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Raising the Black Flag : state capacity, geography, international law, and the resurgence of maritime crime

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RAISING THE BLACK FLAG: STATE CAPACITY, GEOGRAPHY, INTERNATIONAL LAW,
AND THE RESURGENCE OF MARITIME CRIME

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Political Science

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I would like to dedicate this dissertation to my friends and family, to whom I am grateful for their endless patience and support.

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ABSTRACT

In my dissertation I seek to answer the questions regarding why some coastal populations turn to maritime crime in domestic and international waters, and others do not. In this work I advocate that generalizable geographic, political, and economic conditions can explain a significant portion of maritime crime. Broadly speaking these conditions are classified into geographic opportunity and a political and economic willingness to act.

Through a qualitative analysis of historical outbreaks of maritime crime and international law, as well as a quantitative analysis of acts of maritime crime spanning from 1991 through 2007, I find that a global level of analysis can provide significant insight into outbreaks of maritime crime. Poor economic conditions, low levels of bureaucratic state capacity, and low levels of coercive state capacity encourage outbreaks of maritime crime in domestic and international waters. Furthermore, this project finds that acts of maritime crime in domestic and international waters are impacted by these conditions in different ways. Declining economic conditions have a stronger impact on acts of maritime crime in domestic waters than on acts of maritime crime in international waters. In terms of coercive force, very few states possess a naval capability which can deter acts of maritime crime in international waters.

This work also finds that contrary to existing expectations maritime chokepoints are not consistent positive drivers of maritime crime. Rather chokepoints bordered by one to two states are negative drivers of maritime crime in domestic waters, and an insignificant driver of maritime crime in international waters. The only chokepoints which behave in a manner hypothesized by the existing literature are maritime chokepoints bordered in close proximity by the maritime claims of three or more states. These chokepoints with complex international borders create a legal environment which allows potential, and active, maritime criminals to obscure their port of origin, and evade pursuers as naval patrols are explicitly prohibited under the United Nations Convention on the Law of the Sea to pursue maritime criminals into the territorial waters of a second state.

CHAPTER 1: INTRODUCTION

Acts of maritime crime have challenged state authority and hindered interstate trade throughout history, and in some cases, threatened the survival of states as advanced as Rome, Pharaonic Egypt, and Mycenaean Greece (deSouza, 1999; Gosse, 1932; Harris, 1985). While outbreaks of maritime crime are spread across the historical record, a recurring theme is the ability of maritime crime to reemerge after it had appeared to be little more than a romanticized historical anomaly. The contemporary iterations of maritime crime, focused around the Straits of Malacca, Horn of Africa, and Gulf of Guinea, illustrate this point effectively. At first glance, conceptualizing piracy in the 21st Century can be difficult. We are centuries removed from the impacts of previous outbreaks of maritime crime. In terms of pop culture points of reference we are exposed to films that offer romanticized and frequently Robin Hood-esque depictions of maritime crime.

Despite the absence of large-scale outbreaks of maritime crime in the early and mid 20th Century, and a frequently romanticized image of historical maritime crime, it would be a mistake to discount the impact of current acts of maritime crime. Contemporary states rely heavily on maritime commerce for the production of a wide range of goods and the transportation of raw materials. This dependence on maritime trade makes states far removed from regions with maritime crime economically vulnerable. In spite of the global scale of maritime commerce, there are a limited number of viable maritime transport corridors that can efficiently bear the brunt of global commerce (Rodrigue, 2009). Over the past two decades, maritime transport routes have been faced with increasing rates of disruption. For example based on data collected by the International Maritime Organization (IMO) and the International Chamber of Commerce's International Maritime Bureau (ICC-IMB), in 1991 there were 51 reported incidents of maritime armed robbery; in 2007, 222 incidents of maritime armed robbery were reported. This change represents an increase of 335 percent. Further illustrating the dramatic increase in maritime crime, in 1991 a single incidence of maritime

piracy was reported. In 2007, 58 incidences of maritime piracy were reported, an increase of 5,700 percent.

These dramatically escalating rates of maritime crime are far from inconsequential. Based on recent data, the combined financial impact of acts of maritime armed robbery, which occurs within the domestic waters of a state, and maritime piracy, which occurs in international waters, ranges from 1.8 to 4 percent of the total economic value of interstate maritime commerce (Bowden, Hurlburt, Marts, Lee, & Aloyo, 2010; International Chamber of Shipping and the International Shipping Federation, 2010). In effect, maritime trade suffers from an unintentional ‘piracy tax’ similar in value to the sales tax of a mid-sized city in the United States. These additional costs have a notably larger impact on states which rely heavily on maritime commerce. For example, Japan and Germany would be impacted by the cost of maritime crime at a higher rate than Libya or North Korea based on their higher percentage of, and greater reliance on, interstate trade for access to raw materials, inexpensive labor, and the delivery of finished goods. Therefore when acts of maritime crime increase the cost of conducting maritime commerce they have a real-world impact on the cost of a wide range of goods, ranging from produce in the grocery store to raw materials, as well as manufactured goods such as your laptop and clothing made overseas.

Additional secondary threats which can dramatically escalate the financial impact of maritime crime include the potential collusion between terrorists or insurgents and maritime criminals, and the risk that a major environmental disaster could occur if a tanker carrying toxic chemicals were to sink or run aground closing a major maritime trade route and incurring sizable cleanup costs (BBC News, 2009; DuBois, 2011; Middleton, 2008; Pham, 2008; The Associated Press, 2010). Near disasters have already occurred, in 1992, the Valiant Carrier, while transporting furnace oil steamed on fire and out of control near the coast of Sumatra following a maritime attack that occurred south of Singapore (Murphy, 2009). Later in the same year, the Nagasaki Spirit was attacked by pirates, forcing the crew to abandon ship. The Nagasaki Spirit proceeded to steam ahead unmanned until it collided with the

Ocean Blessing, a container ship, and released 14,000 tons of crude oil (Stewart, 2006). In 2008, the Japanese oil tanker Takayama was attacked by pirates. Following the attack, it was discovered that the ship's fuel tanks had ruptured and were spilling into the sea (Lillkung, 2008). Fortunately the damage from these incidents was limited. However, they serve as case studies illustrating the vulnerable nature of global maritime commerce and the very real possibility that an act of maritime crime could lead to a major disaster, potentially closing major maritime trade routes.

The objective of this dissertation is to investigate recurring but largely untested observations regarding an array of geopolitical conditions and international law which have been associated with outbreaks of maritime crime in the historical record, as well as the contemporary maritime policy literature. This work substantively adds to the existing literature in several ways. First, it investigates proposed hypotheses using the largest dataset assembled to-date recording incidents of maritime crime. Second, by drawing on historical case studies it highlights recurring patterns that create an opportunity for coastal populations to adopt maritime raiding, as well as conditions that make them willing to do so. Third, by analyzing maritime armed robbery and maritime piracy as separate events, as defined in international law, this project finds that these separate acts of maritime crime are not driven by uniform conditions. Fourth, these findings provide actionable information for policymakers regarding the use of economic aid, coercive force and potential reforms to international law which can collectively assist in minimizing current outbreaks of maritime crime as well as reducing the severity of future outbreaks of maritime crime. The remainder of this chapter will introduce the reader to the contemporary definitions of maritime crime and their relationships to state sovereignty; provide a brief overview of the contemporary literature addressing maritime crime, frame outbreaks of maritime crime as a combination of both geopolitical opportunity (or necessary conditions), as well as willingness (or sufficient conditions) that encourage coastal populations to resort to maritime raiding. This introduction will then close with an overview of the structure of the following chapters.

1.1 Defining Maritime Piracy and Maritime Armed Robbery

Piracy is a more difficult concept to define than one might initially assume. In contemporary usage 'piracy' can be used to describe illegally downloading a movie, cracking the registration and distributing software, or failing to request permission before broadcasting a major sporting event in a public setting. Even when we restrict the concept of piracy to an exclusively maritime act, the definition of piracy has evolved and notably changed across time. For example an act of piracy as defined by Rome will not always meet the criteria for an act of piracy as defined by contemporary states. In short, piracy is a term that is frequently used but poorly defined. Chapter two provides a detailed summary of the evolution of piracy both in linguistic usage and as a legal concept focused on the motivations of maritime criminals and their locations in relation to international borders. However, a preliminary introduction to contemporary definitions of maritime crime is included to familiarize the reader with concepts that will be discussed at length in this dissertation.

When we restrict an act of piracy to a contemporary and exclusively maritime act there remain two competing definitions. The first is advanced by the International Chamber of Commerce. The second is based on the norms of international law which have culminated in the United Nations Convention on the Laws of the Sea (UNCLOS). The differences which exist between these two definitions place drastically different levels of importance on state sovereignty, as well as the locations of these acts of maritime crime in relation to maritime borders. The definition developed by the ICC-IMB recognizes piracy as:

An act of boarding or attempting to board any ship with the intent to commit theft or any other crime and with the intent or capability to use force in the furtherance of that act, excepting those crimes that are shown or strongly suspected to be politically motivated ("Piracy Annual Report," 2003).

This methodological definition is appealing from a common sense perspective, essentially arguing that theft is theft regardless of location. From the perspective of a sailor or ship owner one would likely perceive little difference between being robbed in international waters and being robbed in domestic

waters. However, this definition has an inherent weakness. It ignores the impact of international maritime borders and state sovereignty, both of which are topics of great concern for the governments of sovereign states.

While the ICC-IMB definition has received support from groups involved in maritime interstate trade, it runs contrary to centuries of maritime tradition and international norms. From the Bronze Age through the fall of Rome large areas of maritime space were generally claimed in their entirety by a lone power, and piracy was defined in a similar way to the ICC-IMB's contemporary definition as any theft at sea. This concept of a closed sea, or *mare clausum*, utilized by Rome, served as a model for defining maritime sovereignty and determining which state actors were responsible for controlling piracy until the 16th century CE. At that time, English trade had expanded in scale and included seas that England was not capable of patrolling regularly (Murphy, 2009). This situation was not unique to England. Unlike the trade routes of Rome, the sea lanes used for trade in the 16th century had become too vast for any one state to effectively police unilaterally. This created a unique problem for European states. Increasing levels of trade required freedom to navigate without fear of robbery, kidnapping, or death. However, how could this freedom of commerce be maintained when states lacked the resources to effectively close off and impose order on vast areas of the open sea?

The solution advanced by Hugo Grotius to this dilemma was to propose a fundamental restructuring of sovereign maritime claims. Rather than advocating for a *mare clausum*, Grotius advocated for the acceptance of a *mare liberum*, or open sea. This concept advocated dividing the sea into two sections. States would maintain sovereign control over a narrow belt of littoral water around the coast. Beyond these tertiary waters would be the 'high seas,' or international waters, where no lone state's jurisdiction would prevail, except for the flag state over its own ships. This division gained widespread support and was considered a mutually beneficial division. It divided the task of controlling maritime crime among multiple states. Within domestic waters, it was the responsibility of

the sovereign coastal state. In international waters, pirates were considered universal brigands and could be prosecuted and dealt with by any naval power (Banker, 2003; Konstam, 2008).

This division of maritime space into separate jurisdictions, which clearly identified the patrolling responsibilities of lone states versus the responsibility of the international seafaring community as a whole, has served as the basis for contemporary definitions of maritime crime for centuries, culminating in the UNCLOS. Granted, over the course of history the distance from shore separating domestic and international waters has shifted, and at times states have gone through periods when they have ignored, or actively encouraged maritime crime, but at no point from the 16th Century onward have any states seriously considered abolishing this division of maritime space between the sovereign maritime territory of a lone state and international maritime space. As maritime crime has been an issue historically addressed by states, this dissertation adopts definitions of maritime crime which have the greatest historical weight and are recognized in current international agreements between sovereign states.

The definition of maritime piracy adopted by the United Nations (U.N.) in the UNCLOS established the maritime boundaries of states at 12 nautical miles from shore. Beyond 12 nautical miles lies the high sea. Maritime piracy is clearly outlined in Article 101 of the 1982 UNCLOS:

Piracy consists of any of the following acts:

- (a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:
 - (i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;
 - (ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;
- (b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;
- (c) any act inciting or of intentionally facilitating an act described in subparagraph (a) or (b).

Because piracy is defined as an activity that can only occur on the high seas, it will also be necessary to clearly define maritime attacks that occur within the sovereign territory of a state. These attacks are considered to be acts of maritime armed robbery in international law. Maritime armed

robbery will be defined in keeping with the definition adopted by the U.N. in the Code of Practice for the Investigation of the Crimes of Piracy and Armed Robbery Against Ships (resolution A.1025 (26), annex, paragraph 2.2) as follows:

Armed robbery against ships means any of the following acts:
(a) any illegal act of violence or detention or any act of depredation, or threat thereof, other than an act of piracy, committed for private ends and directed against a ship or against persons or property on board such a ship, within a State's internal waters, archipelagic waters and territorial sea;
(b) any act of inciting or of intentionally facilitating an act described above.

Despite competition from the ICC-IMB in aspiring to redefine piracy as an act that occurs anywhere on the sea, it is unlikely that the UNCLOS signatory states will abandon these definitions in the near future. Fundamentally reimagining maritime borders could theoretically weaken the sovereign powers of a state within their internationally accepted borders. When proposals have been advanced which suggest altering naval borders or creating permanent international maritime corridors through littoral seas, there has been strong resistance from states. In 1971, Indonesia responded to the concept of internationalizing the Straits of Malacca by stating that Indonesia:

Cannot accept any idea that might lead to the internationalization of the strait, in the sense that among others the right to control and supervise the strait is taken away from the coastal states (Ong-Webb, 2006, p. 147).

A similar proposal was put forward in 1991 and met with a comparable level of hostility from both Malaysia and Indonesia (Huang, 2008). While these examples are limited to Southeast Asia, it seems unlikely that states such as China, the United States, or Russia will argue that the UNCLOS emphasis on state sovereignty in defining acts of maritime crime is irrelevant or should be ignored.

1.2 Overview of the Existing Literature

There is no denying the dramatic increase in maritime crime in the late 20th and early 21st centuries. However, there is an active debate regarding the nature of this resurgence. Are these

increases driven by generalizable global conditions? Or is the increase in maritime crime a collection of distinctly generated regional events which are occurring simultaneously?

Abhyankar (2006) was an early advocate of this regionally focused position. The author came to this conclusion after noting the differences in strategy that emerged based on geographic location. For example, “Asian” piracy was identified by activities which largely occur in domestic waters, focused on stealing cash and small items, and generally involved the use of minimum force. In contrast, “West African” and “South American” piracy occurred most frequently in harbor, had a strong predisposition towards violence, and involved stealing cash, cargo, ship equipment, and essentially anything which could be carried off and sold. In addition to regional variations, Abhyankar (2006) also classifies acts of maritime crime by their overall level of violence. For example, he noted that violent ship hijackings occurred at an increased frequency in the Straits of Malacca from 2002 forward.

This work is an important component of the existing literature. It created one of the first classification schemes which systematically categorized acts of maritime crime based on the tactics employed, goods targeted and geographic region in which the events occurred. However, there are weaknesses to these groupings. Abhyankar (2006) notes that, beginning in 2000, the level of violence employed by maritime pirates began to increase across the globe. If “Asian” piracy consistently involved a minimum use of force, why have violent ship hijackings occurred with greater frequency in Southeast Asia? If acts of maritime crime in this region of the world are no longer uniquely low in violence, are they substantially different from “West African” or “South American” piracy? Even if acts of maritime piracy manifests in different forms across the globe, the conditions that encourage them to develop and the potential that they share similar causes is not addressed in depth in this classification scheme.

Frecon (2006) conducted fieldwork on the Riau Islands located near Singapore. The objective of this project was to examine an environment firsthand where acts of maritime crime had become a

common occurrence and, in doing so, generate hypotheses that explain this behavior. Posing as a tourist, Frecon was able to gain the trust of residents engaged in raiding shipping lanes. He found that pirates in the region were predominantly young, single males who had few economic opportunities. The challenging nature of the economic environment forced many young people to turn to crime in order to earn a living for themselves, whether it was full-time or part-time to supplement low-paying conventional work. Common criminal undertakings included pickpocketing and maritime raiding for young men and prostitution for young women. The close proximity between the Riau Islands and maritime trade routes anchored in Singapore was also noted as contributing factors. The contrast between the economically successful and vibrant city-state of Singapore and the realities faced by those who chose to partake in maritime crime was considered a factor which highlighted the relative lack of economic opportunity and poverty in Indonesia.

While a stark existence located next to the lucrative trade routes of a successful neighbor may encourage acts of maritime crime, it is only a necessary condition in this case study. Frecon (2006) attributed the high concentration of maritime crime in this region to the complacency and inability of the national government to exercise control over the region. The local police often did not report instances of maritime crime to Jakarta, and in some cases had exacted “taxes” from small ships passing near the islands. Even if the local police were to decide to crack down on maritime crime in the region, they were considered to have insufficient operating funds and inferior equipment. When these conditions are combined with the geographic location of the Riau Islands, conditions which create a clear opportunity to resort to maritime crime come into focus. When the bleak economic conditions of Riau Islands are also considered a potential variable explaining the willingness of the seagoing residents of this island chain also arises.

Frecon’s case study is an interesting addition to the literature as it hypothesizes that a specific combination of poor economic conditions, geographic factors, and weak state capacity lead to maritime crime in the Riau Islands. While the exact conditions of the Riau Islands are difficult to

generalize to other locations around the globe, the overarching conditions which generate a sufficient opportunity and willingness to engage in criminal activity are generalizable. A coastal location located near frequently transited trade routes creates a clear opportunity to conduct an act of maritime crime. The willingness to engage in maritime crime is found in the low levels of state capacity and lack of economic opportunity in the region.

Young (2007) also focused on Southeast Asia and reached similar conclusions as Frecon (2006). Young considered the reemergence of acts of maritime crime in Southeast Asia as strongly related to declining economic conditions which impacted coastal populations with maritime experience, and the region's unique geography that lacks clear natural boundaries. With the exception of the ambiguous nature of Southeast Asia's geographic boundaries, these hypothesized causes of maritime crime are generalizable to other regions of the globe. Based on these observations we again see outbreaks of maritime crime in a region with sufficient opportunity and a clear willingness to act. Opportunity is present in abundance of maritime shipping. The poor economic conditions noted in the region serve as hypothetical incentive to exploit these conditions for private gain. Thus both opportunity and willingness are again suggested in the existing literature.

1.3 Theoretical Framework – Opportunity and Willingness

The existing literature has adopted varying levels of analysis when investigating maritime crime. They also share a considerable amount of common theoretical ground not only with each other but also the historical record. Frecon (2006) discusses two conditions that were both necessary and sufficient for the individuals and groups to rationally decide to undertake acts of maritime crime. The primary condition that creates an opportunity to commit an act of maritime crime is tied to geographic conditions and the prevalence of maritime trade routes in a region. If a coastal population is located near high volume maritime trade routes which pass through maritime chokepoints which concentrate and slow ships at sea, this creates a clear opportunity to engage in acts of maritime crime. Poor economic conditions are described as a catalyst which encourages individuals, or groups, existing in

sub-optimal economic conditions to decide to take part in maritime raiding. These acts serve as a way to substantively augment a coastal resident's income. These observations serve as the basis for examining maritime crime throughout this project.

Frecon (2006) is not alone in noting a link between poor economic conditions and a willingness to engage in criminal activity. While researching maritime crime in Southeast Asia Young (2007) argued that a regional economic downturn played a clear role in increasing levels of maritime crime in Southeast Asia. Martin Murphy also links economic reward as strongly influencing the willingness of coastal populations to engage in acts of robbery and theft at sea. Murphy hypothesized that the promise of reward, which also implies that the existing economic conditions are not rewarding enough, is likely a key factor encouraging maritime crime (Murphy, 2007, 2009). Throughout the major works addressing maritime crime poor economic conditions are a recurring theme in identifying regions where coastal populations with maritime experience are likely to engage in illegal, rather than legal maritime vocations.

The overarching themes of geographic opportunity and an economic willingness to engage in maritime crime is found throughout the historical literature as well. For example, from the 10th – 4th Centuries BCE, Greek city-states were located in close proximity to the trade routes of Phoenicia which spanned the Mediterranean. Hence, the Greeks of the day existed in an environment which provided a high opportunity to commit acts of maritime crime. Regular and frequent commercial trade routes transited near their shores. While these conditions were certainly necessary, they are not sufficient to explain the tolerance of piracy by Greek city-states that are found in the historical record. The incentive which generated a willingness in the Greek population to transition from potential to active piracy were the depressed economic conditions found on the southern end of the Peninsula of Haemus. In comparison to the success of the Phoenicians, the city-states of Greece which supported, or at least tolerated, piracy existed in a less than desirable economic state (Konstam, 2008).

When viewed from this theoretical perspective, the occurrence of maritime crime was the result of both sufficient opportunity and willingness. If Greece were not located near maritime trade routes, little opportunity would be present. If economic conditions in Greece were higher there would have been little economic incentive to engage in piracy.

Rome confronted piracy on a massive scale following the conclusion of the Third Punic War. Again this historical outbreak occurred due to a combination of sufficient geographic opportunity, paired with a strong economic incentive. While the populations of Carthage and Athens possessed an opportunity to engage in piracy prior to the Third Punic War what led to the transition of latent to active criminals was a dramatic decline in the economic conditions of Carthage and Athens following this conflict (Gosse, 1932). In the same manner, the Viking raids of the 8th Century have been linked to deteriorating environmental conditions which adversely impacted Scandinavian agriculture and trade (Bradford, 2007; Ferguson, 2009). The worsening of the standard of living in Scandinavia encouraged a populace with maritime experience to turn to aggressive maritime raiding as a way to augment poor economic conditions. In the case of the Vikings, these raids become so frequent over the course of time they receive a level of cultural justification and tolerance.

Perhaps the best known outbreak of maritime piracy ravaged maritime trade and coastal settlements throughout the Caribbean from the 15th-18th centuries. This 'golden age' of piracy came about as a result of regional conditions providing a high opportunity to commit illicit acts at sea paired with a strong financial incentive serving as motivation. In terms of geography the Caribbean provided access to regularly transited Spanish trading routes which passed through multiple chokepoints increasing the density of available targets. The motivation for exploiting these conditions was motivated by a sense of income inequality resulting from the massive wealth that sailed into Seville annually in the form of the Spanish treasure fleets.

As noted in Ronald (2007), Tudor England was a near pauper state in comparison to Spain. This sense of declining economic status in relative terms to Spain is considered a primary cause in

England's decision to commission privateers and tolerate piracy that targeted Spanish territories and shipping. Regardless of if we are discussing historical cases of piracy or hypothesized causes of maritime crime, a recurring expectation is that a maritime people who are located near regularly used trade routes and geographic features that slow or concentrate ships at sea have a clear opportunity to act. However, this opportunity alone is insufficient. The willingness of a population with maritime experience to engage in active robbery at sea has been repeatedly linked to poor economic conditions in both the contemporary maritime crime literature as well as the historical record.

The recurring assumptions found throughout the literature indicating that a coastal population requires both an opportunity to act, as well as an incentive to act, aligns the work of Most and Starr (1989). Their work proposes that the a generalizable opportunity and willingness framework can be used to conceptually organize and analyze disparate events at the global level. As acts of maritime crime occur throughout the globe in varying densities and they have predominantly been studied as distinct regional acts, Most and Starr's framework is quite applicable to the investigation of maritime crime. This framework will serve as the overarching theoretical approach for investigating the acts of robbery, theft, kidnapping, and general maritime mischief which have been associated with the modern incarnation of maritime crime.

1.4 Dissertation Structure

While the literature discussing maritime crime spans multiple academic and professional disciplines, there are common and recurring hypotheses regarding conditions that have encouraged outbreaks of maritime crime across history. In terms of necessary conditions a coastal location near maritime trade routes serves as a necessary, albeit not singularly sufficient condition, for maritime crime to become an option for coastal residents. Conditions that allow coastal populations to transition from latent to active maritime criminals have been hypothesized to include poor economic conditions and a dearth of administrative and coercive state capacity. Granted, there is insufficient data currently available to conduct a comprehensive analysis of maritime crime spanning the millennium and a half

that is documented in the historical literature. However, it is possible to empirically test these hypotheses at a global level by focusing on the most recent outbreaks of maritime crime, which emerged at the close of the 20th Century CE and has remained active through the early 21st Century CE. Investigating the validity of academic theories advanced to date will contribute to the ongoing academic debate surrounding maritime crime, as well as provide ‘real world’ data that can be used by contemporary policy makers interested in controlling or preventing outbreaks of maritime crime.

As noted recent quantitative analyses have focused on piracy as defined by the ICC-IMB rather than the definition of piracy adopted by the U.N. and IMO (Groot & Shortland, 2010; Hastings, 2009; Maximo Q. Mejia Jr., 2009). While this work has contributed to the developing literature addressing maritime crime, at the time of this project no research existed which analyzed maritime crime as it is currently defined by international law at a global level. Despite the claim that maritime crime in domestic waters is difficult to separate from maritime crime in international waters, international law considers these to be clearly distinct acts (Coggins, 2012; Hastings, 2009; United Nations, 1982). Utilizing the narrower definition of maritime piracy outlined in the UNCLOS and its emphasis on domestic and international waters will add a greater level of detail, and value to debates regarding the formation of policy directed at alleviating and eliminating maritime crime. The structure of this dissertation is outlined in the remainder of this chapter.

Chapter two sets out to provide a historical background outlining how concepts of maritime crime have gradually developed over the past millennium and a half. In doing so, this chapter illustrates that the definitions of maritime crime currently applied in international law carry a substantial amount of historical momentum and institutional acceptance among sovereign states. Hence these definitions of maritime crime are the most applicable for analyzing outbreaks of contemporary maritime crime, especially given the role that state sovereignty plays in classifying and pursuing individuals engaged in maritime crime.

Chapter three provides an analysis of historical outbreaks of maritime crime spanning the ancient, medieval, near modern and modern periods. This chapter notably expands on the themes introduced in section 1.3. In addition to reinforcing similar themes surrounding the emergence and demise of maritime crime it introduces the reader to additional historical outbreaks.

Chapter four serves to amalgamate the major themes from the previous chapters and outlines research hypotheses which will be subsequently tested in the dissertation. These theories span multiple literatures. In some cases they are drawn exclusively from a lone text which advances, but does not globally test a hypothesis. In other cases, the hypotheses represent a synthesis of the existing historical and contemporary security and policy literature focused on maritime crime.

Chapter five outlines the data collection procedures employed for the creation of two new global datasets addressing contemporary maritime crime. The incident dataset contains information from every reported case of maritime crime reported to the IMO and ICC-IMB between the years 1991 and 2007, provided that the location could be determined and mapped with a reasonable degree of accuracy. In total, the dataset contains 3,385 acts of attempted and successful maritime armed robbery occurring in the domestic waters of a state, 417 acts of successful and attempted maritime piracy occurring on the high seas, and a combined total of 3,797 acts of attempted and successful maritime crime in general.

The country year dataset tallies the number of incidences of maritime armed robbery, maritime piracy and overall maritime crime based out of each state from 1991 to 2007. Observations are included for every country with a coastline accessible to international maritime trade routes included in the Correlates of War Interstate War Data v.4.0 and Intrastate War Stata v.4.1. The dataset consists of unbalanced panel data, as a country is only included so long as it maintains a coastline with access to international trade routes. For example, Ethiopia has entries for 1991 and 1992 and is excluded after this period following Eritrea's formal separation from Ethiopia. East Timor was added to the dataset beginning in 2002, following its separation from Indonesia. Other examples of states

which do not contain data entries for the full range of years include: Croatia, Bosnia, Montenegro, Yugoslavia (Serbia), and Palau. In total, 147 coastal states are included with a total of 2,428 recorded country years.

Chapter six details the methods used to conduct the empirical analyses. This chapter contains two primary components. The first serves as a Geographic Information Systems (GIS) report regarding the creation and preliminary analyses of maps illustrating various aspects of maritime crime. The second is a more traditional statistical analysis describing the dependent and independent variables, a discussion of the estimation technique applied, as well as a description of the test results. In general, the findings indicate that maritime crime is generally driven by the hypothesized conditions relating to geographic location, poor economic conditions, and overall state weakness. While driven by similar forces, conditions encouraging the emergence of maritime armed robbery in domestic waters differs conditions causing maritime piracy in international waters.

Chapter seven serves as a capstone for this project. It reiterates the importance of state sovereignty and hence the definitions of maritime crime employed in this project. It also includes a summary discussion of the research results. The chapter then transitions from the descriptive analyses of existing cases to prescriptive measures that can be applied by current and future policymakers. Finally, it notes the limitations of this research project, as well as opportunities for future work.

CHAPTER 2: THE EVOLVING DEFINITIONS OF PIRACY AND MARITIME SOVEREIGNTY

2.1 Introduction

It was probably not long after humanity devised the technological capacity to build seagoing vessels that the first instance of piracy likely occurred. By the time that humans were recording incidences of piracy, it is obvious from the records that these were events, though unwelcome, which were not unfamiliar to the people of antiquity. Thus, the resurgence of maritime crime in the late 20th and early 21st centuries CE is hardly a new or unique phenomenon. Outbreaks of maritime crime have plagued states across time as diverse as Pharonic Egypt, Greek city-states, Rome, England, France, Spain, the United States, China, and Singapore. While piracy may seem like a simple act to conceptualize and define, the term “piracy” has come to be used to describe activities as diverse as downloading music from a peer-to-peer network, or copying a DVD for a personal archive or sale on the black market. This makes piracy both a term that most of the populace is familiar with and yet one that can be used to describe a wide array of actions that have nothing to do with maritime commerce or seaborne vessels.

The objective of this chapter is to focus strictly on maritime crime and analyze how the concept of maritime piracy has evolved over time, from ancient states through to the modern era, culminating in the establishment of the current definitions of maritime piracy and maritime armed robbery adopted by the U.N. Discussing the evolution of maritime crime as a concept is a necessary prerequisite to this project as it illustrates that maritime piracy has not remained a static concept. For example, the term does not refer to the same actions in the epic poems of Greece as it does in modern international law. It has undergone at least a millennium and a half of gradual change.

Without an understanding of the evolution of the meaning of piracy anchored in historical texts and legal documents, the modern division of maritime crime into the separate acts of maritime armed robbery and maritime piracy based on international maritime borders can appear arbitrary. In

fact, the current focus on state sovereignty and the division of the sea into domestic and international zones are useful and specific. They are the result of centuries of states gradually adjusting international norms in an attempt to share the burden of identifying and reducing one of humanity's oldest crimes.

2.2 Defining Piracy in the Ancient World

Piracy has been a documented problem confronting states as far back in history as the Egypt of Ramses the III in the 14th century BCE. However, the Greeks are most frequently associated with developing concepts and terms to identify an act of piracy, and these served as the genesis for succeeding Latin terms as well as the contemporary English term 'pirate'. The first term used by the Greeks in reference to piracy was *leistes*. The origin of this term can be traced back to classical Greece between the years 500-330 BCE. *Leistes* is derived from the root *leis*, which means 'booty' or 'plunder'. Therefore *leistes* identifies someone who is engaged in either armed robbery or plundering. The common English interpretation for this term is either 'bandit' or 'pirate' (deSouza, 1999). A limitation to the term *leistes* is that it did not differentiate between land based banditry and maritime crime. Instead, a qualifying term could be placed in front of *leistes* to denote the location of the activity, thus allowing authors the ability to separate a highwayman from someone engaged in maritime theft or kidnapping, which are generally accepted as the acts of a pirate (Powell, 1997).

A second term used by the Greeks to identify an act of piracy was *peirates*. At first glance, a casual reader might believe that *peirates* clearly relates to maritime activity as it bears a striking resemblance to the contemporary English term pirate. Despite the similarity between *peirates* and pirate, classical Greek authors did not use *peirates* to clearly identify seaborne crime from banditry on land. Rather, *peirates* was a synonym for *leistes*. When *peirates* was used to identify seaborne crime, it required a qualifying phrase in the same manner as *leistes*. (deSouza, 1999).

There was a lone word developed by classical Greek culture which was used exclusively for seaborne piracy, and that was *katapontistes* (Powell, 1997). *Katapontistes* translates as 'one who throws into the sea'. While *katapontistes* is the closest in meaning to the modern conception of

maritime piracy, the term was used infrequently by classical authors (deSouza, 1999). Philip deSouza (1999) theorizes that this is because *katapontistes* is a long and relatively inelegant word when compared to *leistes* or *peirates*. Therefore, it was too cumbersome for composing poetry intended to recount historical events. One of the few historians who consistently used *katapontistes* to denote individuals who always launched attacks from sea was Casius Dio in his discussions of the early political career of Pompey and his campaign against Mediterranean piracy.

The lack of specificity provided in either *leistes* or *peirates*, combined with the sporadic usage of *katapontistes*, suggests that the ancient Greeks did not typically view the term piracy in the same maritime manner as the contemporary world. However, this ambiguity was not unique to the Greeks. Latin also utilized terms that could be, but were not always, used to describe maritime piracy. The two primary words utilized were *praedo* and *pirata*. The usage of *praedo* is similar to the Greek *leistes* as it can be used to describe land based banditry or seaborne piracy based on the presence, or lack thereof, of a qualifying phrase such as *maritimos* to indicate that the act did not occur on land (deSouza, 1999). The second term *pirata*, which was developed later in history, came to be definitively associated with seaborne piracy and not land based banditry. *Pirata* is derived from the term *transire*. When used in the form *transeundo mare*, *transire* referred to one who ‘roves upon the sea’. *Pirata* developed as a phrase that contains the maritime usage of *transire* and refers to one who attacks or attempts to attack. When the base of the word sea roving is combined with the usage of the word to attempt or successfully attack, the result is a phrase that clearly and consistently differentiates seaborne attacks from land based banditry (Dubner, 1980; Young, 2007).

In addition to offering a clear definition of piracy as robbery at sea and serving as the basis for the English term *pirate*, the usage of *pirata* in Roman philosophy began to establish piracy as not only a maritime act but one clearly occurring outside of the approval of a state. Dubner (1980) emphasized Cicero’s quote, “*pirata non est ex perduellium numero definitus, sed communis hostis omnium.*” Dubner translates this quote as, a pirate is not included in the list of lawful enemies, but is the common

enemy of all; among pirates and other men there ought to be neither mutual faith nor binding oath. This places all acts of maritime crime occurring at this point in history under the blanket classification of 'pirate'. Individuals who chose to take part in these acts were not only at odds with the state and merchants but the entire civilized world.

Contrary to the modern division of maritime space into domestic and international zones, Roman law emphasized that the sea was a common space, and it was the responsibility of the state to assume jurisdiction and provide for protection from foreign attack and obstacles to commerce. As Roman territory expanded on land around the Mediterranean, so did its maritime claims. At the maximum extent of Rome, the entire Mediterranean fell under Roman legal jurisdiction and came to be viewed as a closed sea or *mare clausum* (Society for Underwater Technology, 1986). As Rome became the dominant political power in the region, this meant that the Roman state was solely responsible for ensuring that Mediterranean trade routes remained open and free of harassment from pirates as there were no other notable maritime threats to commercial trade.

When the Roman perspective of piracy is contrasted with the Greek view, there are clear distinctions. For the Greeks, maritime piracy was predominantly another form of theft that was not substantially different from any other form of robbery. While this was a position initially shared by the Romans, piracy came to be viewed as clearly distinct from banditry on land. As maritime pirates became the only remaining maritime threat to Rome's maritime trade, pirates were classified as and treated in the same manner as Rome dealt with former state challengers such as Carthage. They were a clear threat to the interests of Rome. This conception that piracy was a crime unique to maritime spaces and occurring outside of the bounds of state approval or societal acceptance remained a central component to defining piracy for nearly a thousand years following the collapse of the Western Roman Empire.

2.3 Defining Piracy in the Medieval and Near Modern Periods

The concept of the closed sea, or *mare clausum*, utilized by Rome served as a model for defining maritime sovereignty and determining which state actors were responsible for controlling piracy until the 16th century CE. At this time, English trade had expanded in scale and surpassed the seas that England was capable of patrolling regularly (Murphy, 2009). This situation was not unique to England, unlike the trade routes of Rome, the sea lanes utilized for trade in the 16th century had now become too vast for any one state to unilaterally police. This created a unique problem for European states. Increasing levels of trade required freedom to navigate without fear of robbery, kidnapping, or death. However, how could this freedom of commerce be maintained when states lacked the resources to effectively close off and impose order on vast areas of the open sea?

Hugo Grotius attempted to answer this question when he proposed a fundamental restructuring of the sovereign claims of maritime territory. Rather than advocating for a *mare clausum*, Grotius advocated for the acceptance of a *mare liberum*, or open sea. This concept advocated dividing the sea into two sections. States would maintain sovereign control over a narrow belt of littoral water around the coast. Beyond these tertiary waters would lay the high sea, or international waters, where no lone state's jurisdiction would prevail, except for the flag state over its own ships.

This division gained widespread support and was considered a mutually beneficial division. It divided the task of controlling piracy among multiple states: within domestic waters, it was the responsibility of a sovereign state; in international waters, any state could detain and prosecute pirates in accordance with their domestic laws. In international waters, pirates were considered *ex hosti humani generis*, or the enemies of mankind, a continuation of the Roman conception of pirates as a nefarious force operating outside of civilized society (Murphy, 2009). In 1536, the government of Henry VIII reinforced this view of piracy when it declared that piracy encompassed any form of treason, felony, robbery, or murder committed on the high seas for private motives and without the authority of a sovereign (Banker, 2003; Konstam, 2008). The usage of the high seas is interesting, as it

suggests that theft which occurred within territorial waters may not be considered piracy. This wording may have, in some part, served as the genesis of the modern division of maritime crime into maritime piracy occurring on the high seas and maritime armed robbery occurring within domestic waters.

2.3.1 The Emergence of Exclusions – Subcontracting the Ability to Wage War

Over the span of a millennium and a half, the concept of piracy underwent a gradual evolution. Piracy originated as a subcategory of banditry plaguing the Greek world, became associated with a clear link to the seaborne crime occurring outside of the permission of the state or civilized society by the Romans, and later served as one of the driving forces for establishing domestic and international maritime spaces during the 16th century. However, rather than providing clarity regarding how piracy should be addressed by the international community as a whole, the states of the 16th century quickly created legal exceptions to what behavior did or did not constitute an act of piracy. These technicalities led to the creation of ‘privateers’, ‘buccaneers’, and ‘corsairs’ (Konstam, 2008). While these terms have been frequently used as synonyms in literature and film for a pirate or act of piracy in a general sense, they possessed distinct definitions which were linked to a sovereign state which had temporarily granted private groups the right to wage public war on the behalf of the state. The official sanction of a state arguably made an act of privateering legal, whereas piracy was still considered an illegal act committed for private benefit that occurred outside of the permission of states and civilized society.

A privateer operated with the permission of a sovereign state that granted the privateer permission to carry out attacks on enemy ships at sea during periods of wartime. The privateer was allowed to profit from goods seized and provided a portion of the earned income to the state. The term corsair is a synonym for privateer. While corsairs are commonly associated with the Mediterranean, they were originally privateers recruited by the government of France who were then granted a *marque de course*. Privateers and corsairs served as a cost effective subcontracted navy for states that lacked a

sufficient level of formal naval power to meet their wartime objectives (Konstam, 2008; Ronald, 2007). Unlike a privateer or corsair, the term buccaneer was used to denote an individual or crew with a wider range of operational latitude than that of the privateer. Rather than limiting potential targets to enemy vessels during a time of war, buccaneers were granted permission to raid coastal cities as well as ships at sea (Konstam, 2008). At first this distinction may seem trivial. However, at least on paper, it is the difference between retaining a freelance navy and a freelance corps of marines.

Despite a clear distinction in sanctioned activities, differentiating the term privateer and buccaneer frequently becomes murky in literature and the historical record, as there are examples of buccaneers described as privateers and vice versa (Exquemelin, 2000 [1684]). The more important distinction to draw from these classifications of maritime activity is the central role that state permission played. Both privateers and buccaneers were granted the right to wage maritime war on behalf of a sovereign state. This is a distinction from the individuals and crews which remained classified as pirates. A true act of piracy involved a crew and vessel beholden to no government and potentially hostile towards all. They would attack any vessel they had the means to intercept that was likely to provide a financial windfall for the crew (Konstam, 2008). This makes piracy a crime that is motivated by private means and distinct from the actions of privateers and buccaneers, which are arguably acting in the interest of the perceived greater good of the citizens of a state.

Regardless of the efforts of states to legally separate piracy from privateering and buccaneering, the term piracy began to occupy a grey area in the international system with little tangible meaning. This created a complicated maritime legal environment where the English considered a privateer such as Sir Francis Drake as a national hero serving his sovereign while the Spanish government considered him to be an outright pirate breaking the laws of civilized society. The legal qualifiers introduced during this time did little to help identify and limit maritime crime. Arguably, they actively rolled back the attempts made in the first half of the 16th century to clearly define piracy and establish a shared international standard for deterring and prosecuting pirates.

2.3.2 Back to Basics: The End of Legal Exceptions to Piracy

The tolerance of privateers and buccaneers offered a clear benefit to both the governments of England and France during the mid and late 16th century. This, in part, explains the willingness of these states to break with the recently established international standards regarding piracy. Privateers generated income for the state and allowed naval power to be quickly augmented without increasing the number of ships, personnel, or the budget of a national navy. Essentially, privateers and buccaneers were a form of government contractor for the Tudor period that operated on commission. However, by the 19th century the dominant states of Western Europe could afford larger navies and saw less need to subcontract the ability to wage war to private naval captains and squadrons. In 1853, the United Kingdom of Great Britain and Ireland altered their definition of piracy as follows:

All persons (whatsoever their origin, or under whatsoever flag or papers they may sail, or to whomsoever their ship may legally belong) will be pirates by the Law of Nations who are guilty of forcible robberies, or captures of ships or goods upon the High Seas without any lawful commission or authority. They and their vessels and cargos may be captured by officers and men in the public service of any nations, and may be tried in the Courts of any nations. For the purpose of jurisdiction in capturing, or trying them, it is of no consequence where, or upon whom, they have committed their crimes, for piracy under the Law of Nations is an offense against all nations, and punishable by all nations (A. P. Rubin, 1998, pp. 91-95).

This revision removes privateering and buccaneering as legal activities as it disregards letters of marque, or ‘papers’, as a manner to avoid being labeled a pirate. While wording is still included that references the, “lawful commission or authority”, this is used in references to the formal navies of states (A. P. Rubin, 1998). It also reinforces the concept of the *mare liberum* introduced by Hugo Grotius with the emphasis it places on the high seas. This revised definition of piracy was a return to the original intent of the Offenses at Sea Act of 1536. It identified piracy as an activity generally occurring in international waters and outside of the approval or sanction of a sovereign state or society in general.

This concept of piracy for the United Kingdom was later expanded to include states that did not respect the freedom of movement of vessels on the high seas, such as the states of the Barbary Coast (A. P. Rubin, 1998). The United States adopted a similar definition of piracy in the 19th century. From 1819 forward, U.S. law has defined piracy based on the law of nations. What this has come to mean in practical terms is that piracy requires a robbery or assault on the high sea (Mason, 2010). This central component for identifying piracy was then reinforced in The Piracy Act of May 15, 1820 (United States Congress, 1963). The British and American definitions of piracy are useful to illustrate how relatively modern definitions of piracy reinforced that piracy was no longer viewed in the same manner as the land based banditry of Bronze Age Greece. It had clearly come into its own as a distinct legally recognized maritime crime occurring in a specific area of maritime space.

