



Layla Ibrahim Abdallah Dawood

**CHINA *VERSUS* THE UNITED STATES: IS
BIPOLARITY BACK?**

**A study of internal balancing as a possible source of
international systemic change**

Tese de Doutorado

Thesis presented to the Programa de Pós-Graduação em Relações Internacionais of the Instituto de Relações Internacionais, PUC-Rio as partial fulfillment of the requirements for the degree of Doutor em Relações Internacionais.

Advisor: Prof. João Franklin Abelardo Pontes Nogueira

Rio de Janeiro, March 2013



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To my mother Eneida Chaves and Cornelia Rahmelow (in
memoriam): strong women who have inspired me to be brave

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Abstract

Dawood, Layla Ibrahim Abdallah; Nogueira, João Franklin Abelardo Pontes (Advisor). **China versus the United States: is bipolarity back?** A study of internal balancing as a possible source of international systemic change. Rio de Janeiro, 2013. 219p. Tese de Doutorado – Instituto de Relações Internacionais, Pontifícia Universidade Católica do Rio de Janeiro.

The dissertation aimed at analyzing the prospects for change of the contemporary international system by examining whether the rise of new poles is already taking place in the current international system. For that purpose, it was assumed that such transformation is related to the internal balancing process. Therefore, the dissertation sought to examine the hypothesis that China is already transforming the current system by means of internally balancing the U.S. power. However, the investigation of the presence of internal balancing in the current system involved a prior effort of conceptual development focused on the construction of criteria that could help to identify concrete behaviors that could be so called, since the various versions of the balance of power theory proved to be insufficient for that purpose. Internal balancing was considered a process that involves the behaviors of: off-setting (quantitative changes), emulation and/or innovation (qualitative changes), resulting in the increase of the balancer's prospects for victory in the face of a possible conflict with the power which is the target of the balancing behaviors. In the course of four chapters of a more empirical character, the concept of internal balancing herein established was contrasted to the behaviors of China in the economic and military realms from the early 1990s, when the unipolar era began, to the present day, so as to assess the pursuit of internal balancing by China against the U.S. throughout this period.

Keywords: balance of power theory, internal balancing, systemic change, China, United States.

Resumo

Dawood, Layla Ibrahim Abdallah; Nogueira, João Franklin Abelardo Pontes. **China versus Estados Unidos: estaria a bipolaridade de volta?** Um estudo do balanceamento interno como uma possível fonte da mudança sistêmica internacional. Rio de Janeiro, 2013. 219p. Tese de Doutorado – Instituto de Relações Internacionais, Pontifícia Universidade Católica do Rio de Janeiro.

A tese objetivou analisar as perspectivas de mudança do sistema internacional contemporâneo, averiguando em que medida já tem lugar a ascensão de novos pólos no sistema internacional. Para tanto, assumiu-se que tal transformação estaria relacionada ao processo de balanceamento interno. Sendo assim, buscou-se analisar a hipótese de que a China já estaria transformando o sistema atual por meio do balanceamento interno contra o poderio dos EUA. Entretanto, o exame da ocorrência ou não de balanceamento interno envolveu um esforço prévio de elaboração conceitual voltado ao desenvolvimento de critérios que permitissem a identificação de comportamentos concretos que pudessem ser assim denominados, uma vez que as várias versões da teoria da balança de poder mostraram-se insuficientes para tanto. O balanceamento interno foi considerado um processo que envolve os comportamentos de *off-setting* (transformação quantitativa), emulação e/ou inovação (transformações qualitativas), tendo como resultado o aumento das perspectivas de vitória por parte do que balanceia em face de um possível conflito com a potência que é alvo do balanceamento. No curso de quatro capítulos de cunho mais empírico, o conceito de balanceamento interno aqui estabelecido foi contrastado ao comportamento da China nas áreas econômica e militar a partir do início da década de 1990 – momento em que se inaugura a era unipolar – até os dias atuais, de modo a verificar a ocorrência ou não de balanceamento interno por parte da China em face dos EUA ao longo deste período.

Palavras-chave: teoria da balança de poder, balanceamento interno, mudança sistêmica, China, Estados Unidos.

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Introduction

This dissertation aims at analyzing the prospects for change of the contemporary international system based on the assumption that this transformation would involve at least one of two dynamics: 1) the **decline** of the most prominent actor of the system due to the loss of economic dynamism brought about by excessive expenditure on defense (the operation of the phenomenon known as imperial overstretch), and 2) the parallel **rise** of new actors in face of lower defense spending and economic growth at different and higher rates than those of the unipole (LAYNE, 1993; GILPIN, 2002).

Since it was not possible to confirm in works that I previously performed whether the process of imperial overstretch (that would cause the decline of the unipolar power) is already happening, I now intend to verify if the rise of other great powers is taking place in the current international system. For that purpose, I assume that the rise of states is correlated with the process of **internal balancing**, which is a phenomenon often defined in opposition to **external balancing** in the sense that the first comprises individual efforts of self-strengthening perpetrated by great power candidates, while the second refers to the formation of alliances between states to counter opposing powers (WALTZ, 1979).

Therefore, *I propose to examine the prospects for change of the current international system via internal balancing*. In particular, *I intend to analyze the hypothesis that China is already transforming the system internally balancing the USA*. However, to examine the presence or absence of internal balancing in the current international system, I will first have to develop some criteria for the identification of concrete behaviors that could be so called. This is because the literature on balance of power theory has proved to be insufficient to characterize this phenomenon.

Accordingly, this dissertation comprehends two theoretical chapters. The second chapter of this dissertation, and first theoretical chapter, discusses the various versions of the balance of power theory, in order to show their insufficiencies in the development of the internal balancing concept. At this point,

some classical works are reviewed such as Claude Jr. (1969), Morgenthau (1965), Wight (1978), Bull (1977) and Waltz (1979), as well as more contemporary works like Walt (1990), Schweller (1997), Brooks and Wohlforth (2005). The main objective is to highlight the preference shown by the literature in studying the phenomenon of external balancing to the detriment of studying internal balancing. Furthermore, the chapter discusses some of the few works available on the internal balancing concept: Elman (1999), Resende-Santos (2007), Taliaferro (2007), Andres and Goldman (1999) and Horowitz, (2010), arguing that this literature focus on the explanation of states' choice to internal balance, but being insufficient in the characterization of the behavior of balancing itself.

In face of that scenario, the third chapter of this dissertation, and second theoretical chapter, aims at overcoming this lacuna by creating a theoretical model that helps in the empirical identification of the internal balancing process. For that purpose, I recur to theories that may shed light on this phenomenon such as the Power Transition Theory (PTT), the Theory of Hegemonic Circles (THC) by Gilpin and the Long-circle Leadership Theory (LCLT). These theories have in common the fact that they can all be framed under a rationalist umbrella, in the sense that: 1) their supporters are not worried with the formation of states' preferences; and 2) they consider their subjects to act rationally (be they states or decision makers). In addition, these theories focus on economic and domestic factors involved in the process of states' growth.

It is important to highlight that the efforts to develop the concept of internal balancing are in close dialogue with the specialized literature reviewed in the second chapter. This literature contributes to the characterization of internal balancing as a process that comprehends the behaviors of *off-setting* (quantitative transformation to face a particular capability possessed by an opponent), **emulation and/or innovation** (qualitative transformations). Nonetheless, other requirements are added to this list of behaviors in order to qualify an action as part of an internal balancing process. Especially, increasing the balancer's chances of victory against the system's poles in case a major war happens is herein considered essential for an action to be considered as internal balancing.

Four empirical chapters follow after the development of the internal balancing theoretical model. Each of these chapters contrasts the theoretically established concept of internal balancing proposed in this dissertation to the

concrete behavior of China after the beginning of the 1990's, when unipolarity was inaugurated.

Accordingly, the fourth chapter reviews the transformations observed in some of the domestic figures during the 1990's and 2000's, such as: productivity, means of transportation and communication and political capacity (here understood as the government's ability to make use of private means for public purposes by using measures such as taxing). The choice of these figures is influenced by the literature reviewed in the third chapter, which inspires the characterization of increases in those figures as a necessary step in enabling the beginning and the maintenance of the internal balancing process.

On the other hand, the fifth, sixth and seventh chapters focus on the military aspects of the internal balancing process. This is because, according to the theoretical model proposed in the third chapter, internal balancing carried out by pole candidates is a process composed of two dynamics: a preparatory and enabling one and a military one (that comprehends the efforts to face the military capabilities of the unipole).

Therefore, in order to analyze empirically if the military dynamic of the internal balancing process is taking place, it is necessary to first identify the capabilities that form the foundation of the American prominence. Consequently, this dissertation argues that the foundation of the U.S. military power lies on its nuclear capacity as well as on its ability to act at distant waters (*seapower*). These capabilities enable the U.S. to project power to other regions other than its own. The American military power is also singular for its investments in the defense industry, which aim at guaranteeing the maintenance of the American leadership in what comes to defense related innovations.

Consequently, the fifth chapter reviews the process of nuclear modernization in China as a reaction to the American nuclear power. By that, I do not mean to establish a causal relationship between the Chinese nuclear modernization process and the American nuclear power. In contrast, this dissertation intends to analyze the final product of the modernization efforts, that is: the objective is to verify if the current measures undertaken by China increase the chances that China wins a future war against the U.S. Moreover, the final product of those efforts will be studied according to the following model: is it possible to argue that the modernization of the Chinese nuclear arsenal off-sets a

qualitative disadvantage by means of performing quantitative changes (off-setting)? Or, in opposition, does this modernization approximate the nuclear arsenals of these two countries in terms of quality (emulation)? Or, finally, would it be possible to say that the product of the Chinese modernization efforts innovates in relation to the American nuclear arsenal?

The same questions are asked in the sixth chapter, but now in relation to China's ability to operate at sea (*seapower*). Accordingly, the chapter inquires if it is possible to say that China's maritime modernization efforts are off-setting or emulating the American seapower capabilities. Or if there is any sign of innovations in relation to those capabilities. Nonetheless, in this chapter, China's efforts are not only compared to the American ones, but also to the actions undertaken by the Soviets during the Cold War. This is due to the fact that some experts consider that the current Chinese strategy at sea is similar to the Soviet one. Thus, the chapter investigates if the similarity with the Soviet strategy is a sign of internal balancing at sea or not.

Finally, the seventh chapter analyzes the institutional transformations carried out by the Chinese government during the 1990's and 2000's in what regards China's defense industry. This analysis is based on the assumption that the military superiority of a state is not restricted to the capabilities already possessed, comprehending also the structures that enable the development of those capabilities and the institutions that rule the functioning of those structures. Since it would not be possible to analyze the decision making procedures, the readiness of the troops, the training and all the other aspects that impact on the effectiveness of the use of power resources, I have made the choice to study an institutional complex that has great influence on the Chinese innovation prospects in the defense realm. Analyzing the implementation of reforms in the defense industry is a good way of verifying China's future potential to perform internal balancing by innovating. This is because those reforms were aimed at increasing competition between defense firms and consequently improving their creativity.

2

Balance of power theories and the underdevelopment of the concept of internal balancing

2.1

Introduction

This chapter reviews the balance of power literature and argues that the various versions of this theory failed to comprehensively develop the concept of internal balancing. In addition, it discusses the few available works on internal balancing, contrasting the different explanations on the reasons why this phenomenon happens, i.e., the different variables which scholars believe impact on the decision to pursue this behavior.

2.2

A review of the various versions of the balance of power theory

2.2.1

Systemic theories versus theories of foreign policy

First and foremost, given the existence of different meanings for the term "balance of power" within the framework of International Relations Theory, it is imperative to discuss some of the numerous understandings regarding this concept. One recurrent meaning in the literature refers to the systemic **situation** or **condition** in which there is an **objective equilibrium of power** among the major units of a given international system, **power** being understood essentially in terms of military capabilities. Consequently, the opposite systemic situation involves the concentration of power in a single actor, which could take the form of unipolarity (when there is an especially powerful actor in the system), hegemony (when

international rules are determined by a single actor) or empire (when the less powerful units lose autonomy to the most powerful) (NEXON, 2009, p. 334-335).

According to Claude Jr. (1969): “In this sense, it is a purely descriptive term, designed to indicate the character of a situation in which the power relationship between states or groups of states is one of rough or precise equality” (p. 13). In turn, Wight (1978) identifies this systemic condition as the original meaning of the term balance of power: “In this usage the word ‘balance’ has its primary meaning of ‘equilibrium’, and it is perhaps most likely to appear as the object of such verbs as maintain and preserve, upset and overturn, or redress and restore” (p. 173-174). It means an even distribution of power, in which no power is so preponderant that it can endanger the others.

Morgenthau (1965), in his book, also makes reference to this meaning of the balance of power term, choosing it as the default meaning for the term:

The term ‘balance of power’ is used in the text with four different meanings: (1) as a policy aimed at a certain state of affairs, (2) as an actual state of affairs, (3) as an approximately equal distribution of power, (4) as any distribution of power. Whenever the term is used without qualification, it refers to an actual state of affairs in which power is distributed among several nations with approximate equality (Footnote 1, p. 167).

This scholar elaborates on the meaning of equilibrium (which is employed by him and by the majority of scholars as a synonym for stability and balance), drawing an analogy between the human body and the international system. The human body equilibrium refers to the normal functioning of the organs which can only be disturbed by external interference or the abnormal growth of a unit. The same would apply to the equilibrium between states that could only be broken by the interference of a unit outside the system or by the abnormal growth of a state in relation to others. Analogy is also drawn between the international system and the system of checks and balances inside the US by which the Executive is balanced by the Legislature, and the Judiciary is supposed to balance both.

In turn, Bull (1977) quotes Emer de Vattel (in a work published in the eighteenth century) to stabilize the balance of power meaning as: “a state of affairs such that no one power is in a position where it is preponderant and can lay down the law to others” (p. 101). And to this he adds: “It is normally military

power that we have in mind when we use the term, but it can refer to other kinds of power in world politics as well” (p. 101).

As can be noticed from the exposition above, Claude Jr. (1969), Morgenthau (1965), Wight (1978) and Bull (1977) agree on the possibility that the term balance of power be employed to designate a situation of equality of power or equilibrium. However, the authors differ in what regards the requirement that this equality of power is precise or approximate. For Claude Jr. (1969), a precisely equal distribution of power seems possible, but Morgenthau (1965) and Wight (1978) stress the word “approximate” to qualify the noun equality. In turn, Bull (1977) makes a distinction between a simple balance of power (comprising two powers) and a complex one (involving three or more powers). According to him, a simple balance of power requires equality or parity of power among the rivals so that we could say that it is in equilibrium and no power is dominant, but the complex does not, since, although states may be stronger or weaker when compared to each other separately, they can compensate that fact with proper alignment arrangements.

Still in relation to the employment of the balance of power term as a **situation**, Claude Jr. (1969) identifies two other possible meanings. Oddly enough, instead of implying equality, some authors may employ the term to refer to the opposite situation in which competing powers are not balanced, that is, to a condition of disequilibrium. In this sense, scholars speak of a balance of power that favors some powers to the detriment of others. Lastly, the balance of power term can be employed as a synonym for any distribution of power, what was also acknowledged by Morgenthau (1965) in the quotation above.

On the other hand, Claude Jr. (1969) highlights that the balance of power term can be employed not only to make reference to a systemic situation but also to a **policy** or as a **principle** that inspires policy. This is related to the expectation that the units of a system will seek to prevent concentrations of power are formed and/or that they will counteract concentrations already formed. Wight (1978), inspired by David Hume, states that the balance of power is founded on common sense and obvious reasoning. According to him, it is the application of the law of self-preservation to world politics:

Let there be three powers, of which the first attacks the second.
The third power cannot afford to see the second so decisively

crushed that it becomes threatened itself; therefore if it is far-sighted it “throws its weight into the lighter scale of the balance” by supporting the second power (...) The balance of power is seen in full operation whenever a dominated power tries to gain mastery of international society and momentarily “overturns the balance” (WIGHT, 1978, p. 169, emphasis added by the author).

Notwithstanding the common understanding that a policy of balancing refers to the attempt to achieve equilibrium, Claude Jr. (1969) argues that the term “policy of balancing” may refer to a policy that attempts to establish equilibrium, a favorable balance or even imbalance (p. 19). So, by employing the term, he seems to make reference to every state effort to manipulate the systemic distribution of power.

Similarly, when Wight (1978) refers to the balance of power as a principle and as a policy, he acknowledges two possible meanings, which are mostly in contradiction. First, balance of power can refer to the principle that power ought to be evenly distributed. “In the eighteenth century the balance of power was generally spoken of as if it were in some manner the unwritten constitution of international society” (p. 174). However, since the balance of power can also be seen as a policy by which most states seek their security, it can also refer to the principle that my side ought to have a margin of strength so as to avert the danger of power being unevenly distributed in favor of others (p. 175).

In sum, the employment of the balance of power term as a **policy** can be regarded as even more controversial as its employment as a **systemic situation**. This is due to the fact that there is no consensus on a number of issues such as the very definition of “balancing”. In other words, scholars diverge when they attempt to characterize the behaviors undertaken by units as **balancing policies**.

Therefore, as can be inferred by the controversies surrounding the meaning of the balance of power term, it is not possible to consider the existence of a single balance of power theory, but rather of a variety of these, which may be divided into two distinct species: theories that aim to explain the **systemic result of equilibrium** and theories that seek to explain the **behavior of the units** or **balancing policies** (when they occur, how and why) (MARTIN, 1999; NEXON, 2009).

Besides the distinction above, Nexon (2009) makes a fruitful though tenuous difference between what he calls **balance of power theories** and **theories of power balances**. For the proponents of the first kind of theory, a combination of mechanisms induces the formation of balances or equilibriums of power. Such mechanisms may be at the level of individual decision (like the human tendency for the pursuit of power) or at the systemic level (anarchy). It is interesting to note that the supporters of the first kind of theory could be arranged in a spectrum in the sense that the stronger versions suggest that the formation of hierarchies in the system is **prevented** by the mechanisms of balance of power, while moderate versions claim that these mechanisms need not produce a balance, but are important in defining systemic results. In other words, these latter theories argue that equilibrium is the most likely result that may therefore be considered a **systemic tendency** (NEXON, 2009).

Wight (1978) highlights that many classics refer to the balance of power as an inherent and inevitable tendency of international politics to produce an even distribution of power. Thus, those scholars fashioned what would be referred by Nexon (2009) as “strong versions of the balance of power theories”. Examples of this line of thinking are Rousseau and A.J.P. Taylor:

Let us not think that this vaunted balance of power has been achieved by anybody, and that anybody has done anything with a view to maintaining it (...) Whether one is conscious of it or not, this balance exists and can well maintain itself without outside interference (ROUSSEAU quoted by WIGHT, 1978, p. 178).

And:

It seemed to be the political equivalent of the laws of economic, both self-operating. If every man followed his own interests, all would be prosperous; and if every state followed its own interests, all would be peaceful and secure (A.J.P. TAYLOR, a scholar from the nineteenth century, cited by WIGHT, 1978, p. 178-179).

In a similar sense, Claude Jr. (1969) argues that the various versions of the balance of power theory can be differentiated in relation to the question of how this tendency to equilibrium is brought to reality. For the authors just mentioned above (Rousseau and A.J.P. Taylor), equilibrium is not only inevitable but also promoted automatically. In this case, balance of power is seen as the political

equivalent of the laws of economics. Equilibrium is produced informally by self-interest, as the efforts of states to maximize power lead to it.

Equilibrium can also be thought to be promoted semi-automatically in which case the role of the so called “holder of the balance” is placed in a central spot. According to Claude Jr. (1969), the authors who support this view believe that only the holder of the balance is thought to act purposefully in order to promote equilibrium, aligning itself to the weaker side to counter the current stronger power in the system. The other states do not calculate their actions accordingly to produce systemic equilibrium (p. 47-48). Finally, some authors argue that equilibrium is produced manually, emphasizing the skilled operations of statesmen who manage the affairs of all units constituting the system (CLAUDE JR., 1969).

Also related to the question of inevitability is the degree of consciousness involved in the process of balance promotion: 1) equilibrium can be thought of as an unintended result, 2) as the main objective of the holder of the balance, 3) and as the result of the autonomous maneuvering of states, which may or may not lead to a situation of equilibrium (CLAUDE JR., 1969).

Morgenthau (1965) is commonly known to believe on the inevitability of the balance of power. In this sense, Little (2007) highlights that this author has been accused of being ahistorical since he allegedly thought that the dynamic of balance of power is immutable and inevitable. In contrast, Little argues that Morgenthau was very much concerned about change and that his theory indeed contemplates change. To prove his point, Little reviews the history told by Morgenthau regarding the 18th and 19th centuries balance of power. Little highlights that Morgenthau put some weight on the transformations that occurred from one era to the other. Especially, Morgenthau developed on the dynastic principles in vigor during the 18th century that provided a certain consensus among decision makers over morality issues and the correct conduct of foreign affairs. In what comes to the 19th century, Morgenthau highlighted the emergence of nationalism that would make the use of compensation much harder. In addition, he stressed a subsequent development that made compensation possible again: the partition between European powers of areas in the periphery of the European continent such as in Africa. In what regards the Cold War, Morgenthau (as did Waltz later on) acknowledged that alliances lost importance and states had to trust

in the augmentation of their own military potential for security. Another important transformation identified by the author was the rise of what he called “nationalistic universalism” which is characterized by the strengthening of nationalistic values and the claim that those values have universal applicability (MORGENTHAU, 1965; LITTLE, 2007).

Little’s (2007) conclusion is that it is not because Morgenthau placed balance of power in the center of history that he saw the nature of international politics as unchanging. According to Little, he did not. In particular, changes in believes would have produced different impacts over decision makers. The first emergence of nationalism after the French Revolution implied self-restrain while the emergence of a nationalistic universalism implied the search to augment ones’ sphere of influence¹.

Claude Jr. (1969) also developed on Morgenthau’s supposed belief on the inevitability of the balance of power stating that there is an inherent contradiction on Morgenthau’s work in relation to this point: at the same time that he said that balance of power is a social law (and therefore, inevitable), he criticized politicians for not being able to act according to this law. Claude Jr. then tried to interpret what Morgenthau meant when he said that the balance of power is inevitable, concluding that, according to Morgenthau, statesmen could try to do differently from what the system of balance of power requires them to, but that acting in this fashion would be **unwise** (CLAUDE JR., 1969, p. 35)².

In sum, in spite of this tension in Morgenthau’s work, it seems fair to say that this author presented a moderate version of a balance of power theory since in his point of view the production of systemic equilibrium can be regarded, if not as inevitable, at least as a powerful trend.

Claude Jr.’s own version of the balance of power theory (1969) can also be characterized as a moderate one since he considers equilibrium a tendency and not a necessity. He stabilizes the concept of balance of power as a system

¹ Because of the importance of believes in Morgenthau’s work, Little (2007) goes as far as considering this author as a proto-constructivist. According to Little, Morgenthau recognizes the existence of a specific power dynamic due to anarchy, but also acknowledges the interference of believes in this dynamic (p. 125).

² In the end, for Claude Jr. (1969), Morgenthau’s version of the balance of power theory is a redundancy since all he supposedly end up stating is that in a power struggle states must and do struggle for power .

distinguished from other systems exactly for its inherent tendency to produce equilibrium (p. 43). However, he distinguishes this tendency from the actual empirical result of equilibrium:

The balance of power system should not be confused with equilibrium. It *may* operate in such fashion as to produce and stabilize a situation of equilibrium, but it does not necessarily do so. Some of the states which compose the system may adopt the policy of promoting equilibrium, but this is dependent upon the exercise of judgment by their leaders (p. 88, emphasis added by the author).
(...)

The results of a balance of power system are too heavily dependent upon contingencies to be postulated *a priori*. *While the balance of power system may have inherent features and tendencies, it has no inherent results*. What men will try to do within the system, and what consequences will flow from their efforts, can be determined only by observation, not by assertion (p. 89, emphasis added by me).

Claude Jr. (1969) establishes the conditions for the proper operation of the balance of power system and for the achievement of equilibrium arguing that those conditions do not prevail at the time of his writing³. Therefore, in what regards the question of how the balance is produced and the degree of consciousness involved in the process, Claude Jr.'s balance of power theory (1969) is a combination of theories fashioned previously by other scholars. He considers that consciousness may or may not be involved in the formation of

³ "It appears that a balance of power system requires that effective power be diffused among a substantial number of major states. The control of the policy of the participating units should be vested in skilled professional players of the diplomatic game, who should be largely free to engage in discretionary maneuvers, manipulate alignments, and adjust policy to challenges and opportunities with secrecy and dispatch. There should be no ideological impediments to arrangements for compensatory adjustment of power relations by the leading statesmen. International decision-makers should have both the freedom and the will to make their decisions on the basis of power calculations alone. The elements constituting national power should be simple enough to permit reasonably accurate estimates of the relative strength of states, and stable enough to permit such estimates to serve for some period of time as the basis of policy. The implications of war should be serious enough to stimulate preventive measures, but mild enough to enable statesmen to invoke the threat, and on occasion the actuality, of force in support of policy. War should be imaginable, controllable, usable. Underneath the prudent mistrust of powerful states and the built-in rivalry of the system, there should be a broad consensus among statesmen that the objectives of war should be limited and the essential pluralism of the system unchallenged hegemonic ambitions should be moderated by a sense of common interest in preserving the system, limited by technological impediments to universal conquest, and frustrated by the flexibility of combination afforded by the alliance technique. Finally, it is highly desirable, if not indispensable, that some major power should be in a position to play the role of holder of the balance, contributing to the stability of the system by adapting its policy to the requirements posed by recurrent thrusts of ambition and alterations of power ratios" (CLAUDE JR., 1969, p. 90-91).

equilibrium since balance can result from the conscious action of statesmen in an environment that has the proper conditions for that purpose, but also equilibrium may result from the aggregation of individual states' drive to maximize power. Finally, he highlights that the proper operation of the balance of power would not guarantee peace, but would settle an environment in which statesmen would have major probability of success in regulating power relationships.

But what would be Kenneth Waltz's position if we wanted to frame his work in the spectrum that divide balance of power theories among strong and moderate versions according to their understanding of equilibrium as inevitable or not? To this end, Nexon (2009) notes that Waltz (1979) argues that the structure is only one of the determinants of state behavior, but not the only one. He argues that to ensure their survival states are socialized to act in accordance with structural constraints and successful practices undertaken by other actors, but that decision makers may fail to obey structural incentives in view of the fact that decisions may have been motivated by other factors rather than the structure. In Waltz's words (1979): "Political structures produce a similarity in process and performance so long as a structure endures. Similarity is not uniformity. Structures operate as a cause, but it is not the only cause in play" (p. 87).

In this sense, Nexon (2009, p. 338) argues that Waltz (1979) should be considered an author who has a moderate version of balance of power theory: states can even ignore the structural dictates, but Waltz believes that there is a tendency towards the formation of balances of power. According to Waltz (1979, p. 128): "The expectation is not that a balance, once achieved, will be maintained, but that a balance, once disrupted, will be restored in one way or another"⁴.

On the other hand, supporters of the second kind of theory, **theories of power balances**, seek to explain the formation of equilibrium in cases where it takes place, but do not consider balance an inevitable result or a systemic trend. A scholar that serves as an example of this category is Jervis (1992), who contrasts balance of power systems to systems in which a *concert* takes place. In the latter, the way to deal with potential enemies would not be balancing, but the grouping with them. Additionally, actors in this system think in the long run and are able to cooperate (p. 724). In a nutshell, Jervis (1992) disagrees that the operation of the

⁴ Waltz's balance of power theory will be explored in greater detail later on.

balance of power is inevitable or that it is a trend, pointing to the historical existence of different systems such as the *concert*.

Nexon (2009) argues that scholars that are placed among **theories of power balances** would not be necessarily tied to realism. This is due to the fact that nothing prevents the creation of liberal and constructivist explanations, for instance, for the formation of systemic balances. At this point, Nexon (2009) refers to theories such as Wendt's (1999) that could, in principle, dialogue with realist theories in explaining systemic results. In this case, an explanation inspired in Wendt (1999) for an outcome of equilibrium would not be restricted to neo-realist variables such as the distribution of capabilities and anarchy. This is because Wendt's structure is not composed only of material aspects, but also of ideational ones.

Another example of a theory of power balances can be found in Bull's (1977) work. This author criticizes the assumption behind realist balance of power theories that states act solely in order to maintain their power position, claiming that states not always pursue to maximize power. That is to say that not always an augment of power by one state provokes a likewise reaction on others. Therefore, for him, there is nothing inevitable related to the balance of power and no necessary tendency towards equilibrium. However, he acknowledges the existence of a "need to maintain one if international order is to be preserved" (p. 112).

Therefore, although Bull (1977) disputes the inevitability of equilibrium, he acknowledges the importance of it for the proper functioning of what he calls the "society of states"⁵. According to him, five institutions have sustained the society of states: balance of power, international law, war, diplomacy, and the managerial system of great powers. Those institutions are the result of the collaboration of states and also the means of maintaining it (p. 74).

⁵ "A *society of states* (or international society) exists when a group of states, conscious of certain common interests and common values, form a society in the sense that they conceive themselves to be bound by a common set of rules in their relations with one another, and share in the working of common institutions (...) An international society in this sense presupposes an international system, but an international system may exist that is not an international society. Two or more states, in other words, may be in contact with each other and interact in such a way as to be necessary factors in each other's calculations without being conscious of common interests or values, conceiving themselves to be bound by a common set of rules, or co-operating in the working of common institutions" (BULL, 1977, p. 13-14, emphasis by the author).

To regard the balance of power as an institution is to consider it a reunion of habits and practices directed towards the fulfillment of the shared goals of a society of states. In this sense, Bull (1977) highlights that balance of power is the one institution which provides the conditions in which other institutions can operate. This is because international law, for instance, would have a hard time functioning in a context of dominance of one state over the others. In addition, the balance of power prevents the emergence of universal empires and guarantees the independence of the most powerful states.

But does that mean that for Bull (1977) a balance of power could not emerge in a “system of states” (where there are no shared beliefs or values) but only in a “society of states”? To answer that, Little (2007) makes reference to a difference established by Bull (1977) himself between a fortuitous and a contrived balance. A fortuitous balance means that no conscious effort was put into it and a contrived one emerges after a conscious policy to its promotion. Little states that, in his opinion, Bull makes a difference between the functioning of the balance of power in an international society and in an international system. This is because since there is no shared beliefs or rules in an international system, the balance of power could not be a contrived one. If a balance of power ever emerges in a system of states, it will be a fortuitous one (what is very similar to Waltz’s thought about automaticity)⁶. But in a society where shared interest and beliefs make consensus possible, the balance of power will not be fortuitous but formed due to the units’ wills and efforts. In this sense, Little thinks of Bull as a middle term among Waltz and Morgenthau since the former is concerned with an automatic balance and the latter develops on the contrived one and Bull’s work comprises both due to its separation of the international system and the international society.

Finally, **theories of balancing** seek to explain the conditions under which states will engage in balancing strategies, trying to establish which are the states most likely to balance and what are the behaviors involved when balancing is at stake (NEXON, 2009). Such theories aim at explaining concrete behavior or

⁶ This interpretation seems to be supported by the following passage: “A balance of power, for example, may arise in an international system quite fortuitously, in the absence of any belief that it serves common interests, or any attempt to regulate or institutionalize it. If it does arise, it may help to limit violence, to render undertakings credible or to safeguard governments from challenges to their local supremacy” (BULL, 1977, p. 65).

balancing policies, being closer, therefore, to theories of foreign policy. In this sense, precisely because they are not committed to the understanding that the systemic balance is a necessary trend, they would have the merit of not being restricted to the analysis of successful balancing practices⁷.

As examples of this kind of theory, one could make reference to the works of Walt (1990), Schweller (1994) and Christensen and Snyder (1990), who elaborate on the frequency of the balancing behavior and the conditions under which it is expected to occur. Walt (1990) argues that balancing behavior will be the most recurrent in the international system, but, unlike Waltz (1979), he predicts that states do not balance power, but threats, coining a theory that became known as "balance of threat theory". So, given that an important feature of Stephen Walt's work (1990) is constructed in opposition to Kenneth Waltz's book (1979), for a better understanding of the former, it is important to first clarify a point on the latter. For Waltz (1979), the concentration of power in a single actor is in itself a threat to the survival of the weakest since it facilitates domination by the strongest. In this sense, the weaker states tend to respond to any concentration of power by allying to other weak states against the stronger actor. Thus, for Waltz (1979), balancing policies would be restricted to the alignment between the weak against the strong. In contrast, bandwagon would involve the alignment of the weak with the strong.

In turn, Walt (1990) argues that when choosing between balancing and bandwagon (that is, when choosing one's allies), decision makers take into account not only the power of potential allies (expressed in capabilities), but ponder what states pose the highest threat. In this sense, for Walt, balancing and

⁷ In order to illustrate the theoretical difference above narrated, Nexon (2009) argues that Theories of Hegemonic Cycles and Power Transitions Theories (PTT) can embrace assumptions from power balances theories and of theories of balancing but that their supporters would not agree with strong versions of the balance of power theory. This is because, for theorists of PTT, balance may be the result expected in some conditions (differential growth rates might lead to balances of powers; technological, economic, and domestic administrative transformations can change relative capacities and create balance; and the dissatisfaction with the distribution of prestige in the system may lead to increased efforts by a revisionist power to augment its capacities, accelerating its rise and the imperial overstretch of the old dominant power). However, the supporters of those theories would not agree with the understanding that the concentration of power in a single actor would be a rare, impossible or passing circumstance (NEXON, 2009, p. 339). The possibility of reconciling theories of balancing, power transition theories and the theory of hegemonic cycles will be put forward later in this dissertation.

bandwagon are best defined as responses to threats: the first would refer to the alignment of states that have a common threat and the second would comprise the alignment with the source of the threat. Therefore, the author lists the factors that would interfere with the degree of threat posed by a state: aggregate power, geographic proximity, offensive power and aggressive intentions. For instance, the perception that a state seeks expansion influences the behavior of a second state (if it opts for balancing or bandwagon) in relation to the first. At the expense of objective power, the perception of an expansionist intention would be crucial in determining states' choice of balancing behavior.

On the other hand, Schweller (1994, 1997) states that bandwagon is a much more common behavior than balance of power theorists are willing to consider. He then creates an alternative theory of alliances called "balance of interests". For this author, it is important to consider the existence of both revisionist states (which seek to increase their power and improve their position in the system) and satisfied powers (states that have as their main objective the maintenance of the *status quo* and of their position in the system). Schweller (1997) believes that scholars such as Walt (1990) and Waltz (1979) consider only the existence of satisfied powers in the system. In contrast, Schweller (1997) argues that revisionist states who do not feel threatened often join stronger revisionist states for opportunistic reasons. In other words, states would use bandwagon to get rewards and power.

As a final example of a theory of balancing, one could mention the work of Christensen and Snyder (1990), who sought to discuss the behavior of units inside alliances formed in multipolar systems. Those scholars highlighted the behavior of **chain-ganging** and **buck-passing**: the first would imply the unconditional commitment to an ally due to the perception that its survival is essential for the balance, while the second would mean that some states relegate to other states the task of balancing. In order to predict which of these behaviors would be chosen by the states, the authors introduced the variable "attack-defense balance". In this sense, the authors predict that every time the attack has the advantage in multipolar systems (i.e. when the military state of the art favors the attacker), states choose chain-ganging. This is because in periods in which the attack has the advantage, preventive war allegedly would become more likely. In this case, chain-ganging is motivated by fear of losing allies in periods in which

preemptive wars of conquest become more likely. On the other hand, when defense has the advantage, states tend to choose buck-passing. In these circumstances, wars of conquest are less likely and states fear to get dragged into wars in which their vital interests are not involved.

In conclusion, what I have tried to show in this section is that the balance of power concept is treated in various forms by the innumerable experts and that the theories developed on the subject can be divided in balance of power theories, theories of power balances and balancing theories, depending on the main focus of their supporters. If the focus is on explaining the result of equilibrium and if equilibrium is considered a necessity or at least a systemic trend, we are dealing with a balance of power theory. If the aim is to explain equilibrium when it emerges, but no claim is made regarding the inevitability of equilibrium or the existence of a tendency towards it, the theory may be treated as a theory of power balances. Finally, if the theory is concerned mainly about the units' behavior, this can be called a theory of balancing (NEXON, 2009).

These distinctions seem useful in order to clarify some sources of criticisms directed towards the various theories that deal with the concept of balance of power. Before accusing any of those theories of failing to explain certain phenomena, it is imperative that we understand the different purposes of the various authors. Therefore, following a reasoning line similar to Nexon (2009), Martin (1999) also identifies misunderstandings within the treatment of the balance of power concept. She sheds light to the confusion of **systemic theories** and theories that aim at explaining balancing policies. According to Martin (1999), this second type of theory is close to **theories of foreign policy**:

In recent work the line between these traditions – one focusing on systemic outcomes and the other on the behavior of states – has been blurred, with analyses that use the systemic balance of power theory associated with neorealism as a basis for work that focuses on the behavior of states. It is my contention that much of the confusion surrounding balance of power theory today is a result, first, of a misunderstanding of what systemic balance of power theory can do, and second, of analysts moving from systemic balance of power theory to the study of state behavior without recognizing the implications of the change in the level of analysis (MARTIN, 1999, online).

Martin (1999) argues that the test of a systemic theory in face of state behavior depends on the prior translation of these theories in foreign policy theories. This is because the systemic result of equilibrium (expected by systems theory) cannot easily be reduced to a state action (which should be explained by a theory of foreign policy):

J. David Singer argues in his 1961 article on levels of analysis that when one moves from one level of analysis to another, an “act of translation” is required: For example, when one moves from the systemic level to the state level, it is necessary to analyze what variables at the state level, what sort of state actions or policies, correspond to the relevant variable at the systemic level. The central insight of systemic international relations theory – that international outcomes are not reducible to the individual actions or intentions of states – is itself a reason why this act of translation has to take place. If an international outcome that we are interested in cannot be reduced to specific actions taken by states, then when taking propositions or ideas about the causes of outcomes at the systemic level and applying them to state behavior, we have to think carefully about what sorts of things at the state level of analysis correspond to particular international outcomes. We have to translate the variables we are interested in at one level into the corresponding variables at other levels. This act of translation has not been adequately performed by most of the analysts who use neorealism as a basis for their studies of state behavior.

And also:

I trace the current problems with balance of power analyses to confusion about how to use systemic theory as a basis for explanations of **foreign policy**. In particular, I argue that the scope of systemic balance of power theory has been overestimated, and that attempts to use systemic balance of power theory as a basis for studies of state behavior are problematic because they fail to analyze exactly what it means for a state to balance (MARTIN, 2003, p. 61-62, emphasis added by me).

According to this scholar, the use of systemic theory for analyzing state behavior without proper translation is problematic for several reasons. First, in the same sense as Nexon (2009), Martin (1999) states that systemic theories such as Waltz’s (1979) can say at most that the units of a system **tend to** act in certain ways due to systemic incentives. However, propositions over what states **tend to do** cannot be translated into propositions about what states **actually do**. This is because the determinants of state behavior are located at all levels of analysis.

Martin (1999) considers that authors such as Vasquez (1997) interpret Waltz's understandings (1979) on how the structure constrains the states as predictions of foreign policy. In particular, Vasquez (1997) treats Neo-realism as a **theory of balancing**, when in fact it is intended to be a **balance of power theory**. In other words, Waltz's theory seeks to explain a law that he considers fundamental in international politics: the law of the formation of balances of power. However, scholars such as Vasquez (1997) and Schroeder (1994)⁸ interpret that this author wanted to explain an alleged law that states will balance.

In contrast, Martin (1999) recalls that, for Waltz (1979), the structure affects state behavior, which is quite different from saying that it determines it. As I have discussed previously, Waltz (1979) states: "Political structures produce a similarity in process and performance so long as a structure endures. Similarity is not uniformity. Structures operate as a cause, but it is not the only cause in play" (p. 87). Structural incentives and constraints are only potential sources of state behavior: systemic theories do not explain behavior, but rather behavioral patterns that are recurrent in spite of the identities of actors. In this sense, systemic theories are not and cannot be theories of foreign policy.

Given this, the attempts to falsify Waltz's theory showing that what determines state behavior is not the structure but domestic factors are controversial. Also controversial are the studies that examine the empirical cases in which states failed to balance. That is because Waltz (1979) acknowledges that the **concrete action** of states may have different motivations than structural incentives and that concrete action may not even involve balancing, but the quest for universal domination, for example. Waltz's theory starts by making theoretical assumptions about the motivation of states and their corresponding actions, and, as such, those assumptions are neither true or false (p. 118). So, to try to falsify his theory based on the finding that in many concrete cases structure has not determined state action is to neglect this author's understanding of what is a theoretical assumption.

About the motivations behind state actions, Waltz (1979) warns:

⁸ The works of Vasquez (1997) and Schroeder (1994) will be discussed in the next sections of this dissertation.

A theory contains assumptions that are theoretical, not factual. One of the most common misunderstandings of balance-of-power theory centers on this point (...) From previous discussion, we know that assumptions are neither true nor false and that they are essential for the construction of theory. We can freely admit that states are in fact not unitary purposive actors. States pursue many goals, which are often vaguely formulated and inconsistent. They fluctuate with the changing currents of domestic politics, are prey to the vagaries of a shifting cast of political leaders, and are influenced by the outcomes of bureaucratic struggles. But all of this has always been known, and it tells nothing about the merits of balance-of-power theory (p. 119).

As for the effective pursuit of balancing or of alternative behaviors:

Balance-of-power theory claims to explain a result (the recurrent formation of balances of power), which may not accord with the intentions of any of the units whose actions combine to produce a result. To contrive and maintain a balance may be the aim of one or more states, but then again it may not be. According to the theory, balances of power tend to form whether some or all states consciously aim to establish and maintain a balance, or whether some or all states aim for universal domination (WALTZ, 1979, p. 119).

The last sentence of the quotation above shows that, according to Waltz (1979), balances of power tend to form even if states do not use balancing as a policy, that is, even if their actions do not aim to achieve equilibrium, but rather, the domination of other players in the system. Thus, it is incorrect to say that Waltz predicts that states "will balance" in the sense that the theory does not presuppose a necessary state behavior, but a recurrent systemic result which is derived from a set of actions by the units. And these actions are underspecified by this author.

In this sense, Martin (1999) makes another important remark for the purpose of this dissertation. She argues that the confusion between systemic theories and theories that deal with the behavior of the units caused a fundamental deficiency in the theories that Nexon (2009) would call theories of balancing, namely: behaviors that could be characterized as balancing policies have rarely been specified. Assuming that states tend to balance and that balances of power

tend to form, scholars tried to test to what extent states balance without specifying adequately what kind of behavior could be framed in the concept.

According to Martin (1999, 2003), we must consider that balancing policies do not necessarily result in systemic equilibrium, i.e. balancing is not always efficient. Therefore, the characterization of an action as balancing cannot be based on its outcome (equilibrium or not), as Waltz (1979) seems to do⁹. Moreover, it is possible that actions that are not normally considered balancing might contribute to the formation of systemic balances. Without the previous study of the behaviors that may be considered balancing, analysts run the risk of making their analysis irrefutable: this is because if the result of a studied policy has not been systemic balance even if the conditions specified by the theory were present, the explanation can always be that the policy pursued was not balancing.

Therefore, when it comes to theories of balancing, the question of how equilibrium is produced must be brought to the center of analysis. Those theories should develop on the types of unit behavior that aim at producing systemic equilibrium and/or that could result in it. However, in what follows, I will try to demonstrate that the theories that have tried to characterize behaviors that could be called balancing suffer from a lacuna in the sense that they focus on external balancing (i.e. the formation of alliances) as a means to produce systemic equilibrium to the detriment of internal balancing practices.

2.2.2

Balance of power as policy

In search for policies that could be identified as balancing, a review of classical works shows an indisputable emphasis on external balancing to the detriment of internal efforts. That is shown by the following quotation:

The balance of power is aptly characterized as an *alliance* system. States struggling for what they regard as appropriate places in the distribution of power discover readily enough that they can enhance their power not only by the 'natural' method of building up their resources, but also by an 'artificial' method of linking themselves to the strength of other states. Indeed, this

⁹ This point will be better developed later.

is the only method available to the bulk of states in the actual circumstances of modern history. Small states obviously cannot hope individually to balance, much less over-balance, their great power neighbors; the only active course open to them in the quest for security within a balance of power system is to seek a position in a grouping of states which, considered as a collectivity, assumes the role of a major participant in the struggle for power. The alliance technique is not, of course, a monopoly of weak states. The making, breaking, and shifting of alliances ties is a central feature of the process of maneuvering for position which is the essence of the internal operation of a balance of power system (CLAUDE JR., 1969, p. 89, emphasis added by the author).

In the same sense, Morgenthau (1965) – in spite of acknowledging the importance of internal efforts such as armaments build-ups that derive from armaments races between two countries – states that “The historically most important manifestation of the balance of power, however, is to be found not in the equilibrium of two isolated nations but in the relations between one nation or alliance of nations and another alliance” (p. 181).

