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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**THE IMPACT OF DECLINING DEFENSE BUDGETS ON
JAPAN MARITIME SELF DEFENSE FORCE**

by

Ryo Ikeda

June 2007

Thesis Advisor:
Second Reader

John Mutty
Douglas Brook

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**THE IMPACT OF DECLINING DEFENSE BUDGETS ON
JAPAN MARITIME SELF DEFENSE FORCE**

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B.S., National Defense Academy, 1995

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

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ABSTRACT

The purpose of this thesis is to analyze the impact of declining defense budgets on the JMSDF. Because of the huge debt of the Government of Japan (GOJ) and financial structural reform, the GOJ is trying to reduce all expenditures, including defense expenditures.

Conversely, Japan and countries in its vicinity face the threat of uncertainty. China is increasing its defense budget to build a modern oceanic navy. North Korea recently conducted a nuclear test despite the overwhelming opposition of the international community.

Therefore, it is a big challenge for the JMSDF to sustain and develop its capabilities under the pressure of the budget and the national security environment.

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I. INTRODUCTION

A. BACKGROUND

Since the end of the Cold War, the international security environment has dramatically changed. The most striking characteristic at present is the diversity and complexity of various threats. Under this environment, it is not possible to predict how serious threats will emerge in the real world. In particular, the terrorist attacks on September 11, 2001 caused a significant change in the traditional idea of national security. Even though the terrorist attacks led to a tightened relationship between the U.S. and other countries, those nations still struggled to prevent terrorist attacks. Terrorists continue to attack the international community. For example, some terrorist groups intended to blast twelve airplanes between London and various U.S. cities in August 2006; as a result of that plot, 24 men were arrested in Britain.

For Japan and its neighbors, the main concern is China, which continues to increase its defense budget and intends to modernize its naval capability. In the early morning of November 10, 2004, a Chinese submarine violated Japanese territorial waters. An order for maritime security operations was issued to the Commander of the Self Defense Fleet (SDF) in response to a cabinet decision. The Japan Maritime Self-Defense Force (JMSDF) requested the submarine to navigate on the surface to show the flag.¹ This is just one example of China's increased testing of its neighbors' capabilities.

Another national security concern for Japan is North Korea. The North Koreans abducted fifteen people in ten separate incidents between 1977 and 1983. Most of them are still in North Korean captivity. Also, North Korean fishing vessels are deployed around the Sea of Japan for unknown purposes. In October 2006, North Korea carried out a nuclear test despite the overwhelming opposition of the international community. Such provocations are likely to continue.

¹ Defense Agency, ed., *Defense of Japan 2005* (Tokyo: Gyosei, 2005), http://www.clearing.mod.go.jp/hakusho_data/2005/w2005_00.html (accessed April 2007).

Because of the changing international security environment, the force structure of the Japan Ground Self-Defense Force (JGSDF), the Japan Maritime Self-Defense Force (JMSDF), and Japan Air Self-Defense Force (JASDF), should be adapted to fit the new realities. Recently, in order to ensure the peace and safety of Japan in the current security environment, the Security Council and Cabinet of the Government of Japan approved the “National Defense Program Guidelines, FY 2005-.”² Thus, it could be said that it is time for a transition toward reform of the defense power structure.

From the beginning, the JMSDF budget has been almost continuously increased so that the JMSDF could enhance its capabilities by procurement of various kinds of vessels, thereby achieving a sustained military preparedness. However, around 1990, the Japanese economy experienced a downturn that started a long recession lasting throughout the 1990s—the Lost Decade. As a result of this recession and the attendant huge government debt, the JMSDF no longer can expect increasing budgets for consecutive fiscal years. Actually, defense budgets stopped growing in fiscal year 1998.

Under the constraints of budget and financial problems, the use of military force now plays a broader role in the international community than simply deterring or responding to armed conflict. Military force is used for a variety of purposes, including military operations other than war (MOOTW). This research paper focuses on the procurement of naval ships by the JMSDF. An analysis of how the JMSDF could manage the size of its naval power and shipbuilding plans under the constraints of tightening budgets and increased mission requirements is presented.

Considering the overall situation, it is very challenging for the JMSDF to secure the homeland and seas in the vicinity of Japan — with existing unpredictable and uncertain threats—without sufficient budgeting resources.

² “NATIONAL DEFENSE PROGRAM GUIDELINES, FY 2005-” Approved by the Security Council and the Cabinet on December 10, 2004, http://www.mod.go.jp/e/policy/f_work/taikou05/fy20050101.pdf (accessed March 2007).

B. OBJECTIVE

The purpose of this thesis is to analyze how the declining defense budget will impact the future maritime strategy by examining historical budgetary data and the transitioning of the maritime defense strategy. This thesis is focused specifically on the shipbuilding account.

C. RESEARCH QUESTIONS

1. Primary Research Question

The Japanese defense budget is declining even as the threats of unpredictable conflict are increasing. The JMSDF must secure Japan and neighboring areas in the future. Thus, the primary question of this thesis is, “what effect has the declining defense budget had on JMSDF capabilities and maritime strategy, especially on shipbuilding?” Warships, including submarines, are the most costly procurement items in the JMSDF budget and also the main equipment of the organization. They are the main elements needed to complete the maritime strategy and fulfill the JMSDF’s mission.

2. Secondary Research Questions

- What are the characteristics of Japan’s defense budget and its military forces? An historical trend of the defense budget is described with its relation to the defense budget structure. As for the military forces, the Constitution of Japan plays an important role in restricting the force structure.
- How does the JMSDF sustain its capabilities under the pressure of the declining defense budget? Will the JMSDF need to review its long/short-term guidelines?
- How did the JMSDF manage the shipbuilding account in the past? Did the JMSDF have some difficulties? If not, why?
- Has the JMSDF strategy changed historically? Is there some correlation between budget and strategy?

- How does the relationship with the U.S. Navy affect JMSDF strategy? What does the U.S. Navy expect from the JMSDF as a coalition force, and vice versa?
- Will the declining defense budget affect the shipbuilding companies? What portion of their sales does the JMSDF shipbuilding account for? Will the decline in defense shipbuilding result in a reduced ability for the shipbuilding industry to keep pace with advanced technology?

D. METHODOLOGY

Multiple sources of published material were utilized to compile a database of background documentation and future projections, as they related to the implementation of the shipbuilding program of the JMSDF. Mainly, data on the national budget and the defense budgets were collected from the Ministry of Finance (MOF) website database and the Maritime Staff Office, Tokyo. These data were mostly utilized to review the historical trends and to understand the current situation with past background.

The data for the shipbuilding accounts for each ship were obtained from the MOF database in order to conduct an historical comparison in terms of account management. These data were used to analyze how the JMSDF managed the shipbuilding account and to track the transition of the five-year payment plan in the second part of the thesis. This analysis examined how the JMSDF managed the shipbuilding account, with some difficulties, under the pressure of declining defense budget. The differences between shipbuilding plans and actual shipbuilding were also examined.

The maritime strategy was tracked from the white paper that is published by the Ministry of Defense every year. These data were analyzed in the first part of the thesis to determine the relationship between defense budgets and the

shipbuilding strategy. Understanding that the defense strategy complements the defense budget policy itself, because the defense budget is reflected in the strategy through monetary terms.

Finally, based on the previous analysis, the impact of declining defense budgets on the JMSDF was examined and conclusions were made. In order to project the probability of future destroyer procurements, simple linear regression is introduced to examine how the historical data are utilized. This thesis describes the projections for the budget and shipbuilding for the future.

E. ORGANIZATION OF THESIS

Following this Introduction, Chapter II reviews the transition in defense strategy after the end of WWII. The JMSDF history is reviewed from its establishment at the beginning and the maritime strategy, which is a part of the defense strategy. It is examined in terms of the relationship between the U.S. Navy and the JMSDF. Finally, the transition of the defense strategy is overviewed to provide an understanding of the historical background for the JMSDF.

Chapter III is an historical data presentation about the national budget, the defense budget, and the JMSDF shipbuilding account. In this chapter that reviews the Japanese budget characteristics and current fiscal situation, the relationship between the national budget and the defense budget is described. In addition, the shipbuilding program in the JMSDF is examined in order to understand how the JMSDF has managed the shipbuilding account.

