pose some barrier to participation in war, (a 30 percent reduction in a given year). More surprising, though, is that Development is insignificant in these models, although rich states are nine percent less likely to go to war than poor states. Of course, rich states are also more able to afford militaries that could sustain prolonged conflict and attain the requisite number of fatalities to qualify as wars compared to poorer nations. And interestingly enough, higher levels of state revenue growth also seem to reduce the risk of war, which is stark evidence against the war-chest hypothesis advanced by many Growth-as-Catalyst studies: wars appear to begin following a year with a lower rate of revenue growth. However, higher levels of Rebellion appear to catalyze interstate conflict (a 27 % increase in the probability). In other words, the more the government of a state is afflicted by major political crises, coups, and guerrilla insurgency, the more likely it will become involved in an interstate war. My post hoc suspicion is that higher levels of domestic violence in a state attract other states to intervene in ongoing civil wars or exploit the state's possible weakness.

Economic Growth and Interstate Militarized Conflict by Region

To this point, I have found that higher levels of economic development typically decrease interstate conflict. Since many of the developed countries in the world are clustered together geographically, a central implication is that economic growth may affect states differently by region. There are also a host of other characteristics associated with development. For example, the longer a state has been independent, the more likely it would seem to obtain higher levels of development and political capacity. Poor states are also less likely to be democratic. It has become well known correlation in

the literature within the last decade that democracies rarely engage in military action against each other.[7] Developed and democratic states that reside in regions containing numerous states with similar attributes, especially on their immediate borders, should possess a lower risk of MID participation and initiation. Meanwhile, many of the least developed states of the world are clustered together in Africa and parts of Asia. Hence, we could potentially see different patterns of conflict in Europe than in Latin America, and in Latin America from Africa.

I originally divided the sample by geographic region as delineated by the Correlates of War project (Western Hemisphere, Europe, Africa, Middle East, Asia, Oceania) and ran the analysis using the same models discussed above.[8] I found that the conflict catalyzing effects of economic growth seem to be particularly a European phenomenon. GDP growth is repeatedly positive and significantly related to Deadly Disputes and war, but not for MID onsets, initiations, or reciprocations. Only GDP growth in Africa occasionally exhibited similar results, although these findings are not very robust. The results also show that the Western Hemisphere, however, becomes more conflict prone with lower rates of economic growth (with or without the United States and Canada included in the sample). Asia and the Middle East do not show a prominent pattern between growth and interstate conflict.

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[7] There are MIDs between democracies, although many do not include the use of force beyond the seizure of fishing vessels or similar actions. Depending on how one defines democracy, some claim two democracies have never fought a war against each other. See Ray (1995) for an extensive discussion of this literature.

[8] Again, I focus here on the models that include the five-year averaged measure of economic growth unless so noted. The models including other lags of GDP growth provide little additional information.

Table 5.8 Five-year Economic growth and War Onset by Region

	Non-European States Model 21			European States Model 22		
War Onset	Coef	Robust SE	Signif	Coef	Robust SE	Signif
GDP growth	0.9484	5.4606	0.8620	25.870	5.7999	***0.0000***
Militarization	0.4121	0.6793	0.5440	0.6131	0.7304	0.4010
Development	122.57	269.92	0.6500	66.599	616.96	0.9140
# Borders	0.0171	0.0569	0.7640	-0.0928	0.0755	0.2190
Major Power	0.9327	0.5624	0.0970	3.1637	0.5153	***0.0000***
# Allies	-0.0062	0.0163	0.7030	0.0152	0.0368	0.6800
Population Density	0.0000	0.0001	0.6920	0.0001	0.0002	0.4910
Executive Constraint	0.0002	0.0779	0.9980	-0.1093	0.1615	0.4990
Revenue Growth	-1.1241	0.8942	0.2090	-0.9136	0.4954	0.0650
Protest	0.1022	0.0270	***0.0000***	-0.4087	0.4642	0.3790
Rebellion	0.0810	0.0768	0.2920	0.2478	0.0967	***0.0100***
$Spline_1$	0.0001	0.0000	0.1320	-0.0002	0.0001	0.0730
$Spline_2$	0.0000	0.0000	0.1530	0.0002	0.0001	0.0780
$Spline_3$	0.0000	0.0000	**0.0160**	0.0000	0.0000	0.4160
Constant	-3.8102	0.5792	0.0000	-6.4584	0.8553	***0.0000***
N		1382			1190	
Wald Test		186.33			14297.63	
p-value		0.0000			0.0000	
Log likelihood		-128.771			-67.066	
Pseudo R2		0.059			0.281	

Note: p<0.10 are italicized, p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-tailed

However, my ability to draw an accurate statistical inference of Africa, Asia, Oceania, and the Middle East is hampered by a lack of data. The European states constitute roughly half of the sample, while the Western Hemisphere accounts for another twenty-five percent. The remaining regions collectively account for a quarter of the sample. For this reason, I re-divided the sample by European and non-European cases.

The European region appears to be historically and empirically different than the rest of the interstate system. Economic growth is positively related to interstate conflict in Europe, but particularly the onset of wars and other MIDs with fatalities. Meanwhile,

GDP growth (averaged five years) is positive for non-European states but is statistically insignificant. Table 5.8 presents the results for war onset.[9]

Why would economic growth have a region-wide conflict inducing effect in Europe? I believe the reason lies in the characteristics of the European state-system itself, especially prior to the Cold War, and the process of economic development. While the regional analysis would seem to suggest that the positive relationship between economic growth and interstate conflict does not appear generalizable across all states in all regions and instead an artifact of European international relations, I believe otherwise. The paths of research projects often arrive at destinations that would not have been obvious at the start. This also appears to be the case here.

I have consistently found that higher levels of economic development (measured in energy consumption per capita) reduce the risk of militarized interstate conflicts with the exception of war onsets. However, I have come to suspect that the relationship between economic development and interstate conflict may be nonlinear. In other words, states may go through phases in their development that make them more or less conflict prone.[10] I have also found that this is not a new idea. Rostow (1960) and Doran (1983, 1985) have previously made this argument. Rostow suggested that a state's economic development is marked by five stages: The Traditional Society, The Preconditions for Take-Off, The Take-Off, The Drive to Maturity, and High Mass-Consumption. He claims that states should be most conflict-prone as they approach economic maturity and

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[9] The models by region for the other dependent variables provide similar results to the models on the full sample. Economic growth is positively related to the onset of Deadly MIDs in the European sample but there were no consistent results for the other dependent variables and for non-European states.

[10] This does not mean that I believe or theorize that *all* states must proceed through the same developmental process. It is possible that states may travel different developmental paths and arrive in similar or dissimilar circumstances. However states arrive at a point where state structure and political capacity are strong enough to sustain military combat, these are the states I expect to be most conflict prone.

less so once they have entered the stage of High Mass-Consumption. Though states that are highly developed could better afford to become involved more frequently in interstate conflicts, many appear to choose not to do so. Rostow claims that these states have three choices about how to spend their wealth: conquest, high social spending, and high mass-consumption of goods. The choice taken appears to be related to state regime type, although Rostow only makes this point indirectly through his use of examples. The Soviets and Imperial Germany appeared to remain conflict-prone despite higher levels of development while other states such as France and Great Britain became more peaceful once they attained the stage of high mass-consumption. Of course, the latter two states were also democratic at that point.

What does this have to do with the finding that European states are particularly conflict prone when they have experienced higher rates of economic growth? The answer is related to the nature of the sample examined. Europe is the region that contained the most states that had achieved this level of economic maturity described by Rostow. The take-off period should especially be the phase when interstate conflict becomes a bigger problem on the regional level and further development (prior to high mass-consumption) broadens the ability to fight farther from home. Great Britain, France, the United States, and Germany began their take-offs and reached economic maturity between 1850 and 1890 or thereabouts. Russia and Japan began their take-offs in the 1890s. The sample analyzed here appears to pick up these transformations in the states, many of which were major powers. Similarly, truncating the sample by including the domestic conflict variables results in the exclusion of the take-off and maturation stages for many western European nations and the United States.

It appears that conflict would break out when particular states were experiencing high growth, which may have then spread throughout the region. Additionally, the European system is unique for at least two reasons. First, Europe has been the only region in the past few centuries containing more than one indigenous major military power. While major powers often project their power into conflicts in distant regions, the close proximity of major powers within the same region may have posed an additional danger. The tension associated with quick mobilizations and possible surprise attack has been a hallmark of much of European history the last few centuries, and with good reason. Wars broke out intermittently among rivals such as France, Austria, Germany, and Russia with alarming frequency. Second, European interstate politics have also been marked by a multipolar system of alliances that were fluid and dynamic prior to the Cold War, which added to the risk and uncertainty surrounding war and peace.[11] These two factors combined may have transformed Europe into a tinderbox waiting for a flame, and economic growth could have exacerbated these factors. Rostow claims that nationalism typically arises during the period of economic take-off that further increases the risk of conflict. If he is correct, this could have exacerbated interstate tensions and led to jingoism. It appears that the timing of disputes and wars within the region were affected by the economic development and the growth rates of at least some of the belligerents. Economic growth, in effect, may have acted as a fuel that when poured onto existing conflicts aided in their militarization and escalation. It is no surprise then that the basis for Growth-as-Catalyst theories has typically been European and this is where they generally drew their anecdotes.

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[11] Note that while the coefficient for the Number of Allies variable is positive, it is not statistically significant, but this only represents a monadic effect and not a regional effect. The same applies to the estimates for the Major Power variable.

This poses an interesting problem, however. If Rostow is correct, then we should expect other regions of the world to become more conflict prone in the coming decades. He predicts that China and India and other states outside of Europe will attain economic maturity, and thus become more conflict prone, early in the twenty first century, especially China and India. Of course, if economic development were to continue linearly, then we could expect teleogically a more peaceful world once all the states of the interstate system had become high mass-consuming societies. I, however, do not assume that this is the process at work nor do I predict that all states will follow this path.

Again, we can better understand the Growth-as-Catalyst literature from these results. The central ideas of this literature tend to originate from European scholarship, often relying on anecdotes based on European wars. Examples include Kondratieff and Blainey. It is of course feasible that other parts of the literature, such as diversionary conflict, may likewise provide explanations of the growth-conflict nexus by drawing their inspiration from the foreign policies of the United States or other cases outside of Europe.

Synthesis and Conclusions

This chapter analyzed the effects of state economic growth on state conflict propensity. Overall, the empirical results generally support some aspects of the Growth-as-Catalyst view. Economic growth is positively related to increases in severe interstate conflict. Meanwhile, I find little evidence to support the claims of the Crisis-Scarcity framework. GDP growth was negative and significant in none of the models examined.[12]

[12] There was no systematic pattern counter to the above findings in the models not presented here in tabular form. Again, the models including GDP growth lagged and averaged ten years did not contain enough power to evaluate any of the discussed perspectives discussed here.

I examined how economic growth affects state conflict propensity from several angles focusing exclusively on disputes that at some point become militarized by at least one of the belligerents. I analyzed both the onset of wars as well as lesser disputes that did not involve bloodshed. Overall, I find modest evidence to support my theoretical expectation that higher levels of economic growth increase the risk that a state will become involved in a militarized interstate dispute (MID) in a given year, but this is particularly true for wars and other disputes that result in fatalities.

In an extension of the Growth-as-Catalyst orientation, I hypothesize that higher rates of economic growth should also increase the likelihood that states will both initiate and reciprocate MIDs, although I could not find evidence to support these claims. The Growth-as-Catalyst theory inadequately explains why states initiate or respond to foreign military threats, although this finding could change with more data in the future.