The British and American definitions of piracy were hardly the only domestic efforts to criminalize robbery at sea during this time. Given the widespread acceptance of dividing maritime territory into domestic waters and international waters during the 1500s, it is somewhat surprising that it took nearly 300 years before the international community made a collective effort to codify piracy. While the primary objective of the 1856 Treaty of Paris was devoted to ending the Crimean War, it also possessed a secondary objective of abolishing privateering and removing the legal protection that a letter of marque had previously provided to the crew of a privateering ship (Keyuan, 2009).

One of the recurring arguments for banning privateers was linked to the difference in naval technology available to the privateering vessels compared to merchant vessels of the time. The Earl of Clarendon argued in front of the British Parliament that:

When the merchantman and the privateer both depended upon the wind for their power of motion they were comparatively upon a footing of equality, find, if the former were the faster sailer, she could escape from her enemy. But the greater part of our commerce, being still carried on in sailing vessels, Would be absolutely at the mercy of a privateer moved by steam, however small; and I think, therefore, that the abolition of privateering will be of the utmost advantage to a commercial community like that of England ("Debate: International Maritime Law - The Treaty of Paris," 1856).

This is an interesting statement because it indicates that outlawing privateering was influenced primarily by economic concerns. During the mid-1800s, privateers were considered to have such a pronounced technological edge over the merchant ships they might prey upon that privateering possessed the latent ability to destabilize interstate trade in general, rather than temporarily impede the trade of a specific state. To this end, no trading state could truly benefit by commissioning privateers in 1855 in the same manner they had in 1555.

2.4 Defining Maritime Piracy (and Maritime Armed Robbery) in the Modern World

When maritime piracy is considered in a broad historical context, it is a concept which gradually emerged as a distinct act occurring at sea. Following its recognition as a uniquely maritime activity, states attempted to find mutually beneficial arrangements to control what was arguably a common threat. Debates regarding piracy during the 20th and 21st centuries CE have continued to focus on how maritime crime should be defined and controlled. Much like the states of Europe during the 16th century CE, there is no lone dominant political or military power which possesses the capability to effectively patrol existing international maritime trade routes in their entirety. Just as the previous discussion of piracy focused on classical societies and explained how the concept of piracy developed, this section will focus on how modern international law has gradually built upon the foundations established by Rome and the states of the Middle Ages, specifically the importance of state sovereignty and the role it plays in identifying acts of maritime crime.

2.4.1 League of Nations: Attempting to Establish International Standards

The common usage of ‘maritime piracy’ during the 20th century identified piracy as a universal threat occurring outside the sanction and territorial boundaries of a state. However, the hodgepodge of varying domestic laws used to identify specific acts of piracy and how the crime should be controlled, reduced, or punished has varied widely (Murphy, 2009). Rather than providing clarity of purpose that would allow all states to act decisively to counter maritime piracy, Grotius’s divided seas, which remained widely accepted by the international community, had become a source

of jurisdictional confusion. This point is best illustrated in the Report of the Sub Committee of the League of Nations Committee of Experts for the Progressive Codification of International Law (1927):

The confusion of opinion on the subject of piracy is due to failure to draw a clear distinction between piracy in the strict sense of the word, as defined by international law, and piracy coming under the private laws and treaties of individual states. In our view, therefore, it would be preferable for the Committee to adopt a clear definition of piracy applicable to all states in virtue of international law in general. To this end, the Committee of Experts circulated a draft of provisions for the suppression of piracy that had been written the previous year along with a questionnaire of topics that the League of Nations should consider addressing at the international level ("Report to the Council of the League of Nations on the Questions which Appear Ripe for International Regulation," 1927).

The Draft Provisions for the Suppression of Piracy sought to establish a unified definition of piracy to which the international community as a whole would conform. It outlined eight articles that identified piracy as motivated by private means, occurring only on the high seas, voided any protection that flying a state flag might provide, granted every warship the right and responsibility to investigate possible pirate ships, and the right to stop and capture any vessel conducting acts of piracy on the high seas. Article 6 of the draft clearly laid out how the search and seizure of ships should be conducted. If an investigated ship turns out to be conducting legitimate business, it would be entitled to reparation or an indemnity. If an investigated ship was actually conducting piracy, the commander of the warship could proceed to try the pirates, if the arrest occurred on the high sea, or deliver the pirates to competent authorities ("Report to the Council of the League of Nations on the Questions which Appear Ripe for International Regulation," 1927). While restricting piracy to the high seas, the draft would have provided a unified standard operating procedure clarifying procedural and jurisdictional issues.

Unfortunately for the League of Nations, the member states did not consider maritime piracy an issue ripe for international regulation. While 18 of the 29 surveyed states recognized the possibility of establishing an international standard for maritime piracy, they did so only tentatively. While the British Empire replied that "it might be desirable to attempt" to establish standards, Japan and Greece

expressed serious reservations about the draft. The United States, France, Brazil, and Germany did not consider codifying piracy at the international level a pressing issue ("Report to the Council of the League of Nations on the Questions which Appear Ripe for International Regulation," 1927).

The few states that expressed clear support for codifying piracy included Bulgaria, Cuba, Poland, and El Salvador. Although the draft failed to muster enough support to lead to a formal convention on maritime rights and piracy, it did provide an interesting sounding board. For example, the governments of Portugal and Romania expressed concerns regarding the Draft Provisions for the Suppression of Piracy. Both states viewed the provisions as too limited ("Report to the Council of the League of Nations on the Questions which Appear Ripe for International Regulation," 1927). In expressing these reservations, both governments raised issues that currently complicate controlling maritime piracy and maritime armed robbery in East Africa and Southeast Asia.

The Portuguese government responded to the definition of piracy proposed by the League of Nations with skepticism. Identifying piracy in international law as occurring only on the high seas was considered to overlook the broader historical trend of maritime crime. This position was emphasized in a rebuttal that stressed that, during both the Classical Period and Middle Ages, the majority of documented pirate attacks occurred near port towns and inhabited coastlines, not on the open sea. Therefore, Portugal did not see any great difference in offenses committed in territorial or international waters. The Portuguese government also opposed the idea of providing reparations to vessels that were searched under suspicion of conducting acts of piracy. This procedure was considered detrimental to searching potential pirate vessels as it would require the captain of a warship to possess a high degree of certainty when detaining a vessel suspected of piracy. Otherwise, the captain would risk committing his state to providing financial compensation to detained vessels not engaged in piracy. ("Report to the Council of the League of Nations on the Questions which Appear Ripe for International Regulation," 1927).

When compared to the League of Nations definition of piracy, the Portuguese favored conducting anti-piracy patrols in the same manner as a traditional military patrol: “Just as in a time of war, a belligerent searches a neutral vessel, and, that vessel’s neutrality having been established, no reparation is due to it on account of the delay in the voyage, here also it would seem that the delay of the ship would be sufficiently compensated for by the sense of security afforded by the navy’s vigilance.” (“Report to the Council of the League of Nations on the Questions which Appear Ripe for International Regulation,” 1927)

Romania, with its only coastline bordering the Black Sea, has never been considered at the forefront of crafting global maritime piracy. That position fell to states such as the United Kingdom, Germany, the United States, and Japan in the early 20th century. Nevertheless, Romania offered an interesting series of counter proposals to the League of Nations which would have established a very aggressive anti-piracy platform for the international community. Like Portugal, the Romanian government viewed the line dividing littoral seas from the high seas as a clear problem when attempting to control maritime piracy. To address this issue, they proposed an additional article which would grant the pursuit of pirates begun on the high sea into the territorial waters of a state if the coastal state was unable to continue the pursuit itself. When these pursuits crossed into domestic waters, the detained pirates would then be handed over to the authorities of the state which claimed the littoral waters (“Report to the Council of the League of Nations on the Questions which Appear Ripe for International Regulation,” 1927).

Neither the suggestions introduced by the governments of Portugal or Romania played a definitive role in shaping the modern definition of piracy. It is interesting to consider these proposed modifications from the perspective of piracy in the 21st century. The idea of a divided sea was intended to improve the ability of states to share the burden of controlling maritime piracy and created the image of maritime piracy as a common threat to all states. However, the concerns raised by the Portuguese and Romanian government illustrate that the implementation of a divided sea could serve,

at best, as a minor obstacle to controlling piracy due to the wide myriad of domestic legal definitions and concerns regarding the sovereignty of littoral seas. At worst, the division of the sea into an international and state controlled spheres could render it nearly impossible to control piracy as the division of international and domestic waters would become a de facto fence limiting the pursuit of pirates and range anti-piracy patrols exclusively to international waters. In addition to limiting pursuit of pirates, this division of responsibility into a domestic and international realm potentially allows states to ignore acts of piracy that are committed within their territorial waters. While these concerns did not appear to be an imminent concern to the major powers in the early 20th century when incidences of maritime crime were rare, they accurately describe the jurisdictional difficulties that confront states in the 21st century in areas where the volume of maritime piracy and maritime armed robbery has dramatically increased since the 1990s, such as the Straits of Malacca and Bab el Mandeb.

2.4.2 The Harvard Draft: The Continued Pursuit of International Standards

The inability of the League of Nations to successfully craft an internationally accepted definition of piracy in international waters, address piracy's as of yet unnamed but implied counterpart in domestic waters, or outline standard operating procedures for controlling piracy in general did not lead to the abandonment of these topics. In 1932, the Harvard School of Law assembled a collection of scholars with the objective of creating a provisional draft on maritime piracy which could serve as the basis for future international conventions focused on maritime piracy. While piracy at sea was rare in the 1920s and 1930s, the Draft Convention on Piracy with Comments, frequently referenced as the "Harvard Draft," intended to pick up where the League of Nations had left off. The Harvard Draft consisted of 19 articles that attempted to update and clarify the definition of piracy, establish an agreed upon standard operating procedure for the pursuit of pirate ships, and address liability for damages caused during a pursuit ("Harvard Research in International Law: Draft Convention on Piracy with Comments," 1932).

Similar to the League of Nations Draft Provisions for the Suppression of Piracy, the Harvard Draft defined piracy as consisting of a broad range of activities. Article 3 defined piracy as “any act of violence or of depredation committed with intent to rob, rape, wound, enslave, imprison, or kill a person with intent to steal or destroy property, for private ends.” In addition to reasserting that piracy is not a state sanctioned activity, the draft also defines how to identify a pirate ship and pirates. Any seagoing vessel involved in any of the activities outlined in Article 3 would be defined as a pirate ship. Any individual who voluntarily participated in the operation of such a vessel and had knowledge of its activities was to be classified as a pirate ("Harvard Research in International Law: Draft Convention on Piracy with Comments," 1932). The basic activities that constitute maritime piracy and how a pirate vessel and crew should be adopted remained unchanged from the League of Nation's Draft Provisions for the Suppression of Piracy, with the exception of the requirement that piracy could only occur on the high seas.

Unlike the League of Nations Draft Provisions for the Suppression of Piracy, the Harvard Draft proposed a more aggressive stance for pursuing and detaining pirate vessels. Similar to the counterproposals put forward by the governments of Portugal and Romania, the Harvard Draft proposed that the pursuit of a pirate vessel begun in international waters could be continued into the domestic waters of a state. Additionally, foreign naval vessels in international waters should be prepared to assist in the pursuit of pirate vessels in domestic waters. Granted, this would have required a request for assistance. In the event that the pursuit of a pirate into domestic waters resulted in damage to private property, the pursuing vessel and the state whose flag it flies would be considered liable and responsible for providing compensation ("Harvard Research in International Law: Draft Convention on Piracy with Comments," 1932). While these proposals did not negate the importance of state sovereignty, they attempted to establish agreed upon procedures which would have greatly enhanced the ability of pirate vessels to be pursued across maritime borders.

2.4.3 The United Nations: Consensus and Progress

Being that neither proposal was directly implemented, it would be easy to dismiss the efforts to codify piracy made by the League of Nations and Harvard School of Law. However, this would be a mistake as both drafts served as a starting point for the International Law Commission convened by the United Nations in 1949 to propose a comprehensive maritime law (Dubner, 1980). Nine years after the process had been initiated the United Nations adopted the High Seas Convention (HSC) in 1958. The HSC contained 10 articles that were modified versions of articles proposed by the League of Nations and Harvard School of Law. The HSC defined piracy as any illegal acts of violent detention or any act of depredation committed for private ends by the crew or the passengers of a private ship against another ship or against persons or property on board such ship (United Nations, 1958). Again, the modern conception of piracy required it to be an act conducted by private actors for personal gain and located on the high seas rather than in the littoral seas of a sovereign state.

Perhaps the greatest weakness of the HSC is that it did not include any of the proposals advanced by the Harvard Draft or revisions to the League of Nations draft that would have allowed maritime borders to be crossed so long as a vessel suspected of committing acts of piracy was being pursued. For example, Article 23 of the HSC clearly states that “the right of hot pursuit ceases as soon as the ship pursued enters the territorial sea of its own country, or of a third state.” The implications of this decision were mixed. On one hand, it clearly reinforced state sovereignty over territorial waters. This legal position had been advocated since the 16th century. On the other hand, the HSC treated international maritime borders as nearly impregnable walls. This confirmed the worst fears of the Portuguese and Romanian critics of the original League of Nations draft. Rather than ensuring that every state has an active interest in combatting pirates as *hosti humani generis*, the HSC ensured that the maritime borders of many states became a way for maritime pirates to evade capture.

The implications of the HSC are central when considering modern maritime crime as they were incorporated verbatim into the 1982 United Nations Convention of the Law of the Sea (UNCLOS). In Article 101, the UNCLOS defined piracy as:

Any illegal acts of violence or detention, or any act of depredation committed for private ends by the crew or the passengers of a private ship, or a private aircraft and directed: on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft; against a ship or aircraft, person or property in a place outside the jurisdiction of any state(United Nations, 1982).

In addition to inheriting the HSC's limitations regarding the maritime pursuit of pirates, the UNCLOS is considered limited in two additional ways. First, for an act to be defined as piracy it must occur on the high seas. Based on the HSC, the high seas begin where the boundaries of the territorial sea end. The extent of the territorial sea was established to be within 12 nautical miles of the shoreline of a state (United Nations, 1958). Therefore, any form of robbery or murder at sea within 12 nautical miles of the shoreline of any state is not recognized as piracy. Second, for an act of piracy to be committed it must be motivated by "private ends."

An important clarifying point not addressed in the UNCLOS is how to parse a private motivation from a public one. As previously discussed, privateering, buccaneering, and all forms of state sanctioned or "public piracy" were banned following the Treaty of Paris in 1856. Nevertheless, the wording that identified piracy as a private act, distinct from a public act, continued to be used despite the legal ambiguities that this created.

An example of the difficulty of continuing to include wording distinguishing between public and private motivations was illustrated in 1961 when the Portuguese cruise ship Santa Maria was boarded in the Caribbean Sea. This action would appear to fall squarely under the definition of piracy established with the HSC in 1958, as an illegal act was committed that involved the detention of the passengers and crew of the vessel while it was located on the high seas. While the U.S. Navy was searching for the cruise ship, a legal team at the Department of State investigated the circumstances

surrounding the seizure of the vessel. Before the ship was located, it had been determined by the legal team that no act of piracy had taken place.

This decision was based on the discovery that the men who boarded the ship were Portuguese revolutionaries who were making a political statement by seizing the ship. Thus, they were considered to be committing an act that was not inherently motivated by private gain (Gottschalk, Flanagan, Kahn, & LaRochelle, 2000). This case serves as a prime example that illustrates how the concept of public motivation has changed in the world of maritime theft and detention. Rather than indicating the approval of a sovereign authority, such as when Elizabeth I commissioned Sir Francis Drake to conduct naval reconnaissance and harass the Spanish on behalf of England, public motivations have transformed into the intentions of a personal action conducted outside of state approval (Pringle, 1953; Ronald, 2007). This also adds an additional complicating layer to maritime crime, as it is unclear what criminal activity is occurring when it is not motivated by private means.

2.4.4 The ICC-IMB Definition & Existing Research

Despite the concerns surrounding the UNCLOS definition of maritime piracy regarding the motivation of maritime marauders, the divisive nature of maritime borders, and restricting piracy as a crime that can only occur on the high seas, the U.N. definition is the generally accepted definition of maritime piracy within the realm of international law. That being said, a notable portion of recent scholarship examining maritime piracy have elected to ignore this definition and placed maritime piracy and maritime armed robbery under a single umbrella. There are several justifications for this methodological decision. It has been argued that maritime piracy is a transnational crime that ignores national borders and the UNCLOS attempted to define maritime piracy, but failed at its task. Hence, the UNCLOS division of maritime crime may be an inappropriate definition for contemporary research (Murphy, 2009). In lieu of UNCLOS definition and its focus on state boundaries, the more important criteria when addressing acts of maritime crime is the fact that a ship was detained or robbed at sea regardless of location or maritime borders. This perspective has been adopted in work

addressing the potential collusion of maritime piracy and terrorist organizations (Banker, 2003), the prevalence of maritime crime in Southeast Asia (Young, 2007), and the tactics employed by maritime criminals near the Horn of Africa and Straits of Malacca (Hastings, 2009).

In place of the UNCLOS definition, these researchers have elected to use a competing definition of maritime piracy advanced by the International Chamber of Commerce's International Maritime Bureau (ICC-IMB). This definition recognizes piracy as

An act of boarding or attempting to board *any ship* [emphasis added] with the intent to commit theft or any other crime and with the intent or capability to use force in the furtherance of that act, excepting those crimes that are shown or strongly suspected to be politically motivated ("Piracy Annual Report," 2003).

This methodological choice intentionally downplays the importance of maritime boundaries and essentially creates a universal maritime jurisdiction. While this methodological choice is appealing from a common sense perspective, essentially arguing theft is theft regardless of location, it possesses a fundamental shortcoming. While internationally established maritime boundaries may be of little consequence to shipping companies, sovereign borders, and their integrity, are topics of great importance for governments of states.

The UNCLOS definition has an additional dimension which makes it a more appropriate choice for U.S. policy makers than the ICC-IMB definition. Article 1, Section 8, Clause 10 of the U.S. Constitution states that:

The Congress shall have Power To... define and punish Piracies and Felonies committed on the high Seas, and Offences against the Law of Nations...(The Constitution of the United States: Analysis and Interpretations, 1987)

This is a substantive statement. There is a clear and intentional alignment of international and domestic definitions of maritime crime. The usage of the high seas, a clear reference to international waters from Tudor England forward limits the U.S. conception of maritime piracy to an international act. This alignment also opens the door for the formal usage of maritime armed robbery in domestic waters by the U.S. government, as well as a policy which prohibits the right of hot pursuit into the

territorial waters of a second state. While the ICC-IMB definition may make sense for shippers, the UNCLOS definition carries the weight and authority of international law and the U.S. Constitution.

2.5 Consistent Definition

Maritime piracy is a concept that has changed dramatically over the past millennium and a half. Despite the common labeling of maritime theft as piracy, there are few historical periods that have consistently applied the same meanings to the words piracy and pirate. By modern standards, it is unlikely that much of the piracy of the ancient world occurred more than 12 nautical miles from shore and thus would not be classified as an act of piracy by the U.N. In the same light, it is unlikely that the legal caveats employed by England or France in commissioning privateers or the creation of the concept of ‘high seas’ would have been accepted as reasonable criteria by Rome. While this project will include a discussion of historic outbreaks of maritime piracy, it is of central importance that a clear definition of maritime piracy is established for later work exclusively addressing piracy at the end of the 20th and in the early 21st centuries CE.

The definition of piracy drafted by the U.N. during the UNCLOS has clear limitations. It requires the motivations of would be pirates to be strictly private. Additionally, it allows international maritime borders to impede the pursuit of pirates. Nevertheless, it is a definition that was drafted and signed by 159 states, and many of the 38 current states that did not sign the UNCLOS or were not independent at the time have acceded to the terms of the agreement. Granted, some states have yet to ratify the agreement in their domestic political systems (United Nations, 2010). In terms of U.S. policy making the UNCLOS also carries the endorsement of the U.S. Constitution as it is the current standard in international law defining acts of maritime crime. Despite the recent preference for the ICC-IMB definition of maritime crime in the academic literature, this project will define acts of maritime crime based on criteria established in the UNCLOS. Therefore, when discussing modern piracy, piracy will be defined based on Article 101 of the 1982 UNCLOS:

Piracy consists of any of the following acts:

- (a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:
 - (i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;
 - (ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;
- (b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;
- (c) any act inciting or of intentionally facilitating an act described in subparagraph (a) or (b).

Because piracy is defined as an activity that can only occur on the high seas, it will also be necessary to clearly define maritime attacks that occur within the sovereign territory of a state. These attacks are considered to be acts of maritime armed robbery in international law. Maritime armed robbery will be defined in keeping with the definition adopted by the U.N. in the Code of Practice for the Investigation of the Crimes of Piracy and Armed Robbery Against Ships (resolution A.1025 (26), annex, paragraph 2.2) as follows:

Armed robbery against ships means any of the following acts:

- (a) any illegal act of violence or detention or any act of depredation, or threat thereof, other than an act of piracy, committed for private ends and directed against a ship or against persons or property on board such a ship, within a State's internal waters, archipelagic waters and territorial sea;
- (b) any act of inciting or of intentionally facilitating an act described above.

Applying these definitions of maritime piracy and maritime armed robbery, as opposed to the definition advocated by the ICC-IMB and utilized in previous research, provides several benefits. In addition to a wide level of acceptance at the state level, the UNCLOS definition places a strong emphasis on state sovereignty. While this has previously been discussed as a hindrance from the perspective of the ICC-IMB, it would be a mistake to argue against the relevancy of this issue. Throughout this section, the role of state sovereignty has been a recurring theme used in definitions of piracy across time. Rejecting state sovereignty as a defining criterion, which is informally suggested in the ICC-IMB definition, would require a partial rejection of the concept of domestic and international

waters, as well as a rejection of existing domestic and international law addressing maritime space that has been, if not universally accepted, nearly universally accepted.

Despite the straight forward appeal of the ICC-IMB interpretation of maritime law it is an inadequate definition. An infrequently discussed hazard of rejecting the UNCLOS is the legal turmoil which could result. If the UNCLOS is an inadequate document outlining maritime rights and state sovereignty effectively ends at the water's edge, who will establish and enforce regulations for what is lawful and unlawful conduct at sea? The implications of a universal maritime jurisdiction are quite substantial regarding issues of off-shore resource exploration, fishing rights, littering, as well as the operation of formal navies. Rather than simplifying the ability to police maritime crime rejecting sovereign maritime boundaries risks opening a legal Pandora's Box which raises far more questions than it answers.

In addition to the theoretical hazard raised by redefining maritime spaces, when proposals have been advanced which suggest altering naval borders or creating permanent international maritime corridors or zones through littoral seas, there has been strong pushback from states. In 1971, Indonesia responded to the concept of internationalizing the Straits of Malacca by stating that Indonesia "cannot accept any idea that might lead to the internationalization of the strait, in the sense that among others the right to control and supervise the strait is taken away from the coastal states (Ong-Webb, 2006, p. 147)." A similar proposal was put forward in 1991 and met with a comparable level of hostility from both Malaysia and Indonesia (Huang, 2008). While these examples are limited to Southeast Asia, it seems unlikely that states such as China, the United States, or Russia are likely to argue that the UNCLOS's emphasis on state sovereignty in defining piracy is irrelevant and should be ignored. Hence the UNCLOS offers the most pragmatic and widely accepted criteria for classifying acts of maritime crime.

2.6 Summary

Creating a simple and direct definition of maritime piracy is something that states have struggled with for centuries. With the exception of Rome's unique position as both political and military hegemon of the Mediterranean, there have been few definitions of piracy that have been both clearly established and easily enforced. The contemporary definitions of maritime piracy and maritime armed robbery adopted by the U.N. are the direct successors of centuries of interstate negotiations and treaties that have attempted to balance the independence of states with the shared responsibility of ensuring a global public good. In this case, the ability to conduct unhindered interstate maritime trade.

These agreements have fundamentally shaped not only how piracy is defined but how the sovereign borders of states are determined at sea. While these definitions contain technical weaknesses and enforcement remains difficult, a majority of the states which belong to the U.N. have formally recognized and adopted these standards for classifying acts of maritime crime. Despite criticism raised by the ICC-IMB and recent academic works that reject the central components of the UNCLOS in dividing maritime space into domestic and international zones, it is unlikely that the UNCLOS signatory states will abandon these definitions in the near future. Fundamentally reimagining maritime borders could theoretically weaken the sovereign powers of a state within their internationally accepted borders. Thus, the most applicable definitions of maritime crime for policymakers in assessing maritime crime are those based on the UNCLOS.

CHAPTER 3: HISTORICAL OUTBREAKS OF MARITIME PIRACY AND RAIDING

3.1 Introduction

Philip Gosse noted, “[T]o write a complete history of piracy from its earliest days would be an impossible undertaking. It would begin to resemble a maritime history of the world.” While it is debatable if such a task would truly be impossible, it would certainly fill numerous and lengthy volumes. In the same manner, conducting an in depth study of specific pirates, even from a limited period of history, would also easily fill an entire volume as illustrated by Patrick Pringle’s *Jolly Roger*, which focused on the careers of Elizabethan pirates and privateers. As the objective of this project is to investigate the causes of maritime crime at a broad level, this chapter will focus on major outbreaks of historical piracy and emphasize geographic conditions which created a sufficient opportunity to engage in maritime crime, as well as depressed economic and weak political conditions which explain the willingness of coastal residents to engage in maritime crime. Conducting this work will contribute to the overall value of this project by illustrating that there are consistently recurring generalizable conditions encouraging the emergence and demise of maritime crime.

While there are geographic conditions that play a factor in providing safe harbor and an opportunity to raid shipping, there is no one geographic region that is somehow exceptionally well suited for piracy to the point that it is completely unique in the world. Conditions that have led to the emergence of both the opportunity and willingness of seafaring people to turn to robbery at sea have existed across time and in numerous locations. Common themes associated with the opportunity to commit piracy have included a coastal location in close proximity to major maritime trade routes and geographic features which consolidate maritime traffic into recurring and densely packed sea lanes. These conditions of geographic opportunity have been repeatedly associated with outbreaks of maritime crime in multiple geographic locations across time (Murray, 1987; Ronald, 2007; Shaw, 2004; Woodward, 2007).

However, opportunity alone is insufficient to trigger outbreaks of maritime crime. A maritime population will not be willing to commit acts of theft at sea unless they are reasonably sure they will economically benefit from the endeavor. In addition to a likely economic improvement a dearth of coercive state capacity increases the likelihood that an individual or group engaged in maritime crime will be able to avoid capture (Frecon, 2006; Murphy, 2007, 2009; Ronald, 2007; Woodward, 2007). Hence the decision to exploit conditions which create an opportunity to engage in maritime piracy is rational and relies on the likelihood of operational success and economic reward.

The combined conditions which create an opportunity to act, as well as a willingness to engage in maritime crime have existed in various regions located across the globe which have been separated by vast expanses both physically and temporally. This will be illustrated through a series of case studies of piracy in the ancient, medieval, and near modern periods in the Mediterranean, North Sea, Caribbean, and South China Sea.

3.2 Piracy in the Ancient World

As incidences of piracy waned considerably from the mid-17th century onward, romanticized images of the swashbuckling pirate, or privateer, increasingly found their way into books, movies, and eventually television. This, however, is hardly the starting point for the recorded history of maritime crime. States have confronted pirates and commissioned privateers for centuries, if not millennia. Some of the earliest recorded examples date back to the 14th century BCE. During this period, states located in the Eastern Mediterranean, including the Ancient Egyptians and Assyrians, were plagued by pirates who disrupted trade in order to amass private wealth.

However, there is more to these outbreaks of maritime crime than personal avarice or random chance. Even the earliest outbreaks of maritime crime conform to the theoretical conditions that encourage outbreaks of maritime crime. The Lukans and the Sea People are prime examples. Based along the coastline of Southern Anatolia the Lukans and Sea People existed in an environment which provided a high opportunity to engage in maritime crime. This region was located in close proximity

to the major maritime trade routes of the day. This geographic opportunity transitioned into active pillaging as both the Lukans and Sea People lacked the capacity to substantially benefit from the trade networks of the day. Hence, they existed in a suboptimal economic state compared to neighboring seafaring states. Southern Anatolia also existed outside of the coercive reach of Assyria and Mycenaean Greece. This relative poverty combined with the absence of a ‘cop on the beat’ served as a strong incentive to raid regular shipping lanes which passed near the Anatolian shoreline (Konstam, 2008).

Despite recurring claims of cultural motivation, these conditions of weak state capacity, poor or deteriorating economic conditions, and access to interstate trade are linked to historical outbreaks of maritime crime spanning a millennia and a half ranging from the 14th to the 1st century BCE and occurring in various geographic regions.

3.2.1 The Lukans and the Sea People

During the 14th century BCE, major maritime trade routes in the Eastern Mediterranean formed a triangle between Greece, Assyria, and the Nile Delta. In exchange for Egyptian wheat and barley, Mycenaean Greek and Assyrian traders exchanged spices, oils, opium, and manufactured goods. The Lukans, a people based in Southwestern Anatolia and isolated from the political control of the Hittite Empire by rugged terrain, did not benefit from this maritime exchange as they possessed few goods of sufficient value to attract merchant vessels travelling along this primary maritime trade route (Omerod, 1997; Silverman, 2003). In addition to this region being of little economic interest, it also existed largely outside of the coercive maritime reach of Greece and Assyria. The Mycenaean Greeks are specifically highlighted in the historical literature as being unable to police the full extent of their maritime trade routes which spanned the Eastern Mediterranean (Omerod, 1997; Silverman, 2003; White, 1970).

In terms of the potential opportunity for the Lukans to engage in maritime crime, they existed in a high opportunity region as there was something of value to steal due to the maritime transit lanes

of the day. The inability of Southern Anatolia to substantively contribute to the regional trade of the day created a strong economic willingness to act, especially when the absence of Mycenaean Greek and Assyrian naval vessels is added into the equation. These basic conditions are similar to contemporary regions that experience high rates of maritime crime such as Southeast Asia and the Horn of Africa.

In addition to the Lukans, the high value of goods shipped and the low level of military deterrence along these trade routes attracted the attention of migratory groups moving out of Southeastern Europe and into the Eastern Mediterranean. Similar to the Lukans, these migratory groups lacked an ability to attract the attention of the major trading states of the Eastern Mediterranean. As a result many of these new groups who settled in the same region as the Lukans, created an assimilated population and culture which continued to exploit the regions high availability of targets and suboptimal economic conditions which collectively explain the continued Lukan tradition of raiding maritime trade routes between Greece, Assyria, and Egypt. By the 13th century BCE the assimilated peoples of Southeastern Anatolia came to be referred to as a single group: the Sea People (Konstam & Kean, 2007; White, 1970). While a precise explanation for this name is not given, it is plausible that it is a descriptive term employed by settled trading states of the Eastern Mediterranean to identify maritime raiders who would emerge from the sea, with little warning, to raid and pillage.

As a result of the inability of regional states to find viable alternative trade routes, improve their coercive presence along these maritime routes, or a general improvement of the economic conditions of Southern Anatolia the Sea People and their continued engagement of piracy had a significant effect on the Bronze Age. Unlike contemporary piracy in East Africa or Southeast Asia, which is viewed as temporarily disrupting international trade, the maritime raiding of the Sea People proved so frequent and successful that they hindered the ability of states to adequately deliver public goods, such as security and the ability to conduct trade. Regardless of whether or not this challenge to

state capacity was intentional, the maritime raids of the Sea People are considered by historians to be a primary catalyst for the collapse of Mycenaean Greece and the Hittite Empire (Konstam, 2008; Thuesen, 2002).

The Mycenaean Greeks, Assyrians, and Hittites lacked sufficient coercive state capacity to substantively reduce the willingness of the Sea People to engage in acts of piracy. As the Sea People became more effective raiders as a result of refining their tactics these states found themselves increasingly unable to obtain supplies from trading partners or contain the Sea People to Southern Anatolia. As a result, what began as maritime raiding by an economically isolated coastal population located near lucrative trade routes transitioned into a threat to regional stability. The only state in the Eastern Mediterranean that was capable of both repelling the Sea People and maintaining a functioning government was Pharonic Egypt (Shaw, 2004; Silverman, 2003).

In 1186 BCE, the Sea People became victims of their own success. The efficacy of their raids caused the volume of interstate maritime trade to plummet in the Eastern Mediterranean, lowering the volume and value of goods available to be plundered. As a result, the Sea People directed their attention further afield from Greece and Assyria to Egypt and the wealth of the Nile Delta. At this point in time maritime raiding had become an ingrained and culturally acceptable vocation for the Sea People. Redirecting their attention further south reflected a desire to locate a maritime region which still provided a high opportunity to engage in maritime crime (Silverman, 2003).

This increased interest in Egypt manifested in two ways. First, the Sea People prepared to launch a series of maritime raids on Egyptian shipping and the Nile Delta itself. Second, the Sea People began to migrate south, out of Anatolia and Northern Syria and towards Egypt. In addition to pillaging maritime trade, the land based migration suggests, if not a directed military invasion then an unwelcome and hostile migration of people seeking to improve their economic lot in life. In response to this threat, Ramses III raised his army and positioned it along the Nile Delta to deter and repel seaborne raiding and in southern Palestine to dissuade the land based migration (Silverman, 2003).

Based on inscriptions found in Medinet Habu, Ramses III was able to defeat the Sea People both on land and at sea. The fleet of the Sea People is depicted as consisting of small ships that possessed fewer offensive weapons than the ships of the Egyptian navy (Shaw, 2004; Silverman, 2003). The image portrayed has led to speculation that the raids conducted by the Sea People relied on speed and stealth rather than overwhelming offensive force (Konstam, 2008). Unfortunately for the Sea People, they faced a state with an organized and strong military as well as a state bureaucracy that could effectively direct the flow of resources to a military deployed along two fronts. The Egyptian navy destroyed the pirate crews with archers clad in body armor and then proceeded to ram, board, and sink the invading craft (Konstam & Kean, 2007; White, 1970).

The Egyptian attack was so effective that it destroyed the Sea People's ability to commit acts of maritime piracy and coastal raiding (Shaw, 2004; Silverman, 2003; White, 1970). From 1120-1186 BCE, the Sea People had enjoyed free reign of the Eastern Mediterranean. They had raided shipping lanes and ports encountering little opposition. In some areas, the Sea People had even succeeded in capturing entire cities and ports, using them as forward bases. Following the defeat of the Sea People, their nearly three decades of unhindered naval raiding ceased.

An interesting secondary effect of the campaign of Ramses III was the settlement of one clan of the Sea People known as the Peleset in coastal Palestine. Their descendants later became known as the Philistines (Konstam, 2008; Milliard, 1990). Another clan known as the Tjekker settled in northern Palestine. The Tjekker carried out sporadic pirate raids but largely turned to legitimate maritime commerce. In the century that followed, the Tjekker were assimilated into Phoenician society where their maritime skills were applied to the growing fleet of Phoenician trading vessels (Konstam & Kean, 2007).

While this display of coercive force makes for an interesting historical story, in terms of this project it is most valuable in highlighting the different willingness structures which existed in the Eastern Mediterranean during the Bronze Age. Arguably the Sea People which challenged Egypt were

experienced raiders who had effectively exploited neighboring states for decades. The primary difference between Mycenaean Greece and Egypt was the coercive capacity of Egypt which created an environment with a low willingness to engage in acts of maritime crime due to the high risk of failure.

There are both similarities and distinctions between the piracy of the Bronze Age and its modern counterpart. Similar to Somali piracy the Lukans and Sea People were located in regions which were close enough to observe high volume maritime trade routes. Hence both groups would be classified as existing in a high opportunity area. The Somalis and Lukans both share a similar incentive, or willingness, to act as both populations could dramatically increase their economic well being and there was little risk of being captured or punished.

Unlike the modern requirement that an act of piracy occurs in international waters 12 nautical miles from shore, identifying a pirate was a relatively simple task for Bronze Age states (United Nations, 1982). Regardless if it was 10, 12, or 50 nautical miles from shore, piracy consisted of theft at sea. While the Sea People also launched attacks on coastal targets, this was not a distinction that prohibited being labeled a pirate during this period of history. When Ramses III confronted the Sea People, there was no debate regarding the nature of the crime they were committing. While the defeat of the Sea People at the hands of the Egyptian military greatly reduced maritime crime in the Eastern Mediterranean, it did not eradicate it. Classical Greece and Rome would both struggle with maritime theft and the challenge it posed to state sovereignty and interstate trade.

3.2.2 Greece and Piracy

Despite the role that the piracy and raiding of the Sea People played in disrupting trade in the Eastern Mediterranean and the collapse of Mycenaean Greece, the Greeks were not perennial victims of piracy. The city-states of Greece served as bases for pirates from the 10th century BCE to the rise of Alexander's Empire in the 4th century BCE. Greek piracy of this period preyed upon the trade networks of the Phoenicians and, later, Egyptian ships passing through the Aegean. In addition to piracy, there are also documented instances of states commissioning privateers. For instance,

privateers were commissioned during the Peloponnesian Wars as a way to finance and acquire supplies for the war effort (deSouza, 1999; Gosse, 1932).

By the 10th century BCE, maritime trade in the Mediterranean was dominated by the Phoenicians. They served as middle men transporting jewels, spices, and silks from Asia to ports as distant as Western Europe. In addition to transporting goods and establishing a trade network that spanned the Mediterranean, the Phoenicians were also colonizers. They established settlements in Southern France, Spain, and North Africa. Several of their more notable settlements included Carthage and Marseille. These settlements created new markets for existing goods and served as locations to further expand trade (Gosse, 1932; Markoe, 2001). In a certain respect, it is possible to argue that Ramses III inadvertently assisted the descendants of the Tjecker, who were no longer pirates and bandits existing on the fringe of profitable trade networks, as their maritime experience made them valuable sailors for the Phoenicians who contributed to the maintenance of their expansive trade routes.

Similar to the Tjecker of the preceding century, the Greeks of this era found their economic fortunes regarding maritime trade greatly altered. Greek city-states were now frequently bypassed by the dominant maritime trade routes of the day. During this period, the Greeks are also described in a manner very similar to the Lukans.

They were the natural enemies of their rich oriental neighbors. A restless, turbulent, hardy people, they were excellently situated to cut across nearly all the ordinary Phoenician trade routes, spy on and intercept the merchant vessels and effect quick escapes into the countless little rocky bays that indent the long coastline of Hellas (Gosse, 1932, p. 304).

This is essentially the same description that was used to describe the Lukans as a lawless people whose criminality thrived due to an accommodating shoreline, the inability of a state to limit their raids, and a people possessing extensive maritime expertise. While it is reasonable to argue that geography and seafaring experience play a role in generating an opportunity to commit maritime

piracy, they do not explain why people are willing to accept the risk of committing an actual act of theft at sea.

Rather than arguing that the Tjecker and their descendants had experienced a cultural shift which transformed them from pirates and bandits into legitimate Phoenician merchants and that the Greeks underwent a similar process but in reverse from merchants to pirates, there is an alternative and simpler explanation. Despite establishing a massive naval trade network spanning the Mediterranean, the Phoenicians did not possess a fighting navy adequate to patrol the length of their trade routes (Gosse, 1932).

When viewed in this light, the Lukans of the 14th century BCE and the Greeks of the 8th century BCE had several key similarities. Both groups were located near high value maritime trade routes. Additionally the Greeks and Lukans both possessed adequate maritime experience to navigate vessels into these trade routes. The willingness for the Greeks of this period to actively engage in piracy were the relatively poor economic conditions they existed in when compared to the Phoenicians, as well as the absence of a Phoenician naval presence to serve as a deterrent. Rather than arguing that cultural barbarity was a driving force, shifting political and economic conditions can explain the transitions of the Tjecker and Greeks from piracy to merchants and vice versa.

Maritime raiding remained prevalent and tolerated in Greece well into the 4th century BCE. At this point, the political and military power of Macedonia was waxing. This allowed Philip II to confront the Athenian government over their apparent tolerance of maritime crime in the Aegean. This challenge took the form of deploying Macedonia's Navy to conduct anti-piracy campaigns. These actions served a dual purpose. They reduced piracy, thus improving Macedonia's ability to conduct interstate trade via the sea, and the campaigns demonstrated that Athenian power was waning. Therefore, the city-states of the region should accept the political leadership of Macedonia (deSouza, 1999). While the anti-piracy campaign of Philip II may have been driven in part by power politics, it serves as another example that piracy in a limited area can be reduced through the application of

concentrated coercive force. The application of coercive force en masse punishes existing maritime criminals and decisively reduces the willingness of a coastal population to engage in acts of maritime crime.

Philip II's son, Alexander the Great, continued his father's efforts to curb maritime piracy during his brief reign. Eliminating piracy was a central objective of Alexander's as the Persian Navy relied on pirates in the Eastern Mediterranean to sporadically augment their naval capacity. This policy provided the Persian Navy with clear naval superiority over that of Macedonia and her allies. Due to the inadequacy of the Greek and Macedonian fleet, Alexander's eradication of piracy was based on conquering and controlling Persian ports along the coastline of the Eastern Mediterranean. This policy successfully avoided confronting the Persians and their hired pirates where they were strongest, on the sea, and denied them safe harbors which could serve as a base of operations (Bosworth, 1988; Sheppard, 2008). In addition to serving as a reasonable wartime strategy, Alexander's approach also served to reduce the willingness that coastal populations in the Eastern Mediterranean had to engage in maritime crime.

Alexander's anti-piracy stance in the Eastern Mediterranean was reinforced in the Common Peace in 336 BCE. In this agreement with the city-states of Greece, it was declared that all signatories should be allowed to sail the seas safely and without hindrance. While each city-state had a shared responsibility to combat maritime piracy, the Macedonian Navy, after absorbing a large portion of the Persian fleet, was the primary force used to deter maritime piracy (deSouza, 1999). This concept of collectively addressing maritime crime shares many of the same objectives as contemporary international law.

There are clear similarities between the use of coercive state capacity by both Ramses III in confronting the Sea People and Alexander the Great in confronting pirates of the 4th century BCE. Both states were able to greatly reduce the frequency of piracy as their use of coercive state capacity reduced the willingness for coastal populations to engage in piracy. It is important to note that neither

ruler succeeded in completely eradicating the opportunity to commit an act of piracy. The Eastern Mediterranean remained full of individuals with sea going experience that lived close to busy maritime trade routes. What both leaders did was dramatically reduce the willingness of these individuals to turn to maritime raiding as a way to augment their income by deploying a military force large enough to effectively deter potential pirates by detaining, arresting, and punishing existing pirates. However, the lull in maritime piracy in the Eastern Mediterranean would be short lived. Following the death of Alexander the Great and subsequent dismemberment of his empire, maritime piracy reemerged as a serious threat within a century.

The Aetolian League in Central Greece emerged as a hub of maritime crime. Following a century of expansion, the Aetolian League gained direct access to the Aegean. Rather than using this maritime access to engage in interstate trade, the Aetolian League tolerated and encouraged pirate bases on its shores. The increase in Aetolian power and tolerance for raiding occurred at the same time as a decline in the naval power of Ptolemaic Egypt and the military strength of Macedonia, forces which had previously deterred such activity (deSouza, 1999; Konstam, 2008). Again, we see that the willingness of individuals to turn to piracy, or of a small state willing to tolerate piracy, is linked to the absence of a strong power that is capable of serving as a deterrent. As a result the Aetolians existed in an environment with a high opportunity and willingness to engage in maritime raiding as a way to augment their economic and political stature.