Chapter IV analyzes the impact of the declining defense budget from the aspects of defense strategy, the shipbuilding program, and the latest shipbuilding technology. The impact on the defense strategy is examined in terms of the shipbuilding program, the fleet concept, and the alliance with the U.S. Navy. Further analysis of the shipbuilding program is conducted by cost estimation

methods with a single linear regression model and projections for a future shipbuilding program. Finally, the impact on technology and the shipbuilding industry is presented.

Chapter V presents conclusions and recommendations regarding the declining defense budget and the JMSDF shipbuilding program.

II. TRANSITION OF THE DEFENSE STRATEGY AFTER THE END OF WWII

A. BIRTH OF THE JMSDF

1. Establishment

At noon on August 15, 1945, the Imperial Edict from the Emperor Hirohito was broadcast throughout Japanese territory to announce the end of the war and the acceptance of the Potsdam Declaration. This meant that the Japanese people would have their first experience with foreign occupation since the dawn of their country's history. After the end of World War II, the General Headquarters (GHQ) of the Allied Powers occupied all of Japan and General Douglas MacArthur of the United States Army served as the Supreme Commander of the Allied Powers.

The defeat in this war had significant influence on Japanese citizens, so much so that they were willing to change their national attitudes, especially toward military affairs. As a result, implementation of total disarmament and demobilization by the GHQ was accepted without large protests and former military personnel were purged from public offices; some of them were prosecuted by the International Military Tribunal for the Far East.

The Potsdam Declaration, formulated by the U.S., China, and the U.K. as an instrument of surrender, set the framework for the democratization and demilitarization of Japan. It emphasized that Japan's militaristic leaders would be removed from power, its ability to make war would be dismantled, its military would be disarmed, and all military industries would be prohibited.³ On the other hand, the U.S. government issued the "U.S. Initial Post-Surrender Policy for Japan"⁴ as a statement of incipient policy after the surrender of Japan. This clearly described the ultimate objective: "to insure that Japan will not again

³ "Potsdam Declaration," National Diet Library, Japan, <http://www.ndl.go.jp/constitution/e/etc/c06.html> (accessed March 2007).

⁴ "U.S. Initial Post-Surrender Policy for Japan," National Diet Library, Japan, http://www.ndl.go.jp/constitution/shiryō/01/022_2/022_2_002r.html (accessed March 2007).

become a menace to the United States or to the peace and security of the world.”⁵ In order to achieve this purpose, General MacArthur ordered the dissolution of all ground, air, and naval forces. Consequently, the seventy-seven year history of the Imperial Japanese Navy came to an end. This meant an end to the glorious emphasis on military power and a collapse of modern Japanese growth and technical progress for the military.

Deprived of any military capability after 1945, Japan had only occupation forces to maintain public order. However, due to the outbreak of the Korean War on June 25, 1950, most of the occupation forces were redeployed to the Korean peninsula. At that time, GHQ realized that there was a necessity to build up some internal force for public security in Japan. General MacArthur sent a letter to Prime Minister Yoshida Shigeru with an order. He wrote, “I authorize your government to take the necessary measures to establish a national police reserve of 75,000 men and expand the existing authorized strength of the personnel serving under the Maritime Safety Board by an additional 8,000.”⁶ The Government of Japan enforced the law to form the National Police Reserve. However, the Japanese government officially called the reserve personnel “police.” This organization was equivalent to a small sized military because it was equipped with M1 Garand rifles, rocket launchers, and small tanks.

After independence was restored in 1952, the Japanese government integrated the National Police Reserve with the Maritime Safety Board to establish the National Security Agency, whose purpose was to defend the whole country from direct and indirect invasion. This was the first step toward militarization. At this time, Japan had a force of 110,000 ground strength, 7,600 naval strength, 120 airplanes, and 18 frigates.⁷

⁵ “U.S. Initial Post-Surrender Policy for Japan.”

⁶ “Douglas MacArthur's Letter to Prime Minister,” National Diet Library, Japan, <http://www.ndl.go.jp/modern/img_r/M010/M010-001r.html (accessed March 2007).

⁷ Yuzuru Tamura, comment on “Transition of the SDF,” <http://www.cc.matsuyama-u.ac.jp/~tamura/jjeitainoennkakutosinnboutaikou.htm> (accessed March 2007).

Finally in 1954, based on the Defense Agency Establishment Act and the Self Defense Force Act, the Japanese Government established the Defense Agency with JGSDF (Japan Ground Self Defense Force), JMSDF (Japan Maritime Self Defense Force), and JASDF (Japan Air Self Defense Force). Table 2.1 shows the initial military power in the Self Defense Force (SDF).

Table 2.1 Initial Military Power in the Self Defense Force (1954)⁸

Ground forces	Naval forces		Air forces	
(personnel)	(personnel)	(tonnage)	(personnel)	(combat aircraft)
139,000	16,000	58,000	6,700	150

2. Constitution of Japan

The Constitution of Japan was promulgated in 1946 to replace the former Meiji Constitution and came into effect in 1947. In the process of drafting the constitution, opinion and direction by the GHQ was strongly reflected. Therefore, the constitution emphasized “that sovereign power resides with the people” in the preface and more specifically described the “renunciation of war” in Article 9.

Article 9 of the constitution stated that “the Japanese people forever renounce war” and “land, sea, and air forces, as well as other war potential, will never be maintained.” However, in reality, the Japanese government politically decided to establish the National Police Reserve at the beginning of the Korean War in 1950. Furthermore, the Self Defense Force was obviously born with equipment and as an armed military in 1954. (The full text of Article 9 follows.)

CHAPTER II: RENUNCIATION OF WAR Article 9: Aspiring sincerely to an international peace based on justice and order, the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as means of settling international disputes. 2) In order to accomplish the aim of the

⁸ Tamura.

preceding paragraph, land, sea, and air forces, as well as other war potential, will never be maintained. The right of belligerency of the state will not be recognized.

The Japanese government explained a relationship between the constitution and the right of self-defense: the idea of pacifism is enshrined in the Constitution, of which Article 9 sets forth the renunciation of war, non-possession of war potential, and a denial of the right of belligerence by the state. Nonetheless, as long as Japan remains an independent nation, these provisions do not deny the inherent right of self-defense.⁹ Thus, the government insists that the right of self defense is not against the principle of the Constitution. “The lack of constitutional legitimacy for the defense forces complicates government efforts to formulate a defense strategy- or to justify defense buildup plans.”¹⁰

According to the latest public opinion survey by the Cabinet office in February 2006, 69.4% of the people recognized a mission for the Self Defense Forces as the national security and agree with the government’s interpretation to retain the right of self defense.¹¹ However, the appropriate size and scope for the self defense force is a highly controversial question. The government noted, “Self defense capability that Japan is permitted to possess under the Constitution is limited to the minimum necessary level” and the possession of “offensive weapons” such as long-range strategic bombers or attack aircraft carriers is prohibited. As an example of the extremes the government has gone to in enforcing these restrictions, when the JASDF introduced the F-4E fighter based on the perceived threat from nearby countries, the bombing and air-refueling capabilities were removed at extra cost.¹² For similar reasons, the JMSDF gave up on building an aircraft carrier.

⁹ Defense Agency, ed., *Defense of Japan 2006* (Tokyo: Gyosei, 2006), http://www.clearing.mod.go.jp/hakusho_data/2006/w2006_00.html (accessed April 2007).

¹⁰ Joseph P. Keddell, *The Politics of Defense in Japan: Managing Internal and External Pressures* (Armonk, N.Y: M. E. Sharpe, 1993), 21.

¹¹ Defense Agency, ed., *Defense of Japan 2006*.

¹² Hisahiko Okazaki, *A Grand Strategy for Japanese Defense* (Lanham: University Press of America, 1986), 81.

The Constitution of Japan has not been amended since it was established in 1947, even though there were some opportunities for change when the security environment became more unstable. Even though 55.5% of the people considered the necessity to amend the Constitution, the hurdle to review has been high and fought with political controversy.¹³ It is seen as a sanctuary where nobody trespasses to preserve the Constitution as it was established. Therefore, instead of an amendment, the government only changed its interpretation and its application in order to justify the SDF activities. The arguments on the relationship between the Constitution and the SDF are still a serious issue within the nation and the political position of the SDF is very ambiguous.