The Growth-as-Catalyst theory instead best explains MIDs that involve fatalities and war. The substantive effect between economic growth and war is the strongest of the conflict dependent variables, which is not surprising in retrospect considering the emphasis in the Growth-as-Catalyst literature on war. Foreign conflicts of this magnitude are very important since they increase domestic attention of crises, which likewise raises the stakes leaders confront politically. It is when foreign conflicts risk turning deadly that a leader may be most vulnerable to his or her political opposition, as well as the gravity of the foreign threat itself. If public perceptions of the outcome of a crisis are negative, a leader's political capital should decline.

The findings I present here are consistent with the proposition that economic growth may be related to higher frequencies of interstate conflict because of a socio-

psychological effect. Perceptions of leader confidence, optimism about the potential outcomes of active or interventionist foreign policies, and risk assessment may vary with economic growth. I believe that my GDP growth variables act as a proxy for this effect. Leaders will be more popular during periods of economic prosperity, which should weaken domestic opposition and possibly increase a state's resolve when confronted with foreign disputes.

Many may find the Growth-as-Catalyst theory presented here ironic or counter-intuitive to the extent that it argues that while economic growth should make people optimistic and potentially happier, it could also have the effect of leading to conflict, bloodshed, and misery. Yet, the empirical analysis robustly indicates that the best means to reduce militarized interstate conflict is through more and more economic growth. The estimates for the *development* variable were negative and significant in most of the models examined with the exception of war onset. Developed states are less likely to engage in MIDs than less developed states.[13]

Finally, to what extent then is the theory presented in Chapter Three generalizable to all countries? Does there exist heterogeneity across states in regard to the behavior predicted during economic growth? There in fact appears to be heterogeneity in the relationship between economic growth and interstate conflict across geographic regions. The conflict catalyzing effects of economic growth appears to be primarily a European characteristic. It is not surprising then that the Growth-as-Catalyst tradition, which is primarily of European origin, has linked economic growth to interstate conflict. To the

[13] I show in other research that the most conflict prone states are those at an intermediate level of development, whereas the richest and poorest states are less likely to become involved in MIDs (Boehmer and Sobek 2001). Moreover, the relationship between intermediate-level development and interstate conflict is strongest in regard to militarized disputes over territory. A copy of this manuscript is available on request from the author.

extent that the theory I presented earlier is generalizable to most states is unclear without further empirical investigation including additional cases, although it is possible that the relationship between economic growth and interstate conflict may increase in non-European regions in the future. Also, missing data in the other regions may particularly play a role. Nevertheless, the analyses in this chapter provide more evidence across a larger set of countries for the Growth-as-Catalyst tradition than most previous studies.

Chapter Six

A Dyadic-Level Research Design of the Effects of Economic Growth on Interstate Conflict

The previous chapter demonstrated a positive relationship between economic growth and interstate conflict in regard to wars and serious disputes that lead to fatalities. While the national level analysis is appropriate for testing the theoretical propositions discussed in Chapter Four, I am also interested in how dyadic effects might play a role in the processes linking economic growth to interstate conflict. In doing so, however, I must take into account monadic effects at the dyadic level. Failing to take this into account in dyadic models leads to two problems. First, neglecting to control for each state's monadic conflict propensity at the dyadic level would lead to model misspecification and any effect identified could not be said to be purely dyadic. The second problem follows from the first: we could not accurately infer strategic behavior between two states without controlling for monadic effects. The role of strategic interaction and behavior is particularly interesting. The differential growth rates between two states may alter the probability of conflict between them in an interactive way, but mention of this is generally absent from much of the literature discussed earlier (with the exception of a few studies of diversionary conflict beyond the American case). Moreover, studies that have attempted to capture strategic behavior and interaction have failed to econometrically isolate monadic from dyadic explanatory factors, which means that we still would not know the proper sources of the behavior we observe. Do the domestic factors analyzed in Chapter Five such as a single state's growth rate or domestic

instability drive interstate conflicts or do other bilateral factors accentuate or mitigate single-state conflict propensities? Without controlling for states' monadic conflict propensities at the dyadic level of analysis we cannot answer this question.

The problem at hand could be illustrated with an example. Imagine two states that come into conflict in a given year, such as the United States and China. Is their dispute a function of each state's conflict propensity or do other factors come into play? We know that each state separately becomes involved frequently in militarized interstate conflicts. The United States has many adversaries and also interjects itself into additional conflicts, whereas China likewise has rivalries with Taiwan and India, among other regional tensions. The probability of a conflict may in part be a function of each state becoming involved in a conflict as well as the nature of the bilateral relations between the two states. Consider a scenario where both states are growing. China takes a provocative action during a period when it has been growing economically that prompts the United States to issue a military threat. The United States may likewise react due to its recent growth. The combined interaction of each state's conflict propensity would seem to greatly multiply the risk of such a militarized conflict. If economic growth makes states more conflict prone, then two growing states should be the most likely to fight.

However, other forms of strategic behavior are possible once dyadic factors are taken into consideration. The question must be asked, "Do states behave strategically in regard to their economic growth and that of potential opponents?" The relative growth rates of two states in a dyad may affect the probability that a militarized conflict will or will not occur in a given year. For example, perhaps the United States may recognize that recent Chinese economic growth may raise the chance that the latter would be

willing to engage in military hostilities. This growth may have led to increased military capabilities and an optimistic foreign policy mood. Chinese growth could then potentially act as a deterrent. It is even possible that two growing states could deter each other even though it might be a better time to fight for each state individually compared to periods of lower growth.

The Growth-as-Catalyst view implies that militarized disputes and war should occur more frequently when both states have experienced high economic growth, whereas much of the Crisis-Scarcity view predicts the opposite. The possibility of an interaction effect is implicit in these views. If such behavior exists, this would imply a multiplicative relationship between the growth rates of two states. This is the theoretical proposition advanced by Blainey (1988) when he discusses the strategic interaction and behavior associated with "Death Watch" wars. The Ottoman Empire was targeted by other states when it became clear that it was becoming too weak to defend its territory. Similarly, it would appear that Iraq attacked Iran in 1980 at least in part because it believed Iran had been weakened economically and militarily by its revolution. Conversely, Leeds and Davis (1997) contend that if states externalize their domestic unrest onto other nations, it is then most beneficial to select an opponent that would appear less likely to respond militarily. Supposing that lower rates of economic growth leads states to become involved in disputes, they claim that higher rates should reduce the likelihood that targets will respond militarily.

This chapter lays out the research design for the analysis that is to follow in Chapter Seven, which examines how dyadic factors influence the role economic growth has on interstate conflict. While of course dyadic factors such as joint democracy or the

geographic distance between two states may affect the probability of interstate conflict, working at the dyadic level implies that the nature of the research questions investigated change. Instead of merely controlling for dyadic factors, I will go further and explore the possibility of strategic behavior and interaction between two states. What is strategic interaction in this context? It is when the probability of a conflict between two states is jointly affected by each state's attributes, such as economic growth, as well as other dyadic factors such as bilateral trade flows that may mitigate or compound the probability of conflict. This requires then that I specifically disentangle monadic effects from dyadic effects. This chapter outlines the research design required of this task. The conceptual model of these processes is as follows:

Militarized Conflict = Joint Monadic Conflict Propensity + Economic Growth of Dyad + Control Variables

Where the Joint Monadic Conflict Propensity Variable is as follows:

Joint Monadic Conflict Propensity = LN (Pr.(conflict State **A**) * Pr.(conflict State **B**))

The Joint Monadic Conflict Propensity is derived by taking the natural log of the predicted probability of conflict for state **A** multiplied by the same of State **B** in a given year.[1] Again, when this interaction term is inserted in dyadic conflict models it should allow us to observe the true dyadic effects separate from the types of monadic effects found in Chapter Five.

I examine two types of dependent variables in Chapter Seven: conflict involvement and conflict initiation. The primary difference among the dependent variables is whether I measure if states merely participate in dyadic militarized interstate

[1] The Joint Monadic Conflict Propensity variable is equivalent to a likelihood function once it is logged.

disputes (MIDs) or if they take specific actions such as initiating military actions.[2] The examination of these two different types of conflict episodes requires the use of two data sets based on different levels of analysis. Table 6.1 illustrates the dependent and independent variables to be analyzed in Chapter Seven and compares them to equivalent variables from Chapter Five. In fact, the dyadic study is in part nested in the monadic study. The variable used to control for each state's monadic conflict propensity is based on the probabilities for conflict found in Chapter Five. This necessitates that I retain the same dependent variables at the dyadic level. Also, several of the independent variables used in the state-level study are transformed here for dyads.

Note in Table 6.1 that I again analyze MID onsets and Deadly MIDs at the dyadic level of analysis. These two variables measure participation in militarized interstate conflicts. The Growth-as-Catalyst view typically predicts that economic growth is positively related to severe interstate contests such as wars, which is why I specifically look at Deadly MIDs separate from all disputes. Of course, it is also desirable to identify whether economic growth is expressly related to conflict initiations. For this reason, I examine MID initiations. If states do time their dispute initiations to moments when either their own domestic situation or that of their potential opponents is beneficial, these models should demonstrate these effects. Furthermore, it would be desirable to examine war or fatal MID initiations, although data limitations are a barrier. Due to problems of missing data, as discussed later, there are too few of these episodes in the dyadic data sets

[2] The MID data are essentially the same as used in Chapter Five albeit at a different level of analysis.

Table 6.1 Variables from the Monadic and Dyadic Analyses

Monadic	Nondirected-Dyad	Directed-Dyad
Dependent variables	(involvement)	(initiation)
MID Onset	MID Onset	
Deadly MID	Deadly MID	
War Onset		
MID Initiation		MID Initiation
MID Reciprocation		
Independent variables		
GDP Growth	***Joint GDP Growth***	***GDP Growth State A***
		GDP Growth State B
N.A.	***Joint Conflict Propensity***	***Joint Conflict Propensity***
Militarization	Joint Militarization	Joint Militarization
Development	Joint Development	Joint Development
Protest	Joint Protest	Joint Protest
Rebellion	Joint Rebellion	Joint Rebellion
Revenue Growth	Joint Revenue Growth	Joint Revenue Growth
Population Density	Joint Pop Density	Joint Pop Density
Executive Constraints	Joint Democracy	Joint Democracy
Number of Borders	Contiguity	Contiguity
	Distance	Distance
Number of Allies	Alliance Similarity	Alliance Similarity
Major Power Status		
	Capability Ratio	Capability Ratio
	Joint Trade Dependence	Trade Dependence A on B
BTSCS Splines	BTSCS Splines	BTSCS Splines

I use here. Finally, I do not study MID reciprocations beyond Chapter Five since this behavior does not appear to be related to economic growth.[3]

Dyadic Hypotheses of Economic Growth on Interstate Conflict

Recall in Chapter Three that I discussed potential scenarios concerned with the onset and initiation of militarized interstate disputes and wars. I have reproduced Table 3.1 in the form of Table 6.2 here, including four cells specifying potential scenarios relating economic growth to conflict at the dyadic level of analysis. Below I list the

[3] While economic growth was likewise weakly related to MID onsets and initiations at the monadic level of analysis, the lack of stronger support for the hypotheses is in part due to missing data.

hypotheses at the dyadic level and affiliate each with a particular cell of the matrix presented in Table 6.2.

Table 6.2 Four Scenarios of Economic Growth at the Dyadic Level of Analysis

	State B growth High	State B growth Low
State A growth High	**1**	**2**
State A growth Low	**3**	**4**

The Conflict Involvement Hypotheses

With the non-directed data I will test the following hypotheses:

H1: The higher the growth of both states in a dyad, the higher the chance a militarized conflict will occur between them in a given year.

H2: The higher the growth of both states in a dyad, the higher the chance a militarized conflict will occur between them in a given year that results in fatalities.

H3: The higher the growth of both states in a dyad, the more likely a war will start between them in a given year.