The shores of Greece were not the only region in the Eastern Mediterranean that exploited the absence of a dominant naval power and hence the increased ability to successfully engage in maritime crime during this period. The Illyrians and Dalmatians conducted raids on Greek and Italian maritime commerce which passed near their shorelines (Konstam, 2008). Piracy in the Adriatic was initially tolerated as it occurred relatively infrequently and was not considered a serious threat to maritime commerce. Neither the city-states of Greece or Rome were interested in undertaking the expense and danger of an anti-piracy campaign for the sake of eliminating a sporadic threat (deSouza, 1999). When

these conditions were combined with the regularly transited trade routes which were left largely unpatrolled we find that both geographic opportunity and the political and economic willingness to raid Greek and Italian commerce were present for the Illyrians and Dalmatians.

The tolerance for isolated maritime crime in the Adriatic began to change by the end of the 3rd century BCE, when the Illyrian coast and all of the pirates in the region were united under a single ruler, King Agron, who was succeeded by his wife, Queen Teuta. Queen Teuta of Illyria removed the few cultural and governmental restrictions that were in place discouraging piracy and encouraged the entrepreneurial spirit of the pirate crews. Increasing piracy in the Adriatic served as a way to distract bordering states while the Illyrian Army expanded her borders (Konstam, 2008). For both the Illyrian state and the pirates of the region, the absence of a deterrent to piracy created a win-win scenario. Illyria was enlarged, and the pirates were enriched.

3.2.3 Rome and Illyrian Piracy

The transition of Illyrian piracy from a sporadic nuisance to a large scale enterprise spanning 600 miles of coastline from the Northern Adriatic to the Peloponnesus fundamentally changed the threat of piracy to Roman merchants. No longer were the Illyrian pirates a sporadic nuisance. They now regularly raided Roman merchant vessels and threatened to disrupt the maritime transport of foodstuffs to Rome itself. Under these circumstances, when merchants again petitioned the Senate for aid in reducing piracy they received a notably more decisive response than their predecessors. Two envoys were dispatched to Queen Teuta to present a list of Rome's grievances and persuade her to control the pirates based in her state (Bradford, 2007; Konstam, 2008). The goal was essentially to ask Illyria to reduce the willingness of her citizens to engage in piracy.

After receiving the Roman envoys and listening to their concerns, Queen Teuta noted that it was not the policy of her state to attack or harass Romans. She also stated:

It is an ancient custom of the land of the Illyrians and of its rulers that the queen does not interfere with the actions of her private citizens in taking plunder on the sea (Bradford, 2007, p. 36).

Piracy had proven a great benefit to the expansion of Illyria. Therefore, the state had little interest in dissuading piracy.

However, what the Illyrians failed to realize was that the arrival of Roman envoys signaled that a state with adequate coercive capacity intended to alter the existing opportunity and willingness structure. This willingness of Rome to exercise its superior coercive state capacity was made clear in the rebuttal delivered by the younger of the Roman envoys:

Queen Teuta, the Romans have an excellent tradition, which is that the state concerns itself with punishing those who commit private wrongs and with helping those who suffer them. With the gods' help we shall do our utmost, and that very soon, to make you reform this ancient custom of your kings (Bradford, 2007, p. 37).

Not surprisingly, the envoy's remark was not received well by Queen Teuta. Some accounts suggest that she dispatched pirates to assassinate the Roman envoys (deSouza, 1999; Neils, 2001). Others note the subsequent assassination of the younger envoy may have been carried out by a faction seeking to earn the Queen's favor (Bradford, 2007).

Illyria's continued tolerance and support of piracy in the Adriatic is considered to be the primary motivation for the Roman invasion of Illyria in 228 BCE (Harris, 1985; Omerod, 1997). A naval squadron of 200 ships was dispatched to Corfu to disrupt an Illyrian siege and proceeded to patrol north into the Adriatic. At the same time, a land force of 20,000 infantry and 2,000 cavalry swept south through the Balkans. This war against Illyrian piracy was a high profile conflict for the Roman Republic, as each of these operations was led by one of the sitting consuls, Carvillus Maximus Ruga II and Fabius Maximus Verrucosus II (Bradford, 2007; deSouza, 1999; Harris, 1985).

Rome's invasion resulted in the removal of Queen Teuta, the reduction of Illyria in size, the appointment of a ruler favorable to Rome's policies, and the implementation of a hostile stance towards maritime piracy (Omerod, 1997). While these policies did not completely eliminate piracy in the Adriatic, they did substantially reduce its frequency. While Illyria remained a location with a high

opportunity to commit piracy, the willingness structure in terms of both the Roman naval presence and the new domestic laws of the land were sufficient to deter potential maritime raiders.

The outbreak of piracy along the Adriatic bears several similarities to the piracy experienced by the Egyptians, Mycenaean Greeks, and Phoenicians. In the absence of a sufficient deterrent, a people who lived near but did not benefit significantly from maritime trade turned to piracy as a way to augment their income and, in the case of the Illyrians, increase the size and resources of a state. If the military strength of Macedonia and Ptolemaic Egypt had not declined, it is unlikely that the Illyrians would have had a sufficient willingness to commit organized and prolonged acts of maritime piracy.

3.2.4 Rome and the Eradication of Mediterranean Piracy

The Romans again confronted piracy on a much larger scale following the conclusion of the Third Punic War. During this period, maritime piracy was so frequent that Rome experienced repeated food shortages as merchant vessels were unable to successfully navigate the Mediterranean without encountering a pirate crew (Gosse, 1932). Gosse (1932) attributed this resurgence of piracy to the naval experience and long history of maritime warfare possessed by the defeated Greeks and Carthaginians. Roman conquest had reduced the political importance of Carthage and Greece, swelled their unemployment rates, and made earning a legitimate living difficult as trade routes became primarily focused on Rome, rather than Carthage or Athens. As a result there was both a strong geographic opportunity to act in the coastal states as well as a strong willingness to act based on the altered political and economic conditions. An additional factor encouraging this strong willingness to act was the dearth of Roman naval capacity in the Mediterranean at this time (Konstam, 2008; Omerod, 1997). Again, we will see geographic opportunity, as well as a coastal population existing in bleak economic conditions in a region which is largely unpatrolled are required for an outbreak of maritime crime to occur.

Piracy in the Eastern Mediterranean surged as Greek pirates fleeing from Roman rule relocated to the shores of Cilicia in Asia Minor, the former base of the Lukans and Sea People. They did so at a time when the Seleucid Empire had reduced its naval patrols of the coastlines of Syria and Cilicia (Konstam, 2008; Omerod, 1997). This left the Cilician coast existing in a relative power vacuum, as it was located on the fringes of political power of both Empires.

In the mid-2nd century, the Roman Senate investigated the complaints of an increase of maritime piracy in the Eastern Mediterranean. The Romans concluded that the majority of the blame should be attributed to the military weakness of the Seleucid Empire (Bradford, 2007). While the Roman investigation overlooked the fact that both the Seleucid Empire and Ptolemaic Egypt were weakened by Roman expansion, their report does illustrate that there has been a hypothesized link between declining state capacity and an increased willingness of a seafaring people to commit acts of piracy when they exist in suboptimal economic conditions near maritime trade routes for millennia.

While the Romans enacted anti-piracy laws and conducted several limited anti-piracy campaigns, they were unable to reduce the rate of piracy in the Mediterranean due to an inability of their navy to patrol their newly expanded maritime territory (Omerod, 1997). This changed in 67 BCE. The inability of Rome to easily transport foodstuffs or military personnel by sea had become a threat to the very continuation of the Empire as a political entity (deSouza, 1999; Gosse, 1932). In response to this threat, the Senate passed a controversial law titled the *lex gabinia de pirates persequendis*, or the law of prosecuting pirates.

The passage of this law granted Pompey dictatorial powers for three years, the use of 20 legions, 500 ships, the ability to raise taxes and recruit troops in all Roman provinces that border the sea, the power to override regional magistrates within fifty miles of the sea, and a budget of 6,000 talents (Bradford, 2007; deSouza, 1999; Gosse, 1932; Omerod, 1997). This placed Pompey in command of the largest combined military force Rome had ever deployed and granted him greater political power in shaping Rome's foreign policy than any previous leader, with the notable exception

of Sulla (Leach, 1978). A clear emphasis of this law was reestablishing state authority and reducing the willingness for coastal populations to engage in maritime crime.

As one of the primary side effects of piracy was the shortage of foodstuffs, Pompey began his anti-piracy campaign by patrolling the coastline and deploying land forces to Sicily, North Africa, and Sardinia, all of which were major sources of corn and grain (Leach, 1978). The next step taken was to limit the movement of maritime pirates and eradicate their safe havens. This choice illustrates how piracy, be it ancient or modern, remains at its heart a land based problem.

Pompey used the military power at his disposal to close the Mediterranean and established 13 military districts. Each of these districts was placed under the command of a lieutenant with orders to patrol the coastline and destroy pirates on sight. Pompey then began a sweep of the Mediterranean from west to east. In the process of doing so, pirate bases were systematically destroyed when the fleeing pirates were forced into the patrolled borders of the neighboring military district (deSouza, 1999; Gosse, 1932; Leach, 1978). Essentially, the pirates were eradicated by using a series of hunting flushes at sea. The strategy proved so effective that piracy in the Western Mediterranean was eradicated in a mere six weeks (Leach, 1978). In the process of eliminating current pirates, a clear message was sent to potential pirates that they were unlikely of economically benefiting from piracy. This realization greatly reduced the willingness of coastal residents to resort to maritime crime.

Clearing the Eastern Mediterranean of piracy was conducted in a similar manner to the Western Mediterranean. However, there was one central difference. The Roman district that included Cilicia was left largely unpatrolled (deSouza, 1999; Leach, 1978). This exception created a single safe harbor for the pirates fleeing from Pompey's systematic sweeps of the Mediterranean. While the details of the final campaign in Asia Minor have been lost, there is a tradition of folklore in Asia Minor that recounts the destruction of several castles and fortified ports at the hands of Pompey (Leach, 1978). Pompey's anti-piracy campaign was so notorious that the pirates amassed in Cilicia surrendered to Pompey upon his arrival rather than risk death. Pompey's policy of compartmentalized

patrols that limited the mobility of pirates eradicated piracy in the Mediterranean three months into Pompey's three years of granted dictatorial power (Gosse, 1932).

Despite destroying 1,300 pirate ships, razing all bases of pirate operation along the expansive Mediterranean, drowning 10,000 pirates, and arresting 20,000 more, Pompey was considered to be a merciful conqueror. The vast majority of the captured pirates were resettled inland in Greece and Asia Minor as farmers. This decision was justified by a desire to alleviate the bleak economic conditions that Pompey viewed as primary drivers of maritime crime. For centuries to come, Rome maintained regular naval patrols throughout the Eastern Mediterranean in order to deter any backsliding in the behavior of the coastal populations (Gosse, 1932; Leach, 1978; Omerod, 1997).

Arguably Rome's eradication of piracy was so effective because it simultaneously reduced both the opportunity and willingness of seafaring people to turn to maritime crime. So long as farming remained an economically viable alternative there was little willingness to engage in maritime crime as it meant risking a profitable livelihood. If someone was still tempted to turn to a life of maritime raiding, they were deterred by the Roman Navy. This combination of reducing economic hardship and increasing military patrols effectively eradicated the willingness of a coastal population to resort to acts of maritime piracy. This approach effectively eradicated piracy as a widespread threat in the Mediterranean until the arrival of the pillaging Norsemen of the Viking Age.

3.3 From Medieval Raiding to Near Modern Piracy

The conditions that allowed piracy to develop time and time again in the ancient world are the same forces that led to the emergence of piracy during the medieval and near modern periods. At first glance, the Vikings, Caribbean pirates, Barbary corsairs, and the pirates of the South China Sea appear to have little in common other than engaging in seaborne theft. Despite originating from divergent cultures, geographic regions, and points in history, the outbreaks of maritime crime, and maritime raiding in the case of the Vikings, were motivated by similar economic and geographic conditions that led to the emergence of Lukan, Illyrian, and Cilician piracy in the ancient world.

Similar to their ancient peers the opportunity to commit acts of maritime crime was driven by geographic features, specifically, a coastal location in relatively close proximity to the major arteries of trade of the day. The catalyst that allowed these groups to transition from a passive ability to commit maritime crime to actively engaging in maritime crime is associated with a persistently low, or worsening economic state as well as the absence of a coercive deterrent.

3.3.1 The Vikings

While maritime piracy reemerged during the Middle Ages, it did not reach the same scale or intensity experienced by ancient states. The more common maritime crime committed during this period was naval raiding, which targeted cities and ports rather than ships at sea. Perhaps the most successful and noteworthy of these raiders were the Scandinavians during the Age of Vikings. Their extensive raids, which ranged from the North Sea to the walled cities of Italy, bear a stronger resemblance to the activities of the Sea People than the pirates of Cilicia. It would be a mistake to consider the Vikings pirates in the strict modern sense of the word as they rarely intercepted and robbed ships at sea. There are several reasons the Scandinavians favored raiding over seaborne piracy. First, Viking ships were well suited for quick departures from land and not designed with maritime boarding in mind (Ferguson, 2009). Second, while maritime commerce had increased since the collapse of the Western Roman Empire, its volume was still notably lower than during the classical period (Bradford, 2007).

Despite receiving the classification of naval raiders, rather than maritime pirates, it is interesting to note that the initial outbreak of Viking raiding was motivated by similar conditions that encouraged outbreaks of piracy in the ancient world. A coastal population with maritime experience existed in relatively close proximity to neighboring states and their maritime trade routes. Hence a geographic opportunity to engage in maritime crime was present. A willingness to act resulted from the absence of a coercive force capable of deterring such raids. In addition to the absence of a

sufficient coercive deterrent this population existed in deteriorating economic conditions. This decline increased the potential economic reward that a successful raid would provide.

Scandinavians of the early 8th century CE dramatically intensified their agricultural production due to the spread of iron tools. This increased the abundance of foodstuffs and allowed for an expansion of the population (Ferguson, 2009). However, by the mid-8th Century CE, changes in climate and rainfall thrust this newly enlarged population into desperation. The average temperature decreased and rainfall became scarce, which depressed agricultural production and led to sporadic outbreaks of famine (Bradford, 2007). The estimated population of Scandinavia at this time was only one to two people per square kilometer, which has led some scholars to discount overpopulation as a catalyst to the Viking raids (Ferguson, 2009). Despite the small size of the population of Scandinavia by modern standards, there is evidence that new farmland was in short supply and existing farmland was abandoned (Arbman, 1961; Kendrick, 2004). In relative terms, Scandinavia was overpopulated, and these conditions suggest that the Scandinavians of the mid-8th century CE existed in a state of being that was suboptimal in terms of resources compared to half a century earlier.

While bleak economic conditions impact the willingness of a coastal population to engage in maritime crime, it is not sufficient as a sole explanation. Power politics of the 8th century played an integral role in increasing Scandinavia's awareness of the relative wealth of Western Europe. The expansion of the Umayyad and Abbasid Caliphates across North Africa and into Spain pushed European trade routes northward and closer to the maritime space frequented by Scandinavians (Ferguson, 2009). This rerouting of predominant trade routes provided a population with a high willingness to act an awareness of nearby territories that could be exploited for economic gain.

An additional factor which increased the opportunity for Scandinavians to resort to maritime raiding was the inability of a state in Western Europe to serve as a coercive deterrent. The importance of coercive force in shaping the willingness to engage in maritime crime is clearly illustrated in the early Viking raids which targeted the Frankish Empire. These early raids were deterred by

Charlemagne who erected fortifications at threatened points and dispatched regular naval patrols of the Frankish coastline and river ways (Ferguson, 2009; Kendrick, 2004). As a result of this deterrence, the Scandinavians focused their raids on other regions such as Britannia, the Mediterranean, and Black Sea which offered lower levels of formal resistance and hence a greater opportunity of success. However, the Vikings returned to raid the Frankish shore when Charlemagne's successor, Louis the Pious, proved unable to maintain the same level of effective military preparedness (Bradford, 2007).

While the motivations of the Vikings were similar to those of the pirates of the previous millennium, the end of the Viking age was clearly different from the end of classical piracy. Rather than being eliminated by the repressive military power of an outside state, such as the Roman expedition led by Pompey or the Hellenistic anti-piracy campaigns of Alexander the Great, many Vikings settled new lands as farmers and rulers (Arbman, 1961; Kendrick, 2004). This reduced societal strain as the population of Scandinavia no longer exceeded its resources, and the newly settled Vikings no longer needed to resort to maritime raiding in order to improve their lot in life.

Despite the lack of a second state capable of applying overwhelming military force, there is one similarity between the end of the Viking age and the end of classical piracy. Similar to Pompey's resettlement of 20,000 arrested pirates, the relocated Scandinavians generally renounced maritime raiding as they had acquired a legitimate vocation, be it farming, trading, or ruling. Once these resettled raiders had gained a degree of social and economic stability, they then worked diligently to grow and protect their new vocations which did not rely on maritime raiding. This suggests that, rather than possessing an ingrained cultural tradition for raiding, geographic conditions created an opportunity to act. While political and economic strain created a willingness of the coastal populations of Scandinavia to resort to maritime raiding. These conditions were of central importance in explaining the emergence of the Viking Age, as well as its demise.

3.3.2 Pirates (and Privateers) of the Caribbean

The pirates and privateers that prowled the Caribbean from the 15th to the early 18th century CE have come to serve as the definitive archetype for maritime piracy in contemporary film and literature. Woodward (2007) notes that these pirates have been the basis for some of fiction's best known characters, including Captain Hook, Long John Silver, and Captain Jack Sparrow. Many of the major historical accounts of piracy in the Caribbean place particular significance on the deeds of individual pirate leaders. Exquemelin (2000 [1684]) recounts his time as a sailor serving under Captain Morgan. Johnson (2002 [1724]) focused specifically on pirates who were considered to have committed the most violent and outrageous acts while pillaging at sea. This is a pattern continued into more recent works as well. Gosse (1932) and Pringle (1953) devote extensive sections of their work to the specific exploits of Captain Morgan, Captain Kidd, and Sir Francis Drake.

While specific case studies such as these make valuable contributions and interesting reading, they overlook central questions. Why the Caribbean? Why this period in history? Were there similarities or differences between this outbreak of maritime piracy and its predecessors? Are there common threads that tie the Lukans, Cilicians, Vikings, and the pirates of Port Royal together? When we examine the generalizable conditions from this period in history we find that outbreaks of piracy, as well as the states involved, were influenced by a combination of geographic opportunity paired with political and economic incentives to act.

The Caribbean proved a tempting target for European states as it was a walled garden claimed by Spain, which prohibited any other state from trading with the region. The notable wealth of this region of the world was to be Spain's alone. Spanish dominion over vast swaths of North America, South America, and the Caribbean originated with the 15th century CE Treaty of Tordesillas. In this agreement, the Vatican settled a dispute between Portugal and Spain regarding claims of new territory and zones of future exploration.

The Vatican fixed a line roughly 925 miles west of Cape Verde as a dividing line. Territory to the west was allotted to Spain; territory to the east was granted to Portugal. The Spanish wasted little time and worked diligently to pacify and settle their new territory. Ponce de Leon established colonies throughout the Caribbean and discovered Florida (Picket & Picket, 2011). Hernan Cortez invaded the land of the Aztecs in Mexico, and this served as the basis for the subsequent Spanish conquest of the Yucatan (Picket & Picket, 2011; Wood, 2000). In South America, Francisco Pizarro set out on a similar task, which led to decades of conflict and the eventual defeat and annexation of the Incan Empire (Hemming, 1970; Wood, 2000).

By the end of the 16th century CE, the Spanish had established a massive colonial holding stretching in excess of 6,000 miles. While this territory was only sparsely settled by Spaniards, it was dotted with fortified ports and harbors which were used as storehouses and transport hubs for crops such as tobacco, sugar, and other valuable raw materials, including gold and silver. Each year from 1530 until 1735, the Spanish government dispatched a fleet that would sail to North America, split into smaller flotillas, and then sail to various resource collection points. The Spanish treasure fleets would pick up tons of jewels, silver, and gold from the Caribbean, Central America, and South America as well as collect trans-Pacific shipments from the Philippines in Panama. The flotillas would then regroup in Havana and set sail for Seville (Konstam, 2008; Walton, 1994).

In addition to being shut out from participating in commerce with the Spanish controlled Americas, European states watched a fortune sail into the Spanish treasury every year. This likely fostered a relative sense of wealth disparity between the states of Europe. These conditions generated a clear willingness for both state sponsored privateers and pirates to target Spanish commerce and the Caribbean as successful raids would result in increasing the economic well-being of the participants. A willingness to engage in illicit raiding alone is insufficient to explain why acts of maritime crime occurred.

To answer an earlier question, why the outbreak of maritime crime in the Caribbean? The simple answer is that the Spanish, despite their fortified treasure ports and the revenue they generated, were unable to deploy a force capable of patrolling the immense extent of their new empire in order to prevent privateering and pirate ports from becoming established. Spain was also unable to deploy a sufficient naval force to capture or deter pirates and privateers (Pringle, 1953). This absence of a coercive deterrent made committing an act of piracy or privateering a low risk and high reward choice. Spain's new world colonies existed in an environment which provided a strong opportunity as well as a strong willingness for groups to engage in maritime crime.

French privateers were the first to exploit Spain's weakness. In 1494, the French monarchy began issuing letters of marque. While the English and French separated pirates and privateers into distinct legal categories, Spain refused to recognize the legal right of any state to commission privateers and considered all seaborne raiders to be classified as pirates (Gosse, 1932). The commissioning of French privateers led to war between France and Spain in 1523 as the Spaniards, in keeping with their legal tradition, accused the French of conducting illegitimate and piratical raids on the sovereign territory of Spain.

Rather than deterring French privateering, this conflict marked the beginning of over forty years of plundering for the coastal towns and shipping routes of Spain (Konstam, 2008). Encouraging French privateers and ignoring the unsanctioned actions of French citizens involved in piracy served the French state in two ways. First, it generated income for France as privateers were obligated to surrender a portion of the goods seized to the French state. Second, prolonged privateering campaigns and allowing piracy to develop unchecked in the Caribbean diverted Spain's resources and weakened its control over North American colonies. You can see the French decision to exploit the strong willingness to commit acts of maritime crime in order to improve their economic and political position is similar to the Illyrians centuries earlier.

The British followed the French example several decades later under the rule of Elizabeth I. (Ronald, 2007). Rather than focusing on specific exploits, it is important to consider the wider balance of wealth and power that existed in Europe at this time. At the time of Elizabeth I's coronation, England was a state that was comparatively poor compared to other major states in Europe, and it did not play a significant role in international trade. Complicating this situation further, England also possessed a large portion of unemployed seamen. In contrast, Spain was, by far, the wealthiest state in Europe with little or no unemployment among its sailing population (Gosse, 1932; Ronald, 2007). As a result Elizabethan England is a state that would be expected to have a high willingness to engage in maritime crime, and exploit the opportunity to commit acts of maritime crime in the Caribbean given the regions high density of trade, and the inability of Spain to exert sufficient coercive force in the region to deter acts of maritime theft or prohibit the establishment of hostile naval bases in the region.

The situation is familiar: A relatively poor state excluded from high value trade routes and possessing a population with maritime experience, chooses to engage in maritime crime in a region that provides a strong geographic opportunity at a time when the coastal population possesses a strong political and economic willingness to do so. This is the same position that the Lukans found themselves in when they targeted the trade routes between Mycenaean Greece and Assyria. It is the same position the Greeks were in when they targeted the trade routes of the Phoenicians. Across history, it is a recurring state of being that has been shared by populations with maritime experience that undertake acts of maritime piracy and coastal raiding. Geographic and political conditions are exploited by seafaring populations existing in a suboptimal economic state.

Piracy and privateering continued to intensify during the 16th and 17th centuries CE. Encouraging piracy served a similar role for England during this period, as Libya's encouragement for terrorist groups in the 1980s. Unofficial encouragement of pirates by England served as a form of asymmetrical warfare against a militarily superior Spain. In addition to informally augmenting

military force during this period, England, France, and the Netherlands successfully exploited the weakened status of Spain and began to acquire their own colonies in the western hemisphere.

Led by Oliver Cromwell, the English claimed the former Spanish colony of Santiago, now known as Jamaica, in 1666. The English also wrested control of a series of islands in the Lesser Antilles. Perhaps the most significant of England's claims was the establishment of her North American colonies, which were also located west of the line demarcating Spain's claims based on the Treaty of Tordesillas (Egerton, 1904). Over the same stretch of time, the French gained a foothold in the Caribbean in Haiti and established extensive claims in North America, including Louisiana and Canada (Pagden, 1998). The demise of this widespread maritime pillaging of the Caribbean can be attributed to a combination of factors that altered the opportunity and willingness structure of states in Western Europe to engage in, or tolerate, maritime crime.

This 'Golden Age' of piracy reached its zenith in the first half of the 17th century CE, and then experienced a dramatic decline. By this time, the English were now an established colonial power in the Western Hemisphere, possessing colonies with active agricultural industries. In addition to a declining financial incentive to tolerate maritime crime, the lingering presence of piracy in the region now threatened to disrupt regular commerce between England and her colonies. This is a dramatic change in events. While a geographic opportunity to engage in maritime crime continues to be present, there is no longer a sufficient political and economic incentive, or willingness, encouraging England to tolerate maritime crime in the Caribbean.

With this perspective in mind, it is not surprising that the English state as a whole adopted a stance denouncing piracy. Unfortunately, it was not interested in devoting a sizable military force to the eradication of piracy. During wartime, naval ships were needed for formal naval combat. During peacetime, the national budget was inadequate to outfit and deploy the same ships for anti-piracy operations (Gosse, 1932). This left anti-piracy operations to a small portion of the English Navy and a collection of colonial governors in Virginia, Maryland, Jamaica, and Barbados (Pringle, 1953).

This collection of colonies was the most directly impacted by the persistence of piracy in the Caribbean. All four relied on the export of agricultural products to generate income (Pringle, 1953). These colonies served as bases of operation for anti-piracy patrols and even donated private ships and financial resources. Thorough sweeps of the coastline were conducted to locate pirate havens and flush pirate ships out into the open so that they could be engaged or detained (Bradford, 2007; Konstam, 2008)

Pringle (1953) singles out one anti-piracy operation in particular that was led directly by the Governor of Virginia in 1700. The Governor pursued a pirate ship with a crew of 140 that had been cruising off the coast of Virginia. In a nine hour engagement where the Governor promised a generous amount of gold as a reward for the crew, the pirate ship was defeated. Approximately 100 prisoners were taken and the rest killed. This display of coercive state force was considered a turning point in the demise of Caribbean piracy. As Pringle (1953) notes , “[P]irates generally were much more prudent and less reckless than is commonly supposed. They did not like risking their lives.” News of consistent and effective anti-piracy patrols spread quickly through the region. This naval action had a similar impact as Pompey’s patrol of the Mediterranean it effectively punished active maritime criminals and signaled that the willingness structure to engage in maritime crime had been substantively altered.

This period of piracy spanned several centuries and, when viewed from an overarching point of view, maritime crime in the Caribbean was driven by the same generalizable conditions that encouraged maritime crime in the Bronze Age. The opportunity for a seafaring people to engage in acts of maritime crime is the result of a geographic location near recurring high volume maritime trade routes. The incentive that encourages the transformation from potential maritime criminal to active maritime criminal is associated with poor economic conditions and a dearth of coercive state capacity devoted to deterring acts of maritime crime. The Lukans and Sea People exploited the opportunity to raid shipping in the Eastern Mediterranean as it was a low risk activity that notably improved a coastal

population's economic well-being. These same conditions held constant in the case studies in this chapter across both time and location.

3.3.3 The Barbary Coast

At the same time as piracy and privateering boomed in the Caribbean, the coast of North Africa also became a hub for seaborne raiding. Historical outbreaks of maritime crime in this region are divided into two primary periods. The first occurred following the Reconquista of Spain in the late 15th century CE. The second occurred in the mid-17th century CE. In both cases geographic opportunity paired with an economic and political willingness to act were present.

Following the Reconquista of Spain, North Africa experienced a sizable influx of Moors from Granada. Gosse (1932) describes the impact of these dislocated people on the populace of North Africa as notably profound. This wave of immigrants placed strains on the food supply and economy of the region as several hundred thousand formerly settled individuals found themselves hard pressed to find employment and shelter. The displaced Moors, motivated both by a sense of economic hardship, and potentially revenge, conducted numerous raids on the maritime shipping lanes near Southern Iberia which was now dominated by Spanish merchants. (Bradford, 2007; Gosse, 1932; Wolf, 1979).

This period of North African piracy falls into the pattern that we have established in the previous historical examples. A predominantly coastal population with maritime knowledge had an opportunity to act as they are located near major arteries of trade. In addition to geographic opportunity the same population existed in unstable political and economic environments which lacked a sufficient coercive deterrent or legitimate economic income (Bradford, 2007; Gosse, 1932). Similar to the Lukans, Carthaginians, Illyrians, and Western European states which targeted Spanish trade, the Moors turned to maritime crime as a result of similar conditions associated with the opportunity to act, and the willingness to do so.

The Moorish raids continued until Ferdinand of Spain mounted an ambitious military expedition in 1509, which blockaded major North African ports. He demanded that the maritime raids cease and withdrew only after erecting a series of fortifications manned by the Spanish Army and Navy (Gosse, 1932; O'Callaghan, 2003). Ferdinand's efforts did little to alter the economic conditions of North Africa which in part incentivized piracy. However, the prolonged display of Spanish coercive force altered the willingness structure in the region. While the coastal population was likely interested in continuing their lucrative careers in raiding given the poor economic conditions, they were unable to do so.

Unrestrained piracy in the region remained low as the Ottoman Empire exerted increasing political control over the region in an attempt to check Spanish expansion. Following the Ottoman expulsion of Spain from the region, a series of Ottoman Sultans expressed a high level of personal interest in the Barbary Coast. The beys, or governors of this region, were hand selected by the Sultans, and garrisons of the Ottoman Army were established to aid the beys in ruling the region (Bradford, 2007; Konstam, 2008). Further illustrating the increase in active bureaucratic and coercive state capacity in the region privateers and naval personnel from North Africa assumed prominent roles in managing the Ottoman Navy throughout the empire (Mikaberidze, 2011). This period lasting from the early 16th to mid 17 centuries CE experienced notably lower rates of piracy as a result of a political presence which actively deterred certain forms of maritime raiding.

This decreased period of maritime crime ended following a revolt against Ottoman rule in 1659. While the Barbary States technically remained under the nominal control of the Ottoman government, they effectively became independent and answerable only to their own constituents, and many of these constituents happened to be former privateers of the Ottoman Empire seeking to expand their raiding operations (Konstam, 2008). Without the supervision of the Ottoman state the North African coast developed into a legitimate den of maritime piracy acting only in their own self-interest (Bradford, 2007; Konstam, 2008; Wolf, 1979).

During this second period, many of the states of Europe elected to bribe, as was the case with the English, and in other cases pay outright annual tribute to the technically unrecognized Barbary States, as was the case with the Netherlands, in order to ensure that ships flying their flag could pass through the Mediterranean unmolested. In effect, these states took active steps to reduce the economic willingness of North African pirates to raid certain ships and shipping lanes. However, the French opted for a policy of limited military reprisal, which would prove largely ineffective.

During 1683, in response to the detention of French ships the French Navy mounted an expedition to bombard Barbary ports from sea. Rather than reducing incidences of piracy, these attacks created an intense sense of hostility towards the French state and her merchants. This led to an active increase in the targeting of French vessels by Barbary pirates, the opposite effect of the desired impact of the operation. As a result the French state quickly adopted the strategy of paying an annual tribute to the beys of the Barbary States (Wolf, 1979). Despite the unsuccessful attempt of the French to shell the Barbary States into submission during the late 17th century CE, military force would prove central to the demise of the Barbary States as a pirate den in the late 18th and early 19th centuries CE.

Surviving as a pirate, or as a state run by pirates, requires that a sufficient opportunity regarding the presence of something to steal is readily available paired with a willingness structure that promises economic reward and little risk of being captured or punished. The demise of piracy based in the Barbary States is linked to changes which primarily impact the willingness to act.

As Europe developed technologically, states increasingly converted their ships to sail, which meant the states of Europe no longer needed a way to obtain oarsmen for their vessels, and slavery as a lucrative source of income for the Barbary States was increasingly condemned (Bradford, 2007). As a result, the economic willingness of the region was altered. The decreasing number of galleys reduced the number of potential slaves which could be seized and sold. The decreasing demand for oarsmen meant that a primary economic incentive generated by Barbary piracy was no longer present.

Despite the loss of a key market, and a general reduction in maritime raiding, the Barbary States continued to serve as a base for pirates into the early 19th century CE. In contrast to the states of Europe, the United States did not pay a regular tribute or bribe to any of the Barbary States. Because of this, American shipping fell under frequent attack throughout the Western Mediterranean and North Atlantic. Over the course of this period the Barbary pirates of Algiers seized over 100 American hostages. When confronted with the choice of paying tribute or a ransom, the U.S. opted for a third course of action. It built its first permanent Navy with the objective of conducting anti-piracy operations against Algiers and became involved in the First Barbary War, lasting from 1801 to 1805, as well as the Second Barbary War, which began and ended in 1815. During these conflicts, the U.S. conducted a constant series of naval blockades, shore bombardments, limited land operations, and extensive naval patrols (Whipple, 1991). In the process of doing so, the U.S. substantively reduced the willingness of pirates based in this region to act.

The defeat of the Barbary Pirates ensured safe passage for American vessels and demonstrated the efficacy of the use of prolonged coercive force as a way to undermine maritime crime. As a result Western European states emulated the tactics employed by the American Navy. Rather than continuing to reduce the willingness of pirates to act by providing an alternative financial incentive, they applied coercive force to achieve the same end following the conclusion of the Napoleonic Wars.

In 1816, the British demanded the release of all Christian slaves and an end to piracy based out of the Barbary States. While Tunis and Tripoli accepted the terms, Algiers did not. The British promptly blockaded and shelled Algiers into submission. This operation forced the bey to agree to the British terms the following day or risk the prolonged wrath of the British Navy and likely occupation of his capital (Bradford, 2007). The final death blow to the Barbary States occurred when the French invaded North Africa in 1830 and later annexed Algiers, followed by Tunis (Mikaberidze, 2011).

Similar to the demise of every group of pirates or maritime raiders discussed thus far, the piracy of the Barbary States was eliminated through the sustained application of coercive military

force which undermined the willingness structure of potential and active pirates. This period of history also suggests that providing an alternative financial incentive can serve as a temporary way to reduce the frequency of piracy in a region by reducing the economic incentive to engage in such activity. When compared to the previous efforts of the French, the primary area where American strategy diverged was in conducting sustained large scale naval patrols rather than a limited series of shore bombardments. The limited efforts of the French did little to substantively alter the willingness structure for coastal residents, while the American strategy clearly signaled that the ability to engage in acts of maritime crime would no longer be available. This outbreak of piracy and the strategies applied to eliminate it differ from those employed by Pompey as they relied on either providing alternative economic incentives at one point, and coercive force at another. This is a contrast when compared to the efforts of Rome which combined both coercive force and economic reforms.

3.3.4 Pirates of the South China Sea

Piracy in East Asia was not strictly limited to the late 18th and early 19th centuries CE. Rather, it was a phenomenon that waxed and waned in intensity throughout the Malay Peninsula as well as off the coasts of Vietnam, China, and Japan for centuries. While claims of cultural tolerance for piracy similar to those leveled against the Cilicians, Greeks, or English have been advanced regarding piracy in this region of the world, an alternative explanation lies in the shifting levels of political and economic willingness found in the region (Murray, 1987; Young, 2007). Conducting an in-depth history of naval theft in this region would easily fill a standalone chapter. As the goal of this chapter is to conduct a broad survey of maritime piracy across historical periods and geographic regions, this section will focus on maritime piracy in the South China Sea, which originated near the port town of Chiang P'ing, located near the border of China and Vietnam, as this location served as the base for the last major outbreak of maritime piracy prior to the 20th century CE.

Located in a region removed from the Chinese capital of Beijing and the Vietnamese capital of Hue, the port town Chiang P'ing existed in, at best, a region of weak state control and, at worst, a state

of anarchy as neither the state apparatus of China or Vietnam was capable of exercising direct administrative or military control over this region. In addition to a clear political willingness to engage in maritime crime the region also possessed a strong geographic opportunity as well given its close proximity to maritime trade routes carrying goods from China to Europe (Young, 2007).

Similar to the Greek city-states that preyed on Phoenician trade or the defeated Granadans who targeted Spanish merchants, the residents of this region were generally poor, recently displaced by land reforms, and possessed maritime experience and familiarity with the local coastline (Murray, 1987; Young, 2007). As a result of these conditions sporadic piracy during the off-season for fisherman is noted in the historical record (Dutton, 2006; Murray, 1987).

In the late 19th century CE maritime crime around Chiang P'ing experienced a dramatic increase in frequency. The Tay-Son rebellion served to further increase the willingness of residents to engage in maritime crime as it further reduced the political control of Vietnam over this region (Murray, 1987; Young, 2007). As a result you see piracy transition from a seasonal occurrence to consistent and increasingly organized activity. The increasing intensity of the attacks launched from Chiang P'ing serve a clear role for the Tay-Son as they restricted the movement of enemy vessels and harassed the maritime supply lines for hostile land forces (Dutton, 2006).

Despite the success of the Tay-Son rebellion to place a ruler on the Vietnamese throne in 1788, the tide of the civil war turned against them, and they experienced defeat at the hands of the Nguyen dynasty, which had enlisted the support of the French government. The increased ability of the Nguyen dynasty with the aid of the French to exert political control over Vietnam reduced the ability of the pirates of Chiang P'ing to easily raid maritime shipping lanes as the increase in coercive state capacity reduced their willingness to act. This new political reality resulted in the pirate fleets of Chiang P'ing relocating to Southern China a region where the level of coercive state capacity was lower, and as a result the willingness to continue raiding the maritime trade routes of the region remained high (Young, 2007).

The relocation of the pirate fleets of Chiang P'ing indicate that this project's hypothesized conditions impacting opportunity and willingness were recognized by historical maritime raiders. The rational act of relocating to a region that allows greater capacity to continue a career is similar to the experiences of the pirates of the Aetolian Confederation in Greece who relocated to Cilicia following the Roman annexation of Greece (deSouza, 1999). In both cases, individuals engaged in maritime crime sought out locations which optimized their opportunity and willingness to engage in maritime crime for economic gain.

Following the relocation to Southern China, piracy blossomed, increasing in both the size of the pirate fleets and their level of organization. The ability of pirate fleets to develop unfettered is attributed to internal political problems that plagued the Ch'ing dynasty, which prevented China from exercising efficient control over her southern provinces (Young, 2007). In this environment, complex local markets emerged around maritime piracy which provided food and supplies for future pirate raids as well as serving as a way for pirates to dispose of their ill-gotten gains after returning to port (Murray, 1987). However, all of this changed in 1809 when the pirate confederation experienced a precipitous decline and dissolution.

This decline was a result of two separate forces targeting acts of piracy based in southern China. First, local governors in southern China mounted a series of limited land and sea based anti-piracy campaigns in combination with a general amnesty for pirates that would renounce their criminal lifestyle. Second, the Portuguese became concerned about the impact of piracy on trade between Portugal and Macao. The attempts made by the regional Chinese governors to reduce piracy through an amnesty program were viewed skeptically by the Portuguese. In an attempt to pursue what was viewed as a more effective strategy in Lisbon the Portuguese Army and Navy were deployed to the region. Based out of Macao, the Portuguese Navy conducted extensive patrols of the South China Sea and actively pursued and engaged any pirate ship or fleet it encountered in the region regardless of its

location in international or domestic waters. This policy was pursued for nearly a decade and a half (Young, 2007).

During the surrender of the last major pirate captain based in southern China, he stated, “For fourteen years you have experienced the power and vigilance of my scepter. You now know from my own mouth that the Portuguese valor was what destroyed it.” (Murray, 1987, p. 146) While the Portuguese frequently receive credit for leveling overwhelming coercive naval force against the pirates, it is debatable whether this strategy alone was responsible for eliminating piracy in the South China Sea.

Clearly, the Portuguese patrols served an important role in reducing the willingness of the coastal populations to engage in maritime crime in the region. The Portuguese actions bear a strong similarity to the American efforts to reduce piracy in North Africa. However, when the Portuguese and Chinese efforts are viewed holistically we find that the combination of limited Chinese sweeps of the coastline and offers of political amnesty are combined with the large scale Portuguese naval patrol of pirate infested waters we begin to see a strategy which bears a resemblance to Pompey’s anti-piracy campaign in the Mediterranean. While there is no evidence of direct cooperation between the Chinese and Portuguese actions, these states indirectly recreated many aspects of a very successful historical strategy to reduce piracy by deploying a coercive deterrent and offering the ability to return to a law abiding life. This dual pronged approach dramatically altered the willingness of active and potential pirates to engage in acts of maritime crime.

3.4 Summary

The previous case studies illustrate that there are recurring conditions that favor the development of maritime crime. These conditions hold equally true for the Illyrians, Caribbean pirates, and the pirates of the South China Sea. Despite the vast differences in culture, climate, and temporal occurrence, an opportunity to commit acts of maritime crime is present when a seafaring populace is located near high value maritime trade routes. This potential opportunity to engage in maritime crime

transitions into an active willingness to engage in maritime crime when economic conditions are poor and coercive state capacity lacks the ability to deter criminal activity.

State capacity plays a clear role throughout the historical record of maritime crime. Specifically, states that are capable of efficiently controlling and managing their coastal territory are capable of greatly reducing the willingness of coastal residents to engage in maritime crime. Among the most effective examples in this chapter included the reign of Ramses III, Pompey the Great, and the time in office of a collection of colonial Governors in North America. These case studies also illustrate that states further reduce the risk of outbreaks of maritime crime by preventing or ameliorating, poor economic conditions. Conversely, when a state cannot control its coastline or alleviate poor economic conditions coastal regions which tolerate piracy are likely to develop.

Arguably, most pirates and potential pirates are risk averse. If they can earn a respectable income through a legitimate trade, the dangers of engaging in maritime crime, such as, incarceration or even death, will far outweigh the potential rewards. If they suspect there is a high likelihood that they will be captured or their attack will fail, there should be a low level of willingness present for potential participants to embark on a career of maritime crime.

At the same time, when a potential pirate has no legitimate vocation and is unlikely to be deterred or arrested from engaging in an act of maritime crime, maritime theft becomes a desirable and arguably economically rational choice. When geographic opportunity is combined with weak economic conditions and a dearth of state capacity engaging in maritime crime is a low risk activity that offers a high rate of economic reward. The impact of these factors on shaping the opportunity and willingness of individuals who consider becoming pirates allows for the creation of a common set of conditions which can be used to analyze the risk of such outbreaks of seaborne crime, regardless of their location, the local culture, or period in history. Theoretically, these factors can also explain prolonged outbreaks of maritime crime across multiple regions and historical periods as well as the absence of maritime crime in regions such as the English Channel and the Cape of Good Hope.