3. Organizational Structure

The Constitution, especially Article 9, makes the defense organizational structure seem distorted. The inconsistency between the Constitution and the real world makes the defense structure very complex. However, on January 8, 2007, the Japanese government raised the Defense Agency to the status of the Department of Defense. Before that, the Defense Agency was one of the agencies of the Cabinet office.

Before promotion to ministry level, the Prime Minister would still appoint the minister of defense, and the whole defense organization remained less than an actual ministry. Thus, the minister was technically one of the cabinet members, but remained in fact head of an agency of the Cabinet office in the Cabinet. The difference between ministry and agency is huge in terms of political power, authority, and influence. The Defense Agency has been seen as the government office for managing the affairs of the Self Defense Forces (SDF), rather than the national security affairs.¹⁴ Thus, it had been possible for the bureaucrats of the Ministry of Finance (MOF) to exercise stronger influence over defense plans than politicians.

¹³ "Public Survey on the Constitution," *Yomiuri Shimbun*, March 2006
<http://www.yomiuri.co.jp/feature/fe6100/koumoku/20060404.htm> (accessed March 2007).

¹⁴ Kedell, 19.

Even though the Defense Agency was not a ministry, the defense budget was submitted to the (MOF) by the Defense Agency. Thus, from the view of public finance, the Defense Agency was regarded as a “ministry.” This political ambiguity affected defense budget negotiations between the MOF and the Defense Agency. In Japanese politics, the budget approval process, or the decisions on dividing up the pie, is always a matter of power. In fact, the MOF bureaucrats reviewed the defense budget requests and controlled the overall size of the budget, so that the defense buildup plans and expenditures were restrained to a marginal pace.¹⁵ The promotion of the Defense Agency to the Ministry of Defense in FY 2007 resolved, after more than fifty years, a big problem related to national security. Appendix A shows an organizational change before and after promotion.

Even though the agency was raised to the department level, the internal organization structure did not change. Figure 2.1 shows the organizational chart for the JMSDF. The JMSDF consists of the Self Defense Fleet and five Regional Districts. The Self Defense Fleet is responsible for the defense of the areas around Japan primarily through mobile operations by utilizing key units such as the Fleet Escort Force, the Fleet Air Force, and the Submarine Force. In addition, there are five regional districts that primarily guard their assigned areas and support the Self Defense Fleet.¹⁶ Therefore, it can be said that the Self Defense Fleet is a major work force within the JMSDF. In particular, the Fleet Escort Force provides the primary units to secure the nation. In fact, the newest ships join the Fleet Escort Force first. The ships in the regional district are received only after being used first by the Fleet Escort Force.

¹⁵ Keddell, 18.

¹⁶ Defense Agency, ed., *Defense of Japan 2006*.

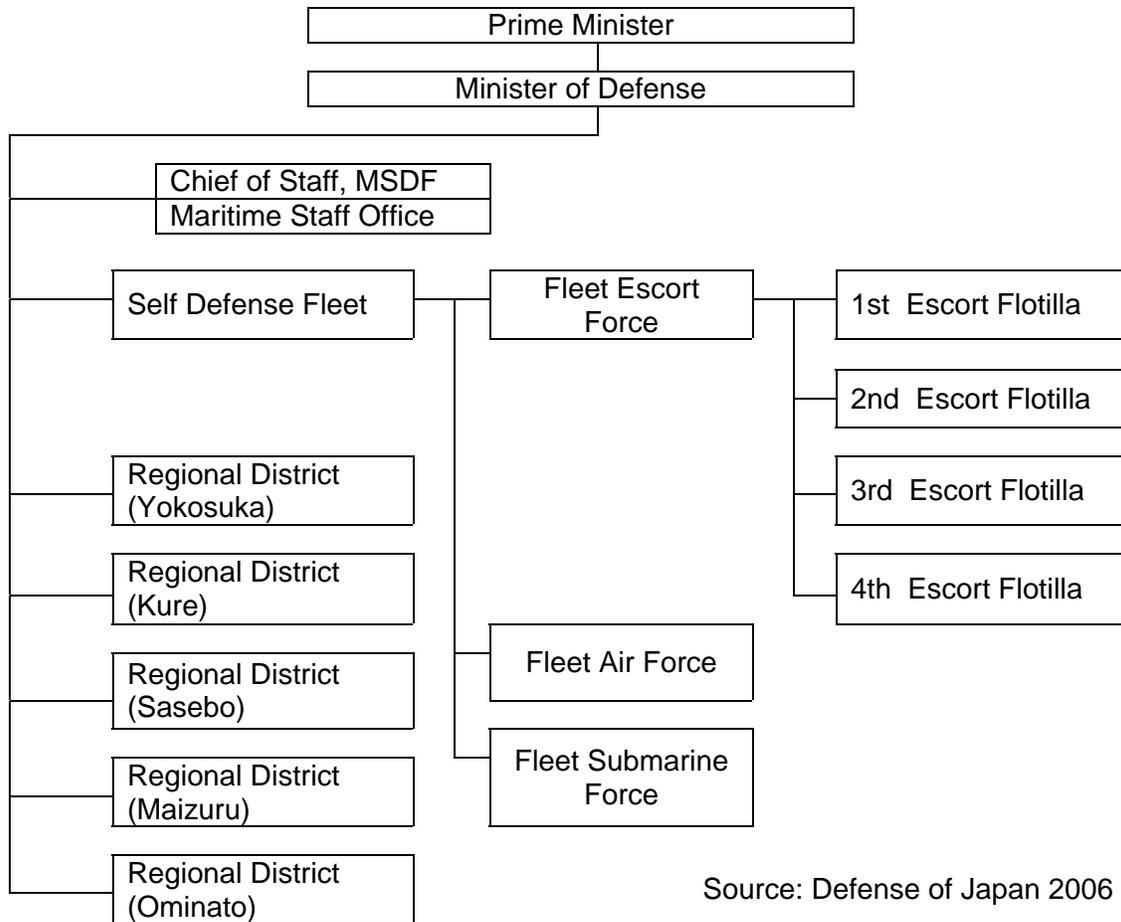


Figure 2.1 Organization Chart for the JMSDF¹⁷

B. RELATIONSHIP WITH THE U.S. NAVY

1. Japan's Independence and the U.S. - Japan Security Treaty

In September 1951, the Allied Powers and Japan signed the Treaty of Peace with Japan at the San Francisco Peace Treaty Conference. Simultaneously, Japan and the U.S. concluded the U.S.-Japan Security Treaty at the Presidio Army Base in San Francisco. Based on these security treaties, the allied occupation forces in Japan withdrew. Since that time, U.S. forces have been stationed in Japan under the United States Forces Japan (USFJ). In 1960, the U.S.-Japan Security Treaty was revised. This "Treaty of Mutual Cooperation

¹⁷ Defense Agency, ed., *Defense of Japan 2006*.

and Security between the United States and Japan” was signed in Washington DC. The initial period was set for one year, but the treaty is still in effect without abrogation.

Under the Japan-U.S. Security Treaty, the U.S. promises to defend Japan, and the JSDF is authorized to conduct cooperative operations with the U.S. Forces in case of emergency. However, as Duncan McCargo points out, “Japan made no such pledge to come to the aid of the United States. The supposedly ‘mutual’ treaty was entirely one-sided.”¹⁸ This distortion is still arguable at present, especially since Japan has attained such a high level of military and economic power.

In 1978, the U.S. and the Japanese government agreed to “a de facto transformation of the mutual security arrangement in the form of a set of *Guidelines for U.S.-Japan Defense Cooperation*.”¹⁹ The aim of these guidelines was described as to enhance the effectiveness and credibility among the two countries.²⁰ In addition, the guidelines defined some concrete activities such as cooperation under normal circumstances, actions in response to an armed attack against Japan, and cooperation in areas surrounding Japan. In accordance with the JMSDF improvement of ability and equipment, the relationship between the U.S. and Japan was reviewed and reinforced for the national security.

The relationship between the JMSDF and the U.S. Navy has been very strong from the beginning with mutual respect and mutual reliance. During the late 1970s and 1980s, the U.S. pressed the Japanese to assume a wider role as a strategic partner in the defense of Pacific Asia.²¹

¹⁸ Duncan McCargo, *Contemporary Japan*. 2nd ed. (New York: Palgrave Macmillan, 2004), 184.