The relationship captured by these three hypotheses is represented in cell number one of Table 6.2 while the inverse relationships are represented in cell four. Higher rates of joint economic growth should increase the risk of conflict for the Growth-as-Catalyst view or decrease it according to the Crisis-Scarcity view.[4] Note that this relationship

[4] Remember that the majority of the literature on economic growth and interstate conflict does not discuss the strategic interaction or behavior. I thus use the terms Growth-as-Catalyst and Crisis-Scarcity loosely to

should at least in part be a function of strategic interaction between two states and these hypotheses are stated in a form that is nondirectional, meaning it does not matter who initiates or is targeted in a MID. The directional hypotheses are discussed below.

The Conflict Initiation Hypotheses

With the conflict initiation hypotheses I pay particular attention to strategic interaction and whether it affects the behavior of potential conflict initiators. Here is where the arguments of Blainey (1988) and Leeds and Davis (1997) are most pertinent. Blainey predicts that growing states will attack states weakened by economic growth and other internal problems whereas Leeds and Davis expect that states experiencing low growth will seek to externalize domestic unrest through the use of foreign conflict with a target that has been growing. Each cell delineates a hypothesis:

H4: The higher state **A**'s economic growth, the more likely it will initiate a militarized dispute against a target (state **B**) that is experiencing poor economic growth in a given year.

H5: The lower the economic growth of state **A**, the more likely it will initiate a militarized dispute against a target (state **B**) that is experiencing high growth in a given year.

Note that the hypotheses listed above, H4 and H5, are strategic in regard to the economic growth of both the initiator and the target. These hypotheses are represented by cells two and three, respectively. An additive model simply including each state's growth rate would not suffice to capture these relationships. States may of course behave strategically in other ways not captured by these hypotheses, but what is most important

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refer to the contending scenarios illustrated in Table 6.2. I extend the monadic predictions by these theories generally to the dyadic level of analysis.

here is the interaction of their differential growth rates.[5] The null hypotheses for these propositions are that states do not target other countries because of their economic growth rates.

The Conflict Involvement Research Design

I use a nondirected-dyad data set as the basis for the research design testing hypotheses one and two.[6] A non-directed-dyad is composed of two states in a given year. The focus is not on which state specifically makes the first militarized action but that it occurs in general between two particular states. For example, Ghana may threaten Togo in a given year but I am only concerned that a threat occurred between the two states.

The Nondirected-dyad Dependent Variables

The dependent variables discussed in this chapter are constructed from Zeev Maoz's DYMID 1.0 data set, which was derived from the MID 2.10 data set produced by the Correlates of War Project, and generated using the EUGene 1.95 (Bennett and Stam 2000) software.[7] The first dependent variable is *MID onset*, which equals one when a MID occurs in a given dyad-year, zero otherwise. Next, *Deadly MID* equals one when a MID occurs in a given dyad-year that entails fatalities, zero otherwise. Deadly MID is constructed by interacting *MID onset* with the fatality level variable in the MID data set when it equals one or higher. The subsequent years of disputes are coded as zero.

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[5] A related question not directly examined here is whether states are targeted because of their political instability, as theorized by Blainey. The role of domestic conflict is relegated to control variables here, although I plan to research this topic further.

[6] As I will explain in Chapter Seven, however, I do not test the third hypothesis on war onset due to data limitations.

[7] EUGene 1.95 can be down-loaded from http://eugenesoftware.org. Also, the DYMID 1.0 data set removes some conflicts between states that in theory were involved in wars but never really fought each other. Almost all of these conflicts occurred during World War Two.

The Nondirected-dyad Independent Variables

I describe the construction of the independent variables below. The variables fall into two categories. The first group is based on related monadic variables listed in Table 6.1. These variables are transformed into interaction terms for both states of a dyad. For example, the variable measuring the economic growth of a dyad is constructed by multiplying the growth rates of both states in a dyad (after standardizing for values above two to avoid multiplying fractions and negative values). Since these variables are based directly on the data sources used to construct their monadic counterparts, as described in Chapter Four, I do not go into depth here about the sources and instead focus on their dyadic forms. Again, Table 6.1 lists all the monadic and dyadic independent variables. Note that most of the dyadic variables are multiplicative functions of the monadic variables. The exceptions are those that compose the second category, which are expressly relational, such as the geographic distance between two states.

My primary explanatory variable is of course the growth rate of both states in a dyad. *Joint GDP Growth* was created by taking each state's growth rate and standardizing it by adding "2" and then multiplying them together.[8] By extending the logic of the Growth-as-Catalyst view, I would expect that the risk of interstate conflict (MIDs, Deadly MIDs) should increase the higher the value of both GDP state's growth rates in a dyad. And as with the national level investigation, I examine whether both short and longer-term economic growth affect interstate conflict by including GDP growth averaged five years and lagged a single year.

[8] The "2" is added to eliminate negative growth rates that would result in an erroneous high positive value once interacted. Thus, two states with negative growth rates will remain toward the bottom of the scale once each state's growth rate is normalized. As with Joint GDP Growth and the other covariates based on variables that include fractions or negative values, I will henceforth state that a variable is "normalized" in this fashion for the remaining interaction terms where relevant.

The Nondirected-dyad Control Variables

The most interesting of the control variables is *Joint Monadic Propensity*, which is included to control for each state's monadic effects. This essentially allows me to directly infer the true dyadic effects of the remaining covariates. For example, this variable would account for the explanatory factors included in the models in Chapter Five at the state level of analysis such as GDP growth, major power status, and levels of political protest. Joint Monadic Propensity was constructed based upon each dependent variable (MID onset and Deadly MID onset) by taking each state's probability of the type of conflict from the monadic level of analysis, normalized, and multiplying it by the other state in a dyad at the dyadic level of analysis, of which the product is then transformed by taking the natural logarithm. Thus, two states each with a high conflict propensity individually should likewise be jointly at a higher risk of militarized interstate conflict, all other factors being equal. Joint Monadic Propensity should therefore be both positive and statistically significant in order to serve its purpose.[9] This variable essentially nests the dyadic analyses in part to the monadic analysis.

As discussed in Chapter Four, I have reason to expect that the selection of cases I use in my analyses contain some bias towards European and other developed and democratic countries, which likely introduces some bias into the sample. Because economic data are generally more available in these states, observations based on these countries are more likely to be included in the analyses. I control for these potential effects with several control variables, some of which were included in the monadic

[9] I likewise added "2" to each state's conflict probability to avoid multiplying fractions together. Clearly, this variable must be of a positive sign direction to make theoretical and econometrical sense.

analysis. Omitting such factors would likely bias my results and lead to spurious inferences.

By extending the logic of the Growth-as-Catalyst view to account for strategic interaction, arms races could heighten the risk of militarized conflict unless other factors intervene to mitigate this danger. For this reason, I include *Joint Militarization* in the models, which is constructed in the same manner as Joint GDP Growth including the averaging and structure. For example, if Joint GDP Growth is lagged and averaged five years, so is Joint Militarization. The data for this variable are the same as used for Militarization in the monadic analysis.

I predict that high levels of revenue growth should lead to a higher probability of interstate conflict. *Joint Revenue Growth* equals the product of each state's revenue growth (after normalization by adding two to each state's growth rate). The source of data for this variable is the same as in the monadic analysis, Banks (1999). Joint revenue growth is of theoretical interest since higher rates of revenue growth could potentially be used to purchase either guns or butter: additional resources could be spent on military weapons or to increase social spending that could boost leader approval. *Joint Pop Density* is the multiplicative function of each state's population density (Pop Density A * Pop Density B), and these data again originate from Banks (1999). I would predict that the sign for this variable should be positive – densely populated dyads should be more likely to become involved in interstate conflict.

The next set of explanatory variables should reduce the propensity for conflict within a dyad (and thus exhibit a negative sign). First, *Joint Democracy* is based on data from Polity III (Jaggers and Gurr 1995) and is based on the product of each state's

democracy score (democ-autoc+10). Higher values of this interaction term should reduce the risk of conflict according to Russett and Oneal (2001). Second, *Joint Dependence* is the product of the trade dependence of two states in a dyad on each other. Trade dependence is measured by adding imports and exports between the two states of a dyad divided by the GDP of each state. The trade data originate from Barbieri (1996) and the GDP data from Maddison (1995). Third, *Joint Development* equals the product of each state's level of development in a dyad, based on the monadic variables examined earlier (normalizing each state's value by adding two before multiplying). The higher the development of a dyad, the less likely a dyad should become involved in a MID or war. Fourth, I again control for the presence and magnitude of domestic discord using the same data as in the monadic study. These variables are of particular theoretic interest to studies of diversionary conflict. *Joint Protest* and *Joint Rebellion* are the normalized (by adding two to each state's value) product of the factor-weighted composite indicators used in the monadic analysis. I predict that higher values for all four variables should constrain the onset of interstate conflict, but that the higher levels of rebellion should pose the stronger constraint.

The remaining set of control variables are the true dyadic variables discussed above and hence do not require a multiplicative form. First, I replace the Number of Allies variable included in the monadic study with a variable that directly compares the alliance portfolios of two states in a dyad. *Alliance Similarity* is an index using similarity scores bounded at one (when states share identical alliance portfolios), and where negative values indicate dissimilarity in alliance commitments (Signorino and Ritter

1999).[10] States with similar friends and world-views should be less inclined to fight than dyads with dissimilar friends and outlooks. Second, the risk of conflict may be lower in dyads where there exists a power disparity. *Capability Ratio* equals the ratio of the state with the larger power component to the state with the smaller power component based on the National Capabilities Data Set. This variable is transformed using a natural logarithm since the effects of power disparity should diminish marginally at the extremes. For example, there should be little difference in the behavior exhibited between two states whether one state is one hundred or three hundred times stronger than the other state. This variable should exhibit a negative sign. Third, states that border each other are more likely to fight than states that are geographically distant. *Contiguity* equals one when the two states of a dyad either border each other or are situated no more than 400 miles from each other by sea, whereas *Distance* measures the distance between the capitol cities of the two states in a dyad. All of these four measures were constructed from data available in the EUGene software.

Finally, as with the monadic analysis, three *spline* variables are again included in all the models to control for temporal dependence based on the BTSCS method discussed in Chapter Four (Beck, Katz, and Tucker 1998). These variables are designed to capture the linear and nonlinear effects of time since the last dispute between two states. Excluding such controls could lead us to falsely attribute the effects of time to other variables in the models.[11]

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[10] I use the global, unweighted form of this variable.

[11] I do not include the *Peace Years* variable offered by this method that is sometimes included in other studies since it appears redundant. Including this variable usually renders one of the spline variables insignificant and thus redundant.

The Dyadic Conflict Initiation Research Design

This analysis examines if economic growth increases the likelihood that states will *initiate* militarized actions against other states while controlling for other dyadic factors. I also attempt to test the hypotheses that states behave strategically in regard to their own economic growth as well as that of potential targets. Again, this research design is generally laid-out in the same manner as the analysis of nondirected-dyads. However, the directed-dyad format provides certain advantages over nondirected-dyads. First, though directed-dyads cannot be used to study variables that measure the onset of conflict (since this would require that the relationships examined be nondirectional), directed dyads allow for the testing of directional hypotheses such as whether economic growth in state **A** or **B** increases the risk of state **A** initiating a dispute against **B**. Second, I could include both monadic and dyadic independent variables in a directed-dyad study, such as the economic growth of both states in a dyad as separate variables. The effects of **A** and **B** can thus be treated separately unlike in nondirected-dyads. Of course, dyadic variables such as relative military capabilities and geographic contiguity are also included in the same manner as the nondirected-dyads (Bennett and Stam 2000).