In turn, when discussing classical works that developed on the balance of power concept as a policy, Sheehan (1996) divides the traditional techniques used by states to achieve equilibrium in those used to build up one’s own power and those employed as an attempt to weaken or diminish the adversary. The techniques discussed by the author include, first of all, the formation of alliances, which are thought of as the critical link, in both theory and practice, between the actions and policies of individual states and the overall results for the system (SHEEHAN, 1996, p. 59).

A second technique explored by the author is war. Sheehan (1996) states that the majority of balance of power authors consider that war can be used as an instrument to achieve balance, which is the same as to say that equilibrium does not guarantee peace: it can save the system and the autonomy of the unities, but it cannot prevent wars¹⁰.

¹⁰ Morgenthau (1965), however, is not clear on that point: at the same time that he states that balance of power is a mechanism to prevent war, he also claims that preventive wars are fought in the name of balance of power maintenance. Claude Jr. (1965) explains that, in general, the belief that equilibrium produces peace derives from the understanding that the lack of certainty of victory has a deterrent effect on possible initiators of wars. But if deterrence is a psychological phenomenon, subjective facts matter in addition to the objective distribution of power. Therefore, according to Claude Jr., the weak will seek war if he/she believe the stronger’s intentions are

A third technique consists in abandoning an ally before his total victory, what would prevent him from becoming too powerful. Therefore, at this point Sheehan (1996) seems to imply that there is an optimum amount of power to be acquired by an ally so that equilibrium is restored.

In turn, the fourth technique can only be pursued by the so called “holder of the balance”: an actor who changes its allegiance according to the current distribution of power, allying itself to the weak against the strong. Sheehan (1996) shows the controversy surrounding the role of the holder of the balance, since some scholars strongly support the idea that for a balance to be achieved a state needs to be concerned about it and act in a way as to establish equilibrium, but, on the other hand, supporters of a more automatic view of the theory do not agree with the very existence of a balancer role¹¹.

A final technique would be the partition of territory and compensation, by which minor states lose territory to a great power so as to re-establish equilibrium in the system. An example of this would be the partition of Germany after the II World War. According to Sheehan (1996), the majority of scholars thinks that this technique does not contradict balance of power primary aim which is to preserve the system of states and not the identity of its units¹².

As can be noticed by the discussion above, the mechanisms highlighted by Sheehan (1996) as strategies used by states to strength themselves involve individual efforts, what is related to the concept of internal balancing since the latter also implies individual and not collective actions. However, none of the frequently cited techniques of self-empowerment develops on the idea of *internal* efforts. An exception to this among the classics is Bull (1977), who, as Waltz

aggressive. Then, for him, mistrust is not directed against power per se but against particular holders of power.

¹¹ In addition, Organski and Kugler (1980) denounce that the role attributed to the holder of the balance is very close to the domination of the system, since this actor, in theory, could almost determine the fate of the system. So, these scholars criticize the conception that so much power in the hands of a unit is viewed as a stabilizing factor since it is in contradiction to the theory prediction that concentrations of power should be avoided for being dangerous.

¹² According to Bull (1977), the chief function of the balance of power is not to preserve peace or the identity of each unit, but the system of states itself. In this sense, it is part of the logic of the balance of power that the needs of the dominant balances must take precedence over those subordinate balances. For him, if aggrandizement has to take place, it is better that it will not be derived from the union of the strong. In his own words: “The partition of Poland was not a departure from the principle of balance of power but an application of it” (p. 108).

(1979), argues that in a simple balance of power (formed by two actors) internal efforts are the sole option to achieve equilibrium.

Bull (1977) argues that the meaning of internal efforts changed during the centuries: in the 18th century those efforts involved the expansion of territory and population, in the 19th century the development of ones' industry and military organization, and in the 20th century the improvement of ones' military technology.

In what regards Waltz's (1979) work, one can also find reference to internal efforts, and, in contrast to Bull (1979), the former actually employs the term internal balancing. When formulating his balance of power theory, Waltz (1979) stated the conditions for the emergence of systemic balances: the coexistence of two or more actors in an anarchic system in which the prerogative of using force in defense of self-interests was not denied to the parties. As I argued in the previous section, this is a systemic theory that seeks to explain a result seen by the author as frequent in the international system. In this sense, Waltz (1979) assigns to anarchy the explanation for the formation of balances of power. Nonetheless, Waltz (1979) mentions only briefly the mechanisms that could be used by states to achieve the result of systemic equilibrium: internal balancing and external balancing.

External balancing, Waltz's main focus (1979), is understood as the formation of alliances that results in the production of a balance of power between the poles of a system. In this sense, the intention to balance does not matter so that an alliance is considered by this author an example of external balancing, but rather the concrete production of equilibrium (p. 118-123).

In turn, according to Waltz (1979), internal balancing is equivalent to improvements within the economic and military capabilities of a state which result in equilibrium the international system (p. 118). Again, the intention to balance is not necessary for an action to be considered internal balancing by this author. In addition, it should be noted that the mere economic rise does not count as balancing for Waltz. For a state to balance the power of a second state, it is not enough that it acquires the economic conditions for that, it is necessary that it effectively transmute this economic potential in military capabilities (p. 118-121; p. 131 and p. 180).

It is important to note that in order to deduce a concept of internal balancing from Waltz's work, it is necessary to combine the claims made by this author when developing balance of power theory (WALTZ, 1979, p. 118-121)¹³ to his discussion of the capabilities that make a state a pole, that is, his considerations on what gives power to units (p. 131). By way of logic deduction from the theory, to say that two poles reached the equilibrium outcome via internal balancing, one must first be able to say that both states are poles. And to appear as a pole, it is necessary that:

States are not placed in the top rank because they excel in one way or another. Their rank depends on how they score on *all* of the following items: size of population and territory, resource endowment, economic capability, military strength, political stability and competence (WALTZ, 1979, p. 131, emphasis added by the author).

From this quote it follows that the economic rise, or the investment in only one type of the capacities that characterize a pole, is not enough so that we could say that a state advances its position in the system. Therefore, neither could we say, in Waltz's terms, that a state that only rises economically is pursuing the behavior of internal balancing.

Furthermore, the claim that internal balancing requires more than economic efforts is also based on Waltz's discussion on the prospects for the rise of new poles through internal efforts. At this point, this author emphasizes the difficulties involved in systemic change in face of the high investments required for the development and acquisition of modern weapons systems, making it clear that military power remains, in his view, the final arbiter of international relations (p. 180-183). Finally, given that the material capabilities whose distribution

¹³ "A balance-of-power theory, properly stated, begins with assumptions about states: They are unitary actors who, at a minimum, seek their own preservation and, at a maximum, drive for universal domination. States, or those who act for them, try in more or less sensible ways to use the means available in order to achieve the ends in view. Those means fall into two categories: internal efforts (moves to increase economic capability, to increase military strength, to develop clever strategies) and external efforts (moves to strengthen and enlarge one's own alliance or to weaken and shrink an opposing one). (...) The theory, then, is built up from the assumed motivations of states and the actions that correspond to them. It describes the constraints that arise from the system that those actions produce, and it indicates the expected outcome: namely, the formation of balances of power. Balance-of-power theory is microtheory precisely in the economist's sense. The system, like a market in economics, is made by the actions and interactions of units, and the theory is based on assumptions about their behavior" (WALTZ, 1979, p. 118).

characterizes the international structure according to Waltz do not only refer to economic capacity, but mostly to military arsenals (p. 180), it is clear that the equilibrium between different countries' capabilities would not be achieved only with economic efforts.

In spite of the fact that Waltz (1979) elaborated on the notion of internal balancing, the concept remained underdeveloped. This is due to the fact that Waltz neglected the analysis of examples of internal balancing so that one does not find enough categories that could guide subsequent works in identifying concrete instances of internal balancing. The same could be said about the works that followed Waltz's 1979 book, which focused mainly on external balancing, mentioning only briefly internal efforts.

For instance, according to Randall Schweller (quoted in NEXON, 2009), balancing involves the creation or aggregation of military power through internal mobilization (internal balancing) or the formation of alliances (external balancing) with the goal of preventing or stopping a territorial occupation or military or political domination by a state or coalition. In this case, balancing is limited to circumstances in which states fear being subjugated politically or losing territory or when their vital interests are adversely affected, and this results in the positioning of military arsenals against each other in preparation for war (p. 341).

In this sense, though Schweller is akin to Waltz in what regards the argument that there is a close relationship between external balancing and military means, he distances himself from Waltz by not considering the production of a systemic equilibrium as a criterion to characterize an action as external balancing or not¹⁴. In addition, despite the fact that Schweller (1994, 1997) contemplates internal efforts in his theory as did Waltz (1979), his main goal was not to talk about internal balancing, but to compare the frequency of the behaviors of external balancing and bandwagon.

It must be noticed that current discussions on the topic of balancing tend not to concentrate on the dyadic relation between internal and external balancing. Nowadays, scholars differ in what comes to the means that must be used so that

¹⁴ In relation to this point, Kaufman, Little and Wohlforth (2007) distinguish dyadic balancing (which refers to policies to contain any threatening actors) from systemic balancing (which corresponds to policies aimed at preventing the rise of a hegemon or at containing a hegemon that has already ascended).

an action is described as balancing, if military or not. This controversy can be traced to the fall of the Berlin Wall in 1989 and the dissolution of the USSR in 1991, when International Relations scholars began to duel on the type of systemic configuration that was emerging at that time, as well as on the prospects of its durability. Such a debate would last throughout the 1990s. During this period, realists like Layne (1993), Wohlforth (1999) and Krauthammer (1990) agreed that unipolarity characterized the post-Cold War international structure, the U.S. being the sole remaining superpower. However, they disagreed about the prospects for the duration of this structure. For example, Layne (1993) characterized unipolarity as an ephemeral structure, as a moment, a geopolitical interlude that would lead to multipolarity between 2000 and 2010. This is because, for this author, systemic constraints lead other states to balance U.S. power so that new superpowers would inevitably emerge. Additionally, the phenomenon of imperial overstretch would probably operate and the U.S. would lose economic dynamism in face of increasing and excessive spending on defense.

On the other hand, Krauthammer (1990) and Wohlforth (1999) defended the possibility that the unipolar system would last. The latter justified his position based on the argument that contemporary unipolarity is unprecedented: for the first time the concentration of power in a pole is symmetrical. In other words, the U.S. scored well in all material requirements of power: territory, population, economy, military, technology, etc. Thus, the overcoming of such a concentration of power would require a lot of time and resources. Moreover, the transformation of the unipolar system through the formation of alliances to balance the American power would be difficult because of the possibility that the U.S. explores collective action problems among potential allies. Finally, the operation of the phenomenon of imperial overstretch is delayed in view of the geographical position of the great power candidates and the U.S. In this sense, the very location of the U.S. contributes to lower defense spending, since this country is protected by two oceans, which hinders the access of potential adversaries to its territory. Moreover, power candidates are located in Eurasia and, because of that, the dynamics of regional balancing hampers possible attempts of global power projection: any attempt by a regional power to rise would probably be contained regionally, without the U.S. having to expend resources in this process (WOHLFORTH, 1999).

The above discussion on the topic of unipolarity underwent some major changes in the years 2000s. Scholars who have been studying the subject are now divided into two main groups (LAYNE, 2006b). The first group is composed of theorists who argue that the phenomenon of balancing has taken new forms. In that sense, to Layne (2006a, 2006b), balancing against the U.S. is already in progress, i.e., the period after the end of the Cold War is not an exception to the prediction that large concentrations of power in a state will lead to balancing by other states in the position to do so. However, the fact that the systemic result of states actions was not the equilibrium of power in the international system has hindered the recognition of balancing practices. Such recognition was also obstructed by a narrow concept of balancing.

Thus, in an attempt to contribute to the debate about the presence or absence of balancing in the current international system, scholars like Layne (2006b) and Pape (2005) advocate the need to review the concept of balancing. According to Layne (2006b), the definition of balancing as a military response in face of an existential threat would be insufficient in order to grasp the geopolitical dynamics in an era of U.S. hegemony. Due to the formidable hard power capabilities of the U.S., other states would find it difficult and possibly dangerous to engage in traditional counterbalancing (hard balancing). In a unipolar world, power candidates would have to adapt to U.S. hegemony and pursue balancing strategies that avoid direct military confrontation with the hegemon.

In this context, new ways of balancing would have emerged in view of a surviving and current hegemon (in contrast to hegemon candidates faced in the past). An example of these new ways of balancing would be soft balancing, which for Layne (2006b) involves the use of diplomacy, international institutions and international law to embarrass and delegitimize the actions of the hegemon. Other examples are: terrorism, opaque balancing (balancing via economic growth) and semi-hard balancing¹⁵ (balancing by creating subsidies that lead to autonomy in relation to the U.S. when it comes to security issues) (LAYNE, 2006a).

¹⁵ In an article published after the book *The peace of illusions* (LAYNE, 2006a), Layne (2006b) addresses more closely the concept of semi-hard balancing, giving it a new name: leash-slipping. Under this form of balancing, the states do not fear being attacked by the hegemon, but enhance their military capabilities to maximize their ability to conduct an independent foreign policy.

In turn, according to Paul, Wirtz and Fortmann (2004), balancing refers to any sort of behavior that seeks to reduce or match the capabilities of a powerful state or any threatening actors. In this sense, these authors highlight three types of balancing behavior: **hard balancing**, **soft balancing** and **asymmetric balancing**.

Paul, Wirtz and Fortmann (2004) use Schweller's definition (quoted in NEXON, 2009) to establish their concept of hard balancing, which is characterized as the use of military means to counter vital threats from other states. On the other hand, soft balancing is defined as a sort of tacit balancing against a common threat. It does not include the creation of formal military alliances, but it involves security understandings between states in order to balance common opposing powers. Examples of soft balancing would be: limited increases in military arsenals, ad hoc joint military exercises and the collaboration within international institutions to try to contain the dominant state's projection of power.

Finally, Paul, Wirtz and Fortmann (2004) argue that asymmetric balancing refers to a state's attempt to contain non-state actors and their state supporters who threaten the lives of the citizens of the first state, but who do not pose a real threat to this state's political survival as an independent unit or to the maintenance of its position in the international system. It also refers to efforts by non-state actors and their supporters to challenge states.

It should be emphasized that the concept of soft balancing was the one that attracted the most of unipolarity scholars' attention, but scholars that deal with this topic have different understandings regarding what means to employ soft balancing. Nexon (2009) explains that the proponents of the concept of soft balancing sometimes differentiate this concept from hard balancing based on the idea that soft balancers use means other than military force to ensure their safety. Other times, scholars argue that soft balancing can involve military means to frustrate the security goals of adversaries and reduce the systemic imbalance in the long term, but that these means are not used directly against an adversary's arsenals. In this sense, an often cited example of soft balancing involve the actions of Russia, France and Germany in the UN Security Council to try to prevent the American incursion in Iraq in 2003. At that time, no direct military means were involved. On the other hand, an also frequently cited example of soft balancing is the Turkish decision not to permit U.S. access to land military bases located in

Turkey during the Iraq War. In this case, a military mean is involved (land bases), but it was not used directly against the American forces.

In addition to the discussions over the meaning of soft balancing, it is also important to note the debate on the reasons why this phenomenon allegedly emerged. As Layne (2006b), Pape (2005) had tried to outline the reasons for the higher occurrence of this behavior to the detriment of traditional balancing. For the latter, internal hard balancing (the increment of the military actives of a country) is not feasible during unipolarity due to the high individual costs involved and the risk of attracting a focused reaction from the unipolar power. As for external hard balancing (the formation of military alliances), this behavior is hampered by collective action problems. For external hard balancing to take place, it should emerge in one shot. This is due to the fact that, if states join a balancing movement gradually, the alliance in question will eventually face the unipolar power without enough capabilities to do so. The movement would then be undermined in its origin. Therefore, states will engage in primary stages of balancing such as soft balancing instead of hard balancing.

Pape (2005) acknowledges that soft balancing¹⁶ does not directly challenge U.S. military power, but says that it delays the exercise of that power and imposes immediate costs and constraints for its use. In addition, the author states that the continued pursuit of an aggressive and unilateral national security policy by the United States will result in increased soft balancing. In turn, the reiterated exercise of soft balancing would gradually evolve to hard balancing, since soft balancing sets the trust foundations that will enable hard balancing in the future.

On the other hand, there is a second group of theorists who repudiate the idea that the concept of balancing has been transformed. For instance, Nexon (2009) argues that better than to separate between hard and soft balancing may be to explore various strategies used by states to balance, balancing being understood generally as the search to reduce security deficits. This is because, according to this author, the difference between hard and soft balancing is not one of *kind* but of *degree*.

In turn, the concept of soft balancing was much more harshly criticized by authors such as Brooks and Wohlforth (2005) who argue that expanding the

¹⁶ To Pape (2005), soft balancing is equivalent to using non-military tools to delay, frustrate and weaken aggressive and unilateral military policies pursued by the United States.

concept of balancing to include efforts other than the increase in military arsenals and the formation of military alliances can lead to a situation in which the concept will refer to a phenomenon totally different from the original. In this sense, analyzing the concept of soft balancing, Brooks and Wohlforth (2005) argue that for the new concept to explain behavioral instances regarded as soft balancing it would be necessary, first of all, that the actions carried out by the supposed balancers were connected to the concentration of power in the U.S.; second, to count as soft balancing, it is essential that balancing actions were taken in response to the perception that the concentration of power in the U.S. is a threat to the safety of those who balance. In other words, by engaging in soft balancing measures, states should have the expectation to constrain the threat posed by the U.S. and that the result of such constraint would be their own safety.

Examining some of the cases most frequently cited as examples of soft balancing – Russia's support for the Iranian nuclear program, Russia's strategic alliances with India and China, the increased military coordination among EU members, and the opposition of Russia, France and Germany to the II Gulf War – Brooks and Wohlforth (2005) confront the explanation based on soft balancing to alternative explanations which were not considered by the proponents of this concept. According to these authors, the mentioned attempts to constrain U.S. behavior can be explained by the following factors: economic interest, regional security concerns, disagreements about the best policies to solve specific international problems and domestic political incentives. In short, in none of these cases anti-American behavior was motivated by a greater perceived threat emerging from that country. Nor was it intended to diminish the U.S. ability to prevail over other powers. Therefore, Brooks and Wohlforth (2005) conclude that the concept of soft balancing is not adequate to explain the often cited examples of this supposedly new way of balancing. The cases to which it is usually applied are equivalent to instances of bargaining and not balancing.

It should be noted that Brooks and Wohlforth (2005) are part of a group of theorists who, not only are contrary to the modification of the concept, but also assert that balancing does not take place nowadays. In other words, these theorists try to deal with what appears to be an anomaly in relation to the prediction of the balance of power theory that the international system tends towards equilibrium and that concentrations of power tend to be temporary. From this position,

emerges a second debate within International Relations theory over the following question: what are the possible repercussions of the present lack of balancing and the resulting longevity of unipolarity for the balance of power theory and the realist research program?

In this context of balance of power theory questioning, Kaufman and Wohlforth (2007) and Wohlforth *et al.* (2007) undertook a series of tests of this theory in the face of previous international systems. These tests were motivated by the following question: can the dynamics of balance of power transform the current unipolar system? To find possible answers, the authors analyzed the rise and fall of previous unipolar systems in order to verify the operation of the predictions of the balance of power theory. Investigating the rise and fall of the Assyrian Empire (historical events that took place between 900-600 BC), Kaufman and Wohlforth (2007) stress that two variables would be central to the understanding of that process of systemic change. Firstly, there is what the authors call **social technology**. Initially, the Assyrians were unable to manage their conquests, losing them in a short time. The reversal of this situation was due not only to Assyrian war forces, but to the development of a bureaucracy to administer the conquered territories. Second, the authors point out the variable **size of the system**. If the administrative advances have made possible the Assyrian empire, it was the expansion of the international system of reference, and not the dynamics of balance of power, the biggest cause of their decline. Actors who were not part of the system clashed with Assyria, exhausting their resources.

Briefly, in opposition to balancing predicted by the balance of power theory as the cause of transformation of unipolar systems, Kaufman and Wohlforth (2007) maintain that the final collapse of Assyria is more properly understood as resulting from the classical effects of imperial overstretch. As the Assyrian population engaged in non-productive jobs in the cities and the rural part became less populated, the empire came to depend increasingly on taxation for the provision of food. The lack of local food supplies resulted in the inability to feed troops.

Thus, the authors sustain that the causal variables of systemic change pointed out by Gilpin (2002) explain the Assyrian case better than those introduced by Waltz in 1979 (KAUFMAN; WOHLFORTH, 2007). They

conclude that although one of the predictions of balance of power theory follows (states often balance against emerging systemic threats), balancing, in this case, was inevitably slow and inefficient.

In the same sense, Wohlforth *et al.* (2007) suggest the following theoretical propositions contrary to balance of power theory as a source of explanation for systemic change (or the transition from balance to hegemony):

1. Efforts to form effective alliances will fail due to problems of collective action (external balancing will be unsuccessful);
2. Domestic political obstacles prevent the emulation of innovations made by the potential hegemon to accumulate power (internal balancing will not happen), and
3. Uncertainties as to the power that places the greatest threat hamper efforts of balancing.

Given these obstacles to balancing, hegemony as a systemic result would be something common in previous international systems, being likely under two historical conditions:

1. When potential hegemons develop the ability to incorporate and effectively manage the conquered territories, and
2. When the boundaries of the international system of reference remain stable and no major power from another system interferes within it (WOHLFORTH *et al.*, 2007).

After testing these theoretical propositions in eight different historical circumstances (the Assyrian case presented above being one of them), the authors state that balancing occurs, and that it can be an important phenomenon, but its effects are minimized by collective action problems (WOHLFORTH *et al.*, 2007).

At first glance, the works of Wohlforth *et al.* (2007) and Kaufman and Wohlforth (2007) would suggest that unipolar systems are not transformed by means of balancing. However, my understanding is that these authors give not enough attention to the study of change through internal balancing. What is signaled by the works of these scholars is the fact that alliances seem to have been historically ineffective in producing systemic balance. In other words, the attempt to carry out external balancing seems to have failed to produce change internationally.

Nevertheless, it is argued here that the process of internal balancing has not been discarded by the mentioned studies as a source of international political change. This is because the dynamics of internal balancing is inserted into the only variable pointed by those scholars as the cause of international change that can be transported without any mediation to the study of change in contemporary international systems, namely: imperial overstretch. By pointing out that international systems change due to the occurrence of domestic changes cited by Gilpin (2002) as factors influencing the rise of states in the system, Kaufman and Wohlforth (2007) seem to disregard that the changes in the domestic sphere are at least precursors of balancing. These changes provide the material foundation that enables the improvement of the military capabilities of a state. Thus, if not balancing behavior, the domestic factors pointed out by Gilpin (2002) as the causes of international change can at least be seen as the conditions of possibility for a systemic change through internal balancing. Thus, my understanding is that internal balancing is a process that may lead to change in the distribution of capabilities within the international system.

On the other hand, the fact that external balancing does not seem to have succeeded in transforming previous unipolar systems does not allow us to discard balance of power theory completely in analyzing contemporary unipolar systems. At this point, the issue of the refutation of theories must be discussed. In other words, the important question is: did works like Wohlforth *et al.* (2007) refute the balance of power theory? To answer yes to that question would be the same as assuming that the contrast with reality would be able to disprove a theory. As I intend to argue, this position would be contrary to the epistemological understandings of Neorealism or at least of Waltz (1997), an author who greatly influences the views on formulating and testing theories advocated in this dissertation.

The issue of the possible refutation of Neorealism was widely discussed among authors self-considered realists like Waltz (1997), Schweller (1997), Walt (1997) and Elman and Elman (1997) in response to an article published by Vasquez (1997) in *The American Political Science Review*. In this article, Vasquez (1997) analyzed the realist research program in what regards its progressive or degenerative character in Imre Lakatos' terms. Vasquez (1997) evaluated the works of Walt (1990) and Schweller (1994) about balancing and

bandwagon and Christensen and Snyder's (1990) work on buck-passing and chain-ganging to ascertain whether they would be progressive in relation to Waltz (1979).

It is worth noting that the test conducted by Vasquez (1997) has the merit of analyzing the realist research program based on criteria that would be accepted by Waltz himself (1979), since this author is clearly influenced by Imre Lakatos. For Waltz, theories are a set of statements designed to explain laws, and the aim of his work was to explain the law that determines the formation of balances in the international system. Thus, Vasquez (1997) proposes that we understand Waltz's theory as belonging to a realist research program inaugurated by Morgenthau. In other words, the balance of power theory introduces auxiliary hypotheses to Morgenthau's realist program. For Vasquez, these hypotheses would be the following: the prediction that the balance of power is not necessarily related to peace (wars can be undertaken to ensure that the balance is achieved or that it endures), the explanation that the balance is formed because of anarchy and not due to the ability of decision makers, and the prediction that balancing is more frequent than bandwagon.

Then, Vasquez (1997) analyzes to what extent subsequent works result in progress for the realist research program, that is, to what extent these works account for everything explained by earlier theories, without denying the hard core of realism (the assumptions common to all scholars self-considered realists) and also contributing to the understanding of new facts in international relations. For Vasquez (1997), Lakatos' requirement that to be considered progressive the later theory must produce an empirical surplus over the previous theory implies that the subsequent theory should be able to explain more than an anomaly between reality and its predecessor: it must reveal facts unknown to scholars in the field.

According to Vasquez (1997), the realist research program presents features of degeneration. He argues that works which followed Waltz (1979) have produced a series of ad hoc hypotheses that do not lead us to discover new facts about international relations. In contrast, these assumptions would only seal realism from the possibility of refutation since opposite trends predicted by the theories (balancing and non-balancing) would become part of the same research program.

In response to Vasquez (1997), Schweller (1997) and Elman and Elman (1997) criticize the way that author uses the understandings of Imre Lakatos to assess the realist program. In addition, according to Elman and Elman (1997), Vasquez (1997) misunderstands the realist research program and ends up equating realism to the balance of power theory of Waltz (1979). One would have to specify each of the terms of Lakatos in realism so that this theory could be evaluated according to this scholar's terms: what is the hard core, which are the auxiliary hypotheses and what are the positive and negative heuristics within the realist research program? Accordingly, Vasquez failed in identifying the hard core of realism, which is not comprised by Waltz's theory, but by some basic assumptions¹⁷, from which arise different theories.

According to Lakatos, it is common that different theories within a research program state different predictions. This is due to the fact that these theories share the same hard core, but produce different auxiliary hypotheses to protect the common core. Thus, the fact that Gilpin and Waltz predict different behaviors does not signal the degenerative character of the program, this phenomenon being something acknowledged by Lakatos himself. For example, the consideration of different auxiliary hypotheses such as "states struggle to ensure their survival and to not lose their position" (defended by defensive realists) or "states guarantee their survival by maximizing power" (proposed by offensive realists) has an impact on the state behaviors predicted by each brand of realism. Thus, balancing would not be the only prediction consistent with this research program (ELMAN; ELMAN, 1997, p. 924-925).

For Schweller (1997), the problem with realism would not be the plurality of predictions, but the fact that realists need to specify the conditions for the application of their theories. For example, according to this author, his own theory would work in face of unsatisfied and non-threatened states and Waltz's theory

¹⁷ According to Schweller (1997, p. 927), such assumptions would be: humans face it other primarily as groups and not as individuals, international relations occur in an anarchic environment, power is the fundamental feature of international politics, the nature of international relations is conflictive, humans cannot transcend conflict by reason, politics is not a function of ethics (morality is a product of power, when morality and necessity of state conflict, the latter always wins). As for Elman and Elman (1997, p. 924), the core would be comprised by the following assumptions: the international environment is anarchic, states act in a self-interested way, survival is the primary interest, the states are the main actors of international relations, states are concerned with power capabilities, states choose more cost-effective strategies, states evaluate their options based on their strategic situation and the external environment.

would work for threatened states. In addition, Schweller (p. 927) suggests that the production that followed Waltz (1979) is not intended to refute his work. In fact, the subsequent works are intended to add variables from the unit level to Waltz's theory, in order to transform it into a theory of foreign policy.

In tune with Schweller's (1997) last point, it is argued here that Vasquez (1997) was mistaken when choosing the theories to be tested, mixing systemic theory with foreign policy theories. In other words, it is not possible to say that the theories produced by Walt (1987), Schweller (1994) and Christensen and Snyder (1990) step forward or backwards in relation to Waltz (1979). This is because these theories have different goals: while systemic theory seeks to explain a systemic result, theories of balancing aim to explain the behavior of states, i.e., the latter are theories that are close to foreign policy theories rather than to systemic theories.

Waltz himself (1997) responded to Vasquez (1997) as follows:

I see 'balance of threat' not as the name of a new theory but as part of a description of how makers of foreign policy think when making alliance decisions (...) In moving from international-political *theory* to foreign-policy *application* one has to consider such matter as statesmen's assessments of threats, but they do not thereby become part of the theory. Forcing more empirical content into a theory would truly amount to a 'regressive theory shift'. It would turn a general theory into a particular explanation. Vasquez, and Walt, have unfortunately taken the imaginative application of a theory to be the creation of a new one (WALTZ, 1997, p. 916).

Although Waltz (1997) denies the character of theory to the literature assessed by Vasquez (1997), the author would agree with this chapter's argument that such literature attempted to operationalize a systemic theory in explanations of specific foreign policies. In this sense, those works are not attempts to refute the theory fashioned by Waltz (1979) and therefore could not be evaluated as such.

Finally, I disagree with the way Vasquez (1997) and Schroeder (1994) understand the testing of theories. I argue here that the alleged discrepancy between theory and reality is not enough to abandon a theory that deals with the concept of balance of power. At this point, I rely on Waltz (1997) himself who is inspired by Lakatos to develop his views on the subject. Waltz (1997) argues that

the test carried out by Vasquez was positivist, in that the latter author distanced himself from the ideas of Lakatos and came close to the ideas of Popper. This is because Vasquez (1997) and Schroeder (1994) believe that the observation of behavior contrary to balancing could falsify balance of power theory. In this sense, although Vasquez states to be influenced by Lakatos, his test of realism follows Popper's views – for whom the contrast between empirics and theory would be sufficient for the falsification of a theory – and distances himself from Lakatos – for whom empirics alone could never falsify a theory.

In this sense, admittedly inspired by Lakatos, Waltz (1997) points out that falsification by contrasting theory and reality depends on how the scholar pursuing the test interprets the words of a theory and also the evidence allegedly contrary to it. This is because there are no facts independent of theories, that is, the facts themselves are interpreted through the lens provided by theory. Thus, Waltz (1997, p. 916) believes the most important question is not whether a theory is true or false (given that such verification would not be possible), but if a theory is worthy of being taken seriously.

Accordingly, I argue that Waltz's version of the balance of power theory should be taken seriously not because it is more correct or the one closest to the operation of the real world, but because it provides categories which are useful for making sense of reality, such as balancing, polarity and the very notion of change that informs this dissertation. In this regard, Kapstein (1995) argues that structural realism has heuristic value to the extent that the literature he analyzes – a set of works that add domestic variables in the analysis of international politics – is the result of issues raised by authors influenced by categories of analysis provided by structural realism, but that could not be answered if only neo-realism were used.

Kapstein (1995) states that the failure to solve problems does not necessarily lead to the abandonment of a theory. A theory is only abandoned when another is put in its place. And for that, the new theory should explain the observations explained by the previous and generate new facts, i.e., it should shed light on phenomena not previously known. In other words, it is not empirical evidence that refutes a theory, but another theory. Neo-realism remains influencing scholars of the balance of power because the decision to forgo a paradigm is always accompanied by the decision to accept a new one (p. 774).

With regard to the debate on the possible refutation of Waltz's version of the balance of power theory, I place myself among those who believe that it has not been refuted, given the above narrated understanding that empirical evidence alone is never sufficient to rule out a theory. Thus, although I disagree with the assertion that the theory has been refuted, I believe that it lacks a more detailed formulation with regard to the concept of internal balancing, which was relegated to a place of secondary importance by balance of power scholars. Although in the original formulation of his theory Waltz (1979) has predicted internal balancing as a means to achieve systemic equilibrium, as I tried to show, such behavior was rarely specified by him or by most of the scholars who were inspired by his work. As discussed above, this literature was mainly concerned with external balancing and the dynamics of alliance formation (WALT, 1990; SCHWELLER, 1997; CHRISTENSEN; SNYDER, 1990).

Nonetheless, some few works dealing specifically with the concept of internal balancing have emerged. The following section will discuss the contributions fashioned by these scholars.

2.3

Internal Balancing

The literature on internal balancing, to be reviewed in this section, focused until now on explaining why this behavior occurs. It should be noted that the few scholars that concentrated on the topic differed in what comes to the level of analysis in which their independent variables were located. In this sense, one of the most comprehensive works on the subject was written by Resende-Santos (2007), who aimed at fashioning a Neorealist theory of internal balancing. This scholar starts from the observation that very different states end up adopting similar foreign models when defining their military organization. Therefore, he assumes that the cause of this behavior cannot be internal, but external.

According to Resende-Santos, balancing can take five major forms: emulation, innovation, countermeasuring, free riding and formal alliance. While the last two are examples of external balancing, the first three are examples of internal balancing (p. 69). Countermeasuring is understood by the scholar as a

quantitative sort of internal balancing which aims at offsetting an increment in an adversary's power pool; it may involve increases in arms, men and finances, repositioning, redeploying and retooling of forces, organizational rearrangements or reconfiguring existing methods. On the other hand, innovation and emulation are considered by the author as qualitative kinds of internal balancing.

The main focus of Resende-Santos' book is undoubtedly on emulation, which he defines as "the deliberate imitation by one state of any aspect of another state's military system that bears upon its own military system" (p. 9). Therefore, it is considered a conscious, voluntary and deliberate act that results in similarity. However, the author warns that no perfect replication is possible. Also, he admits that he is most concerned with the process of emulation and not with the effects of emulation in terms of the effectiveness in war of copied weapons and/or institutions.

The dependent variable of his theory is states' military organizations, while the independent variable is the systemic anarchy and the presence of external threats. That means that the behavior of emulation is explained by the effects of anarchy. Anarchy being characterized by uncertainty and competition, risk-averse states emulate best military practices in order to guarantee their own survival.

Therefore, according to Resende-Santos (2007), states are called like units by Neorealism not only because they behave similarly but also because they end up having the same internal organization. In this sense, "internal balancing is the avenue through which the system works its organizational effects on states" (p. 15). That is to say that there is a connection between anarchy and *state formation*. This is due to the fact that large scale military emulation entails changes far beyond military organization. For instance, the author mentions that the improvement of the state capacity to extract funds from society was necessary to fully implement and finance the adoption of a mass army in Chile, Argentina and Brazil (the three case-studies carried out by RESENDE-SANTOS, 2007).

However, in spite of the importance of the internal balancing process:

This aspect of neorealism is both underdeveloped by neorealists and overlooked by critics. Neorealists have yet to explicate a coherent set of propositions about organizational effects of anarchic realms. I suspect that this underdevelopment of the theory is the result of the exclusive attention paid to external forms of balancing, even though intuitively we expect that

contending units in self-help realms will turn mainly to internally directed efforts to bolster their relative competitive effectiveness. This study lies at the heart of neorealism core logic and does what Waltz failed to do. It elaborates neorealist theoretical infrastructure, brings greater determinacy and specification to its casual framework, and does so while remaining faithful to its structural logic and without undermining its economy and elegance. More critically, my book shows that Waltzian neorealism – so widely criticized as ahistorical and unable to account for one of its main units of analysis, does have something useful to say about states and their historical development. (...) Crossnational military emulation is not just the leading pathway through which military organizations change, develop, and follow common trajectories. It is also an avenue through which we can examine the historical development of states and their shared organizational-technological transformations (RESENDE-SANTOS, 2007, p. 16).

In addition to explaining why states emulate, the author also tries to predict who will be emulated, as well as to account for the fact that the pace of emulation varies among the various states or units of a system. The states whose military activities will be emulated are the most powerful and successful ones. The test of which are the best military practices of an era is provided by war. So, even if the system changes in regards to the distribution of capabilities between the units, in the absence of a new war, the state regarded as the most successful will be the one that scored better on the last major war.

On the other hand, the different timings and scopes of emulation between states are explained by the different levels of threat faced by each state. In turn, the level of threat is determined by relative military power, geographic assets and liabilities, offensive capabilities of adversaries, and the availability of external balancing options¹⁸. The difficulty to defend oneself (lack of natural barriers, for example) and the possession of offensive capabilities by an adversary tend to accelerate internal balancing, while the availability of external balancing options tends to delay and slow military emulation.

In short, Resende-Santos (2007) argues that: 1) military emulation is the quickest way to increase power and bolster security and it is the result of states'

¹⁸ Although the author includes variables from balance of threat theory in a self-declared Neorealist theory, he excludes intention as a factor that contributes to the level of threat an actor faces or imposes since, according to him, this is not compatible with Neorealism.

concern with relative competitive effectiveness (a state's capacity to meet the changing requirements of success in the system); 2) emulation is a kind of internal balancing; 3) the pace of emulation will be determined by the timing and scale of external threats; and 4) states emulate on the basis of proven effectiveness, victory in war being the measure of military effectiveness.

Another example of a work that deals with this topic is Colin Elman's PhD Dissertation *The logic of emulation: the diffusion of military practices in the international system* defended in 1999. Although this scholar does not employ the term internal balancing, his work is in close dialogue with Resende-Santos' ideas¹⁹ and with Waltz's balance of power theory.

Elman's (1999) dependent variable is states' reaction to the military practices of other states, the possible responses being: no change, off-setting and emulation. By off-setting the author means to counter other states' military practices without coping them. In turn, emulation involves the coping of other states military practices, in part or in totality. Partial emulation can present itself as reinvention (the military practice is changed during the process of adoption) or as selective adoption (when only some parts of other's military practices are mimicked). In the process of emulation and off-setting, it is possible that innovation (doing something new) and invention (creating new knowledge) take place. In turn, diffusion is the term employed by the author to refer to the systemic outcome of the behavior of emulation (p. 48).

As for the independent variable, the author tests two models that aim at explaining military behavior: Neorealism and an organizational model. For Neorealism, the important variables would be the *likelihood of war* and the *availability of information about other's military practices*. The neorealist model predicts that the tendency to emulate augments with the increase in the likelihood of war and the availability of information about the military practice. But the response will also be affected by contextual and strategic factors such as

¹⁹ In his dissertation, Colin Elman openly acknowledges the dialogue between his and Resende-Santos' ideas. By the time Elman defended his dissertation, Resende-Santos had already published a book chapter with a summary of the conceptions to be developed further on his book of 2007: RESENDE-SANTOS, J. Anarchy and the emulation of military systems: military organization and technology in South-America, 1870-1914. In: FRANKEL, B. (Ed.). **Realism**: restatements and renewal. Frank Class: London, 1996. p. 193-260.

geography and alliance politics. Finally, it matters if the innovation creates opportunities or threats to the state that responds. Practices that offer opportunities will be emulated and practices that pose a threat tend to be off-set. On the other hand, for organizational theory, the important independent variable would be the *degree of coincidence between the innovation and domestic military organizational preferences*. For this last theory, emulation only happens if the foreign military practice is in tune with military domestic institutions and beliefs.

After analyzing the process of incorporating tanks to the Soviet and the American armed forces, Elman (1999) argues that both models (organizational theory and neorealism) help to explain states' reaction to other states' military practices. "In the short run, if threat levels are low and information unclear, the organizational model proves most useful. The parochial preferences of military actors influence the ways in which states respond. But in the long run, especially as the threat and severity of war increase, the neo-realist model comes into its own" (p. 97).

Therefore, Elman (1999) seems to claim that the neorealist model eventually works, what points to the confirmation of this theory. However, the victory would not be essentially a victory of Waltz's version of Neorealism. Elman (1999) argues that the theory he developed is new in many respects. This is because

(...) there have been very few applications of the neo-realist theory to the phenomenon of reaction to other states' military practices, including the foreign policy choice of emulation of utile practices, and the systemic dependent variable of diffusion. Waltz's Theory of International Politics is largely silent on the issue, except for one paragraph that includes a strong prediction of isomorphism²⁰ (p. 52).

Nonetheless, Elman (1999) assumes that this theoretical lacuna can be filled by subsequent works like his, potentially demonstrating the progressiveness of the neorealist research program, since those works use of neorealist

²⁰ "The fate of each state depends on its responses to what other states do. The possibility that conflict will be conducted by force leads to competition in the arts and instruments of force. Competition produces a tendency toward the sameness of the competitors (...) Contending states imitate the military innovations contrived by the country of greatest capability and ingenuity. And so the weapons of major contenders, and even their strategies, begin to look the same all over the world" (WALTZ, 1979, p. 127).

assumptions to theorize and make predictions on this question would be heuristically novel.

As for the dialogue between his theory and the work of Resende-Santos (1996), Elman (1999) acknowledges that the only extensive neorealist treatment of emulation and diffusion is Joao Resende Santos' PhD dissertation (that would become a book in 2007). However, Elman claims that there are important differences between the two. According to Elman, they define differently their dependent variables: while Resende-Santos understands emulation as a sub-set of internal balancing, Elman (1999) defines emulation as a "sub-set of reactions to information about other states military practices" (p. 54). Second, Resende-Santos focuses on large-scale processes of emulation and not on the adoption of individual military technologies. Third, Resende-Santos sees his theory as a neorealist "second-image reversed" theory of the state, what implies that he is concerned with much broader transformations that transcend military scope. Finally, Elman (1999) attributes more importance to the event of war since he predicts that emulation tends to occur during periods of war when information about military practices is available (p. 54).

Nevertheless, although Elman (1999) claims that the above cited differences are substantive, I disagree. Elman (1999) resists calling his object internal balancing and chooses to restrict his work to the treatment of emulation. In contrast, in spite of the fact that Resende-Santos (1996, 2007) promises to talk about internal balancing, he ends up dealing solely with one of the types of internal balancing mentioned by him which is emulation. Therefore, Elman (1999) and Resende-Santos (1996, 2007) are actually speaking the same language in the sense that they focus on very similar sets of variable to explain the same phenomenon: emulation of military practices. The second and third differences mentioned by Elman can be considered a methodological one for the purposes of my work: Elman (1999) studies the emulation of a technique (the employment of tanks) and Resende-Santos (1996, 2007) is concerned with broader military organizational mimics, but this does not alter the fact that they both recur to a systemic theory to explain emulation. Lastly, in what regards the treatment of war, in the book published in 2007, Resende-Santos also emphasizes the importance of this phenomenon for the prospects of emulation. This is because war determines what a good military practice is and what is not, i.e., it establishes what and who

will be emulated. However, Elman (1999) has got a point: Resende-Santos does not pay enough attention to the availability of information about other states' military practices as a variable that contributes to determine if emulation will happen or not. And this only means that Elman considered a variable disregarded by Resende-Santos, not being enough of a reason to treat these two theories as too distant.

In turn, Taliaferro (2007) aims at fashioning an explanation for internal balancing that relies on Neoclassical Realism. In this sense, he is motivated by the observation that states vary in their ability to mobilize domestic resources for defense even when confronted with the same threat. In his own words:

Under what circumstances are states more likely to emulate the successful military institutions, governing practices, and technologies of more powerful states? When confronted with similarly threatening international environments, why are some states able to emulate, while other states fail to do so? Under what circumstances will states create entirely new military institutions, practices, and technologies in an effort to offset the perceived advantages of rival states? Finally, why are some threatened states willing and able to create efficient means to extract and mobilize greater resources from their societies, while other states will not or cannot? (TALIAFERRO, 2007, p. 130).

Taliaferro reviews possible explanations for the behavior of internal balancing derived from the various versions of Realism. Firstly, he underlines some points of agreement between a neoclassical and a classical realist explanation. He, a self-regarded neoclassical realist, agrees with classical realists' focus on statesmen calculation of relative power to act on the international arena. Also, classical and neoclassical realists agree on the assumption that aggregate economic and potential capabilities are not synonymous with a state's actual power and influence in the international arena, i.e., classical realists do not assume that states have similar extractive capacities. However, Taliaferro (2007) states that most classical realists did not devote enough attention to the practical problems that leaders encounter in extracting and mobilizing resources from the domestic society (p. 139). Moreover, the author criticizes classical works for the excessive emphasis on the skills of statesmen in operating the balance of power to the detriment of considering external constraints involved in the decision to balance.

On the other hand, neorealist explanations emphasize external constraints and disregard domestic ones in explaining why balancing occurs. As Taliaferro (2007) explains, Waltz's version of Neorealism works with a single independent variable: the systemic distribution of power as measured by the number of great powers (or polarity), making two predictions: (1) that balances of power tend to form, and (2) that states tend to emulate the successful practices of others (p. 141). In this sense, Taliaferro criticizes Neorealism for presenting a "passive military adaptive" model of the state which assumes that states have unlimited ability to extract resources from domestic societies and convert those resources into power. Thus, according to this author, the original formulation of Neorealism fashioned by Waltz "cannot account for variation in rate, scope, or extent of military diffusion or the likelihood that any particular state will pursue large-scale emulation, innovation, or any other internal balancing strategy" (p. 146).