¹⁹ Hitoshi Abe, Mineyuki Shindo, and Sadafumi Kawato, *The Government and Politics of Japan* (Tokyo: University of Tokyo Press, 1994), 105.

²⁰ Defense Agency, ed., *Defense of Japan 2006*.

²¹ McCargo, 184.

2. Interoperability between the U.S. Navy and the JMSDF

Due to the support by the U.S. Navy, the JMSDF has increased its capabilities in both qualitative and quantitative terms. The National Defense Program Guideline for FY2005 and after (NDPG) clearly stated, “The close and cooperative relationship between Japan and the United States, based on the Japan-U.S. Security Arrangements, continues to play an important role for the security of Japan as well as for peace and stability in the Asia-Pacific region.” In order to strengthen interoperability, the JMSDF usually conducts combined exercises with the U.S. Navy, not only to promote closer communication and keep harmonious relations between the U.S. Navy and the JMSDF, but also to improve the level of tactical skill. In addition, every year the JMSDF dispatches its escort ships, submarines, and aircraft to the U.S. to brush up on their proficiency by making use of the U.S. Navy’s training installations.

In FY2005, joint exercises were conducted as follows (See Table 2.2):

Table 2.2 Record of Joint Exercises in FY2005

Exercise Designation	Date	Location	Scale	
			JMSDF	U.S. Navy
Anti-infiltration training	Apr 20-24, 2005	Sea area to south-west of Japan	Vessels: 2 Aircraft: a few	Vessels: 2 Aircraft: a few
Minesweeping exercise	Jul 17-29, 2005	Mutsuwan Bay, Japan	Vessels: 23 Aircraft: 16	Aircraft: 9
Anti-infiltration training	Oct 3-8, 2005	Around Okinawa, Japan	Vessels: 5 Aircraft: a few	Vessels: 10 Aircraft: a few
Minesweeping exercise	Oct 3-8, 2005	Hyuganada-sea, Japan	Vessels: 28 Aircraft: 5	Explosive ordnance disposal personnel: 6
Medical training	Oct 26, 2005	Yokosuka Naval Base	Personnel: 80	Personnel: 100
Minesweeping training	Feb 15-27, 2006	Suonada sea, Japan	Vessels: 18 Aircraft: 15	Vessels: 2 Aircraft: 1
Training for guarding USFJ bases	Mar 13-15, 2006	Port of Yokosuka	Personnel: 320	U.S. Navy Yokosuka base units
Command post exercise	Mar 13-23, 2006	U.S. Naval College	Personnel: 30	Personnel: 40

Source: Defense of Japan 2006, Defense Agency

One of the major joint exercises is the Rim of the Pacific Exercise, RIMPAC, which is conducted biennially (every even year) under the leadership of the U.S. Navy. The JMSDF has participated in RIMPAC since 1980. The exercise is held with the primary objective to “Enhance key war fighting skill sets and coalition interoperability.” RIMPAC 2006 brought together military forces from Australia, Canada, Chile, Peru, Japan, the Republic of Korea, the United Kingdom and the United States.²²

The JMSDF and the U.S. Navy have enhanced their interoperability through these exercises. At the present time, the strong relationship between the two countries provides a consistent level of security around the Pacific-Asia region. Consequently, it follows that Japanese defense policy is made based on the U.S. relationship.

3. The Japan- U.S. Alliance of the New Century

As the international security environment changes, so too does the relationship between the U.S. and Japan. During the Cold War era, the JMSDF was expected to play a role in containing Soviet sea power in the northwest Pacific. Thus, the JMSDF developed its Anti-Submarine Warfare (ASW) capability so that the JMSDF could complement the U.S. Navy strategy in the Pacific. However, because of the end of the Cold War and Japanese economic growth, the U.S. expressly stated that “Japan needed to assume greater responsibility for regional security around its immediate territorial waters.”²³ Furthermore, Japan was accused of enjoying a “free ride” in defense terms, due to the outdated and distorted mutual security treaty.²⁴

The Gulf War (1990-1991) made a significant change in the Japanese defense policy. The U.S. government strongly encouraged Japan to cooperate in the war and to contribute toward the war expenditures. The Japanese responded

²² COMTHIRDFLT Public Affairs, “Rim of the Pacific Exercise 2006,” http://www.c3f.navy.mil/RIMPAC_2006/about_rimpac.htm (accessed March 2007).

²³ McCargo, 185.

²⁴ Masaaki Honma, *Introduction to the Study of Modern Public Finance* [GENDAI ZAISEI NYUMON], 2nd ed. (Tokyo: Nihon Keizai Shimbunsha, 1994), 404.

with a payment of \$13 billion. Because the law was not settled yet to permit SDF activity on the battlefield, no personnel were allocated to the Gulf War effort. Because of the Constitution the Japanese government could not do anything further. Despite the money Japan committed, the other coalition forces attacking Iraq did not appreciate the Japanese contribution. Americans were dissatisfied and accused Japan of checkbook diplomacy, and the Kuwaitis, when thanking their liberators, did not mention Japan.²⁵

Such a humiliation prompted the Japanese government to shed what some Japanese criticized as irresponsible one-country pacifism.²⁶ At this time, the Japanese government realized that the money they contributed to the war effort did not garner respect from the international community.²⁷ In fact, the attitude of other countries toward Japan was negative and Japan was accused of not providing full support because they did not send personnel.²⁸ Consequently, the Japanese government changed its defense policy to become more deeply involved in international affairs. It intended to activate the SDF outside Japan waters. The Japanese government passed a law allowing the SDF to participate in United Nations peacekeeping operations a year after the Gulf War.

After September 11, 2001, the Japanese media reported the statement made by Richard Armitage, the United States Deputy Secretary of State, to the Ambassador of Japan to the United States of America: "it was crucially important that the Japanese flag fly besides the Stars and Stripes in the war on terror."²⁹ This statement reminded the Japanese government of the negative publicity received during and after the Gulf War. "There was almost a kind of trauma among Japanese as a result of the reaction to what we did in the Gulf War. It was

²⁵ Louis D. Hayes, *Introduction to Japanese Politics*, 1st ed. (New York: Paragon House, 1992), 265.

²⁶ Mike Mochizuki, "Japan Rethinks Pacifism," *Los Angeles Times*, Sep 21, 2006.

²⁷ Doug Struck, "As Alliances Shift, Japan's Military Role Is Widening," *The Washington Post*, Sep 28, 2001.

²⁸ Sebastian Moffett and Martin Fackler, "Active Duty: Cautiously, Japan Returns to Combat, In Southern Iraq; Tokyo, Pressed by U.S., Threat From North Korea, Sheds Decades of Forced Pacifism; Redefining an Aircraft Carrier," *Wall Street Journal*, Jan 2, 2004.

²⁹ Ayako Doi and Kim Willenson, "Sayonara to Japanese Pacifism?" *Washington Post*, Aug 14, 2005.

a very bitter experience,” said Chikako Sekiba, a professor of Sacred Heart University in Tokyo.³⁰ Japan finally decided to send the JMSDF fleet into the Indian Ocean in order to join Operation Enduring Freedom (OEF). Since December 2001, the JMSDF has contributed a total of 460,000 kl of ship fuel to naval vessels from eleven countries (See also Table 2.3).

Table 2.3 Support to the Coalition Forces³¹

Country	Fuel	Water	Fuel for helicopters
Canada	42 times		3 times
France	79 times		
Germany	23 times		6 times
Greek	10 times		
Italy	39 times		3 times
Holland	11 times		
New Zealand	15 times		
Pakistan	110 times	88 times	11 times
Spain	10 times		
U.K.	27 times		2 times
U.S.A.	339 times		30 times
Total times	705 times	88 times	55 times
Total amount	460,000 kl	5,180 tons	870 kl

On June 29, 2006, President George W. Bush and Prime Minister Junichiro Koizumi of Japan announced a joint statement titled “The Japan – U.S. Alliance of the New Century.” It said that, “the President praised Japan’s humanitarian and reconstruction assistance in Afghanistan and Iraq as well as Japan’s support provided to coalition forces operating in the Indian Ocean.”³² The role of the JMSDF has been transforming from participation in local

³⁰ Struck.