CHAPTER 4: COMMON PERSPECTIVES ON MARITIME CRIME AND RESEARCH HYPOTHESES

4.1 Introduction

Piracy has challenged state authority and hindered interstate trade throughout history, and in some cases, threatened the continued survival of major states (Bradford, 2007; Gosse, 1932; Konstam & Kean, 2007). The contemporary incarnation of piracy in the forms of maritime piracy on the high seas and its domestic counterpart, maritime armed robbery, are no different. These phenomena increase the cost of interstate trade, divert military resources, and impact the global economy at a rate of up to \$12 billion per year (Bowden et al., 2010). They also have the potential to incur notably higher annual costs in the future, as maritime trade is expected to double if not triple in volume by 2020 (United States Coast Guard, 2011). The threat posed by maritime crime could escalate still further if future attacks on shipping routes result in the hull rupture or sinking of a vessel carrying large amounts of crude oil or toxic chemicals (Davis, 2002; Middleton, 2008).

Additionally, there is the possibility that terrorist organizations could establish mutually beneficial agreements with modern pirates in which training would be provided to allow seaborne vessels to be used in a terrorist attack or the maritime tactics of pirates could be adopted by terrorist organizations as an independent way to raise financial capital (Ross & Ben-David, 2009). Despite the current financial costs and the as of yet unrealized, but plausible, concerns regarding an environmental disaster or collaboration with a terrorist organization, maritime crime remains a topic which receives an inadequate level of attention. When compared to topics such as transnational terrorism, very little is known about systematic factors that encourage its occurrence.

The focus of this chapter will be to investigate the existing literature discussing maritime crime and identify theoretically justifiable variables which are likely to explain outbreaks at a global rather than a regional level. This position runs against the grain of existing research, which has viewed outbreaks of maritime piracy and maritime armed robbery as a collection of discrete regional events

that are driven by distinct cultural traditions and regional geographic traits (Abhyankar, 2006; Young, 2007). Most and Starr (1989) utilized the concepts of opportunity and willingness as a way to conceptually organize and analyze apparently disparate events at the global level. Given that acts of maritime crime have rarely been discussed as a unified phenomenon this methodological approach is well suited to investigate the impact of global level variables which may contribute to its occurrence.

This research contributes to the existing academic literature focused on acts of maritime crime by broadening the discussion and investigation of its causative factors. The discovery of significant global variables would help to explain why maritime crime occurs with high frequency in the Gulf of Aden, Straits of Malacca, and off the West Coast of Africa, but not the Straits of Gibraltar, North American coastline, Strait of Skagerrak, or the English Channel. Such results would assist in predicting when and where outbreaks of maritime crime are likely to occur, aiding in the development of policies which aim to reduce existing and prevent future outbreaks.

4.2 Regional and Global Perspectives

The dramatic reemergence of maritime piracy and maritime armed robbery in the late 20th and early 21st centuries has been a global phenomenon. Tracking organizations such as the IMO and ICC-IMB have recorded acts of maritime piracy and maritime armed robbery in South America, West Africa, East Africa, East Asia, and Southeast Asia. Sporadic incidences have also been reported in Europe and North America (Murphy, 2009). Despite an overall increase in activity, recent literature has debated whether these outbreaks are evidence of a global event driven by consistent forces. Rather, it has been argued that they may be a series of distinctly generated regional events which are occurring at the same time.

Abhyankar (2006) was an early advocate of this regionally focused position. The author came to this conclusion after noting the differences in strategy that emerged based on geographic location. For example, “Asian” piracy was identified by activities which largely occur in domestic waters, focused on stealing cash and small items, and generally involved the use of minimum force. In

contrast, “West African” and “South American” piracy occurred most frequently in harbor, had a strong predisposition towards violence, and involved stealing cash, cargo, ship equipment, and essentially anything which could be carried off and sold. In addition to regional variations, Abhyankar (2006) also classifies acts of maritime crime by their overall level of violence. For example, he noted that violent ship hijackings occurred at an increased frequency in the Straits of Malacca from 2002 forward.

This work is an important component of the existing literature. It created one of the first classification schemes which systematically categorized acts of maritime crime based on the tactics employed, goods targeted and geographic region in which the events occurred. However, there are weaknesses to these groupings. Abhyankar (2006) notes that, beginning in 2000, the level of violence employed by maritime pirates began to increase across the globe. If “Asian” piracy consistently involved a minimum use of force, why have violent ship hijackings occurred with greater frequency in Southeast Asia? If acts of maritime crime in this region of the world are no longer uniquely low in violence, is it substantially different from “West African” or “South American” maritime crime? Even if acts of maritime crime manifests in different forms across the globe, the conditions that encourage them to develop and the potential that they share similar causes is not addressed in depth in this classification scheme.

Frecon (2006) conducted fieldwork on the Riau Islands located near Singapore. The objective of this project was to examine an environment firsthand where acts of maritime crime had become a common occurrence and, in doing so, generate hypotheses that explain this behavior. Posing as a tourist, Frecon was able to gain the trust of residents engaged in raiding shipping lanes. He found that pirates in the region were predominantly young, single males who had few economic opportunities. The challenging nature of the economic environment forced many young people to turn to crime in order to earn a living for themselves, whether it was full-time or part-time to supplement low-paying conventional work. Common criminal undertakings included pickpocketing and maritime raiding for

young men and prostitution for young women. The close proximity between the Riau Islands and maritime trade routes anchored in Singapore was also noted as contributing factors. The contrast between the economically successful and vibrant city-state of Singapore and the realities faced by those who chose to partake in maritime crime was considered a factor which highlighted the relative lack of economic opportunity and poverty in Indonesia.

While a stark existence located next to the lucrative trade routes of a successful neighbor may encourage acts of maritime crime, it is only a necessary condition in this case study. Frecon (2006) attributed the high concentration of maritime crime in this region to the complacency and inability of the national government to exercise control over the region. The local police often did not report instances of maritime crime to Jakarta, and in some cases had exacted “taxes” from small ships passing near the islands. Even if the local police were to decide to crack down on maritime crime in the region, they were considered to have insufficient operating funds and inferior equipment. When these conditions are combined with the geographic location of the Riau Islands, conditions which create a clear opportunity to resort to maritime crime come into focus. When the bleak economic conditions of Riau Islands are also considered a potential variable explaining the willingness of the seagoing residents of this island chain also arises.

Frecon’s case study is an interesting addition to the literature as it hypothesizes that a specific combination of poor economic conditions, geographic factors, and weak state capacity lead to maritime crime in the Riau Islands. While the exact conditions of the Riau Islands are difficult to generalize to other locations around the globe, the overarching conditions which generate a sufficient opportunity and willingness to engage in criminal activity are generalizable. A coastal location near frequently transited trade routes creates a clear opportunity to conduct an act of maritime crime. The willingness to engage in maritime crime is found in the low levels of state capacity and lack of economic opportunity in the region.

Young (2007) also focused on Southeast Asia and reached similar conclusion as Frecon (2006). Young considered the reemergence of acts of maritime crime in Southeast Asia as strongly related to declining economic conditions which impacted coastal populations with maritime experience, and the region's unique geography that lacks clear natural boundaries. With the exception of the ambiguous nature of Southeast Asia's geographic boundaries, these hypothesized causes of maritime crime are generalizable to other regions of the globe. Based on these observations we again see outbreaks of maritime crime in a region with sufficient opportunity and willingness to act. Opportunity is present in abundance of maritime shipping. The poor economic conditions noted in the region serve as hypothetical incentive to exploit these conditions for private gain. Thus both opportunity and willingness are again suggested in the existing literature.

The possibility that the current outbreaks of maritime crime may be more than a collection of separate distinctly generated regional events was advanced by Martin Murphy in Adelphi Paper 338 titled, "Contemporary Piracy and Maritime Terrorism," and his 2009 book, *Small Boats, Weak States, Dirty Money*. Both of these contributions note that, while regional factors such as a cultural predisposition for maritime crime may be present, consistent global sources of maritime crime are likely to exist. This international dimension of maritime piracy and armed robbery is considered to be a result of primarily political conditions. In both works, Murphy proposes seven conditions that lead to outbreaks of maritime crime: legal and jurisdictional weakness, favorable geography, conflict and disorder, an inadequate security apparatus, permissive political environments, cultural acceptance, and the promise of reward. (Murphy, 2007, 2009). Despite hypothesizing the existence of global political causes of maritime crime, Murphy's seven conditions are not divided into 'political' and 'non-political' causes.

Arguably, four of the seven causes can be classified as 'political' as they relate to the sovereign borders of states and issues of state capacity. These include: legal and jurisdictional weakness, conflict and disorder, inadequate security apparatus, and a permissive political environment.

When discussing legal and jurisdictional weaknesses, Murphy notes the obstacle posed by international maritime borders to the pursuit of existing pirates as well as developing anti-piracy operations. This is in part due to the reticent attitude expressed by many states when reforming or revising maritime boundaries as established in UNCLOS. Another unique problem is that piracy is not recognized as a crime in some states. For example, neither India nor Japan has criminalized piracy. Conflict and disorder are considered to be favorable conditions for potential pirates as events such as an interstate war or civil disturbance can divert resources from law enforcement and create desperate circumstances for individuals living in or near a zone of conflict (Murphy, 2007, 2009).

A recurring example used throughout the literature to illustrate this condition is the case of Lebanon during its civil war. From 1975 to 1990, a series of ports developed along the Lebanese coast which catered to move stolen cargo to market and refit stolen ships (Conway, 1981). An inadequately funded or trained security apparatus can have a similar effect. The absence of an effective coast guard, navy, or police force can create an environment that creates a clear opportunity for potential maritime criminals to organize and launch attacks.

The final hypothetical cause noted by Murphy which can be classified as, ‘political,’ is the presence of a permissive political environment. Murphy considers permissive political environments to develop as a result of corruption or as the result of an underfunded security apparatus. When security personnel are underfunded they are considered likely to cooperate with criminals in order to augment their income. When a state lacks the means to control maritime crime as a result of a small or poorly trained coast guard or navy, maritime piracy and maritime armed robbery can proliferate as there is little chance of interference or prosecution (Murphy, 2007, 2009).

This list can be consolidated further to three political factors: legal and jurisdictional weakness, conflict and disorder, and an inadequate security apparatus. While permissive political environments are certainly plausible as a cause of maritime crime, the manner in which this category is described suggests that it may be an effect of a state with an inadequate security apparatus. In which

case, a permissive political environment may not be a primary cause of maritime crime. Or, if it is utilized in future work, the cause and effect relationship between an inadequate security apparatus and a permissive political environment should be analyzed in greater depth to determine if they are truly separate causes or merely two sides of the same coin.

The three remaining hypothesized causes, favorable geography, cultural acceptance, and the promise of reward, can then be classified as largely ‘non-political’. Favorable geography is clearly a central cause of maritime crime. Without access to a coastal location near maritime trade routes, undertaking an act of maritime robbery becomes as challenging as two land-locked nations, such as Kazakhstan and Bolivia, engaging in war. Similar to the mixed relationship between a permissive political environment and a weak security apparatus, the relationship between geography and cultural acceptability falls in a grey area.

Murphy (2007) states that, “piracy thrives where it is culturally acceptable,” then goes on to note, “it is likely that a reason for piracy’s greater acceptability in Southeast Asia than West Africa is that rich cargoes have transited Southeast Asian archipelagoes for centuries, making the opportunity for piracy a permanent feature of the local environment to an extent that it was not in West Africa.” Therefore, cultural acceptability may not be a primary cause of maritime crime. Rather, it could be considered a result of geography and the volume of trade present in an area. The third ‘non-political’ aspect of piracy noted by Murphy is the promise of reward. This condition has likely been a requirement for piracy across time. Without the promise, or at least the reasonable hope, of being financially better off after raiding shipping lanes, there would be few, if any, instances of maritime theft.

4.3 Common Ground

While these works have adopted varying levels of analysis when investigating contemporary outbreaks of maritime crime, they share a considerable amount of common theoretical ground not only with each other but also the historical record. Regardless of the level of analysis applied, there is a

consensus that poor economic conditions encourage individuals to consider resorting to maritime crime. Frecon (2006) found this to be the case in the communities of the Riau Islands. Young (2007) proposed that a regional economic downturn played a central role in explaining Southeast Asia's outbreak of maritime armed robbery and piracy in the late 20th century CE. When analyzing maritime crime at a global level, Murphy hypothesized that the promise of reward, which also implies that the existing economic conditions are not rewarding enough, is likely a key factor encouraging maritime crime (Murphy, 2007, 2009). Throughout the contemporary work there is a recurring association of declining economic conditions leading to a greater willingness to undertake acts of maritime crime.

The historical incidences of piracy discussed in chapter three provide anecdotal support to this hypothesis. In comparison to the success of the Phoenicians, the city-states of Greece which supported, or at least tolerated, piracy existed in a less than desirable economic state. Rome confronted piracy on a massive scale following the conclusion of the Third Punic War. Again there is a hypothesized link between the poor economic conditions of Carthage and Athens following this conflict and an increase in maritime crime (Gosse, 1932). In the same manner, the Viking raids of the 8th Century have been linked to deteriorating environmental conditions which adversely impacted Scandinavian agriculture and trade (Bradford, 2007; Ferguson, 2009).

Perhaps the best known outbreak of maritime piracy ravaged maritime trade and coastal settlements throughout the Caribbean from the 15th-18th centuries. This outbreak was partly motivated by a sense of income inequality resulting from the massive wealth that sailed into Seville annually in the form of the Spanish treasure fleets. As noted in Ronald (2007), Tudor England was a near pauper state in comparison to Spain. This sense of declining economic status in relative terms to Spain is considered a primary cause in England's decision to commission privateers and tolerate piracy that targeted Spanish territories and shipping. Regardless of if we are discussing historical cases of piracy or hypothesized causes of contemporary maritime crime, a recurring expectation is that a maritime

people who are willing to turn to robbery, kidnapping, and general criminal mischief at sea do so in economic conditions which are suboptimal.

The second recurring condition associated with contemporary acts of maritime crime is a location which allows a coastal populace existing in less than desirable economic conditions the opportunity to intercept maritime trade and goods. The Riau Islands are located south of trade routes which pass through Singapore. This location, along with the relative poverty of the region compared to Singapore have transformed the Riau Islands into a haven for modern seaborne criminals (Frecon, 2006). Young (2007) expands this position advocating that Southeast Asia's geography is well suited in general providing a clear opportunity to engage in acts of maritime crime due to numerous islands, archipelagoes, and peninsulas that create narrow sea lanes. Murphy moves the importance of geography specifically the role played by maritime chokepoints, up another level of analysis and theorizes that they are associated with outbreaks of maritime crime regardless of regional location. Even if dire economic conditions create a high willingness to act, if a would-be pirate or maritime armed robber is not located near a coastal trade route or a naval chokepoint that concentrates trade, there is little if any opportunity to engage in criminal activity at sea (Murphy, 2007, 2009).

Drawing on the cases discussed in chapter three, similar claims have been noted throughout the historical record. The Lukans and their successors, the Sea People, were located on the coast of Southern Anatolia, existed in a less than optimal economic state compared to their neighbors, and were located near maritime trade routes between Mycenaean Greece and Assyria. During the Bronze Age, it was common for vessels to remain close to shore for navigation purposes. This resulted in a dense concentration of trade, which provided recurring targets for a coastal population that could turn to maritime crime to augment their economic states (Konstam, 2008). The Lukans, as well as the Sea People, existed in an environment that provided a clear opportunity to act based on the trade routes of the day. The source of their willingness to turn from potentially legitimate sources of income to acts of

maritime piracy can be identified in the poor economic conditions of the region and a dearth of coercive state capacity.

Later, Greek city-states, located near the center of Phoenicia's Mediterranean trade routes, provided coastal populations, which did not benefit from the Mediterranean trade routes of the Phoenicians, access to high volumes of valuable goods that could be used to augment their economic conditions (Gosse, 1932). Similar geographic locations near maritime trade routes which passed along the coast of a region with suboptimal economic conditions were also present for the corsairs of the Barbary Coast, the pirates of Chiang P'ing in Southeast Asia, and European pirates and privateers following the establishment of bases of operation in the Caribbean (Bradford, 2007; Gosse, 1932; Murray, 1987; Pringle, 1953; Ronald, 2007; Wolf, 1979). Given the wide range of geographic regions and periods of history where a coastal location, its proximity to maritime trade routes, and poor economic conditions are described as a central components leading to acts of maritime crime, it is reasonable to expect that similar geographic conditions play a role in generating an opportunity to turn to maritime crime, in addition to poor economic conditions which impact the willingness of a coastal populations to act, in the late 20th and early 21st centuries.

In addition to economic and geographic concerns, a recurring condition in the maritime crime literature and the historical record is the presence of state weakness or complicity and outbreaks of maritime crime. Frecon (2006) and Murphy (2009) focus on widely different levels of analysis, the former conducted in-depth fieldwork at the community level while the latter introduced the possibility that consistent global factors can lead to outbreaks of maritime crime. Despite these differences, a state's inability to control sovereign territory as a result of a weak police force, coast guard, or navy is considered to lead to government complicity or a cultural acceptance of maritime crime. Again, historical outbreaks of piracy suggest that this link is a recurring theme which helps shape the willingness to engage in maritime crime and is not unique to modern cases.

The Mycenaean Greeks lacked sufficient naval power to deter either the Lukans or the Sea People from raiding their ships or, later, seizing their ports (Omerod, 1997; Silverman, 2003; White, 1970). The Romans experienced a similar problem. While Rome maintained a political claim on coastal territory encircling the Mediterranean, it initially lacked a way to patrol and enforce its political will on the region, or provide a sufficiently stable and rewarding economic environment. While Pompey's anti-piracy campaign is discussed as a victory of the will of the Roman state, it would not have been necessary if piracy had not emerged in the region as a profitable undertaking.

Rome's inability to control or deter piracy inadvertently created a strong willingness for coastal populations to act, as well as contributing to the arguable cultural acceptance of maritime crime throughout the Mediterranean. This allowed piracy to develop to a point that it threatened to disrupt the majority of maritime trade in the region (Gosse, 1932; Konstam, 2008). While few Roman historians associate the weakness of the Roman state with the emergence of piracy, Rome itself had previously associated the inability of states such as the Seleucid Empire and Ptolemaic Egypt to effectively administer and patrol the Eastern Mediterranean as a clear driving condition encouraging piracy in the region (Bradford, 2007).

Piracy in the Caribbean followed a similar trajectory. It flourished so long as Spain was unable to deploy sufficient coercive force, which would have reduced the willingness of pirates to act, or a sufficient level of legitimate income which would have reduced the willingness of seafaring populations to turn to maritime raiding (Pringle, 1953). This lack of state capacity aided again in the creation and dissemination of a regional cultural acceptance, or at least tolerance, of maritime crime which preyed upon maritime trade routes linking Spain to her colonial holdings. This tolerance of piracy continued until British colonial governors decisively established political control over the region's maritime territory and adopted and enforced a strict anti-piracy stance (Bradford, 2007; Konstam, 2008; Pringle, 1953). This imposition of authority reduced the willingness of potential pirates to act.

The piracy which occurred in the South China Sea more than a millennium after the fall of the Western Roman Empire followed a similar pattern. Piracy developed based out of the port of Chiang P'ing, which existed on the fringe of the political control of both Vietnam and China. Hence it existed in a location providing a clear opportunity and willingness to raid shipping as it was located near regularly transited maritime trade routes and removed from the coercive apparatuses of both states. Maritime raiding emerged as a way to compensate for lost income. Again, the combination of geographic features and lax state control created an opportunity to turn to maritime crime. This geographic opportunity was not fully exploited until poor economic conditions created a strong desire to augment personal income between fishing seasons (Murray, 1987).

In the process of maritime crime becoming a recurring activity of the coastal residents a tolerance of piracy is considered to have developed. For more than twenty years, piracy continued unhindered until the governments of Portugal and China began to exert control over the territory through a series of naval and land based military patrols and the aggressive prosecution of pirates (Murray, 1987). This agreement between the contemporary maritime crime literature and the historical record of piracy suggests a clear and recurring link between geographic location and an opportunity to turn to maritime crime. A recurring hypothesized spark that allows this latent capacity to become active and in some cases legitimized, is the presence of poor economic conditions and a low level of state capacity.

The addition of conflict and disorder, such as an interstate or intrastate war, as a favorable condition to the emergence of piracy is a unique contribution made by Martin Murphy. Thus, there is little contemporary research which advances a similar claim at the local, regional, or global level. However, piracy associated with the expansion of Illyria in the 3rd century CE, displaced Moors in North Africa following the Reconquista of Spain, and the Confederation of Pirates in the South China Sea in the late 19th century all involve notable increases in maritime piracy during periods of interstate or intrastate war. Illyria's expansion under Queen Teuta removed cultural and legal restrictions in

order to encourage maritime piracy in the Adriatic. Increasing levels of piracy strained the naval forces of neighboring states and reduced their ability to repel an Illyrian invasion (Konstam, 2008).

Debatably, if Illyria had not been forcibly expanding its borders, the legal and cultural environment would have remained more hostile towards maritime crime in the region.

The plight of the Moors following the Reconquista of Spain is an example that bears a strong resemblance to Murphy's expectations. Moors displaced from Southern Spain found their economic means reduced, and they existed in an uncertain political environment. Ferdinand's Spain required time to establish political control over Southern Spain, and the Moors existed as refugees in North Africa (Gosse, 1932; Wolf, 1979). Without the political and economic disruptions resulting from the downfall of Granada, it is unlikely that Moors, who had previously existed in a stable political and economic environment, would have turned from their previous legitimate vocations to piracy as a means to generate income.

Political instability resulting from the Tay-Son rebellion in Vietnam is described as a major catalyst leading to a dramatic increase in piracy in Southeast Asia. The Tay-Son rebels encouraged maritime piracy in the region as a way to disrupt trade and the movement of government vessels (Dutton, 2006). Without the outbreak of a civil war and the operational latitude and the increased incentive to act it provided to the pirates of Chiang P'ing, piracy may have remained a minor nuisance as compared to a major regional threat undermining European trade with China. At the very least, it is unlikely that piracy in the region would not have developed in scale as quickly.

A recurring claim made in the maritime crime literature and indicated in the historical case studies is that a low level of state capacity is linked to a willingness to engage in maritime crime. This is a similar position to the hypothesized link between weak state capacity and the emergence of transnational terrorist organizations. The transnational terrorism literature states that the lack of an effective coercive force makes states unable to maintain a monopoly on the use of violence within their borders, this inability is considered a key factor encouraging state weakness (Rotberg, 2003;

Zartman, 1995). The inability of these weak states to project power within their sovereign borders results in a willingness for the emergence of state challengers and internal violence from opposition groups and terrorist organizations (Rotberg, 2003).

Hehir (2007) discusses a second critical dimension to the measurement of state capacity. In addition to coercive capacity, states can suffer from a lack of administrative capacity. Administrative capacity is a broader category encompassing more than military and police control. It focuses on the ability of a state to deliver economic security as well as a functioning bureaucracy. Hehir (2007) notes that the existing state capacity literature advocates that a lack of either coercive or bureaucratic capacity can result in an environment which creates a willingness for terrorist groups to organize and challenge the legitimacy of the state.

Both terrorism and maritime crime are acts which challenge the authority of states. Therefore, literature which discusses conditions which generate environments facilitating the emergence of terrorists as challengers to state authority is applicable to the emergence of maritime criminals in coastal states. While the maritime crime literature to date is limited, incorporating the recurring theme of weak state capacity and the emergence of terrorism serves to strengthen the claim that weak state capacity is a plausible contributing factor to the emergence of maritime crime.

When the existing literature addressing maritime crime is compared to historical instances of piracy, several recurring hypotheses emerge regardless of the level of analysis applied by the researcher or the period of time during which acts of piracy occurred. A favorable geographic location is crucial for launching maritime raids, and in some cases avoiding the effective control of a state. When people located in these regions exist in poor economic conditions, they have little to lose by engaging in acts of maritime crime. Poor economic conditions also increase the relative value earned from an act of robbery committed at sea, as it can supplement a diminished, or replace a primary income which has been lost. These conditions associated with geographic opportunity, and an economic willingness to act, have been hypothesized to be exacerbated during outbreaks of interstate

or intrastate war, as well as declining state capacity. Both conflict and low levels of state capacity reduce a state's ability to effectively exercise control over territory and deter criminal activity.

4.4 A Framework for Analysis – Research Questions

The common theoretical assumptions found throughout the literature can be placed into an overarching framework of analysis framed by the concepts of opportunity and willingness. Using a modified list of the non-political causes of maritime crime outlined in Murphy (2007), both geographic location and a promise of reward are required for an individual to consider conducting an act of maritime crime. Geographic features alone are insufficient. A coastal location may offer ample opportunity to engage in acts of maritime crime.

A high opportunity to commit an act of maritime crime is present when a coastal location grants access to regularly transited maritime trade routes which pass through a maritime chokepoint. Chokepoints consist of geographic features which force ships close to shore and concentrate maritime traffic, reducing their speed and maneuverability. Common examples include the Straits of Malacca, Bab el Mandeb, the Cape of Good Hope, and the Straits of Gibraltar. Target density increases the potential rate of success from resorting to acts of maritime crime as the odds of locating and intercepting a ship are improved. However, it is possible that a coastal location is near a maritime chokepoint yet the threat of maritime crime would remain low. For example, if the region is not utilized as a major maritime shipping lane there would be a low risk of maritime crime due to a lack of available targets. One such example would be the Straits of Magellan.

The implications for geographic opportunity are straightforward. Without access to maritime trade routes, it is not easily possible to commit an act of maritime armed robbery or maritime piracy. Based on the matrix laid out in Table 4.1, the following hypotheses will be investigated.

Hypothesis 1: A significant and positive relationship between maritime trade routes passing within two hundred nautical miles of shore and the rate of maritime piracy, maritime armed robbery, and overall maritime crime experienced by coastal states will be found.

Hypothesis 2: A significant and positive between naval chokepoints located within two hundred nautical miles of shore and the rate of maritime piracy, maritime armed robbery, and overall maritime crime experienced by coastal states will be found.

That being said, there remains a theoretical possibility that maritime chokepoints may have a diverse range of impact on maritime crime. Perhaps a maritime chokepoint encompassed in the tertiary seas of a lone state will experience lower rates of maritime piracy. This jurisdictionally simple environment could create a maritime space that allows for intensive maritime patrols as well as avoiding complex boundaries which would aid pirates in avoiding pursuit.

Table 4.1 – Geographic Opportunity and Target Density

	Limited or No Access to a Maritime Chokepoint	Access to a Maritime Chokepoint
Access to Maritime Trade Routes	Medium Opportunity Numerous targets that, while recurring, are not densely packed.	High Opportunity Numerous densely packed targets with limited mobility.
Limited or No Access to Maritime Trade Routes	Low Opportunity Few, if any potential targets. Little chance of reward.	Low Opportunity Few, if any potential targets. Little chance of reward.

The selection of two hundred nautical miles to indicate close proximity to the maritime trade routes and chokepoints is desirable as this distance from shore is recognized as the boundary line of the extended economic zone (EEZ) of a coastal state. While the EEZ of states lies within international waters, the coastal states are granted fishing rights and access to mineral deposits within the EEZ (*Rights Based Fishing*, 1989). With this in mind, it is hypothesized that a majority of the craft present in a coastal state which could be used to commit acts of maritime crime are primarily equipped to operate within this zone.

Explaining the willingness of potential maritime criminals to act involves more than close proximity to maritime trade routes and favorable coastal geography. The coercive capacity of a state plays a role in generating a potential willingness to act. Complex international borders serve as a second dimension which impacts the ability of a state in applying its military or police forces. Based on the UNCLOS definition of piracy, which limits the ability of naval forces to cross international maritime borders in pursuit of maritime criminals, the close proximity of multiple sovereign borders creates a legal environment where it is arguably easy for pirates to avoid pursuit by crossing these boundaries. Hence the willingness to carry out a successful maritime raid is likely increased.

A region which is likely to experience the lowest level of opportunity and willingness as a result of coercive state capacity would possess a combination of a strong security apparatus and simple maritime borders. In this scenario, simple maritime boundaries are defined as areas with two or fewer international maritime borders in close proximity. This would create clearly defined legal jurisdiction with few obstacles to impede the pursuit of maritime criminals or obscure their point of origin. The presence of a strong security apparatus would provide the manpower and equipment required to carry out such pursuits as well as serve as a general deterrent and decreases the potential opportunity and willingness of maritime criminals to act.

Moderate levels of opportunity and willingness to act are expected in two scenarios. The first would involve a region with a strong security apparatus and complex maritime borders. Despite complex jurisdictional borders which would hinder the pursuit of maritime criminals, a strong security apparatus would reduce the willingness of potential pirates by allowing for effective patrols of the domestic waters of a single state and international waters. For example, if state A exists in a region with complex maritime borders but possess a strong coercive capacity, it has access to the resources which can be used to patrol both the littoral waters of state A and the neighboring high seas of the region (see Figure 1).

This ability would remove large areas of maritime space from potential maritime marauders. Granted, under current international law state A is unable to enter the territorial waters of state B or state C which could serve as friendly ports for potential maritime raiders. In this sense, an effective coercive apparatus allows state A to partially compensate for the jurisdictional problems associated with complex maritime borders. Alternatively a modified version of this scenario would involve a state with a blue water navy possessing the capability to exert coercive force in international waters at a global level. These states could fill a similar role as a strong regional coercive power as they would possess the resources to patrol the high seas but not the littoral waters of coastal states.

The second combination of conditions expected to lead to moderate levels of opportunity and

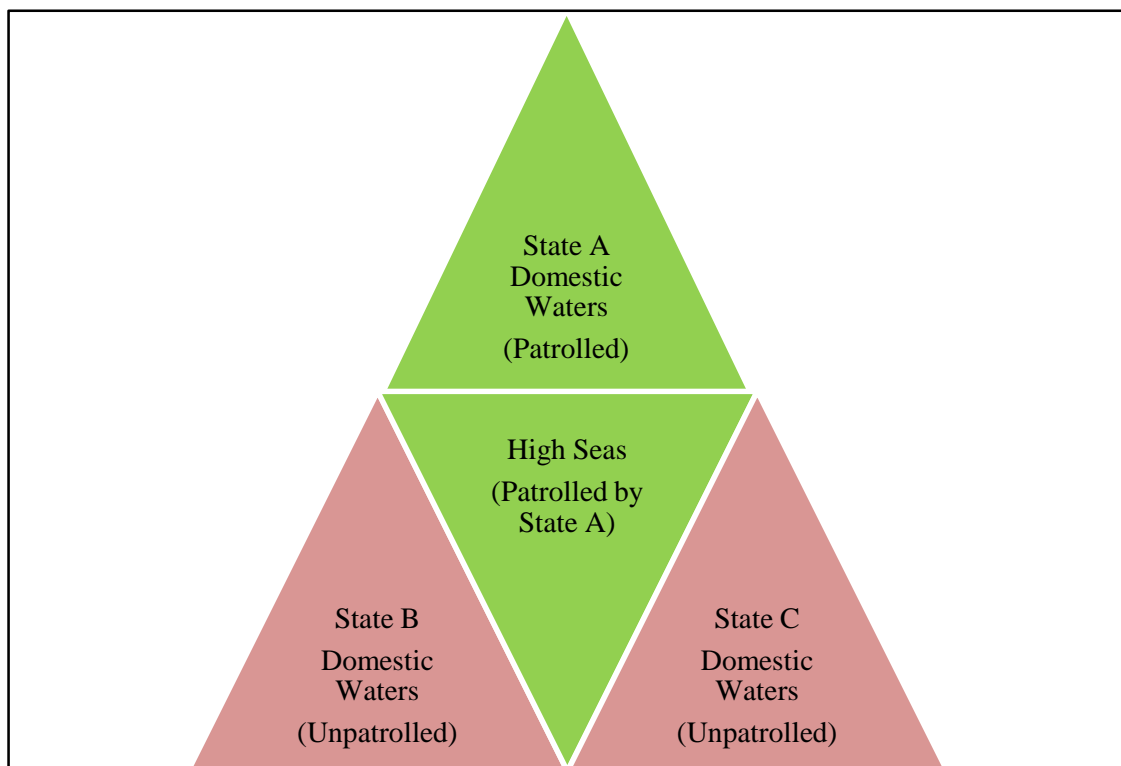


Figure 4.1 – Naval Patrol Capabilities of State A

willingness to commit acts of maritime crime are also expected regions with simple maritime borders, defined as 1-2 states in close proximity, and the absence of a strong deterrent capability. While the system of international borders present would not greatly aid pirates in evading capture, the lack of a

strong coercive apparatus to pursue or punish the potential pirates could encourage potential pirates to try their hand at raiding nearby trade routes. The highest expected opportunity and willingness to commit acts of maritime crime associated with coercive state capacity would occur in regions with complex maritime borders, and a weak security apparatus (See Table 4.2). This combination of conditions creates an environment where numerous ships will be present with limitations placed on their speed and maneuverability, creating a target rich environment as the absence of a strong coercive capacity reduces the ability of states to pursue maritime criminals. In the limited instances when pirates are pursued, it would be relatively easy to evade pursuit by crossing international borders.

Table 4.2 – Opportunity and Willingness: International Borders and Coercive State Capacity

	Simple Maritime Borders 1-2 maritime borders in close proximity	Chokepoint with Complex Maritime Borders 3+ maritime borders in close proximity
Weak Security Apparatus	Moderate Opportunity and Willingness There will be few pursuers. However, those that are present will be difficult to evade.	High Opportunity and Willingness There will be few pursuers, and they will be easy to evade by crossing international borders.
Strong Security Apparatus	Low Opportunity and Willingness Clearly defined jurisdiction and a strong security apparatus create few obstacles to aggressive anti-piracy campaigns.	Moderate Opportunity and Willingness Despite complex jurisdictional issues, a strong security apparatus could effectively patrol domestic and international waters reducing the willingness of potential pirates.

These conditions which combine recurring themes stressed in the maritime crime literature as well as historical case studies of piracy will be tested with the following hypotheses.

Hypothesis 3: As the coercive capacity of a state increases, the rate of maritime piracy, maritime armed robbery, and overall maritime crime will decline.

Hypothesis 4: The presence of a chokepoint with complex maritime borders will have a greater significant and positive effect on the rate of maritime piracy, maritime armed robbery, and overall maritime crime than the presence of a maritime chokepoint bordered one to two states.

The economic conditions present in a coastal state have been repeatedly associated with encouraging coastal residents with seafaring experience to turn to acts of maritime crime to improve their economic lot in life. There are multiple potential measures of the economic conditions found in a state. However, one the most direct is GDP per capita adjusted for purchasing power parity. Adjusting GDP per capita for purchasing power parity provides a relative value across currencies.

This is not the only potential indicator of poor economic conditions, Hehir (2007) linked weak administrative capacity with the inefficient delivery of public goods, corruption, and an overall worsening of economic conditions. Regardless of the measure the hypothetical assumption is that poor economic conditions serve as a variable shaping an individual's willingness to engage in illicit activity.

There are two scenarios where a moderate amount economic willingness to commit acts of maritime crime is expected to be present. The first would be in a state with simple maritime borders and a low level of administrative capacity. Such a location would possess jurisdictional boundaries which minimize the ability of maritime criminals to avoid pursuit. However, low levels of economic income are expected to lead to more volatile and desperate conditions. The second combination of traits expected to lead to a moderate level of willingness to commit acts of maritime crime include the presence of complex international borders and a high level of economic success. Despite complex jurisdictional issues, a high level of economic income is expected to create a less volatile and desperate state of being, which would theoretically reduce the level of economic desperation in coastal communities. Nevertheless, it would still be possible for acts of maritime crime to occur, albeit at a lower level than for states in a similar location with poor economies. The highest expected willingness to commit acts of maritime crime is theoretically expected in regions with poor economic conditions

and complex international borders, as this combination suggests that would-be pirates exist in an economically unstable environment that is located in an area which would allow them access to a high number of potential targets, as well as a perennial means to avoid pursuit (see Table 4.3). Thus the following hypothesis is included in this project.

Hypothesis 5: As the economic conditions in a state increases, the rate of maritime piracy, maritime armed robbery, and overall acts of maritime will decline. Table 4.3 – Opportunity and Willingness: International Borders and Economic Conditions

	Standard Maritime Borders 1-2 maritime borders in close proximity	Complex Maritime Borders 3+ maritime borders in close proximity
Poor Economic Conditions	Moderate Opportunity and Willingness Jurisdictional boundaries are minimized in this option. However, the weaker administrative capacity is expected to lead to more volatile environments regarding economic stability and the delivery of public goods.	High Opportunity and Willingness There will be few pursuers, and they will be easy to evade by crossing international borders.
Strong Economic Conditions	Low Opportunity and Willingness Clearly defined jurisdiction and a strong administrative capacity are expected to deter potential pirates.	Moderate Opportunity and Willingness Despite complex jurisdictional issues, a high level of administrative capacity is expected to create a less volatile economic environment and efficient delivery of goods.

4.4.1 Overarching View of Opportunity, Willingness, and Maritime Crime

When the opportunity and willingness tables are used in tandem, they allow for the hypothesized causes of maritime crime to be collectively and systematically applied. For example, the Bab el Mandeb would provide a high opportunity to commit piracy as there is a high volume of maritime trade that passes through a naval chokepoint. Potential pirates would also have a high willingness to act, as the states in this region have complex naval borders, and are generally

considered to possess weak security branches. In addition to these features many states in this region have been classified as failed or failing, which makes it unlikely that economic conditions are stable or public goods are delivered efficiently (Hastings, 2009). These conditions create a clear economic willingness to act, as successful acts of maritime crime would substantively improve depressed economic condition.

Conversely, these hypotheses suggest why other regions would experience little, if any, maritime crime. The English Channel also experiences a high volume of maritime trade and possesses complex maritime borders between the United Kingdom, France, and Belgium. At first glance, there is a high opportunity for maritime crime. However, these states possess effective security arms which can deter potential maritime criminals notably decreasing the likelihood of successfully carrying out an act of maritime crime in the English Channel. In addition to a low willingness to act the United Kingdom, France, and Belgium possess high GDPs. The high standard of living greatly reduces the potential willingness to turn to maritime raiding. It is simply far less lucrative an act in Northwest Europe than around the Horn of Africa.

In order to more clearly illustrate how opportunity and willingness combine to create conditions that favor or dissuade acts of maritime crime from occurring, these three 2x2 tables can be combined (see Table 4.4) The x-axis consists of categories indicating a low, medium, and high geographic opportunity to commit an act of maritime crime. A low classification would include coastal states far removed from the major arteries of trade. A moderate classification would include states located near frequently transited routes. A high classification would include states located near a frequently transited route and a maritime chokepoint.

The y-axis of the table consists of categories indicating combinations of willingness based on economic conditions and coercive state capacity. These categories are also divided into low, moderate, and high levels and given values ranging from 0 to 2. Low categories are valued at 0, moderate categories are valued at 1, and high categories are valued at 2. The scores for economic willingness

Table 4.4 – Opportunity and Willingness Matrix

	Low Opportunity Value = 0	Moderate Opportunity Value = 1	High Opportunity Value = 2
Low Economic Willingness and Low Coercive Willingness Score =0	0	1	2
Low Economic Willingness and Moderate Coercive Willingness Score=1	1 Iceland	2	3
Low Economic Willingness and High Coercive Willingness Score=2	2	3	4
Moderate Economic Willingness and Low Coercive Willingness Score=1	1	2	3
Moderate Economic Willingness and Moderate Coercive Willingness Score=2	2	3	4
Moderate Economic Willingness and High Coercive Willingness Score=3	3	4	5
High Economic Willingness and Low Coercive Willingness Score=2	2	3	4
High Economic Willingness and Moderate Coercive Willingness Score = 3	3	4	5
High Economic Willingness and High Coercive Willingness Score=4	4	5	6 Somalia

and coercive willingness are then tallied. For example, a low level of willingness based on the coercive state capacity, and a low level of the economic conditions found on shore has an overall score of 0. A high level of willingness based on coercive capacity and economic conditions has a score of 4, as both high categories are assigned a value of 2. When the two point opportunity (x-axis) and four point willingness (y-axis) scores are combined, their totals range from 1-6. A combined opportunity and willingness score of 1-2 indicates a low risk of maritime crime, 3-4 indicates a moderate risk of maritime crime, and scores of 5-6 indicate a high risk of maritime crime.

Based on this unified table we can make hypothetical predictions regarding states and their risk of experiencing outbreaks of maritime crime. The example of Somalia and the Bab el Mandeb would be expected to experience a high rate of maritime crime as it would earn a score of 6. This score reflects a state that provides ample geographic opportunity, as well as a high coercive willingness score due to the nearly non-existent Somali naval presence. Coastal residents in Somalia would also be predicted to possess a high economic willingness to act resulting from very poor economic conditions found within the state. The United Kingdom while located near primary maritime trade routes and a complex maritime chokepoint is predicted to experience a low level of maritime crime. This low prediction is driven by a lack of coercive willingness as the United Kingdom possesses an ample ability to deploy coercive force, as well as the regions high standard of living which creates a low willingness of coastal populations to resort to acts of maritime crime in order to augment their income.

Drawing on the earlier discussion of historical cases, which suggest that maritime crime increases during periods of economic decline, interstate and intrastate warfare, as well as the hypotheses advanced in Murphy (2007; 2009) the following hypotheses will be investigated.

Hypothesis 6: A significant and positive relationship between a coastal state's involvement in an interstate war and the occurrence of maritime piracy, maritime armed robbery and overall maritime crime will be present.

Hypothesis 7: A significant and positive relationship between a coastal state's involvement in an intrastate war and the occurrence of maritime piracy, maritime armed robbery and overall maritime crime will be present.

Based on the opportunity and willingness matrix introduced earlier in this chapter the following hypothesis will be examined.

Hypothesis 8: Higher scores on the opportunity and willingness matrix will lead to significant and positive rates of maritime piracy, maritime armed robbery, and overall maritime crime.

4.5 Summary

In this chapter, I have outlined the hypotheses which will be investigated in depth in the following chapters. The proposed hypotheses have been drawn from the preceding policy literature investigating maritime crime and historical outbreaks of maritime crime. These results will further advance both the academic and policy debates on maritime armed robbery and maritime piracy by establishing a common framework based on generalizable conditions that can be used to predict the risk of outbreaks of maritime crime. In clearly identifying these conditions and determining their impact on maritime crime the findings can be used to develop targeted policy proposals intended to improve the security of international maritime trade.

CHAPTER 5: DATA COLLECTION

5.1 Introduction

In order to test the hypotheses established in chapter five and their validity as predictors of maritime piracy, maritime armed robbery, and overall maritime crime, this dissertation will utilize large-n quantitative analyses and requires the creation of new global level datasets. The majority of quantitative analyses completed to date have focused on piracy as defined by the ICC-IMB rather than the definition of piracy adopted by the U.N. and IMO (Groot & Shortland, 2010; Hastings, 2009; Maximo Q. Mejia Jr., 2009). While this work has contributed to the developing literature of maritime crime, no research exists which analyzes maritime piracy as it is currently defined under international law. Despite the claim that maritime crime in domestic waters is difficult to separate from maritime crime in international waters, international law considers these to be clearly distinct acts (Coggins, 2012; Hastings, 2009; United Nations, 1982). Utilizing the narrower definition of maritime piracy outlined in the UNCLOS and its emphasis on domestic and international waters will add a greater level of detail, and value to debates regarding the formation of policy directed at alleviating and eliminating maritime crime.