Accordingly, the works of Resende-Santos (1996, 2007) and Elman (1999) above described are considered by Taliaferro (2007) as belonging to defensive realism and not neorealism, since those scholars add structural variables (the offense-defense balance and geography) in order to explain variation in the rate and scope of emulation. Moreover, in spite of the fact that both Resende-Santos and Elman tried to develop an explanation for the different timing and scope of emulation between the various states of a system, Taliaferro (2007) is critical of those works since they fail to examine the domestic constraints that states face in responding to systemic imperatives (p. 145-146).

According to Taliaferro (2007), defensive and neorealist theories can only predict that states generally balance, but to explain the type of balancing chosen by states (if emulation, innovation or no response at all), one has to include unit level variables. In his own words: "While systemic variables have causal primacy in shaping states' external behavior, domestic-level variables intervene to determine the types of balancing strategies they are likely to pursue" (p. 131).

For neoclassical realism, while external threat determines that a reaction is necessary, state power (i.e., the relative ability of the state to extract or mobilize resources from domestic society, determined by the institutions of a state, by nationalism and ideology) shapes the type of internal balancing strategies a state is likely to choose. States that face high external vulnerability and, at the same time, have higher extraction and mobilization capacity are more likely to emulate the

military, governing, and technological practices of most successful states. In contrast, states that face high external vulnerability but are lacking in extraction and mobilization capacity will have difficulty emulating. On the other hand, if a state faces low external vulnerability and enjoys high extraction and mobilization capacity, the path of innovation is more likely than emulation. However, if a state does not face considerable external threats and lacks mobilization and extraction capacity at the same time, the probability of both emulation and innovation decreases (p. 131-132).

In other words, *external vulnerability* (which is located at the system's level and comprises the relative distribution of power, the offense-defense balance and geography) is treated as an *independent variable*, while *state power* (which is located at the domestic variable and is determined by state institutions, state-sponsored nationalism and statist ideology²¹) is seen as an *intervening variable*. Together the previous variables explain the choice for an internal balancing strategy (the *dependable variable*).

In a similar vein, Horowitz (2010) argues for the consideration of states' ability to emulate when trying to explain emulation and the diffusion of military practices among the units of the international system. In this sense, he fashions what he calls "adoption capacity theory", which claims that the factors that determine a state's capacity to adopt other states' innovations are: *financial intensity of the innovation* and *organizational capital required to adopt it*. High financial intensity is produced by a *high cost per unit* of the hardware associated with an innovation, and a high degree of *exclusiveness of the innovation to the military realm*. In turn, organizational capital refers to the non-technological aspect of force generation like doctrine, education and training.

In an analogy to the functioning of firms, Horowitz (2010) states that a firm must have a "broad critical task focus" to be able to emulate another firm's innovations. In other words, a firm that does not link its organizational identity to particular methods is more likely to incorporate new ways of achieving organizational goals. In addition, new firms and those that carry out ongoing experimentation of new procedures incorporate innovation more easily.

²¹ According to Taliaferro (2007), in the long term, states can try to increase their extractive and mobilization capabilities, and consequently their ability to pursue emulation or innovation, by purveying nationalist or statist ideologies.

Horowitz (2010) works with the hypotheses that high financial intensity results in low levels of innovation diffusion and that high organizational capital required to implement innovation slows the spread of innovation. But not only adoption capacity determines emulation. According to the author, the strategic choice to adopt innovation also depends on the availability of information about another state's innovation and the potential emulator's interest in adopting innovation due to external and internal environment. His conclusion is that external threats can only predict that a state will respond but not the content of the response, which is determined by its capacity to emulate.

In addition to explaining the behavior of emulation, Horowitz (2010) is also concerned with the success or failure of this behavior, in contrast to the authors mentioned above. In this sense, he also develops a theory of military diffusion. For him, the content of specific innovations does not matter only for changing the way a war is fought, but it is the spread or lack of diffusion that determines winners and losers in international politics. In other words, since military innovation diffusion is part of the causal process governing power transitions, adoption capacity theory could help explain the mechanism by which these transitions occur.

The author claims that innovations that involve low financial intensity and few organizational requirements do not have a significant impact on the system since all states concerned will adopt them. In the same sense, innovations that pose high financial but low organizational demands on potential emulators, do not impact on power distribution since all the major powers are likely to adopt it. At most, this last type of diffusion will contribute to widen the gap among the already powerful and the less so.

On the other hand, innovations that present low financial intensity but high organizational demand may have a significant impact on the system. This is because major powers with consolidated military organizations will face difficulties in adopting innovation, but middle powers may adopt it with more ease. Finally, high financial intensity and high organizational demand innovations may result in the conquest and maintenance of domination by one or more powers, since they provide long term asymmetrical power advantage to countries that produced them.

To sum up, from the works of Resende-Santos (1996, 2007), Elman (1999), Taliaferro (2007) and Horowitz (2010) derive the following variables that aim at explaining the behavior of internal balancing: anarchy, the distribution of capabilities, the likelihood of war, the availability of information about others' military practices, external threats (geography and attack-defense balance) and non-availability of allies to pursue external balancing, state power and the characteristics of the military innovation to be emulated.

Nonetheless, as far as I am concerned, although the above mentioned authors fashioned plausible explanations for the occurrence of internal balancing, their works do not shed enough light on the behavior of internal balancing itself. Therefore, they need to be complemented in order to enable the fulfillment of the attempt to identify this behavior in the current international system. Thus, the next chapter will be dedicated to reviewing other theoretical approaches that may help to verify if China is carrying out internal balancing against the U.S. and if the result of this behavior is likely to be the global equilibrium of forces, i.e., the end of unipolarity.

3

Further developing the concept of internal balancing

3.1

Introduction

In view of the theoretical lacuna previously highlighted, this chapter aims at developing criteria to empirically identify the process of internal balancing. In other words, it will be dedicated to the deductive construction of a theoretical model of internal balancing, which will be afterwards contrasted to China's economic and military behavior in the period succeeding the end of the Cold War.

For that purpose, I recur to theories in the field of International Relations that might shed light on the phenomenon of internal balancing such as the Power Transition Theory (PPT), the Theory of Hegemonic Cycles (THC) and the Leadership Long Cycle Theory (LLCT). These theories have in common the fact that their supporters all claim to be rationalist in the sense that they: 1) are not concerned with states' formation of preferences, and that 2) they work with the premise that the objects of analysis (either states or decision makers) act rationally. In addition, these theories share a common emphasis on economic and domestic factors involved in the process of states' rise.

On the other hand, the effort to further develop the concept of internal balancing will be in close dialogue with the specialized literature reviewed in the first chapter of this dissertation, such as the works of Elman (1999), Taliaferro (2007), Resende-Santos (2007) and Horowitz (2010). As will be discussed in what follows, this literature contributes to the characterization of internal balancing as a process that involves the behaviors of **off-setting**, **emulation** and/or **innovation**.

3.2

Theorizing about the rise of powers and its relation to the behavior of internal balancing

This section reviews the literature on the rise of powers in search for theoretical insights for the better characterization of the process of internal balancing. This effort is based on the assumption that internal balancing is correlated with the rise of new powers in the sense that it comprehends a set of behaviors that might lead to the transformation of a state power into a pole, resulting, therefore, in structural change. It is important to highlight that internal balancing is not here seen as a synonym for economic growth. In other words, mere economic growth does not characterize balancing. However, economic growth, a phenomenon stressed by the literature on hegemonic cycles, is regarded as a necessary step for internal balancing to happen. It is also one of the phenomena that compose the phenomenon of internal balancing itself. Accordingly, the various hegemonic cycle theories help in the attempt to better characterize the economic and domestic components of the internal balancing process.

3.2.1

Bringing in Power Transition Theory (PPT), the Theory of Hegemonic Cycles (THC), and the Leadership Long Cycle Theory (LLCT)

This dissertation supports the claim that the explanatory and predictive value of theories that focus on balancing behaviors could be increased by the introduction of **economic** and **domestic considerations**. In this respect, Brawley (2004) argues that there is an often disregarded economic component in both external and internal balancing. Concerning external balancing, the formation of alliances is often accompanied by the attempt to strengthen oneself and ones' allies through increased trade between allies, together with the exclusion of enemies from the benefits of these relationships. In turn, any internal balancing policy necessarily involves an economic component, which is related to the pursuit of economic growth; this being an essential step for the acquisition of military capabilities.

Although Brawley (2004) advocates the observation of economic factors in both types of balancing, his emphasis, as mine, lays on internal balancing. This is because this scholar argues that significant and lasting increases in national power come from domestic and not from external sources. In other words, external balancing alters the distribution of power quickly but not permanently (since the configuration of alliances may change), while internal balancing is a way of changing the distribution of capabilities in the long run (p. 82).

Notwithstanding the effectiveness of internal balancing in changing the international structure, the choice between internal and external balancing also takes other issues into consideration. According to Brawley (2004), the type of balancing behavior chosen by the states depends on the following factors: *the perception of decision makers on **when** they will need to contain an opponent and the conversion **speed** of wealth into power*. Hence, this scholar highlights a simple but often forgotten fact that wealth is not perfectly transmutable into power and that the speed of this transformation is variable throughout history.

Taking this conversion rate into consideration, one could arrive at the following conclusion: *since the effects of balancing behavior in terms of producing a global balance of power depend on the conversion speed of wealth into power, it is possible that China is currently balancing the U.S. power, but that the consequence of this behavior has not been international equilibrium due to a low conversion rate of wealth into power*. In other words, one cannot assume that there is no balancing from China's part because this country has not achieved capabilities equivalent to U.S. arsenals. It is possible that this country is balancing, but that the result of systemic equilibrium is being delayed owing to a current low conversion speed of wealth into military power¹. From that conclusion derives the main hypotheses of this dissertation: **that China is already engaged with the behavior of internal balancing against the U.S.;** and, consequently, **that internal balancing is involved in changing the unipolar system inaugurated with the end of the Cold War.**

¹ It is important to highlight that conversion rates are determined by the military state of the art (BRAWLEY, 2004). In other words, if one assumes the existence of a current low conversion rate (given the fact that the production of modern weapons capabilities requires large sums of investment in research and development and training of personnel), that rate applies to any state, not only to China.

The emphasis on studying internal balancing is justified not only in view of the underdevelopment of the topic amongst balance of power theorists but also due to the fact that external balancing, by definition, is expected to be lacking in a unipolar system. This is because there are no other poles available to form counter-balancing alliances. In this sense, Brawley (2004) argues that the only candidate to balance the U.S. in the medium term is China. So, if this country feels threatened by the imbalance of power with the U.S. and tries to produce equilibrium in the short term, Brawley states that there are no allies available, leaving China with internal balancing or bandwagon² as its only options. But if the Chinese goal is to leave attempts to produce a balance to the more distant future, it could make use of military appeasement³ in conjunction with the continuity of economic development efforts. In both cases, the dominant strategy for China is economic development. However, according to Brawley, the only power that might feel threatened by the USA (wishing, therefore, to balance this country's power) has little hope of achieving a balance quickly. Thus, in an environment where there are no allies available and the conversion speed of wealth into power is low, the author believes it is more likely that rising powers will choose appeasement to the detriment of balancing.

Although Brawley (2004) does not believe that balancing tends to occur in the short term, he sheds light on the fact that balancing, whenever it takes place, involves economic issues. Thus, in tune with this author's thoughts, I argue that Power Transition Theory (PTT), the Leadership Long Cycle Theory (LLCT) and the Theory of Hegemonic Cycles proposed by Gilpin (2002) can assist in the production of criteria for the identification of balancing behaviors. In what regards the PTT, I understand that this proposal may engender reluctance considering the widely recognized differences between balance of power theories and PTT. In fact, balance of power systemic theories are based on assumptions diametrically opposed to the latter.

In this respect, Organski and Kugler (1980) – the main proponents of PTT – suggest that, for balance of power theorists, wars will be less likely when there

² *Bandwagoning* is a strategy opposed to balancing to the extent that it implies that the weaker ones flock to the side of the stronger rather than uniting against it (MEARSHEIMER, 2001).

³ Appeasement means no direct confrontation with the rival power and the concession to some of its designs in the hope of containing their focused rivalry (MEARSHEIMER, 2001).

is equilibrium between states⁴ and that the probability of war increases when there is concentration of power in a single actor, in which case strong actors would be tempted to use force to achieve their goals. Thus, also according to Organski and Kugler, balance of power theories predict that the units of a system will seek to avoid the concentration of power in a single actor, and that this makes the formation of balances of power a frequent result in the international system.

In contrast, Organski and Kugler (1980) highlight that, for the supporters of PTT, the international system is often dominated by a single power that establishes the rules which will govern the interaction between units. The main assumptions of this theory are that: 1) the concentration of power in a dominant state creates stability and peace, and that 2) wars are more likely when a dissatisfied power reaches parity with the dominant power. Accordingly, for PTT, wars do not follow directly from the distribution of power: there must be dissatisfaction with the existing order from the part of the ascending powers and a desire to change the rules of the game (ORGANSKI; KUGLER, 1980; TAMMEN *et al.*, 2000).

Besides the different perceptions over the systemic effects of various power configurations with regard to the likelihood of war, for Organski and Kugler (1980), the theories also differ in what comes to the mechanisms of power redistribution focused by each one of those theories. According to Organski and Kugler, balance of power theories postulate that the redistribution is caused by the formation of alliances, i.e., states often do not change, but the way they are arranged with each other changes. It is not that a state cannot try to strengthen itself internally, but the easiest way to accumulate power would be to form an alliance with other states, making such behavior recurrent in the international system.

⁴ It is important to remark that this is a very controversial point. According to Vasquez's interpretation (1997), with which I fully agree, Waltz (1979) considers wars possible in times of balance (although unlikely) since they can be regarded as a mechanism available to decision makers in order to promote equilibrium in the system. Morgenthau (1965) and Bull (1977) also seem to acknowledge wars as possible in times of equilibrium. Therefore, contrary to what Organski and Kugler (1980) argue, some important proponents of the balance of power theory seem to understand that wars, in spite of being less likely, could not be ruled out of balanced systems. Nonetheless, the belief in the prevalence of a state preference towards the avoidance of concentrated systems is a common and non-controversial feature among balance of power theorists.

In turn, supporters of PTT believe that the greatest source of power is the very socioeconomic and political development of states. This is because the formation of alliances is not an easy task. In addition, alliances cannot change long-term trends. If gaps of power between states are large, it is likely that alliances will only be able to change the size of the intervals, but not the ranking among the powers that dominate the system. Therefore, Organski and Kugler (1980) argue that, historically, the biggest changes in the distribution of international power occurred outside the pattern of alliances.

Despite the contrast made by Organski and Kugler (1980) between PTT and balance of power theories, this dissertation proposes the articulation between these approaches. This is because the alleged unbeatable contrast between those theories stems from two misconceptions held by Organski and Kugler regarding balance of power theories. First, the authors only work with the *systemic version of balance of power theory and treat it as a foreign policy theory*. Consequently, these scholars end up dealing with the various balance of power theories as if they were a single theory which equally employ the prediction that states seek to balance by means of forming military alliances. As explained in the discussion of Martin's work (1999), which was pursued in the previous chapter, attempting to explain the recurrence of balanced international systems does not necessarily equate the prediction that states have a preference for balancing behaviors in all circumstances. It is therefore necessary to differentiate between systemic theories, which try to explain the formation of equilibrium, from theories that analyze balancing behaviors and policies.

Secondly, Organski and Kugler (1980) mistake when they assign exclusive importance to external balancing at the expense of internal balancing within balance of power theories. In this regard, provided that adequate significance is given to internal balancing within balance of power theories, at least one of the mechanisms of international change predicted by this theory (internal balancing) is compatible with the main mechanism of change identified by PTT, that is: economic growth.

This is where lays the possibility of linking these theories: in view of the fact that PTT focused its efforts on the analysis of the economic aspects involved in the process of power redistribution, this approach could deepen our understanding of the economic aspects that also characterizes the phenomenon of

internal balancing. In other words, although the link between a systemic balance of power theory with PTT may be difficult in face of different assumptions regarding most likely systemic results, PTT is perfectly compatible with a theory of balancing, i.e., a theory aimed at explaining the behavior of balancing but not committed to the assumption that equilibrium is a systemic trend.

In particular, PTT empirical studies drive attention to the importance of domestic factors in promoting change in the international distribution of power, to the detriment of the formation of alliances and major wars. Organski and Kugler (1980) claim that, in the long run, losers of major wars reach winners when it comes to power capabilities. This is because losers' rates of recovery are greater than the winners' rates: this is referred to by those scholars as the Phoenix Factor, implying that losers have historically risen from the ashes.

According to these scholars, this reemergence has nothing to do with the help of winners to losers, since in carrying out empirical tests they found no statistical correlation between reemergence and foreign aid. For instance, a country that received a smaller amount of aid compared to European countries, Japan, recovered at higher rates than Germany. Thus, the authors argue that the effect of wars in the distribution of capabilities is limited to the short-term, but that in the long run (15 to 20 years) the system re-assumes the characteristics that existed before the war. Thus, the scholars conclude that changes in the distribution of power are shaped by differential growth rates between countries and that those rates cannot be changed, not even by great wars. Thus, they conclude that the origins of the independent variable (power distribution) are internal or domestic, not external (ORGANSKI; KUGLER, 1980, p. 144-146).

Additionally, other supporters of PTT such as Tammen *et al.* (2000) argue that given the fact that there is no way to contain the growth of challenging states at differential rates, the dominant states only option is to strengthen their alliance with states whose resources can make a difference in the international distribution of power. In this sense, Tammen *et al.* see alliances as a mechanism available to dominant states in order to prevent change and not as a mechanism to promote change in the international system (p. 38).

Therefore, I argue that one of the hypotheses that drives this dissertation – namely, that internal balancing is an important factor in changing the unipolar international system inaugurated after the end of the Cold War – is compatible

with the work of Organski and Kugler (1980). This allows the use of these authors' main conclusions as inspiration to better characterize the phenomenon of internal balancing.

Accordingly, Organski and Kugler (1980) set apart three concepts often mistakenly treated as one by neo-realists: **national power**, **national capabilities** and **military might**. **National power** refers to the capacity of a state to control the behavior of another state. Such control may occur due to the former's economy or to its capacity to concede selective incentives or even to punish the latter. Thus, the exercise of **national power** requires the mobilization of **national capabilities** to control the actions of others. However, the power held by a state should not be confused with its **military might**, since it also includes capabilities other than military arsenals.

According to Organski and Kugler (1980), national power depends on the *number of people who can work and fight*, on the *skills and productivity of the economically active population* and on the *governmental capacity to mobilize human and material resources for the achievement of national objectives*. Therefore, these scholars' main thesis is that the way and the speed of development and economic growth change the portfolio of resources of a nation. And precisely because economic development is not distributed equitably, power will not be evenly distributed either.

Trying to operationalize the national power concept, Power Transition theorists have developed indexes of power that supposedly help in predicting the results of international conflicts and the frequency of these conflicts in various systemic configurations. It is argued here that the study of the variables developed by those scholars for the purpose of predicting conflict outcomes and of their respective proxies can help in characterizing the process of internal balancing.

In particular, Organski and Kugler (1980) draw attention to the variable *political capacity*. The inclusion of this variable stems from these authors' criticism that previous measurements of power did not incorporate the following question: *do the elites of countries surveyed have the necessary tools to ensure the extraction of resources from civil society, mobilizing them towards national objectives?* The consideration of the political capacity variable is the result of the understanding that the possession of resources is not enough, it is imperative that they are usable.

To measure variations of political capacity, the authors tried to develop indicators that could denote states' ability to perform tasks imposed internally and externally, signaling states' penetration into society and their capacity to extract resources from it. In this sense, the *ability to tax society* (what governments get from taxes as opposed to what it could be achieved if taxation reached the totality of taxable goods and services) is one of the indicators of power derived from PTT.

Conducting a review of PTT between 1980 and 2000, Tammen *et al.* (2000) argue that one of the great contributions of this theory is the equation that considers power as a result of the sum of population size, productivity and state political capacity, or: **power = population + productivity + political capacity**. Such an equation, advanced by the work published in 1980 which was reviewed above, has the merit of capturing the dynamics of power transitions.

Therefore, in order to study the rise of states in the international system, PTT inspires us to pay attention to *variations in population* (monitoring birth and mortality rates, for instance) and in *capital and labor productivity*, since those are variables that determine states ability to rise economically. In addition, one should also monitor the ability of governments to use the revenues of economic growth for state purposes, i.e., to the political capacity of states. For that purpose, it is important to pay attention to changes in central governments' fiscal policies.

On the other hand, the Theory of Hegemonic Cycles fashioned by Gilpin (2002) can also be useful in the attempt to better characterize the phenomenon of internal balancing. In particular, this scholar highlights a group of domestic factors whose operation result in change in the international distribution of capabilities. Analyzing international political change via the rise of new actors, Gilpin (2002) assumes that states will try to change the international system when the perceived benefits of this change outweigh the costs.

Accordingly, from the material context, emerge what Gilpin (2002) calls **environmental factors**, which are responsible for altering the perceived costs and benefits involved in the attempt to transform the international system. However, if a state will in fact pursue change depends on **domestic factors** such as the activities of interest groups inside a state of reference (p. 50-55).

The *environmental factors* cited by Gilpin (2002) are: *technological transformations (especially in the transportation and communication sectors), and military and economic changes*. These factors result in significant gains to

some states and in losses to others. The disequilibrium among winners and losers derived from this process is followed by the pursuit on the part of winners to change the system (p. 55-56).

As an example of the operation of environmental factors, technological improvements in the transportation sector increase the area over which a state is able to exercise effective military power and political influence. Thus, the territorial integrity of a political entity and possible attempts of territorial expansion are mainly functions of the costs faced by a state in the exercise of political and military control over large areas (GILPIN, 2002).

In this sense, improvements in transportation and also in communication could encourage political unification as well as military expansion. By facilitating the ability of an empire or of a dominant power to extract and use the wealth of the conquered territories, such innovations create economies of scale, being advantageous for large states. They make easier the suppression of rebellions, as well as the supervision of subordinate local officials, encouraging political consolidation and even the formation of empires, reducing costs and increasing the benefits of conquest (GILPIN, 2002, p. 56-59).

As for military technology, the adoption of new weapons and the development of new tactics or new models of military organization have historically enabled states and groups to conquer territory. According to Gilpin (2002), military innovations are important when they increase the area over which it is profitable to extend military protection in exchange for income, encouraging economic and political expansion and the formation of political entities of greater areas (GILPIN, 2002)⁵.

A third environmental factor that influences the profitability of change in the international system is the economic system. Gilpin (2002) argues that the interaction between economics and politics is an important aspect of the process of change in international politics. The desire to obtain economic gains is a powerful motivation in seeking to change the system, and the distribution of

⁵ However, the duration of a military advantage conferred by an innovation is a function of the scale and the complexity of it and of the prerequisites for its adoption by other societies. A simple innovation in weaponry brings an advantage of short duration to the extent that such weapons can easily be copied by the innovator's opponents. However, the adoption of a new weapon accompanied by tactics involving social discipline may not be copied easily, providing long-term advantages (GILPIN, 2002).

power between domestic groups and states determines the pattern of economic activity and which actors will be most benefited by the domestic and international division of labor. In a world of limited resources, groups and states will seek to control and organize economic relations and activities in order to increase their share of eventual economic surpluses.

Economic changes operate the same way as technological and/or military changes, creating incentives for international change if the benefits of transforming the system are increased and/or if the costs of doing so are decreased. The types of economic change that may alter these costs and benefits are numerous. According to Gilpin (2002), any development that increases the demand for bigger markets, capital or raw materials will encourage a state to expand its political or economic influence. In addition, any development that reduces the costs of economic transactions will also encourage the transformation of economic and political relations.

With respect to the **domestic sources of international political change** specifically identified as such by Gilpin (2002), this scholar begins by questioning what it would take for a society to seize opportunities arising from environmental changes and venture out to change the international system. In this sense, the author recalls previous attempts to establish correlations between the internal composition of a state and the propensity for expansion, which explore the various ways in which the national character, the economic structure and the political culture of a state could influence its foreign policy.

According to Gilpin (2002), despite the historical specificities of each power candidate's attempt to change the international system, some generalizations are possible. The crucial aspect of domestic regime change related to the transformation of international politics is the ***relationship between private and public gains***. If the growth and expansion of a power candidate appear to be complementary to the interests of dominant domestic groups, there are incentives for expansion and for the attempt to change the international system. However, if the expansion takes place by imposing high costs on those groups or threatening their interests, there are negative incentives for the attempt to change the international system.

Moreover, ***social, political and economic domestic arrangements*** would create incentives for individuals or groups to behave in a way such as to

contribute to state power aggrandizement, affecting a state propensity to attempt to increase its control over the international system. For Gilpin (2002), states that encourage their citizens through private incentives (or selective incentives in Mancur Olson's terms) to carry out activities that promote the power and wealth of a society are more likely to achieve the transformation of its position in the system (GILPIN, 2002, p. 97-98).

Finally, Leadership Long Cycle Theory (LLCT) can also contribute to the characterization of the phenomenon of internal balancing due to its developments on the analysis of the rise of states in the international system. According to Rasler and Thompson (1994), for the past 500 years, global political economy has experienced a sequence of capability concentration, deconcentration and reconcentration. These authors argue that the fluctuations in capability concentration and systemic wars are closely related since global wars occur in periods of deconcentration, reestablishing concentration in the system.

In that sense, Rasler and Thompson (1994) claim that the most critical historical pattern of structural change has been one of attempted transitions between an ascending and expansionist regional leader and a declining global leader specialized in long distance, interoceanic transactions (p. 1). In other words, there are two dynamics that interfere upon the phenomenon of international change – a global and a regional one – and at least two types of actors involved in the process – global and regional powers.

LLCT has a very peculiar way of identifying global and regional powers. According to this theory, **global powers** must demonstrate that they have the capability to operate over long transoceanic distances by assembling minimal naval capabilities (10% of global capability pool). They must also demonstrate interest in actually using sea power beyond their region: “A navy that operates in only one sea – the Mediterranean or the Baltic, for instance – no matter how many ships it has, remains a regional power” (RASLER; THOMPSON, 1994, p. 17).

In turn, a **world power** must possess at least 50% of the global naval capability pool at the conclusion of a global war. Until now, five global wars⁶

⁶ To qualify as a global war, a conflict must lead to the re-concentration of naval capabilities in the system. Or, in Thompson's (1988) words: “Global wars thus demarcate a period in time when economic and military power concentrations come together to provide a systemic leader with the underpinnings for altering the rules of the system and promoting a new world order” (p. 165).

have happened: 1) Italian and Indian Ocean Wars (1445-1516); 2) Spanish Wars (1580-1608); 3) Wars of Grand Alliance (1688-1713); 4) French Revolutionary and Napoleonic Wars (1792-1815); 5) First and Second World Wars (RASLER; THOMPSON, 1994, p. 17).

Therefore, LLCT sustains two basic propositions: 1) that, in the modern world, world powers have been sea powers (or ocean powers), exercising command of the sea; and 2) that changes in the position of world leadership are associated with shifts in the distribution of seapower (MODELSKI; THOMPSON, 1988).

But why is seapower emphasized by this theory? First of all, it is considered an essential component of world order because of what navies can do in war: 1) neutralize and destroy opponents' navies (sea control); 2) preserve home bases from attack and invade opponents bases (power projection); 3) safeguard friendly communication and trade and intercept lines and commerce of opponents; 4) guard and secure essential links with allies. In times of peace, a navy with capabilities similar to the American ones can: 1) with its missile and attack submarines, deny a challenger the opportunity of a surprise attack and victory (deterrence); 2) be used to retaliate an attack (for that purpose, carrier forces and missile-carrying submarines are essential); 3) protect trade routes, 4) limit the intercontinental mobility of the missile forces of a challenger's military forces and create conditions for the movement of allied forces (MODELSKI; THOMPSON, 1988, p. 11-13).

In addition:

Seapower may be regarded as a superior medium because it offers higher generality for the following reasons: 1) it confers greater mobility, hence access to a wider variety of resources and experiences; 2) it employs higher-order technology, is more expensive, and generates greater innovation; 3) it carries larger information content, higher visibility and symbolic load; 4) it operates world-wide and at the global level (MODELSKI; THOMPSON, 1988, p. 14).

But a note of attention is in order: the centrality of seapower is related to the fact that this has been a means frequently used by world powers to achieve global reach. In this sense:

Contrary to popular impressions, the leadership long cycle argument is not about cycles of seapower concentration. Rather,

seapower has been the global reach capability of choice for much of the past 500 years. Other types of capabilities are not dismissed as irrelevant. But they either tend to be of less significance for global reach or already hinted at by the distribution of seapower capabilities (THOMPSON, 2006, p. 4).

However, it is important to stress that the centrality of seapower is not regarded as immutable by the theory. According to Modelski and Thompson (1988), the viability of the naval-strength indicator ultimately rests upon the maritime character of the decisive battles in past global wars.

In contrast to global and world powers that are defined in terms of their naval superiority and their consequent capacity to project power and protect commercial routes, regional powers are defined by land superiority. Therefore, the proxies used by LLCT scholars to measure regional and global powers capabilities are very different from each other. When it comes to global powers, the indicators are expenditure with naval capabilities and/or possession of specific vessels⁷, but, to identify a regional power, the proxy is army size.

In addition, regional dynamics differ from the global one not only because the capability gathered by the units is different, but because the effects of concentration and deconcentration are also different between the levels. LLCT scholars claim that unipolarity or high concentrations of power at the regional level have destabilizing effects but that, at the global level, concentration of power equals stability. Then, if we relate the two arenas, we will notice that the likelihood of wars is greater whenever we have a deconcentrating global system and a reconcentrating central regional system. Therefore, the global and regional dynamics are connected: the deconcentration of global power appears to give rise to regional bits for hegemony and a regional threat encourages reconcentration of global power. So, the picks of regional and global power do not coincide, but are related since one gives rise to the other. The authors test this hypothesis empirically and seem to find support for it. Also, they think the interplay between regional and global structures is likely to continue in the future. However, this

⁷ Indicators of global reach capability from 1946 until today: “number of heavy or attack aircraft carriers and, after 1960, number of nuclear attack submarines and number of sea-based nuclear warheads weighted according to equivalent megatonnage (EMT) and counter military potential (CMP) – with carriers, attack submarines, EMT, and CMP given equal weight in a combined index” (THOMPSON, 1988, p. 49).

time, the central region whose dynamics is important to the global one will not be Europe but East Asia (p. 71)⁸.

The concentration of power on some units (or the rise of powers) obeys prerequisites some of which are particular to time and space, but some repeat themselves. To attain the status of world power, four prerequisites have been essential up to now: **geographic insularity, societal cohesiveness and openness, preponderance of global-reach capability and economic leadership**. Insularity is highlighted by the LLCT scholars since it determines that land forces will not be central to a world power and that, in turn, naval power will be a natural concern. The achievement of naval power superiority is of paramount importance in the protection of global trade routes. On the other hand, the relative lack of land forces means that other states will not fear to be conquered by the world power (RASLER; THOMPSON, 1994).

In addition, LLCT gives special attention to *economic innovation* arguing that the rise of powers is predicated eminently on it. This is because innovators temporarily possess monopoly over innovation and enjoy great economic advantages from that fact. Accordingly, decline is also related to innovation, being caused by its diffusion among other units of the system and the consequent loss of the monopoly advantage (RASLER; THOMPSON, 1994).

It is important to stress that this literature is not concerned with any kind of innovation but with those innovations **related to the leading-sectors of the global economy** (the most productive ones). Innovations in leading-sectors fuel economic growth, developing elite interests in trade and global orientation, and generating economic surplus to pay for naval power (RASLER; THOMPSON, 1994, p. 18). In this sense, each world power goes through two phases of

⁸ According to Thompson (1996), the acknowledgment of these two different dynamics (regional and global) is what allows us to integrate PTT and balance of power theories. In other words, for this scholar, the dichotomy among those theories is a matter of interpretation. This is because Organski and Kugler (1980) contrasted their theory to a certain kind of balance of power theory, which is solely a possibility but not the only kind available. For Thompson, it is impossible to resolve the question of whether equality brings war or peace since movements away and to restore inequality happened in different levels and speeds and equality in Europe was dependent on non-regional resources. Therefore, it is the realization of the existence of different regional and global dynamics and of the existence of a connection between them that can reconcile balance of power theories and PTT. In regional balances, inequality tends to be destabilizing. But in what comes to the global balance, periods of concentration are periods of lack of global wars. Global wars occur in the context of global deconcentration. The most destabilizing transition occurs between ascending regional powers and declining global leaders.

innovation: one before and one after the global war of the period. From the fifteenth to the eighteenth century, important innovation had to do with seaborne commerce. By the end of eighteenth century, innovation was related to industrial production.

In short:

Long-term economic growth, according to the leadership long cycle perspective, is based on radical shifts in commercial and technological innovations that tend to be concentrated initially in one state at a time. A spurt of growth in one state revolutionizes best economic practices and also destabilizes the international system's pecking order. The ensuing global war, assuming a decisive outcome, restabilizes the global system by producing a clear winner. The state with the system's lead economy or principal source of innovation and, later, credit and finance. The benefits of war-induced growth and a world economy tilted in its direction then leads to a second, postwar spurt of innovation and growth. In this fashion, each lead economy experiences at least one "twin peak" set of growth built around a long global war period (THOMPSON, 2006, p. 3).

After the exposure of the main arguments of PTT, the Theory of Hegemonic Cycles and the LLCT, it is important to evaluate their possible contribution to this dissertation. According to Tammen *et al.* (2000), PTT would have the merit of capturing the effects of the dynamics of power transition on the behavior of states, showing, for example, that states would be more prone to war in times of the overtaking of one power by another. It is this dissertation's argument that the same applies to the Theory of Hegemonic Cycles and to LLCT. In this sense, all these three approaches show that the dynamics of change in the distribution of power impact on the behavior of states, even if a change in system's polarity has not yet been accomplished. In other words, polarity is not the only variable affecting the behavior of units, but also the dynamics of polarity transformation influence state actions⁹. Hence, these are theories that deal with the problem of international change within a realist framework.

⁹ It should be noted that, while recognizing the validity of this step (i.e. while agreeing with the statement that not only polarity impacts on the state behavior, but also the dynamics of change in the distribution of power), authors such as Copeland (1996) state that the PTT and the theory of hegemonic cycles suffer from a logical problem, to the extent that they predict that it is the challenging state the one who starts wars of transition. However, why a state would dare to wage war when it has not yet consolidated its power? In contrast, Copeland (1996) argues that the most correct, both from a historical and a logical standpoint, would be to think that war would be

In this sense, even though my ultimate goal is not to explain the behavior of individual states, but the systemic results derived from it¹⁰, I argue that PTT, LLCT and Gilpin's Theory of Hegemonic Cycles can assist in the attempt to develop the components neglected by theories that discuss balancing, namely the economic and domestic transformations that precede the definitive change of the systemic distribution of capabilities. This is to say that, from these theories, I infer features to be observed in the attempt to characterize the phenomenon of internal balancing¹¹. However, these theories cannot be the only theoretical background used in the characterization of balancing behavior. This is because they describe behaviors that can be considered steps in a broader process of internal balancing, but that alone could not be characterized as such.

3.3

How to differentiate balancing behavior from politics as usual?

In the previous section, I argued that the incorporation of economic and domestic variables to the theories of balancing will help in understanding the transformations that need to be undertaken by rising powers so that international change through internal balancing shall occur. However, the engagement of this literature does not solve the following problem: how to distinguish a country's mere growth from its rise in the system via balancing?

In characterizing balancing, Martin (1999) argues that there cannot be a complete decoupling between the results expected by systemic balance of power theories and balancing behaviors analyzed by theories of foreign politics. In this

initiated by the declining power. Thus, the author develops a theory that seeks to predict the conditions under which a declining power would start a war. This trend would vary according to the distribution of power in the system and with the portfolio of power resources of the declining state. For Copeland (1996), declining states would be more likely to initiate wars when their decline occurs in a bipolar system, given that within that system there would be no possibility of using the external balancing (the formation of alliances) to contain the candidate to hegemony. War would also be more likely when the declining power loses economic and potential power. The loss of economic power raises state concern due to the possibility that the future conversion of wealth into military might may be impaired by the decline of wealth in the present (p. 54-55).

¹⁰ In other words, my dependent variable is not state behavior as in the case of PTT, but the distribution of capabilities in the system.

¹¹ This point is best developed in the next section.

sense, as mentioned previously in the first chapter, this scholar considers imperative the **translation** of systemic theory into theories of balancing, recognizing, therefore, the link between these theories, but also their coexistence. To perform this translation, she suggests that some adjustments are needed.

In particular, she proposes that the researcher's focus should move out of the systemic outcome actually achieved and weigh on the motivation of state behavior. In view of the existence of structural pressures defining results, intentions cannot be inferred by analyzing outcomes. Thus, she argues that it is necessary to study motivations themselves.

It is important to note that the theory of balancing proposed by Martin (1999) aims to be a translation of one of the most traditional balance of power systemic theory (the theory fashioned by Waltz, 1979) in a theory of foreign policy that addresses the actual pursuit of the balancing behavior by states. To do so, it is necessary to create criteria to identify balancing behavior and the main criterion proposed by Martin (1999) is the **intention** to balance and not the actual production of systemic equilibrium. Therefore, if the criterion established by Martin was to be followed herein, a country's economic rise, for instance, would count as balancing behavior if the intention to balance was present.

It is important to keep in mind that the theory of balancing quickly drafted by Waltz (1979) when formulating his systemic theory ignores intention and stresses the capacity to effectively produce the outcome of equilibrium to characterize a behavior as balancing. What I mean by this is not that Martin (1999) is mistaken. Nevertheless, it is essential to make clear the differences among various ways of operationalizing Waltz's systemic theory in a theory that deals with state behavior.

Accordingly, I believe that the herein adoption of Waltz's understanding would make my study sealed to any attempt of falsification. Since one of my goals is to analyze the tendency that balancing transforms the contemporary international system, if I start with the assumption that balancing policies are fully linked to the outcome of equilibrium (in the sense that balancing is defined by the effective production of equilibrium), in case that in the end of the survey I concluded that an equilibrium did not seem to be an approaching trend, I could simply infer that no attempt of balancing has been carried out, without even considering the possibility that balancing is being done inefficiently nowadays.

And to consider that balancing is being done inefficiently is imperative when one has in mind an even more important question for the realist research program, which is: can the balancing mechanism really change the current international unipolar system?

Nonetheless, if I decided to follow Martin's criterion (1999), I would have to come up with a way of assessing intentions. But this scholar herself acknowledges the difficulty of this task:

The lack of a clear understanding of what constitutes “balancing” also explains why there has been little investigation of “internal balancing”. The general assertion that states acquire arms in response to external threats is widely accepted, but once we examine specific decisions to acquire particular armaments, it becomes necessary to deal with other possible motives for acquiring arms – the interests of defense industries and the armed services, for example. These competing explanations become even more difficult to handle if one includes other, more indirect ways of increasing a country's power as examples of internal balancing (online source).

Therefore, in awareness of the difficulty of gauging the intent of China or of Chinese authorities, I advocate the need to come up with more objective criteria in order to identify balancing behaviors. In addition, I argue that the criteria developed must obey some requirements that help to differentiate balancing from other kinds of behavior.

In this sense, I firmly believe that PTT, the Theory of Hegemonic Cycles and LLCT help in the establishment of criteria for a better characterization of balancing behavior. In especial, they assist in grasping the economical and domestic aspects involved in internal balancing. However, the criteria whose conception was inspired by the above mentioned theories need to obey some requirements so as to make sure that they refer to balancing and not to other sorts of behavior. Those requirements will be better clarified below, where the internal balancing model that guides this dissertation is developed.

3.4

A theoretical model of the process of internal balancing

The main question that drives this dissertation is: to what extent is the contemporary unipolar international system being transformed through internal balancing? In response to this question, two hypotheses are proposed: **that China is already engaged with the behavior of internal balancing against the U.S.;** and, consequently, **that internal balancing has already begun to change the unipolar system inaugurated with the end of the Cold War.**

It is important to draw attention to the fact that the research question and the proposed hypotheses are influenced by a group of different theoretical approaches such as the neo-realism of Waltz (1979) and the Power Transition Theory (PTT) established by Organski and Kugler (1980). However, this dissertation is not fully in tune with any of those theoretical approaches. It goes without saying that Waltz's work (1979) greatly influences the formulation of the research question herein proposed. Committed to the idea that international systems tend towards equilibrium, Waltz (1979) ended up suggesting that an important source of international change, especially with regards to unipolar systems, is balancing. This is due to his claim that states tend to react to great concentrations of power, making unipolar systems rare and of short duration. However, this author did not give details about the activities that are undertaken by states to reach systemic balance. This is because, as discussed previously, his theory is not a theory about the behavior of state units, neither a theory of foreign policy, but a systemic theory that focuses on the explanation of systemic results. In this sense, the study of the prospects that the current system changes through balancing is theoretically inspired by Waltz (1979) to the extent that this research question comprises categories with which this scholar worked, such as balancing, balance of power and systemic stability. In particular, this dissertation's understanding of what is international change is mainly inspired by Waltz (1979): it is not any kind of change that constitutes the object of this work, but transformations in the distribution of capabilities among states.

However, the analysis of the prospects that the current international system changes through internal balancing necessarily involves the study of prospective balancers' behaviors. Accordingly, it is imperative to operationalize Waltz's theory in a theory of units' behavior. In other words, my dissertation will comprise domestic aspects that are not included in Waltz's work. This is not because I intend to explain units' behavior by adding domestic variables, but

because I need to define what kind of behavior counts as balancing before I can evaluate if this behavior is happening and, in case it is, if it is close to transforming the system or not.

Therefore, at this point, I distance myself from Waltz (1979) and resort to PTT, LLCT and Gilpin's Theory of Hegemonic Cycles. Considering its emphasis on economic features and on developments that occur within states, this literature assists in identifying some features of the internal balancing behavior.

Nonetheless, it is important to clarify that the ultimate dependent variable of this study is the distribution of power in the system and that internal balancing is seen as a possible cause of international structural change. However, I do not neglect the fact that internal balancing is also influenced by the current systemic distribution of power. Therefore, what this dissertation does is to break this process down in order to analyze its parts. Accordingly, the first chapter discussed possible explanations for the phenomenon of internal balancing, among which figures the structure or the distribution of capabilities in a system. Nevertheless, the main objective of my research is not to explain balancing behavior, but to develop ways to identify it empirically and to evaluate its impact on the system, as it is my understanding that this effort was not pursued sufficiently, not even by the few works that specifically dealt with the subject of internal balancing such as Elman (1999) and Resende-Santos (2007) (reviewed in the previous chapter).

Hence, this chapter defines internal balancing and establishes criteria to identify this behavior empirically. For that purpose, it is important to highlight, first and foremost, that internal balancing is not treated here as a *policy*, since this could have unwanted implications regarding the issue of awareness. In other words, if I were to treat internal balancing as a policy, this could imply that balancing only occurs when there is a clear intention to balance. Stated otherwise: readers would think that behaviors could only be qualified as internal balancing when the desire to establish systemic equilibrium (by the part of policymakers or by states considered as a unit) was present. Therefore, in order to avoid restricting internal balancing to an intentional and formal policy, this phenomenon will be considered as a *process* comprised by a series of **behaviors** that are logically in sequence, but that may not be empirically so. That is to say that I deductively develop a theoretical model of the process of internal balancing to be contrasted in

the following chapters to concrete Chinese economic and military behaviors after the end of the Cold War.

At this point, another note of caution is in order: the primary aim is to develop criteria to identify **global internal balancing**, that is, balancing pursued against the sole pole of the unipolar global system inaugurated with the fall of the USSR. This is because it is acknowledged here that balancing can also happen on a regional level, i.e., against regional powers. Nevertheless, as the purpose of this dissertation is to verify if the global system is changing by means of internal balancing, one needs to design ways to differentiate among efforts merely forged to counter regional enemies and efforts aimed at the sole pole.

Therefore, I must promptly clarify that the effective accomplishment of the result of global systemic balance is not herein used as a criterion to identify global balancing practices. This would neglect the possibility that both effective and ineffective balancing behaviors could take place. However, I argue that there must be a connection between the behavior and the equilibrium outcome so that an action can be characterized as balancing. In other words, to qualify a group of actions as global internal balancing, it is necessary to evaluate its *prospects to reduce the capabilities gap between the sole pole and the balancer candidate*. This is to say that, although the results of state actions matter in the characterization of internal balancing, it is not required that those actions produce global equilibrium in order to name an action “global internal balancing”.