³¹ “Support to the Coalition Forces,” Japan Maritime Self Defense Force, 2006, <http://www.mod.go.jp/JMSDF/about/haken/hakenkyouryoku/sienkatudou/index.html> (accessed March 2007).

³² “The Japan-U.S. Alliance of the New Century,” White House 2006, <http://www.whitehouse.gov/news/releases/2006/06/20060629-2.html> (accessed March 2007).

exercises to that of worldwide cooperation. As a result, the mission of the JMSDF has expanded to meet the goals of the new alliance worldwide.

C. TRANSITION OF THE DEFENSE STRATEGY

1. Defense Policy

The Japanese defense policy is based on the "Basic Policy for National Defense," which was adopted by the National Defense Council in 1957. According to this policy, "The objective of national defense is to prevent direct and indirect aggression, but once invaded, to repel such aggression thereby preserving the independence and peace of Japan founded upon democratic principles."³³ In order to achieve this objective, the government has advocated some more detailed principles since the SDF was formed. The most specific characteristic among the principles is the "exclusively defense-oriented" policy. McCargo explains that exclusively defense-oriented means "they [the Japanese government or SDF]:

- Can only act if attacked;
- Must take only minimum actions required for defense; and
- The size of their capability must be limited to the minimum necessary for defense – that is, there should be no offensive or strategic weapons."³⁴

However, the security environment around Japan is changing remarkably, jolted by North Korea's missile tests and nuclear test. In fact, some Japanese politicians urged the beginning of a debate on developing a capability to hit the enemy base before they launch a missile.³⁵ Japan does not possess the ability to strike an overseas base, but North Korea's missile test has revived discussion over whether it should and whether doing so would violate the U.S.-drafted

³³ "NATIONAL DEFENSE PROGRAM GUIDELINE, FY 2005 and after," Defense Agency, 2005, http://www.mod.go.jp/e/policy/f_work/taikou05/index_e01.htm (accessed March 2007).

³⁴ McCargo, 184.

³⁵ "Japan LDP Debates Ability to Hit Enemy Bases," *Defense News*, posted August 4, 2006, <http://www.defensenews.com/story.php?F=2001032&C=asiapac> (accessed March 2007).

pacifist constitution. This constitution has previously been interpreted as allowing a military solely for self-defense purposes.³⁶

The arguments for possessing pre-emptive strike capability are being formulated and discussed at the present time. As John Feffer, co-director of Foreign Policy in Focus at the International Relations Center, Albuquerque, N.M., points out, "After the 1998 Taepodong launch, the Japanese public certainly became more hawkish on North Korea. But supporting a stronger defense is a far cry from supporting pre-emptive strikes."³⁷ It seems to take a long time to reach any conclusions. However, the Japanese government intends to make the best decision under the limitations of the Constitution. These recent events have resulted in Japan participating in a Ballistic Missile Defense (BMD) program with the U.S. Additionally, the JMSDF introduced the Standard Missile-3 (SM-3) Block 4 missile system for Aegis destroyers. Therefore, the Aegis destroyers have assumed a significant role for Japan's defense strategy in the future.

2. Defense Strategy and Defense Budget Policy

Based on the "Basic Policy for National Defense," the Japanese government decided to develop a defense capability as necessary for self-defense, with regard to the nation's resources and the prevailing domestic situation. The defense strategy was laid out in the Defense Buildup Plan of 1958 and revised three times during the period 1958-1976. The emphasis of this plan was to promote substantial preparedness both quantitatively and qualitatively.³⁸

There have been two major turning points in terms of the relationship between defense strategy and the defense budget. The first one was in 1976. A nominal 1% of GNP limit on defense spending was adopted by the National Defense Council and approved by the Cabinet. Looking back at the previous year, FY1975, the necessary defense capability was considered to be almost satisfied;

³⁶ "Japan LDP Debates Ability to Hit Enemy Bases."

³⁷ "Japan Debates Pre-Emptive Strike," Defense News, posted August 14, 2006, <http://www.defensenews.com/story.php?F=2016893&C=asiapac> (accessed March 2007).

³⁸ Satsuki Katayama, "National Defense Program Outline in and after FY2005 and Mid-Term Defense Program (FY2005-FY2009)," *The Finance*, February, 2005, 40-53.

thus, the government ceased to formulate a defense buildup plan covering a fixed time as it did before. Instead, it was decided to adopt a “single fiscal year formula” by which the required decisions would be made annually. However, the government realized the importance of setting a ceiling on defense expenditures. Thus, they applied the framework of the 1% of GNP. Figure 2.2 shows a transition of defense strategy since 1958.

FY	1958				1976	1977		1986	1987		1990
	Basic Policy for National Defense (Adopted on May 20, 1957 by the National Defense Council and the Cabinet)										
	First Defense Buildup Plan (1958 - 1960)	Second Defense Buildup Plan (1962 - 1966)	Third Defense Buildup Plan (1967 - 1971)	Fourth Defense Buildup Plan (1972 - 1976)	National Defense Program Outline						
					Mid Term Defense Program (1986-1990)						
					Framework of 1% of GNP			Framework of Total expense set forth in the program			

FY	1991		1995	1996		2000	2001		2004	2005		2009
	Basic Policy for National Defense (Adopted on May 20, 1957 by the National Defense Council and the Cabinet)											
	National Defense Program Outline		National Defense Program Guideline				National Defense Program Guideline					
	Mid Term Defense Program (1991-1995)		Mid Term Defense Program (1996-2000)		Mid Term Defense Program (2001 – 2004)		Mid Term Defense Program (2005 -2009)					
	Framework of total expense set forth in the program											

Figure 2.2 Transition of Defense Strategy³⁹

Until the end of 1986, this framework was effective for putting the brakes on spiraling defense spending. In 1986, in the process of the compilation of the FY 1987 budget, the defense budget exceeded the 1% framework. Therefore, the government ceased using this framework. Instead, the defense budget limit

³⁹ Katayama, 40-53.

was described in the Mid-Term Defense Program as the total amount for that period. In other words, the framework of total expense was set forth in the Mid-Term Program.

The second turning point came in 2004. The main issue was a transition to reduce JSDF expenditures. The Cabinet approved the "National Defense Program Guideline for FY2005 and after" (NDPG) and the "Mid-Term Defense Program FY2005-FY2009" (MTDP) on December 10, 2004. According to the NDPG, "The Government of Japan will rationalize and streamline personnel, equipment, and operations so as to attain greater results with the limited resources that are available."⁴⁰ Limited resources implied budget and manpower; as a result, the hardware and scope of JSDF operations would be significantly reduced. As for the JMSDF, the destroyers were reduced to 47 and P-3C aircraft to 150. This change was made not only for the overall financial reasons, but also for specific military internal and financial reasons.

3. Fleet Concept

Japan relies on foreign countries for most of the materials that are needed to produce Japanese manufactured goods. In particular, energy resources are highly dependent on imports using tankers. For example, 99.7% of oil consumption and 96.3% of natural gas consumption is imported.⁴¹ Therefore, sea-lane defense is considered one of the major missions for the JMSDF.

In order to maintain the maritime security, the JMSDF operates the Self Defense Fleet as a mobile force. In particular, the Fleet Escort Force is the center of Japanese sea power. Traditionally, the Fleet Escort Force consists of four Escort Flotillas and each Escort Flotilla is assigned eight ships, including two guided missile destroyers (DDGs). Because there are four flotillas, the JMSDF has an operational plan in which one flotilla is always on duty, one flotilla is in a readiness condition, one flotilla is in training, and the last one is in

⁴⁰ Defense Agency, ed., *Defense of Japan 2006*.

⁴¹ "Japanese Energy Resources," Japan Oil, Gas and Metals National Corporation, http://www.jogmec.go.jp/j_resource/index.html (accessed March 2007).

maintenance.⁴² In addition, eight antisubmarine helicopters are assigned to each flotilla. These eight ships with eight helicopters are referred to as the “Eight by Eight Fleet Concept.”