In addition to a general lack of research on this subject, previous efforts to assemble datasets focused on maritime crime have not coded the full range of publicly available piracy reports and, in some cases, may have suffered from selection bias as country information has only been recorded when an act or attempted act of piracy has occurred. The two most significant efforts at creating datasets to date include Hastings (2009) and Coggins (2012). The Hastings dataset begins in the year 1998, and the Coggins dataset begins in the year 2000; both datasets omit reports collected by the IMO which date back to 1991. This artificially excludes numerous years of reportable observations which would nearly double the size of their datasets and add further empirical value to their results. Additionally, the Hastings dataset excludes data from countries which did not experience acts of maritime crime. Including where maritime crime does not occur, as well as where it does occur, over a

broad period of time, would present a more robust model for the investigation of the causative factors of maritime piracy, maritime armed robbery, and overall maritime crime.

This chapter first describes how raw data was collected and coded for a new dataset on maritime crime. The dataset reduces the risk of selection bias as it includes data for every country in the world with a coastline and access to international maritime trade routes included in the Correlates of War Dataset. It also includes a wider range of country years than the previously discussed data collection efforts, allowing for a more thorough investigation.

5.2 Data Collection and Coding

The data coded for this project was recorded in two separate formats. The first recorded incident data. The incident data set codes information for individual reported acts of maritime crime and classifies the events as either maritime armed robbery or maritime piracy. The individual events of maritime crime were then tallied and additional controls were included in a second dataset in country-year format.

5.2.1 Incident Dataset

The incident dataset contains coded information for every reported case of maritime crime reported to the IMO and IMB between the years 1991 and 2007, provided that the location could be determined and mapped with a reasonable degree of accuracy. In total, the dataset contains 3,385 acts of attempted and successful maritime armed robbery occurring in the domestic waters of a state, 417 acts of successful and attempted maritime piracy occurring on the high seas, and a combined total of 3,797 acts of attempted and successful maritime crime in general.

This dataset draws its information from two separate reporting agencies. From 1991 to 2000, quarterly and monthly piracy reports collected by the IMO are used, as the IMB did not begin issuing piracy reports until the year 2000. From the year 2000 onward, the IMB reports became the de facto standard reporting center for maritime crime and the IMO ceased collecting and releasing event data independently of the IMB. While each of these organizations employs a different definition of piracy,

their reports collect similar information regarding maritime attacks. For example, both agencies record the date and time of a maritime attack, the reported position of the ship at the time of the attack, details of the incident, and the consequences for the crew. This allows the IMO reports and IMB reports to be coded in a consistent manner from 1991 forward, with a lone exception.

During the last six months of 1995, the IMO changed the manner in which they released detailed data on reported incidences of maritime crime. From October 1991 through June 1995, the IMO's quarterly reports logged detailed information of each reported incident. However, from July 1995 through December 1995, the IMO's quarterly reports were reformatted and included a tallied count of maritime crime by region. These reports did not contain information regarding the specific location or detailed information regarding attacks, which would allow them to be coded into the incident dataset or plotted with a high degree of confidence using ArcGIS mapping software.

Based on the tally of attacks noted in the third and fourth quarter piracy reports from 1995, 110 incidents of maritime crime are not included in the incident dataset. This represents a loss of two percent of the reported cases of maritime crime between 1991 and 2007. The IMO Library located in London, England, was contacted regarding this issue. However, the library does not possess any detailed records of maritime crime reported during the last six months of 1995. This loss of data is unfortunate but limited, as the monthly reports released by the IMO beginning in January 1996 adopted a similar format as the quarterly reports released from October 1991 to June 1995.

The following section outlines the variables and coding procedures employed in the incident data set. All of the information was collected from IMO and ICC-IMB piracy reports between the years 1991 and 2007.

ID: Each incidence of maritime crime was assigned a custom identification number (ID) for this project. The format for these IDs was as follows: MMP.#####. For example, the first recorded incident has an ID of MMP.00001.

Source: As this dataset draws information from numerous reports from two separate reporting agencies, it was important to note the origin of the information for each specific incidence. When an incident was recorded from an IMO report, it was indicated by recording the last two digits of the report year, circulation number assigned by the IMO, and the incident number noted in the report. For example, 91.CIRC577.1 indicates that the incident occurred in 1991, was reported in the IMO report assigned circulation number 577, and was the first case in the report. When an incident was recorded from an IMB report, a similar identification procedure was used.

Date: The reported date of the incident was recorded in dd.mm.yyyy format.

Year: The reported year of the incident.

Location: The location variable notes the level of detail provided for each individual incident. A coding of 0 indicates that the location of the reported incident could not be precisely determined. Examples of a vague description include the absence of any identifying criteria, such as latitude or longitude or a location description, such as, 'on route between Singapore and Hong Kong.' A coding of 1 indicates that the precise location of the attack is provided in latitude and longitude coordinates in a report. A coding of 2 indicates that a precise location is not included. However, a detailed description which allows a location to be reasonably approximated is present. Examples of such a description would include, '50 miles from the coast of country x,' 'at anchor in Rio de Janeiro,' or 'within the territorial waters of country y.'

Latitude: When the latitude of an attack was recorded in the IMB and IMO reports, it was logged in degrees, minutes, and seconds. While this format of noting location is common in maritime reports, it is incompatible with ArcGIS. For this reason, latitude coordinates were converted into decimal degrees using the Latitude and Longitude Conversion Utility, which is accessible online via the Gateway of Geospatial Information Technology of San Diego State University.

Longitude: Longitude coordinates were converted and coded in the same manner as latitude coordinates.

Piracy: The latitude and longitude coordinates recorded as decimal degrees were then used to plot the location of the incident using ArcGIS and the OpenStreetMap base layer, which indicates the twelve nautical mile boundary between tertiary seas and international waters noted in the UNCLOS. If the reported act occurred in international waters, it was coded a 1. If the reported act occurred in domestic waters, it was coded as a 0.

ArmedRobbery: The same mapping process was employed to record acts of maritime armed robbery. If the plotted incident occurred in the domestic waters of a state, it was coded a 1. If the reported act occurred in international waters, it was coded a 0.

PirateState: This entry records the estimated country of origin for the attackers. While the IMO reports do not declare a state of origin for a maritime attack, the ICC-IMB codes the state of origin as the state located closest to the attack. The following rules were used to determine how the state of origin was determined in this dataset. Rule 1: If the incident report clearly identifies the nationality of the attackers, this will be used to determine their country of origin. For example, incidences of maritime crime located near the coastline of Yemen, and deep in the Indian Ocean have noted that their attackers were Somali pirates. In such cases, Somalia was recorded as the likely country of origin for these attacks. Rule 2: When the incident report does not clearly identify the nationality of the attackers, the state of origin is assumed to be the closest coastal state.

PirateStateCode: This variable indicates the Correlates of War country code assigned to the state determined to be the country of origin for the attack.

VictimState: The victim state is determined based on the flag flown by the vessel that reported the attack. The flag flown by the attacked vessel is consistently noted in both IMO and ICC-IMB reports.

VictimStateCode: This variable indicates the Correlates of War country code assigned to the state determined to be the victim of the maritime attack.

BootyDescription: The description of goods stolen as noted in the attack descriptions of the IMO and ICC-IMB reports.

BootyDV: A binary variable indicating whether goods or equipment were successfully stolen during an attack. This variable can serve as an indicator for successful versus attempted acts of maritime crime.

PirateNumber: The number of attackers noted in the narrative description of the IMO and ICC-IMB reports.

Weapon: A categorical variable indicating the weaponry used by the attackers in the narrative description of the IMO and ICC-IMB reports. A coding of 1 indicates that knives were used during an attack. This is a broad category which is used to denote a range of implements that can be used for stabbing, slicing, etc., including swords, machetes, and coconut knives. A coding of 2 indicates that pistols or generic ‘guns’ were mentioned in the incident report. A coding of 3 indicates that the attackers were noted to have rifles or automatic weapons. A coding of 4 indicates that the attackers had high powered weapons, such as rocket launchers or mortars. A coding of 5 indicates that the attackers used non-traditional weapons, such as drugs, to incapacitate the crew.

Violence: The level of violence noted in the narrative description of the IMO and ICC-IMB reports was recorded using a categorical variable. A coding of 0 indicates that there was no reported violence during the attack. A coding of 1 indicates that there was a threat of violence made against the crew but not carried out. A coding of 2 indicates that a threat of violence was made and carried out against the crew of a ship. A coding of 3 indicates that a threat of violence was made, carried out against the crew, and resulted in at least one death. The coding scheme for this variable employs the same classification of violence used in the Coggins (2012) dataset.

5.2.2 Country Year Dataset

The country year dataset tallies the number of incidences of maritime armed robbery, maritime piracy, and overall maritime crime for all coastal states from 1991 to 2007. Observations are included for every country with a coastline accessible to international maritime trade routes included in the Correlates of War Interstate War Data v.4.0 and Intrastate War Stata v.4.1. The dataset consists

of unbalanced panel data as a country is only included so long as it maintains a coastline with access to international trade routes. For example, Ethiopia has entries for 1991 and 1992 and is excluded after this period, following Eritrea's formal separation from Ethiopia. East Timor was added to the dataset beginning in 2002, following its separation from Indonesia. Other examples of states which do not contain data entries for the full range of years include Croatia, Bosnia, Montenegro, Yugoslavia (Serbia), and Palau. In total, 147 coastal states are included with a total of 2,428 recorded country years.

Unlike the incident dataset which primarily coded information from piracy reports released by the ICC-IMB and IMO, the country year dataset includes data collected from an array of sources including the World Bank, United Nations, CIA World Factbook, Eugene, and Dr. Jean-Paul Rodrigue's work investigating the geography of modern maritime transport systems.

Similar to the preceding variable coding description for the incident dataset, this section will explain how the variables were coded and the sources that information was drawn from.

CCode: The Correlates of War Country Code used to identify the coastal state.

Country: The name of the coastal state. The Correlates of War State list was used to define the state name used in this dataset.

Year: Indicates each year that a coastal state maintained a coastline providing access to maritime trade routes. As previously discussed, the majority of states in this data set have entries for each year from 1991 to 2007.

RegionName: Indicates the name of the sub region that the coastal state belongs to, according to the United Nations Standard Country or Area Coding Procedures for Statistical Use. This classification of countries by geographic region is desirable as it provides a systematic and widely used geographic classification scheme and does not make any assumptions regarding the political affiliations of states (United Nations Statistics Division, 2012). The regional classifications used in this project include North America, Central America, Caribbean, South America, Northern Europe, Western Europe,

Southern Europe, Eastern Europe, Northern Africa, Western Africa, Middle Africa, Southern Africa, Eastern Africa, Western Asia, Southern Asia, Eastern Asia, Southeastern Asia, Australia and New Zealand, Micronesia, Melanesia, and Polynesia.¹

Region: This variable assigns an identifying number to each of the previously mentioned regions. This variable is intended to improve the sorting and comparison of information across regions. The numbering process began in the Western Hemisphere and systematically moved eastward. The assignment of IDs for each region is as follows: North America = 1, Central America =2, Caribbean =3, South America =4, Northern Europe =5, Western Europe =6, Southern Europe =7, Eastern Europe =8, Northern Africa =9, Western Africa =10, Middle Africa = 11, Eastern Africa =12, Southern Africa =13, Western Asia =14, Southern Asia =15, Eastern Asia =16, Southeastern Asia =17, Australia and New Zealand =18, Melanesia =19, Polynesia =20, and Micronesia =21.

Binary Region Variables: A series of regional variables were created for each of the 21 regions. If a country was classified as belonging in a certain region, it was coded with a 1. If a country was not classified as belonging in the region, it was coded as a zero.

CINC: The Composite Index of National Capability or CINC is a measure of state power beyond GDP developed by David Singer for the Correlates of War project. Scores are scaled from 0 to 1 and reflect the portion of salient aspects of state power beyond GDP possessed by each state. The components of the CINC score represent the demographic, industrial, and military resources available for mobilization within each state. This variable was included in the annual dataset to allow for the hypotheses focused on the coercive capacity of coastal states to be fully investigated (Singer, 1988). The data was collected for the years 1991-2007 via EUGene (Bennett & Stam, 2000). At the time of this project, CINC data after 2007 had not been released.

GDPCapPPP: This variable serves as an annual measure of the GDP per capita based on purchasing price parity for every country in the annual dataset between 1991 and 2007. This annual variable was

¹ A full list of the composition of each of these regions is available online via the U.N. and can be located at <http://millenniumindicators.un.org/unsd/methods/m49/m49regin.htm>.

collected using the World Development Indicators (WDI) dataset maintained by the World Bank. The WDI dataset defines this variable as:

The gross domestic product converted to international dollars, using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2005 international dollars (World Bank (a), 2012).

When the WDI did not possess an entry for GDP PPP, data was collected from CIA World Factbooks and adjusted to constant 2005 dollars. The inclusion of this variable is justified as a measure of the economic conditions which are hypothesized to play a role in the decision making process which encourages maritime individuals to turn to maritime crime as a source of income (Frecon, 2006; Gosse, 1932; Murphy, 2009; Young, 2007).

AreaKmSq: The total area of each state is recorded in square kilometers. Based on the work of Piazza (2008) which addressed terrorism, the argument it presents is that states with larger areas to control are likely to experience greater difficulty in exerting their administrative capacity across the entirety of their territory. Arguably, a similar assessment can be applied to coastal states which possess large amounts of territory. Data regarding the total square kilometers claimed by each state was collected via CIA World Factbooks.

Population: Population is included in this dataset based on the work of Piazza (2008) which theorized that increasing populations of states could impact the efficacy of states, making them more desirable bases for terrorist organizations. Based on this position Hastings (2009) included a variable measuring total population when assembling a dataset investigating East African and Southeast Asian maritime crime. As this measure served as an important control in both of these projects, population data for each state was collected from the World Bank's Health Nutrition and Population Statistics Dataset (World Bank (b), 2012).

CoastKm: Similar to total area controlled, the total length of a state's coastline can be considered a factor that can decrease the ability of a state to effectively exert administrative or coercive capabilities throughout a state. For example, if a state encounters difficulty administering and patrolling a long coastline, this produces an opportunity for coastal populations to consider adopting maritime crime as a vocation. Data regarding the total coastline of the states in this dataset in kilometers was drawn from annual CIA World Factbooks from 1991 to 2007.

Effective: This variable measures the annual effectiveness of the governments of the coastal states included in this dataset, using a continuous scale that ranges from 0 (weak government) to 5 (strong government).

This data was collected from the World Bank's Worldwide Governance Indicators (WGI) Project. This project aggregates a wide array of information ranging from infrastructure, the delivery of public goods, such as education, and an assessment of the overall quality of a state's bureaucracy.

The WGI Project calculates an overall score that:

Captures perceptions of the quality of public services, the quality of the civil service, and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (Kaufman, Kraay, & Mastruzzi, 2010).

The overall effectiveness of government was then recorded on a scale ranging from -2.5, indicating weak governance performance, to 2.5, indicating strong governance performance (Kaufman et al., 2010). This range was reformatted to a continuous variable ranging from 0 (weak government) to 5 (strong government). The WGI indicator for good governance is a desirable measure as it is released annually for more than 200 countries and represents one of the largest and most systematic efforts to assess and rank bureaucratic state capacity to date.

While the WGI provides governance estimates for a wide range of years, missing values are still present, specifically, governance estimates for years ranging from 1991 – 1995. Contrary to previous instances of missing data, for example GDP per capita PPP, the missing governance data is

present at the beginning of the dataset. Therefore, it is not possible to estimate an average of previous entries. The missing governance data is considered ‘missing at random,’ meaning that the missing values are independent of each other. Their absence is a result of inconsistent data collection during the early 1990s. As the annual dataset includes variables that influence the effectiveness of government, such as CINC scores, GDP per capita PPP, along with demographic and geographic factors that can impact the effectiveness of government, such as territory size, population, and coastline, multiple imputation techniques are an appropriate manner to estimate the missing values. Multiple imputation techniques are considered preferential to other techniques as they avoid biases and statistical uncertainty that can result from listwise deletion and best guess mean substitutions (Honaker & King, 2010; D. Rubin & Little, 1987; Schafer & Olsen, 1998). In recent years, use of multiple imputation has become a common practice to estimate missing values in the political science, public health, and private sector literatures (Honaker & King, 2010; D. B. Rubin & Schenker, 2006; Zhou & Eckert, 2001).

MAR: This variable tallies the instances of maritime armed robbery plotted in the incident data set by country year.

MMP: This variable tallies the instances of maritime piracy plotted in the incident data set by country year.

CMMP: This variable tallies the combined count of maritime armed robbery and maritime piracy recorded in the incident dataset by country year.

In addition to the aforementioned variables this dataset also contains a series of variables noting the presence of primary trade routes, secondary trade routes, along with the form of maritime chokepoint present within 200 nautical miles, or the Exclusive Economic Zones (EEZ), as defined in the UNCLOS (United Nations, 1982) The classification and plotting of these features is based on the work of Dr. Jean-Paul Rodrigue of Hofstra University and his research into the geography of maritime transport routes. Despite the nearly endless potential number of maritime shipping routes, Rodrigue

(2012) notes that the configuration of maritime trade routes is ‘relatively simple.’ He goes on to explain that maritime trade routes are shaped by physical constraints, political borders, strategic shipping hubs, and that the primary maritime passages skirt the equator and connect North America, Europe and East Asia through the Suez Canal, Straits of Malacca and the Panama Canal, in an attempt to follow the great circle distance which seeks the shortest distance between any two points on a sphere (Rodrigue, 2009, 2012).

These shipping routes, which are determined by geographic and geopolitical considerations, are further classified into primary and secondary routes. Primary trade routes are those which support the most important commercial shipping flows servicing major markets and attract the highest volume of traffic. Secondary trade routes are those which serve as connectors between smaller markets and primary trade routes (Rodrigue, 2012). In order to illustrate the location of these primary and secondary trade routes, the following map was created using ArcMap 10, a blank template indicating current state boundaries, and an ArcGIS layer of maritime trade routes created by Dr. Rodrigue (see Figure 5.1). Primary trade routes are indicated in red. Secondary trade routes are indicated in dark blue.

In addition to identifying and classifying maritime trade routes, Rodrigue (2009; 2012) also provides a framework for identifying and classifying maritime chokepoints located along these routes. In total, twenty-two canals, passages, and straits are identified as maritime chokepoints located throughout the globe (Rodrigue, 2012). This project will use twenty-one of these identified maritime chokepoints as it combines the Bosphorus and Dardanelles into a single maritime chokepoint, referred to as the Bosphorus. This methodological decision is similar to the common usage of the Straits of Malacca to reference both the Straits of Singapore and Straits of Malacca, which are located in close proximity to each other.

Of these twenty-one chokepoints, eight are classified as primary chokepoints, and the remaining thirteen are classified as secondary chokepoints. Rodrigue (2012) defines primary

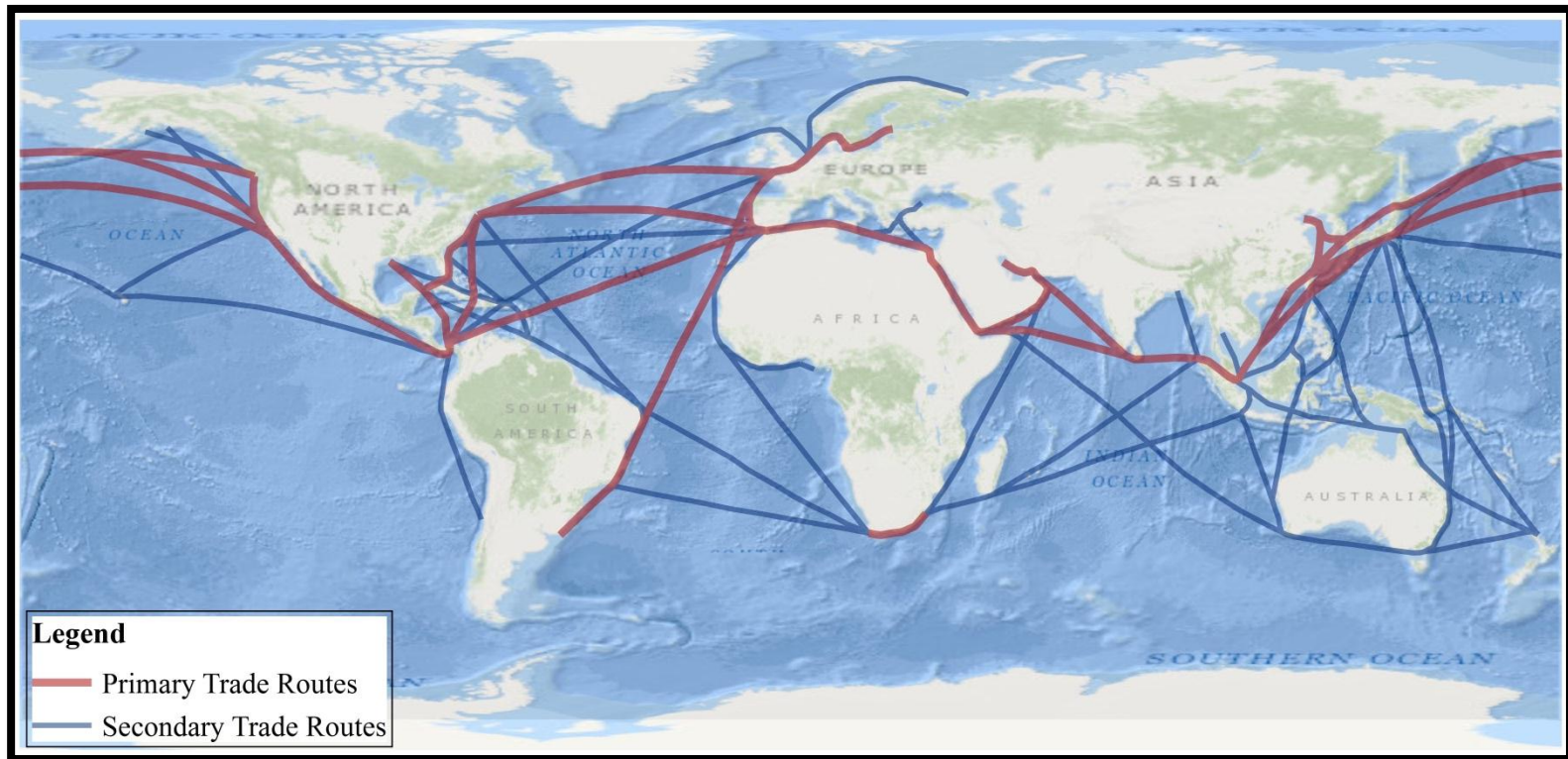


Figure 5.1 – Maritime Trade Routes

chokepoints as “the most important passages since, without them, there would be limited cost effective maritime shipping alternatives, which would seriously impair global trade.” Secondary chokepoints are defined as “passages that have alternatives, but would still involve a notable detour.” Primary chokepoints include the Panama Canal, Straits of Gibraltar, Bosphorus Straits, Suez Canal, Bab el-Mandeb, Strait of Hormuz, Cape of Good Hope, and the Straits of Malacca. Secondary chokepoints include the Yucatan Channel, Windward Passage, Mona Passage, Dover Strait, Oresund, Sunda Strait, Lombok Strait, Torres Strait, Maksiar Strait, Strait of Luzon, Taiwan Straits, Passage of Magellan, and the Tsugaru Strait.

The following variables, noting density of trade routes, naval chokepoints, and the complexity of political borders surrounding maritime chokepoints, were created using ArcMap 10, the OpenStreetMap base layer, trade route map layer developed by Dr. Rodrigue, and the Maritime Boundaries Geodatabase layer for ArcGIS created by the Census of Marine Life. The Maritime Boundaries Geodatabase layer is useful as it indicates the extent of the EEZ of coastal states as recognized by international law. While the EEZ of states exist within international waters, the coastal states are granted fishing rights and access to mineral deposits within the EEZ (*Rights Based Fishing*, 1989). With this in mind, the assumption is made that a majority of the craft present in a coastal state, which could be used to commit acts of maritime crime, are primarily equipped to operate within this maritime zone.

PrimaryTradeCount: This variable is a count of the primary trade routes which pass within the EEZ of a coastal state.

SecondaryTradeCount: This variable is a count of the secondary trade routes which pass within the EEZ of a coastal state.

Choke1: This is a binary variable that indicates if a maritime chokepoint is present within 200 nautical miles of a coastal state, and bordered by the sovereign territory a single state. If these conditions are not present, the variable is coded as a zero.

Choke2: This is a binary variable indicating if a maritime chokepoint bordered by the sovereign territory of two states is present within 200 nautical miles of a coastal state. Such a condition is indicated by a coding of 1. If these conditions are not present, the variable is coded as a zero.

ChokeComplex: This is a binary variable that indicates if a chokepoint within the 200 nautical miles of a coastal state possesses complex maritime borders. Complex borders consist of the domestic waters of at least three states within twenty nautical miles of each other. There are no examples of a coastal state possessing more than a single complex chokepoint.

In order to investigate the recurring assertion that political instability resulting from interstate or intrastate conflict may contribute to maritime crime, as suggested in Gosse (1932), Pringle (1953), Murray (1987), Konstam and Kean (2007), and Murphy (2009), data was collected on interstate conflict using the Correlates of War database on interstate wars v.4.0 and intrastate wars using the Correlates of War database on intrastate war v.4.1.

BlueWater: This variable measures the distance in kilometers between the capital of the coastal state and the capital of the nearest state possessing a blue water navy. As defined by the U.S. Department of Defense's Defense Security Service (DSS), a blue water navy consists of:

A maritime force capable of sustained operation across the deep waters of open oceans. A blue water navy allows a country to project power far from the home country and usually includes one or more aircraft carriers (Department of Defense - Defense Security Service, 2012).

At present, the DSS recognizes three states that possess active blue water navies: the U.S., the United Kingdom, and France. While Russia possesses a large navy, it is not considered a blue water power as the fleet cannot readily be deployed in its present condition (Department of Defense - Defense Security Service, 2012). The distance between state capitals in miles was calculated using ArcGIS. This variable is included as a measure of the ability of a blue water state to intervene in a region experiencing an outbreak of maritime crime.

InterstateWar: This is a binary variable indicating if a coastal state was involved in an interstate war, as defined by the Correlates of War.

InterstateWarName: The name of the conflict that a coastal state was involved in, as identified by the Correlates of War interstate war database v.4.0.

IntrastateWar: This is a binary variable indicating if a coastal state was involved in an intrastate war, as defined by the Correlates of War.

IntrastateWarName: The name of the conflict the coastal state was involved in, as identified by the Correlates of War intrastate war database v.4.1.

5.3 Summary

In this chapter, I have outlined the codebook for this project, including the various data sources which were required to assemble the datasets and noted how variables were identified and coded. The event and annual datasets are unique in that they offer future researchers the broadest array of recorded data available regarding maritime crime along with descriptive indicators of coastal states. While this chapter may not have the same swashbuckling appeal as the historical outbreaks of piracy discussed in chapter three, it provides a clear description of the data used in this project, which is of central importance given the broad scope of the problem which it sets out to investigate.

CHAPTER 6: METHODS AND RESULTS

6.1 Introduction

Both the historical case studies presented in chapter three and the summary of the recent piracy literature presented in chapter four suggest that maritime crime occurs as a result of the combination geographic opportunity, economic desperation, and a dearth of state capacity. Although these expectations, while recurring throughout the literature, have been investigated at the regional level, the argument advanced in this project is that these conditions are generalizable and applicable at a global level of analysis. While the research hypotheses advanced in this project share common ground with the wider academic and professional literature, they substantively add to both bodies of work in showing that maritime crime, be it in domestic or international waters, and share common structural causes.

The objectives of this chapter are twofold. First, it will present a spatial analysis of maritime armed robbery and maritime piracy. This section draws on the field of political geography for its inspiration and structure. Second, this chapter will present the results of a series of statistical models, combining methods common in the field of geography with more traditional quantitative approaches. In doing so, this chapter provides a series of reinforcing analyses that are both statistically and spatially significant.

6.2 GIS Examination

6.2.1 Section Introduction

Maritime commerce plays an increasingly significant role in the ability of the modern global economy to obtain raw materials, access cost-effective labor and transport finished goods across vast distances. Despite the global scale of maritime commerce, there are a limited number of viable maritime transport corridors that can efficiently bear the brunt of global commerce (Rodrigue, 2009). Over the past two decades, maritime transport routes have been faced with the challenges of increasing rates of maritime crime. For example, in 1991 there were 51 reported incidents of maritime armed

robbery; in 2007, 222 incidents of maritime armed robbery were reported. This change represents an increase of 335 percent. Further illustrating the dramatic increase in maritime crime, in 1991 a single incidence of maritime piracy was reported. In 2007, 58 incidences of maritime piracy were reported, an increase of 5,700 percent.

These dramatically escalating rates of maritime crime are far from inconsequential. Based on recent data, the combined financial impact of maritime armed robbery and maritime piracy ranges from 1.8–4 percent of the total economic value of interstate maritime commerce (Bowden et al., 2010; International Chamber of Shipping and the International Shipping Federation, 2010). In effect, maritime trade suffers from an unintentional ‘piracy tax’ similar in value to the sales tax of a mid-sized city in the United States. Chapter four noted the emergence of recurring but largely untested hypotheses to explain outbreaks of maritime crime and organized them into a matrix of geopolitical conditions. The following section of chapter six will spatially examine the conditions associated with the opportunity and willingness required to commit acts of domestic and international maritime crime. This analysis is important to the overall project as it is difficult to fully explain the choices of individuals without understanding the geopolitical environment in which they find themselves (Agnew, 1996).

6.2.2 Methodology

This section explains how data was classified and assigned into a series of categories to generate four maps, utilizing ArcMap 10 software. The generated maps illustrate geographic opportunity to commit maritime crime, the likely willingness to act based on coercive state capacity, economic stability, and a map that combines variables from the previous layers to illustrate the expectations of the opportunity and willingness matrix introduced in chapter four. These maps were based on data collected in the incident and country year datasets described in chapter five. From the incident dataset, the latitude and longitude variables were used. Drawing from the country year dataset, the CINC, Effective, MAR, MMP, PrimaryTradeCount, SecondaryTradeCount, Choke1,

Choke2, ChokeComplex, and BlueWater variables were used. The variables were combined with the trade route layer describe in chapter five, the Ocean Basemap layer, and a blank template noting contemporary state borders. Both of the latter two map layers are included in the ArcGIS 10 software suite. The map layer indicating maritime trade routes was provided by Dr. Rodrigue of Hofstra University.

The map indicating geographic opportunity (see Figure 6.1) was created to provide a visual representation of the matrix of geographic opportunity and target density introduced in chapter four. In order to create this map, the attribute table for the blank template of state boundaries was altered. A new attribute variable indicating geographic opportunity was created. If a state failed to possess an outlet to a body of water providing access to primary or secondary maritime trade routes, it was coded as a zero and visually represented in grey. This category is labeled as N/A in the legend. Coastal states were coded with a score of 1 if no primary or secondary trade route passed within 200 nautical miles of the coastline, which marks the extended economic zone of a coastal state. This category is labeled as low opportunity in the legend. Coastal states received a score of 2 if the following conditions were met. First, a primary or secondary trade route was required to pass through the extended economic zone of a state. Second, a coastal state required a maritime choke point to be located within 200 nautical miles of shore. This category is labeled as high opportunity in the legend.

In addition to this scale, there are four additional layers that play a prominent role in the map. The backdrop of the map is the Ocean Basemap layer. Maritime trade routes are indicated via the map layer produced by Dr. Rodrigue of Hofstra; primary trade routes are indicated in red and secondary trade routes are indicated in blue. A layer indicating incidences of maritime armed robbery was created based on the latitude and longitude coordinates recorded in the incident dataset. Acts of maritime armed robbery are visually represented as green dots. Finally, a layer indicating acts of maritime piracy was created in a similar manner. Acts of maritime piracy are represented as black dots.

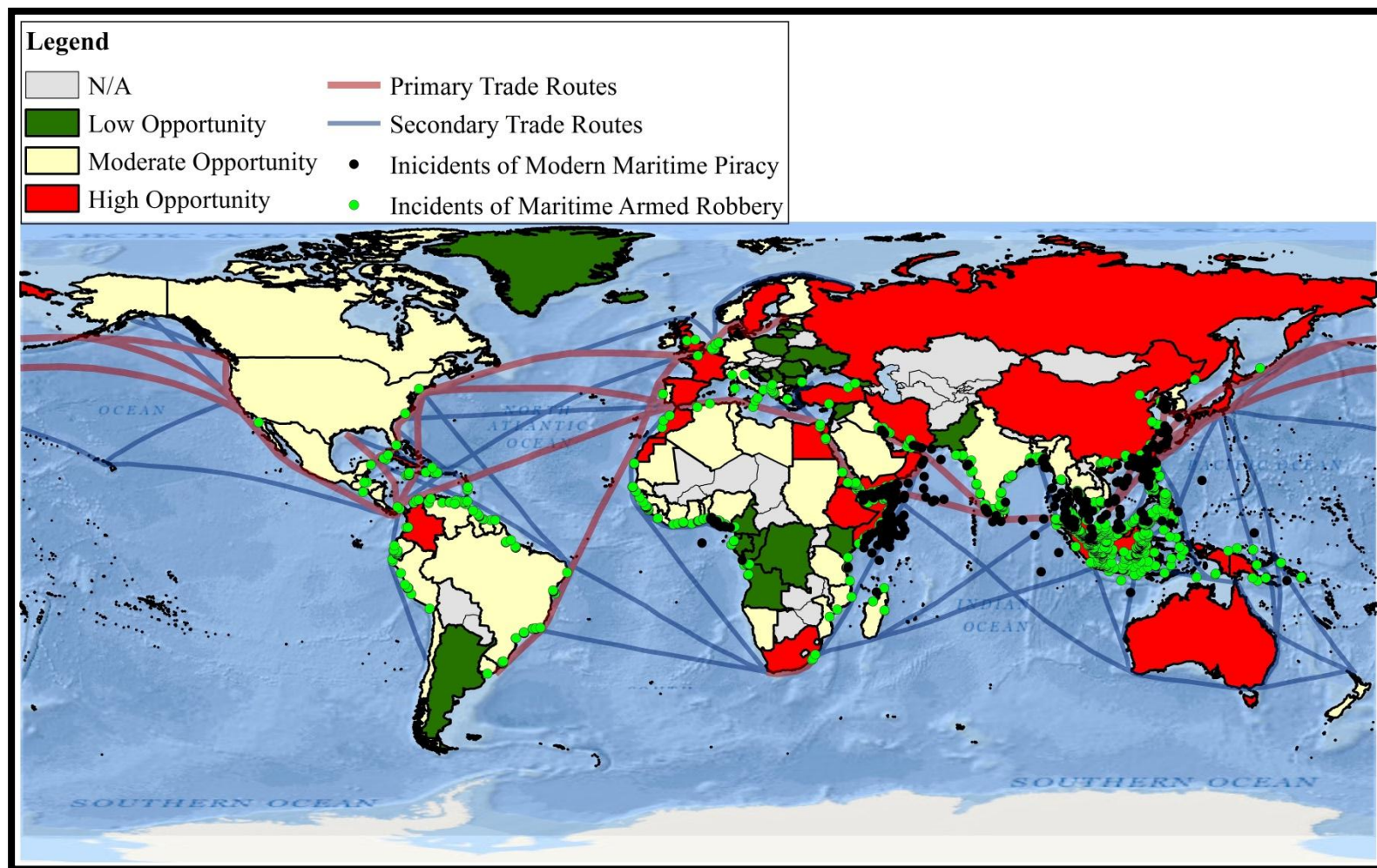


Figure 6.1 – Opportunity: Geographic Location and Maritime Trade Routes

The second map was created to illustrate the ability of a state to provide a stable economy as well as the effective delivery of public goods in coastal states (see Figure 6.2). This map was created by altering the attribute table of a blank layer to indicate current state boundaries. Similar to the previous procedure, if a state lacked access to a body of water providing access to global maritime trade routes it was coded as a zero, visually represented in grey, and labeled as N/A in the legend. The total range of governance scores related to economic stability and the delivery of public goods found in the effective variable ranged from a low of 0.4 to a high score of 4.6.

In order to create low, medium, and high categories, this data was automatically divided into quantiles using ArcMap 10 based on the distribution of scores. If a state possessed a score between 0 and 2.06, it was automatically coded as a two, color coded as red, and labeled as unstable. States with scores between 2.07 and 2.66 were coded as a one, identified by beige, and labeled as stable. Coastal states with governance scores between 2.67 and 5.00 were coded as zero, color coded as green, and labeled as very stable in the legend. As noted in chapter four and represented in table 4.3, it has been hypothesized that complex maritime borders hinder the effectiveness of governments in controlling maritime crime. In order to model this effect, if a complex maritime chokepoint was located within the extended economic zone of a state that state's governance score received a 0.3 reduction. The objective of this weighting is to represent the role that complex maritime borders are hypothesized to have without drastically undermining the value of the World Banks' estimates of the ability of states to provide stable economic environments. The map layer representing the stability of economic conditions was then displayed with the Ocean Basemap, maritime trade route, maritime armed robbery, and maritime piracy layers discussed with the creation of the geographic opportunity map.

The third map was created to illustrate the coercive capacity coastal states (Figure 6.3). The data used to measure coercive capacity was based on an average of the CINC scores recorded for each

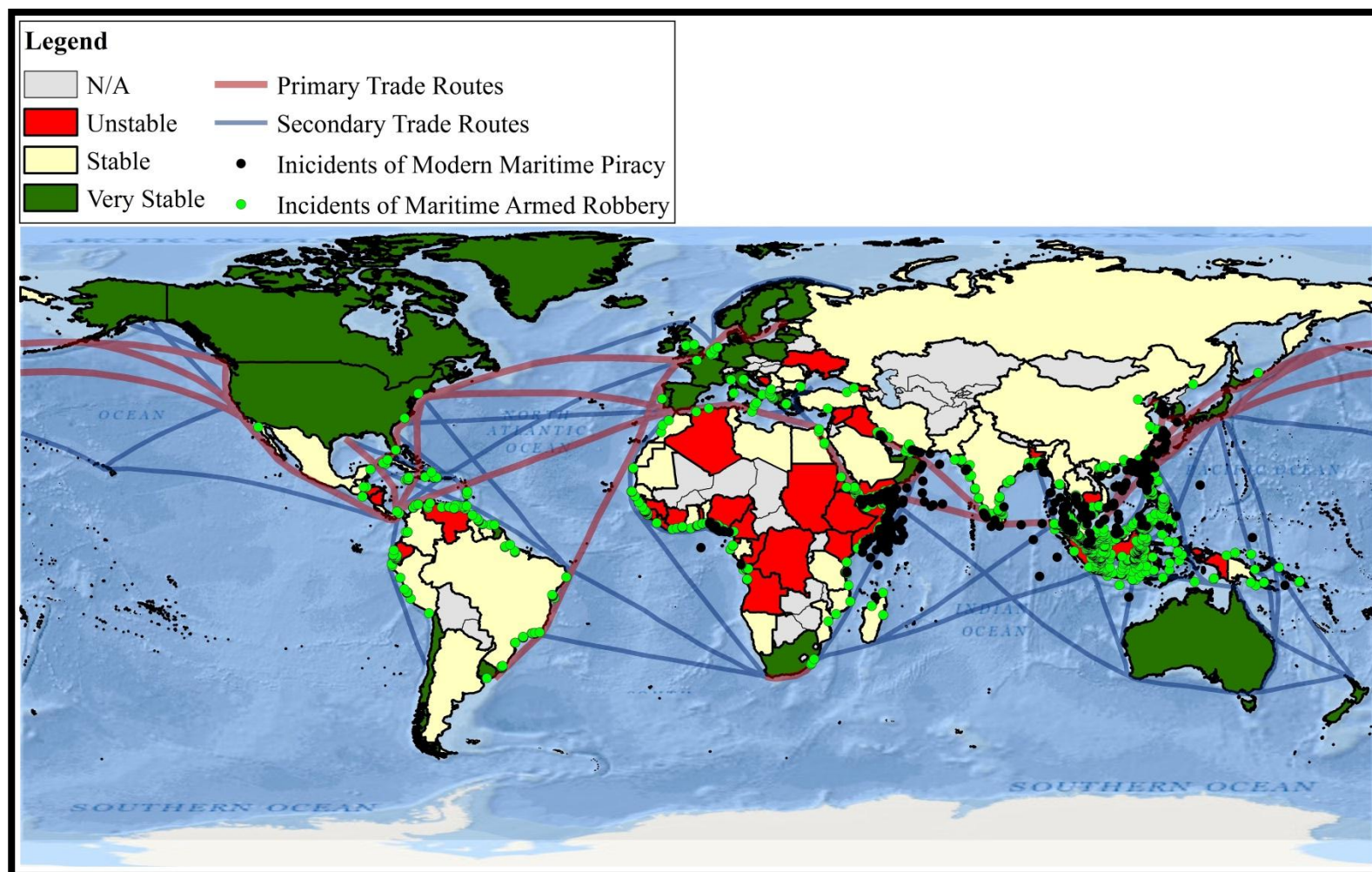


Figure 6.2 – Willingness: Economic Stability

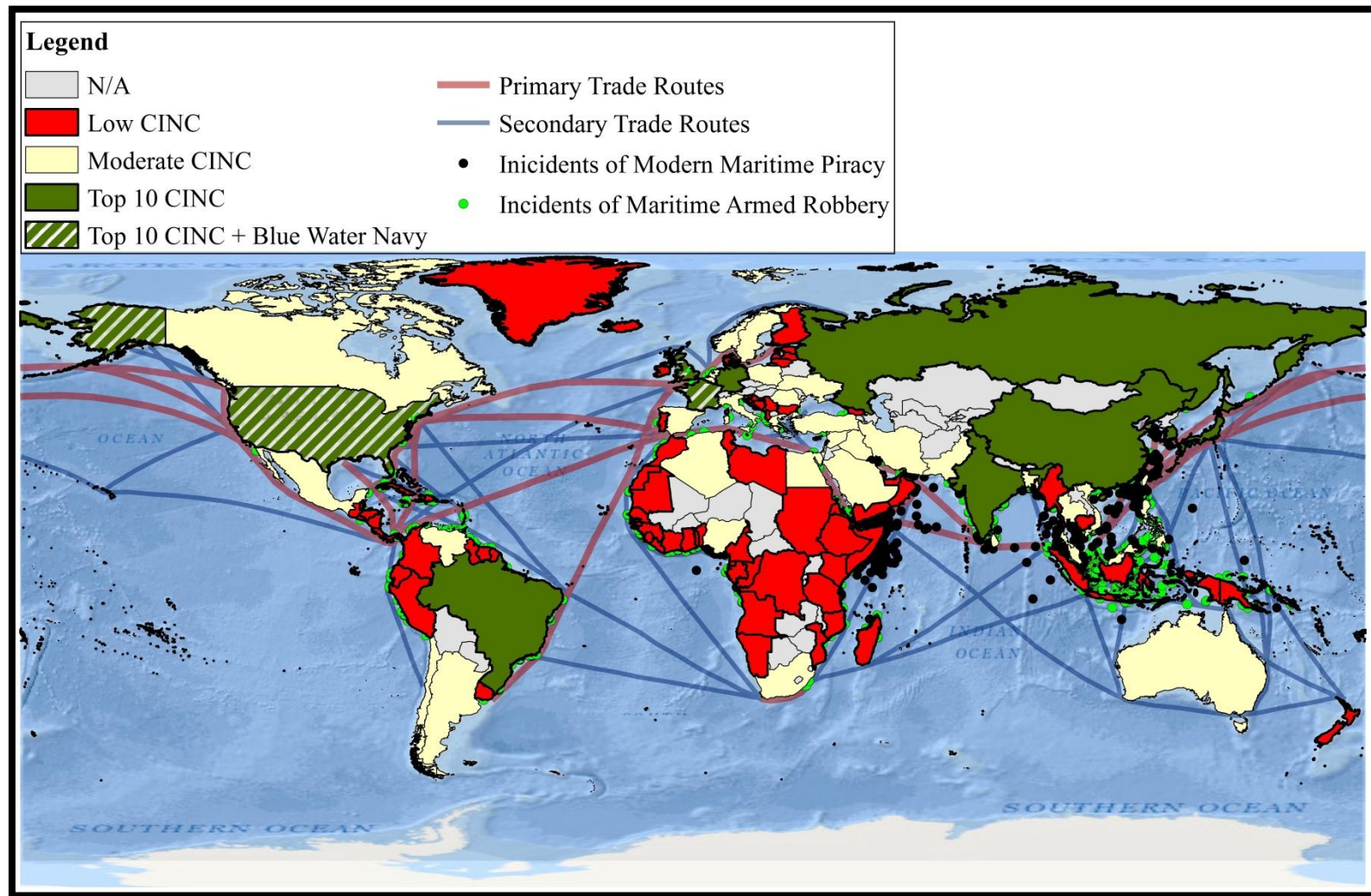


Figure 6.3 – Willingness: Coercive State Capacity

state between 1991 and 2007. This data was then added as a new attribute variable on a blank layer indicating state boundaries. States which lacked coastal access to maritime trade routes are indicated in grey, and recorded as N/A in the legend. Similar to the previous two maps, this data was divided into quantiles using ArcMap 10. Unlike the previous maps, this is not the only factor used to determine the color categories. For example, only the states with the top 10 averaged CINC scores are indicated in green. Additionally, three of these states are color coded with diagonal lines, which illustrates that they possess blue water navies as defined by the BlueWater variable from the country year dataset. These states are indicated in the legend as either a top 10 CINC score or a top 10 CINC score + blue water navy. Moderate CINC scores are indicated in beige. States ranking in the lowest quantile are indicated in red on the map. These states are labeled as low CINC states in the legend. The map was then created using the CINC score layer and the previously discussed map layers indicating maritime attacks, ocean labels, and trade routes.