The directed dyads and Maoz DYMID 1.0 data are again generated using EUGene 1.95. The unit of analysis is the directed-dyad-year. Each state is observed as both the potential initiator and target with every other state in the sample for every year. For example, the United States-Canada dyad is included twice in the data set; in one observation the United States is "state **A**", in the other "state **B**". Many of the same explanatory variables are carried over from both the monadic and nondirected-dyad

analyses. However, as mentioned above, using directed-dyads allows me to directly import variables from the national level study without transforming them in any way.

The Directed-dyad Dependent variables

The dependent variable, *Initiate*, is again constructed from the DYMID 1.0 data set provided by Zeev Maoz using EUGene.[12] Initiate is dichotomous and equals one when State **A** initiates a MID in a given dyad-year against State **B**, otherwise it equals zero. Again, by initiation I mean the state that first crosses the militarized threshold in the dyad, which is similar to the definition I used in the monadic analysis, and subsequent years of disputes are again coded as zeros.

The Directed-dyad Independent Variables

Variables measuring GDP growth rates were again generated for a lag of one year and moving average of five years. The growth rates for both states **A** and **B** are included in the models with the same lag structure and are the same data as included in the monadic study. If the GDP Growth **A** is lagged and averaged five years, the same is done for state **B**.

The Directed-dyad Control Variables

Of course, I again control for each state's joint conflict propensity with a similar transformation to the nondirected-dyad forms but based on the monadic initiation models. Note that the statistical estimate for Joint Monadic Propensity should be weaker for the initiation models, but still of a positive sign direction, since many of the explanatory

[12] These data are available from the web site of Zeev Maoz at http://spirit.tau.ac.il/~zeevmaoz/. These data provide additional variables useful for constructing the dependent variables used in this study and minimize the chance of anomalous conflicts that never occurred but that are just artifacts of coding problems.

variables were insignificant in the monadic models.[13] Again, including this variable allows me to disentangle the monadic and dyadic factors. It is then possible to interpret the GDP Growth coefficient for State **A** directly related to the growth rate of state **B**.

The following multiplicative control variables are carried over directly from the analysis of dyadic conflict on nondirected-dyads without additional transformation: *Joint Militarization, Joint Development, Joint Pop Density, Joint Revenue Growth, Joint Democracy, Joint Protest, and Joint Rebellion.* The following dyadic terms are also the same: *Contiguity, Alliance Similarity,* and *Distance.* Also the *temporal splines* based on the BTSCS method (recalculated for the directed dyad dependent variables) are again used.

Finally, the directed-dyad study does require the alteration of a few variables. First, I include the trade dependence of state **A** on state **B,** *Dependence A on B,* in place of Joint Dependence, using the dyadic trade data from Barbieri (1996) divided by the GDP of state **A**. If state **A** is economically dependent upon state **B**, then trade dependence should constrain the initiation of MIDs. Second, I again include *Capability Ratio,* but its construction is as follows: LN (capability of state **A**/capability of state **B**). Capability Ratio increases the higher the ratio of power of state **A** over state **B**.

Order of Model Analysis and Estimation Technique

Since I am testing dichotomous dependent variables, ordinary least squares regressions (OLS) are not permissible due to the violation of the assumption of linearity. Logit analysis is again used with estimated robust standard errors (clustered on dyad id) to control for heteroskedasticity since some dyads may be more likely to become

[13] Again, the monadic initiation models appear sensitive to missing data, especially since there are naturally fewer episodes of initiations relative to overall conflict involvements.

involved in conflicts or contain conflict initiations (Huber 1967; White 1978). Two-tailed tests are used to calculate significance levels.

As mentioned earlier, in the next chapter I will first present the results of models estimating the effect of economic growth on MID onsets and Deadly MIDs using the nondirected-dyad analysis. This will be followed by the analysis of the MID Initiations using the directed-dyad models.

Chapter Seven

A Dyadic Analysis of the Effects of Economic Growth on Militarized Interstate Conflict

The objective of this chapter is three-fold. First, I examine whether the economic growth rates of both states in a dyad (a pair of states) jointly increase the risk of a militarized dispute. I hypothesize that the higher the growth rates of both states in a dyad, the more likely they will engage in disputes that become militarized. I also theorize that the same process raises the risk of war. Due to problems associated with missing data however, I do not directly test this latter proposition. I instead examine how the economic growth of both states in a dyad jointly affects escalation to disputes that involve fatalities. Second, I attempt to explore whether states behave strategically in regard to not only their own growth but also the growth of potential opponents by separating dyadic from monadic factors. Extant studies attempting to empirically investigate these processes fail to disentangle them from each other. States that seek to initiate militarized disputes may select opponents based on their own recent economic performance as well as the domestic conditions of a potential target. The interaction of two states' economic growth rates is a dyadic factor that may accentuate or mitigate state-level effects that catalyze or constrain interstate conflict. Third, I extend the models presented in Chapter Five to include control variables often utilized in other dyadic level studies that were not directly feasible in the state level study presented earlier.

The testing of the hypotheses discussed in Chapter Six requires the use of two different data sets, however. I examine two different types of dependent variables here.

The first two dependent variables measure the *involvement* of states in militarized disputes. I examine dispute onsets as well as those that specifically result in fatalities between two states in a given year. Analysis of the models requires a nondirected-dyad data set. The remaining dependent variable specifically measures whether one state initiates a militarized threat or action against another state in any particular year and calls for a directed-dyad data set.

This chapter is organized in the following manner. I first present the analysis of MID Onsets and Deadly MIDs using the nondirected-dyad data. Again, these models include the variable Joint Conflict Propensity to control for and separate monadic effects from any dyadic effects. I then repeat the same strategy with the remaining MID initiation model using the directed-dyad data. The final section of this chapter concludes with an examination of the sensitivity of the sample to systematic bias that may result through case selection. Existing dyadic studies on this topic may suffer from selection biases that hamper our ability to draw accurate inferences of the growth-conflict nexus.

The Results of Conflict Involvement Using Nondirected-Dyads

Remember that in a nondirected-dyad analysis the unit of analysis is the nondirected-dyad year, which means that I am measuring the onset of a MID in a given year between two states, but the directionality of specific state acts is not denoted. For example, I do not indicate which state is the initiator and which is the target. The estimates of the logistic regressions for this section are reported in Table 7.1 and the substantive implications illustrated in Figure 7.1. I only present the models including GDP growth lagged and averaged five years in tabular form to conserve space. The

results between the sets of models with economic growth lagged one or five years are very similar.

Economic Growth and the Onset of MIDs in Nondirected-Dyads

I do not find support for hypothesis one, which states that the higher the growth rates of both states in a dyad, the more likely a MID will occur between them in a given year. The relationship between the joint economic growth of a dyad and MID onsets is instead negative. The coefficient for Joint GDP Growth is negative and significant at a probability of .004, as presented in Table 7.1. The higher the joint growth rates of two states, the less likely they will become involved in a MID. Of course, this means that lower rates of growth positively affect the likelihood of militarized conflict.

Interpreting the models in this chapter requires that we remember that the dyadic effect of economic growth need not be the same as the monadic. The inclusion of Joint Conflict Propensity controls for state-level effects found in Chapter Five, separating the dyadic effects presented in Table 7.1 from the monadic effects. This means that economic growth at the monadic level still contributes positively to MID onsets through Joint Conflict Propensity. Note that this variable is positive and significant as it should be. The higher the joint conflict propensity for two states, the more likely a dyad will become involved in a MID onset. What is also interesting in this model is that the Joint GDP Growth variable is a much more significant predictor of MID onset than the remaining explanatory variables in the model, with the exception of the Joint Monadic Probability variable and Contiguity.[1]

[1] Based on the estimates of this model, it would appear that factors often associated with peace in other studies do not have a significant dyadic effect. For example, *Joint Dependence* should capture the mutual

Table 7.1 Economic Growth and the Onset of Militarized Interstate Disputes

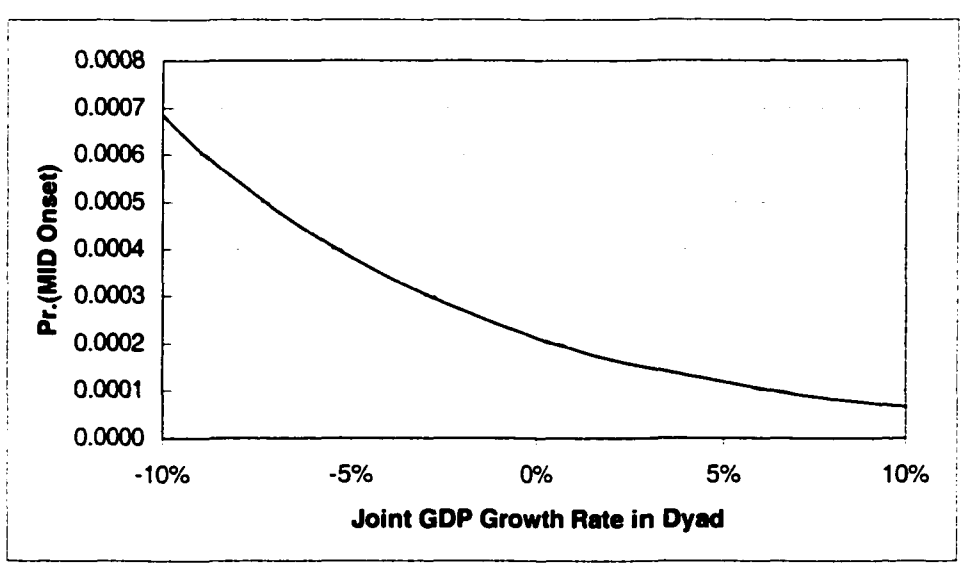
	Model 1 (5 year avg.		
MID Onset	**Coef**	**Robust SE**	**Signif**
Joint GDP Growth	-5.9964	1.1039	***0.0000***
Theoretically Relevant Control Variables			
Joint Monadic Propensity	5.3479	2.0174	***0.0080***
Joint Militarization	0.1090	0.0873	0.2120
Joint Revenue Growth	0.0026	0.0081	0.7490
Joint Protest	0.0145	0.0065	**0.0260**
Joint Rebellion	-0.0040	0.0072	0.5810
Sample Bias Control Variables			
Joint Development	-434.84	330.36	0.1880
Joint Pop Density	0.0000	0.0000	0.9030
Joint Democracy	-0.0008	0.0009	0.3800
Joint Dependence	-5.0062	5.4546	0.3590
Alliance Similarity	-1.9839	0.7677	***0.0100***
Contiguity	1.5934	0.3073	***0.0000***
Distance	-0.0002	0.0001	***0.0030***
Capability Ratio	-0.0685	0.0979	0.4840
Temporal Dependence Control Variables			
Spline1	0.0027	0.0004	***0.0000***
Spline2	-0.0021	0.0003	***0.0000***
Spline3	0.0006	0.0001	***0.0000***
Constant	453.89	333.59	0.1740
N of Observations		42241	
Wald Test		483.82	
p-value		0.0000	
Log likelihood		-824.23	
Pseudo R2		0.3510	

Note: p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-

dependence of two states on each other for trade as a percentage of their GDP, while *Joint Democracy* should capture the pacifying effect of two democratic states in a dyad separate from their own institutional constraints. However, neither of these variables is significant, nor are the other variables often important to the Growth-as-Catalyst view (*Joint Militarization, Joint Population Density*). Note however, that higher levels of Joint Protest are positively related to MID onset.