In view of that, global internal balancing must be thought as a group of behaviors that would not be pursued if the concentration of power to be countered was not the U.S. This is to say that, to qualify as internal balancing, behaviors need to function as a reaction to U.S. superiority. However, by that I do not mean that the *intention* and the *end result* of those actions are exclusively to be able to deal with American capabilities. Obviously, the same efforts and capabilities used to balance the U.S. could also help a balancer candidate to deal with other possible adversaries. In addition, the global balancer’s *intention* may also be to balance a regional power. When I say that a group of actions needs to function as a reaction to U.S. power to qualify as global internal balancing, I mean that it must *increase a balancer’s capacity to win a possible war against the U.S.*

Nonetheless, I argue that the very first phase of the internal balancing process is characterized by the development of domestic features or, in other

words, economic and political capabilities that do not immediately increase a balancer's capabilities to win a war, but make this possible in the long run. In spite of the fact that it does not immediately increase a balancer candidate's capabilities to win a war against the dominant pole, the economic and domestic components of the global internal balancing process are of paramount analytical importance since they help to differentiate between global internal balancing and other sorts of defensive improvements. Clearly, global balancing involves improvements on defensive capacity against a possible attack by the sole pole. However, if balancing behavior results were restricted to this requirement, any increase on a country's arsenal or defense modernization would qualify as balancing, since it potentially improves the prospects of defense. Nonetheless, global balancing is here seen as a means of global political change. It is a behavior put into effect by a state in the path to becoming a pole in the system, i.e., of not only being better at defending itself against any enemy, but being able to actually win if involved in a major conflict against global powers. And to win a conflict weapons are of course needed, but economic and political capabilities to sustain the war effort are also essential.

In this respect, the various theories mentioned previously drive attention to different domestic and economic features which inspire the characterization of the first phase of the global internal balancing process. As was developed in the preceding sections, PTT supporters stress that transformations in **productivity** and **population** are related to the rise of powers and Gilpin (2002) drives attention to transformations in sectors such as **transportation, communications**, and in the **economic system** itself. In addition, LLCT scholars highlight the causal relation between **economic innovations** and the rise and fall of great powers. According to these scholars, the rise of a dominant power is the result of some sort of invention related to the leading sectors of world economy which provides the inventor with the sort of advantages that usually derive from monopoly. In contrast, the decline of a dominant power is caused by the diffusion of its economic innovations to other states (RASLER; THOMPSON, 1994).

In view of that, I believe it is reasonable to expect that a dominant power candidate will first emulate the current dominant power's key economic innovations before it comes up with some sort of major economic innovation. Therefore, the process of internal balancing might begin with the attempt to

emulate important economic innovations produced by the former dominant state. Accordingly, it is important to identify some of the economic improvements responsible for the U.S. initial take-off.

In this respect, it is proposed here that capitalist institutions are an undeniable source of American prominence. Therefore, by means of theoretical deduction, it is logical to state that a balancer candidate will probably begin the internal balancing process by emulating American capitalism. In this sense, the first empirical chapter of this dissertation will evaluate the behaviors of emulation and innovation in relation to Chinese adoption of capitalist institutions such as private property and banking.

In what comes to political features, the PTT and Gilpin (2002) work with the concept of **political capacity**, which relates to the distinction between state power and national power: the latter being the sum of a country's assets and the former being comprised by what state authorities can really use for public purposes. As indicators of political capacity, I follow the PTT in choosing fiscal and tax policy. Thus, Chinese central government **performance in taxing its citizens and devoting public sources for public purposes** is investigated in chapter 4.

The financial and political improvements achieved in the previous phase (and the maintenance of these achievements in time) enable the second phase of the internal balancing process which is military in nature. In the military phase, the requirement that the balancer's behaviors relate to the current dominant state's strategies and capabilities becomes even more relevant. In other words, to qualify as internal balancing in a unipolar system, a military build-up must increase the balancer's prospects of winning a war against the unipole.

To deal with the unipole's capabilities, a balancer might choose: 1) off-setting – to increase the number or quality of weapons already at the disposal of the balancer candidate; 2) emulation – to copy or reproduce the adversary's capabilities; and/or 3) innovation – to come up with new capabilities that help counter the ones owned by a potential opponent.

In order to empirically identify the different internal balancing behaviors that states can pursue in this second phase of the internal balancing process, first and foremost, it is important to identify the capabilities possessed by the current dominant power. Therefore, whenever one decides to test if internal balancing is

happening, a technical preliminary analysis is in order. It is necessary to identify which capabilities are responsible for the current poles' predominance and which capabilities would be decisive in the event of a war against pole candidates.

In face of that, in order to test if internal balancing is happening in the current system, one needs first to evaluate which capabilities would be decisive for the U.S. in the event of a war against a pole candidate. Moreover, one needs to consider that the capabilities possibly employed depend greatly on the geographical position of the balancer. Afterwards, to verify if China is internally balancing the U.S., it is essential to assess if the process of military modernization being pursued by this state relates to essential American capabilities. In other words, it is necessary to evaluate if the capabilities acquired by the Chinese can be thought of as off-setting, emulating or innovating the capabilities that would most probably be employed by the U.S. in the event of a major war against China. Finally, as stated before, in order to qualify as balancing, a state's actions need to increase its prospects of winning a possible war against the current predominant power and that means being able to deal with the capabilities the superpower might use in war.

In identifying the American capabilities that China would have to deal with, geostrategic imperatives must be taken into consideration, especially the need to project power through great sums of water. As a result, two main sorts of capabilities could be employed by the U.S if this country were involved in a war against China: seapower and/or nuclear capabilities.

The importance of seapower for a state to be considered a global pole is supported by many theories, among which the LLCT. According to the proponents of this theory, regional powers are identified by their ground forces size, and global powers are characterized by the possession of seapower. In turn, international change happens when regional powers acquire naval capabilities in the desire to reach global power stature. Thus, in LLCT terminology, this dissertation attempts to verify if China is changing from regional to global standing or, in other words, if it is becoming a hybrid regional power, by means of acquiring maritime capabilities.

Nonetheless, due to the nuclear arsenal at the disposal of the U.S., it is possible, at least in theory, that nuclear weapons be used by this country if the

interests at stake are considered important enough. Therefore, this dissertation also dedicates one chapter to the Chinese nuclear weapons modernization.

However, analyzing the capabilities acquired by China after the Cold War is not enough to grasp the manifestation of a possible internal balancing process. It is also important to investigate the theater in which a conflict might take place so that the adequacy of the capabilities acquired can be assessed. As will be shown in the next chapters, analysts predict that, if a conflict happens between the U.S. and China in the near future, it will not take place next to the U.S., but in Asia.

Therefore, this dissertation investigates Chinese increasing efforts to **deny U.S. access to the Asian region**. This is due to the understanding that it is not necessary to find out that China is equating the U.S. in total capabilities in order to say that global internal balancing is happening and that it is having a systemic impact. If this dissertation finds out that China is already able to impose great limitations in what regards U.S. actions in Asia, this would be a clear sign of internal balancing and at least the beginning of international systemic change. In other words, we corroborate Ross's understanding that although the *consequences* of the internal balancing behavior are global, the actions that constitute balancing take place regionally (ROSS, 2006).

Accordingly, as stated before in relation to economic innovations, it also seems reasonable to think that in the beginning of the military phase an eventual challenger would emulate a dominant state's military innovations. This is due to the fact that competition in a self-help system constrains states to seek to perform equally the same military tasks. For that purpose, emulation is less time-consuming and less risky (since the main risks and troubles when creating a new military system were incurred by others) (RESENDE-SANTOS, 2007).

Nonetheless, the geographic location of a possible balancer and possible battle theaters also influence the kind of weapons to be acquired and strategic and doctrinal concepts adopted. As a result, it is a hard task to establish beforehand which of the internal balancing behaviors will be preferred by China in case it has already initiated the internal balancing process. However, it seems logical to argue that military innovation is a more advanced behavior which probably will not be present at the early stages of this process. Therefore, if internal balancing is already happening, it is probably taking the form of off-setting and/or emulation.

In sum, in order to verify if China is pursuing global internal balancing, its economic and military behaviors after the end of the Cold War should be contrasted to the following logical sequence: **development of economic and political capabilities (which include emulation of the U.S. main economic and political developments) → some sort of economic innovation → offsetting and/or emulation of the current leader's military capabilities → military innovation.**

The domestic and economic components of the internal balancing process

4.1

Introduction

This chapter aims at characterizing some of the domestic and economic developments which are here considered as essential components of the internal balancing model proposed in this dissertation, to the extent that they are supposed to enable China to become a pole candidate and to pursue balancing behaviors in case Chinese authorities decide to do so. Accordingly, as was suggested in the previous chapter, the following economic and domestic factors will be emphasized: **productivity**, **population** and **political capacity**.

In order to observe changes in productivity and population, this dissertation recurs to a literature that attempts to make sense of the Chinese economic growth process. At this point, I focus on the possible emulation of the capitalist economic system by China. In especial, I inquire whether capitalist institutions related to **property** and **finance** were emulated by this country and, if they were, how so. In addition, the chapter investigates whether economists relate the Chinese economic growth phenomenon to the adoption of capitalist institutions.

Last but not least, the chapter focuses on **political capacity**, which is herein understood as the government capacity to take advantage of the country's economic growth dividends, using them to provide public goods and services. This is based on the idea that economic growth by itself is insufficient to enable a country to become a pole. Together with growth, a pole candidate should experience the improvement of the central government's extraction capacity. This is supposed to enable the government to direct the dividends of growth to the pursuit of public interests such as defense and, possibly, balancing. Therefore, the last section of the chapter analyzes **fiscal and tax developments** in China during the most recent decades.

4.2

Characterizing China's economic growth

Since the foundation of the People's Republic of China in 1949, the Chinese economy has undergone two major waves of change. From 1949 to 1977, in tune with its communist political system, China's economy went through collectivization and centralization. Nonetheless, beginning in 1978, major economic reforms led by Deng Xiaoping took place in China. The reforms comprehended the incorporation of capitalist institutions by this country, a development which is regarded by many economists as a major determinant of China's economic growth acceleration (WEI; ZHIZHOU, 2007, p. 9; YANRUI, 2007).

Economic growth can be understood as a process through which a given political unit realizes economic aggregate enlargement in a certain period (WEI; ZHIZHOU, 2007). This section exposes the aggregate figures that reflect China's economic growth during the past decades and discusses some of the reasons often presented by scholars to explain this phenomenon. In general terms, the incorporation of capitalist mechanisms and institutions by this country is often cited among the reasons that explain growth. However, as will be shown in what follows, the Chinese incorporation of capitalism was pursued in a very peculiar fashion.

In order to fully grasp China's economic growth process, it is important to first highlight a group of economic figures. In especial, the table below shows the transformations that took place from 1978 to 2010 in what regards the principal macroeconomic figures.

Table 1 – Evolution of main macroeconomic figures

Item	Aggregate Data							
	1978	1990	2000	2009	2010	Average Annual Growth Rate		
						1979-2010	1991-2010	2001-2010
Population and Employment								
Population (10 000 persons)								
Population at Year-end	96259	114333	126743	133450	134091	1,0	0,8	0,6
Urban	17245	30195	45906	64512	66978	4,3	4,1	3,8
Rural	79014	84138	80837	68938	67113	-0,5	-1,1	-1,8
Employment (10 000 persons)								
Employment	40152	64749	72085	75828	76105	2,0	0,8	0,5
Macro Economy								
National Accounting (100 million yuan)								
Gross National Income	3645,2	18718,3	98000,5	341401,5	403260,0	9,9	10,5	10,7
Gross Domestic Product	3645,2	18667,8	99214,6	340902,8	401202,0	9,9	10,5	10,5
Primary Industry	1027,5	5062,0	14944,7	35226,0	40533,6	4,6	4,0	4,2
Secondary Industry	1745,2	7717,4	45555,9	157638,8	187581,4	11,4	12,5	11,5
Tertiary Industry	872,5	5888,4	38714,0	148038,0	173087,0	10,9	10,7	11,2
Gross Domestic Product by Expenditure Approach	3605,6	19347,8	98749,0	346316,6	394307,6			
Final Consumption Expenditure	2239,1	12090,5	61516,0	166820,1	186905,3			
Household Consumption Expenditures	1759,1	9450,9	45854,6	121129,9	133290,9			
Government Consumption Expenditure	480,0	2639,6	15661,4	45690,2	53614,4			
Gross Capital Formation	1377,9	6747,0	34842,8	164463,2	191690,8			
Net Export of Goods and Services	-11,4	510,3	2390,2	15033,3	15711,5			
Investment in Fixed Assets (100 million yuan)								
Total Investment in Fixed Assets		4517,0	32917,7	224598,8	278121,9		22,6	23,0
Urban		3274,4	26221,8	193920,4	241430,9		23,8	24,2
Real Estate Development		253,3	4984,1	36241,8	48259,4		31,2	25,5
Rural		1242,6	6695,9	30678,4	36691,0		18,3	17,3
Floor Space of Buildings under Construction (10 000 sq.m)		137171	265294	754189	885173		9,8	12,8
Floor Space of Buildings Completed (10 000 sq.m)		107952	181974	302117	304306		5,3	5,3
Consumption								
Total Retail Sales of Consumer Goods (100 million yuan)	1559	8300	39106	132678	156998	15,504464	15,835212	14,91203708
Foreign Trade								
Total Value of Imports and Exports (USD 100 million)	206,4	1154,4	4742,9	22075,4	29740,0	16,803867	17,63843	20,15163227
Exports	97,5	620,9	2492,0	12016,1	15777,5	17,228265	17,557647	20,26773552
Imports	108,9	533,5	2250,9	10059,2	13962,4	16,378544	17,731139	20,02190401
Actually Utilization of Foreign Capital								
Foreign Direct Investments (USD 100 million)		34,9	407,2	900,3	1057,4		18,600997	10,01361434
Other Foreign Investments (USD 100 million)		2,7	86,4	17,7	30,9		12,995996	-9,784078058

Source: adapted from China Statistical Yearbook, 2011. Figures in value terms are in current prices (2011)

The figures above are a clear evidence of China's economic growth, since great increases can be observed in what concerns all important macroeconomic figures, such as exports (from 9,75 billion dollars in 1978 to approximately 1,58 trillion dollars in 2010) and GDP (3,6 billion yuan in 1978 to 40,12 trillion yuan in 2010). However, besides characterizing China's economic growth by exposing aggregate figures, it is also important to make sense of this phenomenon, discussing some of the reasons often cited by economists to explain China's growth.

In general, when attempting to explain economic growth, economists stress the importance of **productivity** improvements. To increase productivity aggregate figures, many paths are available: for instance, institutional innovation may provide incentives to individuals, leading them to produce more. In addition, there can be an increase on the input of capital and/or other production factors. Technical innovation is another source of productivity improvement, i.e., of increasing production efficiency (WEI; ZHIZHOU, 2007).

Traditional theoretical frameworks that explain economic growth tend to observe changes on productivity, labor and capital. Labor productivity (understood as the amount of GDP per employee) increased quickly after the reforms: in 2004, it was 5.33 times as much as in 1978 (YANRUI, 2007). In this respect, Wong (2007) argues that China's growth depended highly on the increase of labor force which was made possible by the transference of workers from the low-productivity agriculture sector to high-production manufacturing.

However, investment efficiency evolved less than labor efficiency during the period. Concerning this last issue, Yanrui (2007) claims that most studies on China's economic growth support the argument that capital formation was the main driver of China's growth. However, although the amount of capital increased, not necessary the efficiency of its use did. Finally, in relation to technical change (which refers to the positive impact of technical innovation on the production process), progress is not so obvious either. In sum, increases in production capacity after the reforms mainly depended on scale enlargement instead of technical change. Accordingly, Wei and Zhizhou (2007) argue that local governments in China prioritized investment scale instead of investment efficiency. Obviously, the more investments are introduced in a region the more developments take place.

In the same vein, Wong (2007) presents what he calls a virtuous circle responsible for China's growth: high rates of investments → high export growth → high GDP growth → high savings → high investments. In other words, the scholar states that China's economic growth was highly based on investments, i.e., fuelled by input of more capital and not on productivity increases (WONG, 2007, p. 50). Wei and Zhizhou (2007) warn that the Chinese way of achieving economic growth has advantages and disadvantages. At the same time that the increase of investments inputs means that a region can be developed in a short

period, it also implies the high consumption rates of limited natural resources (p. 22)¹.

Economists also link Chinese economic growth with international trade developments. More specifically, Rudai and Yao (2007) link China's trade strategy to its record of economic growth. These scholars name the Chinese trade strategy as “limited catch-up”, which refers to a country that exports products that have higher technological contents than what the comparative advantage-based international division of labor allows it to. This is to say that a country that adopts this strategy does not aim at catching up with the most advanced technologically speaking traders, but also does more than is expected from a country that invests in its comparative advantage (RUDAI; YAO, 2007, p. 156).

Nonetheless, the theory and empirical analysis developed by Rudai and Yao (2007) claim to provide a way to reconcile comparative advantage and catch-up. This is because the scholars believe that, in the short run, the catch-up strategy is necessary for a country to close the gap with advanced countries. But, in the long run, the scholars believe that every country ends up following its comparative advantage. They also claim that China is still in the catch-up phase. Based on the trajectories of South Korea and Taiwan, the scholars argue that China has about 20 years more for fast economic growth (p. 180-181).

Similarly, Tong (2007) stresses the correlation between international trade and Chinese economic growth, and, especially, the huge trade imbalances with the US and the European Union. Moreover, the scholar observes that China developed a different kind of trade relationship with its neighbors. Between 2000 and 2004, the share of other Asian countries exports to China increased from 7 percent to 12 percent (p. 184-186). China maintains large surplus with the US and the EU, but observes deficits with its Asian neighbors (p. 189). In this respect, it is important to highlight that China's rise as a major trading nation took place at the same time that the manufacturing outsourcing phenomenon emerged. China became an export platform for companies from all around the world and also from neighboring economies. It has also become a crucial link in regional production networks of manufactures, producing final goods after processing parts and components imported from economies in the region such as Taiwan, South Korea,

¹ This will be discussed further by the time the sustainability of China's growth is problematized in this chapter.

Japan, and ASEAN members. Those products are later exported to the US and European Union markets.

Related to its trade strategy is the Chinese decision to attract foreign investment to high technology industries and export oriented ones. The participation of foreign firms contributed enormously to the transformation of China's economy. Manufacturing activities have become fragmented and China has been incorporated in trade and high-tech production networks². Scholars believe that the participation of foreign firms has helped technological advancement and productivity improvement of the domestic firms, in a process of technology spillover (TONG, 2007).

Transformations in **demography** are also thought to have helped Chinese economic growth. Very much debated is the one-child policy which means that an urban couple can have only one child and a rural couple can have a second child if the first is a girl. Scholars believe that this policy helped to control China's population growth, making fertility rates decline to below-replacement levels (DASHU, 2007, p. 333).

In this respect, Dashu (2007) employs the concept of the "demographic dividend" to examine the relationship between China's demographic transition and economic development. Economists believe that countries in which a large portion of the population has reached the age for working and saving may enjoy a boost to growth due to the increases in the accumulation of capital and reduced spending on dependents, what is known as the "demographic dividend". It is important to highlight that nowadays economists have stopped focusing on population indicators such as population size and growth rate and started concentrating on age structure, i.e., the way in which the population is distributed across different age groups.

The demographic dividend helps economic growth acting on labor supply, savings, and human capital. In general, low fertility rates are accompanied by rising female participation in the labor force and baby-boomers from the last

² From 1998 to 2005, the items included in the top 10 Chinese exporting industries changed, since industries producing products with higher technology content increased their presence in the list. Computer peripherals and computer industries accounted for more than 15 percent of total exports by state and non-state enterprises in 2003 (in opposition to the figure of 4 percent observed in 1998) and the total share of traditional exporting industries such as apparel, leather shoes, and toys, decreased from 14 percent in 1998 to 10 percent in 2005 (TONG, 2007, p. 196).

round of demographic growth leave the dependent years. As a result, the availability of workers is increased. Moreover, during the last quarter of the 20th century, the labor supply in China was increased significantly due to the migration of farmer workers to urban areas. In what regards human capital, public and private investments in education and effective education reform have improved the levels of educational attainment. Finally, during the period of the demographic window, personal savings and investments become possible. This is because human beings have two periods of economic dependency – in the beginning and in the end of their lives – when individuals consume more than they produce. In contrast, during working age, individuals produce more than they consume and can, consequently, save money (DASHU, 2007).

Since the late 1960's, China experienced a dramatic decline in fertility rates so that, in 1990, the total dependency ratio of inactive population on active individuals declined to levels below 50 percent. Speculating in what ways population age structure changes might affect China's prospects for economic development in the future, Dashu (2007) estimates that this age structure (named by this scholar as the "golden age structure") will last about 40 years, i.e, until 2030, when the total dependency ratio will rise as a result of population ageing³.

Besides analyzing productivity, trade and demographics, in order to fully grasp China's economic growth process, Wei and Zhizhou (2007) suggest that we also observe: the **objectives** of economic growth; the **paths** to realize these objectives; and the **constraints** on the sustainability of economic growth.

It is important to highlight that China's economic growth figures were high even before the economic reforms, which were initiated in the end of the 1970's: the average annual GDP growth rate from 1952 to 1978 was 6.15 percent. However, the economic reforms are regarded as accelerators of GDP growth (WEI; ZHIZHOU, 2007). In the beginning of the reforms, Wei and Zhizhou (2007) argue that the main **objective** was to produce aggregate growth regardless of the way gains would be divided among the Chinese society and that only more recently the social and distributional aspect caught authorities' attention.

As for the **path** chosen for growth, there is a clear difference between the 1980's and the 1990's. In the beginning of the 1980's, **agricultural** development

³ The next section will be devoted to the discussion of the sustainability of growth in China.

triggered China's economic growth. Afterwards, China's main economic drives transferred from the rural to the **urban** areas (WEI; ZHIZHOU, 2007).

Concerning the balance between the urban and rural sectors and its relation to China's economic developments, Huang (2008) argues that capitalism with Chinese characteristics is "a function of a political balance between two Chinas – the entrepreneurial, market-driven rural China vis-à-vis the state-led urban China. In the 1980's, rural China gained the upper hand, but, in the 1990's, urban China gained the upper hand" (p. xvi).

This scholar recalls that most economists judge China's economic performance solely by its aggregate economic data. Nonetheless, Huang (2008) claims that, in spite of the fact that differences in China's GDP growth are small between the 1980's and 1990's, there is a huge disparity in what regards the economic and social implications of the different policies pursued in each of those decades. The scholar invested efforts in studying banking documents and came to the conclusion that a more entrepreneurial version of capitalism took place in China during the 1980's. In contrast, state-led capitalism was the norm in the 1990's.

According to Huang (2008), there was a reversal of economic policies in the beginning of the 1990's. In a controversial fashion, the scholar claims that the gradualist notion that China increasingly came to be more liberal is not correct. This is because, during the 1980's, economic policies were becoming progressively more liberal, particularly in what regarded rural areas. For instance, there was some level of access to credit and rural entrepreneurship was permitted⁴. Nevertheless, during the 1990's, authorities chose to emphasize industrial policy and state-led investments. It is important to clarify that GDP growth was substantial and rapid during both eras, but that the effects of growth were very different. In the 1980's, GDP growth came together with personal income growth, improvements in income distribution and the decline of poverty. In the 1990's, the welfare effects of GDP growth were not so obvious (p. 8-9).

⁴ Huang (2008) clarifies that documentary evidence shows reforms were initiated at the very top of the Chinese financial system. The scholar found directives and instructions supportive of private-sector lending issued by the governor of the People's Bank of China (PBoC), China's central bank, and presidents of the Bank of China and the Agricultural Bank of China. Therefore, liberalization took place in the rural part of the country in the 1980s, but, at that time, urban China was not affected by the financial reforms.

Despite the claim that private-sector policies in the rural areas became illiberal in the 1990's, Huang (2008) admits that, at the same time, China moved forward in FDI liberalization and in restructuring urban state owned enterprises. Nonetheless, the scholar chooses to focus on rural developments when explaining the pace and the character of China's transition to capitalism. He justifies this choice claiming that entrepreneurial capitalism in China is rural in origin and that, consequently, rural policies matter more for China's economic transition (p. 39).

An approach that focuses on one sector to characterize a supposed transition from the predominance of liberal to illiberal practices is, obviously, controversial. Even so, Huang's writings have the merit of revealing previously disregarded aspects about China's rural areas, persuasively arguing that some liberal practices took place there in the 1980's. In addition, the scholar shows that different groups were benefited across the decades.

This is a very important piece of information if we have in mind the main objectives of this dissertation. This is due to the fact that, according to Gilpin (2002), growth depends on domestic developments that benefit certain groups (notably elites) and persuade them to believe that the country's interests are in tune with their individual interests. This supposedly makes individuals work to produce their own fortune and the country's as well. Therefore, the transition from a focus on the rural sector to the urban sector is very meaningful to the extent that it suggests a domestic development that, in spite of its social effects, seemed to have been essential to the persistence of China's economic rise.

On the other hand, in contrast to Huang's propositions, it seems more adequate to concurrently analyze developments both in rural and urban areas in order to have a more comprehensive idea of China's economic reforms. Therefore, Wei and Zhizhou (2007) believe that China's economic growth process went through three different periods after the beginning of the economic reforms. The first period goes from the end of the 1970s to the beginning of the 1990's and is characterized by the reform of the traditional socialist distribution system. By the end of the 1970, urban and rural enterprises were formed on the basis of collective ownership rules. This meant that average distribution was the fundamental distribution method. The way to break equilibrium was to adjust income distribution. Accordingly, some individuals and regions were allowed to become rich first, since the expectation was that others would be brought to the

same level afterwards. Operationalizing this idea, some changes were implemented: for instance, urban enterprises were given more independence and entered markets; foreign direct investments were permitted in some coastal cities, etc. Industrially speaking, this period was marked by **the development of agriculture** and of **consumer goods manufacture**.

The second period of the reforms comprehended the transformation of the **market** and the modern **enterprise system** in the 1990's, when institutional innovation was emphasized. In addition, in the industrial realm, China saw the development of hi-tech industries and of modern tertiary industries such as communication, transportation, finance, and real estate (WEI; ZHIZHOU, 2007).

The third period is marked by accelerated industrialization and economic globalization in the beginning of the 21st century. Moreover, the rapid growth of fixed capital investment and the development of the heavy industries are also features of the period. Finally, market reform has been deepened and China has initiated a **stock share reform of state-owned financial institutions** (WEI; ZHIZHOU, 2007).

According to Wei and Zhizhou (2007), **institutional innovation** in the economic realm in general and in the state-owned enterprise system in particular was the most important drive of growth since the reforms began. First of all, it is important to highlight **the introduction of the market economy system**. These scholars estimate that, by the time their book was written, the market decided the prices of above 95 percent of consuming and capital goods, while 95 percent prices were decided by the government before the reforms. Nowadays, China tries to deepen the reform of the production factors market, which began in the 1990's. The labor market has evolved in the sense that wages of most employees are decided by the market. However, the capital and land market developed more slowly.

Concerning the financial sector, the socialist mono-banking system has been restructured into a central banking system that resembles the western one, i.e., based on fractional reserves of commercial-bank members. State-owned specialized banks were incorporated by commercial banks and some are now listed in stock markets. Although big dominant state-owned banks persist, there are also commercial banks formed on a share-holding basis and financial

institutions that operate in China. China's two stock markets in Shanghai and Shenzhen were launched in the 1990's, growing fast (DING; NING, 2007).

According to Ding and Ning (2007), the aforementioned changes in the financial system allowed it to play an important role in supporting China's growth. This is because, as mentioned above, capital formation was one of the major driving factors of the Chinese growth phenomenon. And capital formation was sustained by high saving rates. China's gross saving rate has been above 35 percent of GDP in most years since the mid-1980's and above 40 percent during most part of the 1990's. High saving rates were a result of the rise in income, the changes in demographics, and the reforms in the banking sector that attracted deposits and mobilized savings. Due to low interest rates, capital account control, and underdeveloped corporate capital-bond market, the banking has absorbed a huge amount of household savings and provided them as low-cost capital to support China's investment-driven growth.

Nevertheless, despite these achievements, the financial system has exhibited serious flaws. This is because state-owned banks sometimes fail to play by typical commercial banking rules. Nowadays, the state budget no longer finances the capital needs of state-owned enterprises and state-owned banks lend money to SOEs'. But the residual connection between state-owned banks' and state-owned enterprises leads to a biased corporate-loan lending portfolio. For instance, in 2003, state-owned companies received 35 percent of bank credit and private and foreign enterprises received 27 percent of bank loans, in spite of the fact that the latter are responsible for a bigger share of GDP production (DING; NING, 2007).

China's stock market is highly influenced by state-owned enterprises interests. Accordingly, even the development of the stock market in the first place was part of a government's program to reform state-owned enterprises. This is because Chinese authorities believed that the stock market would provide funding and help state-owned enterprises to transit to the market system. Thus, aiming to ensure that the state will retain its dominant share and control, after being listed, SOEs created a system of "tradable shares" and "non-tradable shares" (DING; NING, 2007).

In what comes to firm governance, the voting right on important corporate matters, such as the elections of the board of directors and acquisitions, is an

important legal right used by shareholders in western economies to exercise their influence. Nevertheless, in China the public shareholders hold only one-third of the total shares in a typical company, making impossible for individuals to make a difference even though China adopts the rule of “one-share-one-vote” practiced in the UK and US (DING; NING, 2007).

Without accountability to the shareholders, many listed companies concentrate on raising money *from* the shareholders and not to return their investments. Still related to the accountability issue, although the Securities Law of People’s Republic of China (from 1998) requires that listed companies publish regularly their financial statements, many companies are believed to conceal or delay the disclosure of crucial information that may have adverse effects on their share prices (DING; NING, 2007, p. 279-280).

However, more recently the split-share structure is being reformed. If pursued properly, the reform of this structure will create conditions to improve corporate governance and protection of shareholders’ rights. If the majority of the shares is owned directly or indirectly by the state and kept out of market, there is a higher probability that governmental authorities will interfere with corporate governance, making transparency and the protection of minority shareholders’ rights impossible (DING; NING, 2007, p. 285).

In what regards **property laws**, China’s Property Law was passed on March 16, 2007, after 13 years of debate. It constitutes a written recognition of private property rights, confirming the revision of article 13 fashioned in the constitutional reform that took place in 2004. The fact that the recognition of property rights was so late in the reform process is misleading in the sense that it gives the impression that China has grown by relying on unique/local institutional innovations. For instance, economists always refer to local state owned enterprises that are known as “township and village enterprises” (TVEs) (HUANG, 2008).

Nevertheless, examining governmental resolutions, bank documents, and household and private-sector firm archives that span from 1979 to 2006, Huang (2008) unveiled that TVEs were not exactly public as Western scholars believed. The Chinese definition of TVEs refers to the locations of establishments and registration, not to their ownership. In other words, TVEs were simply the name given to businesses located in the rural areas. This means that, in 1985, of the 12 million businesses identified as TVEs, 10 million were private. In addition, the

scholar observes that private TVEs were most lucrative in the poorest and agricultural provinces of China. According to Huang, this phenomenon, i.e., the location of the most lucrative TVEs in agricultural and poor regions, explains the connection between rural private entrepreneurship and poverty alleviation.

In addition, although Huang (2008) recognizes that conventional property rights security is still flawed in China, he claims that the proprietor's security (i.e., the security of a person who holds the property, benefiting from its fruits, not necessarily being its owner) increased in the beginning of the economic reforms. This is because the Chinese policy makers in the early 1980's made sure to project policy credibility and predictability. According to Huang, in the beginning of the 1980's, Chinese leaders returned assets to former capitalists, promoted meetings with private entrepreneurs, and apologized to those private entrepreneurs who had been wrongly treated by the government in the past (p. 34). During the Cultural Revolution, those who went into private commerce risked being arrested. In the 1980's, that was reversed. In Huang's words: "the incentive effect between being arrested and not being arrested must have been massive" (p. 94).

Therefore, in the 1980's, "China's miraculous economic growth" was, in fact, very conventional in the sense that private-sector dynamism and increasing property rights security were the main reasons behind this phenomenon. Nonetheless, after the Tiananmen incidents, there was a significant reversal of economic policies. In other words, there was a change in the trajectory of capitalism in China: the country continued to march toward capitalism but to a different kind of capitalism (p. 111-112).

In the 1990's, Chinese policy makers favored the cities in terms of investment and credit and taxed the rural sector to finance the state-led urban growth. Huang (2008) believes that this policy change was not fortuitous, but was instead based on a heavy urban bias. The government investments heavily in state-allied businesses, courted FDI, restricted indigenous capitalists, and subsidized the urban boom by taxing the poorest segments of the population. This period is called by many scholars as state-led capitalism (HUANG, 2008, p. 173).

When trying to make sense of the introduction of capitalist institutions in China, Chu and So (2010) have perfectly summarized and convincingly explained the contradictions of this later phase of the process:

Whereas the capitalist class has been the dominant agent of neoliberalism in the West, the communist party-state had to take the driving seat to propel neoliberalism forward. Thus, we coined the term “state neoliberalism” to highlight the contrast between China’s experience of neoliberalism, and that of the West. Obviously state neoliberalism is a highly contradictory term: while the party-state still claims to be communist and to stand on the side of workers and peasants, it has carried out all sorts of neoliberal policies to assault workers and peasants and undermine their interests. As such, it will be interesting to study how the contradiction of state neoliberalism has led to an oscillation between market-led and state-led development in China, and how the party- state has handled this contradiction over the past three decades, leading not only to the surprising continuation of the Chinese communist party-state, but also to the rise of China as a contending power in the capitalist world-system (p. 49-50).

In sum, it seems reasonable to argue that China’s economic rise is closely related to the adoption of capitalist institutions. However, the incorporation of those institutions was pursued in a peculiar fashion in view of the domestic political context. Accordingly, although the reforms can be understood as a process of emulation of Western economic institutions, the copy is not exactly equal to the original, since it is conditioned by the political history of China.

In view of that, the next section discusses if the contradictions that characterize China’s economic growth process impacts on its sustainability. Inquiring about the sustainability of growth is essential for the purposes of this dissertation. This is because economic growth is a fundamental requisite for the onset of the internal balancing process, but the sustainability of growth is essential for the maintenance of the process once it has began.

4.3

On the sustainability issue and the new purposes of economic growth

Attempting to answer if China’s growth is sustainable, Wong (2007) analyzes this country’s economy in the context of developments in East Asia. According to this scholar, historically speaking, the East Asian growth process is marked by three waves. The first wave took place due to the industrialization of Japan and the consequent increase in its economic growth rates. In the beginning,

Japan exported labor-intensive manufactured products, but rising wages and increased costs in Japan resulted in the transference of production to the NIEs, which took-off after the 1960s. Therefore, this last development inaugurated the second wave of East Asian growth. However, in the 1980's costs and wages also increased in the NIEs, forcing them to invest in capital-intensive manufacture instead of labor-intensive ones. China and the ASEAN, then, started producing labor-intensive products, a development that Wong (2007) considers as the third wave of East Asian growth.

Japanese scholars call this phenomenon the “Flying Geese” pattern. Accordingly, it can be said that China is one of the “geese” and that all of them have experienced leading the flight formation, but none have fled the formation. Therefore, Wong (2007) argues that observing the East Asian broader context leads to optimism regarding the sustainability of China's growth. However, to continue growing, China would have to abandon the focus on capital formation and put emphasis on productivity. In addition, Wong argues that there is potential for increases on domestic consumption figures. Nonetheless, the potential increase of domestic demand is conditioned on the improvement of the inequality figures. In opposition to other East Asian economies such as Japan, Korea and Taiwan in which economic growth was accompanied by a trickle-down process, in China income disparities have grown. In addition, the economic growth benefits have not been diffused to the Chinese rural sector (WONG, 2007).

In the same vein, Yanrui (2007) claims that domestic consumption accounts for a relatively small share of China GDP and that there is potential for expansion in rural consumption. The scholar also sees potential for growth in the service sector, tourism, government services, banking and finance (p. 142-144). He believes that the next round of economic growth in China will be characterized by the rise of domestic consumption, increments in the service sector, innovation and balanced development (p. 150).

In what regards the issue of domestic consumption and the reduction of inequality, only more recently China's authorities have shown concern with economic development to the detriment of economic growth: the latter is related to the improvement of various aggregate indexes and the former implies a focus on structures and on the relationships among various economic variables such as ownership structure, employment, industrial structure, international balance,

income distribution, and regional differences. In addition, Chinese authorities now aim at transforming China's growth model and to decrease resource consumption rates. For that purpose, technical innovation is essential. However, the promotion of technical innovation depends on the creation and the maintenance of adequate institutions (WEI; ZHIZHOU, 2007).

The 11th 5-year plan (which established directives for the period of 2006 to 2010) made clear the objective of guaranteeing the sustainability of growth and spreading growth fruits to more people and regions in China. This is because household consumption as a share of GDP has been falling since the economic reforms: for instance, it went from 52% in 1985 to 39% in 2005. One of the possible explanations for this reduction is the fact that education, health care and retirement burdens have been shifted from government to the household sector. This contributes to government surplus, but also determines lower consumption and decreasing household savings rates. In addition, China has pursued policies that benefit the industrial sector to the detriment of households. For instance, prices of energy consumption are lower to industries and state-owned enterprises have easier access to lending (YAM, 2007).

Besides the existence of differences in treatment of households and industries, there are also contradictions related to the way the rural and urban sectors are treated. Larger cities have received higher public investments in infrastructure and more funds for industrial enterprises, as well as being favored by subsidy policies on foreign direct investment. In 2005, rural population paid 87% of health care expenditure and urban population paid 44% (YAM, 2007, p. 84). It is as if the rural sector was exploited by the urban sector.

More recently, the "new socialist countryside" program has been adopted to deal with the inequality between the urban and rural sectors. This policy abolishes agricultural taxes, increases subsidies to farmers and government fiscal allocation to rural infrastructure, education and health-care (YAM, 2007).

Sustainability of growth depends also on resolving regional and sectorial differences in labor productivity, which are large and increasing. There are great disparities between the coastal and western regions, but the greatest disparity in what comes to productivity is in the rural-urban division. In what regards variations across sectors: in the agriculture sector, the marginal product of labor and capital diverge by approximately 2.1 times across all the four Chinese regions

and, in the industrial sector, the disparity between urban and rural nonfarm varies from 3.5 to 4.7 times across the Chinese regions. On the other hand, the disparity in the marginal return of labor and capital is higher across sectors: marginal product of labor in the urban industry sector (11,884.2) is 32.6 times that of the agriculture sector and the marginal product of capital in the rural nonfarm sector (106.2) is 7.8 times that of the agriculture sector (YAM, 2007, p. 125).

Another issue related to sustainability of growth is the access to energy. China's dependence on imported oil has reached 40-50%. This problem is aggravated by overconsumption, which is stimulated by the policies that establish low prices for the industrial consumption of resources such as oil and water in China. Overconsumption is problematic not only because it leads to dependence on foreign sellers but also because it leads to environmental degradation. In sum, low efficiency in resource use needs to be overcome in order to guarantee growth sustainability in China (YAM, 2007).

To conclude, it is important to state that the sustainability of China's economic growth cannot be taken for granted. Although many economists argue that the maintenance of growth is feasible, they condition this forecast on the solution of the problems discussed in this section.

Finally, it is necessary to investigate the instruments built by the Chinese state to make sure the dividends of growth can be used, now and in the future, for public purposes.

4.4

The probability of using growth gains for public purposes: discussing China's political capacity

It is generally stated that the role of the public sector is to provide services that private markets cannot supply efficiently, as well as to take charge of activities that aim at re-distributing revenue more equally (MARTINEZ-VAZQUEZ, 2010). Accordingly, the theory of fiscal federalism claims that governments have three main functions: resource allocation (so that national governments provide public goods which benefit the whole country's population and local governments supply goods for their constituencies), income distribution,

and macroeconomic stabilization (fiscal and monetary policies) (LJUNGWALL *et al.*, 2011).

Therefore, when problematizing fiscal and tax policies, there are at least two sets of questions that have to be asked: 1) which services and activities should be carried out by the public sector, and 2) which level of government should provide each service?

Public Law scholars argue that group needs are better met if governments observe the subsidiarity principle. Internationally, this principle means that the responsibility for the provision of services should be at the lowest level of government compatible with the size of the benefit⁵. Moreover, it is claimed that expenditures undertaken for equity or income equalization reasons (welfare programs, for instance) should be the responsibility of the central government. Finally, the responsibilities of the central government should have a national dimension, such as defense and internal security, the justice system, foreign relations and research (MARTINEZ-VAZQUEZ, 2010).

Therefore, when talking about state political capacity, scholars often refer to governments' ability to provide services and activities attributed to the public sector. Nonetheless, this section takes one step back, considering that to fulfill their responsibilities governments must first be able to collect revenue from their population. Secondly, they must create mechanisms such as laws, regulations and institutions to transform into public services the money collected in the form of taxes. Thus, whenever political capacity is mentioned in this dissertation, the main reference is to tax and fiscal policies.

In China, tax and fiscal policies are a peculiar combination of centralization and decentralization⁶. China tried to adopt a decentralized system in the 1980's, but, in 1994, the country performed a critical revenue reform which fundamentally changed the central-local government relations. The end result was an array of policies and laws that combines centralization in what regards revenue and decentralization concerning expenditure. In particular, the reform aimed at

⁵ In Brazil, the subsidiary principle acquired a different meaning over the years. Here, when employing this principle, lawyers often mean that the role of local government is established by exclusion: what is not constitutionally granted to the central government can be carried out by local governments.

⁶ To decentralize fiscal and tax responsibilities means to transfer the responsibility for planning, management and resource-raising and allocation to government agencies and ministries, lower levels of government or NGO's (LIN, 2007, p. 215).

increasing the central government's share of total tax revenue and its authority over crucial issues related to fiscal policy (LJUNGWALL *et al.*, 2011).

In the same vein, Lee (2000) also claims that the 1994 reforms aimed at providing adequate revenues for the government, notably the central government (p. 1007). Tax laws are made by the National People's Congress and its Standing Committee and the provincial governments have limited power to pass tax laws. In turn, municipalities have no right to enact tax laws. In addition, local governments (provincial, prefecture, county and township) have no rights to issue bonds (LIN, 2007).

The reforms established a "tax sharing system", dividing taxes in three categories: central government taxes, local government taxes and joint taxes. About the tax species: central taxes include tariff, consumption tax, corporate income tax (central government-owned enterprises), income tax from local and foreign financial institutions, income tax from rail road, headquarters banks and insurance companies and profits from central government-owned enterprises; local government taxes include: business tax, income tax from local enterprises, profits from local enterprises, personal income tax, urban land tax, urban construction and maintenance tax, housing tax, vehicle license tax, urban real state tax, vehicle tax, stamp tax, land appreciation tax, slaughtering tax, agricultural tax, cultivated land occupation tax, and contract tax; and shared taxes comprehend value-added tax, natural resources tax. China nowadays heavily relies on value added tax (VAT), corporate income tax, business tax and consumption tax. In contrast, revenue from personal income tax is still small and property tax has not been established (LIN, 2011; 2007).

It is important to highlight that one of the most important results of the reform was indeed the increase in central government revenue, fulfilling the reforms' main objective: in 1994, central government's share in total revenue reached more than 50%. In addition, since 1994, total government revenue has grown fast: in 2007, the growth rate reached 32.4% and, in 2010, it was 21.3%. In 2010, total government revenue reached 22% of China's GDP. This growth in fiscal revenue is also due to: economic growth, enforcement of tax laws, strengthened collection of tax and non-tax revenue (LIN, 2011).

Nonetheless, the tax-sharing system put local governments in a difficult fiscal position. To have a better sense of the reform's impact, it is important to

highlight the following figures: in 1980, local government revenue accounted for 75% of total government revenue and local government spending constituted 46% of total government spending. In contrast, in 2010, local governments were granted 48.9% of total government revenue and covered 82.2% of total government spending. In other words, since the 1994 reforms, local governments have presented budgetary deficits. To cover deficits, local governments receive transfers from the central government. Even the rich provinces need large transfers from the central government to cover their deficits (LIN, 2011, p. 86).

However, local governments were not helpless during the reform, having had some sort of leeway in the onset of this process. This is because, in spite of the fact that taxing power became formally controlled by the central government, some local governments were successful in altering the tax base which would be later used to calculate central government grants to local governments. In addition, local governments benefit from informal (and often illegal) taxing in the form of fees and funds that they collect from constituencies (LJUNGWALL *et al.*, 2011).

In this respect, it is important to stress that, apart from the official budget, China counts also on extra-budgetary revenues which include non-tax revenues collected by local governments, government agencies and state-owned enterprises (SOEs). It comes in the form of charges for services provided by government agencies, administrative fees (like licenses) and revenues from businesses run by colleges and high schools. The central government no longer relies on extra-budgetary revenues: its share of extra-budgetary revenue was 43.6% in 1992, coming down to 7.4% in 2008. In opposition, extra-budgetary revenue is still essential for local governments (LIN, 2011, p. 85).

Moreover, besides extra-budgetary revenue, local governments in China also have off-budget revenues (which are known as “the Little Golden Boxes”). These revenues come from illegal fee collection and sales of government properties. It is estimated that off-budget revenue reaches 30% of total local government revenue and about 3-4% of GDP (LIN, 2011, p. 86).