The fourth map created (see Figure 6.4) illustrates the opportunity and willingness matrix discussed in chapter five (Table 4.4). This map is based on combining quantile data from each of three previous maps and creating a six point scale of risk. Coastal states with a low geographic risk received a score of zero, states with a moderate geographic risk received a score of one, and states with a high geographic risk received a score of two. Coastal states in the lowest quantile of effective government scores received a score of two, states in the moderate quantile of effective government scores were coded as one, and states in the highest quantile of effective government scores were coded as a zero. Coercive state capacity was coded in the same manner as effective governance.

These three categories were then tallied providing a score ranging from 1-6 for each coastal state. Low scores indicate that there is little opportunity and willingness to commit acts of maritime crime, and high scores indicate there is a high opportunity and willingness to act. A score of 1 indicates a very low risk and is identified with a dark green; 2 indicates a low risk and is identified with green; 3 indicates a moderately low risk and is identified with light yellow; 4 indicates a

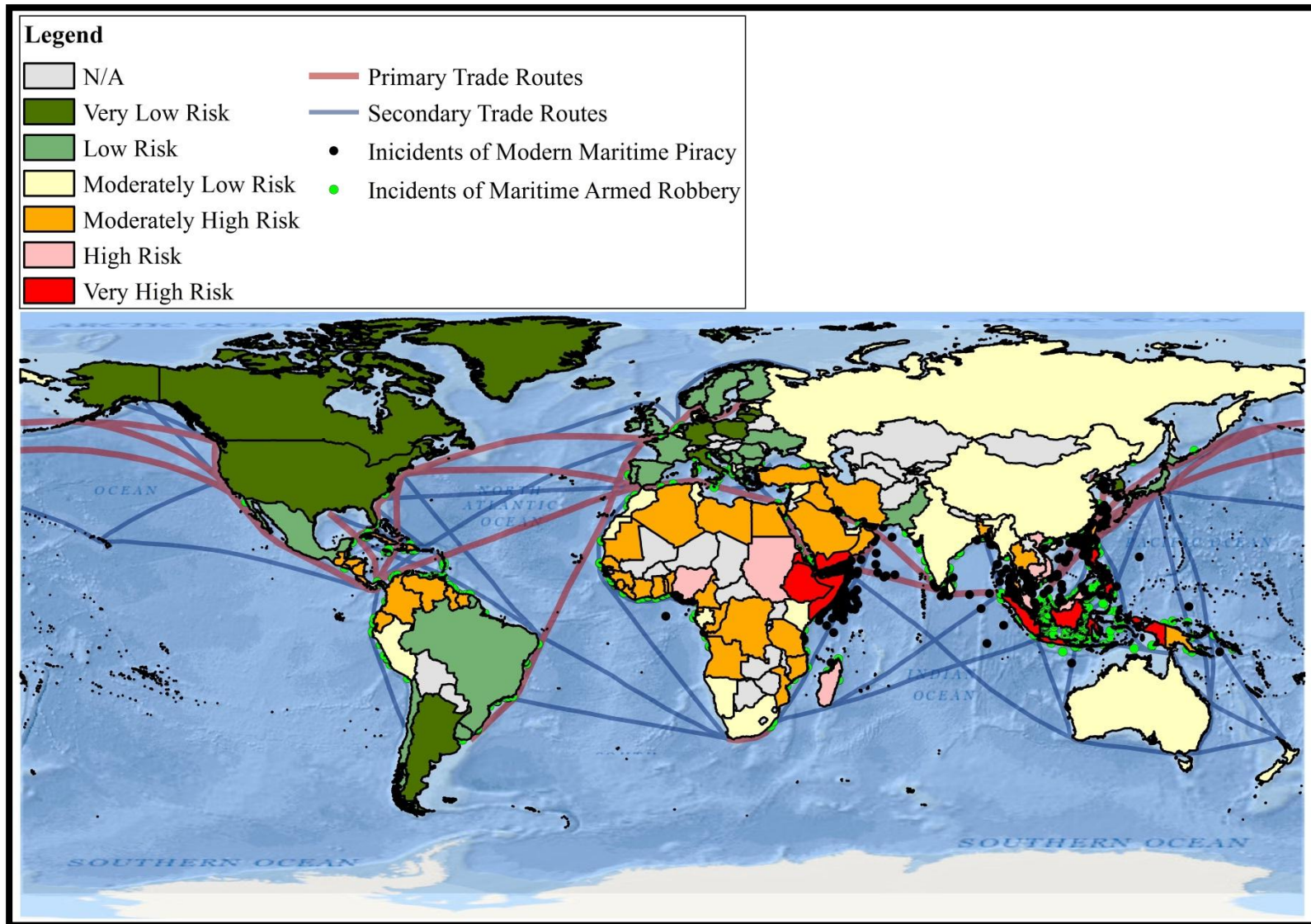


Figure 6.4 – Opportunity and Willingness Matrix

moderately high risk and is identified with orange; 5 indicates a high risk of maritime crime and is coded pink; and a score of 6 indicates a very high risk of maritime crime and is identified on the map in red. This map layer was then combined with the previously discussed background layers to produce the final product.

6.2.3 Results & Discussion

Whereas chapters two, three, and four established the background literature and outlined the research questions selected for this project, these positions have remained predominantly theoretical. As both maritime crime and the theories proposed to explain its occurrence possess clear geographic criteria, it is reasonable to assume that maps illustrating varying levels of geographic opportunity, coercive state capacity, and the stability of economic conditions found in coastal states will overlap with the plotted instances of maritime crime. While these figures do not provide specific statistical results, they do provide an ‘intraocular’ examination of the initial validity of the proposed research framework based on real world data collected between 1991 and 2007.

The first map discussed Figure 6.1, is based on Table 4.1 and illustrates the geographic opportunity for potential maritime criminals to act based on maritime trade routes and naval chokepoints. The densest clusters of both maritime armed robbery and maritime piracy are located in Southeast Asia, near Indonesia and the Philippines, and in the Gulf of Guinea. These high rates of maritime crime coincide with states falling under the classification of a high geographic opportunity for maritime criminals to act. In a similar manner, a dearth of reported acts of maritime crime can be noted in regions possessing a low geographic opportunity for maritime criminals to act, such as Argentina, Iceland, Eastern Europe, and Central Africa south of the Gulf of Guinea.

It is also evident that geographic opportunity alone does not explain the occurrence of these acts on a global level as there are numerous states with a high geographic opportunity for maritime crime but few, if any, cases of maritime armed robbery or maritime piracy. This list of states included Japan, Australia, the United Kingdom, France, Spain, and South Africa. All of these states have

maritime trade routes and maritime chokepoints located within 200 nautical miles of their coastline. If acts of maritime crime were driven solely or predominantly by geographic features and maritime trade routes, we would expect to see dense clusters of maritime piracy or maritime armed robbery off the coasts of Western Europe, Southern Africa, and Northeastern Asia in the same manner as those which occur off the coasts of Eastern Africa and Southeastern Asia.

The second map produced, Figure 6.2, represents the economic stability of a state, its ability to provide public goods, and the relationship between these capabilities and instances of maritime crime. The classification scheme used in this map is based on the assumptions of economic conditions and international borders outlined in Table 4.3. The densest clusters of maritime armed robbery and maritime piracy are located in Southeast Asia and East Africa. Both of these outbreaks coincide with regional states that are classified as possessing a weak ability to deliver public goods and ensure a stable economic environment. Moving to the opposite end of the scale there are no reported incidences of maritime piracy and only a handful of reported incidences of maritime armed robbery reported by states which possess a stable economy and the ability to effectively deliver public goods.

The moderate category proves to be a mixed case in terms of predictive capabilities. High rates of maritime armed robbery were reported off the coasts of China and India but not Central Africa, a region with generally unstable economic conditions and ineffective public goods delivery. However, this may be the result of a lack of geographic opportunity to engage in acts of maritime crime as major arteries of maritime trade do not pass near the shores of Central Africa.

While the economic stability of states is theoretically linked to the willingness of a coastal population to turn to maritime crime, it cannot explain all occurrences of maritime crime. The willingness structure regarding coercive state capacity plays a significant role. For example, additional clusters of states with unstable economies exist in Central America yet reported incidents of maritime piracy and maritime armed robbery are relatively low.

To this point we have independently mapped the role played by geography and economic stability. However, both of these measures are insufficient on their own. The final condition which we will consider independently relates to the willingness of a coastal population to act. This last category consists of the level of coercive force present in a region. The third map, Figure 6.3 represents the coercive capacity of coastal states across four categories. First, the states are divided in low, moderate, and high categories based on their CINC scores. This was accomplished by dividing the CINC scores into three quantiles using ArcGIS. Second, states which possess blue water navies are identified with diagonal lines. Similar to effective governance, coercive state capacity alone provides a mixed perspective regarding maritime crime. Eastern Africa and Southeast Asia are again regions which are classified as high risk due to insufficient coercive force. However, coercive capacity is also indicated as low in South America as well as throughout Southern and Western Africa. Nevertheless, these regions experience a relatively low rate of maritime crime. Additional areas which appear to run contrary to the coercive capacity argument include China and India. Both of these states possess very high CINC scores, yet China has numerous reported instances of maritime piracy and India experiences frequent instances of maritime armed robbery.

There are several potential explanations for these anomalies. The first may involve what a CINC score is actually measuring. It is a representation of the potential, not actual, military capacity of a state. Furthermore, it does not include a separate measure of naval force. For example, China and India possess very high CINC scores, but they lack a naval presence comparable to the United States, United Kingdom, or France – nations where there are few instances of maritime piracy or maritime armed robbery reported near their territorial waters or even in neighboring regions. The most pronounced example of this would be the Caribbean, a region that possess moderate to high opportunity and willingness to commit maritime crime, numerous states with weak governance scores, and low potential military capabilities. Despite these indicators, the region does not experience maritime crime on the same scale as East Africa or Southeast Asia.

Arguably, this is a result of the capabilities of the United States Navy. As discussed in chapter five and illustrated in Figure 4.1, it has been hypothesized that a state with a strong naval capacity, such as the United States, can effectively overcome conditions in a region that would otherwise favor maritime crime. To account for this possibility coercive capacity is measured in two manners as it is possible that blue water navies may be a better predictor of the rate of maritime crime than CINC scores. Additionally, the blue water navy effect is an intriguing observation as it provides anecdotal support that the distance of a state from a blue water navy is likely to be a significant variable in the statistical analysis examined later in this chapter.

While the three preceding figures provide interesting insight into the research hypotheses of this project, it is also clear that geographic opportunity, coercive state capacity, and economic stability alone fail to sufficiently identify regions that were at risk of experiencing maritime armed robbery or maritime piracy between 1991 and 2007. Figure 6.4 maps the six-point piracy matrix. This matrix combines geographic location, coercive state capacity, and economic conditions into a unified theoretical framework to identify states which are projected to experience acts of maritime crime.

In general, mapping this matrix provides initial support for the research hypotheses proposed in chapter four. As compared to the three previous figures, the likelihood of maritime crime outlined in the matrix aligns closely with the data collected on acts of maritime crime for this project. The states with the greatest risk of maritime crime are located in areas of high geographic opportunity, and near states with limited coercive capacity and unstable economic conditions. For example, the most at risk regions are located in Eastern Africa and Southeastern Asia. These regions possess densely packed trade routes and relatively weak states.

Even when a high level of geographic opportunity is present, such as in Western Europe or the Caribbean, maritime crime is expected to occur at a notably lower rate. This is due to the presence of states with stable economic conditions and a strong coercive capability. Thus there are two clear disincentives to engage in maritime crime in Western Europe. Economic conditions are stable and

high as a result there is little economic reward from maritime theft. Even for the few individuals who might be tempted to engage in maritime crime to improve their economic conditions, they have little willingness to do so as a result the coercive capacity of major states in, or near, the region.

The matrix also provides novel insight at the regional level. Figure 6.5 focuses specifically on the Horn of Africa, one of the regions which experienced high rates of maritime crime from the 1990s through the 2000s. In addition to noting the high rate of attacks located near high risk countries, it also illustrates that states in the same region that the matrix predicts as less likely to experience acts of maritime crime actually experience less of it. In Eastern Africa, Kenya is a novel case. Kenya received a moderately low score. This was primarily due to a greater distance between the shoreline and access to maritime trade routes as well as higher governance scores as assessed by the World Bank. When compared to Yemen, Eritrea, or Somalia, there is a clear absence of maritime crime off the coast of Kenya.

Pakistan is a similar case. It received a low risk of piracy as maritime trade routes passing from the Persian Gulf or Gulf of Aden are located far from the Pakistani shore, and the lack of incidences of maritime crime there is notable. A similar comparison of conditions can be found in Southeast Asia and East Asia as noted in Figures 6.6 and 6.7.

Similar to the conditions which exist near the Horn of Africa, Southeast Asia possesses a dense network of maritime trade routes, maritime choke points with complex sovereignty, as well as states with low scores regarding coercive state capacity and economic stability. Whereas Northeast Asian states such as Japan and South Korea are located near comparably high volumes of maritime trade, there is a clear drop off of maritime crime near the coastlines of these states. This can be explained by the opportunity and willingness matrix as both of these states have high scores regarding coercive state capacity and high levels of economic stability. This is a similar set of conditions found in Western Europe. Additionally, there is an absence of maritime chokepoints bordered by three or more states in Northeast Asia.

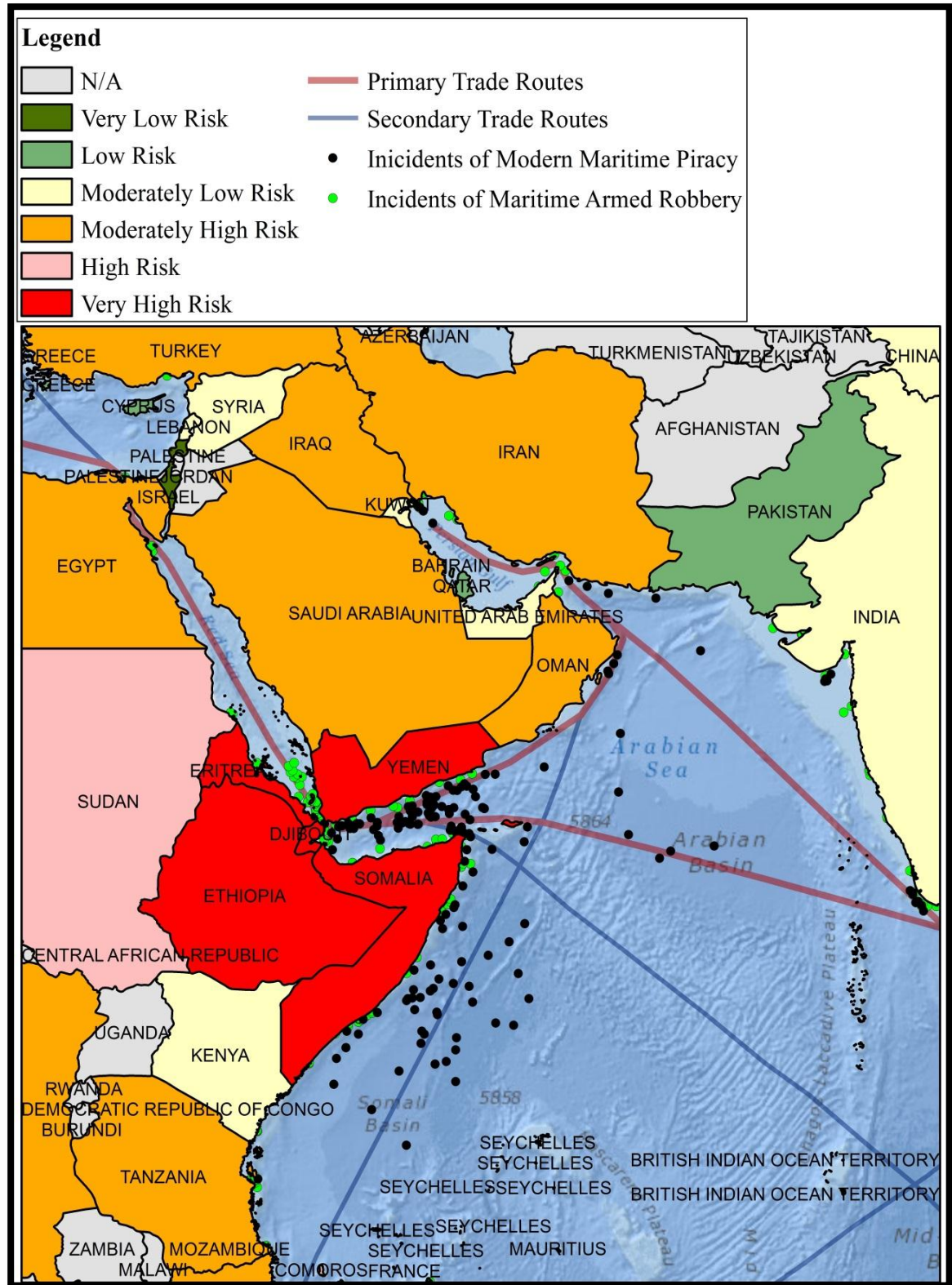


Figure 6.5 – Opportunity and Willingness Matrix: Horn of Africa

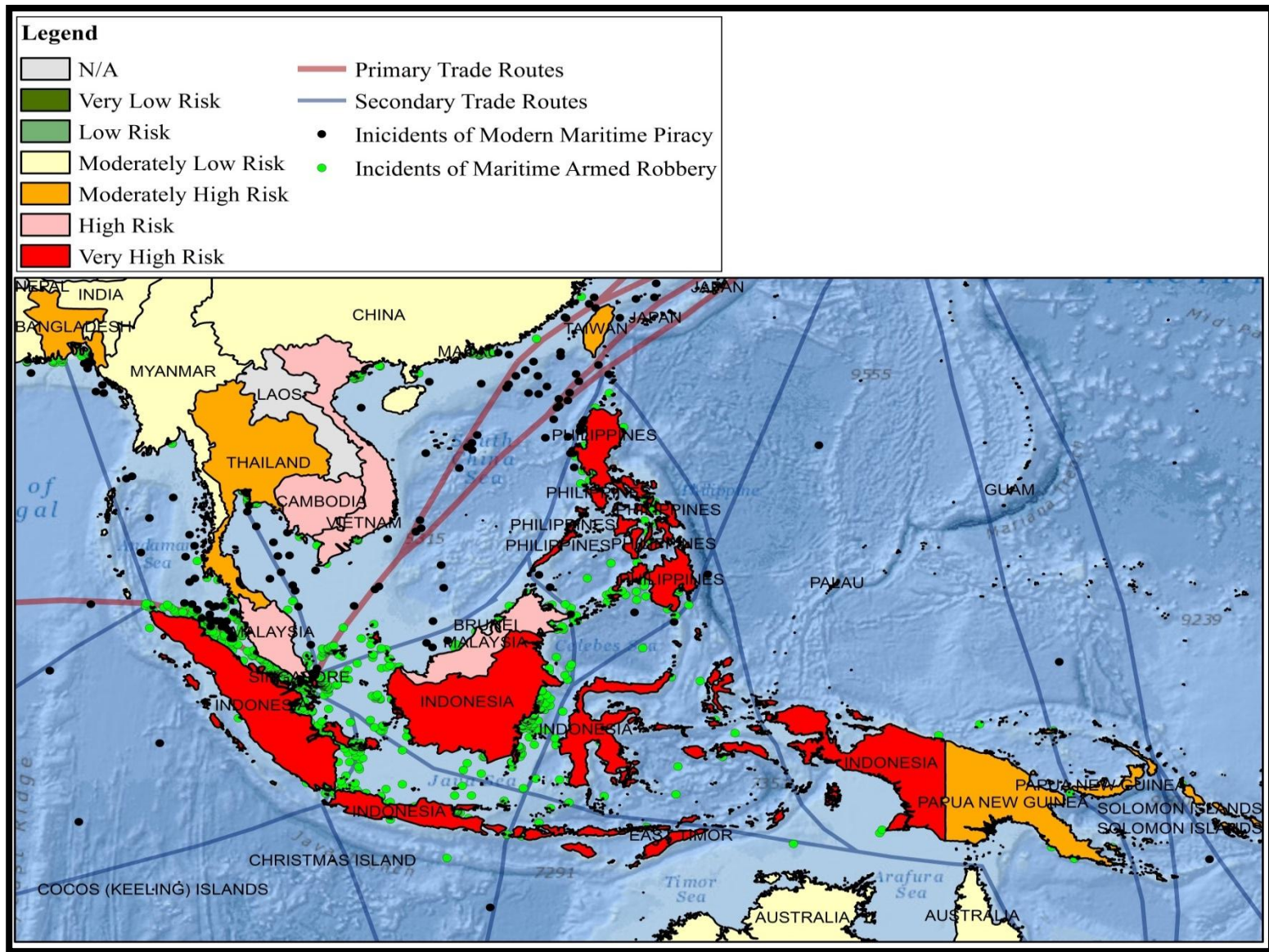


Figure 6.6 – Opportunity and Willingness Matrix: Southeast Asia

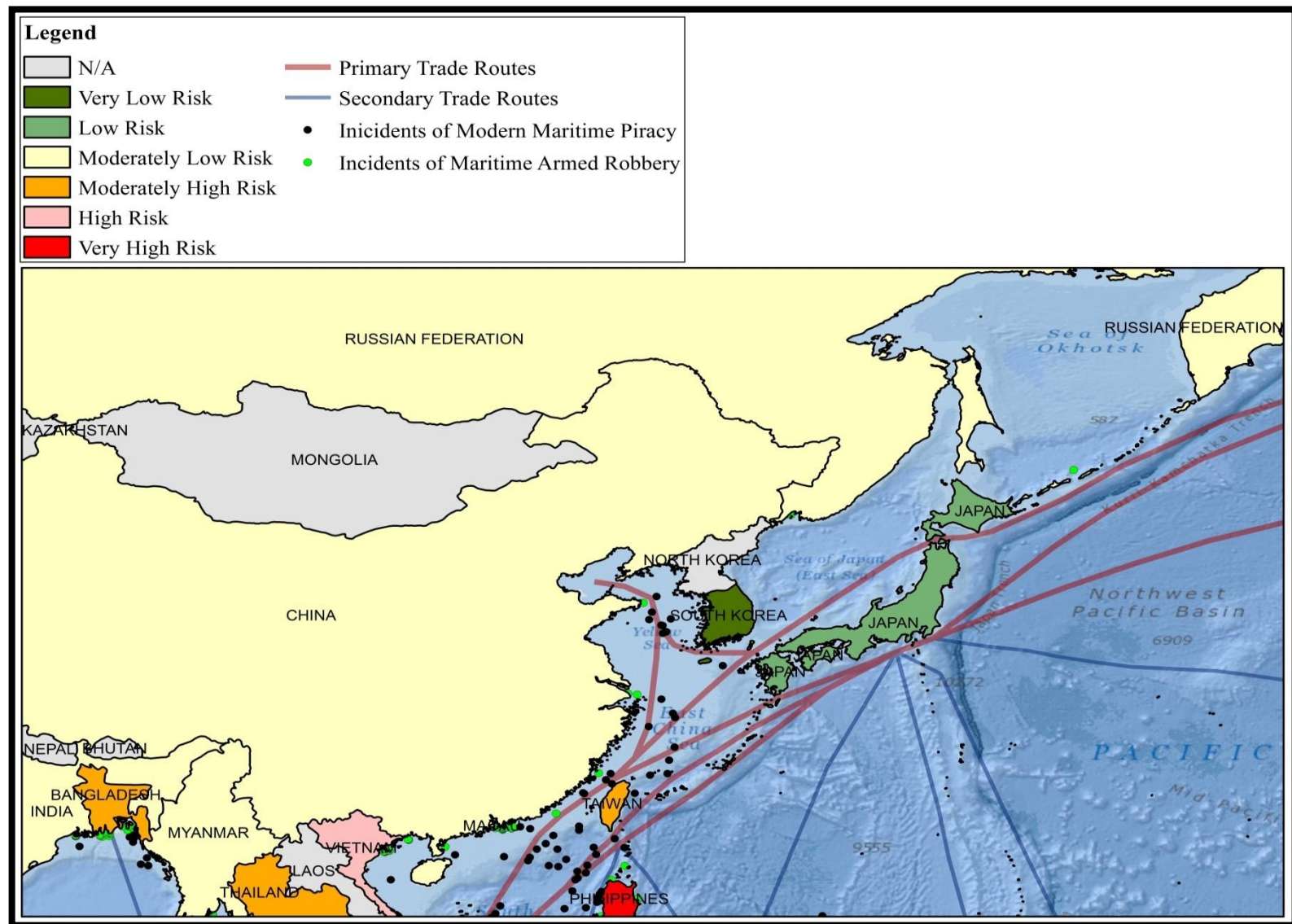


Figure 6.7 – Opportunity and Willingness Matrix: Northeast Asia

Another region which demonstrates fluctuating rates of maritime crime which align with the expectations of the opportunity and willingness matrix is West Africa (see Figure 6.8). While a majority of coastal states in this region are classified as possessing a moderate risk of maritime crime, Nigeria is an exception. Compared to its neighbors, it is expected to be a high risk state. Nigeria's difference in classification is primarily driven by lower scores regarding economic stability and the delivery of public goods. While isolated instances of maritime armed robbery occurred off the coast of Cameroon and Gabon, Nigeria possess the densest cluster of both maritime armed robbery and maritime piracy in the region. The matrix explains this increase as coastal residents would be expected to possess a stronger economic incentive to engage in maritime crime than other states in the region.

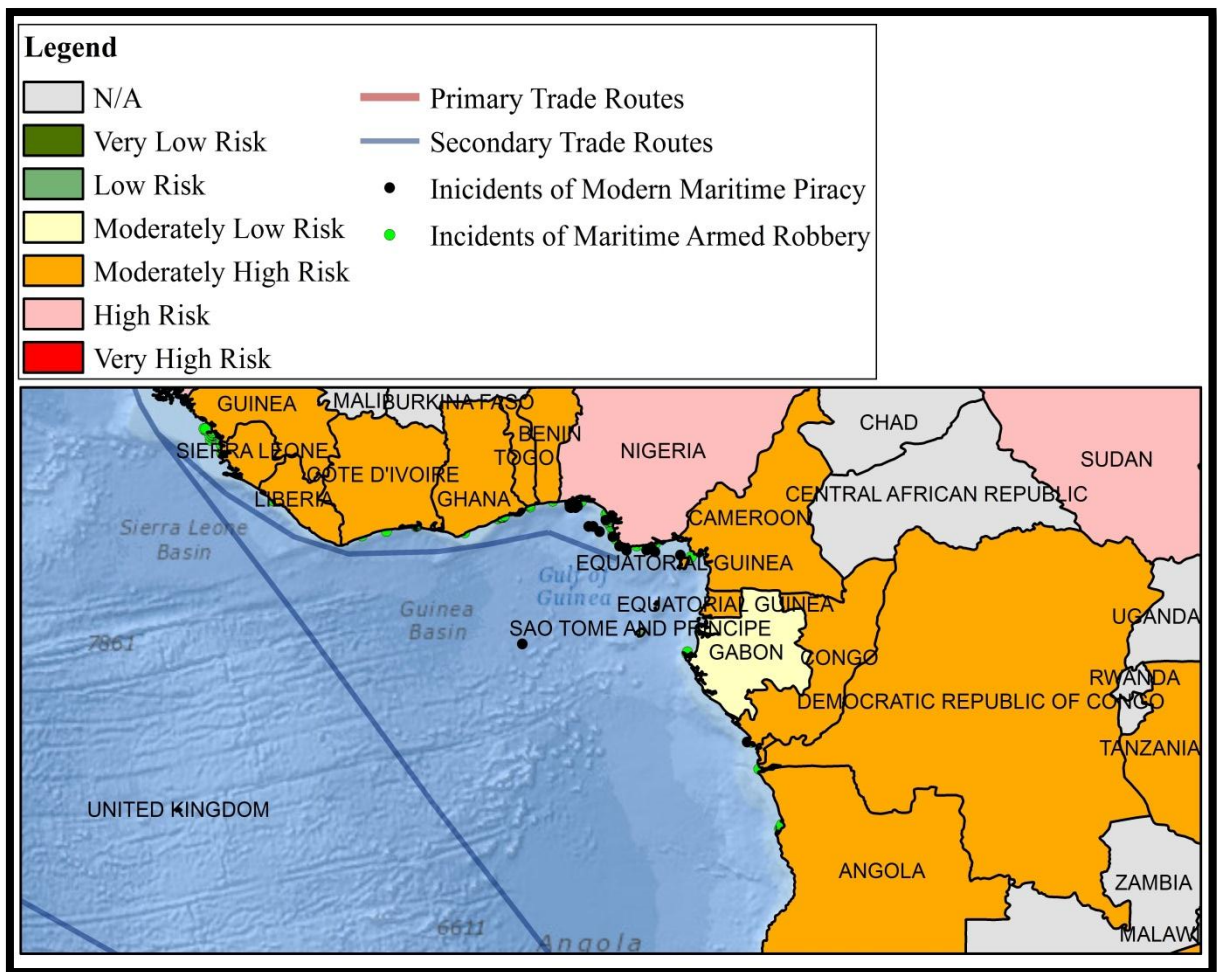


Figure 6.8 – Opportunity and Willingness Matrix: Gulf of Guinea

previous examples provide a preliminary confirmation for the predictive power of the research framework outlined in this project. Nevertheless, mapping these hypotheses also suggests that the predictive expectations are not perfect. China proves a potentially challenging case for this project's classification matrix. There are numerous instances of piracy located off the Eastern coastline of the state. When compared to other states classified as moderately low risk, China experiences a high rate of maritime crime.

There are several potential explanations to account for this. First, it is possible that the coastal Chinese residents may possess some form of cultural disposition to maritime crime. Essentially, this would apply the cultural assumptions made by Young (2007) or Frecon (2006) to China as well as Southeast Asia. Second, while China possesses a large CINC score, it may not have been channeled into a naval force that can effectively patrol this region. Third and most likely, China and India's high CINC scores may inadvertently skew the classification to moderately low risk when they should actually be classified as moderately high risk states. Both of these states possess the largest populations in the world and very large urban populations. These factors lead to high CINC scores, which lead to matrix scores of four rather than three.

6.3 Statistical Examination

6.3.1 Section Introduction

In order to further investigate the research hypotheses and validity of the preliminary findings from the GIS analysis, a series of large-n quantitative tests were conducted utilizing variables from the country-year dataset outlined in chapter five. These analyses examined uneven panel data spanning a total of 19 years with a total of 154 countries containing 2,428 country-year observations collected between 1991 and 2007. While the datasets collected for this project contain information regarding acts of maritime crime through 2012, the data analysis is limited to 2007 as the Correlates of War had not released CINC scores past this date. Nevertheless, this project is potentially the largest and most thorough investigation of the causes of maritime armed robbery, maritime piracy, and general

maritime crime conducted to date. The following sections will discuss variable selection, the preliminary relationship between dependent and independent variables, multivariate analyses of the data and a discussion of how the results compare with the expectations of the research hypotheses.

6.3.2 Variable Selection

Recurring geographic and political conditions have been theorized as explanatory variables for outbreaks of maritime crime. This project considers the effect of multiple independent variables, which can be broadly classified into four groups, and their effect on the dependent variables measuring reported incidents of maritime piracy, maritime armed robbery, and overall maritime crime. All of the dependent and independent variables outlined are drawn from the country-year dataset discussed in chapter five. The first group of variables measures the geographic opportunity of coastal residents to act. The second group of variables measures the willingness of an individual to undertake an act of maritime crime based on the political and economic stability of the state they reside in. The third group investigates the impact of conflict and disorder based on incidences of interstate and intrastate conflict. The fourth group controls for demographic conditions such as population size and the total coastline of a state.

The grouping of variables measuring geographic opportunity can be thought of as the conditions which are necessary, albeit not sufficient, for maritime crime to occur. Drawing from the country year dataset, the following variables are placed in this category, PrimaryTradeCount, SecondaryTradeCount, Choke1, Choke2, and ChokeComplex. PrimaryTradeCount serves as a tally of the number of primary maritime trade routes that pass within 200 nautical miles of a coastal state. Primary trade routes are those which support the most important commercial shipping flows servicing major markets and attract the highest volume of traffic. SecondaryTradeCount serves as a comparable tally of secondary maritime trade routes. Secondary trade routes are those which serve as connectors between smaller markets and primary trade routes. The location of these trade routes is determined based on Dr. Jean-Paul Rodrigue's work on the geography of maritime transport routes. These routes

are recorded as separate variables as it is plausible that primary trade routes, carrying a higher volume of maritime trade, would prove more likely targets for potential criminals.

In addition to trade routes maritime chokepoints are divided into three classifications. Choke1 serves as an indicator that a maritime chokepoint bordered by single state is present within the EEZ of a coastal state. This form of chokepoint primarily consists of canals, such as the Panama Canal or Suez Canal. However, the Straits of Bosphorus are an example of a natural occurrence of such a chokepoint. Choke2 serves a similar purpose. However, it identifies chokepoints that are bordered by the sovereign territory of two coastal states. Examples of such a chokepoint include the Yucatan Channel and the Strait of Hormuz. ChokeComplex is an indicator that a chokepoint which is bordered by the sovereign territory of three coastal states is located within the EEZ of a state.

Including both the Choke1 and Choke2 variables, rather than a generic simple choke variable representing all maritime chokepoints bordered by fewer than three states, allows the hypothesis that geographic features which are expected to concentrate and reduce the maneuverability of vessels will lead to increases in maritime crime to be assessed in a more nuanced manner than similar work to date. The inclusion of ChokeComplex provides an opportunity to investigate the role that complex state sovereignty plays on maritime chokepoints. As discussed in chapter five, the presence of complex maritime borders is expected to create favorable opportunities for maritime criminals. Collectively, these variables serve as indicators of the hypothesized geographic and political conditions associated with creating a strong opportunity for a coastal population to turn to maritime crime.

Conditions that allow potential maritime criminals to transition into active maritime criminals are attributed to the political and economic conditions found in coastal states. Coercive state capacity has been repeatedly hypothesized as an important variable which shapes the willingness of a population to engage in acts of maritime crime (Chalk, 2008; deSouza, 1999; Dutton, 2006; Eklof, 2005; Keyuan, 2009; Lennox, 2008; Murphy, 2009; Murray, 1987; Wolf, 1979; Young, 2007). The following variables are classified into this coercive category include: CINC and BlueWater. CINC

measures the composite index of national capabilities of each coastal state. In essence, this index represents the resources available to wage war. While this potential capacity is not divided into a land-based or seaborne category, coastal states with higher CINC scores arguably possess greater resources that can be directed towards patrolling nearby maritime territory where there is potential for maritime crime to occur.

While CINC represents the potential coercive capacity of specific states, the BlueWater variable takes into account the tangible coercive naval capacity of great maritime powers. This is a short list of states consisting of the U.S., U.K., and France. By definition, these states:

Possess a maritime force capable of sustained operations across the deep waters of open oceans... and usually includes one or more aircraft carriers (Department of Defense - Defense Security Service, 2012).

These states are expected to possess sufficient seaborne coercive capacity such that they can deter acts of maritime crime. However, it is expected that the greater the distance between a state and a great maritime power the more difficult it will be for a great maritime power to exercise its naval power to prevent acts of maritime crime or repress maritime crime in general.

The second group takes into account variables associated with creating an economic incentive for a coastal population to rationally engage in acts of maritime crime, transitioning from potential to actual maritime plunderers. These conditions are measured using two variables, GDPCapPPP and Effective. GDPCapPPP measures the relative spending power of each citizen located in a coastal state. Effective measures the domestic conditions found in a state that the World Bank considers central to measuring the delivery of public goods and overall stability of the national economy.

The third group of variables is included specifically to test the hypothesis that conflict and disorder play a pivotal role in the occurrence of maritime crime. While previous variables such as Effective and GDPCapPPP provide a measure of the domestic economic conditions, they provide no insight into the role of conflict that can arise as a result of political disagreements. Arguably, the outbreak of an inter-, or intra-, state conflict could create conditions that encourage acts of maritime

crime by creating economic hardship and/or reducing the ability of a state to exert control over the entirety of its territory. Prominent case studies highlighted in the literature include Lebanon which experienced acts of maritime crime during its civil war (1975-1990) and the ongoing political crisis in Somalia, which began with the collapse of the Barre regime in 1991 (Murphy, 2007, 2009). To rectify this issue, the InterStateWar and IntraStateWar variables are included from the country year data set. These variables are binary and indicate whether a coastal state was involved in an interstate or intrastate conflict as defined by the Correlates of War.

In order to minimize erroneous findings, the following variables were included in all models. These include CoastKM, Matrix and Population. By controlling for the total coastline and population of a state, we can focus more accurately on the impact of varying forms of maritime geography and state capacity on the rates of maritime armed robbery, maritime piracy, and the overall combined rate of modern maritime piracy. The Matrix variable is a measure of the six point threat scale introduced in chapter three and mapped earlier in chapter five. It is included in several models as a way to test the validity of the measure.

6.3.3 Preliminary Analysis

The descriptive statistics in Table 6.1 illustrate that many of the variables correlate with the dependent variables in a manner that the hypotheses would expect. Increases in the density of primary and secondary trade routes correlates with greater rates of all forms of maritime crime investigated in this project. Additionally, there is a positive correlation between all forms of maritime crime and a location that is geographically distant from a blue water naval power. In terms of domestic variables, increasing levels of GDP PPP, and the overall stability of economic conditions correlate with decreases in all three forms of maritime crime. While these results provide novel initial insight, correlation does not imply causality.

Table 6.1 – Descriptive Statistics of All Variable s Used

Variables	N	Mean	Standard Deviation	Minimum	Maximum	Correlation with Maritime Piracy	Correlation with Maritime Armed Robbery	Correlation with overall Maritime Crime
Count - Maritime Piracy	2428	1.3942	7.5048	0.0000	143.0000	1	N/A	N/A
Count - Maritime Armed Robbery	2428	0.1717	1.2279	0.0000	33.0000	N/A	1	N/A
Count - Modern Maritime Piracy	2428	1.5638	7.8613	0.0000	147.0000	N/A	N/A	1
Density of Primary Trade Routes	2428	0.6392	1.0006	0.0000	7.0000	0.0663	0.0310	0.0400
Density of Secondary Trade Routes	2428	0.8896	1.3807	0.0000	9.0000	0.1076	0.4127	0.4109
Chokepoint - Singe State	2428	0.0350	0.1838	0.0000	1.0000	-0.0247	-0.0304	-0.0328
Chokepoint - Two States	2428	0.0910	0.2877	0.0000	1.0000	0.0366	-0.0206	-0.0138
Chokepoint - Three States (Complex)	2428	0.0840	0.2775	0.0000	1.0000	0.2130	0.2395	0.2617
CINC Score	2428	0.0073	0.0244	0.0000	0.3366	0.0556	0.0406	0.0475
Distance from a Blue Water Navy	2428	5084.3610	3631.2120	0.0000	15963.3100	0.0931	0.1710	0.1780
GDP per Capita (Purchasing Price Parity)	2428	12040.0800	25785.2800	0.0000	653499.0000	-0.0473	-0.0570	-0.0617
Economic Stability	2428	2.5450	0.8560	0.1616	0.1616	-0.1503	-0.0832	-0.1029
Interstate Conflict	2428	0.0206	0.1421	0.0000	1.0000	0.0130	0.2011	0.1940
Intrastate Conflict	2428	0.0741	0.2621	0.0000	1.0000	0.0684	-0.0020	0.0088
Population	2428	3.9300E+09	1.3800E+08	16804.0000	1.3200E+09	0.1391	0.1785	0.1922
Total Coastline (Kilometers)	2428	4.9381E+03	1.8195E+04	4.1000	2.0208E+05	0.0279	0.1636	0.1605

Full descriptions of variable definitions and units of measurement are described in chapter five.

6.3.4 Test Selection

The impact of the independent variables measuring, geographic opportunity, domestic coercive force, economic stability, the occurrence of conflict, and demographic characteristics, will be tested using a series of negative binomial and zero inflated negative binomial regressions to determine their impact on the dependent variables measuring annual incidents of maritime piracy, maritime armed robbery and a combined tally of both events by country-year. In addition to testing the outlined variables, a second version of each test will be run which will include the opportunity and willingness matrix. These will be included to test the overall validity of the matrix.

The negative binomial regressions are appropriate when a dependent variable is a 'count', or tally, of observed events, over-dispersed or under-dispersed, and each subject has the same length of observation. The negative binomial regression is preferable to other count models, such as an ordinary least square (OLS), or Poisson when these conditions are present. Count variables often follow a Poisson distribution, which requires the mean and variance to be somewhat similar. This distribution is not present in the three previously outlined dependent variables, which show signs of over-dispersion.