How then do we interpret the Joint GDP Growth coefficient? This is where strategic interaction and behavior are relevant. Based on the results presented here, it would appear that growing states might intentionally avoid becoming involved in militarized hostilities with other growing states. Perhaps growing states deter each other, each realizing that the other may be well prepared and willing to escalate conflicts if they occur. The results also suggest that the most dangerous point would be when two states in a dyad have each experienced lower rates of economic growth over the previous five years. Lower rates of joint economic growth contribute to the onset of MIDs. Figure 7.1 illustrates the substantive effect between economic growth and MID onsets in nondirected-dyads. Here we see that the probability of a MID drops precipitously for dyads that have averaged positive growth. The probability of a MID onset drops by approximately ten percent with every one percent average increase in the growth rate for the dyad.

Figure 7.1 Economic Growth and Probability of a MID Onset



While the bulk of the literature reviewed earlier fails to account for the possibility of strategic interaction and behavior, this does not mean that such a story could not be told. The models presented here are rather general in their scope compared to what would be offered by other dyadic theories such as Power Transition Theory or Power Cycles Theory that focus on specific situations. And though the results here might be said to match predictions by theories of imperialism, that states should become more conflict prone during periods of lower economic growth as they compete for new resources or markets, the sample here includes both large and small, capitalist and non-capitalist states. Other theories not yet put forward would be required to properly explain this result. Though the evidence would appear to support the broader Crisis-Scarcity contention that lower rates of conflict should increase the risk of interstate militarized conflict, these results mainly show that growing states avoid militarized conflicts with each other.

Economic Growth and the Occurrence of Deadly MIDs

Ideally, I would have tested hypothesis three, that economic growth increases the risk of war, directly; however, there are too few wars in the non-directed dyad sample to do so (approximately 33). Including attributes from both states in a dyad into the model, particularly the growth rates of both states, alters the number of wars in the sample. Observations are dropped during model estimation when the GDP data for either state in a dyad is missing, which poses an additional problem beyond the missing data normally encountered in a monadic level study. This problem affects both dyadic samples discussed in this chapter. However, I can look at MIDs that involve fatalities, which are

less severe than wars but still a higher level of severity than all MIDs. These fatal MIDs are generally rare, although there are enough of these events (approximately 75) in the non-directed dyad sample to test hypothesis two.

Table 7.2 Economic Growth and the Onset of Deadly Militarized Disputes

	Model 2 (5 year avg. growth)		
Deadly MIDs	**Coef**	**Robust SE**	**Signif**
Joint GDP Growth	-5.2597	2.1091	**0.0130**
Theoretically Relevant Control Variables			
Joint Monadic Probability	32.374	11.379	***0.0040***
Joint Militarization	0.2959	0.1255	**0.0180**
Joint Revenue Growth	-0.0243	0.0658	0.7120
Joint Protest	0.0189	0.0056	***0.0010***
Joint Rebellion	-0.0089	0.0085	0.2970
Sample Bias Control Variables			
Joint Development	-1051.48	633.66	0.0970
Joint Pop Density	0.0000	0.0000	0.5750
Joint Democracy	-0.0004	0.0018	0.8230
Joint Dependence	-49.334	49.728	0.3210
Alliance Similarity	-6.0771	1.3288	***0.0000***
Contiguity	1.5763	0.5658	***0.0050***
Distance	-0.0006	0.0002	***0.0030***
Capability Ratio	0.0351	0.1373	0.7980
Temporal Dependence Control Variables			
Spline1	0.0008	0.0005	0.1300
Spline2	-0.0006	0.0004	0.1530
Spline3	0.0001	0.0001	0.2050
Constant	1074.59	639.66	0.0930
N of Observations		42228	
Wald Test		469.89	
p-value		0.0000	
Log likelihood		-172.22	
Pseudo R2		0.421	

Note: p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-tailed.

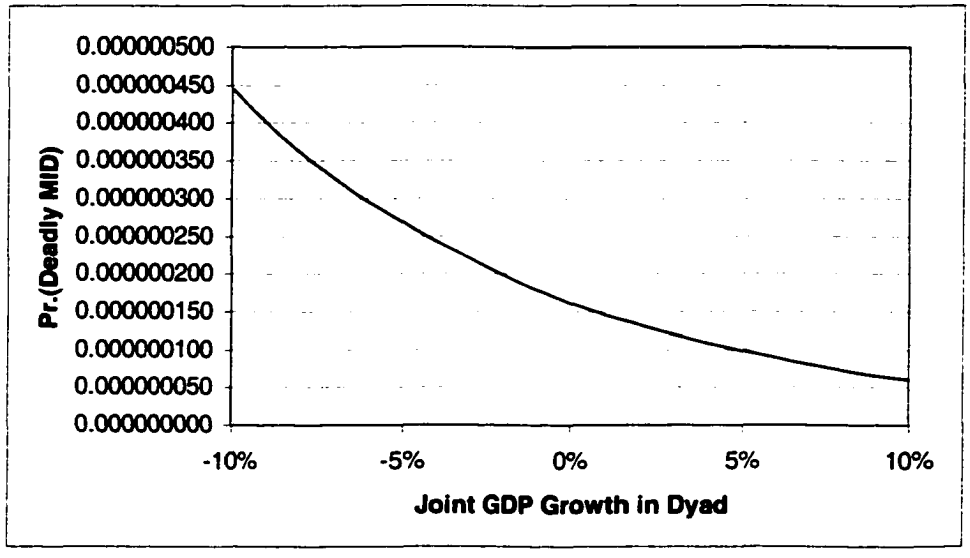
The dyadic effect of economic growth on Deadly MIDs is again negative after controlling for each states' monadic conflict propensity, as illustrated in Table 7.2. Joint GDP Growth is negative and highly significant. Note that I earlier found a strong relationship between monadic economic growth and MID onsets that result in fatalities and wars. This effect is subsumed into each state's monadic conflict propensity, meaning that economic growth appears to have both monadic and dyadic effects.

Beyond each state's monadic conflict propensity, there appears to exist a purely dyadic effect of economic growth that may in part ameliorate the monadic effects discussed in Chapter Five. The probability of a militarized conflict between two states is a product of both the joint monadic conflict propensities and the dyadic effects between them. Finally, what is also interesting is that while higher rates of militarization, growth of military spending, did not have a robust effect on the probability of various forms of militarized conflict presented in the monadic models, joint militarization indeed increases the risk of Deadly MIDs. Though the Militarization measure does not perfectly capture arms races between two states since states could be spending money on their militaries for internal reasons or with other states in mind, these results indicate that arms races are dangerous when they do occur.

The substantive effect of joint economic growth on Deadly MIDs is similar to that of all MID onsets. The shape of the slope marking the relationship between growth and the onset of Deadly MIDs shows the same pattern. Of course, wars and other disputes that result in fatalities are decidedly rare events in international relations and thus the probability of their occurrence between two particular states in a given year is very small. Depending on the base growth, an increase in the average growth rate of a dyad by one

percentage point yields a decrease in the probability of a Deadly MID by about ten percent.

Figure 7.2 Economic Growth and the Probability of Deadly MIDs



The Effects of Economic Growth on the Initiation of MIDs on Directed-Dyads

In 1980, Iraq may have attacked Iran based on the likely presupposition that its target had become weakened by revolution. Both the Iranian economy and military seemed to have been destabilized by internal discord. A blanket of economic sanctions had been imposed against the Iranian fundamentalist state, complicating economic interactions and eventually forcing the military to turn to the international black market in search of spare parts. This is an example of strategic behavior in recent world politics.

Blainey (1988) theorizes that many wars may start in a manner similar to the Iran-Iraq War. States may initiate militarized interstate conflicts when their economy has experienced growth and a potential target has been befallen by economic hardship, which should increase the odds of success against opponents that may not be capable of

sustaining military action. While economic growth is first and foremost a national-level factor, the results in the previous sections show that it has ramifications at the dyadic level of analysis. Leaders may not only behave strategically by timing foreign military action to periods when domestically permissible and/or beneficial, their decisions may also be influenced by the condition of potential opponents. In the example mentioned above, Iraq sought to exploit what it perceived as Iran's internal disarray, which also should have undermined Iran's ability to fight a war (or at least a long one). Iraq's economy was likely growing faster than Iran's. Conversely, it is also possible that states may select targets that may be disinclined to respond militarily based on the supposition that these states are less likely to risk the disruption of the status quo (Leeds and Davis 1997). Hence, strategic behavior potentially has both monadic and dyadic dimensions. The models demonstrated in the previous sections show that strategic interaction and behavior appear to play a role in the occurrence of militarized disputes among states, although they could not show us the conditions of potential initiators and targets.

In this section I explore a related question: Does economic growth increase the risk that one state will *initiate* a militarized action (make a threat, display forces, or use force) against another state, and are these acts of aggression influenced by the economic growth of the target state? I investigate the four scenarios outlined in the latter section of Chapter Six examining the joint growth of two states in a dyad. Unlike the previous models, I include the growth rates for both states in a dyad separately to search for strategic behavior associated with potential initiators and targets.

Based on the Growth-as-Catalyst view, the risk of militarized conflict should be highest when the economic growth rates of both states are higher than usual, and lowest

when each has experienced lower growth. Alternatively, Blainey (1988) predicts growing states are likely to initiate military conflicts to exploit states that may have been weakened by low or negative economic growth. Lastly, Leeds and Davis (1997) predict the opposite of Blainey: that states experiencing economic crisis may initiate militarized conflicts against states with high growth in order to externalize domestic discontent. They theorize that a growing target is less likely to respond militarily than one that also potentially seeks an external outlet for its domestic unrest. Such a strategy would maximize the utility of militarized action by minimizing the risk of becoming involved in a war.

Based on the model estimates reported in Table 7.3, it appears that the *Growth-as-Catalyst* perspective is not explaining the effect of economic growth on MID initiation at the dyadic level of analysis.[2] The GDP growth variables for both states are negative, although only State **A**'s coefficient is statistically significant. As in the earlier nondirected-dyad models, the lower the rate of growth of both states in a dyad, the more likely state **A** will initiate some militarized action against state **B**. However, the effect of state **A's** growth rate appears to be the stronger of the two.[3] These results suggest that the initiator's growth rate may be a stronger factor over the economic condition of the target leading to MID initiation. Leeds and Davis argue that growing states should make safer targets since the risk of escalation should be lower presuming that low growth leads states to seek conflicts to externalize internal pressures, although the results here show that this

[2] Of course most of the Growth-as-Catalyst literature does not incorporate strategic behavior. I am extending the logic of these theories to the dyadic level of analysis.