Reforms have concentrated on the revenue side and neglected expenditures assignment. In addition, the system has an *ad hoc* feature since the budget of local governments has to be submitted to the People's Congress at that level and approved by it (MARTINEZ-VAZQUEZ, 2010).

The provincial budget is decided by the rule of “two-ups and two-downs”, since a first draft of the budget is submitted for the approval of the central government and then sent back to the local government for revision. The revised version is sent again to the central government for final approval. The central government is entitled to evaluating the budgets of provincial governments and has the responsibility to cover provincial government’s fiscal deficits through transfers. Therefore, although local governments are the ones that spend more, they have limited power to decide on what they will spend. Also, they rely heavily on central government transfers to fulfill their duties (LIN, 2007, p. 218).

The current system is said to cause inefficiency and corruption. This is because the transfer system gives the central government huge controlling power over local governments. Due to the fact that the central government has a large amount of funds to distribute and that the rules that regulate this distribution are not very clear, the central government has a lot of leeway in allocating the funds. On the other hand, local governments have no power to check the central government distribution activities (LIN, 2007).

Other problems of the Chinese expenditure assignment system are: 1) the mismatch between revenue collection and expenditure responsibilities, since central government collect most of the taxes, but the responsibility for the provision of important social services is concentrated on local governments (such as counties and townships); 2) lack of clarity concerning expenditure assignments; 3) “wrongly” assigned responsibilities at the lowest level, such as pensions and unemployment insurance; and 4) lack of horizontal accountability mechanisms (MARTINEZ-VAZQUEZ, 2010).

An example of an apparent mistake in expenditure assignment is social security. Before 1978, China’s social security pension system was run by each state-owned enterprise separately and government employees located in other state units were under the government responsibility. After the economic reforms, a mixed social security system was established. The new system comprehends a social pooling account (the young contribute to a collective account that benefits the old) and an individual account (a mandatory account by which individuals save when young and withdraw savings when old) (LIN, 2011).

The problem is that funds from individual accounts have been used by local governments to offset fund shortages in social pooling accounts. For

example, in 2008, the revenue of the social pooling account in Shanghai was 52.659 billion yuan, but the expenditure was higher: 61.522 billion yuan. The same happened in 2009, when the revenue for the social pooling account was 61.873 billion yuan and the expenditure was 71.059 billion yuan. In face of the deficits, the Shanghai city government used the fiscal revenue (which is around 10 billion yuan annually) to offset the social security deficits in recent years. This figures show that the current social system is not sustainable (LIN, 2011, p. 89-90).

In sum, in the past two decades, China has attempted to transform its fiscal and tax policies in tune with western practices, succeeding in separating government from SOEs, for instance. However, there are still problems in expenditure assignment (MARTINEZ-VAZQUEZ, 2010).

In view of those problems, it is important to evaluate China's state capacity during the past 20 years. Examining if the reforms have contributed to increase state capacity in China, Lee (2000) assesses the impact of the new system on the extractive capacity of the central government. Lee explicitly refers to the work of Organski and Kugler (1980), after which extractive power has been regarded as one of the most important ingredient of state capacity. Lee clarifies that the original purpose of Organski and Kugler was to explain why the "weak" could beat the "strong" in international wars, investigating differences in states' capacity to mobilize national resources for war. Nevertheless, Lee states that Organski and Kugler failed to consider the political constraints that prevented governments from taxing during peacetime, when national survival is not at stake. Therefore, Lee (2000) attempts to explain the political forces that result in success or failure in extracting revenues from the population (p. 1008).

He highlights the institutional aspect of political capacity, stating that the growth of institutional credibility improves extractive capacity. According to Lee (2000), by strengthening property rights and enforcing contract responsibilities, the government encourages a flow of resources from the constituent population to the national government. On the other hand, the absence of political credibility and institutional stability leads to strategic reactions on the part of entrepreneurs. If the private sector anticipates frequent reversions in policies, it will protect its interests and withhold resources. As a result, the state will extract less wealth from the population than it could in principle. On the other hand, local governments are

used to constant institutional changes in the tax and fiscal system in China. Therefore, anticipating a forthcoming alteration of the rules established in 1994, local governments tended to conceal their wealth in order to be in a better position in case the central government launched another round of reforms.

In sum, Lee (2000) believes that the Chinese central government is caught in a vicious circle of "state-strength dilemma": to increase state capacity, it centralizes the collection of taxes but continues to decentralize spending obligations to local governments. This ends up undermining mutual trust and political cohesion between: the efforts taken by the central government to become a strong government perpetuate its weaknesses (p. 1023-1024).

Nevertheless, the problem of unlawful fees was solved around 2005, when some fees were eliminated and others were converted into taxes (in what became known as the tax-for fee policy or *fei gai shui*) (LIN, 2011). In addition, China's central government has shown great ability in controlling the effects of world economic crisis in 1997 and 2008. According to Lin (2011), after both crisis China adopted an expansionary fiscal policy which had the negative side-effect of increasing budget deficits. However, government policies were important in maintaining growth in China in spite of the crisis (LIN, 2011, p. 93).

The Chinese government's stimulus package caused a deficit of 92.2 billion yuan in 1998 compared to a deficit of 739.7 billion yuan in 2009. Therefore, it can be said that the Chinese government was much more aggressive in using the fiscal tool to stimulate the economy in 2008 than in 1998 (LIN, 2011, p. 95). The 2008 stimulus package was composed of monetary and fiscal policies. The total fiscal stimulus was about 1,56 billion yuan, compared to the package of 4 trillion yuan; therefore, it is clear most of the stimulus came from monetary expansion. In addition, the Chinese government also cut the value-added tax (VAT), excluding investment from the tax base and, consequently, reducing business tax burden and increasing investment (LIN, 2011).

Therefore, the increase in the central government's ability to deal with world crises might indicate strengthened state capacity. In other words, it seems safe to argue that the central government's capacity to help in the maintenance of growth and in using the dividends of growth for public purposes has increased considerably during the past decades.

5

The modernization of Chinese nuclear forces: a first sign of internal balancing against the United States?

5.1

Introduction

According to the theoretical model developed in the first chapters of this dissertation, “internal balancing” by pole candidates during unipolarity is herein seen as a process that consists of two components: a domestic and economic one (which establishes the economic and political foundations that make the beginning of internal balancing possible, as well as the maintenance of those efforts in time) and a military one (which comprehends the reaction to the dominant state’s capabilities through off-setting, emulation and/or innovation). It was also previously argued that, in order to empirically analyze the occurrence of the military phase of internal balancing, it is necessary to first and foremost identify which are the capabilities and institutions that constitute the grounds of the dominant state prominence. Accordingly, this dissertation relies on the assumption that two main sets of capabilities constitute the basis of American power: its nuclear arsenal and its seapower. As argued in chapter 3, this is due to the fact that those are the very capabilities which make possible the projection of power by the U.S. to regions other than its own.

Therefore, if the American nuclear arsenal is one of the foundations of its prominence, one should expect that a pole candidate would react to those capabilities in its pursuit of a more favorable international distribution of power. In other words, to verify if internal balancing is currently happening or not, one needs to observe China's behavior towards nuclear weapons. Specifically, one needs to investigate if it is possible to identify off-setting, emulation and/or innovation by the Chinese in what regards the American nuclear arsenal. In addition, one needs to evaluate the results of the Chinese nuclear modernization efforts. This is because a group of actions is only herein considered as part of an internal balancing process if their consequence is to

raise the chances that the balancer wins a war against the opponent pole.

With that purpose in mind, this chapter will initiate with a brief historic review of the Chinese strategic program. This is an indispensable step back since the current developments in the Chinese nuclear policy do not occur in a vacuum. What the Chinese decide to do during the years of unipolarity depends on the progress reached during the Cold War. The very options of modernization are dependent on the stature of the arsenal that is being modernized.

As will be shown in what follows, the creation of the Chinese nuclear arsenal during the Cold War was a reaction to the American arsenal. In this sense, it seems fair to say that actions that resemble internal balancing have been undertaken by China in bipolarity. In fact, during part of the Cold War, Chinese authorities thought of both the Soviets and the Americans as possible opponents in a nuclear conflict. Nonetheless, the results of China's nuclear efforts were not enough to raise its prospects of winning a nuclear war against either of the poles, since China's arsenal could not even survive a first strike against its nuclear forces.

Therefore, if a second strike capability was not in China's possession during the Cold War, there was no way this country could win a nuclear war against the U.S. or the USSR. The possession of second strike capabilities is herein considered as the minimal requirement for a country to have any chances of winning a war against a nuclear superpower.

In face of that, as will be demonstrated below, the Chinese nuclear modernization efforts after the end of the Cold War are closer to meeting the requirements established in this dissertation to qualify a group of actions as internal balancing. In order to state that internal balancing is happening in the nuclear realm, not only must the Chinese actions involve off-setting, emulation and innovation in comparison to the U.S. nuclear power, but the consequence of the balancer's behavior must be the reduction of the gap between the U.S and China's nuclear capabilities, improving the latter chances of winning a war against the former.

5.2

A brief review of the Chinese nuclear weapons program history

In a seminal work about the origins and the main developments of the Chinese nuclear weapons program during the Cold War, Lewis and Litai (1988) recall China's first generation of leaders' rhetoric against the U.S. and the Chinese relationship with the Soviets in the first years of the Cold War. China's alliance with the USSR – established on February 14, 1950 – was initially seen as the only way to defeat what was referred by the Chinese as “American imperialism” (p. 6).

On October, 1950, Mao Zedong decided to intervene in the Korean conflict sending troops to help the North Koreans. During this conflict, the Soviets provided great support for the Chinese, what contributed to deepen China's relations with the USSR at that point. The Korean War was decisive in the history of China's nuclear program, since it exposed the Chinese to technological modernization and to the threat of a nuclear attack.

Lewis and Litai (1988) recall that, during the 1950's, the American policy towards nuclear weapons stated that, in the event of hostilities, either with the Soviet Union or with China, the United States would consider nuclear weapons to be available for use as any other munitions (p. 17). To make the perception of threat even worse, the U.S. signed a defense treaty with Taiwan in 1955. The aforementioned authors believe that, analyzing in hindsight, the American threat to use nuclear weapons against China was not real, but the Chinese perceived it as real and this perception was a major factor leading to China's acquisition of nuclear weapons (p. 34). In addition, nationalism and a feeling that never again would the Chinese endure nuclear blackmail also help to explain China's decision to build a nuclear arsenal (p. 36).

In face of the reasoning behind the decision to acquire nuclear weapons during bipolarity, it seems fair to say that the Chinese were reacting to one pole in particular: the U.S. However, at that point, there were, at least in theory, two possible targets of nuclear emulation in the process of actually building the bomb: the Soviet and the American nuclear program. Due to the existence of an alliance between the

Chinese and the Soviets established in 1950, it was logical that the target of nuclear emulation would be the Soviet program. Nonetheless, the Chinese strategic program during the Cold War was the result of an interesting combination of offsetting, emulation and innovation in relation to both the Soviets and the Americans.

The development and production of the Chinese nuclear arsenal went from a phase of dependency to a phase of self-reliance, in conformity with the developments of the Sino-Soviet alliance. The nuclear dependency phase occurred from 1955 to 1958, resulting in gains in training, resources, designs and equipment. Dependency towards the Soviets was also one of the reasons behind the institutional split between the strategic and the conventional weapons programs in China: the necessity to constantly negotiate nuclear assistance with the Soviets made the politicians willing to work with scientists, empowering the latter. The same liberty was never conferred to the technicians involved in the conventional weapons production (LEWIS; LITAI, 1988, p. 221).

The years of interdependence occurred from 1959 to 1960, when China pursued a dual-track approach to the bomb: seeking assistance from the Soviets, but also investing in future self-reliance. This period of time coincided with the Great Leap Forward and its collapse. In face of social unrest, Nie Rongzhen and Song Renqiong, backed up by Zhou Enlai (Premier of the PRC from 1949 to 1976), forged a strong military organization of a special kind, based on strong personal networks, a need for secrecy and geographical insularity. However, it is important to say that the Chinese experimented with organizational variety and bottom-up initiative. In the words of Lewis and Litai (1988): it “was not a system built on textbook efficiency or mindless obedience. That was the secret of its success” (p. 223).

The years of independence began after the Soviets experts left China in the beginning of the 1960's. The different views of Mao Zedong and Nikita Khrushchev on the subject of the strategic implications of nuclear weapons were among the major causes of the Sino-Soviet split. In addition, the split was rooted in disputes regarding the construction of a Soviet radio station in China (what was denied by Chinese authorities), the Soviet failure to provide a prototype nuclear bomb to China as was previously promised and the Chinese attack of the Quemoy and Matsu Islands (an act

that was regarded by the Soviets as irresponsible behavior).

Between 1962 and 1964, the Chinese technicians overcame two major problems by themselves: the production of enriched uranium and the design of a neutron initiator. To meet these challenges, the Chinese pursued a path of emulation and innovation. China enjoyed the advantages that derive from the fact that it was a follow-on nuclear state. In what regards to costs in particular, Lewis and Litai (1988) believe the Chinese strategic program was a lot less expensive than the American one for the following reasons:

- 1) they did not have to do much creative work but largely copied what others had done; 2) they did not make costly mistakes; 3) the costs of skilled labor were about 1 percent of the costs of comparable labor in the United States; and 4) they sought to build less sophisticated and less accurate weapons than the ones in the U.S. arsenal (p. 108).

Being a follow-on state meant that China's scientists knew in general terms which avenues to pursue and could avoid costly mistakes as a result. According to Lewis and Litai (1988), each move was approved after detailed comparison to the ones taken by other nations, with special attention to the American program (p. 107). Therefore, at this point, there are some signs of emulation not only from the Soviets, but also from the Americans. This is because many American scientific discoveries were openly available in specialized international publications.

Speaking about international assistance, Liu Xiyao (vice-minister of the Second Ministry, the Chinese organization responsible for the production of nuclear weapons) acknowledged that: “Without Soviet help, (...) it would have been impossible for us to have achieved such a rapid success in making the atomic and hydrogen bombs”. Furthermore, Liu states that China could not get “any secret scientific or technical data concerning hydrogen development”, but that international reports “contributed to the unification of our ideas and to the determination of our goals” (*apud* LEWIS; LITAI, 1988, p. 199).

Nonetheless, exactly because complete information was not available neither in what concerned the American nuclear program nor the Soviet, the Chinese had to innovate in order to accomplish the goal of building the nuclear bomb. For that

purpose, the Chinese authorities forged a rather unique nuclear weapons program, under the coordination of Nie Rongzhen, which imposed national level coordination, although tolerating organizational flexibility and diversity. The program had some peculiar managerial characteristics (especially having in mind the Chinese organizational patterns of the time), which were responsible for its success. First of all, the strategic program had the support of high level politicians and the close relationship between technicians and politicians empowered the former, giving them freedom to work. It was amply understood that the scientific and technical decision making should be left to the experts. Moreover, the staff involved with the nuclear program was not bigger than necessary and was qualified; there were not excessive reporting requirements and there were channels of communication established between the scientists and the end users (the armed forces); and careful prototyping and testing of devices were current practices (LEWIS; LITAI, 1988, p. 232-234).

Accordingly:

The necessity of problem solving in engineering required an attitude of discovery and invention, and a number of “scientific” breakthroughs and “technical” innovations entailed making the political and bureaucratic system experiment in novel modes of nationwide cooperation with the science and technology systems. When the managerial institutions worked best, innovative concepts and engineering designs either functioned well the first time or were revised through trial and error by specialists at many bureaucratic levels in a rare spirit of mutual help (LEWIS; LITAI, 1988, p. 225).

Last but not least, Lewis and Litai (1988) identify reasons for the success of the Chinese in developing and producing the nuclear bomb on a more personal level: “The extreme secrecy and isolation of most installations in the nuclear program probably added to the atmosphere of high adventure and the promise of unparalleled rewards” (p. 235). The program's goals were established in face of international standards and the participants believed that attaining those goals would be recognized by high authorities, resulting in benefits not only for the nation, but for themselves as well (p. 235).

As for the delivery system development and production, Lewis and Hua (1992) highlight that direct Soviet assistance was scarce. Following the decision to develop

ballistic missiles in the mid 1950's, the Chinese immediately turned to the Soviets for help, to what they responded providing two types of missiles: the R-1 and the R-2. However, the range of those missiles and the size of the payloads they could carry were very limited. This led the Chinese to begin in the late 1950's the development of a missile series known as *dongfeng* or DF ballistic missiles. The first DF (DF-1) was inspired in the Soviet missile R-12. In spite of the fact that the USSR had refused to provide it to China, Chinese rocketry students in the USSR got important information on this missile both through their studies in the USSR and also via interviews with the personnel involved in the R-12 development and production (LEWIS; HUA, 1992, p. 13).

Regarding the strategic concerns that lead the process of missile production, the initial inclination was clearly to react to the U.S nuclear arsenal. An evidence of that is a plan devised by the Chinese in the early 1960's to build four types of missiles in eight years. Each type of missile would have a different range based on a specific imaginary target. The imaginary targets in the original plan from 1964 were the U.S. and its allies: Japan (DF-2), the Philippines (DF-3), Guam (DF-4) and the continental U.S. (DF-5). In 1969, as the Sino-Soviet tensions intensified, the Soviets were included as a possible target of the DF-4 (LEWIS; LITAI, 1988, p. 212; LEWIS; HUA, 1992).

After the relationship between the USSR and China worsened, Chinese missile designers were left on their own, but the Soviet influence persisted in the sense that Chinese scientists have followed the Soviet way of building ballistic missiles with liquid propellants and large throw-weight (LEWIS; HUA, 1992, p. 21). On the other hand, in need to decide on the best way to protect their first intercontinental ballistic missile (the DF-5), the Chinese carefully studied the American means of storage, choosing to keep it in silos, since this was the original way the Americans kept the Titan II (DF-5's "twin missile" in the U.S. arsenal) (LEWIS; HUA, p. 24). Therefore, in regards to missile production, the Chinese emulated both from the Soviets and from the Americans.

Finally, in what comes to the development of an undersea deterrent, the decision to build a ballistic missile nuclear submarine (SSBN) was taken in the late

1950's. Contrary to what has been done by both the U.S and the USSR, China's authorities decided to develop concomitantly both the submarine and the ballistic missile to be deployed to it (SLBM), launching at the same time "Project 09" (the submarine development program) and "Project JL" (the missile development program) (LEWIS; LITAI, 1994, p. 5).

In the very beginning of these programs, the Chinese again sought Soviet assistance, but the programs' inauguration coincided with the deterioration of the Sino-Soviet alliance. When refusing to aid the Chinese in the construction of a nuclear submarine of their own, Nikita Khrushchev stated: "I don't consider that you are able to develop such complicated technologies as those required for a nuclear submarine. You don't have to spend so much money. Once the Soviet Union has nuclear submarines you will already have them. We can create a joint flotilla" (*apud* LEWIS; LITAI, 1994, p. 18). In face of that, Mao Zedong responded: "We will have to build nuclear submarines even if it takes us 10,000 years!" (*apud* LEWIS; LITAI, 1994, p. 18).

In spite of the fact that formal Soviet help was not provided, it is possible to say that the Chinese built on Soviet technology to construct its first SSBN. This is because, although assistance to the SSBN program was denied, the last conventional naval assistance agreement between the USSR and China was signed in the end of 1958. Under this agreement, Moscow licensed the Chinese construction of a conventional-powered ballistic missile submarine, a medium-sized attack submarine, two sizes of missile craft, hydrofoil torpedo boats, a submarine-to-surface missile and a ship-to-ship missile. This technology helped the Chinese with missile propulsion and guidance, as well as missile submarine construction (LEWIS; LITAI, 1994, p. 17).

In addition, although having to reach solutions of their own in the construction of a SSBN and a SLBM, the Chinese had access to open international publications that reported the development of American submarines and SLBMs. The American SSBN and SLBM programs were closely watched by China's authorities and technicians. The former were especially interested in the institutional solutions forged by the Americans which involved the Navy in the development process:

The central role of a military service in an advanced research-and-development program was unprecedented and in fact has not been

repeated since. Though the shipbuilding ministry, the Sixth Ministry of Machine Building, would eventually be spun off from the First and the follow on Third Ministry, and the navy would share some of its project-related authority with this state organ, the navy continued to play a central directing role in the development of both the submarine and the SLBM throughout. In defining this role, it is worth noting, the Chinese consciously studied the bureaucratic powers and techniques of the U.S. Navy's Special Projects Office in connection with the Polaris program. They liked not only the methodology but the relative freedom from outside interference that the U.S. program appeared to enjoy (LEWIS; LITAI, 1994, p. 6-7).

Furthermore, Chinese technicians reportedly used open knowledge about American SSBN program when confronted with technical problems. While narrating the history of the design of Chinese SSBN, Lewis and Litai (1994) refer many times to “the close reading of the increasing number of publications on the American Polaris program” (p. 53). To reach this conclusion, these authors draw especially on memoirs and technical articles written by Chinese experts involved in the project.

Overall, it is possible to say that, during the Cold War, Chinese offsetting, emulation and innovation happened in relation to both the Soviet and the American nuclear programs. The Chinese authorities' statements to justify the acquisition of nuclear weapons stressed the goal to contain “American imperialism” and avoid “nuclear blackmail” by the U.S. In addition, as was mentioned above, the initial plans to build missiles to deliver the Chinese newly produced nuclear warheads had the U.S. territory and its allies as potential targets. Accordingly, the Chinese acquisition of nuclear weapons could be explained as an attempt to offset American nuclear capabilities. However, the model initially emulated by the Chinese to cope with American nuclear weapons was the Soviet one.

Nonetheless, as was previously discussed, the Chinese nuclear program cannot be described simply as a product of emulation. Especially, one cannot neglect the fact that Soviets dropped their assistance to China in the early 1960's. As a result of that, China had to innovate in order to achieve the objective of building its own nuclear arsenal. Although it is known that technical innovation happened in what comes to the design of the bomb (see LEWIS; LITAI, 1988, chapter 6, p. 167), the unique set of institutions developed by the Chinese to make technological innovation

possible is an example of innovation in the very process of nuclear weapons acquisition.

The emulation of the Soviet nuclear program is comprehensible due to the Sino-Soviet alliance during the 1950's and also due to the fact that the international system was bipolar at the time. The presence of off-setting and emulation in relation to both programs (the American and the Soviet) is noticeably explained by the fact that during the Cold War there were two successful models which could possibly be emulated. China needed to defend itself from possible attacks from both superpowers. To defend itself against the system's poles, China would off-set and emulate both superpowers nuclear capabilities.

5.3

Were the results of Chinese efforts enough?

Despite the fact that the Chinese nuclear program can be described as a considerable accomplishment in the sense that China tested successfully its first nuclear device in 1964 and its first intercontinental ballistic missile in 1971 (LEWIS; HUA, 1992), one cannot ignore that the arsenal built by this country was the most modest one when compared to other nuclear states during the Cold War. The table below displays a comparison between the actual amount of missiles that could hit American territory in 1984 and 1994 (National Security Council) and the projections made by the Defense Intelligence Agency for the years of 1989 and 1994:

Table 2 - Defense Intelligence Agency's Projection of Selected Chinese Strategic Forces, 1984-94

	Actual & Projected in <i>Nuclear Weapons Systems in China (1984)</i>			Actual
	1984	<i>1989</i>	<i>1994</i>	1994
CSS-4 (DF-5)	2	<i>9</i>	<i>16</i>	7
CSS-3 (DF-4)	8	<i>31</i>	<i>32</i>	10
CSS-NX-3 (JL-1)	0	<i>24</i>	<i>48</i>	0

Reproduced from Jeffrey (2007), p. 69 (Projections are in italic here in accordance to the original).

As the estimates above show, in 1984, China had only two missiles that could reach the U.S. continental territory (the DF-5) and seven of the same kind in 1994. Consequently, it is important to inquire to what extent were Chinese efforts enough in what regards this state attempt to improve its standing in the international system during the Cold War. In other words, is it possible to say that China internally balanced the U.S. and the USSR? This is a complex question with no easy answers. At least two assumptions are hidden behind this inquiry: 1) that, just as internal balancing is a behavior that can be carried out by pole candidates during unipolarity, it is also a behavior pursued by states that want to improve their standing in a bipolar international system (and not only by the poles in relation to each other); 2) that the acquisition of nuclear weapons was a necessary step to be confronted by pole candidates during the Cold War.

Related to this inquiry regarding the results of the Chinese nuclear program in what comes to the standing of this country in the international system is the question of how much is enough to achieve deterrence and if the fact that nuclear weapons were not used against China during the Cold War is a deterring result of its nuclear arsenal. In other words, one is also inquiring how developed a nuclear arsenal must be so that deterrence works. On the other hand, the most important question for the purposes of this dissertation is whether the fact that deterrence might have worked implies that China succeeded in improving its standing in the internal system via internally balancing the U.S. and the USSR.

In a review of the academic classifications of the Chinese posture towards nuclear weapons in the first years that followed the end of the Cold War, Johnston (1995-1996) identifies three general views held by Western scholars on the matter. The first view characterizes the Chinese behavior as "minimum deterrence", arguing that Chinese authorities for long have believed that a small number of warheads capable of inflicting unacceptable damage on an enemy's cities would constitute a credible deterrent. The supporters of this view claim that China's force structure by the end of the Cold War (that included around fifty single-warhead, inter-continental and intermediate-range ballistic missiles) was only consistent with a minimum

deterrence posture. A second view states that the Chinese are inclined towards some form of limited war-fighting doctrine or flexible response and a third view emphasizes the peculiar characteristics of China's view of deterrence (in opposition to Western thoughts on the subject), stressing that Chinese authorities are informed by a strategic tradition that values minimalism and ambiguity (p. 10-11)¹.

Although the specific characteristics of Chinese behavior during the Cold War may be disputed, there is consensus among Western scholars in denominating it as deterrence. And the Chinese themselves also tend to agree with this characterization, which is supported by Deng Xiaoping's words in a meeting with foreigners in 1983:

While you have some deterrence force, we also have some; but we don't want much. It will do just to possess it. Things like strategic weapons and deterrence forces are there to scare others. They must not be used first. But our possession will have some effect. The limited possession of nuclear weapons itself exert some pressure. It remains our position that we will develop a little (nuclear weapons). But the development will be limited. We have said repeatedly that our small amount (of nuclear weapons) is nothing. It is only to show that we also have what you have. If you want to destroy us, you yourself have to suffer some punishment at the same time (*apud* YUNZHU, 2005, p. 3).

But was the pursuit of deterrence successful? According to Goldstein (2000), nuclear deterrence worked for China and it did *in spite of* the size of its arsenal. This scholar states that the Chinese relied on the understanding that the nuclear revolution resulted in a new international strategic environment in which China could provide itself with a credible deterrent by taking advantage of an adversary's uncertainty about the retaliatory forces the PRC would have at its disposal as well as the circumstances under which they might be employed (p. 133).

And this belief seems to be supported not only by the Chinese, but by Goldstein (2000) himself since the reasons he provides to explain the success of deterrence are not specifically related to the size of China's arsenal but to the manipulation of rationality:

(...) it is precisely because there could be no certainty that China would behave as if it were a rational actor that Beijing could be confident nuclear deterrence and the concomitant risk of escalation

¹ Chinese nuclear posture will be discussed in greater detail in what follows.

to a catastrophic exchange provided so robust a security guarantee, even for a state like China with a small collection of relatively vulnerable and inaccurate, though powerful, weapons (p. 131).

According to Goldstein, the lack of confidence that China would behave rationally was derived from the possibility of accidental launch and the impulsiveness of leaders sensitive to international humiliation (p. 131).

Nonetheless, the main problem with evaluating the success of deterrence is the following: the fact that nuclear weapons were not used against China is not necessarily a result of deterrence. But, even if we close our eyes to this dilemma and accept the idea that deterrence worked, another problem remains: does the pursuit of deterrence equate internal balancing? And if yes, was a deterrence posture effective in improving China's standing in the international system?

A tentative response to that question is that the acquisition of nuclear weapons and the posture of deterrence had the effect of improving Chinese international standing during the Cold War, but it does not seem to have been enough to transform China into a pole. This conclusion is supported by the counterfactual claim that, if tensions had risen between the U.S. and China, the latter's arsenal was not sure to guarantee a second strike capability, which was one of the basis of pole standing during the Cold War. According to the nuclear intelligence community, the U.S. deployment of the Trident II-D5 put in doubt the already fragile Chinese nuclear arsenal since it was believed to be accurate enough to threaten Chinese nuclear silos (JEFFREY, 2007, p. 72). On the other hand, if involved in a war against the USSR, China's situation would be even worse in view of the geographical proximity between the countries and the fact that it is believed that the Soviets had information on the exact location of Chinese nuclear weapons.

Therefore, although the actions undertaken by China during the Cold War resemble internal balancing, they do not fit entirely into our characterization of this phenomenon since they did not increase China's chances of actually winning a nuclear war against either the U.S. or the USSR. A country that does not possess a second strike capabilities cannot be said to have good chances of winning a nuclear war.

5.4

The Chinese nuclear arsenal after the end of the Cold War

As was discussed in the previous section, China did some offsetting, emulation and innovation during the Cold War, but those actions were not successful in transforming this country into a pole and this is because its nuclear arsenal was extremely vulnerable to a preemptive first strike during that period of time. In other words, actions that resemble internal balancing happened, but could not be characterized as such since they did not have the potential to affect the international distribution of power.

This section aims at inquiring whether there were any changes in Chinese behavior with the emergence of unipolarity. In other words, the objective is to verify if China is currently internally balancing the U.S. in what comes to the latter's nuclear power. For that purpose, one needs to identify which forms Chinese internal balancing might be taking (off-setting, emulation or innovation, or a combination of the three) and if Chinese actions have at least the potential to reduce the capability gap between the U.S. and China, increasing the Chinese chances of winning a nuclear war against the Americans.

In response to those questions, it is argued here that actions that resemble internal balancing are happening just as they happened during the Cold War. However, there are two main important differences nowadays: a) the actions are mainly pursued in reaction to developments in the American arsenal, and b) the results of those actions seem to be closer to this dissertation's definition of internal balancing, since they act on the survivability of Chinese nuclear weapons, creating a true second strike capability for the first time since China's decision to acquire nuclear weapons.

5.4.1

The Chinese nuclear posture after the Cold War

After the end of the Cold War, debates about Chinese behavior towards

nuclear weapons concentrated on Grand Strategy, with scholars inquiring to what extent Chinese posture was still one of minimum deterrence. Johnston (1995-1996) claimed that the Chinese nuclear posture was in a process of transformation in the mid 1990's, since, according to this scholar, Chinese strategists began to reject minimum deterrence based on the argument that the capabilities required to pursue such a strategy were allegedly too vulnerable to a disarming first strike (p. 18).

In this sense, Johnston (1995-1996) reported that Chinese scholars were now explicitly distinguishing "limited deterrence" and "minimum deterrence"². In limited deterrence, nuclear weapons are expected to deter both conventional and nuclear wars and could be used in escalation control in case deterrence fails (p. 12). Therefore, "limited deterrence" seems to entertain the possibility that nuclear wars can be fought and won. In other words, this posture relies on the idea that inflicting counterforce and countervalue damage on an enemy may lead him/her to retreat, denying him/her victory in a conflict. Johnston believed that the list of targets considered appropriate by Chinese strategists (countervalue and hard and soft counterforce targets) supported the hypothesis that "limited deterrence" was turning into Chinese strategic posture, since minimum deterrence is believed to involve just countervalue targeting (p. 19).

Nevertheless, Johnston (1995-1996) acknowledged that, at the time of his writing, there was a large gap between the doctrinal arguments he discussed and China's nuclear capabilities (p. 31). He explained this gap by suggesting that the evolving limited deterrence thinking might have established guidelines for operational plans, technology acquisition, and deployment in the mid-1990s and beyond, but that the results of these efforts would take time to become visible.

To support this explanation, he contended that:

On average, it took eleven years for China's first generation of ballistic missiles (DF2 through DF5) to move from research and development (R&D) stages to deployment. The second-generation weapons (JL1/DF21 and DF41) have taken about as long. Thus any R&D choices made on the basis of the requirements for limited deterrence will not come to fruition until the late 1990s and the first decade of the next century: if so, one should expect the size, mobility, diversity, and flexibility of Chinese forces to increase over

² Johnston (1995-1996) reports that Chinese scholars employ the term "maximum deterrence" to refer to what they perceive as a counterforce war-fighting doctrine pursued by the United States and the Soviet Union during the Cold War.

the next decade or so. One should also expect to see efforts to develop ground-based and possibly some space-based BMD systems, ASATs, TNW, and improved early-warning capabilities (including satellite technologies) (JOHNSTON, 1995-1996, p. 36).

On the other hand, in the early 2000's, Gill, Mulvenon and Stokes (2002) highlighted the continuity of the declared array of principles that supposedly guide China's approach to nuclear weapons: the no-first use policy (which means that the nature of Chinese nuclear arsenal is defensive; therefore, its function is to deter a first strike by China's adversaries); the commitment not to use nuclear weapons against non-nuclear states and to work within the Security Council framework to help non-nuclear weapons in case they have suffered a nuclear attack; the rejection of the idea of extended nuclear deterrence and of deploying nuclear weapons outside its national borders; and the support for nuclear weapons free-zones. Nonetheless, these scholars acknowledged that those principles were very much related to what the Chinese arsenal *could* do and might be subject to change in case the arsenal improved in quality and quantity.

Consequently, Gill, Mulvenon and Stokes (2002) tried to analyze Chinese nuclear posture on the basis of what current capabilities could do, and not on stated intentions or principles. In this sense, they claimed that Chinese strategic forces defied simple categorization as "minimal" or "limited" deterrence by the time of their writing, since the Second Artillery forces were (and still are) composed of strategic, theater, and tactical systems of varying range, accuracy, and yield, that could possibly perform different missions. According to these scholars, the small intercontinental ballistic missile (ICBM) force was the foundation of a second-strike minimal deterrence force, while the theater systems were not supposed to be used in a second-strike following a preemptive strike, but as offensive systems meant to strike U.S. forces and bases in Asia, offsetting, therefore, the American superiority in conventional capabilities. As a consequence of the developments in strategic and theater systems, the scholars concluded that nuclear credible deterrence was being attained for the first time in Chinese history. Finally, the short-range, ballistic missile forces, also nuclear capable, served conventional warfighting and nuclear warfighting

roles.

Accordingly, Gill, Mulvenon and Stokes (2002) argued that:

For the future, the doctrine and force structure of China's Second Artillery must be analyzed at three distinct levels: a posture of credible minimal deterrence with regard to the continental United States and Russia; a more offensive-oriented posture of "*limited-deterrence*" with regard to China's theater nuclear forces; and an *offensively-configured, preemptive, counterforce warfighting posture* of "active defense" or "offensive defense" for the Second Artillery's conventional weapons (p. 556-557, emphasis by the authors).

In turn, Jeffrey (2007) disputes the view that there is any evidence of a revision in the traditional deployment pattern of Chinese strategic forces or the underlying strategic logic. He contends that the purpose of the Chinese nuclear arsenal continues to be to discourage states from using nuclear weapons against the PRC and to retaliate against any state that does. Supporting his argument, he invokes continuing characteristics of the Chinese nuclear weapons, which are: "1) small in number and based largely on land-based ballistic missiles, 2) kept under tight central control and off-alert, and 3) limited in their operational missions to retaliatory strikes" (p. 26).

In addition, Jeffrey (2007) thinks that China's support for the Comprehensive Test-Ban Treaty (CTBT) is a result of a view allegedly held by the Chinese authorities that deterrence is insensitive to changes in the size, configuration, and readiness of nuclear forces (p. 22). Hence, he predicts that: "China will continue to preserve a modest level of capability sufficient for its minimalist conception of the role of nuclear weapons despite U.S. investments in missile defenses and in other aspects of strategic modernization" (p. 18).

Yunzhu (2005), a respected Chinese source on this topic, specifically disagrees with the inclusion of warfighting concepts in Chinese thoughts about deterrence:

If I am to choose from Western deterrence classifications to describe Chinese nuclear deterrence posture in general, I would have to use the handy concept of "minimum deterrence" as compared to maximum or limited deterrence. Personally, I think the word "minimum" has too strong a quantitative connotation that is

misleading. It sometimes suggests a quantitative standard instead of a qualitative standard. The word “minimum” has for some time been officially used in Chinese government documents. But what I want to emphasize is that Chinese strategists take the concept as a relative one, defined not only by pure numbers, but more importantly by such key criteria as invulnerability of nuclear forces, assurance of retaliation, and credibility of counter-attack. When a Chinese document says that China intends to possess nuclear weapons only at the minimum (or lowest) level for the needs of self-defense, that means to have the minimum but assured capabilities for a retaliatory second strike. Some studies have suggested a shift of Chinese nuclear posture toward limited deterrence, where China could employ nuclear weapons to deter both conventional and nuclear wars, and even to exercise escalation control in the event of a conventional confrontation. However, the basic logic of China’s nuclear thinking dictates nuclear weapons as deterring—not as a means of winning against nuclear weapons (YUNZHU, 2005, p. 4).

Wortzel (2007) agrees with Yunzhu (2005) in what comes to the acknowledgement that published long-standing military doctrine texts and statements by senior leaders support the conclusion that the Second Artillery’s strategic mission is principally to be a deterrent and retaliatory force. However, Wortzel argues that there is a debate going on in China about the continuation of the “no-first-use” policy. In particular, military thinkers are discussing if nuclear weapons should be used in response to conventional attacks on strategic systems and if preemptive strategic attacks should be launched in case of warnings of an imminent strategic attack (p. 14)³.

Furthermore, Wortzel (2007) points out that the objectives of nuclear counterattack campaigns established by the PLA leadership seem to suggest that China is not restrained by a countervalue strategy. The objectives are:

- Cause the will of the enemy (and the populace) to waver;
- Destroy the enemy’s command and control system;
- Delay the enemy’s war (or combat) operations;

³ Examples of this new line of thinking are Rong Yu and Peng Guangqian: “If nuclear weapons of one warring party are attacked by the enemy’s conventional weapons, resulting in nuclear radiation, nuclear contamination or even a nuclear explosion, could this be viewed as a nuclear first use? On the surface, this is merely a conventional attack, but in effect, its impact is little different than suffering a nuclear strike and incurring similarly heavy losses. In this case, conventional attack might also be seen as breaking the nuclear threshold, and the attacked will find it difficult to refrain from a nuclear counterattack, which, in turn, will greatly increase the risks that either side launches a nuclear attack first” (*apud* YOSHIHARA; HOLMES, 2010, p. 147).

- Reduce the enemy's force generation and war-making potential; and,
- Degrade the enemy's ability to win a nuclear war (WORZTEL, 2007, p. 18).

Also arguing in favor of the view that the Chinese nuclear posture has been changing, Chase, Erickson and Yeaw (2009) claim that China has recently discarded the belief that the quantity and quality of its missile and nuclear forces have little influence on deterrence. This is because Chinese planners seem to be promoting reforms to improve the current credibility of Beijing's deterrent. According to Chase, Erickson and Yeaw, the main objective of those reforms is to enhance the survivability and robustness as well as the flexibility and responsiveness of the missile force. In what regards survivability, Chinese scientists and engineers have discussed in open publications a series of countermeasures such as decoys, maneuvering warheads, multiple warhead systems, "enveloping balls", and preemptive strikes (p. 81). Finally, it is believed that China is pursuing the development of tactical nuclear weapons in order to ensure the credibility of its deterrent posture at all levels of war (p. 87).

Fravel and Medeiros (2010), despite arguing for the continuity of the Chinese approach to nuclear strategy since the 1960s⁴, agree that China has nonetheless made recent improvements on survivability. They highlight that changes in the composition of China's nuclear forces have emphasized increasing quality over quantity in order to achieve a secure second-strike capability (p. 52). In other words, the scholars think that China is seeking to acquire adequate capabilities to reach assured retaliation. However, the authors advert that this is not the same as saying that China's nuclear strategy is one of minimum deterrence, since minimum deterrence would imply that China adheres to a series of ideas that prescribes the size, composition, and operations

⁴ The authors explain the continuity in Chinese nuclear posture based on the views of China's top leaders since Mao Zedong who view nuclear weapons as tools for deterring nuclear aggression and coercion which are not to be used in combat. In addition, Chinese leaders adhere to the idea that a small number of survivable weapons would be enough to accomplish deterrence by threatening retaliation, what Fravel and Medeiros (2007) call a doctrine of "assured retaliation" (p. 57-58). Furthermore, these scholars believe that domestic and organizational politics are also responsible for the gradual evolution of China's nuclear strategy and forces. In particular, they invoke a lack of resources and expertise on nuclear strategy within the PLA to explain the underspecified characteristic of China's nuclear strategy and doctrine before the 1990s (p. 66).

of nuclear forces. China is neither committed to pursue only countervalue targeting (as mentioned previously, PLA sources suggest that adversary's forces and military facilities could be targets in a retaliatory strike) nor to acquiring just a specific number of weapons, which are both attributes of minimum deterrence (p. 79).

Likewise, in spite of denying the occurrence of fundamental changes in Chinese nuclear Grand Strategy, Jeffrey (2007) also acknowledges that the Chinese have been working to improve the survivability of their nuclear arsenal under conditions of a nuclear attack, recalling that, in August 1995, the Second Artillery completed a project that allegedly created a network of *interconnected caves and tunnels* to store its missiles (p. 33). Moreover, in his own words: "Whatever the reason, China appears to have reassessed its ballistic missile deployments during the 1990s. Between 1994 and 1998, U.S intelligence estimates the number of China's CSS-4 (DF-5) ballistic missiles increased from 'seven to ten' to 'about twenty'" (p. 73).

Finally, Yoshihara and Holmes (2010) state that the most recent developments in China's nuclear forces do not necessarily break with a minimalist strategy, but reinforce minimum deterrence (p. 133). Beijing is believed to have kept the assessment that a small amount of nuclear weapons is enough, as long as survivability of its arsenals is guaranteed. Nonetheless, developments in a potential enemy arsenal change the minimal requirements to guarantee survivability. Therefore, the lack of change in China's strategic thought does not mean that Chinese nuclear arsenal remains intact. In the words of these scholars "change is occurring within a broader context of continuity" (p. 135). Or, as a Chinese source claims: "As various precision strike capabilities rapidly grow and anti-ballistic missile systems develop internationally, the minimum standards and technological benchmarks necessary for self defense must be raised accordingly" (SUN XIANGLI *apud* YOSHIHARA; HOLMES, 2010, p. 135).

In sum, although scholars disagree in what comes to the occurrence of major changes in Chinese nuclear Grand Strategy, there is consensus in recognizing a major development: the current nuclear modernization efforts have been focused on improving the survivability of Chinese nuclear weapons, potentially providing China

with a secure second strike capability for the first time in the history of this country's nuclear program. The next section will discuss the current developments in the Chinese nuclear arsenal in order to better characterize the claim that the improvements were few, but decisive.

5.4.2

The modernization of the Chinese nuclear arsenal

In a recent Bulletin of Atomic Scientists on the status of the Chinese nuclear forces, Kristensen and Norris (2011) estimate that this country has a total of 240 nuclear warheads, an amount that did not vary much since the end of the Cold War⁵. However, the modernization efforts have not been focused on the amount of warheads, but rather on the quality of the delivery systems. In this sense, General Jing Zhiyuan, the commander of the Second Artillery, declared that “elite effectiveness” and “sufficient effectiveness” are the basis of the modernization program (*apud* YOSHIHARA; HOLMES, 2010, p. 136).

Kulacki (2011) stresses that China's nuclear weapons experts trust that their nuclear warheads will detonate as tested, but they fear for the survivability of China's delivery vehicles and its command and control facilities. Therefore, the problem of survivability appears to be driving current improvements in China's arsenal and the focus on delivery systems. In particular, China's modernization efforts are focused on replacing its liquid-fueled missiles, which were supposed to be launched from fixed sites, with solid-fueled missiles that can be deployed on mobile platforms. This would reduce the likelihood that China's missiles could be destroyed in a first strike (p. 3-4).

Missile mobility and survivability could in principle be attained by the construction of road-mobile missiles or by deploying missiles to submarines. In other words, Beijing needs to determine the proper force mix and tradeoffs between a land-based and a sea-based deterrent. However, China is amply believed to prioritize its land-based deterrent force. Kristensen and Norris (2011) estimate that Beijing has about 140 land-based nuclear ballistic missiles capable of carrying a single warhead

⁵ According to Kristensen and Norris (2010), China had 234 nuclear warheads in 1991 (p. 80).

each (p. 81). Nonetheless, these scholars presume that only 72 of those missiles can strike U.S. territory (12 DF-4s, 20 DF-5As, up to 20 DF-31s, and up to 20 DF-31As) and only 40 (the DF-5As and DF-31) can reach the continental U.S. (p. 82). It is important to note that this is a significant increase from the Cold War numbers shown previously. In 1984, China had only 2 missiles that could reach the continental U.S.