While all three dependent variables have multiple entries with a value of zero, this does not automatically indicate that a zero-inflated model is an appropriate statistical test. Zero-inflated models are designed to compensate for an excessive number of zeroes under certain circumstances. Specifically, these models are applicable when the values of zero are generated by at least two distinct processes.

When you consider two out of three dependent variables in this project, the reported incidences of maritime armed robbery and the combined total of all reported cases of maritime armed robbery and maritime piracy, it is quite plausible that there may be multiple explanations for values of zero found in the data set. A state may have a score of zero due a dearth of geographic opportunity. There is simply nothing to steal. A state may be logged as experiencing no incidences of maritime crime due to a high level of coercive state capacity, or alternatively a high level of economic success.

Additionally, acts of maritime armed robbery occur in a wide range of states ranging from Belgium to Bangladesh, a wide array of economic, geographic, and political conditions are present across this wide range of states. It is clearly possible that a range of variables play a role in a state which does not experience any incidences of maritime crime. A similar line of reasoning applies to the dependent variable which pools incidences of maritime armed robbery and maritime piracy.

The dependent variable addressing maritime piracy may not be applicable for a zero inflated test. Unlike maritime armed robbery, acts of maritime piracy are less frequent. As a result there are two scenarios which might make a zero inflated model a less than effective modeling choice. The first is based on the possibility that acts of maritime piracy are driven by fairly uniform causes. The second considers that acts of maritime piracy, much like interstate war, are rare. As a result, a zero inflated test may fail to provide predicted probabilities higher than zero due to the large volume of non-events in the data set.

As it is possible that multiple conditions may play a role in generating zeroes in the dependent variables measuring maritime armed robbery, as well as the combined incidences of maritime armed robbery and maritime piracy it is reasonable to include both negative binomial and zero inflated negative binomial regressions. In terms of maritime piracy, including both the negative binomial and zero inflated versions of the test is a reasonable modeling choice, if only to determine the accuracy, or lack thereof, of a zero inflated model. If the zero inflated models yield results that are both significant and provide reliable predictive data their results will be discussed. If the models prove insignificant or fail to yield reliable predictive data their results will be included, but the primary discussion of results will be based on the standard negative binomial results.

6.3.5 Testing the Opportunity and Willingness Matrix

Overall, the test results displayed in Tables 6.2, 6.3, 6.4 and 6.5 are broadly supportive of many of the hypotheses advanced based by the existing literature. In addition to general support they also indicate that maritime armed robbery and maritime piracy are not driven by identical conditions.

Table 6.2 – Testing the Opportunity and Willingness Matrix: Robust Negative Binomial Regression Results

Model Significance	Model 1: Maritime Piracy // Non-Tertiary Waters - 12 Nautical Miles or More			Model 2: Maritime Armed Robbery // Tertiary Waters - Less than 12 Nautical Miles			Model 3: Modern Maritime Piracy // All Maritime Events		
Number of Observations	2428			2428			2428		
Wald Chi Square	389.29			527.27			588.02		
Probability that the Wald Chi Square is observed under the null hypothesis	0.0000			0.0000			0.0000		
Independent Variables	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change
Opportunity and Willingness Matrix	0.9634 (0.1645)	5.86 ***	0.0291	0.6164 (0.6547)	9.41 ***	0.2700	0.6669 (0.0684)	9.74 ***	0.3117
Density of Primary Trade Routes	0.4287 (0.1316)	3.26 ***	0.0094	-0.0756 (0.0862)	-0.88	-0.0249	0.0112 (0.0881)	0.13	0.0039
Density of Secondary Trade Routes	0.2529 (0.0985)	2.57	0.0077	0.7087 (0.0673)	10.53 ***	0.3376	0.6403 (0.0663)	9.66 ***	0.3215
Chokepoint - Singe State	-1.8549 (1.1376)	-1.63	-0.0076	-1.9991 (0.3987)	-5.01 ***	-0.1230	-1.9340 (0.3912)	-4.94 ***	-0.1264
Chokepoint - Two States	-0.1201 (0.3730)	-0.32	-0.0008	-1.1076 (0.2317)	-4.78 ***	-0.1061	-0.8768 (0.2552)	-3.44 ***	-0.0891
Chokepoint - Three States (Complex)	0.4808 (0.3468)	1.39	0.0029	-0.2810 (0.2709)	-1.04	-0.0259	-0.1437 (0.2411)	-0.60	-0.1400
CINC Score	-1.0233 (0.0001)	6.13 ***	-0.0005	-15.2715 (6.1962)	-2.46 **	-0.1244	-10.5140 (7.1361)	-1.47	-0.0907
Distance from a Blue Water Navy	0.0002 (0.0001)	6.13 ***	0.0161	0.0001 (0.0001)	2.84 ***	0.0767	0.0001 (0.0001)	4.23 ***	0.1147
GDP per Capita (Purchasing Price Parity)	-1.55e-06 (2.04e-06)	-0.76	-0.0009	-2.44e-06 (1.58e-06)	-1.54	-0.0207	-2.48e-06 (2.27e-06)	-1.09	-0.0224
Economic Stability	-0.4811 (0.1460)	-3.29 ***	-0.0090	-0.3639 (0.0904)	-4.03 ***	-0.1027	-0.4250 (0.0989)	-4.30 ***	-0.1276
Interstate Conflict	-0.3472 (0.5705)	-0.61	-0.0011	-0.2702 (0.5647)	-0.48	-0.0128	-0.1600 (0.4558)	-0.35	-0.0800
Intrastate Conflict	0.2715 (0.2654)	1.02	0.0016	0.1496 (0.2595)	0.58	0.0130	0.1333 (0.2027)	0.66	0.0123
Population	3.63e-09 (8.08e-10)	4.49 ***	0.0112	6.07e-09 (7.90e-10)	7.68 ***	0.2881	5.65e-09 (9.04e-10)	6.25 ***	0.2838
Total Coastline (Kilometers)	-0.0001 (0.0001)	-3.45 ***	-0.0235	-0.0001 (0.0001)	3.98 ***	-0.2829	-0.0001 (0.0001)	-4.40 ***	-0.3351
Constant	-6.9800(0.7808)	-0.69		-2.7283(0.3626)	-7.52 ***		-2.8311(0.3801)	-7.45 ***	
Alpha	3.5471(0.7000)			4.3682(0.3026)			3.9826(0.2575)		

*** .001 or less, ** .025 or less, * .05 or less

Table 6.3 – Testing the Opportunity and Willingness Matrix: Robust Zero Inflated Negative Binomial Results

Model Significance	Model 1: Maritime Piracy // Non-Tertiary Waters - 12 Nautical Miles or More			Model 2: Maritime Armed Robbery // Tertiary Waters - Less than 12 Nautical Miles			Model 3: Modern Maritime Piracy // All Maritime Events		
Number of Observations	2428			2428			2428		
Nonzero Observations	158			501			537		
Zero Observations	2270			1927			1891		
Wald Chi Square	99.73			753.69			739.00		
Probability that the Wald Chi Square is observed under the null hypothesis	0.0000			0.0000			0.0000		
Independent Variables	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change
Opportunity and Willingness Matrix	0.2887 (0.1238)	2.33 **	0.0000	0.2007 (0.0716)	2.80 **	0.6819	0.1920 (0.0706)	2.72 **	0.6251
Density of Primary Trade Routes	0.0122 (0.1090)	0.11	0.0000	-0.0906 (0.0610)	-1.48	-0.2372	-0.0463 (0.0555)	-0.83	-0.1161
Density of Secondary Trade Routes	0.2444 (0.0894)	2.73 **	0.0000	0.2487 (0.0437)	5.70 ***	0.9082	0.2566 (0.0418)	6.14 ***	0.8986
Chokepoint - Single State	1.1631 (0.6248)	1.86	0.0000	-1.2775 (0.2393)	-5.34 ***	-0.6226	-1.2530 (0.2189)	-5.72 ***	-0.5854
Chokepoint - Two States	0.6614 (0.2979)	2.22 *	0.0000	-0.7906 (0.2393)	-5.34 ***	-0.6007	-0.6907 (0.1461)	-4.73 ***	-0.5028
Chokepoint - Three States (Complex)	0.2805 (0.2872)	0.98	0.0000	-0.1981 (0.3466)	-0.53	-0.1448	0.0937 (0.1857)	0.50	0.0657
CINC Score	-10.9493 (5.0879)	-2.15 *	0.0000	-17.6069 (2.993)	-5.88 ***	-1.1420	-16.4306 (3.0157)	-5.45 ***	-1.0205
Distance from a Blue Water Navy	0.0001 (0.0001)	2.45 **	0.0000	0.0001 (0.0001)	3.08 **	0.7263	0.0001 (0.0001)	3.73 ***	0.7961
GDP per Capita (Purchasing Price Parity)	-1.55e-06 (2.04e-06)	3.18 ***	0.0000	-1.83e-06 (5.27e-07)	-3.47 ***	-0.1236	-1.89e-06 (6.74e-07)	-2.80 **	-0.1222
Economic Stability	-0.6499 (0.1528)	-4.25 ***	0.0000	0.0621 (0.0779)	0.80	0.1388	-0.1086 (0.0814)	-1.33	-0.2326
Interstate Conflict	0.0585 (0.3338)	0.18	0.0000	0.3047 (0.2320)	1.31	0.1145	0.2201 (0.2120)	1.04	0.0793
Intrastate Conflict	-0.1487 (0.2222)	-0.67	0.0000	-0.2787 (0.1629)	-1.71	-0.1930	-0.2140 (0.1606)	-1.33	-0.1420
Population	2.21e-09 (5.61e-10)	3.95	0.0000	2.96e-09 (3.13e-10)	9.46 ***	1.0903	2.97e-09 (3.15e-10)	9.43 ***	1.0507
Total Coastline (Kilometers)	-0.0001 (-0.0001)	2.45 **	0.0000	-3.94e-06 (7.86e-06)	-0.50	-0.1896	-9.63e-06 (7.74e-06)	-1.21	-0.4320
Constant	-0.5042(0.7356)	-0.69		-0.1824(0.3466)	-0.53		0.1222(0.3409)	0.36	
Inflated Dependent Variable	-44.9767(6025.538)	-0.01		-49.7864(0.7813)	-637.20 ***		-51.6480(0.0768)	-672.49 ***	
Constant	23.8773(4444.573)	0.01		26.2862(0.0378)	695.59 ***		27.1422(0.0385)	704.19 ***	
Alpha	0.2466(0.5825)			0.6280(0.0604)			0.6467(0.0558)		

*** .001 or less, ** .025 or less, * .05 or less

Table 6.4 – Robust Negative Binomial Results

Model Significance		Model 1: Maritime Piracy // Non-Tertiary Waters - 12 Nautical Miles or More			Model 2: Maritime Armed Robbery // Tertiary Waters - Less than 12 Nautical Miles			Model 3: Modern Maritime Piracy // All Maritime Events		
Number of Observations		2428			2428			2428		
Wald Chi Square		343.67			333.23			413.64		
Probability that the Wald Chi Square is observed under the null hypothesis		0.0000			0.0000			0.0000		
Independent Variables	Hypothesized Relationship	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change
Density of Primary Trade Routes	+	0.6145(0.1174)	5.23 ***	0.0190	0.0698(0.0871)	0.8	0.0252	0.1672(0.0837)	2.00 *	0.0671
Density of Secondary Trade Routes	+	0.3805(0.1019)	3.73 ***	0.0162	0.8832(0.0739)	11.96 ***	0.4687	0.8068(0.0670)	12.04 ***	0.4706
Chokepoint - Singe State	+	-2.8172(1.2558)	-2.24 **	-0.0159	-2.2345(0.5020)	-4.45 ***	-0.1496	-2.2082(0.4911)	-4.50 ***	-0.1641
Chokepoint - Two States	+	0.4550(0.3494)	1.30	0.0040	-0.8981(0.2426)	-3.7 ***	-0.0937	-0.6452(0.2326)	-2.77 **	-0.0746
Chokepoint - Three States (Complex)	+	1.6812(0.2763)	6.08 ***	0.0143	0.4434(0.2620)	1.69	0.0444	0.6480(0.2197)	2.95 **	0.0721
CINC Score	-	-21.6520(11.3232)	-1.91	-0.0162	-41.0410(7.9180)	-5.18 ***	-0.3768	-38.1223(7.4190)	-5.14 ***	-0.3863
Distance from a Blue Water Navy	+	0.0002(0.0000)	6.88 ***	0.0242	0.0001(0.0000)	3.75 ***	0.1177	0.0001(0.0000)	4.79 ***	0.1633
GDP per Capita (Purchasing Price Parity)	-	-3.44e-06 (1.67e05)	-2.06 *	-0.0278	-4.17e-06(2.09e-06)	-1.99 *	-0.0389	-4.43e-06(2.14e-06)	-2.07 *	-0.0459
Economic Stability	-	-0.8200(0.1695)	-4.84 ***	-0.0218	-0.7322(0.0960)	-7.63 ***	-0.2301	-0.8050(0.8688)	-9.27 ***	-0.2818
Interstate Conflict	+	-0.3903(0.8303)	-0.47	-0.0017	-0.2280(0.6065)	-0.38	-0.0117	-0.0983(0.5104)	-0.19	-0.0056
Intrastate Conflict	+	0.4232(0.2596)	1.63	0.0034	0.2537(0.2201)	1.15	0.0240	0.2229(0.2023)	1.10	0.0234
Population	N/A	4.53e-09(1.44e-09)	3.15 **	0.0194	8.54e-09(1.39e-09)	6.14 ***	0.4529	8.13e-09(1.33e-09)	6.10 ***	0.4760
Total Coastline (Kilometers)	N/A	-0.0001(0.0000)	-2.54	-0.0248	-0.0001(0.0000)	-3.02 **	-0.2663	-0.0001(0.0000)	-3.45 ***	-0.3117
Constant		-2.7216(0.4888)	-5.57 ***		-0.1161(0.2625)	-0.44		0.0341(0.2389)	0.14	
Alpha		4.4519(1.1455)			5.0286(0.3354)			4.6027(0.2990)		

*** .001 or less, ** .025 or less, * .05 or less

Table 6.5 – Robust Zero Inflated Negative Binomial Test Results

Model Significance		Model 1: Maritime Piracy // Non-Tertiary Waters - 12 Nautical Miles or More			Model 2: Maritime Armed Robbery // Tertiary Waters - Less than 12 Nautical Miles			Model 3: Modern Maritime Piracy // All Maritime Events		
Number of Observations		2428			2428			2428		
Nonzero Observations		158			501			537		
Zero Observations		2270			1927			1891		
Wald Chi Square		83.46			751.91			419.49		
Probability that the Wald Chi Square is observed under the null hypothesis		0.0000			0.0000			0.0000		
Independent Variables	Hypothesized Relationship	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change	Coefficient (Standard Error)	Z-Score	+/- Standard Deviation Change
Density of Primary Trade Routes	+	0.0459(0.1195)	0.38	0.0000	-0.2608(0.1728)	-1.51	-0.1830	-0.0203(0.0625)	-0.32	-0.0554
Density of Secondary Trade Routes	+	0.2266(0.1169)	1.94	0.0000	0.2491(0.0439)	5.67 ***	0.9899	0.2625(0.0488)	5.38 ***	0.9949
Chokepoint - Singe State	+	0.9320(1.3042)	0.71	0.0000	-1.3040(0.2561)	-5.09 ***	-0.6885	-1.2989(0.3584)	-3.62 ***	-0.6536
Chokepoint - Two States	+	0.8882(0.3655)	2.43	0.0000	-0.6065(0.1422)	-4.27 ***	-0.5006	-0.5231(0.1613)	-3.24 ***	-0.4114
Chokepoint - Three States (Complex)	+	0.6611(0.2184)	3.03 **	0.0000	0.0764(0.1635)	0.47	0.0606	0.3235(0.1389)	2.33 **	0.2447
CINC Score	-	-14.5233(6.9120)	-2.10 *	0.0000	-22.4973(3.010)	-7.48 ***	-1.5899	-21.1001(4.1031)	-5.14 ***	-1.4192
Distance from a Blue Water Navy	+	0.0001(4.86e-05)	2.20 *	0.0000	0.0001(2.41e-05)	3.71 ***	0.9311	0.0001(1.85e-05)	5.53 ***	1.0161
GDP per Capita (Purchasing Price Parity)	-	3.51e-05(3.86e-05)	1.64	0.0000	-2.85e-06(4.00e-07)	-7.12 ***	-0.2101	-2.80e-06(1.92e-06)	-1.46	-0.1972
Economic Stability	-	-0.6656(0.1131)	-5.88 ***	0.0000	-0.0603(0.0684)	-0.88	-0.1477	-0.2143(0.0610)	-3.51 ***	-0.5011
Interstate Conflict	+	0.0210(0.4228)	0.05	0.0000	0.2607(0.2311)	1.14	0.1061	0.1915(0.3053)	0.63	0.0743
Intrastate Conflict	+	-0.1418(0.1861)	-0.76	0.0000	-0.2608(0.1728)	-1.51	-0.1958	-0.1955(0.1316)	-1.49	-0.1399
Population	N/A	1.99e-09(7.31e-10)	2.27 **	0.0000	3.15e-09(3.50e-10)	9.00 ***	1.2601	3.15e-09(4.31e-10)	7.31 ***	1.2007
Total Coastline (Kilometers)	N/A	-0.0001(0.0000)	-2.56	0.0000	-7.67e-07(7.99e-06)	0.00	-0.0400	-6.87e-06(7.67e-06)	-0.90	-0.03415
Constant		0.8650(0.2817)	3.07 ***		0.7589(0.2153)	3.53 ***		0.9860(0.1589)	6.21 ***	
Inflated Dependent Variable		-47.6035(11104.04)	0.00		-49.9976(0.1008)	-669.57 ***		-50.3506(18501.0500)	0.00	
Constant		25.2712(8155.22110)	0.00 ***		26.4199(0.0322)	819.47 ***		26.4791(15102.97)	9.00	
Alpha		0.2570(0.0601)			0.6398(0.0645)			0.6551(0.0483)		

*** .001 or less, ** .025 or less, * .05 or less

Prior to delving into these topics in greater depth the first topic discussed will be the significance of the opportunity and willingness matrix as a predictive tool.

Table 6.2 contains a series of robust negative binomial regressions which include all of the hypothesized variables plus the threat matrix. The threat matrix's positive and statistically significant coefficients regarding the occurrence of maritime piracy, maritime armed robbery, and a tally of both events indicates that higher threat scores are linked with a greater number of all forms of maritime crime.

In terms of substantive effects we find that the threat matrix has the greatest impact on models two and three. In model two, examining maritime armed robbery, when the matrix is set at one and all variables are held at their mean, 0.0896 incidents of maritime armed robbery are expected. When the threat matrix is set at a score of six the model predicts 1.86 acts of maritime armed robbery. In model three, examining a tally of both maritime armed robbery and maritime piracy, when the threat matrix is set at one the model predicts 0.0874 acts of maritime crime. When the matrix is adjusted to six, again holding all other variables at their mean, the model predicts 2.3165 acts of maritime crime. When examining maritime piracy the threat matrix continues to yield notable predictions. Setting the threat matrix score at one the model predicts 0.00274 incidences of piracy. Setting the threat matrix score at six and continuing to hold all other variables at their mean, the model predicts 0.3391 incidences of maritime piracy, or an increase of 124 percent.

When examining the test results we find that the six-point threat matrix developed for this project is both statistically significant and yields substantively meaningful results. As this matrix amalgamates hypothesized economic, political and geographic conditions which have been associated with outbreaks of maritime crime, it serves as an initial confirmation for common hypotheses advanced in the existing literature.

6.3.6 Discussion of Results

While the results of the three models are interesting, the question remains: What do they tell us about the research hypotheses of this project and their impact for future policy makers? The answer is that it depends. When the model addressing overall maritime crime, i.e. instances of maritime crime occurring in both domestic and international waters, is examined, nearly all of the research hypotheses are supported. The few research hypotheses that are invalid include the expected relationship between interstate and intrastate conflict on the rate of acts of maritime crime. However, when maritime piracy in international waters and maritime armed robbery in domestic waters are modeled as distinct phenomenon we find that several of the independent variables vary in terms of their impact and significance.

In order to discuss the significance of the hypotheses and their validity across different forms of maritime crime, the evaluation of the research hypotheses will be organized into several thematic categories. These will include trade routes, chokepoints, coercive state capacity, economic conditions, and conflict². While several of these categories will address a single research hypothesis and focus on a single independent variable, other categories will address multiple hypotheses and independent variables.

6.3.6.1 Trade Routes

A basic requirement that must exist prior to coastal residents turning to maritime crime, be it in international or domestic waters, is the presence of something to steal. Throughout the historical record, coastal peoples who have turned to maritime crime have been located near maritime trade routes and possessed the necessary seafaring skills to intercept vessels (Gosse, 1932; Kendrick, 2004; Konstam, 2008; Murray, 1987; Wolf, 1979; Young, 2007). This holds equally true for the Sea People and the Greeks of the 14th and 4th Centuries BCE as it did for the European and Vietnamese pirates of

² In addition to these test results a series of interactions were also investigated. All of which indicate that there is no substantive overlap in measurement between good governance and GDP PPP, a state's territorial size and CINC score, a state's size and GDP PPP, or primary trade routes and complex maritime chokepoints.

the 16th and 19th centuries CE. Therefore, it is not surprising that the results indicate a positive and significant relationship between the presence of maritime trade routes and maritime piracy and maritime armed robbery.

Table 6.4 contains the estimates from a series of robust negative binomial regressions. In general, the results confirm hypothesis one as the presence of both primary and secondary trade routes relate to greater incidences of maritime crime overall. As maritime crime has previously been discussed as a single unified phenomenon, these findings lend support to the hypothesis regarding maritime trade routes and the advent of maritime crime raised by Murphy (2009). However, when maritime armed robbery and maritime piracy are examined as separate events, we find that the relationship between the density of traffic along trade routes and type of maritime crime committed varies in a manner unanticipated by the previous literature.

When examining maritime armed robbery on its own we find that only the density of secondary trade routes is significantly associated with an increase of maritime crime committed within the territorial waters of states. Holding all variables at their means model 2 in Table 6.4 predicts 0.3611 instances of maritime armed robbery. Increasing the secondary trade routes variable one standard deviation from its mean of 0.8894 to 2.2715 yields the predicted rate of maritime armed robbery increases to 2.2715. Increasing the secondary trade routes variable two standard deviations above the mean leads to a predicted rate of maritime armed robbery of 3.6536.

We see the most dramatic increase in the predicted rate of maritime crime when we hold all variables at their mean and adjust the secondary trade route variable from a low of 1, to its maximum entry of 9 (See Figure 6.9). When plotting these results we see a dramatic expected increase in maritime armed robbery when coastal states have five or more secondary trade routes located within their extended economic zone. While the projected figures exceed the maximum number of reported cases of maritime armed robbery we do find some of the densest clusters of maritime armed robbery occur near states with multiple secondary trade routes. For example, four secondary trade routes pass

through the extended economic zone of the Philippines. This state experienced an average of seven acts of maritime armed robbery per year and a maximum of 39 reported cases of maritime armed robbery in 1996. Nine secondary trade routes pass through the extended economic zone of Indonesia. Indonesia experienced an average of 62 acts of maritime armed robbery and a maximum of 143 reported instances in 2003.

These findings provide additional support to the GIS examination of maritime armed robbery from earlier in this chapter. While maritime armed robbery has occurred in close proximity to primary trade routes they do not play a significant factor in its occurrence. Rather maritime armed robbery occurs at a significantly greater rate in coastal regions located near multiple secondary maritime trade routes. These results are significant for the policy making community as they indicate that regions which are transited by secondary maritime trade routes are more likely to experience maritime crime within the territorial waters of a state rather than on the high seas. As a result of these distinctions policies originally designed to address maritime piracy on the high seas may not be transferable or as effective in controlling or reducing domestic maritime crime.

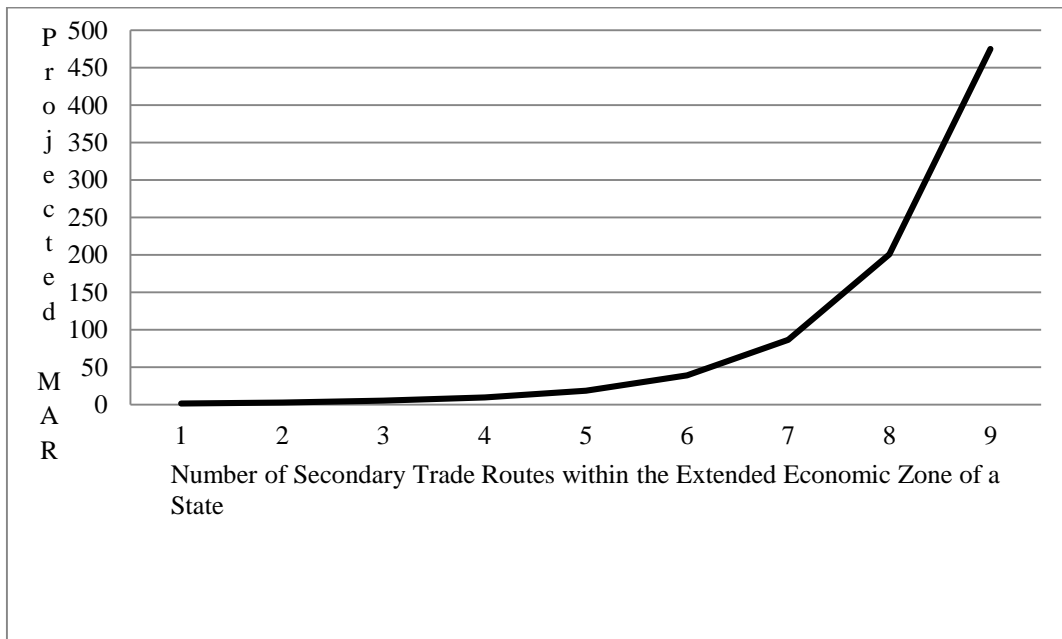


Figure 6.9 – The Impact of Secondary Trade Routes on Maritime Armed Robbery Holding All Other Variables at Their Means

The findings regarding maritime piracy, which occurs in international waters, indicate that both primary and secondary trade routes are significantly and positively associated with maritime crime in international waters. As maritime piracy occurs farther from the shoreline of a coastal state than maritime armed robbery, this finding is not entirely surprising. Arguably, intercepting vessels which lie beyond the horizon line of the shore requires a greater level of confidence regarding the regular location of vessels, as well as planning and access to resources. As both primary and secondary trade routes concentrate the availability of targets in a general area, they decrease the risk of failure for maritime pirates.

That being said, when we compare the impact of both primary and secondary trade routes on maritime piracy we find a less pronounced result than the impact of secondary trade routes on maritime armed robbery. When all variables are held at their means model 2 in Table 6.4 predicts 0.0304 instances of maritime piracy. Increasing the primary trade routes variable one standard deviation from its mean of 0.6392 to 1.6398 increases the rate of maritime piracy to 0.0562. Adjusting primary trade routes variable two standard deviations from its mean to 2.6404 increases the rate of maritime piracy to 0.1038. Adjusting the primary trade routes variable to its maximum of seven and continuing to hold all other variables at their means yields an expectation of 1.5131 instances of maritime piracy.

When we hold all of the variables at their means, except for the secondary trade routes variable, we find a similar relationship exists between the density of secondary trade routes and maritime piracy. Adjusting the secondary trade route variable one standard deviation from its mean of 0.8896 to 1.411 model 2 predicts 0.0370 instances of maritime piracy. Adjusting the secondary trade routes variable two standard deviations from its mean to 2.7918 leads to an expectation of 0.0626 instances of maritime piracy. Finally, adjusting the secondary trade route variable to its maximum score of nine and holding all other variables at their means leads to an expectation of 0.6648 instances of maritime piracy.

These results illustrate that the relationship between maritime trade routes and maritime piracy are more nuanced than expected by the existing literature. While they conform to the expectation that acts of maritime piracy will increase as the density of maritime trade off a state increases, the impact of primary and secondary trade routes are not equal. A one standard deviation increase in the density of primary trade routes leads to an increase in maritime piracy that is 65 percent greater than a one standard deviation increase in the density of secondary trade routes. In a similar manner a two standard deviation increase in the density of primary trade routes leads to an increase in maritime piracy that is 60 percent greater than a two standard deviation increase in secondary trade routes.

In terms of potential policy implications, these findings illustrate that maritime crime can be, in part, predicted based on the types of maritime trade routes which pass near coastal states. As a result, individual states, or the international community at large, could take preemptive measures to discourage outbreaks of maritime armed robbery or maritime piracy. For example, if secondary trade routes were to increase in density a state could expand the scope of the patrols of its coastal waters. In a similar manner, if primary maritime routes were to increase in density a coastal state could expect a greater risk that maritime piracy could occur in international waters near its sovereign territory. Anticipating this potential increase the coastal state could attempt to patrol a select expanse of the primary trade routes. Alternatively, they could solicit assistance from a state possessing a blue water navy or regional naval power with a vested interest in the trade route. Even though these suggestions center on police actions they should not be taken as an indicator that coercion is the only option in limiting and preventing outbreaks of maritime crime.

6.3.6.2 Maritime Chokepoints

Maritime chokepoints are expected to increase the occurrence of maritime crime overall as they both concentrate vessels close to shore in a fixed manner while limiting their speed and maneuverability. This concentration of maritime traffic theoretically increases the odds that maritime criminals will be able to successfully locate, board, and rob these vessels provided that sufficient

political and economic conditions are present. Contrary to these general expectations we find that the presence of maritime chokepoints does not lead to a uniform increase in both maritime armed robbery and maritime piracy.

When all variables are set at their means and the single chokepoint variable is adjusted from 0 to 1, we find that the presence of a maritime chokepoint bordered by a single state leads a decrease in the rate of maritime piracy of 0.0315 incidents. However the significance of this finding is attributed to a lone outlier, the Panama Canal. When the test is rerun excluding the Panama Canal we find that single sovereignty chokepoints become statistically insignificant similar to the double sovereignty chokepoints. Adjusting the complex chokepoint variable from 0 to 1, we find that the rate of maritime piracy increases by 0.1153 incidents.

While maritime chokepoints with complex borders provide favorable jurisdictional conditions for maritime pirates, the negative to insignificant relationship sans Panama between jurisdictionally simple chokepoints and maritime piracy is unexpected. A potential explanation for this finding is that the political boundaries of simple chokepoints impact maritime piracy in a similar manner as maritime armed robbery. When compared to maritime armed robbery, maritime piracy involves frequently crossing international borders. Therefore, maritime features that concentrate trade and provide an opportunity to cross multiple maritime borders would provide an increased ability to evade a pursuit which began in international waters. In the same manner, regions with fewer international borders available to cross create a maritime environment where it is more difficult to obscure your port of origin or evade pursuit.

Similar to the range of effects caused by differing types of maritime trade routes, examining maritime chokepoints in a detailed manner regarding issues of state sovereignty provides constructive insight for policy makers. The previous literature regarding maritime crime asserted the effect of maritime chokepoints to be uniform and lead to greater rates of all forms of maritime crime in both

domestic and international waters. The results of this project indicate that the effects of maritime chokepoints on the occurrence of maritime crime significantly vary.

Finding that maritime chokepoints play either an insignificant or negative role in the occurrence of maritime armed robbery contradicts the existing literature. As a result the role of geographic conditions on maritime crime committed in the littoral waters of coastal states should be reevaluated. The results indicating that only complex maritime chokepoints are associated with an increase in acts of maritime piracy limits the number of regions where geographic chokepoints can be viewed as a catalyst to maritime crime. These four complex chokepoints are the Straits of Dover, the Straits of Gibraltar, the Straits of Malacca and the Bab el Mandeb. The Oresund exists as a potential addition to this list of complex chokepoints. These findings also suggest that maritime chokepoints such as the Panama Canal significantly discourage acts of maritime piracy in waterways leading up to the canals locks due to less complex legal environments and the close proximity of a blue water navy. Alternatively chokepoints like the Suez Canal have an insignificant impact on the waterways leading up to its entry and exit points.

6.3.6.3 Coercive State Capacity

The role of coercive state capacity, i.e. the ability of a state to forcibly deter and/or punish individuals or groups, has been noted throughout the historical literature as an effective way to eliminate maritime crime. Hypothesis three, which seeks to determine if this generalization from the historical record is applicable to acts of maritime crime in the late 20th and early 21st centuries CE, will be investigated in two ways. The coercive capacity of individual coastal states is measured by their CINC score. This variable measures the coercive potential possessed by a state. In addition to the repressive power of a coastal state, it is also probable, if not likely, that a secondary state possessing a strong navy could opt to intervene in an attempt to reduce or eliminate maritime crime located in a different geographic region. This secondary aspect of coercive state capacity will be investigated

based on a coastal state's distance, measured in kilometers, from a state possessing a blue water navy as defined by the U.S. Department of Defense.

Overall, the relationship expected in hypothesis three is supported. Across all three models, there is a significant and positive relationship between the distance from a state possessing a blue water navy and all forms of maritime crime. Additionally, the CINC score of a state has a significant and negative relationship with the dependent variables measuring maritime armed robbery and a tally of all forms of maritime crime. However, CINC scores have no significant impact on the occurrence of maritime piracy.

When we examine the impact of coercive state capacity on maritime armed robbery we find that CINC scores have a more pronounced impact on the rate of maritime armed robbery than a state's distance from a blue water navy. Setting all variables at their mean model 2 in Table 6.4 predicts 0.3614 instances of maritime armed robbery. Increasing the blue water navy variable one standard deviation from its mean of 5078.68 to 8709.86 leads to a predicted rate of maritime armed robbery of 0.4996, an increase of 0.1382 or 28 percent. When we repeat this process with the CINC variable we find that a one standard deviation increase from the mean of 0.0073 to 0.0317 results in a predicted rate of maritime armed robbery of 0.1382, a decrease of 0.2286 or 64 percent.

When we hold all of the variables at their means, except for the variable measuring the distance between a coastal state and a state possessing a blue water navy we find that a similar relationship is present regarding outbreaks of maritime piracy and a coastal state's distance from a blue water naval power. Increasing the blue water navy variable from its mean of 5078.68 to 8709.86 increases the predicted rate of maritime piracy from its mean of 0.0304 to 0.0662, or an increase of 102 percent.

These findings suggest several interesting options for the policymakers of states interested in reducing or preventing outbreaks of maritime crime. Unlike the mixed impact of maritime trade routes and chokepoints, we find that coercive force is a consistent and significant variable which behaves in a

manner expected by the existing literature. Greater levels of a domestic coercive deterrent lead to lower rates of maritime robbery. For example, if a state is confronted with a prolonged outbreak of maritime armed robbery increasing its security presence in domestic waters should lead to a greater reduction in maritime armed robbery than an intervention in international waters from a blue water naval power.

The ability of states possessing blue water navies to significantly decrease all forms of maritime crime suggests an area where the UNCLOS could be amended. As suggested in 1927 by Portugal and Romania when proposing amendments to the Report to the Council of the League of Nations on the Questions which Appear Ripe for International Regulation, allowing naval powers to enter the domestic waters of states in order to pursue or police maritime crime would remove jurisdictional boundaries that benefit individuals who commit acts of maritime piracy. Such a modification of international law would be mutually beneficial for all states involved in legitimate global commerce and likely increase the deterrent effect of dominant naval powers.

6.3.6.4 Economic Conditions

The variables discussed in this section represent measures of the economic stability of a state and the relative income of the citizens of coastal states. Economic stability and bureaucratic state capacity is measured using data from the World Bank's World Development Indicators. The income of coastal populations is measured using GDP per capita at purchasing power parity. Both independent variables have strongly significant relationships which align with the expectations of hypotheses 5 and 9. Increases in GDP PPP lead to significant decreases in all forms of maritime crime at the 0.05 level across all models. The effects of increasing levels of economic stability and bureaucratic state capacity as measured by the World Bank lead to decreasing rates of all forms of maritime crime are stronger still as this relationship is significant at the 0.001 level in all three models.

In terms of substantive effect increasing levels of GDP PPP has a stronger negative impact on maritime piracy than maritime armed robbery. When all variables are held at their means the

coefficient for maritime piracy is 0.0304, and the coefficient for maritime armed robbery is 0.3611. A one standard deviation increase in GDP PPP from its mean of 12036.7 to 37826.8 results in a maritime piracy coefficient of 0.0125, or a 58 percent decrease from the mean prediction. The same one standard deviation increase results in a predicted maritime armed robbery coefficient of 0.3243, or a 10 percent decrease in the rate of maritime armed robbery.

When we examine the impact of increasing levels of bureaucratic state capacity and economic stability as measured by the World Bank we find that reducing economic volatility significantly leads to fewer instances of both maritime armed robbery and piracy. However, reducing economic volatility leads to a greater reduction in maritime armed robbery than piracy. Setting all variables at their means, 0.0304 instances of maritime piracy are expected and 0.3611 instances of maritime armed robbery are expected. A one standard deviation increase in the measure of economic stability from 2.5463 to 3.4025 results in a predicted rate of maritime piracy of 0.015, or a 50 percent decrease from the mean prediction. The same one standard deviation increase results in a predicted rate of maritime armed robbery of 0.1505 or a reduction of 58 percent. Demonstrating that improving economic conditions suppresses maritime crime in all forms supports to the observation made by Frecon (2006) and Young (2007) regarding maritime crime in Southeast Asia. It also lends support to the historical claims of economic desperation discussed in chapter three, such as the Greeks and Carthaginians following the Third Punic War, the displaced Moors following the Reconquista and the coastal Vietnamese and Chinese residents near Chiang P'ing in the 19th century CE.

These findings provide an additional metric that can be used to identify coastal regions and populations which are likely to turn to maritime crime. For example, maritime crime rarely occurs off the coast of states with high levels of economic success, such as the United States, the majority of Western Europe, South Korea, and Japan. However, it occurs at notably higher rates off the coasts of states with relatively low levels of economic stability and success. In addition to identifying regions that are at risk, the significance of 'on the ground' economic conditions creates an additional set of

options for policy makers other than solely applying coercive military force in order to deter or prevent maritime crime.

Working towards ensuring favorable economic conditions in coastal regions that are at risk of experiencing outbreaks of maritime crime based on the presence of maritime trade routes and geopolitical features would significantly reduce the incentive to adopt a career in maritime crime. In regions where maritime crime is already established, acknowledging that the economic conditions of coastal states matter reinforces the idea that maritime crime is driven by conditions on shore, making it a land based crime which manifests at sea. When acts of maritime crime are viewed in this manner, we find that tested policy options already exist in the historical record. Specifically, examples which combined coercive state capacity with alleviating impoverished economic conditions.

Pompey's anti-piracy campaign in the Mediterranean involved combining overwhelming coercive force with efforts to improve the economic conditions of coastal peoples engaged in piracy in the Roman world. By resettling captured pirates inland in Asia Minor as farmers, the bleak economic conditions that Pompey viewed as the primary drivers of maritime crime were notably reduced (Gosse, 1932; Leach, 1978; Omerod, 1997). This combination of repressive force and addressing suboptimal economic conditions proved to be perhaps the most successful effort to address maritime crime in the historical record. As we have found that increasing levels of coercive force and economic conditions significantly reduce acts of modern maritime crime, the model employed by Pompey may be just as viable in the 21st century CE as it was in the 1st century BCE.

6.3.6.5 Interstate and Intrastate Conflict

Hypotheses 7 and 8 set out to investigate the relationship between the occurrence of interstate and intrastate war and an expected increase in the rate of all forms of maritime crime. Murphy (2007) was one of the first works investigating maritime crime to propose a link between the occurrence of armed conflict and a tendency for coastal populations to turn to criminal behavior. The primary case used to illustrate this expectation was the Lebanese civil war of 1975-1990. Early in this conflict, it

was reported that, “ports sprang up along the coast to handle stolen cargo and refit stolen ships (Conway, 1981, p. 15).” These activities bear a resemblance to the reported acts of maritime theft near Carthage and Greece following the Third Punic War, as well as the actions of the Moors who were forced to flee Granada as refugees following the Reconquista of Spain (Bradford, 2007; Gosse, 1932; Wolf, 1979). Subsequently, there appears to be a certain amount of preliminary validity to the expectation that an outbreak of interstate or intrastate conflict would significantly encourage outbreaks of maritime crime in the 21st century CE.

However, we find that this hypothesized relationship between conflict and maritime crime is not present in any of the models in Table 6.4. While the effect of intrastate conflict on maritime armed robbery and maritime piracy is positive, it is not statistically significant and provides no support for hypothesis seven. In addition to statistical insignificance, the occurrence of an interstate war had a negative, albeit insignificant, coefficient in all three models. As this coefficient moves in a direction unanticipated by hypothesis six, it may warrant a greater level of attention in case studies or as more data points become available. In order to illustrate that the impacts of an inter- or intra- state conflict are not being masked, there is no strong correlation between these conflict variables and the variables measuring economic conditions.

6.3.7 Model Predictions vs. Reported Incidents of Maritime Crime

While the previous discussion of results illustrate that the models created for this project yield results which are both statistically significant and substantive, a lingering question remains. How effective are these models at predicting the real world threat of maritime piracy and maritime armed robbery? In order to test the efficacy of these models a projection matrix was used to map the observed values of maritime crime to each of the fitted values of maritime crime. These scores were then compared to the mean incidents of maritime crime. What we find is that the models investigating maritime armed robbery and piracy accurately predict many of the top ten states which experience maritime crime.

Table 6.6 compares the top ten states which are predicted to experience maritime piracy with the top ten states which actually experienced maritime piracy. The top ten predicted states identified eight out of ten of the states which experience the highest levels of maritime piracy including Indonesia, Somalia, India, Yemen, China, Malaysia, the Philippines, and Eritrea. The most accurate prediction is that of Eritrea which is predicted to experience the tenth highest rate of maritime piracy in the world. This forecast perfectly aligns with Eritrea's actual level of maritime piracy. In terms of a near match, Somalia was predicted to experience the second highest rate of maritime piracy. However Somalia outperformed the model and experienced the highest rate of maritime piracy in the world.

Table 6.6 – Predicted Rate of Maritime Piracy vs. Mean Rate of Maritime Piracy, 1991-2007

Rank	Top 10 Predicted Risk of Maritime Piracy	Top 10 Mean Incidents of Maritime Piracy
1	Indonesia	Somalia
2	Somalia	Malaysia
3	India	China
4	Yemen	Nigeria
5	China	Philippines
6	Malaysia	Yemen
7	Papua New Guinea	Indonesia
8	Philippines	Thailand
9	Djibouti	India
10	Eritrea	Eritrea

* States which are on both the predicted and actual top ten lists are indicated in green.

In addition to the overall success of the predicted cases there were four anomalous results. Djibouti was predicted to experience the ninth highest rate of maritime piracy in the world. However, it actually experienced the seventy fourth highest rate of maritime piracy. While Djibouti shares a similar geographic location, along with weak state capacity and economic conditions similar to Somalia and Yemen it clearly deviates from the modeled predictions. As a result, this makes Djibouti a strong candidate for a future regional project investigating maritime crime in the Gulf of Aden.