[3] I found that these results are sensitive to changes in the sample of cases when the model was run without the Joint Conflict Propensity and domestic conflict variables. The coefficient for the GDP growth of State

Table 7.3 Economic Growth, Dyadic Interaction, and the Initiation of Militarized Interstate Disputes

	Model 3 (5 year avg. growth)		
MID Initiation	**Coef.**	**Robust SE**	**Signif**
GDP Growth A	-10.061	3.0875	***0.0010***
GDP Growth B	-4.4980	3.9810	0.2590
Theoretically Relevant Control Variables			
Joint Monadic Probability	4.3367	2.2141	**0.0500**
Joint Militarization	-0.0289	0.0821	0.7250
Joint Revenue Growth	0.0048	0.0073	0.5130
Joint Protest	0.0119	0.0067	0.0770
Joint Rebellion	-0.0071	0.0102	0.4870
Sample Bias Control Variables			
Joint Population Density	0.0000	0.0000	0.7360
Joint Development	-808.43	255.85	***0.0020***
Joint Democracy	-0.0007	0.0007	0.3210
Dependence A on B	0.5354	1.6259	0.7420
Capability Ratio	-0.0134	0.0618	0.8280
Contiguity	2.1898	0.3614	***0.0000***
Distance	-0.0002	0.0001	***0.0030***
Alliance Similarity	-2.0288	0.7261	***0.0050***
Temporal Dependence Control Variables			
Spline1	0.0013	0.0002	***0.0000***
Spline2	-0.0011	0.0002	***0.0000***
Spline3	0.0003	0.0000	***0.0000***
Constant	800.68	257.91	***0.0020***
N of Observations		83500	
Wald Test		894.71	
P-value of Wald		0.0000	
Log Likelihood		-1083.27	
Pseudo R2		0.3116	

Note: p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-tailed

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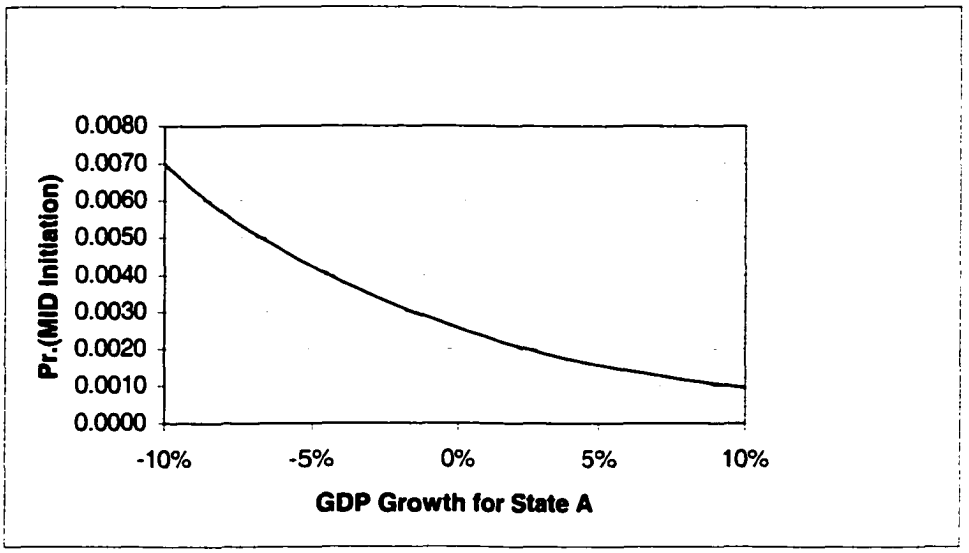
A is only weakly significant (.077 probability value) and State B's growth rate variable was positive and

does not appear to be the case.[4] Instead, MID initiations are most likely when both states have experienced lower rates of economic growth.

Figure 7.3 Economic Growth and the Probability of MID Initiation



An illustration of the substantive effects associated with economic growth and MID initiation is presented in Figure 7.3. We again see that the probability of MID initiation by state **A** against state **B** drops as state **A**'s GDP growth rate rises. An increase of State **A**'s growth rate by one percent yields about an eleven percent drop in the relative risk of a MID initiation. Hypothesis four is thus not supported. Economic growth acts as a pacifying effect while economic decline/deprivation increases MID initiations. Consequently, no evidence is found here to support Hypothesis five -- high economic growth in state **A** does not increase the chance a state will initiate a militarized dispute

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insignificant.

against a state that is not growing, as theorized by Blainey (1988) or that states with lower growth rates would initiate against states with higher rates of growth, as predicted by Leeds and Davis (1997).

Case Sensitivity and Biases at the Dyadic Level of Analysis

The results thus far present a puzzle. I demonstrated in Chapter Five that economic growth increases severe interstate conflict at the national level, thus supporting some of the predictions of the Growth-as-Catalyst literature. However, the dyadic analyses provide results that would appear to support the Crisis-Scarcity perspective if we were to stretch this literature to incorporate a role for strategic interaction and behavior at the dyadic level. One would think that the dyadic analysis of Deadly MIDs would at least reflect the monadic findings, everything being equal. If economic growth makes states more likely to become involved in severe disputes and wars, then dyads of states with higher rates of growth should be the most likely to fight. This is not the case, however. Lower rates of economic growth appear to have their strongest positive effect on the probability of MID onsets, whether fatalities result or not, at the dyadic level of analysis.

It is possible that the levels of analysis do not agree because strategic behavior at least partially mitigates monadic effects. Higher rates of joint economic growth may provide a mutual deterrent for conflict between two states. Another possibility is that the models presented in this chapter suffer from systematic error, specifically a selection bias. In other words, there may be important changes in the sample of cases examined when moving from the monadic to the dyadic level of analysis. I suspect that the dyadic

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[4] Leeds and Davis' empirical results also do not support their theoretical expectations. I suspect that this could be a function of their theory, which is limited to democracies, and their small sample size (only about

analyses incurred a problem with missing data that truncates the number of countries represented in the samples. Of course, the models estimated are only based on those dyads where there is no missing data. However, this can be a problem in an analysis based on the availability of economic data, which has traditionally been difficult to obtain for some countries. By definition, the dyads included in the analyses can only be composed of the 56 countries for which data are available from Maddison (1995), which of course limits the conflicts included in the results to those between these particular dyads. By contrast, conflicts between the same 56 countries in the monadic analysis with states outside of this sample could be included. Hence, the composition of conflicts between the levels of analysis varies.

Furthermore, the implication of this potential selection bias and error is serious for those dyadic studies that particularly employ economic data. The two data sources that appear limited within the dyadic analyses are GDP and trade flows. As I mentioned earlier, only Miller (1995, 1999) has provided as many countries in a dyadic sample studying economic growth and conflict as examined here since he likewise uses Maddison (1995). This means that any potential selection bias and error I find here would likely affect the literature on this topic as a whole.

I ran an additional set of models with an alternative specification, dropping the interaction terms and the Joint Conflict Propensity variables in favor of a set of variables based on the weak-link assumption, as found in the work of Oneal and Russett (1997). They claim that the slower growing state of dyad will drive the probability of conflict. A dyadic economic growth rate variable based on the weak-link assumption accounts for

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12 countries).

both states' growth rates by taking the value of the lower growth rate in the dyad. For example, if the United States has a growth rate of two percent and China's is nine percent, the value for the "GDP Growth Low" variable would equal two percent. This construction of the variable also captures the level of both states growth rates at some common threshold (such as both being no slower than two percent growth) but it loses some information in the interaction (such as the effect of difference in the growth rates), whereas the interaction terms used earlier provide more information by capturing a broader range in the differential variation of the growth rates. However, I ran the models of MID involvement to test the existing literature.

When I ran these alternative dyadic models of Deadly MIDs (disputes that result in casualties) and MID initiations, I observed that they are sensitive to changes in the sample of cases. Dropping the domestic conflict variables in particular often changes the estimates for the GDP growth variables. This led me to suspect that the models in this chapter also suffer from this potential bias through the inclusion of variables at both the monadic and dyadic levels of analysis. I therefore further investigated the potential problem of selection biases below that may hamper our ability to draw a correct inference of the effects of economic growth on militarized interstate conflict.

Bias may occur in research for numerous reasons. I am interested here in bias that may be generated as a consequence of the selection of cases in my sample, which is systematically related to the issue of data availability. Vogt (1999) defines *bias* as "anything that produces systematic error in a research finding." Two types of selection biases appear to affect my results: spatial and temporal. I have demonstrated that dropping the domestic conflict variables (in Chapter Five and in the alternative models

discussed above) tends to affect the estimates for my GDP growth variables. This is mainly the consequence of a temporal bias. The beginning date of the sample changes from 1920 to 1871 when the protest and rebellion variables are removed from the models. I discussed the theoretical implications of this problem in Chapter Five, and observed that this problem appears to affect the models on Deadly MIDs and MID initiations at the dyadic level of analysis. Below, I will direct my attention to spatial bias.

My analysis here suggests that the spatial selection bias and systematic error that occurs in the results presented in the dyadic level analyses are related to missing data. The inclusion of several variables in the dyadic models truncates the sample, resulting in the omission of many cases from the analyses. The most important source of this bias is the inclusion of the GDP growth rate of more than one state in the dyadic models, which drops the number of cases and conflict events in the sample, selecting only on the 56 countries in Maddison (1995). This appears to be why I could not feasibly test the nondirected-dyad war hypothesis or further examine the initiation of severe disputes or wars; the number of wars or other severe disputes become too few to glean enough information about the effects of the covariates.

The inclusion of the GDP growth rates of both states in a dyad instantly changes the nature of the sample; thus, any systematic error added would seem to confound the findings discussed earlier in the chapter. This bias is automatically introduced into the models by individually including most of the interaction terms. The same goes for the directed-dyad models even though each state's growth rate is included separately. The models including variables interacting each state's monadic attributes, such as the joint

levels of political protest or joint level of development, should be most afflicted with this problem.

Many cases that would be included in the monadic analysis are excluded from the dyadic analysis. Dyadic analysis requires complete data on both GDPs in a dyad. However, monadic analyses require data on only one. Dyads containing at least one of the countries from Maddison are included in the monadic set, such as the Vietnam War for the United States, but not in the dyadic samples due to missing data. For example, the dyad for North Vietnam and the United States would not be included in the analyses since the former country's GDP data is missing. This problem occurs in other sets of dyads associated with such events as the Korean War and the Gulf War. Table 7.4 lists a sample of prominent conflict events depicting whether they are included in the analyses. We see, for example, that the Korean War would be included for both the United States and China separately in the monadic study and as a dyadic conflict between these two states in both dyadic analyses; however, North Korea would be missing from all the analyses since its GDP data is missing (including the dyads that include North Korea). Again, the number of cases included in the dyadic analyses is larger but less reflective of the population of cases where conflicts occur. I lose data on a non-random set of cases. There are two implications of this problem of missing data. First, the missing GDP data (as well as other data such as trade flows that I discuss below) produces a spatial selection bias: only those countries where GDP data is available are included in the study. The systematic bias arises from the fact that data are most readily available for states that are more likely to be economically developed and possibly democratic as well. It has been difficult in the past to obtain quality GDP data for states such as Libya and North Korea,

for example, that may be authoritarian and do not make theses statistics public. These dyads will always drop out of the models presented here, whereas other dyads are complete such as the United Kingdom-Argentina dyad. Thus, while all the analyses in this project incur some of this bias, this problem should be most pronounced for the dyadic models.

Table 7.4 Examples of Conflicts Included or Excluded in the Monadic and Dyadic Analyses

Event	State A	State B	Monadic Inclusion	Dyadic Inclusion
Spanish-American War	USA	Spain	Yes, both	Yes
Korean War	USA	China	Yes, both	Yes
Falklands War	U K	Argentina	Yes, both	Yes
Korean War	USA	N. Korea	Yes, US	No
Vietnamese War	USA	N. Vietnam	Yes, US	No
Seven-Day War	Egypt	Israel	Yes, Egypt	No
Yom Kippur War	Egypt	Israel	Yes, Egypt	No
Gulf War	USA	Iraq	Yes, US	No
Cuban Missile Crisis	USA	Cuba	Yes, US	No
Iran-Iraq War	Iraq	Iran	No	No
Gulf War	Iraq	Kuwait	No	No

The second implication is closely related: the dyadic samples truncate the number of conflicts estimated by the models. The dyadic samples are composed of states that are more likely to be economically developed or democratic. Remember that I have consistently found that a state's level of economic development influences its conflict propensity. Developed states are less likely to engage in MIDs. While the countries in Maddison's sample account for 87 percent of the world's population and 92 percent of global production during the span covered, the countries excluded are generally less

developed but may participate frequently in militarized conflict, and the countries excluded from Maddison are generally poor or autocratic. For this reason, the missing data, if available, might further weaken the inverse relationship found between economic growth and interstate conflict at the dyadic level of analysis.

It is feasible to in part explore the degree to which this selection bias affects the dyadic findings. Since the directed-dyad models allow for the inclusion of only a single state's attributes, such as the GDP growth for state **A** alone, I can drop the variables that most distort the sample of cases from the overall population.