Similarly, in its annual report to Congress, the U.S. Department of Defense (DoD) states that China is “modernizing its nuclear forces by adding more survivable delivery systems. For example, in recent years the road mobile, solid propellant DF-31 and DF-31A intercontinental range ballistic missiles (ICBM) have entered service” (DoD, 2010, p. 2). The DoD also believes that China is developing a new road-mobile ICBM (intercontinental ballistic missile) capable of carrying a multiple independently targeted re-entry vehicle (MIRV) (p. 2). Nonetheless, Kristensen and Norris (2006) disagree with the idea that China might be interested in arming its missiles with multiple warheads. In their words, this could be risky since it implies placing “too many eggs in one basket”, increasing the vulnerability of its ICBMs to a first strike (p. 56)

On the other hand, Kristensen and Norris (2006, 2011) highlight that China is replacing the original DF-5s with a modified and longer-range version, the DF-5A, which reaches up to 8,100 miles (13,000 km). A report delivered to the House of Representatives in the late 1990’s known as the “Cox Report⁶” claimed that the DF-5 was a clear emulation of U.S. technology which was allegedly stolen by China in the 1950’s. However, one cannot say for sure that emulation really happened since this allegation was discredited by subsequent assessments of the Cox Report. In special, the Stanford University Center for International Security and Cooperation (CISAC) published a review of the Cox Report by a group of scholars from Harvard University, Stanford University and the Lawrence Livermore National Laboratory, which contended that the report failed to provide information that traces China’s nuclear weapons to U.S. sources. The report asserts, for instance, that the next generation of

⁶ This congressional document is known as Cox Report due to the Representative who chaired the House of Representatives Committee on U.S. National Security and Military/Commercial concerns with the People’s Republic of China: Christopher Cox (R-Calif.). At that point, the Committee investigated allegations that China had illegally acquired American nuclear technology (KRISTENSEN; NORRIS, 2006, p. 23).

Chinese thermonuclear weapons will be based on technology stolen from the U.S., but does not present any evidence to support this claim. In addition, the scholars argue that theft of information could not lead to such a new generation short of nuclear testing. In sum, the report is accused of lacking scholarly rigor and exhibiting factual errors and unjustified inferences (KRISTENSEN; NORRIS, 2006, p. 23-28; and p. 73).

Another important recent development is the deployment of two solid-fueled and road-mobile missiles: the DF-31 and the DF-31A. The latter is an extension of the former and reaches 11,200 kilometers, but it still has a smaller range than the DF-5A (p. 83). Kristensen and Norris (2011) dispute the DoD report (which implies that the entire continental United States is within reach of the DF-31A). These scholars claim that the DoD measures the DF-31A range from the Chinese border rather than the actual deployment sites inside the country. To reach all locations in the U.S., the DF-5 which is not mobile, is still required (p. 83).

In view of the fact that non-mobile missiles remain important for China, an action that should be expected from this state in its effort to improve the survivability of its arsenal is the hardening of the storage sites. Indeed, according to Zhang (2012), the Chinese media, including the *People's Liberation Army's National Defense Daily*, has reported that the engineering unit of the Second Artillery Corps began to build an “underground great wall” (or an array of tunnels to store nuclear weapons) in 1985 and finished its first phase about 10 years after that.

In respect to this development, an American national security strategist during the Cold War, Dr. Phillip A. Karber (*apud* ZHANG, 2012, p. 1-2) recently led a research with a group of Georgetown students on the tunnel system in China. Karber's final report argues that China's nuclear arsenal could be thousands of warheads larger than intelligence analysts now estimate. Nonetheless, this conclusion was contested by a series of scholars, who highlighted that the study had some very serious deficiencies. In particular, the conclusion that China had thousands of warheads was based mainly on the number of tunnels that were discovered by the students via internet tools like “Google Earth”, disregarding the amount of plutonium and highly enriched uranium (HEU) that China has available for weapon production. Newly

available public information indicates that China has an existing military inventory of about 1.8 tons of plutonium and 16 tons of weapons-grade HEU. Having stopped the production of highly enriched uranium in 1987 and reduced the plutonium production by 1990, experts estimate that Chinese stockpile of fissionable material would be enough to produce 680 thermonuclear warheads at most: a lot less than the thousands suggested by Dr. Karber (ZHANG, 2012, p. 1-2).

In addition to deploying new missiles and building tunnels, China accelerated the speed of medium and long-range missile tests and is training officers, soldiers, and technicians so that they will be able to operate the new missiles. Moreover, the Chinese are promoting organizational reforms to deal with the new missiles such as the creation of new missile units and the conversion of old units into new types of missiles ones. It is also believed that they are trying to modernize their command and control system. Finally, China demonstrated to have a direct anti-satellite capability on 11 January 2007, when it employed a mobile missile to destroy the old Chinese weather satellite Feng Yun 1C. (CHASE; ERICKSON; YEAW, 2009, p. 69-72).

In what regards the deployment of missiles to submarines, a flotilla like the one held by the United States provides this country with the most survivable component of its nuclear arsenal. This is due to the fact that nuclear power enables ballistic-missile submarines to stay submerged for weeks. Because of that, SSBNs can patrol quietly in locations known to no one but their commanders, making it very hard for potential enemies to find out where they are. Therefore, SSBNs provide a highly assured second-strike capability (McCONNAUGHY, 2005, p. 24).

Chinese authorities recognize the importance of this tool in strengthening their deterrence arsenal. In the words of General Liu Huaqing (known as the “father of Chinese modern navy”) in 1997: “Fewer than ten percent of China’s land-based missiles would survive a large-scale nuclear first strike; the less vulnerable SLBMs would preserve our nuclear counterattack capabilities” (*apud* McCONNAUGHY, 2005, p. 26).

Yang Daxin argues that SSBNs are the ultimate weapons due to their survivability (90 percent), offensive power and destructive power (*apud* YOSHIHARA; HOLMES, 2010, p. 137). Likewise, Hong Hai, writing for the

Chinese journal *Naval and Merchant Ships*, claims that

SSBNs offers (1) concealment and survivability; (2) mobility and range; (3) an offset for the limited range of ballistic missiles; (4) firepower and multivector strike; (5) flexible firing solutions and superior penetration capabilities against anti-ballistic-missile systems and (6) independent operations far from the homeland, thus lowering collateral damage to civilians in counterforce exchanges (*apud* YOSHIHARA; HOLMES, 2010, p. 138)

However, China has experienced many difficulties in this realm. Its first nuclear-powered ballistic missile submarine (SSBN), the Xia-class, is reported to be noisy and to have an unreliable propulsion system. Above all, it is not considered currently operational (JEFFREY, 2007, p. 35). In what regards the missile that was supposed to be launched from this submarine, the JL-1, China also experienced many problems during its development, only conducting a successful submerged launch from the Xia in 1988, thirty years after the decision to build China's first SSBN (McCONNAUGHY, 2005, p. 34).

A new class of nuclear submarines, the Jin-class, is believed to be ready to enter service. This new submarine is said to be able to carry 12 missiles. The number of second-generation Chinese SSBN that will be deployed is subject to debate, with estimates varying from four (Jane's Strategic Weapons System's prediction) to five (the Pentagon and the U.S. Navy's Office of Naval Intelligence's estimate) (*apud* YOSHIHARA; HOLMES, 2010, p. 140). Nevertheless, it is unclear how the new submarine force might operate. This is because Chinese submarines have never sailed on a deterrent patrol and therefore do not have experience with this procedure. In addition, China's Central Military Commission, which directly controls the nuclear arsenal, might not authorize the deployment of nuclear warheads to the navy during peacetime. If this turns out to be true, China would not develop a sea-based deterrent similar to that of the United Kingdom or the United States, since the submarines would only be armed with warheads and deployed after a conflict has started (KRISTENSEN; NORRIS, 2011, p. 84).

Writing in the same issue of the journal above mentioned (*Naval and Merchant Ships*) Lan Hai highlights many drawbacks of SSBNs in comparison to land-based missiles: less missile accuracy; high expenses in maintaining operational

readiness and keeping submarines at sea, building and maintaining ships; difficulties in command and control; high impact of damage, loss or destruction of a submarine; and long research and development time for platforms (*apud* YOSHIHARA; HOLMES, 2010, p. 138).

In conclusion, Yoshihara and Holmes (2010) claim it is clear that there is a very well informed debate going on in China about the feasibility of an undersea deterrent and that, although the efforts to build SSBNs tend to continue, it is not likely that Chinese authorities will lean decisively towards SSBN to the detriment of land-based missiles (p. 138). This is because many Chinese scholars seem to be persuaded that China's large territory and mobile DF-31 would be enough to make the Chinese nuclear arsenal survivable to a first-strike (p. 139).

5.4.3

The correlation between Chinese nuclear modernization and the U.S. arsenal

In characterizing China's current behaviors as internal balancing against the U.S., it is important not only to demonstrate that China is modernizing its nuclear arsenal, but that it is doing so in reaction to developments in the American nuclear arsenal and that the consequence of those actions is the increase of China's chances of winning a war against the U.S.

American capabilities are seen by Chinese authorities as one of the major potential threats to China's security. In this respect, after analyzing recent Chinese language books published by the People's Liberation Army (PLA) on China's Second Artillery Corps⁷, Wortzel (2007) claims that:

One of the key insights from these documents is that China now identifies the United States as its main potential enemy, although in some materials, the references to the United States are indirect. This is an important change in China's strategic literature because in the

⁷ The material analyzed by Wortzel (2007) was composed by doctrinal texts published by the Chinese National Defense University to be used in the education of PLA officers, such as "A Guide to the Study of Campaign Theory". Other publications analyzed were "On Strategic Command and Control", published by Military Science Press in 2002 and "Warfare in the Information Age", published by National Defense University Press in 2000.

past, Russia (the Soviet Union) was also identified as a principal threat to China. Now the United States stands alone. In part, this is because senior PLA leaders and military strategists consider the United States to be the most advanced military force on which to base their own military development. They also see the United States as the most advanced and likely potential enemy against which they may need to employ ballistic and cruise missiles or counter advanced C4ISR technologies (p. 3).

Exactly because the U.S. capabilities are perceived by the Chinese strategists as 1) the most developed in the world; and 2) the most likely to create problems to China's security, Chinese authorities follow U.S. military developments more carefully than those of other nations and aim to be prepared to counter the American forces. This threat perception fuels the PLA's efforts of modernization. In particular, PLA strategists believe that their missiles represent a "trump card" that may help the PLA to win a possible war against the U.S. (WORTZEL, 2007, p. 4-5).

Yao Yunzhu, a Senior Colonel of the People's Liberation Army, agrees with the idea that Chinese current nuclear posture is pursued in reaction to the U.S.:

Both Taiwan and BMD [Ballistic Missile Defense] are important factors that will have impacts on Chinese nuclear calculus:

- The former highlights the necessity and urgency of ensuring a mutual deterrent relationship with the United States to prevent nuclear use in the Taiwan conflict, which might have not been so important or urgent before. Only in this way, has Taiwan become relevant to China's nuclear policy.
- The latter emphasizes the concern over the credibility of Chinese deterrence against the United States. Concerns over Taiwan and BMD combine to form the focus of China's nuclear modernization – the maintenance of sufficient nuclear capabilities that can survive a first strike to inflict unacceptable damage on the enemy in a retaliatory strike (YUNZHU, 2005, p. 7).

Likewise, Fravel and Medeiros (2010) state that China's nuclear strategy is now (and will continue to be) mostly linked to advances in U.S. military capabilities and to U.S. strategic defenses. The PLA fears that U.S. developments in missile defenses, long-range conventional strike, and command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) assets may

increase considerably the American capacity to locate and target China's nuclear forces, what might threaten the credibility of Chinese second-strike capabilities (p. 83). In their words:

Two motivations are driving China's efforts to increase the size of its force. First, the PLA has sought to update many of its aging systems, which are based on missile technology developed in the 1960s and 1970s. Second, the PLA wants to possess an arsenal large enough to penetrate missile defense systems following a first strike on China. For China, **its nuclear forces are strongly linked to its assessment of the size and effectiveness of U.S. strategic defenses** (p. 81, emphasis added).

American authorities also seem to acknowledge the relation between Chinese nuclear modernization and developments in American nuclear weapons. Kristensen and Norris (2006) state that there is a sense among the U.S. intelligence community that Chinese nuclear modernization was triggered by the deployment of more capable U.S. offensive forces and the discussions on the development of an anti-ballistic missile defense system. Nonetheless, the aforementioned scholars also claim that one has to look long and hard to find the public acknowledgment of this feeling. An example is found in Robert Walpole's (a member of the CIA), testimony to the Senate in 2002:

Sen. Cochran. The estimate that you have described to us today says that China is modernizing its strategic missile forces. Can you tell us how long this modernization effort has been underway?

Mr. Walpole. Yes, since the mid-1980s. China became concerned about the survivability of its silos when the U.S. deployed the Trident II-D5 because you could hit those silos (apud KRISTENSEN; NORRIS, 2006, p. 51, emphasis by the authors).

As the statements quoted in this section indicate, there appears to be a correlation between China's behavior and the developments in U.S. nuclear arsenal. However, one might argue that China's behavior is not a response to unipolarity, since the timing seems to be wrong. As Robert Walpole's statement above shows, China initiated its nuclear modernization in the 1980s, when the USSR was still standing. So, technically the world was yet bipolar.

Nevertheless, it is possible to argue that the perception of the unipolar world

to come was increased by the American declaration of the intent to build a BMD. In addition, although the decision to improve Chinese arsenals was taken in the 1980's, modest progress was reached during that decade. There were important developments such as the successful test of a submarine-launched ballistic missile (SLBM) in 1982 and the launch of China's first communications satellite in 1984. However, decreased defense funding held back major improvements in the Chinese nuclear arsenal (POLK, 2005, p. 12-13).

In contrast, the decade of 1990 witnessed a general increase in Chinese defense expenditure and the broad modernization of Chinese military forces, permitting critical improvements in what comes to the Chinese nuclear arsenal. In especial, the progress in survivability appears to be provoked by current U.S. actions, since no other nuclear country could dream of having a decisive first strike advantage nowadays.

According to Lieber and Press (2007), U.S. nuclear primacy, i.e. the ability to succeed in a debilitating counterforce first strike against either Russia or China, was conquered after the end of the Cold War. To support this claim, the authors recall major developments in the American arsenal in the last 15 years, such as the deployment of the Trident II D-5 missiles to the entire SSBN fleet, the placement of the high-yield W88 warheads on many of those missiles, and the deployment of the stealthy B-2 bombers. The scholars argue that these weapons were critical in providing the U.S. with a first strike advantage, since they possess an unprecedented combination of minimal warning, high accuracy, and large warhead yield (p. 83).

Therefore, if Chinese new efforts are directed to improve their second strike capabilities, the motivating threat seems to be the U.S. Another evidence of the fact that the Chinese are trying to offset American first strike capabilities is the dual track of China's efforts: the improvement of the survivability of land-based missiles and the concomitant (although slow, but yet continuing) construction of an undersea deterrent. This is because the only country that could threaten China with a disarming first strike on land and at sea simultaneously is the U.S. (YOSHIHARA; HOLMES, 2010, p. 140).

5.5

Are the Chinese efforts after the Cold War enough to say that internal balancing is taking place?

It has been herein argued that China's improvements in its nuclear arsenal are a reaction to the U.S., i.e. an attempt to provide China with a second strike capability and offset the developments in the U.S. nuclear arsenal that, in theory, could provide this country with nuclear primacy. Accordingly, to the extent that internal balancing could be said to be happening, it was also argued that offsetting seems to be the form of choice. In what regards emulation, although the Cox Report claimed that the DF-5 is a product of technology acquired from the U.S. illegally, this allegation has been contested by the intelligence community in the U.S. As for innovation, there is not much information yet on the process of developing and producing the new Chinese ICBM (the DF-31A). As a result, it is difficult to establish to what extent it technically innovates or not.

Nonetheless, as mentioned before, the occurrence of offsetting, emulation and/or innovation is not enough to characterize a set of behaviors as internal balancing. The second requirement is that the actions undertaken have an intrinsic potential to reduce the gap between the current unipole and the contestant power, increasing the latter chances of winning a war against the former. In this sense, it is important to acknowledge that, even after the recent improvements, the Chinese nuclear arsenal still has many weaknesses. For instance, its deterrent arsenal relies too much on land based missiles to the detriment of bombers and submarines. Moreover, the Chinese are believed to lack early warning systems, what makes it impossible to adopt any other doctrine but the "no-first use" policy. In what comes to command and control, only the Central Military Commission can authorize a nuclear retaliation attack. Therefore, the communication between the high authorities and the six base commands of the Second Artillery becomes a central issue and a possible caveat, since scholars estimate that the Chinese communication system is still two generations behind the West. Finally, China stores the missiles unfueled and without warheads. As a consequence of that, a retaliatory attack would take long to happen

due to the amount of time needed to complete the launch sequence (JEFFREY, 2007).

Notwithstanding those drawbacks, the *Federation of American Scientists* came up with a study that simulated a nuclear confrontation between the U.S. and China. According to this study, a Chinese attack on the continental United States with 20 ICBMs would result in about 40 million casualties (KRISTENSEN; NORRIS, 2006, p. 200). This means that, if the current improvements in the survivability of Chinese missiles can protect at least half of the Chinese missiles that can reach the continental U.S. (40), China would still be able to kill 40 million Americans. Thus, in the words of Kristensen and Norris (2006): “The nuclear war scenarios we examined are a stark reminder to policy-makers and military planners that a modest-sized arsenal on low or no alert can suffice as a deterrent” (p. 201).

Therefore, the developments in China’s nuclear arsenal after the Cold War have the potential to provide this state with a second strike capability for the first time in its history. In this sense, Chinese current efforts have at least the potential to improve China’s chances of winning a war against the U.S. by turning the decision to cross the nuclear threshold harder.

Nonetheless, Lieber and Press (2006) claim that the improvements in the U.S. nuclear arsenal after the Cold War were of such a magnitude that they granted this state the capability of destroying Russia's entire nuclear arsenal (which by the time these scholars wrote their article consisted of 3500 warheads capable of reaching the U.S. homeland). Furthermore, the scholars argued that, in view of the fact that the Chinese arsenal was (and continues to be now) much smaller than the Russian, the task to eliminate China’s arsenal would be much easier.

In their own words:

Much has been made of China's ongoing defense modernization, but the country's strategic arsenal is growing at a glacial pace. China has only 18 ICBMs, a number that has remained essentially unchanged for more than a decade. In addition, these missiles are kept unfueled, and their warheads are stored separately (LIEBER; PRESS, 2006, p. 27).

Lieber and Press’ article was criticized in many ways. In particular, experts disputed the feasibility of disarming completely either China or Russia in a first strike:

Some have argued that “the United States [today] stands on the verge of attaining nuclear primacy” and “could conceivably disarm the long-range nuclear arsenals of Russia or China with a nuclear first strike.” But our realistic calculations of what effects would occur if only a few Chinese ICBM warheads survived indicate that the United States would need to have complete confidence that a preemptive strike had managed to destroy all of China’s long-range missiles (KRISTENSEN; NORRIS, 2006, p. 174)

Likewise, Bin (2006) claims that Lieber and Press (2006) calculations are not surprising, since basic arithmetic alone certifies that thousands of nuclear missiles are able to destroy “a dozen immobile intercontinental ballistic missiles (ICBMs)” (p. 79). However, Bin warns that Lieber and Press’ calculations were based on a hidden and fundamentally unrealistic assumption that the United States can detect and locate all Russian or Chinese long-range nuclear weapons in case it planned to attack one of those countries (p. 80). Therefore, Bin seems to have a point when he argues that no matter how much the U.S. increases the accuracy and reliability of its arsenal, it cannot destroy Chinese ICBMs that its intelligence has not detected. In Bin’s words: “Thus, there is no method or model by which Lieber and Press can determine with any certainty that the number of surviving Chinese ICBMs after a surprise U.S. strike (equal to the number of undetected Chinese ICBMs) will be zero, and it seems far more likely survivability would be greater than zero” (p. 81).

To that, Lieber and Press (2007) respond that this might not affect American authorities’ consideration of a first strike because:

(...) military planners employ a standard targeting strategy for dealing with intelligence uncertainty: when in doubt, assume that possible targets are real targets. For example, rather than risk leaving a real Chinese DF-5A missile untargeted, U.S. warplans likely target every **identified** DF-5A silo plus many possible silos – some of which may be decoys and some of which may simply be suspicious topographical features. This sort of “overkill” targeting is a luxury available to a country with a huge numerical advantage in nuclear forces, and the United States has such an advantage against China (p. 81, emphasis added by me)

Nevertheless, Lieber and Press (2007) do not fully appreciate the consequences of imperfect intelligence. Their response assumes a dilemma between a

real silo and a decoy, whereas the true dilemma is the impossibility of identifying every single real and decoy Chinese silos.

On the other hand, Lieber and Press (2007) concede that U.S. awareness of imperfect intelligence might reduce the likelihood of a U.S. preemptive strike during a crisis or war. Nonetheless, they argue that the Chinese leaders do not know the level of confidence of the U.S. authorities on their intelligence about China's weapons. This leads those scholars to expect that "Regardless of America's actual willingness to conduct a preemptive attack on an alerting Chinese missile force, current U.S. counterforce capabilities create strong incentives for Chinese leaders to reduce the vulnerability of the Chinese arsenal" (p. 82).

Accordingly, what has been argued in this chapter is that China has already acknowledged this vulnerability and has been acting upon it. The development and deployment of the mobile missile DF-31, which has occurred after Lieber and Press wrote their articles (2006, 2007) demonstrate that China is moving in the direction of trying to safeguard its arsenal to a possible first strike (i.e. towards acquiring a second strike capability). Most certainly, Lieber and Press would consider that current China's efforts have not provided this country yet with a second-strike capability, since they have stated that not even Russia, which has a more robust nuclear arsenal than China, has it.

Nevertheless, China's current nuclear efforts seem to be closer to meeting the requirements established in this dissertation to characterize a state behavior as internal balancing. This is because, although the final result of those actions is not yet equilibrium with American nuclear capabilities, the actions diminish the gap between China and the U.S. For the first time in its history, China seems to have the capacity to harm the U.S. continental territory after a possible American first strike. This new situation does not wipe away American nuclear superiority, but turns the decision to actually employ nuclear weapons against China a lot harder. In this sense, Chinese behavior improves its chances of off-setting American capabilities, neutralizing its nuclear superiority if the objectives at stake are not considered important enough to cross the nuclear threshold.

Nonetheless, it is also important to evaluate if China's efforts in the nuclear

realm increase its prospects of actually winning a nuclear war against the U.S. This chapter has argued that China has improved in the sense that the acquisition of second strike capabilities will certainly complicate an American decision to strike first with nuclear weapons in case a conventional conflict is going on between these countries. This is due to the fact that now China seems to be able to retaliate and, consequently, an American decision to start a nuclear war has to take in consideration the higher probability of American losses. However, China's nuclear efforts seem to be only enough to prevent the beginning of a nuclear conflict. But, if the decision to begin a nuclear war is actually taken, China does not seem to be able to perform a third or a fourth attack after it has employed its second strike capabilities.

Therefore, one could not state that there are no signs of internal balancing behavior in the nuclear realm. By acquiring second strike capabilities, China improves its chances of winning a conventional war against the U.S., since the decision to make use of nukes is much harder now. Nonetheless, since the internal balancing phenomenon is here considered as a process, it is definitely not possible to state that the process is in an advanced stage. It could be argued that this process has begun, but it has progressed slowly.

6

Chinese naval modernization: internal balancing at sea?

6.1

Introduction

Much has been said about the current Chinese naval modernization effort and about the challenges it might impose on the United States standing in Asia. This chapter aims at verifying whether this trend could be qualified as internal balancing by China against the U.S. In other words, it investigates if the criteria proposed in the theoretical chapters of this dissertation to help identify a group of actions as internal balancing are met or not.

In view of that, this chapter evaluates the *timing* of China's maritime modernization in order to check if there could be, at least in principle, a correlation between Chinese actions and unipolarity. In addition, it discusses the nature of the capabilities this country is acquiring and the strategic concepts that would drive the possible use of these capabilities in case of conflict. This is because the type of capabilities and the strategy chosen indicate the enemies against which a state is prepared to fight. According to the theoretical model herein proposed, it is only possible to state that a country is performing internal balancing if it is improving its chances of victory in case a conflict against the current pole(s) arises. Therefore, it is important to evaluate if the *results* of China's actions have the potential to diminish the gap in maritime capabilities between this country and the U.S. Finally, to qualify as internal balancing, the capabilities acquired and the strategies adopted must involve some combination of *off-setting*, *emulation* and/or *innovation* in relation to the unipole.

6.2

Chinese navy during the Cold War

Before analyzing the more recent naval modernization efforts, it is essential to step back and evaluate the state of China's maritime forces during the

Cold War. This might help to better understand the need and the potential to modernize, as well as possible shortcomings of the modernization process. During the Cold War, Chinese authorities perceived no need to develop a strong Navy. However, some actions were taken to build a navy that could be at least capable of helping land forces in case of an invasion to China's territory.

Accordingly, in the 1950's, Soviet advisors introduced to China the so called "Young School", which emerged in the Soviet Union during the late 1920's. After the World War I, two schools of thought on the ways to employ maritime forces were in dispute in the Soviet Union. The "Old School" claimed that the Soviets should have a big-ship navy, aiming at commanding the seas. However, the fact that at that point the Soviet state could not afford the expenses required to build such a navy contributed to the creation of another approach: the "Young School". The supporters of the latter approach advocated that the classical command of the seas theories were not realist and that the Soviets needed a small navy to cooperate with the army against possible enemy amphibious landing. The supporters of this school also stated that the advent of submarines and aircraft had made big ships obsolete and that the fleet should be composed of submarines and small surface ships. This latter theory predominated in the Soviet Union from 1933 to 1936 (VEGO, 2009)¹.

Although the Young School proposition of submarine warfare supremacy was not uncontroversial among Soviet scholars and authorities in the 1950's, it

¹ External and internal factors contributed to the transformation of this strategic posture. The elimination of the domestic opposition to Joseph Stalin and the improvements seen on the Italian and German fleets increased the attraction of a big-ship navy concept. From this point on, Soviet authorities embraced the idea that submarines and aircraft should be used to support the main forces which should be composed of battleships and heavy cruisers. These ideas did not get to be tested during the II World War, since the ships were not ready when the conflict began and the main battlefields for the Russians forces were in land and not at sea. During that conflict, the Soviet navy mainly performed actions in support of the land forces, securing the army flanks, conducting small-scale amphibious landing, securing communications in coastal waters and attacking enemy sea communications (VEGO, 2009, p. 213). After the end of the II World War, the US was considered the USSR main enemy and the former and its allies potentially controlled the oceans. In the beginning of the Cold War, the Soviet navy main objective was to counter Normandy-scale landings on their shores. Later on, the capability of US carriers to strike Soviet territory from the eastern Mediterranean and the south of the Norwegian sea without landing was developed. In response to that, the Soviets decided to concentrate on nuclear submarines. Big vessels as carriers were considered vulnerable to submarines which justified the concentration of resources on the latter to the detriment of the former. In 1955, Adm. Sergei Gorshkov was appointed as commander in chief of the navy. He did not agree with the emphasis on submarine warfare and he moved on gradually to a more balanced blue water navy. The Cuban missile crisis would later help to persuade Soviets authorities of the need for surface ships. This is because they got the impression that if the Soviets had deployed surface ships to the theater, the result might have been different.

was thought to be adequate to China's strategic situation, which was comparable to the Soviet context right after the I World War:

1) a new regime that was under military and political attack by several capitalist countries and had not completely quelled domestic fighting; 2) a regime, furthermore, that expected to be besieged and attacked by capitalist nations, with amphibious attack a current fact and future threat, especially from “the ultimate bastion of imperialism, the United States”; 3) a navy that was in disarray and almost entirely manned by captured or defecting former enemy personnel; 4) budgetary shortages that limited the amount available to spend on expensive naval systems; 5) lack of an industrial infrastructure to produce indigenously modern naval armaments; and 6) a maritime frontier hemmed in by adversarial fleets and bases (COLE, 2009, p. 322).

Not only did the Soviets provide the main ideological conception for the foundation of the new Chinese navy, but they also helped China in building its first shipyards and navy colleges. In addition, Chinese naval officers were sent to the Soviet Union to receive training. Nonetheless, during the 1960's, the Soviets became China's adversary and, without their help, the Chinese navy predicament would get worse. Throughout the whole Cold War it lacked enough trained personnel, amphibious ships, air power and maintenance and logistical infrastructure (COLE, 2009, p. 324).

In what comes to strategy, until the mid-1980's, the Chinese navy pursued a near-coast defense strategy. This meant that China's maritime forces were supposed to defend up to a dozen nautical miles (nms) from China's coastline and the territory of about 300 kilometers (kms) inland from the coast. However, since China's coastline is approximately 18,000 kms long, naval defense was concentrated on straits of strategic importance that could be used by potential enemies in order to conquer important land targets. It is important to say that Chinese capabilities at that point were not suited to perform much more than this (LI, 2011).

Many factors help explain the underdevelopment of the Chinese navy during the Cold War. First of all, the fact that one of China's main enemies during that period of time (the USSR) posed a land threat and not a maritime one implied that there was no perceived urgency to develop seapower. In addition, the Vietnam War, a land conflict, made clear that ground forces needed improvement urgently

and that this area of the military should be prioritized. Finally, U.S. support to China meant that potential tensions between Tokyo and Beijing could be solved short of war by U.S. intervention. In other words, there was no external incentive for improvements on the Chinese navy. Internally, bad industrial conditions, the turmoil produced by the Proletarian Cultural Revolution of 1966-67 and the disputes for Mao's Zedong succession made major decisions to change investments priorities towards the navy very hard (COLE, 2009, p. 329).

However, scholars highlight many domestic and international transformations that might have contributed to change Chinese authorities' approach towards the Navy in the late 1980's and 1990's: the accelerated development of the country and the use of the seas for commerce as a consequence of that; Deng's realization that the Chinese Navy was ill equipped and the political support for naval investments that followed this realization; the prominence of the idea that the Soviets' did not put a threat to China anymore and that future wars would not be major wars of invasion but small wars on the periphery; and the appointment of an experienced and highly regarded army general (Liu Huaqing) as the head of the navy (COLE, 2009, 2010).

However, this dissertation aims at examining if there is some correlation between the Chinese modernization effort and the emergence of unipolarity and at verifying if this effort could be qualified as internal balancing or not. Therefore, the next sections of this chapter will investigate the timing of the Chinese naval modernization, the type of capabilities acquired and the strategies adopted and, especially, the results of those efforts.

6.3

Chinese naval modernization efforts: timing, capabilities and strategy

Although there is no consensus on the exact year of the inception of China's naval modernization effort, scholars tend to agree with the idea that it began sometime during the 1990's. Scholars also agree that it was reinforced after 1996, when the United States deployed two aircraft carriers to Taiwan's surroundings in response to Chinese missile tests and naval exercises near Taiwan (O'ROURKE, 2012, p. 3).

China's naval modernization is believed to comprehend the acquisition of:

anti-ship ballistic missiles (ASBMs), anti-ship cruise missiles (ASCMs), land-attack cruise missiles (LACMs), surface-to-air missiles, mines, manned aircraft, unmanned aircraft, submarines, aircraft carriers, destroyers, frigates, patrol craft, amphibious ships, mine countermeasures (MCM) ships, hospital ships, and supporting C4ISR systems (...) China's naval modernization effort also includes reforms and improvements in maintenance and logistics, naval doctrine, personnel quality, education and training, and exercises (O'ROURKE, 2012, p. 3).

In particular, one of the most important features of the naval modernization effort seems to be the improvements on the submarine force. The 1950 Romeo-class submarines (of Russian design) were the basis of Chinese fleet until the beginning of the 2000's. Since then, China has built new classes of non-nuclear attack submarines (SS) such as the Ming-class, the Yuan-class and the Song-class and improved the Romeo-class design. It also has acquired from Russia twelve Kilo-class submarines (which are also non-nuclear attack submarines) (COLE, 2010; O'ROURKE, 2012).

In what comes to nuclear-powered submarines, China is believed to have built a new nuclear-powered ballistic missile submarine (SSBN) (the Jin-class or Type 094) and a nuclear-powered attack submarine (SSN) (the Shang-class or Type 093). According to Cole (2010), the new class of SSNs and the new SSBN rely on Russian design and engineering assistance provided by the St. Petersburg's Rubin Central Design Bureau (p. 97). Likewise, O'Rourke (2012) agrees with the statement that China has benefited from Russian submarine technology and design know-how to build some of these new classes of submarines.

The various submarine building programs contributed to significant changes in the composition of China's submarine force during the past two decades. In especial, the new submarines are regarded as quieter and, consequently, less detectable (O'ROURKE, 2012, p. 13-14). The table below shows the increase in the number of submarines owned by China from 1995 to 2012:

Table 3 – Chinese submarines from 1995 to 2012

	Jin (Type 094) SSBN	Shang (Type 093) SSN	Kilo SS (Russian- made)	Ming (Type 035) SS ^b	Song (Type 039) SS	Yuan (Type 041) SS ^a	Annual total for all types shown	Cumulative total for all types shown	Cumulative total for modern attack boats ^c
1995			2 ^d	1			3	3	2
1996				1			1	4	2
1997				2			2	6	2
1998			1 ^d	2			3	9	3
1999			1 ^d		1		2	11	5
2000				1			1	12	5
2001				1	2		3	15	7
2002				1			1	16	7
2003					2		2	18	9
2004			1		3		4	22	13
2005			4		3		7	29	20
2006		1	3		2 ^e	1	7	36	27
2007	1	1 ^f					2	38	28
2008							0	38	28
2009						2	2	40	30
2010	1					1	2	42	31
2011						2	2	44	33
2012	1					1	2	46	34
2013	1					n/a	n/a	n/a	n/a
2014	1					n/a	n/a	n/a	n/a
2015						n/a	n/a	n/a	n/a
2016	1 ^g					n/a	n/a	n/a	n/a

Source: O'Rourke, 2012, p. 16.

Regarding surface combatants ships, in the 1950's the majority of the Chinese fleet was composed of vessels directly acquired from the Soviet Union. In the 1960's and 1970's, there was indigenous production of Soviet models in China. Subsequently, the Chinese moved on to the acquisition of the Sovremenny class from Russia and the indigenous construction of the Luhai and Luhai classes. The years 2000's were marked by the construction of three new classes of destroyers in China (DDG 51C, 52B and 52C). China has also deployed new generations of frigates, corvettes and a missile-armed fast attack craft that uses a stealthy catamaran hull design (O'ROURKE, 2012; COLE, 2010).

The tables below show the increase in Chinese destroyers and frigates numbers:

Table 4 - PLA Navy Destroyers

	Sovremenny (Russian-made)	Luhu (Type 052)	Luhai (Type 051B)	Luyang I (Type 052B)	Lyugang II (Type 052C)	Louzhou (Type 051C)	Annual total	Cumulative total
1994		1					1	1
1995							0	1
1996		1					1	2
1997							0	2
1998							0	2
1999	1		1				2	4
2000							0	4
2001	1						1	5
2002							0	5
2003							0	5
2004				2	1		3	8
2005	1				1		2	10
2006	1					1	2	12
2007						1	1	13
2008							0	13
2009							0	13
2010							0	13
2011							0	13
2012					1 ^a		1	14

Source: O'Rourke, 2012, p. 23.

Table 5 - PLA Navy Frigates

	Jiangwei I (Type 053 H2G)	Jiangwei II (Type 053H3)	Jiangkai I (Type 054)	Jiangkai II (Type 054A)	Annual total	Cumulative total
1991	1				1	1
1992	1				1	2
1993	1				1	3
1994	1				1	4
1995					0	4
1996					0	4
1997					0	4
1998		1			1	5
1999		4			4	9
2000		1			1	10
2001					0	10
2002		2			2	12
2003					0	12
2004					0	12
2005		2	1		3	15
2006			1		1	16
2007					0	16
2008				4	4	20
2009					0	20
2010				2	2	22
2011				2	2	25
2012				3	3	28
2013				1	1	29

Source: O'Rourke, 2012, p. 25.

Observers state that the improvements in quantity and quality of those surface ships represent a step towards overcoming long lasting deficiencies in anti-air warfare (O'ROURKE, 2012). Nonetheless, Cole (2010) emphasizes that those vessels have parts bought from Russia, Ukraine, France and even the U.S, what might pose difficulties concerning maintenance. In addition, Cole states that those ships were envisioned by their designers (who are mostly not Chinese) to operate together with different types of ships in a network strategy and, therefore, will only serve the Chinese Navy if operating in a formation together with other ships.

In this sense, Cole (2010) argues:

Two significant features in these new ship classes evidence China's limited ability to build modern warships. First, they still depend on foreign designs in almost all areas, from propulsion plants to the mast-top sensors and embarked aircraft. (...) Second, command and control information management remains problematic, although 'link' systems allow coordinated operations both among ships and between the ship and its embarked helicopter. However, it does seem clear that the PLAN, even in its newest ships, has yet to demonstrate the command and control capability necessary successfully to conduct net-centric operations in a twenty-first-century maritime battlespace (p. 102-103).

There is also much speculation regarding China's plans to acquire an aircraft carrier. Observers state that the Chinese are completing the ex-Ukrainian aircraft carrier *Varyag* purchased as an unfinished ship in 1998. In addition, the U.S. Department of Defense believes that China is building its first indigenous aircraft carrier. China is also believed to be developing its own carrier-capable fighter (the J-15) inspired on the Su-33 (O'ROURKE, 2012, p. 17-20).

In what comes to naval weapon systems, observers emphasize China's anti-ship cruise missiles (ASCM), highlighting that this State has developed the capability of designing and manufacturing cruise missiles with state-of-the-art features (supersonic speed, complex maneuvers, and submerged-submarine-launch capability) (COLE, 2010, O'ROURKE, 2012). Furthermore, many analysts believe that China has been developing and testing an anti-ship ballistic missile (ASBM): a theater-range ballistic missile equipped with a maneuverable reentry vehicle (MaRV) that could theoretically hit moving ships at sea. This is believed

to be directed to improving the PLAN ability to attack aircraft carriers. If true, this innovation is said to represent a “game changer”, posing great difficulties to American forces in Asia. This is because the ability to change course would make this ASBM more difficult to intercept than non-maneuvering ballistic missile reentry vehicles (O'ROURKE, 2012, p.7-8).

As was shown in this section, there is a long-lasting Russian influence on the Chinese navy, especially in what comes to the design of its vessels. However, observers also identify the resonance of American visions of sea warfare on China's maritime capabilities and strategy. More specifically, the Chinese are reportedly seeking to emulate the U.S. network naval warfare. For that purpose, investments have been made on enhancing information technology and PLAN's communications capabilities.

C4ISR modernization in China dates back to the late 1990s, when the PLA began a major effort to upgrade its communications infrastructure. This was made possible by the development of the civilian IT and telecommunications industries in China. Improvements can be identified in relation to the construction of a national fiber optics network and of space-based C4ISR capabilities (ERICKSON; CHASE, 2008, p. 25).

Confirming the Chinese intention to come closer to the U.S. in this area, Erickson and Chase (2008) report statements from Chinese researches which claim that the “informatization” of shipboard weapons and equipment is the core of maritime joint combat and that the Chinese navy should build data links for maritime military actions and change the way they carry out tasks in the future, in order to create “networked fleet” (p. 25). Those researchers advocate the need to link platforms into an integrated whole, since “resource sharing among various platforms and coordinated allocation of the resources of all operational forces can enable the currently available resources of military strength to be fully utilized” (ERICKSON; CHASE, 2008, p. 26).

Those efforts have important implications regarding command and control. This is because improved IT and C4ISR capabilities would permit to further delegate decision making authority to lower-level commanders, since lower levels could be provided information to enjoy superior tactical initiative. On the other hand, the same capabilities could also deepen centralization since they allow for the communication of high rank orders to lower commands. Most military forces

aim at centralized planning and decentralized executions, but even in the West things not necessarily work like that and “commanders who can control, do control.” However, it is noteworthy that, in spite of the tradition of centralization, a debate between advocates of centralization and proponents of decentralization has been going on in China (ERICKSON; CHASE, p. 29-30).

6.4

The new focus on seapower

The aforementioned naval capabilities acquired during the 1990's and 2000's reflect a new focus on the development of seapower by the part of Chinese authorities and scholars. Various Chinese publications seem to confirm this new emphasis. According to Fravel and Liebman (2011), who have analyzed a series of articles from specialized journals such as the *PLA Daily* electronic archive (available from 1987 to 2005), the *People's Daily* (a CCP newspaper), the *Modern Navy* (published by the PLAN's party committee) and the *National Defense*, Chinese navy officials are increasingly casting the PLAN as the protector of China's economy, in order to legitimize the demand for resources from the navy.

In this sense, Yao Wenhui (a two-star Admiral and vice-head of the PLAN political department) argued in the July 2007 issue of the *National Defense* that China should gradually increase the proportion of resources devoted to naval capabilities. He states that for long Chinese military's main task was to protect territorial borders, what justified the priority given to the army. However, he advocated that the world political situation has changed, making it inadequate for China to have a “big land force”. In addition, he stated that the heart of China's economy is more and more concentrated in coastal areas and that this State's dependence on maritime shipping is growing, turning the protection of China's sea lines of communication (SLOCs) a priority (*apud* FRAVEL; LIEBMAN, 2011, p. 74-75).

Likewise, Hartnett and Vellucci (2011) highlight that the concept of seapower has been heavily debated in the Chinese press and that Chinese writings reveal a general consensus that it is now important for China to concentrate resources on naval capabilities. However, these scholars argue that Chinese

publications show a lack of consensus on the actual definition of seapower. At the same time that there was a broad agreement among the articles surveyed by these scholars that the operational range of the PLAN needed to be expanded, there was divergence on how much expansion was necessary. The majority of Chinese authors agreed that the PLAN's should be able to operate on China's claimed exclusive economic zone (EEZ) and the continental shelf at a minimum. However, there was disagreement as to how much farther the navy should go.

Chinese official sources also point to this new focus. China's Defense White Paper of 2006 states that the country aims at extending the strategic depth of offshore defensive operations and at enhancing its capabilities in integrated maritime operations. In addition, the Defense White Paper of 2008 for the first time referred to the ground forces as a service equivalent to the navy, air force, and second artillery, suggesting that the branches might be treated equally in the future. Moreover, it emphasizes the objective of developing the navy's capabilities of conducting cooperation in distant waters (ERICKSON; GOLDSTEIN, 2009, p. 47-48).²

However, although there is a new focus on developing Chinese navy's capabilities, for the purposes of this dissertation, it is important to inquire whether these efforts are enough to qualify China's efforts as internal balancing. This implies comparing the Chinese and the American navies.

6.5

Comparing navies

In spite of the fact that China's naval modernization has improved this State's capabilities considerably, analysts believe that China's navy still has serious limitations. Below there is a comparison of the Chinese Navy with neighbor navies and with the American fleet deployed to that region:

² Obviously, the new focus on seapower would be better characterized if we could show increases in spending with the Navy over the years. Nonetheless, no breakdown of spending by service is available for China (SIPRI, 2011).

Table 6 – Comparing navies

Total number of vessels in service in 2000 (A), vessels in service in 2010 (B), and the number of new vessels planned or being built (if known) after 2010 (C).

	US PACOM			China			Japan			South Korea		
	A	B	C	A	B	C	A	B	C	A	B	C
Aircraft carrier CV/CVS	5	6	+1	0	0	-	0	0	-	0	0	-
Helicopter carrier or LPD* CVH/LHA/LHD/LPH/LPD	12	10	+6	0	1	+1	1	4	+1	0	1	+1
Cruiser C	13	12	-	0	0	-	0	0	-	0	0	=
Destroyer DD	24	32	+7	20	26	+1	42	42	+4	6	10	+1
Frigate FF	16	14	+2	40	52	+3	13	6	-	9	9	+6
Corvette FS	0	0	-	0	0	-	0	0	-	28	27	-
Conventional submarine SS/SSK	0	0	-	59	62	-	16	18	+4	8	12	+6
Nuclear submarine** SSN	30	34	+5	5	6	-	0	0	-	0	0	-
Ballistic Missile Submarine SSBN	8	8	-	1	3	-	0	0	-	0	0	-
Guided-missile patrol boat PCG/PBG	0	0	-	93	102	-	3	6	-	5	3	+6

	Russia Pacific			India			Australia			Vietnam		
	A	B	C	A	B	C	A	B	C	A	B	C
Aircraft carrier CV/CVS	0	0	-	1	1	+2	0	0	-	0	0	-
Helicopter carrier or LPD* CVH/LHA/LHD/LPH/LPD	0	0	-	0	1	-	0	0	+2	0	0	-
Cruiser C	1	1	-	0	0	-	0	0	-	0	0	-
Destroyer DD	7	7	-	8	8	+3	1	0	+3	0	0	-
Frigate FF	0	0	+4	12	10	+12	8	12	-	6	5	+2
Corvette FS	9	13	+5	19	24	+4	0	0	-	1	9	-
Conventional submarine SS/SSK	11	9	-	16	16	+6	3	6	-	0	0	-
Nuclear submarine** SSN	11	9	+6	0	0	+1	0	0	-	0	0	-
Ballistic Missile Submarine SSBN	5	5	+4	0	0	-	0	0	-	0	0	-
Guided-missile patrol boat PCG/PBG	27	10	-	6	0	-	0	0	-	12	8	-

Source: Holslag, 2010, p. 44.