With regard to the Coast Guard mission, five Regional Districts cover the entire Japanese coastline and inshore waters. Even though the newest ships are assigned to the Escort Flotilla first and the older ships are delivered to the Regional Districts, the oldest one was built in 1982 and the most recent ship was built in 1987.

The "National Defense Program Guideline for FY2005 and after" (NDPG) provides guidelines for a big transition in the Fleet Concept. Units for mobile operations units will be consolidated into eight divisions (one division consisting of four vessels) to be able to respond to contingencies swiftly and continuously. Units for regional district units will be changed to allocate one unit to each of the five security areas to reflect the current security environment.⁴³ Figure 2.3 shows a future posture of mobile operation unit and regionally deployed unit. As a result, NDPG directs a reduction of seven destroyers that will draw down the total to 47 from 54.

⁴² Defense Agency, ed., *Defense of Japan 1992* (Tokyo: Gyosei, 2006), http://www.clearing.mod.go.jp/hakusho_data/1992/w1992_02.html (accessed March 2007).

⁴³ Defense Agency, ed., *Defense of Japan 2006*.

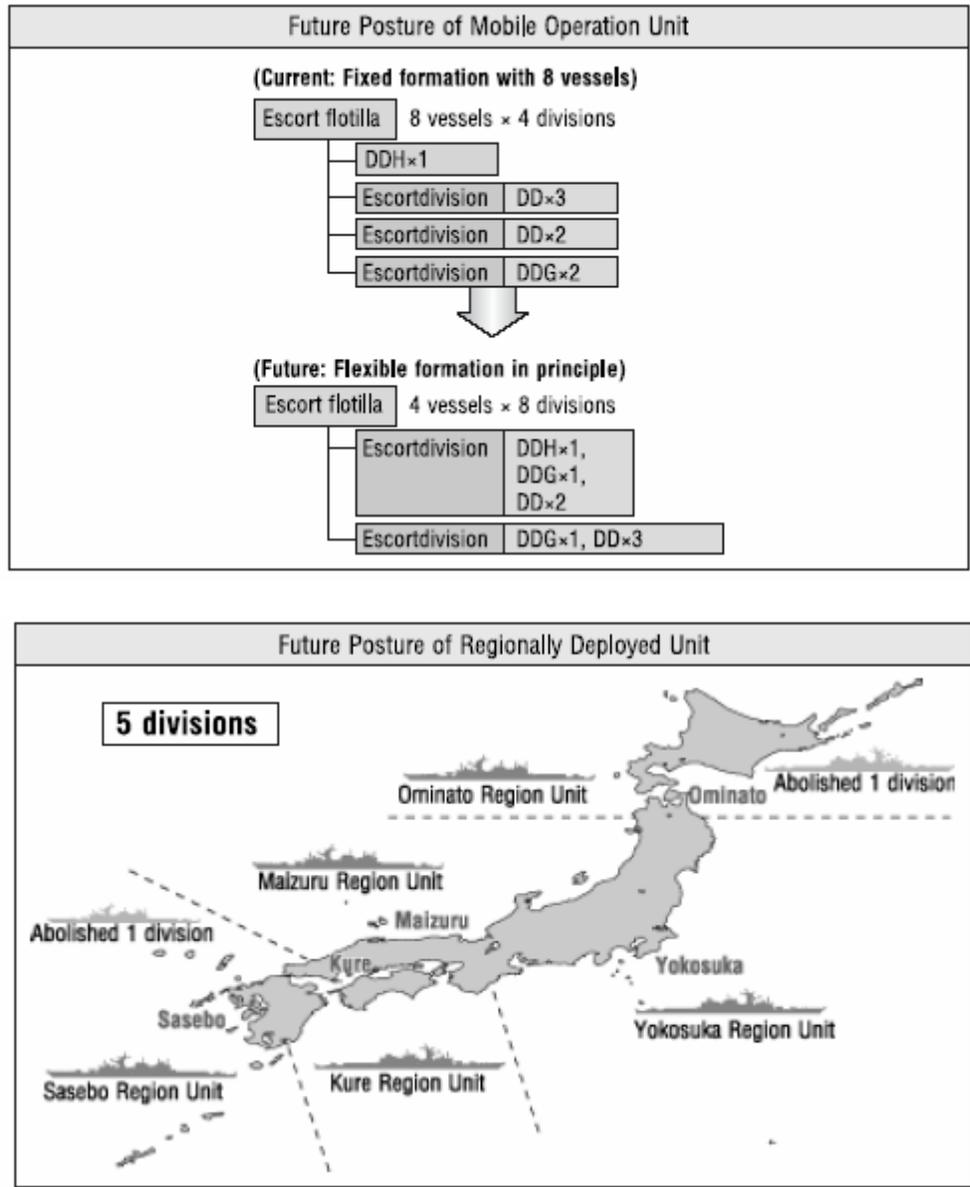


Figure 2.3 Future Posture of Units⁴⁴

D. SUMMARY

The Japanese defense history after WWII cannot be described without including the relationship with the U.S. The two countries have been deeply involved in an effort to build up the Asia-Pacific region security environment. However, as time has passed, the relationship has transformed from complementary to a full partnership. The JMSDF developed its maritime

⁴⁴ Defense Agency, ed., *Defense of Japan 2006*.

fundamental forces in the 1960s with U.S. Naval support. During the late 1970s and 1980s, the U.S. pressed the Japanese to assume a wider role as a strategic partner in the defense of Pacific Asia. At the end of the Cold War, winning the war on terrorism became a mutual objective and one of common interest. Now, based on a bilateral relationship the U.S. and Japan stand together to work for regional and global cooperation. The JMSDF is expected to accomplish a wide range of missions to not only secure the nation but also be active all over the world. The expanded JMSDF scope will, however, be limited by its scarce resources.

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III. DATA PRESENTATION – SHIPBUILDING PROGRAM OF THE JMSDF

A. JAPANESE BUDGET OVERVIEW

1. Characteristics

The Japanese budget system is managed in conformity with the Constitution and the Public Finance law. The Prime Minister must submit a draft budget each fiscal year to the Diet for approval, and then implement the approved budget in an appropriate manner for the benefit of the public. With respect to the shipbuilding program, two specific characteristics about the Japanese budget system are fiscal year and ‘continued expense (planned multi-year expenditures).’

The fiscal year in Japan begins on April 1 and ends on March 31 of the following year. The budget is compiled for each fiscal year (the principle of preparing the budget on an annual basis). Also, in principle, the revenues from each fiscal year must cover the expenditures for that fiscal year. With the exception of the continued expenses, contracts and outlays authorized by the budget for each fiscal year must be made or disbursed within that fiscal year.⁴⁵

This annual fiscal year system has the advantage of keeping the fiscal condition ‘healthy’ because the relationship between revenues and expenditures is very clear and predictable. However, on the flip side, there is a disadvantage in that a large amount of end-of-year spending could be inefficient and wasteful with the notion of ‘use it, or lose it.’ Additionally, according to the Public Finance Law, it follows that annual year-based budgets do not allow use of the budget evenly across the fiscal year.⁴⁶ Therefore, in order to solve this dilemma, planned multi-year budget dollars are used to cover the long-period projects such as shipbuilding.

⁴⁵ “Understanding the Japanese Budget,” Budget Bureau of Ministry of Finance, 2004, http://www.mof.go.jp/english/budget/brief/2004/2004b_01.htm (accessed March 2007).

⁴⁶ Public Finance Law (1947).

Continued expenses contain items for which the government makes payments over a period of several years, the maximum period being five years. These payments are for projects in construction, production, and other areas. Prior Diet approval is required for a multi-year expense item, and the Diet specifies the total amount of expenditure as well as the annual allotments. However, in recent years, continued expenses have been used only for the construction of destroyers and submarines for the JMSDF.⁴⁷

2. Fiscal Situation

Since the end of WWII, the Japanese economy has been shifting within a boom and bust cycle. In particular, the Fourth Arab-Israeli War (1973) caused a worldwide energy crisis that damaged the Japanese economy. The steep rise in oil prices led to economic turmoil and was referred to as the Oil Shock. Consequently, the inflation rate rose rapidly, reaching 19.2% in 1974, and the consumer price index (CPI) increased by 23% (Figure 3.1). The government imposed a cut in the use of oil, and as a result, pushed the economy toward a recession.⁴⁸ In FY1976, the government issued 3.5 trillion yen of deficit—financing bonds to cover insufficient tax revenue. Since then, the Japanese fiscal structure has relied heavily on government bonds.