Table 7.5 illustrates the effects of removing the variables that appear to introduce the systematic bias into the dyadic samples: both GDP Growth **A** and **B**, Dependence **A** on **B**, Protest **A** or B, Rebellion **A** or **B**, Revenue Growth **A** or **B**. Two important changes are notable in this model compared to those reported earlier in the chapter. First, notice that the coefficient for GDP growth **A** is now positive but still insignificant. Second, many of the sample bias control variables included in the earlier models, such as Capability Ratio, were consistently statistically insignificant when they are acknowledged to important predictors of conflict within the field of international relations. These variables are now significant when the number of observations jumps from 83,500 to 340,000 cases. The variables in the truncated sample likely contain lower variance, whereas the larger sample is likely more representative of the population of cases. Thus, even after controlling for factors such as geographic contiguity and distance, the ratio of power capabilities between two states, and alliance similarity, which were not included in the monadic study, the results presented in model four are similar to the MID initiation models presented in Chapter Five.

Table 7.5 The Effects of Selection Bias on Economic Growth and the Initiation of Militarized Interstate Disputes

	Model 4 (5 year avg. growth)		
MID Initiation	**Coef.**	**Robust SE**	**Signif**
GDP Growth A	*1.0474*	*1.1303*	*0.3540*
Theoretically Relevant Control Variables			
Military Growth A	-0.0743	0.0539	0.1680
Executive Constraints A	0.0524	0.0298	0.0790
Sample Bias Control Variables			
Major Power A	1.1713	0.1739	***0.0000***
Population Density A	-0.0001	0.0000	**0.0290**
Development A	-1357.10	213.49	***0.0000***
Capability Ratio	-0.2346	0.0291	***0.0000***
Contiguity	1.9444	0.1868	***0.0000***
Distance	-0.0002	0.0000	***0.0000***
Alliance Similarity	-1.0972	0.3875	***0.0050***
Temporal Dependence Control Variables			
Spline1	0.0008	0.0001	***0.0000***
Spline2	-0.0006	0.0001	***0.0000***
Spline3	0.0001	0.0000	***0.0000***
Constant	-3.4840	0.3573	***0.0000***
N of Observations		341715	
Wald Test		1318.04	
P-value of Wald		0.0000	
Log Likelihood		-4426.27	
Pseudo R2		0.2571	

Note: p<0.05 are bolded, p<0.01 are bolded and italicized. All tests are two-tailed

What is also interesting about this problem is that it has not been acknowledged by extant studies in this area of research. Though as a field we are cognizant of the problem of systematic bias and error, this problem has not been confronted in most dyadic studies examining economic conditions and interstate conflict. For example,

Miller (1995, 1999) provides two studies employing the same Maddison data used here and presents findings similar to those presented in the additive models I noted earlier (but not presented in tabular form). Miller claims to have found support for the diversionary conflict thesis, but that autocracies were more likely to engage in this behavior than democracies. However, based on my experience here with the problem of missing data, we should further explore the robustness of these findings.

Summary of the Dyadic Level Analyses

This chapter examined the hypotheses stated in Chapter Six. The dyadic analyses did not provide evidence that higher rates of economic growth are related to higher levels of MIDs within dyads. The evidence instead tends to loosely support the Crisis-Scarcity perspective that lower economic growth is related to interstate conflict, although none of the theories within this group provides a detailed explanation of the empirical findings here. Yet, while I did find that joint economic growth appears to provide a pacifying effect that could potentially mitigate monadic sources of conflict, the evidence of strategic behavior in the initiation of MIDs was weaker. The economic growth of state **A** was a more important factor than state **B**'s growth in MID initiations. This suggests that the conditions of the initiating state may have the strongest effect on the likelihood of conflict within a dyad. However, the evidence across the dyadic analyses is inconsistent and may lead us to draw an inaccurate inference due to the possibility of systematic error in the selection of cases. It would appear that the dyadic results are less tenable than they first appear. The inclusion of missing cases might swing the evidence in favor of the Growth-as-Catalyst perspective. Additional data might provide enough information to

increase the effect of the GDP growth low variable over the high variable on the probability of a MID onset or Deadly MID. More analysis on a sample of states more representative of the population of the interstate system is required to properly answer this question.

Chapter Eight

Concluding Remarks and Final Thoughts

The primary purpose of this project has been to provide a *general* theory and tests of the economic growth and militarized interstate conflict that builds upon existing literature. By general, I mean a study that seeks to provide an explanation for all states, not just sub-samples of democracies or single cases such as the United States. Though most existing theories on this topic aim for generalization, they nonetheless remain incomplete and sometimes difficult to test. Meanwhile, much of the empirical work focuses specifically on the American case, and the handful of remaining studies that seek to provide evidence generalizable across all nations often contain other limitations that currently do not allow us to conclude whether economic growth increases or decreases militarized interstate conflicts.

I believe the explanation provided by the Growth-as-Catalyst tradition is more plausible than that provided by the Crisis-Scarcity view. Economic growth ought to increase both social optimism and military capabilities, providing states with the means and the willingness to fight. This growth should translate into more frequent interstate disputes. I also contend that constraints placed on executive leaders, institutional or otherwise, should reduce participation in interstate conflicts. Domestic discord ought to have a similar pacifying effect. Leaders that face high levels of domestic political opposition, through political parties, factions of the military, or otherwise, should face a higher risk of removal from office, especially during potential attempts to externalize internal political pressure that could result in further domestic trouble. Are people really

naïve enough to regularly fall prey to such manipulation? Possibly, although since unpopular leaders may be most prone to attempt this tactic, they are the ones that will receive the most doubt and scrutiny, making it less available to precisely these leaders. Involvement in external militarized conflict, especially in cases where it escalates to battlefield fatalities, would only seem to compound domestic problems. Low economic growth and domestic discord should both reduce the ability of states to fight. Additionally, the effects of economic growth, whether low or high, should be strongest when compounded over several years.

The Empirical Findings of this Thesis

This study incorporated the economic growth of 56 states dating from 1870 until 1992. I first examined my hypotheses at the state level of analysis. This was followed by an additional analysis at the dyadic level that specifically analyzed the possibility that states may behave strategically in regard to economic conditions. While most of the literature on the growth-conflict nexus is posed at the monadic level, including the theory I presented in Chapter Three, the dyadic level of analysis provided the means to test additional questions not feasible at the monadic level, such as the interaction of joint economic growth in a dyad. This latter analysis also allowed me to account for other dyadic factors such as joint democracy not examined in the monadic analysis that may influence the relationship between growth and interstate conflict. In general, I find more empirical evidence to support the Growth-as-Catalyst view over the Crisis-Scarcity perspective.

Economic Growth on Militarized Interstate Conflicts at the State Level of Analysis

The empirical evidence at the state level of analysis (monadic) generally supports the modified version of the Growth-as-Catalyst theory presented in Chapter Three: high economic growth contributes to interstate conflict. This was particularly the case for disputes that result in fatalities and the onset of interstate war, although the evidence was weaker for militarized dispute initiations and overall involvement (all MIDs). I suspect the weaker results for MID initiations and onsets is in part related to missing data and further analysis will of course provide more insight.

However, contrary to my expectations, economic growth appears to decrease the likelihood of MID reciprocation. I posited that economic growth should increase both dispute initiations and reciprocations. It could be that audience costs (Fearon 1994) prevent target states from backing down during foreign crises, since to do so could also exacerbate the political pressures faced by leaders. Admittedly, these scenarios could provide an opportunity to use diversionary tactics since leaders may face less blame for the conflict. Yet, these models likewise failed to attain robust results for this alternative argument. Additionally, the relationship between growth and conflict is nonlinear over time.

Interestingly though, I found that the positive relationship between growth and conflict was mostly relegated to European states while this relationship was insignificant for the rest of the world. There appear to be three possible reasons for this. First, Rostow (1960) may be correct that states go through phases of economic and social development that alter their conflict propensity over time. Several European powers matured economically and politically, resulting in greater political capacity through stronger state

structure, nationalism, and the ability to afford higher military expenditures. These states were particularly willing and able to fight. Half of the states examined are European. Second, by increasing social optimism (nationalism according to Rostow) and military spending, economic growth may have provided further fuel to the sparks arising from the regions volatile interstate dynamics, a system containing more than one major power and active alliance systems. Third, it is also possible that missing data in the other regions of the world hamper a better test on a regional level. Do these findings indicate that the explanations provided by Growth-as-Catalyst theories fail to provide generality? Not necessarily. If the stages-of-growth argument is correct, we should see similar eruptions of conflict related to higher rates of economic growth in other regions of the world in the future. For Asia, this period could begin in the near future with the economic development of China, India, and other states.

Economic Growth on Militarized Interstate Conflicts at the Dyadic Level of Analysis

I conducted my investigation of economic growth and interstate conflict at the dyadic level on both militarized dispute involvements and initiations. I also looked at involvement in disputes that result in fatalities, although data limitations prevented a similar analysis of economic growth and the initiation of severe forms of conflict such as wars. The purpose was to identify strategic behavior related to the differential growth rates of two states in a dyad. The research designs used for this task are unique in that they separate the monadic effects from dyadic effects, which is especially necessary since I earlier demonstrated a relationship between economic growth and interstate conflict at the monadic level of analysis. Extant studies seeking to measure strategic behavior without controlling for monadic effects would seemingly be misspecified.

I found that there appears to be some strategic interaction or behavior between two states related to differential economic growth rates. The higher the joint growth of two states the less likely they will become involved in militarized interstate disputes, including those that result in fatalities. Joint economic growth also appears to lower the probability of dispute initiation. Yet, the analysis of dispute initiations appears to show that the growth rate of the initiating states may be the more important effect altering the risk of militarized conflict. Overall, I found that the monadic theories explored in Chapter Two do not provide an appropriate explanation of the dyadic results. Most of the literature is ill equipped to account for strategic behavior and those that do, Blainey (1988) and Leeds and Davis (1997), are not supported.

Finally, it is often the case that further research is required before we could have a high degree of confidence in the results produced by scientific studies. This thesis is no exception. The most pressing issue requiring further attention here is sample bias, which does not appear to be minimal in this study. This is particularly true of the dyadic analyses. The monadic analysis contains 56 countries constituting roughly a third of the states within the temporal domain analyzed. The dyadic analysis, however, appears to be less representative of the population composing the interstate system. These dyadic analyses are likely biased towards the most developed and democratic states in the sample due to the truncation in the number of conflicts included in the dyadic analyses and the selection of cases that occurs from missing trade and GDP data. Additional tests show that the sign of the GDP growth of state A generally flips to positive once these two variables along with the domestic conflict variables are dropped from the models. Hence,

the dyadic analyses lose some generality due to the systematic bias that is introduced because of missing data from some poor or totalitarian/authoritarian states.

Other Important Factors

Level of development was the variable that had the strongest and most robust pacifying effect in the monadic analysis, and this effect was often apparent in the dyadic models as well. While executive constraints also contribute to peace in some of the monadic models, I found inconsistent evidence of a related democratic peace effect in the dyadic analyses. Similarly, the pacifistic qualities of trade interdependence often discussed by extant literature within the field do not appear to play a significant role here. However, this appears to in part stem once again from case selection.

Finally, though I do not specifically analyze a relationship between economic growth and domestic discord, I suspect that they are related. In Chapter Five I report that political protest appears to reduce the probability of war onset, but the opposite is true of rebellions. I suspect that the coefficient for rebellions is affected by situations where domestic conflicts spread through foreign intervention. Domestic discord did not play a strong role in lesser forms of militarized disputes.[1]

Contributions to the Literature

This dissertation contributes to the literature on economic growth and interstate conflict in the following ways. First, I provide a theory that builds upon the Growth-as-Catalyst tradition by elaborating on the role of domestic politics and the decision to engage in interstate conflict. I particularly attempt to explain how diversionary conflict

[1] Recall that the domestic discord variables typically were linked positively to conflict in Chapter Seven, but these results may be biased as well due to the selection of cases examined. Of course, further research at the dyadic level still could lend support to these findings once this systematic effect is eliminated.

may not be a common and generalizable state behavior. I also attempt to bridge levels of analysis by providing predictions at the dyadic level derived from a monadic theory.