As can be noticed by the numbers above, China has more conventional submarines in comparison to the U.S. and to the Chinese neighbors. In opposition, the U.S. has considerable advantage in what comes to the possession of nuclear submarines and aircraft carriers.

Besides the inferiority in numbers, China's Navy has problems of a more qualitative nature. It presents weaknesses in what comes to sustained operations in

distant waters, joint operations with other parts of China's military, C4ISR systems, anti-air warfare (AAW), antisubmarine warfare (ASW), a dependence on foreign suppliers for key ship components, and a lack of operational experience in combat situations. It also faces serious aviation shortfalls regarding ASW aircraft, tankers and airborne warning and control aircraft (AWACS) (COLE, 2010; O'ROURKE, 2012, p. 3-4).

Nonetheless, as O'Rourke argues:

The sufficiency of a country's naval capabilities is best assessed against that navy's intended missions. Although China's navy has limitations and weaknesses, it may nevertheless be sufficient for performing certain missions of interest to Chinese leaders. As China's navy reduces its weaknesses and limitations, it may become sufficient to perform a wider array of potential missions (O'ROURKE, 2012, p. 4).

Considering that the missions to be performed by the various states' navies differ, navies should be measured against their respective missions and not against one another. In other words, although one navy might have fewer capabilities than the other, the first may yet be better able to perform its missions than the second. This should be considered when comparing the American and the Chinese navies, since these navies' respective missions are very different (O'ROURKE, 2012, p. 36).

Similarly, Cole (2010) claims that

The numbers of state-of-the-art ships, submarines, and aircraft it fields do not yet give the PLAN the ability to dominate East or South Asian waters certainly when measured against the U.S. Navy or even the Japanese Maritime Self-Defense Force or the Indian Navy. However, measuring total naval forces against one another is not particularly useful in strategic operational terms; what is more meaningful is a Clausewitzian measure: how much (and we might add, how effective) naval force China can deploy against a given objective at a time of Beijing's choosing. Whether this mission concerns Taiwan or an East or South Sea objective, it seems fairly certain that China will be able to seize the initiative when employing its new Navy (p. 113)

6.5.1

The Taiwan mission and the strategy of anti-access

The majority of Chinese military observers claim that the near-term objective of China's naval military modernization efforts is to improve this state's

ability to deal with the Taiwan issue in case it turns into an armed conflict. Nonetheless, this statement only makes sense in face of China's expectation that the U.S. might interfere in such a conflict. This is due to the fact that seapower is not essential in dealing with Taiwan alone: air power and missiles are China's capabilities of choice in case an armed conflict arises and the US does not interfere (SHLAPAK *et al.*, 2009). In this respect:

China's capabilities have developed to the point that it is capable of mounting very destructive attacks against Taiwan's military infrastructure. As part of a large-scale offensive, the PLA could employ its SRBMs [short-range ballistic missile] and LACMs [land-attack cruise missile] to suppress Taiwan's air defenses, permitting attacks by manned aircraft armed with PGMs [precision-guided munitions]. The increasing accuracy, warhead variety, and numbers of Chinese missiles would also permit smaller, coercive attacks aimed at specific political, military, or economic target (...) A China able to launch large missile attacks followed up by sizable air raids will, however, likely be able to inflict significant damage on a number and variety of targets of Beijing's choosing, almost regardless of Taiwan's defensive preparations (SHLAPAK *et al.*, 2009, p. 125-126).

On the other hand, to prepare against American interference in a conflict with Taiwan, seapower seems indispensable since the U.S. would definitely use its own seapower to attack China. Accordingly, China is believed to be adopting an "anti-access strategy", which aims at deterring or at least delaying a potential U.S. intervention in a conflict between China and Taiwan. It is important to say that "anti-access" and "area denial" are U.S. terms and not Chinese ones. Those terms, first employed by the U.S. Department of Defense in the 2001 Quadrennial Defense Review, are often used interchangeably by analysts to characterize the attempt to prevent a U.S. military intervention if China attacks Taiwan. In particular, the assumed Chinese objective is to impede U.S. aircraft carriers from getting within tactical aircraft operating distance from China (McDEVITT, 2011, p. 192).

The U.S. Department of Defense (DoD) states that:

If a quick resolution [to a situation involving Taiwan] is not possible, Beijing would seek to deter U.S. intervention or, failing that, delay such intervention, defeat it in an asymmetric, limited, quick war; or, fight it to a standstill and pursue a protracted conflict. China's emerging maritime antiaccess force can be viewed as broadly analogous to the sea-denial force that

the Soviet Union developed during the Cold War to deny U.S. use of the sea or to counter U.S. forces participating in a NATO-Warsaw Pact conflict (*apud* O'ROURKE, 2011, p. 142).

The similarity between the Soviet posture during the Cold War and the Chinese current sea-denial strategy is clear. This similarity in strategy seems to be driven by the geo-strategic imperatives imposed on both China and the Soviet Union/Russia, which are very different from the ones faced by the U.S.

It took some time for American scholars to fully acknowledge the impact that the different geo-strategic contexts would have on Soviet strategy during the Cold War. In the early 1960's, the predominant view in the U.S. was that the Soviets were building a naval force with capabilities similar to the United States Navy, i.e., that the Soviet Union had a blue-water navy which could attack the U.S. territory and Western sea lines of communication and launch strategic nuclear strikes from the sea. In other words, in assessing Soviet naval capabilities, Americans mirror-imaged their own. Nevertheless, during the 1970's, some analysts began to develop an alternative assessment that relied on Soviet Union's own views and objectives (HATTENDORF, 2004).

As an example of those new interpretations, in 1973, the scholar Bradford Dismukes tried to provide evidence that the Soviets were mainly concerned about the security of their SSBN force, stressing that the maintenance of SSBNs on station was regarded as more important by the Soviets than attacking Western sea lines of communication. In 1977, James M. McConnell argued that Soviet SSBNs would operate in local sanctuaries close to home, which would be heavily guarded by mines, fixed underwater acoustic surveillance systems, air defense and surface ships. At that time, this scholar claimed that the Soviets should not be expected to substantially deploy forwards platforms during the conventional phase of a war (*apud* HATTENDORF, 2004).

This idea that the Soviets would withhold SSBNs as a strategic reserve force in protected bastions was developed by McConnell based on his analysis of Soviet military and academic writings, but it was not accepted in the U.S. as a faithful description of the USSR naval strategy during the 1970's (*apud* HATTENDORF, 2004). Nevertheless, new evidence emerged in 1980 and 1981 and analysts began to concede to the idea that the Soviets adopted a SSBN

withholding strategy.

In the end of 1981, the inter-agency intelligence memorandum called “Soviet intentions and capabilities for interdicting sea lines of communication in a war with NATO” stated that Soviet military planners regarded the wartime interdiction of NATO sea lines of communication as a secondary mission: in case of a conflict between Eastern and Western forces, the majority of Soviet naval forces would be deployed to defend the Soviet SSBN force and to protect the homeland from NATO’s nuclear-armed naval strike force (HATTENDORF, 2004).

In other words, the Soviets adopted a defensive maritime strategy in opposition to what Americans believed at first they would do. This strategy also involved the establishment of thresholds at various distances from the Soviet Union’s coasts, which were like “lines-in-the-water”. The Soviets considered the waters closest to the mainland (200 nms) an area that Soviet naval forces and land-based air forces should be able to control. Moving farther towards the sea (1,200 nms), the Soviets aimed at denying or contesting those waters to the U.S. Navy. In other words, the military requirement was sea control close in and sea denial as the distances from the mainland increased. For that purpose, the Soviet sea-control and sea-denial strategies involved a combination of open ocean surveillance, long-range land-based aircraft with cruise missiles, and nuclear-powered submarines with large loads of anti-ship cruise missiles (McDEVITT, 2011, p. 196-201)

Accordingly, nowadays, ASBMs, attack submarines, and supporting C4ISR systems are viewed as key elements of China’s emerging anti-access force (O’ROURKE, 2012, p. 4). In addition, the threshold idea is also present in Chinese current naval thinking. The difference between the USSR and China is that the PLA has elected to define distance-related thresholds in terms of “island chains” (McDEVITT, 2011, p. 201).

Liu Huaqing, an important figure in Chinese navy during the 1980’s who received schooling in the USSR, was the one responsible for envisioning a navy that would move in phases: the first one aimed at the so called “first island chain”, the second at the “second island chain” and the third at global waters. Cole (2010) highlights that the division of the navy strategy in phases was influenced by the Soviet way of thinking of zones of activities and also reflected Liu’s “land

mentality” since he was in the past a member of the Army³.

In this sense, the Chinese sea-denial strategy is also referred to as near-seas active defense (in opposition to the near-coast defense strategy adopted during the Cold War), since the aim after the late 1980's is to cover a much larger sea area and not only the coast. Under this more recent strategy, the PLAN is regarded as a “strategic service,” meaning that it operates more independently, possessing its own geographical bounds of operations. The near-seas active defense covers the first island chain (which stretches from the Kurile islands through the islands of Japan, Ryukyu Archipelago, Taiwan, the Philippines to Borneo Island), the Yellow Sea, East China Sea, and South China Sea, or the three near seas within the inner rims of the first island chain, and sea areas adjacent to the outer rims of this island chain, and those of the north Pacific. However, the concept does not cover the south Pacific and the Indian Ocean (LI, 2011, p. 116).

To execute a near-seas sea-denial strategy, it is imperative that the Chinese can effectively perform surveillance of the near seas, so that the deployment of submarines and land-based aircraft can be defined and anti-ship missiles targeting executed. China is reported to have several satellites in orbit that can contribute to ocean surveillance. In what comes to the land-based air component, China does not have anything equivalent to the Soviet Backfire bomber carrying long-range AS-4 anti-ship missiles. Therefore, it would deploy the FB-7 fighter-bomber and the Chinese variant (B6H) of the Soviet Badger bomber, which do not have the range of the Backfire. However, it is the opinion of McDevitt (2011) that the PLA Air Force and Naval Aviation Force can deploy around 10 regiments of aircraft with cruise missiles to attack approaching warships (200 aircraft), what might be enough to cover three or four carrier battlegroups. Nonetheless, as the aircrafts do not possess a long range cruise missile, they might be vulnerable to fleet air defenses.

Therefore, the submarine force is the most important PLAN capability to perform the sea-denial strategy. Assuming that it takes three submarines to keep one on station (one on station, one going home, one getting ready to go), McDevitt (2011) estimates that a sea-denial strategy requires around 60 to 75 modern submarines to deal with U.S. carriers. The PLAN has currently 34 modern

³This is because other Navies do not think in terms of theater of operation since the seas are considered too fluid for that (COLE, 2010).

attack boats (according to Jane's batteships data shown in Table 1 above). That means that it is not unequivocal that China's forces can effectively perform the strategy of sea-denial (McDEVITT, 2011).

Nevertheless, observers foresee a major technological innovation that might aid the Chinese to perform their sea-denial strategy. In other words, China is believed to have taken the Soviet antiaccess strategy one step farther, adding a uniquely Chinese element to the layered defense: to use ballistic missiles to attack moving surface warships. Traditionally, ballistic missiles were not considered efficient against ships at sea, since ships are moving targets and since missiles once fired could not change trajectory to account for target motion. However, the PLA is reportedly trying to place seekers in high-explosive missile warheads that would activate as the warhead descends into the target area, and then guide the warhead to the moving ship. If the Chinese succeed to achieve such innovation, it could pose a huge challenge to U.S. forces, since defense against ballistic missiles is a hard task: a target traveling so fast is very difficult to shoot down (McDEVITT, 2011).

It is also argued that the sea-denial strategy could also involve the attack of U.S. bases in the region in order to deter or delay U.S. intervention. However, talking about the repercussions of an attack to a Japanese base, Yoshihara (2010) persuasively considers:

Equally worrisome, operational interactions between Chinese and American forces could prove highly escalatory and destabilizing. As Evan Medeiros and co-authors astutely observe, the operational doctrines on both sides share a proclivity for seizing the initiative at the outset of a conflict through surprise, speed, and attacks against enemy rear echelons. Medeiros further argues: Neither body of doctrine appears to consider how an adversary might react to such operations in a limited war—indeed, each seems to assume that it will suppress enemy escalation by dominating the conflict. Consequently a Sino-American confrontation would entail risks of inadvertent escalation if military forces were permitted to operate in keeping with their doctrinal tenets without regard for escalation thresholds. It is clear, then, that an attack against regional bases is neither a trump card nor a substantially risk-free option. If plans go awry, as they always do in war, China could find itself in a protracted conflict against more than one implacable, well-resourced enemy as intent as the Chinese upon achieving escalation dominance. Whether Beijing would find the stakes over Taiwan or over another dispute sufficiently high to run such a risk is unclear. Disturbingly, however, Chinese writings suggest that some segments of the PLA are inclined to

accept the repercussions of a coercive campaign against U.S. bases in Japan (p. 56).

6.5.2

Other missions to be performed by the Chinese navy: can power projection be one of them?

External observers argue that Chinese authorities envision other missions for their navy besides preventing Taiwan's formal independence. In particular, the navy is believed to be increasingly charged with the task of protecting Chinese interests regarding this state's territorial claims in the South China Sea and East China Sea, which overlap with those of other countries such as Japan and Vietnam. The navy is also expected to enforce China's view that it has the legal right to regulate foreign military activities in its exclusive economic zone (EEZ) (which extends 200-mile maritime from the coast). Furthermore, observers believe that China's maritime capabilities are also directed to providing protection to its sea lines of communications (from which comes much of China's energy imports). Finally, some analysts argue that China's Navy aims at displacing U.S. influence in the Pacific and establishing China's status as a major world power (O'ROURKE, 2012, p. 5).

Chinese writings seem to confirm the view that China is moving beyond the Taiwan issue. In Hartnett and Velucci (2011) words:

(...) from the Chinese writings on maritime security sampled here, it is clear that most Chinese security analysts concerned with maritime affairs are looking beyond the Taiwan issue. Although mention of using the PLAN to safeguard territorial integrity (i.e., Taiwan) appeared throughout the timeline of articles surveyed, not all articles focused on or even discussed this issue. Other issues, such as defending China's maritime rights and interests and safeguarding overseas economic interests, also frequently appeared in the writings. Surprisingly, the need to defend maritime rights and interests was actually mentioned more often than territorial integrity as the main reason for strengthening the PLAN and defining a coordinated maritime strategy. This demonstrates that although reunification with Taiwan remains an important issue, other drivers of PLAN modernization also exist; even if the current cross-strait disagreement was resolved, the PLAN would likely remain on the same fast-paced developmental trajectory (p. 103-104).

In view of the prominence of these other missions, observers claim that China might be moving towards the adoption of a different maritime strategy. According to this line of thinking, the Chinese strategy would have progressed from a “near-coast defense” strategy prior to the mid-1980’s, to the “near-seas active defense” after the mid-1980’s, and finally to a “far-seas operations strategy” by the mid-2000’s (LI, 2011).

But does China have the capabilities to execute far-seas operations? The first time that China's navy deployed forces operationally beyond its immediate maritime periphery (in opposition to just representing the country abroad) occurred in December 2008, when Chinese forces were deployed to the Gulf of Aden with the task of performing a counter-piracy mission. The goal was to escort merchant ships from China and other nations, protecting them against pirates. At that time, China deployed two South Sea Fleet destroyers and a supply ship 10,000 kilometers from their home base in Sanya. Later on, other ships were sent to replace the destroyers, but the supply ship used remained the same. The logistics and supply requirements were handled by underway replenishment and port visits. These deployments show that the PLAN has begun moderate blue water operations in the form of counterpiracy missions. However, the navy's emphasis is still clear on improving quality and anti-access capability. The PLAN is far from being able to support a substantial SLOC security posture (ERICKSON, 2010).

Since it is clear that China does not have yet blue-water capabilities, is there a trend towards the acquisition of those assets? Erickson and Goldstein (2009) indicate some possible measures that would have to be identified so that an observer could say that a trend towards the acquisition of blue-water capabilities exists. According to those scholars, major acquisitions and changes in operational doctrine in China are preceded by a major speech by a senior civilian leader advocating the new ideas. However, in what comes to force structure, concrete signs of a more ambitious Chinese naval strategy would include the:

- 1) Construction and deployment of additional nuclear attack submarines and other platforms with significant demonstrated antisubmarine warfare capabilities,
- 2) Development of aircraft or helicopter carriers and related doctrine and training programs,
- 3) Establishment of new, modern shipyards dedicated to military ship production or expansion of areas in coproduction yards that are dedicated to military ship production,
- 4)

Expansion of the PLAN auxiliary fleet, particularly long-range, high-speed oilers and replenishment ships, 5) Development of the ability to conduct sophisticated ship repairs remotely, either through tenders or overseas repair facilities, 6) Steady deployment of PLAN forces to vulnerable portions of the sea-lanes to increase operational familiarity and readiness, 7) Maturation of advanced levels of PLA doctrine, training, and human capital (ERICKSON; GOLDSTEIN, 2009, p. 62).

Finally, those scholars also state that: “Perhaps the most important indicator, however, would be Chinese acquisition of reliable overseas air and naval bases – a major shift from current foreign policy doctrine” (p. 62).

The measures established by Erickson and Goldstein (2009) to evaluate if a change towards a blue-water navy is occurring, coincides with the shortcomings faced by the Chinese maritime forces. China has been working to overcome some of these limitations. For instance, the amphibious force is being modernized, but that has not expanded China's capacity in this area yet: the PLAN is still limited to transporting one mechanized division of fully equipped troops. Moreover, China has been slow to increase its Navy's ability to remain at sea for extended periods. Only two of the PLAN's five oilers are less than twenty years old, and only one (Nancang) is capable of providing more than a single major fueling to a task groups of four or more ships. This indicates that at least the logistic focus of maritime thought in Beijing remains on Taiwan and other regional situations such as the East and South China seas (COLE, 2010, p. 107).

Therefore, in what concerns the need for investments in amphibious and replenishment capabilities, there is consensus among specialists both that those capabilities are needed if China wants to project power and that this country is not there yet. Nonetheless, regarding the acquisition of an aircraft carrier and of a system of foreign bases for the purpose of power projection, there is controversy on the effectiveness of those efforts in order to provide China with power projection capabilities.

Since aircraft carriers would have limited value for China in a conflict with Taiwan once the island is within range of land-based Chinese aircraft, most observers believe that China is acquiring carriers to be able to operate in more distant areas and also as a symbol of China's status as a world power. Carriers are also believed to provide China with soft power due to the fact that they may be

used for humanitarian assistance and disaster relief operations, maritime security operations (like anti-piracy operations), and non-combatant evacuation operations. Nevertheless, some observers believe that carriers would not be useful for China in a conflict with the U.S., since Chinese aircraft carriers would be vulnerable to attack by U.S. ships and aircraft (O'ROURKE, 2012, p. 20-21).

Regarding foreign bases, some observers believe that China is building a series of naval and other military bases in the Indian Ocean to support Chinese naval operations along the sea line of communication linking China to Persian Gulf oil sources, what has been referred to as a “string of pearls”. This theory was a creation of a 2004 study contracted by the U.S. Department of Defense entitled “Energy Futures in Asia” and is broadly accepted as true in the U.S. and India. However, this information is disputed by some analysts who argue that China has built *commercial port* facilities in the Indian Ocean, but not naval bases. These scholars claim that China is pursuing a strategy of having “places not bases”. This type of strategy involves diplomatic agreements with other state's governments that allow access to their facilities in order to obtain essential supplies, such as fuel, food, and freshwater for deployed forces. Such agreements can also involve reciprocal guarantees of military support in such areas as training, equipment, and education (KOSTECKA, 2011, p. 60-61). In other words, China is seeking to guarantee that its navy would have places to visit, not staying permanently anywhere abroad (O'ROURKE, 2012, p. 30-31).

The fact that China invested in the construction of commercial port facilities in places like Gwadar and Hambantota is often taken as evidence that China is seeking to build naval bases in the Indian Ocean. Nevertheless, there is a long way to go to convert these facilities into bases that could be used in wartime. Moreover, some observers doubt that this would be a wise decision since the exposed positions of those places would make their wartime utility uncertain against an enemy that has long-range precision-strike capability such as the U.S. Therefore, some analysts advocate that the optimum course of action for China is to remain developing a network of “places” to support forces deployed for nontraditional security missions like the counterpiracy patrols in the Gulf of Aden (KOSTECKA, 2011, p. 74; ERICKSON, 2010)

In turn, other observers argue that acquiring aircraft carriers and over-seas bases for power projection contradicts China's desire to project an image to the

world that its rise will be peaceful, what might hinder the decision to acquire those assets. In addition, some scholars point that there are domestic impediments to the pursuit of such a strategy since there seems to be a school of thought in China that argues that rather than striving to be a maritime power, China should be content to remain a land power. On the other hand, more optimist scholars argue that although it took two decades for the near-seas active defense strategy to translate into capabilities for accomplishing the objectives of this strategy, it may take less time for the new strategy of far-seas operations to translate into appropriate capabilities due to fewer budgetary and technological constraints (LI, 2011, p. 134-135).

Nonetheless, for the purposes of this dissertation, what really matters is that no major efforts to change Chinese power projection capabilities have been made so far. In face of that, it is important to evaluate if even so one could say that China is internally balancing the U.S.

6.5.3

Comparing nowadays China to the Soviet Union's behavior during the Cold War

As was stated before, the Chinese strategy of sea-denial is very similar to what the Soviets pursued for the most part of the bipolarity era. Most importantly, as happens to the Chinese now, the Soviets never had power projection capabilities comparable to the American ones. Therefore, since there is no doubt among international relations balance of power scholars that internal balancing was pursued by the USSR against the U.S during the Cold War, could the same be said about nowadays China?

It is important to highlight that only in the 1980's did the Soviets reach a large and balanced fleet. As happens to China nowadays, the Soviet approach to the sea for the most part of the Cold War was based on submarines. Submarines were the main element of Soviet war strategy and out of area deployment of Soviet forces was envisioned to be performed in peace-time, serving as an instrument of state policy (naval diplomacy). Accordingly, in the 1980's, Soviet naval forces maintained a continuous presence in the Mediterranean Sea, the Indian Ocean, and the South China Sea. They also conducted deployments to the

Caribbean (VEGO, 2009, p. 223-224).

In a report about Soviet seapower written in the 1980's, the American intelligence agencies stated:

The out-of-area operations of the navy continue to reflect the Soviets' interest in strengthening their position in the Third World (especially in areas of potential Western vulnerability), balancing Western presence, and countering potential strategic threats. Although strategic military concerns remain prominent in Soviet distant operations, particularly in the Mediterranean, the navy is performing increasingly important tasks related to the projection of Soviet power and influence in the Third World. In addition to routine show-the-flag deployments and port visits, Soviet naval forces have demonstrated support for friendly nations and sought to inhibit the use of hostile naval forces against Soviet allies. During recent Third World crises, the Soviets have augmented their naval presence in the areas of conflict: the Angolan civil war in 1975; the Ethiopian-Somali conflict in 1977-1978, the Sino-Vietnamese conflict in 1979; and the Iranian hostage crisis in 1979-1980. Such use of Soviet naval forces is likely to continue in future distant-area crises. *We do not believe, however, that the Soviets would deploy major naval forces in response to a Third World crisis in an area other than the Mediterranean and possibly the Indian Ocean, if they judged the crisis involved a high risk of escalation to general war with the West. The Soviets would probably fear that, if war broke out, such forces would be out of position to perform the initial wartime tasks of protecting SSBNs and the sea approaches to the USSR* (THE DIRECTOR OF CENTRAL INTELLIGENCE, 2004, p. 129-130, emphasis added).

In addition, the Soviets never got to build a carrier of their own and also had major difficulties with their amphibious forces. The same report stated:

The amphibious exercises conducted on Socotra Island in May 1980 and in cooperation with the Syrians in July 1981 demonstrate an interest in and a modest capability for distant-area projection. The Soviet Navy has never conducted large-scale amphibious landings away from the periphery of the USSR. Exercise ZAPAD-81 in the Baltic, however, included a large-scale amphibious exercise that for the first time used ships drawn from all four Soviet fleets (...) It is still doubtful that a Soviet amphibious task force could carry out a successful landing abroad against substantial opposition, in large part because of the lack of adequate tactical air support, either land or sea-based (THE DIRECTOR OF CENTRAL INTELLIGENCE, 2004, p. 131-132).

China's navy strategy and shortcomings are similar to the USSR on many levels. In this respect, it is important to highlight that analysts had no doubt that the USSR was internally balancing the U.S. during the Cold War. What was in

dispute was not if internal balancing was taking place, but the kind of internal balancing behavior chosen by the USSR. Among the different types of internal balancing behaviors possible (off-setting, emulation and innovation), it turned out that the Soviets prioritized off-setting. In other words, they did not try to emulate American naval capabilities. In contrast, they tried to deal with the capabilities the Americans would use in case they chose to attack the USSR using the seas.

If what the Soviets did during the Cold War was enough to qualify their actions as internal balancing, could it be said that what the Chinese do nowadays is internal balancing? In other words, are the results of Chinese naval modernization enough to raise its prospects of winning a war with the U.S. which would have the seas as its main theater? The answer to that question seems to be no.

This is because one difference between China and the former USSR is essential: although the two countries have similar geostrategic challenges, power projection capabilities are much more important to China than they were to the USSR. This is because China relies on imported sources of energy and the USSR never faced this predicament. In this sense, being able to protect the routes through which this oil travels to get to China is very important, since in a possible conflict between China and the U.S., the former would have to deal with the capabilities of the latter to perform a blockade of its SLOC.

Therefore, being able to delay U.S. access to a potential conflict over the Taiwan issue is not enough to off-set U.S. power advantages in the region. China must also ensure its own access to the South China Sea, the Indian Ocean, and beyond before it can consider itself a power fairly equivalent to the U.S. and, consequently a pole. This is not to say that China must have power projection capabilities that would be enough to invade the U.S, for instance, but at least it should be able to have some expectation of success in a possible conflict with the U.S. that might take place in the Asian region, where Chinese main economic and territorial interests are located.

6.6

Preliminary conclusion

In sum, it can be argued that the timing of China's actions in what regards

seapower seems to indicate that the Chinese authorities are reacting to the U.S. unipolarity. In addition, one of the behaviors characteristic of internal balancing (off-setting, emulation and innovation) is present: China seems to be off-setting the American seapower through an anti-access strategy.

On the other hand, China is not amply emulating the American naval capabilities. It seems to be emulating the best practices available to a state in its geo-strategic situation in order to deal with a maritime power like the U.S.: the Soviet practices and capabilities during the Cold War. Therefore, this leads us to conclude that the target of emulation is not only the pole against which the balancer might fight. It could be said that emulation of Soviet practices at sea is being used to internally balance the U.S. via off-setting. Therefore, one can also conclude by this that geo-strategic imperatives seem to be essential in defining the type of internal balancing behavior chosen.

Nonetheless, it is not clear if the second criterion herein proposed to qualify a group of actions as internal balancing is met: Chinese efforts do not seem to have the potential to diminish the gap between the U.S and China's capabilities or to considerably increase the latter's chances of winning a war against the former. This is due to the fact that Chinese maritime modernization succeeds in improving China's capabilities to at least delay a possible U.S. intervention in the Taiwan Strait, but it fails to provide China with the resources necessary to project power outside the so called "first island chain". And projecting power to more distant waters is important in enabling China to win a possible war against the U.S. This is due to the fact that China has the disadvantage of relying on sea-lines of communication (SLOCs) for vital products such as energy sources. In this sense, the capability of protecting its SLOC is essential to raise China's chances of winning a war against the U.S., since the latter is surely capable of imposing a naval embargo on China that would hamper Chinese war efforts, making victory a lot harder.

Therefore, it could be said that the fact that China has moved on to acquire adequate capabilities to perform a sea-denial strategy is consistent, at most, with an early stage of the internal balancing process, but that an unequivocal internal balancing movement would necessarily encompass the acquisition of capabilities adequate to protect China's SLOCs.

7

China's future arsenals: from emulation to innovation?

7.1

Introduction

This chapter aims at evaluating the probability that China overcomes the United States, by acquiring new capabilities that raise significantly its prospects of winning a possible war against that country. For that to happen, it is assumed here that not only would China have to emulate state of the art military capabilities, but also to innovate in relation to those. Therefore, this chapter analyzes China's approach to research and development (R&D), paying especial attention to its defense industry in order to assess Chinese efforts to innovate in the defense realm.

7.2

China's approach to technology at a glance: the history of a changing relationship between the Chinese defense industry and the civilian sector

To have a sense of China's innovation potential, it is important that the most recent reforms in the so called National Innovation System (NIS) are evaluated. Nonetheless, the only way to grasp the significance of those reforms is to step back in time in the attempt to understand the system's evolution throughout the decades.

7.2.1

Mao Zedong's years

The importance of people over technology was an assumption of Mao Zedong's thinking about war, who advocated the superiority of man over weapons. Nonetheless, the Korean War had a great impact on the Chinese

understandings about technology. The encounter with American technology and the number of Chinese deaths in that conflict made authorities reevaluate the way they viewed technology (FEIGENBAUM, 2003).

Therefore, to acquire necessary technology, the Chinese recurred initially to the USSR, negotiating the transference of equipment and knowledge from that country to China and emulating capabilities whenever possible. However, the desire to produce technology nationally was always present due to insecurities regarding the likelihood that the Soviets would keep helping the Chinese on a regular basis (FEIGENBAUM, 2003).

In the middle of the 20th century, the mantra regarding technology in China was that economic development should be fostered by means of military investment. This idea is related to what scholars call “technonationalism”. More specifically, Feigenbaum (2003) defines technonationalism as the notion that technology is fundamental to both national security and economic prosperity; that a nation's development policy must have explicit strategic underpinnings; and that technology must be indigenized at all costs and diffused system wide (p. 14).

Nonetheless, the way technonationalism expresses itself is different amongst the various societies and can also vary inside a country from time to time. In general terms, the notions that have characterized technonationalism in China can be summarized as follows: technological development is intrinsically strategic since it has implications for the relative position of a state in the international balance of power; the central government must invest in critical technological sectors; the state should pursue import-substituting indigenization; the central government must nurture an indigenous capacity to innovate; and technological diffusion should be turned into a state policy via *spin off* (transference of technology from military endeavors to civilian ones) or *spin on* (transference of technology from civilian areas to military ones) (FEIGENBAUM, 2003, p. 39).

Contrary to what this definition of technonationalism with Chinese characteristics might imply, China's relation to technology was not constant throughout the years. From the 1950's to the 1970's, priority was given to strategic weapons research and development, to the detriment of civilian industries and conventional weapons (FEIGENBAUM, 2003).

During Mao's years, there was a clear distinction between the conventional

weapons and the strategic weapons production system. A tighter control of political authorities over conventional weapons production could be identified at that point. This made the strategic system more vulnerable to political changes such as the Great Leap Forward and the Cultural Revolution, hampering R&D in the conventional weapons sector. In addition, the focus was on the quantity of conventional weapons produced and not on their quality. There was no competition among producers and government authorities valued the achievement of production quotas to the detriment of quality improvements. Accordingly, imitation was promoted instead of innovation (CHEUNG, 2009).

Another characteristic of the conventional weapons system that imposed obstacles to innovation was a very rigid division of labor between R&D institutions and manufactures. The firms involved in this system were geographically dispersed and were not integrated, lacking mechanisms of information sharing. Finally, one can quote the absence of effective institutions such as property rights – resulting in less confidence from the part of possible investors and, therefore, in less innovation – and the lack of mechanisms for the supervision of standards (CHEUNG, 2009, p. 36-40).

On the other hand, in the case of strategic weapons, Chinese political authorities granted more liberty to the production centers. Furthermore, there was greater integration between research and production units, which were geographically concentrated, facilitating the exchange of information among them. In addition, the members of the system had access to foreign knowledge in the sense that they were educated abroad and that international publications were available to them. Consequently, performance was evaluated in face of international standards, making performance requirement more rigid. Finally, political authorities focused on the quality of the outputs and not on quantity. According to Cheung (2009), those differences explain the much more significant advances in the production of strategic weapons in comparison to the production of conventional weapons in China from the 1950's to the 1970's.

In the same vein, Feigenbaum (2003) argues that the strategic weapons bureaucracy created during Mao's administration had very distinctive characteristics that accounted for its success:

- Technicians were put in charge, occupying important public positions.
- Two lines of command could be identified: on the first track, there

were technical decision makers with the “chief designer” or “chief engineer” at the top; on the other track, administrative or managerial in nature, there were the relevant military industrial ministries, with an executive minister at the top (p. 43-44). Technicians were integrated on the managerial track and, when members of the military had to be picked to take part in the administration of the system, Marshal Nie Rongzhen (the brain before the system) chose people that had close ties to him in order to make sure the staff shared the same understandings about the management of the system¹;

- Instead of the verticalism that defines Chinese institutions in general, the organizations involved in strategic weapons production were granted constant access and contact to one another. Seminars involving technicians and high level authorities were held to discuss the status of the weapons and the possibility of testing them or not. An example of this was the first nuclear power submarine produced in China, whose test was scheduled during a seminar and not by uninformed political authorities;
- There was collaboration between units of the system instead of compartmentalization;
- Performance was evaluated based on universal standardization and the Chinese progress was benchmarked against international technical developments;
- Politicians showed commitment to develop strategic weapons;
- There was a culture of experimentation and risk taking in the strategic sector (FEIGENBAUM, 2003, p. 40-60).

It is important to note that the technicians involved with strategic weapons R&D, which were mainly trained abroad, were also recruited to work and organize the whole structure of scientific institutions in China. This meant that

¹ Strategic weaponeers were especially influential because they built links to the political elite, making possible that regular politicians be lectured on the technical requirements of the projects. This was later facilitated by the creation of institutionalized channels of access. The strategic weapons intellectual elite was the only one that survived the Cultural Revolution (1966-1971). During this period of time, intellectual work was considered bourgeois and was discouraged, leading to the paralysis of scientific development in China. However, although spared in comparison to other intellectual endeavors, the strategic weapons organizations did not survive intact. The technical track of the dual line of command fell (FEIGENBAUM, 2003).

many universities' laboratories were founded in connection to the strategic weapons system. Also, at this point, the brightest students were attracted to the strategic weapons organization system (FEIGENBAUM, 2003).

On the other hand, this approach to technology also meant that, during Mao's years, China advanced a lot in what comes to industries related to the military, but scored badly in what regarded other basic industries. As a result, the understanding that military progress would spin off to civilian industry began to be discredited. In addition, international and domestic changes provided a context for change in what regarded China's approach to technology: internationally, China leaned towards the US and, domestically, the country was trying to substitute Mao after his death (FEIGENBAUM, 2003).

7.2.2

Deng Xiaoping's era

When Deng Xiaoping came to power, the reforms guided by him touched China's approach to technology in at least three ways: investment strategy was shifted from capital intensive to light industry, large-scale demilitarization of industry was promoted; and the role of technology in economic policy was expanded (FEIGENBAUM, 2003, p. 75).

In especial, Deng rejected the understanding that military R&D could boost economic development. According to him, defense construction and military work would only prosper if based on a sound economic foundation (FEIGENBAUM, 2003, p. 91). In other words, at this point, the predominant understanding was that national security could only be reinforced if the national technology base progressed first. This meant that military modernization was being delayed, not necessarily neglected (p. 92).

The Chinese defense industry went through transformations in face of Deng Xiaoping's desire to move China away from the Soviet model and to promote Chinese economic development. At a defense industry meeting in August 1978, Deng stated that: "We mechanically copied the Soviet system and this has been wasteful". Therefore, he defended that the Chinese should liberate themselves and move away from the Soviet past (DENG XIAOPING *apud* CHEUNG, 2009, p. 55).

Accordingly, the focus was now on the conversion of military industries into civilian ones. In the beginning of the conversion process, some military firms hesitated to change to civilian production, in the belief that this was not a long lasting policy. However, after the mid 1980's, there was no doubt about the longevity of the policy. In contrast, other military firms saw right away the opportunity for profit in converting to civilian production. The hope was that the contact with foreign technology and the chance of receiving foreign investments would be especially beneficial (CHEUNG, 2009).

At the onset of the conversion process, there was weak institutional control over the converted firms. This was due to the fact that those firms were handed to local government, which lacked the institutional apparel to deal with them. In addition, from the late 1970's to the early 1980's, conversion did not follow a government plan.

Nevertheless, in 1982, the Commission for Science, Technology, and Industry for National Defense (COSTIND) was created to oversee the planning and administration of the research, development, evaluation, and production of the country's conventional and strategic weapons systems². Another important attempt to promote change in the Chinese defense sector also happened in the beginning of the 1980's, when contract responsibility system (CRS) was adopted. Under this system, enterprises were required to negotiate contracts, budgets, profits, schedules, and quality standards directly with PLA departments (CHEUNG, 2009).

However, the attempt of reform did not produce all the expected results. In spite of the establishment of CRS, contracts were often rewarded on the basis of bureaucratic connections and patronage. Also, defense products prices continued to be fixed. In particular, the firms that remained solely military did not experience many changes. In this respect, Cheung (2009) observes that:

(...) the military component of the system continued to be self-enclosed, maintained its own separate organizational system, remained overly reliant on state funding, lacked close ties with the production system, and had a poor track record at commercializing its R&D results (p. 79).

² It is important to note that the people involved in the strategic weapons system preserved their influence since the staff appointed to the new organization had close ties to them (CHEUNG, 2009).

Another drawback of the defense system institutional structure at this point was that the PLA took part in COSTIND. This meant that the end-user of defense products was also involved in production and, therefore, could not turn to another seller if things went wrong (CHEUNG, 2009, p. 98).

In the mid 1980's, a program that aimed to forge a "new technological revolution" was launched. This program, which came to be known by its date of inception (March, 1986), **Plan 863**, was proposed by members of the old strategic weapons elite and accepted right away by Deng's administration. It sought to maintain the role of the state in technology promotion, to establish China as a great power and to restore the centrality of the strategic weapons activities (FEIGENBAUM, 2003).

The creators of Plan 863 believed that technological innovation in the industrialized world depended on changes that China had yet to assimilate and that the development of weapons' technology was no longer sufficient to the challenge this revolution posed. In particular, they claimed that the state should concentrate its innovation efforts on seven areas: automation, biotechnology, energy, information technology, lasers, new materials and space technology (FEIGENBAUM, 2003).

The focus was on applied R&D, but there were some funds directed towards basic research. This was meant to avoid the situation in which the Chinese would understand the mechanics of state of the art technologies but not the fundamentals that allowed its production and that would allow the creation of the next generation of technologies. The definition of investment priorities has similarities with the American way:

The 863 program's allocation procedures are akin, in many respects, to contract R&D in the United States. Expert groups comprised of leaders in each focal area set state goals, invite bids, and then choose "winners" who receive funding to fulfill the contract. Separate subcommittees of specialists in each are peer review proposal and bids, which are then approved by panels selected by the top S&T bureaucracies. Competitive bidding empowers these small groups of specialists because they have additional responsibility for monitoring performance and fulfillment of contracts (FEIGENBAUM, 2003, p. 165).

Funds are allocated to the 863 expert groups who channel money

downward on the basis of bid decisions³. The expert groups that decide on targets and contractor report to managerial staffs in the seven fields prioritized by the 863 Program. Only two of these fields (space technology and lasers) are dominated by military planners and bureaucracies. The other five (automation, biotechnology, energy, information technology and new materials) have mostly civilian staffs (FEIGENBAUM, 2003).

In virtue of this program, Feigenbaum (2003) and Cheung (2009) argue that the strategic weapons elite influenced various technological endeavors in China, spreading the institutional system envisioned by Marshal Nie Rongzhen in the 1950's and 1960's to the rest of R&D activities in China. The most important example of this is the devolution of final decision making authority on budgets and contracts to state-organized task forces of technicians. Technocrats have power in the sense that they control the direction of state investments through selecting the winners in the competition for contracts. The fact that technicians not only advice but really decide is a departure from the more general post-1949 Chinese model.

Feigenbaum (2003) warns that Chinese sources tend to treat this development as a revolution in national technological policy. But the integration of experts into decision making was the backbone of the strategic weapons R&D system 20 years before the 863 plan. It was Marshal Nie Rongzhen who first institutionalized the notion of scientists in political and managerial decision making positions and not merely in technical activities.

This was a significant development for the Chinese R&D system because it introduced technical criteria to investment choices and policy decisions.

7.2.3

Are there any signs of internal balancing during the Cold War years?

As a result of the conversion process that promoted the transformation of military firms into civilian ones, even though nominal defense expenditures increased from 1986 to 1994, defense expenditure as a percentage of total GDP declined (FEIGENBAUM, 2003, p. 97). Moreover, by the end of the conversion

³ Unfortunately, there is no official estimate on how much money is allocated to this system as a whole (FEIGENBAUM, 2003).

process, the majority of defense economy system's output was composed of civilian products (CHEUNG, 2009).

Therefore, if the main object of this dissertation and the direction of the Chinese defense sector during the 1980's and the early to mid-1990's are contrasted, the first reaction of an observer would be to argue decisively that the country was not balancing at all at that point. This is because one cannot ignore the fact that the Chinese defense sector was shrinking and internal balancing is here regarded as an improvement in defense capacities that raise the balancers prospects to win a war with the system's poles. Nonetheless, the following consideration needs to be added to the equation: the shrinking process was necessary in face of the inefficiencies that characterized the production of defense products in China, especially of conventional capabilities. Therefore, in hindsight, it is possible to say that, in spite of the fact that there was a quantitative decrease in defense production, the conversion process aimed at promoting a qualitative leap forward.

Many problems hampered China's progress at that point, making emulation of foreign military capabilities by China a hard task, as well as hampering innovation in the defense sector: excessive size, production overcapacity, overstaffing, scattered location of enterprises, lack of cooperation between defense firms, separation of military and civilian production, construction of duplicate projects, and an incoherent enterprise system. Innovation and absorption were also hindered by lack of access to advanced foreign technology, a risk-averse institutional culture and inadequate investment (CHEUNG, 2009, p. 111).

Therefore, the conversion process was the beginning of a long process to correct those inefficiencies, targeting especially the issues of excessive size, production overcapacity, overstaffing and the development of duplicate projects. Nonetheless, these efforts did not improve China's defense outputs right away. Thus, clearly, the immediate result was not the increase of China's prospects to win a major war. This impedes the characterization of the efforts carried out by China in the 1980's and early to mid-1990's as internal balancing. Nevertheless, one cannot neglect the fact that the conversion process was a necessary step to be taken before balancing could even be thought as an option.

7.2.4

The defense sector during the late 1990's and the years 2000's: internal balancing via emulation?

In the late 1990's new reforms were attempted in order to improve China's defense economy performance. In 1998, the concept of the four mechanisms (*Sige Jizhi*) was adopted. The objective was to promote: 1) competition, albeit in a limited and regulated form; 2) independent evaluation of the financial, technological and engineering feasibility of weapons project; 3) supervision of the development and production of weapons; 4) encouragement of a motivated workforce through the promotion of ideological campaigns, the improvement of labor management, financial incentives and performance-related mechanisms (CHEUNG, 2009, p. 130-132).

To fulfill those objectives, in the late 1990's and throughout the years 2000's, new institutional reforms took place. In 1998, the military and civilian components of COSTIND were separated. The military part was incorporated into the newly created General Armament Department (GAD), a PLA department, and the civilian part remained under the title of COSTIND. The civilianized COSTIND was responsible for drafting and implementing policies, regulations, and laws regarding the defense industry; long-term strategic planning; foreign cooperation and acquisitions; regulation of sensitive military technologies export; educational training of defense S&T personnel; coordination of weapons projects; and defense conversion. COSTIND also had control over the State Aerospace Bureau and the State Nuclear Energy Administration. Those bureaus oversaw the regulatory management of the space and nuclear sector. GAD controlled the conventional weapons testing grounds, research institutes, the Lop Nor test facility, and space launch bases. Its main responsibility was to look after the needs of the PLA. And, now, if the GAD judged the national industrial facilities could not satisfy the PLA needs, equipment and weapons could be purchased overseas (CHEUNG, 2009, p. 112-113).

In 2008, a new round of institutional reforms took place. COSTIND was merged with the Ministry of Information Industries, the State Council Informatization Office, portions of the National Development and Planning Commission responsible for trade and industry and the State Tobacco Monopoly

Administration. The product of that merge was the Ministry of Industry and Informatization. COSTIND staff was turned into a subordinate agency within the new ministry: the State Administration of Science, Technology and Industry for National Defense (SASTIND).