Since the bond dependency ratio (the ratio of bond issuance to total expenditures) increased to 34.7% in 1979, the government instituted fiscal structural reform by cutting down expenses such as a “zero ceiling budget in 1982” (the same level of budget as the previous year) and a “minus ceiling budget formulation in 1983” (a smaller budget than the previous year) in the ministry budget request.⁴⁹ While the ceiling policy had many exceptions including the defense budget, it effectively signaled the government’s determination to pursue a tight budget policy.⁵⁰ However, continuously increasing outstanding

⁴⁷ “Understanding the Japanese Budget.”

⁴⁸ W.G. Beasley, *The Rise of Modern Japan* (New York: St. Martin’s Press, 1990), 249.

⁴⁹ Honma, 403.

⁵⁰ Allen Schick, *Fiscal Externalities in U.S. and Japanese Budget Policies* (Maryland: University of Maryland at College Park, 1996), 21.

government bonds to support the Japanese economy has led to a deteriorating fiscal condition that has worsened year by year. Figure 3.2 shows a relationship between bond issues and bond dependency. The bond dependency rate significantly increased from 1990.

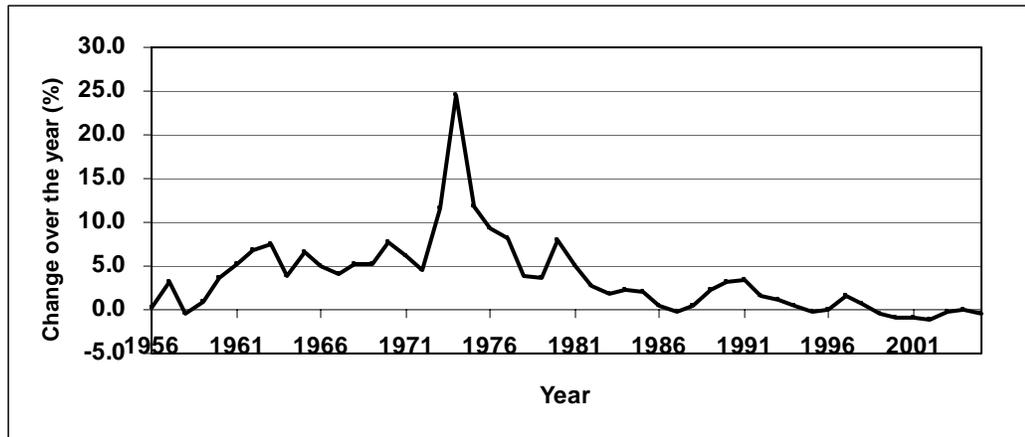


Figure 3.1 Consumer Price Index⁵¹

In the cycle of boom and bust, the latter half of the 1980s is known as the age of the bubble economic boom. Stocks and land prices showed remarkable increases and overseas investment from Japan increased rapidly. Japan became known as the world’s largest creditor country.⁵² Meanwhile, the economic boom was a prelude to the next long-term recession, called the lost decade, from 1991 to 2000.

While the fiscal condition showed an indication of improvement during the bubble economy, outstanding bonds and bond dependency rates started to increase again. According to the MOF estimate, the amount of long-term debt outstanding—the sum of central government long-term debt outstanding and local governments’ long-term debt outstanding—was expected to reach approximately 775 trillion yen by the end of FY2006, which would be 150.8% of

⁵¹ “Highlights of the Budget for FY2007,” Ministry of Finance, 2006, <http://www.mof.go.jp/english/budget/e20061224a.pdf> (accessed February 2007).

⁵² Yukio Noguchi, “The “Bubble” and Economic Policies in the 1980s,” *Journal of Japanese Studies* 20, no. 2 (Summer 1994): 291-329.

GDP.⁵³ Former Prime Minister Junichiro Koizumi advocated structural reforms without exception to put Japanese finances in order, the so-called “Koizumi Structural Reform.”⁵⁴ Therefore, every ministry was requested to reduce expenditures. The alternative was serious financial trouble for Japan in the near future. The impact of these reforms is that defense is no longer considered as a budget-protected sanctuary.

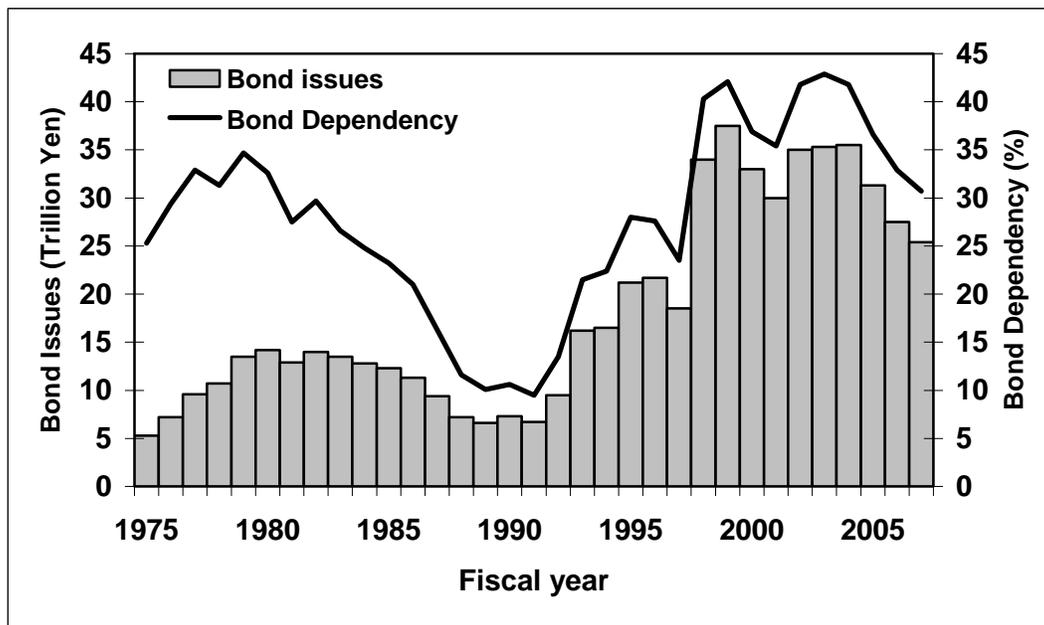


Figure 3.2 Trends of Bond Issues and Bond Dependency⁵⁵

3. Trends

The General Account Budget, commonly referred to as the budget, is the basic account for the Japanese government. The expenditures in the General

⁵³ “Current Japanese Fiscal Conditions and Issues to be considered,” Ministry of Finance, 2006, <http://www.mof.go.jp/english/budget/pamphlet/cjfc2006.pdf> (accessed February 2006).

⁵⁴ “Koizumi Reforms,” pamphlet by the Cabinet Office, 2004, <http://www.keizai-shimon.go.jp/explain/pamphlet/0404.pdf> (accessed February 2006).

⁵⁵ “Highlights of the Budget for FY2007,” Ministry of Finance, 2006, <http://www.mof.go.jp/english/budget/e20061224a.pdf> (accessed February 2007).

Account are classified by major government programs, such as social security, education and science, and national defense. All national taxes are included as revenues in the General Account.⁵⁶

Based on the economic background, annual expenditures in the General Account had been increasing until FY2000. In that year, the budget was at 85 trillion yen, which was unparalleled in history. However, because of the extremely large amount of outstanding government bonds, the General Account became stagnant after FY2001. In FY2006, the General Account was only 79.68 trillion yen, which was almost the same level as ten years prior. Figure 3.3 shows the percentage of tax revenue in the General Account Budget. The rate of tax revenue in the General Account Budget significantly dropped from 1990 due to the long recession. Recently, however, the General Account Budget has increased slightly and steadied at approximately eighty trillion yen. This implies that the government bonds have sustained the fiscal condition in recent years.