Second, the monadic analysis provides cross-national empirical support for the Growth-as-Catalyst view over the Crisis-Scarcity perspective, which aids in the attempt to answer which tradition provides the best general explanation of the growth-conflict nexus. I also contribute by examining multiple conflict dependent variables (dispute onset, initiation, reciprocation, deadly disputes, and war). Most previous studies predicting that growth should increase interstate conflict almost exclusively focus on wars, whereas recent studies of diversionary conflict do not tend to specifically examine differences between all disputes and those that entail the loss of life (deadly disputes and wars).[2] Moreover, unlike most other cross-national studies on this topic, I directly incorporate and control for the effects of domestic conflict on interstate conflict by differentiating between acts of protest and rebellion.

Third, this study also in part explains why there exist empirical discrepancies in the findings between the Growth-as-Catalyst and the Crisis-Scarcity views. Most of the works examined here suffer some sort of selection effect in the cases analyzed. The bulk of the Growth-as-Catalyst studies discussed earlier were inspired by, and drew their analogies from, conflicts where one can find an association between high economic growth and interstate conflict. Many studies present anecdotal evidence drawn from momentous events such as World War One. Exceptions include the work of Pollins (1996) and Pollins and Murrin (1999), which provide empirical evidence supporting the Growth-as-Catalyst view based on a large number of cases. Conversely, most other empirical studies conducted over the past decade, or thereabouts, typically find evidence

[2] Some studies of diversionary conflict have examined uses of force as a dependent variable.

to support the Crisis-Scarcity viewpoint, often with a theoretical interest in the diversionary conflict theme. However, the conclusions drawn from these latter studies are based on analyses that have systematically truncated or skewed the cases examined. Despite the fact that many of these works are large-N, statistical studies, various decisions in their research designs trim the cases examined in a manner that seems to have introduced sample bias or non-generality. Leeds and Davis, for example, examine twelve democracies only. Miller (1995, 1999), using the Maddison GDP data as a basis of his studies, presents evidence not dissimilar to the dyadic findings I demonstrated in Chapter Seven (besides the fact that he does not control for monadic effects), and both of our studies drop a large number of conflicts that include the less developed nations of the world by including attributes from both states in a dyad. Heldt (1999) only examines cases where states have territorial disputes and the initiating states have a negative growth rate, all other cases are dropped. Finally, Bennett and Nordstrom (2000) base their analysis on dyads that have historical militarized rivalries.[3] Hence, many existing studies do not present evidence that is generalizable across all nations.

Further Implications of this Study

If economic growth increases the frequency of interstate conflict, what advice then would I provide to policy-makers? Clearly I could not recommend that states should attempt to slow their economic growth. States appear to universally seek economic growth for the benefits it provides governments and societies. Economic growth may nevertheless acerbate existing interstate tensions and conflicts. It would also seem difficult to advise state leaders and their citizens to be wary of optimism, hubris,

[3] Bennett and Nordstrom (2000) also only include economic growth lagged a single year.

nationalism, xenophobia, or jingoism that could cause or exacerbate interstate disputes, especially when leaders seek to manipulate public opinion to support militarized actions.

I also suspect that economic growth contributes to the perception of threat between states, although I present no direct evidence of this here. While economic growth could potentially lead to the perception of threat, it could be more likely that it accentuates existing tensions. For example, China and the United States were enemies in the past and remain rivals quite wary of each other in the present. Chinese growth and development seems to increase the perception of threat to the United States since this growth could be transformed into military might. Though it would seem more plausible that economic growth should aid in the development of states and foster peace, this does not always appear to be the case.

Earlier I presented an anecdotal discussion of economic growth and the onsets of World War One and World War Two. France for example still appeared to be in a state of malaise in the 1930s that coincided with economic depression, which made it difficult to confront the threat posed by Hitler. Similarly, the Great Depression may have delayed American entry into WWII, whereas higher rates of growth allowed it to mobilize quickly for World War One. It is also doubtful states such as Germany and Japan could have embarked on the expansionist policies they knew would encounter foreign military resistance without the spurts of growth that allowed them to build up their militaries. The empirical findings presented in Chapter Five are consistent with the proposition that economic growth increases the probability of militarized disputes because these states are more willing to fight. Growth may also catalyze conflict when other factors are in place making militarized disputes more likely. If states did not fear or expect interstate

conflict, or were at least unwilling to participate in militarized disputes, it would seem that economic growth could not directly cause conflict by itself.

The task then would be to make states less willing or unable to engage in interstate conflicts. I would suggest that interstate peace could be fostered, and thus reduce the contribution of economic growth to interstate conflict, by increasing similar preferences between countries and by constraining state leaders. One of the most robust findings of this dissertation was that high levels of state development decrease the probability of militarized interstate disputes. While growth apparently has a positive effect on interstate conflict, the states that are participating in these disputes are more likely to be developing nations. No two developed states have fought a war against each other since World War Two (Mueller 1989). This tendency is echoed in the works of others (Hegre 2000a, 2000b; Mousseau 1997; Boehmer and Sobek 2002). While developed states may threaten or display military forces against each other, these disputes appear to be less frequent than between dyads containing at least one developing state, and these disputes are less likely to escalate to clashes that result in the loss of life. Again, this is not the case for disputes between developed and developing states. It is possible that developed states share similar economic and political preferences that reduce the risk that conflicts will become militarized and also escalate to combat.

The preferences of states could also become intertwined through economic interdependence. Again, extant research indicates that trading states may be less likely to engage in militarized disputes with each other (Oneal and Russett 1997, 1999; Russett, Oneal, and Davis 1998; Polachek, Robst, and Chang 1999; among others). Rosecrance (1986) claims trading states become reliant on trade as a means of further growth and

development and less dependent upon resource extraction and agriculture, which may be related to territorial conflicts between states. Peace may also be fostered by economic interdependence through international investments and monetary coordination (Gartzke, Li, and Boehmer 2001). Joint democracy may have a similar effect. Beyond the institutional constraints placed on leaders, democracy may foster or reinforce a culture of nonviolent conflict resolution (Maoz and Russett 1993; Ray 1995; Russett 1993; Russett and Oneal 2001, et al.).

Yet, joint democracy and trade interdependence did not appear to consistently contribute to peace in the dyadic study. This should be troubling to policy-makers and advocates of liberalism. However, I suspect that these variables performed poorly or counter to the predictions of existing studies for the same reason discussed above – the truncation of the number of militarized disputes in the dyadic analysis decreases the variance of these explanatory variables, especially since they are likely related. We know states that are inclined to engage in the highest levels of interstate commerce tend to be developed and also democratic.[4] Many developed and democratic states also appear to share similar security arrangements, as demonstrated by the robust finding that the congruity of alliance portfolios between states decreases the risk of conflict between them. Hence, one should hold some skepticism about these results.

Avenues for Further Research

It is common for conclusions of research projects to proclaim that further research is required, and here again this is true. This dissertation has sought to provide a general

[4] One should note that the missing trade data for many poor countries results in the exclusion of over a hundred thousand cases in the dyadic models. I, again, suspect that the states in these cases are more likely to be autocratic and have relatively low levels of trade than the states for which trade data, or GDP data for that matter, are available.

theory of economic growth and interstate conflict, and then to test many of the key propositions. Further research on economic growth is necessary, however, to further identify how it affects particular processes. More work could especially be done examining the general relationship between growth and conflict for all states. For example, future dyadic studies need to incorporate more developing countries so as to avoid a bias toward the richest and most democratic states.

While this dissertation provides several theoretical and empirical contributions to the literature in this area of study, aspects of the project were not fulfilled. In particular, I found it difficult to test some of the more interesting hypotheses formulated at the dyadic level of analysis. I could not, for example, test whether joint economic growth in a dyad increases the probability of war. The root of this problem was in part, again, the drop in the number of cases from developing countries and the number of conflict events in particular.

Several other aspects of this study could be improved or expanded upon in the future. First, I do not directly examine whether social optimism is related to interstate conflict. While there are insufficient survey data available to provide an explanation generalizable to all states, I could at least explore how public opinion is related to the participation of democratic states. Also, I could attempt to apply my theory specifically to the case of the United States and thus participate in the debate in this area.

Second, I plan to further explore the relationship between economic growth and rates of military spending. While some of my preliminary work (not presented here) provides some evidence that GDP growth leads to higher military spending, additional research is required to further investigate the robustness of this relationship. Ideally the

data used to measure military spending could be more compatible cross-nationally. While GDP data measured in purchasing power parity provides a more reliable means to make cross-national comparisons, the data used here to measure growth of military spending fall short of this goal. Future studies should attempt to reduce this problem, but this is no easy task.

Third, some advocates of World-System Theory, Lenin, or Hobson may claim that the tests conducted here do not provide a fair or complete test of their theses. They would be in part correct. While I again explored ways to specifically test these theories, the empirical results were inconsistent and focused exclusively on interstate war.[5] Additional work requires an examination of both interstate conflicts and extrastate conflicts (conflicts between states and non-state actors). Wars such as the Zulu war are not included here.

Fourth, I intend to expand the research begun here by further exploring the political capacity of states and their domestic politics in relation to economic growth, interstate conflict, and political instability. This could be accomplished by examining if states that face lower rates of economic growth or other domestic crises have a lower probability to initiate or participate in interstate conflicts than other states. Whereas advocates of diversionary conflict theory would expect that states with low economic growth or low political capacity (a weak state that cannot extract significant resources from society) should be more likely to engage in foreign conflicts, I expect the opposite. Also, such states should also face a higher threat of government collapse or over-throw.

Similarly, I have made several assumptions about how economic growth should affect the likelihood of domestic discord. Although I directly control for the effects of

[5] These results are available from the author by request.

political protest and rebellion on interstate conflict, I do not examine if low growth increases domestic conflict. This aspect of my theory is testable and I plan to do so in the future. Also, Mancur Olson (1963) theorized that rapid economic growth can be destabilizing to developing states by raising the expectations of their societies during times of growth, but that can turn to pessimism, violence, and rebellion if development stalls leaving expectations unfulfilled. My focus on interstate conflict likewise did not permit me to explore the theme of relative deprivation in this dissertation, and questions of this sort are of course left for future research.

Appendix

Entry Dates for Nation-Years Included in the Sample*

Western Hemisphere
Canada 1922
United States 1920
Argentina 1920
Brazil 1920
Chile 1920
Colombia 1925
Mexico 1920
Peru 1920
Venezuela 1920

Europe
Austria 1920
Belgium 1920
Denmark 1920
Finland 1921
France 1920
Germany 1920
Italy 1920
Netherlands 1920
Norway 1920
Sweden 1920
Switzerland 1920
United Kingdom 1920
Greece 1929
Ireland 1936
Portugal 1947

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* Entry year equals the first year for which GDP data are available.

Spain 1920
Bulgaria 1925
Czechoslovakia 1920
Hungary 1924
Poland 1929
Romania 1926
USSR 1928
Yugoslavia 1920

Asia
Japan 1920
Turkey 1926
Burma 1950
Bangladesh 1975
China 1929
India 1949
Indonesia 1951
Pakistan 1950
Philippines 1950
South Korea 1952
Taiwan 1952
Thailand 1950
Australia 1922
New Zealand 1949

Africa
Ivory Coast 1962
Egypt 1952
Ethiopia 1961
Ghana 1959
Kenya 1965
Morocco 1958
Nigeria 1964
South Africa 1952
Tanzania 1966
Zaire 1963

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