Papua New Guinea was predicted to experience the seventh highest rate of maritime piracy, yet its real ranking was thirty eighth. Papua New Guinea's ranking exceeds its actual rate of maritime

piracy due to the abundance of secondary trade routes which pass near the state. When the number of secondary trade routes is artificially reduced to one in the dataset the predicted rate of maritime piracy nears its real rate of maritime piracy. We will see a similar problem with Australia, South Africa and Papua New Guinea in Table 6.7.

There are three ways to look at these results. First, these states are awash in the opportunity to engage in maritime crime but not the economic or political willingness to do so. Second, the abundance of secondary trade routes around these states may be inaccurately recorded in work regarding maritime transit lanes. Third, while secondary trade routes exist in dense clusters around these states, they may not carry consistently high volumes of regular traffic. Hence, it is difficult to predict when high value targets are passing near a coastal state along these trade routes.

Table 6.7 compares the top ten states which are predicted to experience acts maritime armed robbery with the top ten states which actually experienced acts of maritime armed robbery. The top ten predicted states identified five out of the ten most at risk states correctly. The two most accurate predictions were Indonesia and Brazil. Indonesia was predicted to experience the highest rate of maritime armed robbery in the world, and did. Brazil was expected to experience the seventh highest

Table 6.7 – Predicted Rate of Maritime Armed Robbery vs. Mean Rate of Maritime Armed Robbery, 1991-2007

Rank	Top 10 Predicted Risk of Maritime Armed Robbery	Top 10 Mean Incidents of Maritime Armed Robbery
1	Indonesia	Indonesia
2	India	Bangladesh
3	Australia	Malaysia
4	Papua New Guinea	Nigeria
5	Somalia	India
6	China	Philippines
7	Brazil	Brazil
8	South Africa	Tanzania
9	Malaysia	Somalia
10	Yemen	Vietnam

* States which are on both the predicted and actual top ten lists are indicated in green.

rate of maritime armed robbery in the world. This is precisely Brazil's real ranking in terms of maritime armed robbery.

When compared to the predictions regarding maritime piracy there were more unanticipated results in the predictions regarding maritime armed robbery. In addition to the previously discussed cases of Australia and Papua New Guinea, Yemen was predicted to be a state which experienced the tenth highest rate of maritime armed robbery in the world. However, it experienced the twenty sixth highest rate of maritime armed robbery instead. Granted, this is still a high figure.

There are several potential causes for the gap between the predicted expectation of maritime armed robbery and its reality for Yemen. As discussed earlier in this project it was noted that shipping companies have begun to avoid areas where maritime crime is likely to occur. These adjustments may keep tempting targets outside of the littoral seas of Yemen. Hence, there may be an absence of desirable targets, despite the willingness of coastal residents to act. Alternatively, there may be a sufficient number of vessels which pass through the littoral seas of Yemen; however, targeting larger ships in international waters may be a more lucrative endeavor. In either case, Yemen's underperformance in both maritime piracy and maritime armed robbery should be investigated in greater depth as more data points are added to the data set.

Of the top ten cases of actual maritime armed robbery which were not on the predicted list of states we find Bangladesh, Nigeria, the Philippines, Tanzania and Vietnam. Three of these states Bangladesh, Nigeria and the Philippines were predicted as top twenty states which were expected to experience maritime armed robbery. Tanzania and Vietnam were both in the list of top thirty of states predicted to experience maritime armed robbery. A potential cause for these missed predictions is the unique nature of these states regarding maritime trade routes.

Many of the more accurate predictions are states which possess a primary maritime trade route, or both a primary and secondary trade route which passes through their EEZs. However, our inaccurately predicted states, with the exception of Vietnam, possess only secondary trade routes

which pass through their EEZs. It would appear that the model is not accurately weighing these secondary trade routes when they are the only form of maritime trade route present. Clearly, the model predictions for maritime armed robbery can be improved upon. Unlike maritime piracy which tends to cluster in certain regions, maritime armed robbery occurs across the globe. It may be possible that there are additional variables which are not considered in the current predictive model. Alternatively maritime armed robbery may be more of a crime of opportunity than maritime piracy. Hence its occurrence near the ports of the Netherlands and Brazil where economic conditions and state capacity are reasonably high.

Overall the predictive models for this project suggest that it is possible to forecast acts of maritime armed robbery and piracy at a global level with a reasonably high level of accuracy. This lends support to the overall objective of this project which aims to show that global, rather than local conditions can be considered as significant and consistent drivers of maritime crime. These findings substantively matter because they provide a systematic way for the international community, as well as regional policy makers, to anticipate future outbreaks of maritime crime.

6.4 Summary

Since the close of the Cold War, maritime crime, both in domestic and international waters, has notably increased in frequency garnering the attention of the media and, increasingly, the policy and academic communities. The decision to embark on a life of maritime crime raises several salient questions for the academic community. What conditions encourage a rational individual to engage in acts of maritime crime? Do different conditions encourage the presence of one form of maritime crime over another? This chapter focused on geographic, political, and economic conditions and how they impact the emergence of maritime crime both in domestic and international waters. In addition to broadly confirming many of the existing hypotheses in the literature, the findings also suggest that the conditions which encourage maritime armed robbery and maritime piracy are more nuanced than previously theorized.

The impact of maritime chokepoints and trade routes provides insight into identifying the forms of maritime crime which are most likely to manifest near coastal states. While generally confirming that both maritime trade routes and chokepoints are drivers of maritime crime, we find that they impact the occurrence of maritime armed robbery and piracy in different ways. For example, primary trade routes are not significant drivers of maritime armed robbery. However, secondary trade routes are. The impact of these secondary trade routes increases exponentially when a state possesses at least five secondary trade routes which pass through its extended economic zone. The role of primary trade routes plays a similar role in the occurrence of maritime piracy. The presence of primary trade routes leads to significantly greater rates of both maritime armed robbery and maritime piracy. However, primary trade routes have a greater impact on driving the rate of maritime piracy than maritime armed robbery.

In terms of fixed features the impact of maritime chokepoints also plays a complicated role in the occurrence of maritime crime. Contrary to the expectations of the existing literature maritime chokepoints do not lead to significant across the board increases in maritime armed robbery. In the case of maritime chokepoints bordered by a single state or two states these chokepoints lead to significantly lower rates of maritime armed robbery. We also find that complex maritime chokepoints bordered by at least three states have no significant impact on the occurrence of maritime armed robbery.

The effect of maritime chokepoints on acts of maritime piracy is also mixed. Maritime chokepoints bordered by a lone state initially appear to have a significant and negative impact on the rate of maritime piracy. However, this finding can be attributed to the Panama Canal which is an outlier as it possesses unusually safe waterways leading up to the canal. When the Panama Canal is excluded we find that single sovereignty chokepoints have no significant impact. We also find that dual sovereignty chokepoints have no significant impact on the rate of maritime piracy. The lone form

of chokepoint which has a significant and positive impact on the rate of maritime piracy are complex chokepoints.

While the existing literature has hypothesized that maritime chokepoints lead to higher rates of maritime crime due to their ability to concentrate and slow traffic, we find that this is not a uniform, or even common, effect. These findings suggest that the impact of maritime chokepoints on maritime crime may be influenced more so by international borders and law than geographic features. When chokepoints are bordered by one to two states they create jurisdictional boundaries which allow states to easily concentrate patrols, as well as conditions which make it difficult for maritime criminals to obscure their point of origin or evade pursuit. However, complex maritime chokepoints such as the Bab el Mandeb and Straits of Malacca have the opposite effect on maritime piracy, and only maritime piracy. The presence of multiple state boundaries makes it possible for maritime pirates to easily obscure their point of origin and evade pursuers. The complex nature of these maritime borders allows pirates to essentially behave like bootleggers during prohibition evading the police by crossing the state line.

Contrary to the findings regarding maritime trade routes and chokepoints we find that economic conditions and coercive state capacity behave in manners more in line with the expectations of the existing literature. As GDP PPP increases we see significant decreases in both maritime piracy and armed robbery. Increasing levels of GDP PPP have the greatest impact on decreasing the rate of maritime piracy. A one standard deviation increase in GDP PPP leads to a fifty eight percent decrease in piracy. The same increase leads a decrease of ten percent in the rate of maritime armed robbery. The most significant ‘across the board’ economic variable was the World Bank’s measure of state capacity and economic stability. A one standard deviation increase in this measure led to a reduction in maritime piracy of fifty percent, and maritime armed robbery of fifty eight percent. The desire to embark on a life of maritime crime is strongly influenced by the economic conditions found in coastal states.

The application of coercive force was a recurring theme in the demise of historical outbreaks of maritime crime in chapter three. While the findings in this chapter clearly indicate that the use of coercive force is far from the sole way to alleviate maritime piracy and armed robbery it remains an important and effective tool. As a state's distance from a major naval power increases, so does their likelihood of experiencing greater rates of both maritime armed robbery and piracy. As a state's CINC score increases their risk of experiencing maritime armed robbery decreases.

Ultimately we find that maritime crime is a multifaceted problem that cannot be easily addressed without adopting a nuanced perspective. In addition to consisting of separate acts as defined under international law, maritime armed robbery and maritime piracy are influenced by geographic, political and economic variables in distinct ways. At the same time as we acknowledge these distinctions, this project also demonstrates that maritime piracy and armed robbery are significantly driven by generalizable conditions. These findings explain why maritime piracy occurs near the Horn of Africa and Straits of Malacca but not the English Channel or Straits of Tsugaru. These finding also provide a way to identify states at risk of experiencing high rates of maritime armed robbery and piracy. How these findings can be applied to improve the effectiveness of existing measures intended to reduce current, and prevent future, outbreaks of maritime crime will be discussed in greater detail in chapter seven.

CHAPTER 7: CONCLUSIONS

Acts of maritime crime occur throughout the world and pose a significant threat to the maritime shipping industry and the economies of states that rely on maritime transport to provide access to raw materials and cost effective labor. The existing academic and policy work regarding maritime crime has allowed scholars to better understand its financial impact and potential security risks while developing preliminary hypotheses that maritime crime may be driven by generalizable global conditions. In spite of this progress, there remains an absence of literature that investigates and tests these hypothesized global variables. In order to establish the role played by geographic, economic and political conditions on the occurrence of seaborne crime, this project employed a macro level analysis examining reported incidences of modern maritime crime collected by the IMO and ICC-IMB from 1991 to 2007.

This work distinguishes between three classifications of maritime crime: maritime armed robbery in domestic waters, maritime piracy in international waters, and a combined tally of both events. The results of this dissertation indicate that maritime crime, regardless of type, is motivated by a combination of geographic opportunity paired with weak economic and political conditions. These serve to lower the costs for potential maritime criminals, creating an environment where there is a high opportunity and willingness to act.

The form of maritime crime which manifests depends on the geopolitical features of a region and the type of maritime trade routes which pass near the shores of a coastal state. These findings add to the existing literature by providing an alternative framework that allows maritime crime to be assessed and potentially predicted based on generalizable global conditions. This framework allows a broader range of questions to be answered when compared to regional and cultural frameworks. Questions such as: Why does maritime piracy occur near the Bab el Mandeb but not the Straits of Gibraltar? Why does maritime armed robbery occur near the Straits of Malacca but not the Bosphorus Straits? In terms of practical application, answering such questions gives policy makers the ability to

identify current and future areas of risk and develop effective policy to counter specific forms of maritime crime.

The following sections will summarize and address four issues. First, that maritime boundaries established in international law have tangible effects on the behavior of maritime criminals and states. Hence, they should be taken seriously when considering and classifying maritime crime. Second, a summary of the findings of this project will be discussed detailing the different conditions that lead to maritime piracy or maritime armed robbery. Third, based on these results a series of suggestions will be advanced for future policy makers seeking to address the issue of maritime crime. Fourth, project limitations and future research projects related to this project will be outlined.

7.1 The Divided Seas

A recurring position throughout this dissertation has been the role played by state sovereignty and international law. From the 15th century CE forward, international norms have clearly divided maritime space into domestic littoral and an international region frequently referenced as ‘the high seas’. While the ranges of the domestic waters of a state have varied over time, the underlying objective of this division of maritime space has not. One of the primary goals of this division was to share the burden of suppressing maritime crime amongst seafaring sovereign states. As discussed in chapter two, this is a perspective which has not been taken into account in recent work. Rather, a notable portion of the existing literature has favored a unified definition of maritime crime which does not acknowledge the role played by state sovereignty in dividing maritime space.

The importance of examining the impact of the twelve nautical mile boundary, the current international norm separating littoral and international waters, is more than academic. It is a boundary that has a clearly demonstrable effect on the behavior of coastal peoples engaging in maritime crime and the behavior of sovereign states while conducting operations intended to discourage or eliminate maritime crime. Prime examples in recent years include the strategic choices made by maritime pirates

and armed robbers in both Eastern Africa and Southeast Asia as well as in the rules of engagement employed by both regional and global naval forces.

The operational decisions made by the U.S. Navy are a prime example of the real world implications of maritime borders. In terms of coercive naval power, the U.S. Navy arguably has the capability to ignore the legal maritime boundaries of many states with relative impunity. Despite this ability, when the U.S. Central Command was researching potential anti-piracy measures which could be deployed off the Horn of Africa they found a recurring obstacle to deterring maritime crime was the twelve nautical mile boundary of Somalia's littoral seas. This maritime boundary impacted the behavior of U.S. Navy as they were legally obligated to cease the pursuit of maritime pirates into Somali territory and were prevented from launching patrols near the shoreline of Somalia. These limitations were actively exploited by Somali pirates. Frequently, vessels hijacked in international waters off the coast of Somalia were quickly relocated and anchored within the littoral seas of Somalia, outside of the jurisdictional reach of intervening navies (Kraska, 2011).

This exploitation of international law and maritime borders represents the increasing sophistication of maritime piracy and the evolution from sporadic opportunism to an organized activity carried out by individuals with a firm grasp on international norms. In a 2008 interview, a Somali pirate named Jama Ali expressed little concern regarding international naval patrols occurring along the Horn of Africa: "They [the international community] can't stop us... we know international law." (Gettleman, 2008) This behavior and mindset illustrate that, while the division between domestic and international waters might be just a line on the map to shipping companies, the maritime boundaries agreed upon in the UNCLOS have clear 'real world' limitations for the U.S. Navy and other naval forces in shaping their operational tactics for anti-piracy operations. Rather than sharing the burden of policing the seas amongst multiple states, the contemporary maritime borders of weak states have inadvertently proved a strategic advantage to maritime criminals willing to cross multiple borders while carrying out attacks in international waters.

In an attempt to address this protective legal barrier in the Horn of Africa, the U.S. sought legal permission to enter Somalia's littoral seas. This permission was granted by the Transitional Federal Government of Somalia and formally recognized in U.N. Resolution 1872, which granted the U.S. Navy the right of hot pursuit and permission to conduct anti-piracy patrols within Somalia's sovereign maritime space (United Nations, 2009). This agreement allowed the U.S. Navy to serve as a temporary coastal force in the Horn of Africa. As indicated in chapter six, the increased presence of coercive force in Somalia's littoral seas, as well as in the international waters neighboring the state, led to decreasing rates of maritime armed robbery and maritime piracy committed off the coast of Somalia. Despite the effectiveness of these increased naval patrols, the decrease in maritime crime has been described as little more than a temporary police action so long as the economic conditions and governmental capabilities of Somalia remain weak (Gettleman, 2008; Smith & Chonghaile, 2012).

While the states bordering the Malacca Straits possess higher levels of effective governance, as measured by the World Bank, and coercive force, as measured by the Correlates of War, than Somalia, international maritime borders have provided a similar level of protection for maritime criminals in Southeast Asia. The close proximity of the international borders of Malaysia, Singapore, and Indonesia inadvertently created systematic ways for maritime criminals to avoid pursuit and undermine the deterrence efforts of regional states. In an attempt to preempt a naval interdiction by the U.S. or Japan, the governments of Malaysia, Indonesia, and Singapore launched the MALSINDO (Malaysia-Singapore-Indonesia) patrols in 2004 in an attempt to increase cooperation and reduce maritime crime in the region.

However, the MALSINDO anti-piracy patrols did not create a unified anti-piracy fleet with a clear command structure or relax the maritime boundaries of any of the participating states (Young, 2007). The standard operating procedure of these patrols was succinctly described by the Malaysian Defense Minister Najib Abdul Razack in 2006 when he stated,

You do not enter others' territorial waters. No sharing of vessels, no hot pursuit. We have to respect the cardinal principle of national sovereignty (Mak, 2006, p. 155).

Though well-intentioned, the initial result of these patrols was an increase in the number of acts of maritime crime based in Indonesia. When compared to Singapore and Malaysia the Indonesian Navy faced a daunting task given the vast expanse of territorial waters which it was required to patrol, in addition to continuing the pursuit of pirates begun in international waters given the poor state of repair of the Indonesian Navy. Recognizing these weaknesses maritime pirates based in Indonesia increased the rate at which they crossed in and out of Indonesia's sovereign maritime territory to attack ships in international and Malaysian waters before retreating back into the domestic waters of Indonesia in order to evade pursuit by Malaysian Naval forces (ICIS News, 2005). Regardless of how pirates learned of this policy, be it the internet, fellow practitioners or from local government officials it serves as a cogent example that maritime borders matter in more than a purely academic sense. They play a central role on the strategic choices made by Southeast Asian pirates and armed robbers as well as the states that seek to deter them.

This is not to say that the efficacy of the MALSINDO patrols did not increase. However, notable drops in the rate of maritime crime did not occur until a greater level of collaboration and temporary relaxation of the impregnable nature of maritime boundaries was agreed upon. In 2005, a component called Eyes-in-the-Sky (EiS) was added that provided coordinated aerial surveillance of the Malacca Straits. In 2006, the three participating states established an Intelligence Exchange Group (IEG). These steps improved the ability of the Malaysian and Indonesian Navies to coordinate their patrols within their sovereign maritime territory. In 2008, a greater number of states became involved in the patrols, such as Thailand, and twenty other states which regularly make use of the Malacca Straits. However, the most significant decrease in maritime crime in the region occurred after Malaysia, Indonesia, and Singapore agreed to allow the pursuit of maritime criminals begun on the high seas to continue into their domestic waters in 2010 (Woolley, 2010). The end result of

implementing a centralized intelligence structure and relaxing maritime borders was a drop in the rate of maritime piracy of ~50 percent between 2004 and 2009 and decreasing rates of maritime armed robbery during the same period. However, even with this notable decrease the region remained the most active in the world in terms of the total number of acts of maritime crime.

Both of these cases illustrate that international boundaries play a tangible role both for maritime criminals in evading capture and the ability of states to effectively counter current and deter future acts of maritime crime. As a result, international boundaries must be considered seriously in terms of classifying acts of maritime crime and the development of future policy intended to reduce or deter acts of maritime crime. While ad hoc policing agreements have increased the efficacy of anti-piracy and anti-maritime armed robbery missions, these programs have not addressed the underlying conditions that make maritime crime a desirable vocation for coastal residents or established a framework that can be quickly implemented in future regions that experience outbreaks of maritime crime.

7.2 Summary of Findings

While maritime crime has been romanticized and maritime criminals idolized in literature and contemporary film, the reality is mundane. Maritime crime is no different than any other criminal activity. In order for it to occur, there must be sufficient opportunity to act, in that there is something available to plunder, and willingness to act, in that people exist in conditions that make criminal activity economically desirable and reasonably risk averse. The results discussed in chapter seven demonstrate that variables associated with opportunity and willingness serve as significant motivating factors linked to outbreaks of maritime crime. Although maritime crime has previously been examined in regional and cultural terms, this project indicates that there are generalizable and significant global forces at work.

When assessing the historical record, a recurring claim is that any pirate is essentially a morally bankrupt scoundrel. When the Mycenaean Greeks were confronted with the rampant piracy of

the Sea People, the Sea People were portrayed as culturally depraved barbarians (Gosse, 1932; Omerod, 1997). Later in the historical record when the Phoenicians were confronted with acts of piracy based in Greece, they described the Greeks as a people inherently predisposed to maritime crime (Gosse, 1932). Similar claims were leveled against the British during the 17th century CE by the Spanish, the city-states of North Africa by the Americans during the 18th century CE, and in the contemporary literature similar claims are now made against Somalia and various regions within Southeast Asia (Bradford, 2007; Murray, 1987; Pringle, 1953; Ronald, 2007).

There are two possible explanations for these claims. The first would affirm the historical record in that some nebulous ‘scoundrel’ force has ebbed and flowed through humanity, traveling around the globe and across the millennia. Second, and I would argue more plausible, is that at various points in history the opportunity and willingness to commit acts of maritime crime shifted in terms of trade routes, chokepoints, economic conditions, and state capacity. Granted, the scope of the available data does not allow these propositions to be tested across the historical record. However, adopting the second position allows modern maritime crime to be analyzed using readily available data that is quantifiable and avoids murky classifications regarding culture or the degree of cultural transition occurring over time.

This project addressed a wide array of hypotheses and variables. Despite the range of this work, the variables and their influence on maritime armed robbery, maritime piracy, and maritime crime in general can be best addressed when grouped by conditions that create sufficient opportunity and willingness for maritime crime to occur. In this manner, maritime crime can be thought of as comparable to many other forms of crime. The first criterion is the existence of and access to something of value to abscond with, which is addressed in chapter six with variables measuring primary and secondary trade routes as well as classifications of maritime chokepoints. The second criterion is that the potential thief believes they will gain value from the act and will likely be able to avoid capture and punishment. There are multiple variables that influence willingness to commit

criminal acts. Low levels of effective domestic governance are associated with ineffective domestic institutions, bribery, corruption and unstable economic conditions. Coercive force is measured for both the coastal state and the distance from a state possessing a blue water navy. The latter of these measures can be thought of as comparable to a city police department and the former a sheriff's department in a neighboring county with no jurisdictional overlap. In theory, both organizations are intended to address similar problems. However, as their ability to effectively patrol territory is reduced and jurisdictional issues arise, they are increasingly unable to execute their designated task of maintaining order.

When examining conditions that encourage outbreaks of maritime armed robbery, the results illustrate that the assumptions made in the existing literature cannot be fully supported. As discussed in chapter seven, it has been broadly hypothesized that the presence of maritime trade routes and chokepoints should correspond with an overall increase in criminal activity. However, when maritime trade routes are examined we find that only secondary trade routes, which connect smaller trade centers to the primary arteries of global commerce, are significantly linked to increasing rates of maritime armed robbery. Furthermore, primary trade routes have no significant impact on the rate of maritime armed robbery.

Departing even further from the hypotheses is the relationship between maritime armed robbery and maritime chokepoints. Maritime chokepoints were expected to lead to significantly higher rates of maritime armed robbery as they both concentrate and slow trade. Not only is this relationship not present, maritime chokepoints bordered by a single state or two states are significantly associated with lower rates of maritime armed robbery. Regarding complex maritime chokepoints, bordered by three or more states, there is no significant relationship between these geopolitical features and maritime armed robbery.

Contrary to the findings regarding the opportunity to act, the expected relationships regarding the willingness to act behave in a manner closer to the hypotheses and previous literature. As a coastal

state's economic conditions and quality of governance decline, its citizens are significantly more likely to turn to maritime crime. Willingness to act is further encouraged as a coastal state's CINC score, or its latent ability to mobilize coercive force, decreases. In the same manner, the greater the distance from a blue water navy the higher the rate of acts of maritime armed robbery.

Based on these results, regions with a high opportunity to commit acts of maritime armed robbery include the Western and Northern coasts of South America, West Africa, Southern Africa, the majority of Southeast Asia, and Scandinavia. Of these regions, the most active are those with suboptimal economic conditions, weak CINC scores, and low levels of effective governance. Even though Norway and Nigeria represent equal levels of opportunity, they possess vastly different incentive structures for potential maritime armed robbers. The same comparison can be made between Indonesia and Australia. A similar array of secondary trade routes passes near both states. Yet they do not experience comparable rates of maritime armed robbery. In comparison, Australia has higher levels of administrative effectiveness, availability of coercive force, and a stronger economy. These findings add to the existing literature by providing an analysis of maritime crime occurring within the littoral seas of states and demonstrating that previous theories regarding the role of maritime commerce, geographic features, and state capacity may need to be reassessed in a nuanced manner.

When assessing variables that encourage acts of maritime piracy, we find that, while they conform more so to the expectations of the previous literature on maritime crime, unanticipated relationships relating to maritime chokepoints and coercive force are present. Contrary to maritime armed robbery, proximity to both primary and secondary trade routes leads to significantly higher rates of maritime piracy. Of these two trade routes, primary trade routes which carry the greatest volume of international trade are the most desirable targets for maritime piracy. This result has a certain amount of common sense validity. If you are going to target vessels beyond the horizon line the most heavily traveled trade routes would provide the highest likelihood of regularly locating vessels on the high seas. These finding provides an indicator that can assist states in determining what

form criminal opportunity is most likely to manifest off their shores, as maritime armed robbery is more likely to occur in domestic waters near secondary trade routes and maritime piracy is more likely to occur in international waters near primary trade routes.

The role played by maritime chokepoints has a comparable impact on the opportunity to commit an act of maritime piracy. Similar to the results for maritime armed robbery, the presence of a maritime chokepoint bordered by a single state leads to significantly lower rates of maritime piracy for a coastal state, provided that the Panama Canal is included in the analysis. When the Panama Canal is excluded we find that single sovereignty chokepoints have no significant impact on the rate of maritime piracy. Whereas, maritime chokepoints bordered by three or more states are significant drivers increasing the rate of maritime piracy for coastal states. These findings reveal that, unlike maritime armed robbery where there is no significant link to maritime chokepoints bordered by three states, the opportunity to commit an act of maritime piracy is strongly linked to geopolitical features that concentrate trade and favor the exploitation of international law regarding the sovereign maritime borders of states and hot pursuit.

When assessing variables associated with a willingness to act, we find that many of the results are similar across the tests for maritime armed robbery and maritime piracy. For example, declining levels of economic stability and per capita income are strongly linked to increasing rates of all forms of maritime crime. An interesting area of divergence involves variables measuring coercive state capacity. While increasing the distance from a state possessing a blue water navy leads to increasing rates of both forms of maritime crime, the CINC score of a coastal state has no significant impact on the rate of maritime piracy occurring on the high seas off the coast of a state. Arguably the insignificance of CINC scores can be interpreted in multiple ways. The first would be the DoD's assessment that most states lack the naval capacity to operate in international waters for prolonged periods of time. The second would be that perhaps a state's CINC score is not the best measure of the naval capacity of many states.

Broadly speaking these results align with the opportunity and willingness framework introduced earlier in this project. Geographic opportunity alone is insufficient. States that experience outbreaks of maritime crime, be it in international or domestic waters, possess weak economies and lower levels of coercive force which could be deployed to deter maritime crime. For example if we focus on the limited number of complex maritime chokepoints we find that only those which provide a sufficient political and economic willingness to act experience outbreaks of maritime crime.

Examples of a primary maritime trade route passing through a complex maritime chokepoint include the Straits of Dover, Straits of Gibraltar, Bab el Mandeb, Straits of Malacca and perhaps the Oresund. Out of these five regions, maritime piracy is the most common in those with low levels of effective domestic governance, poor economic conditions, and located a respectable distance away from a blue water naval power. These results possess a certain amount of face validity and are a significant contribution to the literature for two reasons. First, they indicate an alternative to a primarily regional and cultural narrative explaining dense clusters of maritime crime. Arguably, the residents of Scandinavian countries and the descendants of the Norman conquest of Britain possess a historically strong cultural tie to pillaging at sea that is just as strong, if not stronger, than the contemporary residents of Somalia, Malaysia, or Indonesia. Yet, there is a clear absence of maritime piracy and maritime armed robbery in the Oresund or Straits of Dover. Second, this project investigates a series of hypotheses which have been proposed but not empirically tested in the existing literature.

Demonstrating that not all trade routes and maritime chokepoints impact incidences of maritime crime in a uniform manner is a noteworthy finding. It indicates that conditions that favor maritime crime are more nuanced than previously assumed. Furthermore, finding that the opportunity to commit acts of maritime armed robbery and maritime piracy varies based on the combination of maritime transit lanes, geographic features, and the complexity of sovereign maritime borders provides insight for policy makers in anticipating the type of maritime crime a coastal state is most at risk of

experiencing during periods of economic decline or political instability. The remaining question for this project is: How can these findings potentially be applied to the creation of effective policy that can alleviate current acts of maritime crime and discourage future acts of maritime crime?

7.3 Policy Implications

The absence of an established framework to address maritime crime may be attributed to its historical tendency to ebb and flow. It is not a phenomenon which occurs with the same frequency as interstate or intrastate conflict. As a result, when maritime crime is in its nascent stage it tends to be downplayed as a minor nuisance. It is not until maritime crime develops into a frequent and widespread phenomenon that states have historically taken decisive measures to address it. Once the threat has been eliminated, maritime crime is largely forgotten, along with the threat it posed towards interstate commerce and the survival of states that depend on such trade.

The objective of this section is to propose a series of suggestions, based on the results of this project, which would assist in suppressing current acts of maritime crime and ameliorating future outbreaks of maritime crime. These proposals focus on adjustments which can be made to the UNCLOS, the Trusteeship Council of the United Nations, the Economic and Social Council of the United Nations and the World Bank. While success has been achieved in suppressing maritime crime on an ad hoc basis, a centralized set of institutions and procedures for addressing maritime crime would remove obstacles to collaboration and reduce delays in implementing strategies ensuring the free flow of interstate maritime commerce.

As discussed in chapter two, the objective of states developing and accepting the concept of a *mare liberum* with a clear division between claimed tertiary seas and international waters was partly motivated by a desire to ensure the free flow of international commerce and share the burden of suppressing maritime crime. This development was essential as trade expanded ever farther around the globe and no single state possessed the capacity to police these trade routes in their entirety. As all states possessed the potential to participate in and benefit from global trade, they had a shared interest

in protecting the free flow of commerce as a global public good. Nevertheless, international maritime borders have developed into the antithesis of this original intent. They have transitioned into a way for maritime pirates to avoid pursuit and serve as a shelter protecting maritime armed robbers from international naval patrols.

The first suggestion for realigning the division of maritime territory with its original objective would be to amend the existing rules for the hot pursuit of a vessel outlined in the UNCLOS. Specifically, Article 111, subsection 3, which states, “The right of hot pursuit ceases as soon as the ship pursued enters the territorial seas of its own State or of a third State (United Nations, 1982).” In its place, resurrecting the Romanian government’s counter proposals to the League of Nations draft regarding the codification of maritime crime would create a stronger anti-piracy platform. These proposals were intended to prevent the division of maritime space into domestic and international zones from becoming a boon to maritime criminals by granting the pursuit of pirates begun on the high sea to continue into the domestic waters of a coastal state if the coastal state is unable to continue the pursuit of the suspected pirate vessel itself (“Report to the Council of the League of Nations on the Questions which Appear Ripe for International Regulation,” 1927).” If such an amendment had been made prior to the 1990s, the U.S. Navy would not have spent in excess of a decade determining how to effectively address the exploitation of international boundaries by pirate crews based in Somalia. Similarly, in Southeast Asia maritime pirates would have experienced greater difficulty in evading capture when pursued by anti-piracy patrols throughout the 1990s and early 2000s.

Granting a temporary permission to cross borders while in hot pursuit of a criminal is not an unusual interstate agreement. In the U.S. during the 1920s, bootleggers exploited interstate and intrastate borders in the same manner that modern maritime pirates exploit international maritime borders. The solution to this unintentional exploitation of state laws was the implementation of a series of hot pursuit agreements allowing law enforcement officers to cross multiple jurisdictions in active pursuit of a criminal (Emanuel, 2007; Mayo, 2011). Similar arrangements have also been reached with

member states in the European Union in order to prevent criminals, ranging from speeders to bank robbers, from evading capture by crossing international boundaries (Daman, 2008; Shanty & Mishra, 2008). Allowing the same procedure regarding the pursuit of maritime pirates would bring international law into alignment with existing legal domestic and interstate agreements designed to limit the exploitation of jurisdictional boundaries and allow the naval forces of multiple states to behave in a manner similar to police forces when confronting maritime piracy.

While amending the UNCLOS would theoretically improve the ability of naval forces to collaboratively apply coercive force to police maritime piracy, it would not address the threat to interstate commerce posed by acts of maritime armed robbery. Maritime armed robbery occurs exclusively within the tertiary seas of a sovereign state and is driven by weak governance, limited coercive capacity, and poor economic conditions. One might be tempted to argue that reducing the tertiary seas of states or internationalizing maritime territory on a permanent basis would allow for a more effective pooling of naval forces directed at reducing or eliminating maritime armed robbery. Although this position has a certain appeal, it is highly unlikely that states would agree to such a proposition. This makes maritime armed robbery a more difficult jurisdictional problem to address. It is a criminal activity that preys on the weakness of coastal states. At the same time, these states are likely to adamantly object to proposals which would increase the efficacy of naval patrols by reducing their maritime territory or sovereignty.

A theoretical solution to this situation would be to revive and expand the authority of the United Nations Trusteeship Council. This revived Trusteeship Council would not transform sovereign states experiencing large scale outbreaks of maritime armed robbery into trust territories comparable to the Mandate of Palestine or the Trust Territory of the Pacific. Rather, it would be granted the authority to declare temporary maritime trusts following some form of vote, perhaps in the Security Council or the General Assembly. Such an arrangement would provide several benefits. First, it would provide a formal structure for states interested in participating in anti-maritime crime patrols to join. This would

lead to a greater level of collaboration, and arguably efficiency, compared to the separate and independent patrols which are currently operational off the Horn of Africa. Second, it would allow states that volunteered to participate in a maritime police action to patrol within the twelve nautical mile limit, providing a deterrent for current or potential maritime armed robbers. Third, it would reinforce the original intent of collaboratively policing maritime crime established when maritime territory was divided into separate domestic and international zones for the maintenance of a global public good. The limited nature of these maritime trusts would both preserve the sovereignty of coastal states while providing temporary relief from a problem the coastal state was not fully prepared to address. Such operations would likely be rare, and coastal states could opt out of the process by resigning their U.N. membership.

The suggestions thus far have addressed policing maritime crime in international and domestic waters by amending international agreements and institutions. The remaining, and perhaps most vital, component for reducing maritime crime in the long run would involve assuaging conditions on shore that make maritime crime a viable and rational option for coastal residents. Among the strongest willingness variables tested we find that economic volatility, low levels of GDP PPP, and a dearth of coercive capacity are all significant drivers of maritime crime. Arguably, the case can be made that acts of maritime crime are similar to civil conflict as both acts challenge the authority of a state by engaging in an activity which is prohibited and can undermine or destroy the authority of the state. The primary distinction between these acts is that residents of a coastal state have an additional option that their land locked peers do not. They do not have to directly challenge the state or seize the capital to redistribute economic resources. Rather, they can turn to maritime raiding, which can offer more immediate rewards and likely requires a lower level of equipment and manpower when compared to an open insurgency.

As both maritime crime and civil conflict are driven by similar conditions, the following suggestions for improving the ‘on the ground conditions’ via foreign aid are based on the political

economy literature investigating civil conflict. In addition to an improved ability to pool coercive force and police maritime trade routes, the expanded objective of our retasked Trusteeship Council would also involve aid packages distributed both directly to the governments of states bordering a maritime trust territory and indirectly to the residents of the coastal state. While it has been hypothesized that providing foreign aid directly to a state can improve economic conditions and state capacity, this concept has remained contentious (Collier & Hoeffler, 2002; Esman & Herring, 2003; Fearon, 2008). However, it has been found that direct foreign aid can serve as a stabilizing force, providing a source of capital that allows governments to reduce the impact of economic shocks on its populace (Dube & Vargas, 2006; Savun & Tirone, 2011). The ability to buoy these services prevents citizens from experiencing sudden declines in public services and economic conditions, which would further increase the willingness of a coastal population to challenge the state either directly through revolt or indirectly by turning to maritime crime.

Based on these findings, if the Trusteeship Council packaged direct aid to states bordering a temporary maritime trust, it would provide several benefits. While it might not improve conditions regarding good governance or economic conditions, it would serve as a stabilizing force preventing conditions from worsening further. Providing such aid would also serve as an incentive for states that might otherwise object to an international police action occurring within its tertiary seas. Therefore, direct aid would serve as an important intervention by stabilizing a region economically while its maritime territory was patrolled with greater frequency in order to capture current and deter future maritime armed robbers.

However, there must also be a commitment to encouraging the long-term economic stability of states which have experienced outbreaks of maritime crime. Without doing so, maritime crime would likely rebound to its previous levels following the conclusion of an international maritime intervention. The dilemma of encouraging maritime criminals to give up an economically successful, albeit illegal, profession is similar to the dilemma faced in encouraging Afghan farmers to abandon the

production of poppies. In each case, both seafaring coastal residents and landlocked farmers adopted criminal undertakings in order to generate the needed income to support their dependents during a period of weak governance and declining economic conditions (Catarious & Russell, 2012).

Efforts to reduce poppy production in Afghanistan outlined in Catarious and Russell (2012) provide a potential model program for regions experiencing maritime crime such as Somalia, Nigeria, and Indonesia. Applying financial aid to provide a degree of economic security to individuals transitioning to a new vocation reduces the likelihood that they will slide back into criminal activity at the first setback. An additional use of this aid would be to provide access to loans in order to purchase the equipment required to transition to a new legitimate economic activity. In Afghanistan, this takes the form of purchasing new farm equipment. A comparable purchase in coastal areas might be mechanized equipment to collect fishing nets or equipment to operation cleaning and canning facilities for seafood.

In order for these steps to bear fruit, efforts would need to be taken to provide access to markets for these new goods. This process could entail developing domestic markets or instituting favorable trade agreements to transport goods farther afield. After an initial period establishing these programs, the final step would be to make potential continued assistance contingent upon the continued absence of maritime crime. Such a step is important because it encourages a certain amount of self-regulation among coastal residents. For example, a former Somali or Yemeni pirate who has become financially comfortable with a lawful fishing and canning business would have an incentive to dissuade his neighbor from returning to a life of plundering at sea as it would disrupt the shipment of local goods to foreign markets and jeopardize favorable loan programs.

Although these proposals are hypothetical, they draw on the findings from this project as well as existing literatures that have investigated effective cases of policing maritime criminal activity and reducing civil conflict. In addition to advancing tested policy suggestions, these proposals advocate similar policies as successful historical campaigns which have reduced, and in some cases eradicated,

maritime crime. Thus, they provide a potential approach which moves beyond temporary maritime interventions and prescribes holistic policies which address the multivariate causes which impact the willingness of a coastal populace living in a high opportunity region to engage in maritime crime.

7.4 Limitations and Future Work

While contributing to the existing literature and academic debate regarding the causative variables of maritime crime and producing generalizable findings that are relevant for future policymakers, this dissertation is not without limitations. This study has focused on a limited period of time, spanning seventeen years between 1991 and 2007. In order to further strengthen the generalizability of the findings in this work, it would be valuable to construct comparable datasets for historical periods that experienced outbreaks of maritime crime. Among the most viable periods would likely include the ‘Golden Age’ of piracy in the Caribbean from the 1650s to the 1730s.

This period of history likely produced historical records regarding acts of piracy conducted against Spanish treasure fleets and merchants. Such documentation may be located in an archive in Madrid or Seville. Additionally, military indicators could be constructed based on historical documents. However, a measure comparable to the World Bank’s indicators of good governance might prove more difficult. A second historical period that is likely to be well documented would frame the emergence and demise of the corsairs of the Barbary Coast. Constructing and testing additional cases would allow for a potential confirmation that causes of maritime crime and perhaps civil conflict are generalizable across time and are not uniquely driven by some aspect of our contemporary world.

In addition to testing comparable hypotheses across the historical record, several tangentially related topics have emerged over the duration of this project. Given the similarity of conditions that encourage the emergence of civil conflict and maritime crime, it would be interesting to determine if coastal populations turn to maritime crime as an alternative to domestic rebellion, or if maritime crime and a domestic rebellion are related in coastal states. If so, which emerges first? There are also a range

of legal issues surrounding the detention and prosecution of accused maritime pirates captured in international waters.

The UNCLOS relies heavily on the initiative of coastal states to establish domestic laws defining piracy as well as systems to try and punish those who break them. As discussed in Kontorovich (2010), this seemingly straightforward task has proven exceptionally complex. The U.S. has attempted to pursue a policy of detention and prosecution; member states of the European Union have favored a catch and release policy; and Kenya only begrudgingly agreed to establish a regional piracy court system at the encouragement, and partial funding, of the U.S. and E.U. While the detention of terrorists by the U.S. is a more common topic, the detention and trial of maritime pirates shares many of the same legal complications. Many questions remain; however, there are equally many untapped resources that, when analyzed using both modern technologies and a long-term historical perspective, could continue to elucidate the most effective way to combat the current surge in maritime crime.

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APPENDIX: LIST OF COASTAL STATES INLCUDED IN THE DATASETS

Albania	Eritrea
Algeria	Estonia
Angola	Ethiopia
Antigua and Barbuda	Federated States of Micronesia
Argentina	Fiji
Australia	Finland
Bahamas	France
Bahrain	Gabon
Bangladesh	Gambia
Barbados	Georgia
Belgium	Germany
Belize	Ghana
Benin	Greece
Bosnia and Herzegovina	Grenada
Brazil	Guatemala
Brunei	Guinea
Bulgaria	Guinea-Bissau
Cambodia	Guyana
Cameroon	Haiti
Canada	Honduras
Cape Verde	Hong Kong (S.A.R.)
Chile	Iceland
China	India
Colombia	Indonesia
Comoros	Iran
Congo	Iraq
Costa Rica	Ireland
Croatia	Israel
Cuba	Italy
Cyprus	Ivory Coast
Democratic Republic of the Congo	Jamaica
Denmark	Japan
Djibouti	Kenya
Dominica	Kiribati
Dominican Republic	Kuwait
East Timor	Latvia
Ecuador	Lebanon
Egypt	Liberia
El Salvador	Libya

Lithuania
Madagascar
Malaysia
Maldives
Malta
Marshall Islands
Mauritania
Mauritius
Mexico
Monaco
Montenegro
Morocco
Mozambique
Myanmar
Namibia
Netherlands
New Zealand
Nicaragua
Nigeria
Norway
Oman
Pakistan
Palau
Panama
Papua New Guinea
Peru
Philippines
Poland
Portugal
Qatar
Romania
Russia
Samoa
Sao Tome and Principe
Saudi Arabia
Senegal
Seychelles
Sierra Leone
Singapore
Slovenia
Solomon Islands
Somalia

South Africa
South Korea
Spain
Sri Lanka
St. Kitts and Nevis
St. Lucia
St. Vincent and the Grenadines
Sudan
Suriname
Sweden
Syria
Taiwan
Tanzania
Thailand
Togo
Tonga
Trinidad and Tobago
Tunisia
Turkey
Ukraine
Uruguay
United Arab Emirates
United Kingdom
United States
Vanuatu
Venezuela
Vietnam
Yemen
Yugoslavia / Serbia

VITA

Samuel R. Rohrer hails from the small Missouri town of Cuba. Cuba is best known as the “Mural City” and home to the World’s Largest Rocking Chair. Sam pursued a series of degrees at Missouri State University accumulating a Bachelor of Arts in Political Science in 2003, a Master of International Affairs and Administration in 2005, and a Master of Health Administration in 2008. The capstone of this educational endeavor will occur when he receives his Doctor of Philosophy in Political Science which he expects to receive in May 2014.