Those institutional reforms aimed primarily at solving the deficiencies of China's defense sector regulation. During the 1980's and early to mid-1990's, one of the main problems of the Chinese defense sector was the lack of regulation and technical standards that could guide the supervision of research and development of defense equipment. This situation drastically changed after the institutional reforms initiated in the late 1990's. This can be observed by the vast list of regulations promulgated in the late 1990's and 2000's by either COSTIND or GAD (CHEUNG, 2009, p. 133-134):

Table 7 - Regulations promulgated in the late 1990's and 2000's

Table 4.5. Key laws and regulations on defense technological and weaponry-related issues

<i>Law/Regulation</i>	<i>Status</i>	<i>Date of promulgation</i>	<i>Promulgating organization (drafting agency)</i>
PRC National Defense Law	Tier 1 national law	March 1997	National People's Congress
Provisional Measures on Weaponry R&D and Production License Management	Tier 3 provisional measures	September 1999	COSTIND
Provisional Regulations on Defense S&T Measurement and Supervisory Management	Tier 3 provisional measures	February 2000	COSTIND
Provisional Regulations on Defense S&T Industrial Fixed Asset Investment Management	Tier 3 provisional measures	October 2000	COSTIND
Working Procedures on Defense S&T Industrial Standards Formulation	Tier 3 working procedures	November 2000	COSTIND
PLA Regulations on Weaponry	Tier 2 regulations	December 2000	CMC (GAD)
PLA Regulations on Command Automation	Tier 2 regulations	July 2001	CMC (GSD)
PLA Regulations on Military Scientific Research	Tier 2 regulations	2001	CMC (GAD)
Measures on Defense S&T Industry Basic R&D Management	Tier 3 provisions	January 2002	COSTIND
Document on Defense S&T Industrial Conversion Technology Development	Tier 3 working document	February 2002	COSTIND
PLA Regulations on Armament Maintenance	Tier 2 regulations	July 2002	CMC (GAD)
PLA Regulations on Armament Procurement	Tier 2 regulations	October 2002	CMC (GAD)
PLA Rules for Weaponry and Armament Administration	Tier 2 regulations	January 2003	CMC (GAD)
Measures on Defense Scientific and Technological Achievements Appraisal Management	Tier 3 provisions	February 2004	COSTIND
COSTIND Provisions on Weaponry R&D and Production Standardization Work	Tier 3 provisions	February 2004	COSTIND

Table 4.5.—cont.

<i>Law/Regulation</i>	<i>Status</i>	<i>Date of promulgation</i>	<i>Promulgating organization (drafting agency)</i>
PLA Regulations on Armaments Research and Development	Tier 2 regulations	February 2004	CMC (GAD)
Regulations on National Defense Patents	Tier 2 regulations	September 2004	State Council and CMC (COSTIND & CMC)
PLA Regulations on Preliminary Armaments Research	Tier 2 regulations	December 2004	CMC (GAD)
PLA Regulations on Science, Technology and Information Work in Weaponry and Equipment	Tier 2 regulations	July 2005	CMC
PLA Regulations on Rewarding Professional and Technical Personnel	Tier 3 provisions	March 2006	CMC (all four PLA general departments)

Sources: Jiao Qiuguang, chief ed., *Junshi Zhuangbei Guanli Xue* [The Study of Military Armaments Management] (Beijing: Junshi Kexue Chubanshe (Academy of Military Sciences Press), 2003), 172-91; *Jiefangjun Bao*, 9 July 2003; COSTIND's policies and regulations website, <http://www.costind.gov.cn>; State Council Information Office, *China's National Defense in 2004*, <http://www.china.org.cn/english>; and State Council Information Office, *China's National Defense in 2006*, <http://www.china.org.cn/english/China>. Tier 1 laws are national-level laws passed by the National People's Congress. Tier 2 regulations are national-level administrative fiats issued by the State Council and/or CMC and are tied to national laws. Tier 3 regulations are service-level rules that are issued by service arms such as the navy, air force, and Second Artillery.

Of course, the mere fact that China promulgated regulations for the defense sector does not result immediately in better defense outputs. Nonetheless, regulations increase the prospects that Chinese defense industries will be able to produce state of the art defense equipment. In especial, the fact that GAD also issued regulations means that the end user (the PLA) now influences the quality of defense outputs, since GAD is a military department.

In contrast to the mere creation of COSTIND in the 1980's, the most recent institutional reforms had more potential to promote long-lasting change. This is because during Deng Xiaoping administration, COSTIND could not execute properly the role of regulating the defense sector, since the leaders of the main defense industries were also vice-ministers in COSTIND, in a clear conflict of interests. On the other hand, according to Cheung (2009), it is still early to predict the results of the creation of SASTIND, but the scholar suspects that COSTIND former staff will continue to be influential in view of the fact that they have endured many institutional changes before this one. In other words, there is a resilient political dimension to this technical process. This political dimension is also felt due to external influences over public institutions: if particular industrial

groups and elites manage to control relevant expert groups, they can potentially protect or promote their agenda in a given area. Chinese specialists commonly refer to these phenomena as *dapo fengsuo* (“blockade busting”) and *hangye bilei* or *hangye baohu* (industrial or professional self-protection) (FEIGENBAUM, 2003, p. 177-178).

Apart from promoting regulatory policies in the defense industry, COSTIND (and now SASTIND) was granted the responsibility of coming up with a strategic blueprint for the sector. Accordingly, in 2004, the “Outline of National Defense Science, Technology and Industry Policy” was published. It highlighted the need to diversify sources of investment; to boost the information technology levels of defense economy; to accelerate the pace of research, development and production of high-technology weapons; to increase support for the integration of military and civilian sectors and the development of dual-use military-civilian technologies; to place priority on high-technological sectors; and to allow a suitable degree of competition in R&D and production (CHEUNG, 2009, p. 115-116). Those objectives were also highlighted in the “Defense Industry 2006–2020 Medium and Long-Term Science and Technology Development Plan” (Defense MLP), published by COSTIND in 2007. Among the various provisions of the Defense MLP, it is important to highlight the recommendation that defense enterprises and research institutes should invest at least 3 percent of their annual revenues in R&D. Nonetheless, this will be a challenging provision to meet since Chinese large-and medium-sized enterprises currently spend less than one percent of their annual revenues on R&D (CHEUNG, 2011b, p. 335).

In order to improve the S&T system in general, the Chinese government tried to provide incentives for the development of R&D activities by the private sector. An example of an attempted solution was the granting of loans for enterprises to set up in-house technical centers and to forge links with research organizations and universities (CHEUNG, 2009).

In an effort to overcome the challenge of increasing R&D investments in the defense sector in particular, during the 10th and 11th Five-Year Plans (2000–2010), COSTIND launched an initiative together with the PLA to expand and upgrade the defense R&D laboratory system. This led to the establishment of more than 50 defense-oriented laboratories in leading research universities and in COSTIND-affiliated universities (CHEUNG, 2011b, p. 334-335).

In spite of the fact that the defense industry's institutional capacity for innovation has expanded with the establishment of those research units, its ability to conduct innovative research cannot be taken for granted, due to the persistent lack of operational experience and qualified personnel from the part of Chinese defense enterprises. However, since the late 1990's, the number of natural science and engineering (NSE) first degree graduates have tripled in China: from around 250,000 in 1998 to 800,000 in 2006 (in comparison to 250,000 NSE graduates in 2006 in the U.S.). In addition, China went from 1,900 doctorates awarded in 1993 to 21,000 in 2006. In turn, the U.S. awarded 22,500 doctorates in 2006; and 24 percent of those were given to Chinese nationals (CHEUNG, 2011b, p. 336).

Besides institutional reforms, other kinds of transformations were attempted in the technology and defense sector since the late 1990's. According to Feigenbaum (2003), the Chinese S&T system now encompasses different kinds of planning and funding. There are local development plans and programs aimed at creating basic infra-structure. This initiative is an attempt to move away from the monopoly of central government mechanisms of financing technology and to promote market-based mechanisms like development banks and research institutes. On the other hand, there are still nationally supported R&D programs such as the 863 (which has been expanded) and the Torch Plan (whose aim is to commercialize technology and spread it to the local level).

In addition, to increase efficiency and promote competition in the defense sector, many defense factories were closed, other were granted the opportunity to refinance their debts and some were allowed to put stock in the local stock market so that the source of funding would not only be governmental. Official figures state that the reform has been successful in the sense that it brought profit to the defense sector⁴. In addition, in 1999, the five most prominent state-owned defense corporations were each split into two. Each defense industrial sector was then composed of two conglomerates of enterprises in order to promote competition (CHEUNG, 2009, p. 119, p. 128).

Nonetheless, a significant step back from the defense economy's demonopolization strategy took place in 2008 when AVIC I and II (the two aviation conglomerates) were consolidated into a single entity nine years after they were

⁴ According to official figures, defense industry profits in 2007 reached RMB 43 billion (CHEUNG, 2011b, p. 339).

separated (CHEUNG, 2011b, p. 339). In this respect:

One of the biggest obstacles though to these efforts to transform the defense conglomerates into innovation powerhouses is their continuing monopolistic dominance of the defense industry. Monopolies stifle competition, a core dynamic for enabling innovation, and the return to single-firm monopolies of major sectors is a troubling sign (CHEUNG, 2011b, p. 340).

Finally, in the late 1990's, the Chinese began to care about the importance of patent laws and the State Defense Patent Agency was established to encourage the defense industry to apply for patents. In 2008, the defense industry filed nearly 11,000 patent applications, compared to just 313 a decade earlier (CHEUNG, 2011b, p. 349).

Therefore, the provisions undertaken by China's authorities in the late 1990's and 2000's in what regards its S&T system and especially the re-organization of its defense economy adoption are a first sign of internal balancing by means of emulation. The Chinese departed from the Soviet model of managing technology and R&D and tried to adopt western solutions such as the promotion of competition, the creation of regulatory agencies and the protection of intellectual property rights. In addition, more obvious traces of emulation from the U.S. can be highlighted during this period of time. Until the late 1990's, the integration of civilian and military industries in China meant simply that military industries were encouraged to engage in civilian activities. The only exception to that was Program 863. Nevertheless, according to Cheung (2009):

Chinese researches began to analyze initiatives undertaken by the United States during the 1990's to promote the development of dual-use technologies and processes such as the Technology Reinvestment Project (TRP) and the Dual-Use Applications Program (DUAP). Discussions of the U.S. efforts began to appear in Chinese technology journals such as *Junmin Liangyong Keji Yu Chanpin* (Dual-Use Technology and Products), *Junzhuanmin* (Defense Conversion), and *Hangtian Gongye Yu Guanli* (Aerospace Industry and Management) in the mid-1990's, **although this attention picked up noticeably toward the end of the 1990's**. Chinese defense policymakers and analysts have learned useful lessons from the U.S. programs that have informed their own policy debates. These include the need to reform the procurement system to enable more flexibility in the acquisition of commercially available goods, the strengthening of standardization levels, and the gradual opening up of the military technology market to allow the participation of civilian firms (p. 181, emphasis added).

According to Cheung (2009), the American civil-military integration model has inspired the Chinese:

[Chinese] Analysts argue that the close relationship between the U.S. Defense Department and the American research university apparatus offers a successful model for China to emulate. They point out that the Pentagon and leading universities such as the Massachusetts Institute of Technology and Stanford University have benefited enormously through cooperative association that stretch back to the Second World War. This has helped to convince military and defense industrial authorities to step up the development of cooperative ties with the country's top tier of research universities. But while the synergies in the development of ties between the Chinese defense industry and the civilian university system are considerable, defense industry decision makers may be hesitant to devote significant funds to carry out this task because they are already committed to building up the research, development and training capabilities of their own base of universities and research academies (CHEUNG, 2009, p. 208-209).

During the Cold War, the US military-industrial complex rivaled the civilian economy in importance and sophistication. R&D focus was on serving military needs and there was not much integration between the military and the civilian sector. The Pentagon managed the military system, being the industry's regulator, banker and buyer. There was no interest from the Pentagon in spin-on or dual use technology. This situation changed in the 1990's when the Pentagon established a number of policies to promote dual-use technology projects. In this respect:

The U.S. experience has been instructive for Chinese defense industrial policymakers who share similar predicaments such as the rigid segregation of the civilian and military sectors and the overreaching presence of the government bureaucracy. Chinese analysts have picked up important lessons from studying the U.S. process about how to tackle the obstacles to civil military integration. One of the most important insights is the need to overhaul the acquisition and military specifications systems to allow greater participation by civilian firms. One of the first areas that COSTIND has addressed in establishing the regulatory framework for the Yujun Yumin **system is the reform of the acquisition regime** (CHEUNG, 2009, p. 230, emphasis added).

Nonetheless, the results of China's new provisions on civil-military integration are not a complete copy of the American way. The new policies to deal with dual-use technology that were established in China aimed at: 1) combining

civil and military needs (through the promotion of spin-on and spin-off); locating military potential in civilian capabilities (by means of establishing a civilian apparatus that has the technological and industrial capabilities to meet the needs of the military and defense economy); vigorously promoting coordination and cooperation (upholding the close cooperation between bureaucracies that led to the successful accomplishment of the country's nuclear, missile and satellite programs); conducting independent innovation (to achieve self-reliance in the production of military equipment, greater emphasis is to be placed in the training of scientists and engineers, strengthening the R&D apparatus and developing a patent system (CHEUNG, 2009, p. 182-183).

It is important to highlight that the Chinese concept that is closer to the Western idea of spin-on (the transference or adaptation of civilian technology for military application) is *Yujun Yumin*. This principle encourages the identification and exploitation of the inherent military attributes of the civilian economy and society, including the mobilization of civilian assets for military application in the event of a war. Thus, although comparable to the spin-on concept, the *Yujun Yumin* concept is much broader⁵.

In conclusion, the behavior of emulation can be identified in the sense that the American model of integrating civil and military research and development has inspired the most recent Chinese solutions. Moreover, the Chinese have explicitly adopted western notions of efficiency investing in the promotion of competition in the defense sector, creating regulatory agencies and protecting intellectual property rights. Nevertheless, the results of those activities in terms of the structures and mechanisms created are not exactly a faithful copy of their American counterparts.

7.2.5

The prospects for Chinese internal balancing in the near future: from emulation to innovation?

The Chinese approach to innovation is guided by a principle named by the

⁵ The main tool to operationalize *Yujun Yumin* is the 863 Program, which is still in place. The program attempts to promote joint R&D activities between the civilian and military sector. A main achievement of this program is the development of reconnaissance satellites which are dual-use (CHEUNG, 2009, p. 194).

Chinese authorities as *Zizhu Chuangxin*. This principle sets indigenous innovation as an objective, which is thought to be achieved through the assimilation of domestic and foreign technologies that are improved upon in China so that they become original (CHEUNG, 2011b, p. 326-327).

In order to gain access to foreign technology, the following activities take place: the invitation of international consultants to China; the purchase of complete systems off-the-shelf (especially from Russia) and of subsystems and components for nationally produced equipment; the acquisition of licenses to nationally assembly and produce complete system; the joint design and development of products; espionage; and creative adaptation of Russian weapons platforms, which is often made illegally (CHEUNG, 2009)⁶.

Evaluating China's S&T system and its innovation capacity, Feigenbaum (2003) points out that this country remains committed to "planned innovation" and that state led technological development fails to create innovation to the extent expected. In addition, the commitment to manage innovation through bureaucratic procedures is becoming self-limiting and may not serve China nowadays. To illustrate his point, the author narrates the telecommunications field experience. The attempt to promote contact between providers of this service ended up in the misuse of the system by one of the providers (the Ministry of Posts and Telecommunications, MPT). In spite of being one of the competitors, the MPT was granted regulator's powers. Later on, the MPT was merged with another ministry (Ministry of Electronics Industry) forming the Ministry of Information Industry (MII), but the MII was dominated by the old MPT elite. Therefore, although new firms were allowed to enter the sector, this development did not promote collaboration among government branches, neither healthy competition between the providers. Each firm and government branch tried to mobilize its political connections to guarantee its share of the sector's activities and profits. Moreover, the chief engineer, that had a lot of power over which projects and firms were authorized to work, chose in general the firms and projects connected to the old MPT (FEIGENBAUM, 2003).

⁶ Nonetheless, the participation of foreigners in the defense sector is not an easy task. In May 2005, COSTIND granted formal permission for the first time to non-state and foreign-funded enterprises to participate in the development and production of military equipment. However, these firms were allowed to participate in contracts that involved subsystem and auxiliary products. System-integration, final assembly and work on advanced weapons systems and high technology are available only to state-owned defense enterprises (CHEUNG, 2009).

Similarly, Cheung argues that the establishment of two conglomerates for each defense industrial sector only promoted moderate competition. In fact, the enterprises were designed to be complementary, competition being a long term aspiration. This is due to the fact that one enterprise was meant to concentrate on military activities while the other would focus on civilian endeavors. However, as mentioned above, some of these conglomerates were later merged again (CHEUNG, 2009, p. 122).

Furthermore, China remains committed to technonationalism (FEIGENBAUM, 2003; BITZINGER, 2011). The technonationalist process of technology production goes through three stages: indigenization, diffusion, and nurturing. Indigenization is the actual acquisition of foreign technology and its incorporation domestically. Afterwards, the acquired technology is spread throughout the national technology base, and improved upon in face of indigenous R&D so that the end result is something new and innovative (BITZINGER, 2011).

Feigenbaum (2003) argues convincingly that technonationalism is a source of policy confusion. Although the nationalist aim of self-reliance is not exactly the same as absolute autarky (meaning instead that China should acquire technology from abroad while planning for a future free from external dependence), this scholar points out that this policy is inherently contradictory since it demands that China integrates farther into international manufacturing, finance and commerce in order to gain access to the technologies it seeks to indigenize. Indigenization remains the ultimate goal of economic integration with foreign partners, but, as a result, the Chinese end up mainly building systems that others already have. Nonetheless, Chinese authorities argue that this is an important step to move China's technology production forward (FEIGENBAUM, 2003, p. 201).

Bitzinger (2011) regards this preference for emulation as counterproductive. According to him, armaments production in the region is often characterized by the implementation of what he calls "prestige projects" which cost more than systems found on the international arms market and yet do not deliver more in terms of capabilities (p. 445). This scholar also argues that balancing the demand for self-reliance in arms production with the growing technological requirements of next-generation weapons systems, especially of network-centric warfare, is a hard task. This opinion is based on the fact that arms industries worldwide have generally accepted the need for "globalization" in the

sense that they participate in a global supply chain that supports the development, manufacture, and marketing of weaponry (BITZINGER, 2011, p. 426).

Bitzinger (2011) evaluates that armaments production in the Asia-Pacific region comes in third place (after the United States and Western Europe) in terms of technology innovation. The armed forces in the region are still heavily platform-centric, as opposed to network-centric. Most weapons are still “industrial-age”, such as tanks, artillery pieces, surface combatants, and combat aircraft. However, local defense industrial bases are deficient in what regards network-centric equipment like radars and other sensors, seekers, and electronic warfare systems (p. 444).

Chinese experts recognize the gap between the PLA and other modern militaries and the gap between PLA’s capabilities and its operational requirements. This has been referred to by Chinese publications as the “Two Incompatibles”. To solve this problem, the modernization efforts since the 1990s have focused on “mechanization and informationization”. Mechanization implies having machines to perform the labor that men used to do and improving mobility (providing armored personnel carriers for the infantry and replacing towed artillery with self-propelled artillery, for instance). On the other hand, informationization refers to the development of new methods of electronic warfare, cyberwar, and information war, as well as to the improvement of current weapons with advanced electronics and computers and the introduction of technologically advanced weapons and equipment into units. In addition, informationization is often linked to the aim of educating and training the troops so that they can employ new weapons and equipment (BLASKO, 2011).

Evaluating the results of those efforts, Blasko (2011) argues that:

Although modernization has been underway for more than 30 years, only in the past decade or so has the PLA received militarily significant numbers of many new weapons and equipment in all services. Because of the size of the force and the relatively limited funding available, replacing old equipment with new higher-technology gear has been a slow process, and the amount of new technology in the force still is relatively low (especially if compared to US forces). On the positive side, the Chinese electronic industry has been able to supply the force with domestically produced computers and electronics to a degree unimagined 15 years ago (p. 378).

Thus, in what regards China’s prospect for innovation, Blasko (2011)

claims that:

(...) Chinese strategists are putting more effort into incorporating existing advanced technologies into the force to fight Local Wars than they are into conjuring ideas for new weapons to fight in ways that have never been proven on contemporary battlefields. The PLA increasingly is focused on learning to operate, employ, maintain, and sustain the advanced weapons and equipment it has now and is gradually introducing into the forces. Though they have made important progress in the past decade, Chinese military leaders are aware of the obstacles and challenges that remain ahead in the final half of their long-term modernization process (p. 380).

Therefore, in what concerns the results of state programs directed towards the improvement of the Chinese innovation system in general and the defense sector in particular, the reforms were not completely successful in increasing competition among defense industries and could not change the fact that the central state is still the main investor in technology. In other words, the results of the emulation behavior did not meet exactly authorities' expectations. However, the preference for the emulation behavior is evident. The target of emulation is variable, though. Institutional solutions were inspired in Western (and especially American institutions), as was shown in the last section. However, due to Western weapons embargo to China, the technologies emulated come mainly from Russia.

In what regards the prospects for innovation, after a conference⁷ that aimed to assess the relationship of China's defense sector with technology and innovation, Cheung's (2011a) diagnosis was optimistic, considering impressive the results achieved by this country in terms of technological outputs since the beginning of the major sector reforms in the late 1990s. This understanding is based on hard performance indicators such as the increase in: defense corporations' profitability, the number of patents issued, research and development outputs, and educational standards (p. 296).

Taking into consideration those results, Cheung (2011a) evaluates that China's defense economy is making substantial progress in building up its innovation capabilities. Nonetheless, he believes that major forms of innovation

⁷ In July 2010, the University of California's Institute on Global Conflict and Cooperation (IGCC) promoted a conference under the title of "China's Defense and Dual-Use Science, Technology, and Industrial Base". The conference was one of the activities of a more comprehensive project funded by the US Defense Department on the relationship of technology and National Security in China. The papers presented at this conference were later published as an issue of the **Strategic Studies Journal**.

that would lead to breakthroughs are likely to be beyond China's reach for another five to ten years (p. 295).

Similarly, Pollpeter (2011) exemplifies China's advances analyzing the ambitious program of technological innovation and civil–military integration in this country's space industry. This program aims at transforming China Aerospace Science and Technology Corporation (CASC) into a world-class aerospace corporation. Since the year 2000, China has expanded its spaceflight program, launched its first lunar orbiter and an increasing number of satellites. In Pollpeter's words: "Because of these efforts, China now ranks as a major power in the most risky of high technology areas" (p. 407).

It is controversial whether China's outputs in space technology are a source of emulation or are either derived from China's own innovation potential. Chinese authorities admit to have benefited from their relationship with foreigners. External assistance, from Russia in particular, was evident during China's development of its space capsule, Shenzhou, to the point that the Chinese were accused of copying the Russian Soyuz-TM space capsule. Chinese sources acknowledge that Russia provided assistance, selling a complete spacecraft life support system, for instance. However, the same sources claim that 90 percent of the Shenzhou capsule was designed and built by Chinese experts (POLLPETER, 2011, p. 408).

China is also making progress in the development of a global navigation satellite service equivalent to the US global positioning system (GPS) which is known as Beidou. The first version of Beidou used different technology as compared to the American GPS, but the second version benefitted from the import of components from Switzerland which experts believe were submitted to reverse-engineering and copied by China. Therefore, China is believed to purchase foreign subsystems and components and then improve and adapt them (POLLPETER, 2011).

Nevertheless, Pollpeter (2011) also acknowledges that many challenges in China's space program remain. First, CASC is a government entity and, as such, in contrast to aerospace large corporations such as Boeing, Lockheed Martin, and European Aeronautic Defence and Space (EADS), it is not properly organized to make profits, develop innovative products and respond to client needs. On the other hand, China's space system products still lags behind in technology when

compared to the American counterparts. Beidou only provides 10-meter accuracy in comparison to the several meters of accuracy provided by GPS (POLLPETER, 2011).

Also evaluating the Chinese innovation system, Wilsdon and Keeley (2007) list a number of strengths and weaknesses. Among the strengths, they first quote the improvement in mobilizing resources, leading to the increase in the share of GDP devoted to R&D⁸. Second, the scholars mention people power: China has the world's largest scientific workforce due to the rise in graduation numbers in science, medicine and engineering. In what comes to scientific publications, in 2007 China produced 6.5 per cent of the world's scientific papers⁹. Moreover, it should be noted that China has a particular strength in fields such as material science and nanoscience. Third, the government recognizes the importance of innovation by domestic firms, and commercialization of academic research as key priorities and is trying to promote developments in those areas. Fourth, China is attracting multinational R&D, since some of the world's most innovative companies are choosing this country to conduct high-value, global-facing research. Fifth, Chinese nationals who graduate in places such as the US, Japan and Europe are being successfully attracted to China, occupying top posts in universities, institutes and foreign R&D labs. Finally, even though there is room for improvement, property rights laws are better enforced nowadays in China; this stimulates innovation in the sense that potential innovators have better prospects for receiving profit for their inventions.

⁸ The PLA's equipment budget has risen from US\$3.1 billion in 1997 to an estimated US\$26 billion in 2010; and, of this amount, approximately US\$4 billion to US\$6 billion is dedicated to defense R&D. Nevertheless, China's investment in defense R&D still lags behind in comparison to the US\$78 billion spent by the U.S. on defense R&D in the 2010 Fiscal Year. In addition, much of the so-called defense R&D in the Asia-Pacific is basically applied research which aim at developing and prototyping weapons systems, rather than engaging in truly innovative basic research (BITZINGER, 2011).

⁹ Evolution in countries' percentage of world's publication:

	China	France	Germany	Japan	Korea	UK	US	EU-15
1995	2.05	6.09	7.62	8.65	0.79	8.88	33.54	34.36
1998	2.90	6.48	8.82	9.42	1.41	9.08	31.63	36.85
2001	4.30	6.33	8.68	9.52	2.01	8.90	31.01	36.55
2004	6.52	5.84	8.14	8.84	2.70	8.33	30.48	35.18

(Source: WILSDON; KEELEY, 2007, p. 16).

On the other hand, Wilsdon and Keely (2007) acknowledge that the Chinese innovation system has still many weaknesses. For instance, although the number of science and engineering graduates is high, there is a wide variation in quality within the system, since only the top 50 Chinese universities are truly world class. In addition, there are huge regional disparities. In other words, Chinese capabilities for science and innovation are distributed unevenly across the country. This may result in conflict, hampering economic improvements in the future. Furthermore, although the number of Chinese publications has increased dramatically, they are not cited to the same level as their American counterparts. Also, the quality and originality of the works is not growing in the same pace as the quantity of the publications. As a side effect of the government's pressure over academics, China has experienced problems with plagiarism and research misconduct. Connected to this is the general direction of the Chinese education system, which is still based on a lot of rote learning, failing to encourage individual creativity. Innovation is also hampered by the fact that in state-owned enterprises the bosses are still chosen by the Party and the criteria for their choice is not always technical. Finally, Chinese companies still invest little in R&D (WILSDON; KEELEY, 2007).

7.3

Conclusion

The theoretical model developed in this dissertation proposes that the internal balancing process involves the behaviors of off-setting, emulation and/or innovation. Those behaviors might happen separately or in some sort of conjunction. This chapter tried to evaluate the presence of these behaviors in what comes to China's technology research and development. In particular, the chapter investigated the close relationship between China's innovation system and its defense industry. The main objective was to determine whether this country is preparing itself to balance the U.S. by means of innovating in the military realm. The focus on the future potential for innovation resulted from chapters five and six main findings: if internal balancing is happening at all, it is mostly taking the form of off-setting and emulation. Therefore, it was important to evaluate China's

defense industry structures in order to verify if innovation is a tendency or if emulation and off-setting persist.

Accordingly, this chapter showed that China's relationship with technology went through many reforms since Mao Zedong's administration. In especial, throughout the years, different understandings regarding the defense sector potential to help economic growth in the country could be observed. Most recently, there have been initiatives to promote civil-military integration that were inspired in the American model. Nonetheless, although it is possible to say that the emulation behavior is present in the reforms initiated in the late 1990's, potentially characterizing China's pursuit of internal balancing by means of emulation, the results of those efforts cannot be regarded as an exact copy of the American system. The Chinese tend to put emphasis on the use of civilian assets in case of war, an emphasis which is definitely not present in the US civil-military integration planning. In addition, China's attempts to promote competition in the defense sector have suffered drawbacks represented by the fusion of some of the firms that were previously separated.

By itself, the fact that the product of emulation is not an exact copy of the target of emulation does not impede the characterization of a behavior as part of an internal balance process. A copy is almost never equal to its original. However, it is important that the differences are not such as to turn the result of emulation inefficient. In the case of China, the emulation of American defense economy institutions did not result in an exact copy, but definitely originated a more capable defense industry with better regulation structures. The fact that the American defense industry structures still inspire the Chinese reforms in those sectors is a sign of the maintenance of emulation.

On the other hand, the chapter showed that the prospects for future internal balancing through innovation are somewhat confusing. Although great improvements in the Chinese innovation system are highlighted by experts, they also seem to acknowledge many weaknesses in the system. Therefore, China's future capacity of innovating in the defense sector depends on the maintenance of its strengths and the overcoming of weaknesses such as the resilient focus on state-led innovation.

Concluding remarks

This dissertation attempted to build a theoretical model of internal balancing that could be contrasted to China's economic and military behavior after the end of the Cold War. Therefore, the construction of this model was herein regarded as important as the empirical test itself. This was due to the fact that the literature review carried out in the second chapter of this dissertation revealed a theoretical lacuna in what concerned the development of the concept of internal balancing. The majority of scholars who has worked on the balance of power topic focused on the external balancing phenomenon. Moreover, the few scholars that have actually studied internal balancing were concerned with explaining its occurrence, rather than comprehensively describing the behavior itself.

Consequently, to accomplish the task of verifying if China is internally balancing the U.S. and if this behavior is already changing the current international system, the third chapter of this dissertation attempted to characterize the internal balancing phenomenon.

In this respect, a note of caution is in order. It has been argued here that internal balancing can take two forms: regional and global. Regional internal balancing happens between the most important states in a region. In the case of China, regional balancing could happen against India, for instance. Nonetheless, the kind of balancing that is the object of this dissertation is global internal balancing, which refers to internal balancing behaviors carried out against the global international system's pole(s). Therefore, what differentiates regional from global internal balancing is the fact that the latter enables the balancer to deal with the military capabilities of the global pole(s) and not only with regional opponents' power.

Therefore, to verify if global internal balancing is happening in the global international system inaugurated with the end of the Cold War, this dissertation assumed that the U.S. is the only global pole nowadays and investigated the results of China's efforts in comparison to the American capabilities. The U.S. is considered a global pole in the sense that it is the only state that can deploy forces

to any region of the globe, potentially influencing other state's decision whenever it chooses to interfere. In addition, it is the only state that has high chances of winning major conflicts even outside its region. By major conflicts this dissertation means conflicts between poles or between poles and pole candidates, involving interests as important as state survival¹.

Associated with this is the fact that in a unipolar international system there are no other poles at the disposal of an eventual balancer's candidate to form military alliances. Thus, external balancing seems to be a much harder task, leaving global internal balancing as an attractive option.

At this point, a second note of caution is also in order. To qualify a group of actions as global internal balancing, it was not herein considered as a requirement that the intention to balance, by the part of policy makers, was present. The criteria established in this dissertation to characterize actions as internal balancing were related to the results of those actions. *Internal balancing actions are those that raise the balancer's chances of victory in case a war against the global international system's pole(s) happens.* Accordingly, global internal balancing is herein considered as a potential source of international systemic change. This is due to the fact that, if successful, it results in the emergence of another global pole, in the sense that the balancer acquires enough capabilities to be able to win a major war against the other pole(s) in the system.

Bearing that in mind, global internal balancing was herein considered as a process that comprises different dynamics or components. On the one hand, the process necessarily comprehends behaviors undertaken by the balancer in the economic and political/domestic realm. This economic and domestic component enables the beginning of the military phase of internal balancing, as well as the maintenance of this military phase. It comprehends the emulation by the balancer candidate of the mechanisms and institutions responsible for the economic prosperity of the current pole(s). This component results in the increase in macroeconomic figures such as GDP and productivity, which are developed

¹ Therefore, I am not saying that a pole can win any war no matter what. If that was the requirement to qualify a pole, the American experience in Vietnam during the Cold War and the current (and endless) "war against terrorism" would necessarily lead us to consider that the U.S. was never a pole. What qualifies a global pole is the fact that it has enough capabilities to potentially win wars in which a particular major national interest is in dispute: the state's survival or its position in the system.

further as a consequence of major economic innovations by the balancer that take place later in the process. This domestic component also involves the improvement of the balancer's political capacity, that is, the central government's ability to extract resources from the booming economy in order to invest in public goods.

On the other hand, there is necessarily a military dynamic in the internal balancing process, which immediately increases the balancer's chances of winning a war against the current pole(s). This is because the balancer concentrates its efforts on acquiring capabilities that either off-set or emulate the military assets of the current pole(s) in the system. Or it can come up with innovations designed to deal with the military capabilities possessed by the pole(s).

After reviewing the theoretical model produced in the first chapters of this dissertation, it is time to summarize the results of the empirical test. The fourth chapter of this dissertation narrated China's achievements in the economic and political/domestic realm: the first dynamic/component of the internal balancing process. It was argued that China has been distancing itself from the Soviet economic model, adopting some of the institutions that were responsible for the American economic dynamism. In this respect, experts argue that **institutional changes** in the economic realm in general and in the state-owned enterprise system in particular were the most important drive of growth since the reforms began (WEI; ZHIZHOU, 2007). A particularly important development was the abandonment of the socialist mono-banking system and the adoption of a central banking system that resembles the western one. Nonetheless, as was shown, although the behavior of emulation seems to be present, the results of the Chinese economic reforms are not an exact copy of the American capitalist institutions. To illustrate that point, the aforementioned banking system is still biased towards the public sector in the sense that great part of the credit is given to state-owned enterprises. In addition, the adoption of capitalist institutions was not exactly a continuous process. As was discussed in that chapter, some experts argue that, in the 1980's, there could be identified strong signs of private entrepreneurship in the rural areas. This was forbidden in the 1990's, when urban state-led capitalism gained the upper-hand.

In addition, the fourth chapter also discussed the many tax and fiscal reforms undertaken in China. Those reforms increased the central government political capacity in the sense that they concentrated the revenues from taxes. In 2010, total government revenue reached 22% of China's GDP (LIN, 2011). Surely, this move increased China's political capacity in the sense that it raised the revenues at the disposal of the central government to fulfill public tasks. However, the tax and fiscal system is considered flawed by many experts due to the fact that it concentrates revenue collection, but spending responsibilities are widely attributed to local governments. This may cause inefficiencies in spending since there are public services which could be better managed if provided equally to the whole country by the central government. In addition, transferences from the central government to local government are not ruled by transparent laws, leaving a lot of room for negotiation and corruption in money distribution.

Despite the fact that the economic and political/domestic reforms reached mixed results in terms of efficiency, it is undeniable that those reforms enabled China to at least begin the military component of the internal balancing process. Nevertheless, one cannot neglect that the maintenance in time of this military dynamic is conditioned upon the continuity of China's economic prosperity and political capacity. In turn, economic prosperity and political capacity continuity depend on the adjustment of some of the inefficiencies discussed in the fourth chapter.

Therefore, it is feasible to investigate whether China has initiated the military dynamic of the internal balancing process, since the economic and political results achieved throughout the 1990's and 2000's potentially enable the launch of such military efforts. However, it is important to bear in mind that the maintenance and success of the military component of the internal balancing process depend also on the maintenance and success of the economic and domestic component. In other words, both dynamics have to happen at the same time at later stages of the internal balancing process.

In what regards the military component of the internal balancing process, the fifth and sixth chapters of this dissertation investigated the results of China's military modernization efforts, examining if they end up increasing China's ability to deal with two of the most important capabilities at the disposal of the U.S. in case a war against a distant power took place: its nuclear arsenal and its seapower.

The choice of those capabilities was influenced by the first chapters' theoretical assumption that the military component of the global internal balancing process is characterized by efforts that raise the balancer chances of actually winning a war against the system's pole(s).

In what comes to China's nuclear modernization, the fifth chapter reviewed the history of China's nuclear program since its inception up to the years 2000's. Traces of behaviors that resembled internal balancing were identified during the Cold War. At that point, Chinese offsetting, emulation and innovation happened in relation to both the Soviet and the American nuclear programs. Chinese authorities' justified the acquisition of nuclear weapons stressing the goal to contain "American imperialism" and avoid "nuclear blackmail" by the U.S. Accordingly, the Chinese acquisition of nuclear weapons could be explained as an attempt to offset American nuclear capabilities. For that purpose, the model initially emulated was the Soviet one.

Nonetheless, as the Soviets dropped their assistance to China in the early 1960's, China had to innovate in order to achieve the objective of building its own nuclear arsenal. In particular, there was innovation in what concerned the organizational structure developed by the Chinese to manage nuclear research and production. In addition, Chinese technicians reportedly used open knowledge about American SSBN program when developing their nuclear arsenal. After analyzing memoirs and technical articles written by Chinese experts involved in the construction of China's SSBN, Lewis and Litai (1994) argue that solutions to the many problems faced by the experts were reached by "the close reading of the increasing number of publications on the American Polaris program" (p. 53).

The emulation of both the Soviet and the American nuclear programs is explained by the fact that the system was bipolar and, consequently, there were two models of "nuclear nest practices". In addition, off-setting of both countries capabilities by the development of missiles that could reach both territories was necessary since both countries could possibly be China's opponent in a nuclear war.

Nonetheless, although China seemed to behave as if it was internally balancing the superpowers during the Cold War, China's actions do not completely meet the requirements established in this dissertation to qualify a group of actions as internal balancing. This is because the result of those

behaviors did not increase China's chances to win a nuclear war against either of the poles. This is because both of them were capable of destroying China's arsenal in a first attack. In other words, China did not acquire second strike capabilities. Without those, one could not speak of a possible Chinese victory once a nuclear war has begun.

In contrast, more recently, China has been investing on the survivability of its nuclear arsenal, trying to guarantee the possession of second strike capabilities. As a result, although China has increased the number of long range missiles at its disposal (it is estimated that this country went from 2 missiles that can reach the continental U.S to at least 40 in 2011), the focus has been on the quality of its arsenal and not on quantity. China has improved the survivability of its nuclear weapons substituting liquid-fuel missiles by solid-fuel ones. The latter can be stored already charged and this diminishes the chances that the launch preparations are detected by an opponent. In addition, solid-fuel missiles are better in what regards mobility. Due to these latest efforts, some experts believe that China has acquired second strike capabilities for the first time since the beginning of its nuclear program.

Nonetheless, it was also argued in the fifth chapter of this dissertation that the acquisition of second strike capabilities can only be seen as a first stage of the internal balancing process. This is because China's second strike capabilities are important in deterring the use of nuclear weapons by the U.S. in case a war between these two countries happens. Therefore, it could be said that the chances of victory are increased since the nuclear option has become much harder. However, if the nuclear threshold is crossed and a nuclear war effectively begins, China's current nuclear arsenals are only enough to damage some of the American cities, but not to win a nuclear war against the U.S. In other words, internal balancing in the nuclear realm is not in an advanced stage.

The sixth chapter discussed China's efforts to improve its ability to fight at sea. In particular, the chapter highlighted the modernization of China's submarines and of the missiles that could be used as weapons in a war against the U.S. In spite of China's new focus on seapower and the progresses already made, the Chinese fleet was found to be quantitatively inferior to the American one. China has a great number of conventional submarines, but lacks aircraft carriers and nuclear submarines. Furthermore, qualitative flaws such as the Navy's

inexperience and difficulty in fighting networked wars were also highlighted. Therefore, at first sight, the results of China's efforts did not seem enough to raise its prospects of winning a war against the U.S. This is because the capabilities actually acquired are still much inferior, quantitatively and qualitatively, to the American ones.

Nonetheless, it was also argued that navies should not be compared solely in what comes to their different capabilities. Different navies need to perform different missions. Accordingly, the capabilities the Americans must have to fight a war against China might be different from the capabilities the Chinese need. In other words, to verify if China is internally balancing the U.S., the results of China's efforts need to be judged in relation to the kind of wars the Chinese navies would possibly fight.

Consequently, analysts argue that there is a possibility that the Chinese armed forces face American seapower in a war over Taiwan. Therefore, the chapter evaluated China's capabilities and strategic thinking to fight such a war. As was shown, nowadays, ASBMs, attack submarines, and supporting C4ISR systems are viewed as key elements of China's emerging anti-access force and strategy (O'ROURKE, 2012, p. 4). In order to execute its sea-denial strategy, the Chinese acquired capabilities to effectively perform surveillance of the near seas. Surveillance is of paramount importance in finding the targets at sea, so that the launching of anti-ship missiles and of land-based aircraft, as well as the deployment of submarines can happen. Experts are not certain that China's efforts are enough for China to win a war against the U.S. over Taiwan. In particular, the low range of its aircraft and the still not so high number of submarines are among the reasons for that uncertainty. However, China has certainly increased its chances of winning a war against the U.S. over Taiwan due to the development of its anti-access strategy. Therefore, one can say that there are signs of internal balancing at sea.

Nonetheless, taking in consideration that China depends on exports of vital products such as oil and that this oil comes through its sea-lines of communication (SLOC), the ability to protect those is essential for China to win a war against American naval capabilities. Being able to delay U.S. access to a potential conflict over the Taiwan issue is not enough to off-set U.S. power advantages in the region. China must also ensure its own access to the South China Sea, the Indian

Ocean. To protect its SLOC, amphibious and replenishment capabilities are required. However, there is consensus among specialists both that those capabilities are needed if China wants to project power, as well as that this country is not there yet. Therefore, China's behavior is only consistent with a very early stage of the internal balancing process.

Finally, chapter seven attempted to evaluate China's chances of carrying out internal balancing through innovation in the future. For that purpose, China's current approach to technology promotion needed to be evaluated. Therefore, the chapter made a review of China's relation with technology since the Cold War, especially paying attention at the defense industry and its close relation to China broader innovation system.

It was highlighted that during the 1980's and the early to mid-1990's, there was a major reversal in China's approach to technology: instead of investing in military technology in the hope that possible military progresses would spin off to other sectors of the economy, China's policies were now based on the understanding that the military would be the one to benefit from civilian technological advances. In addition, a conversion policy took place at that point: due to this policy, military firms were encouraged to produce civilian products. However, although the Chinese defense sector shrank as a result of that policy, it paved the way for a qualitative leap forward, amending some of the inefficiencies that characterized the production of defense products in China, especially of conventional capabilities.

Nonetheless, conversion efforts did not improve China's defense outputs right away. Thus, if the immediate result was not the increase of China's prospects to win a major war, the China's behavior in the defense industry from 1980 to the mid-1990's cannot be qualified as part of an internal balancing process. Nevertheless, the conversion process was a necessary step before balancing could be considered a possibility.

More recently, China has promoted significant reforms in its defense industry. In especial, it has attempted to create and strengthen regulatory structures, in a movement that could be seen as internal balancing via emulation of American practices. Nonetheless, the product of emulation was not an exact copy of American defense industry's structures. As was argued in the seventh chapter, by itself, the fact that the product of emulation is not an exact copy of the

target of emulation does not impede the characterization of this behavior as part of an internal balancing process, since copies are almost never exactly equal to their original. But the differences from the original cannot be such as to turn the result of emulation inefficient. In the case of China, the emulation of American defense economy institutions did not result in an exact copy, but certainly improved the Chinese defense industry, since the presence of regulation structures eases the imposition of weapons and systems' standards.

On the other hand the target of technological emulation has been mainly Russia. This indicates that the choice of the target of emulation is not only determined by the potential opponent a country might face and the geo-strategic context of the balancer (as was highlighted while I evaluated China's behavior in relation to the American seapower). This choice seems to also be influenced by the availability of information about the potential opponent's capabilities. Due to the American arms embargo to China, this country had to pursue other targets to emulate.

In what regards the question about the chances that China internally balances the U.S. in the future via innovation, the seventh chapter attempted to show that there are no easy answers. China's innovation system still depends a lot on technonationalism: the understanding that innovation will come from the absorption and adaptation of foreign technologies. Nonetheless, this policy risks condemning China to the production at higher costs of defense items that are already produced elsewhere in a more efficient fashion.

In conclusion, the results of the empirical test conducted in this dissertation are only consistent with a very initial stage of the internal balancing process. Although economic and domestic/political developments enable China to pursue the military dynamic of the process, internal balancing behaviors are being pursued slowly and with modest results. In the nuclear realm, internal balancing is mainly taking the form of off-setting, to the detriment of emulation and innovation. The same can be said about the way China is dealing with American seapower. Emulation of American assets is more evident in the defense regulatory system and the prospects for internal balancing via innovation are controversial. Therefore, this dissertation is not consistent with the refutation of the hypothesis that China is already internally balancing the U.S., but the evidence is not conclusive enough to say that the internal balancing is being successful in

changing the international system into a bipolar one. In other words, although an internal balancing process seems to have begun, it has progressed slowly.

Accordingly, future research should engage in explaining why internal balancing by China has been slow and inefficient in transforming the system.

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