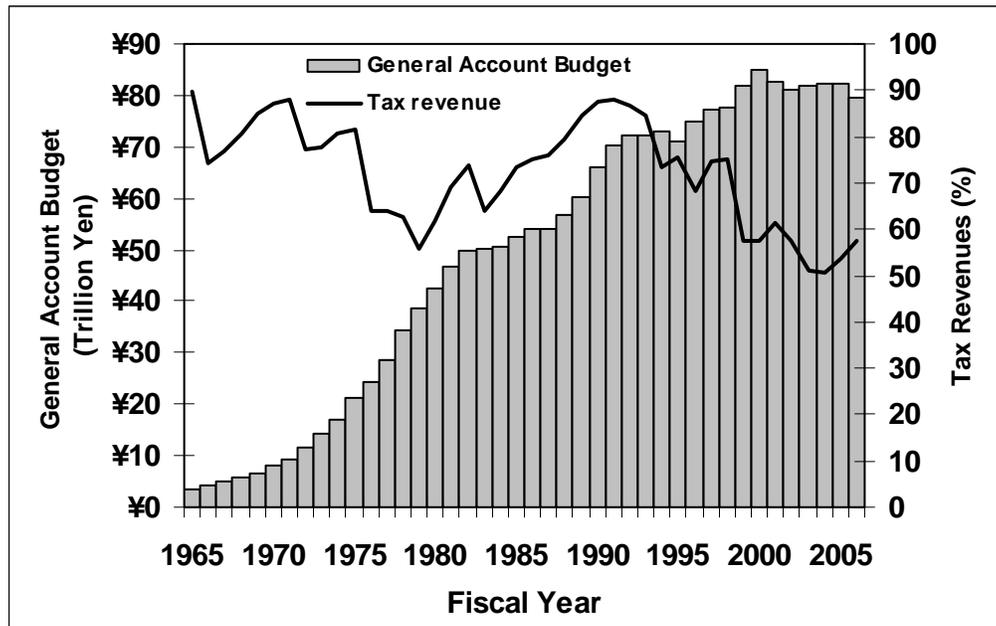


Figure 3.3 Trends of General Account Budget⁵⁷

⁵⁶ "Understanding the Japanese Budget."

⁵⁷ "Transition of General Accounts and Tax Revenue," Ministry of Finance, 2006, <http://www.mof.go.jp/jouhou/syukei/siryousy1809c.htm> (accessed February 2007).

In spite of a heavy debt, the budget has not gone bankrupt because of the relative growth of GDP. The GDP growth rate was still positive among the oil shocks, and only in FY1998 through FY2002 was there negative growth during consecutive years. Figure 3.4 shows the Nominal GDP and growth rate. Viewing the GDP only, it can be said there has been a rapid growth in GDP since the end of WWII, but no overall economic growth is recognized.

Finally, it can be concluded that the problem of the Japanese fiscal condition derives from the outstanding government bonds of over 546 trillion yen. Even though the tax revenue has increased, it follows that erosion due to the interest payments for the debt negatively affects the General Account Budget.

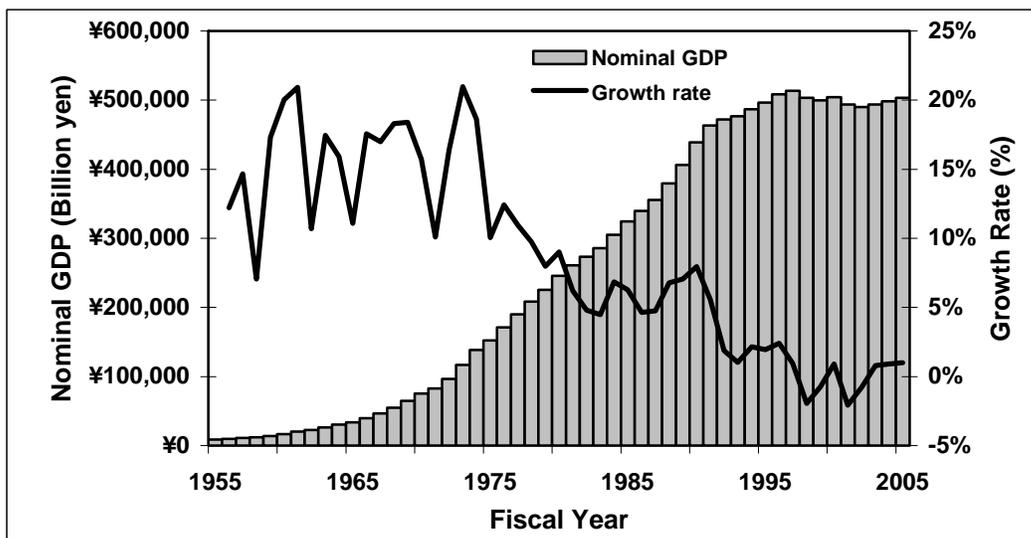


Figure 3.4 Nominal GDP and Growth Rate⁵⁸

(Note FY1955-1993: 68SNA basis, FY1994-2005: 93SNA basis)

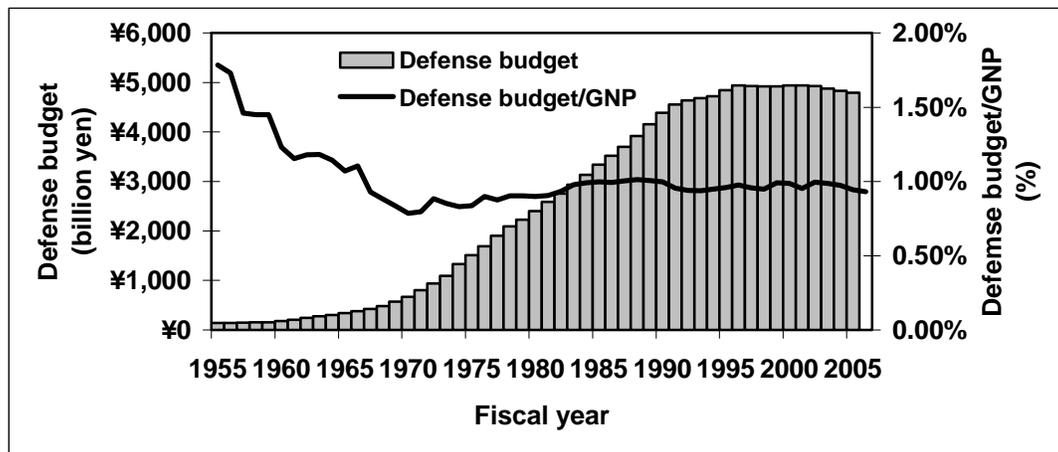
B. DEFENSE BUDGET

1. Trends

The defense budget stopped growing in 1998. Since 1955 the defense budget had increased in consonance with the corresponding Japanese economic

⁵⁸ "GDP Long-Term Time Series," Department of National Accounts, Cabinet Office, 2006, <http://www.esri.cao.go.jp/jp/sna/toukei.html> (accessed February 2007).

growth. However, currently the economy, as well as the defense budget, is not expected to grow rapidly due to the economic situation.⁵⁹ Because of the increase in budget deficit in FY 1975, the Japanese government has set a lower budget ceiling in budget requests by ministry and agency.⁶⁰ Figure 3.5 shows the trend in the defense budget and a relationship between GDP and the defense budget.



(Note Defense budget: original budget. GDP: initial forecasted GDP)

Figure 3.5 Trends in the Defense Budget and Defense Budget As a Percent of GNP⁶¹

The defense budget has remained under 1% of GNP except during the first ten years of the Self Defense Force (SDF). This occurred even though the government changed from a framework of 1% of the GNP to a framework of total expense set forth in the mid-term defense program. The ratio of the defense budget to the GDP was highest in 1955, at 1.78%. However, due to the pacifism principle in the constitution, the defense budget was restrained in concert with the GDP growth. The ratio reached the lowest level at 0.79% in 1970, after the government set the guideline as 1% of the GNP for the defense budget.

⁵⁹ "Reform Issues 2007 for the Council on Economic and Fiscal Policy," Council on Economic and Fiscal Policy, posted January 18, 2007, <http://www.kantei.go.jp/jp/singi/keizai/kakugi/070125kettei.pdf> (accessed February 2007).

⁶⁰ Kozo Yamamura and Yasukichi Yasuba, *The Political Economy of Japan* (Stanford, Calif.: Stanford University Press, 1987), 209.

⁶¹ Defense Agency, ed., *Defense of Japan 2006*.

In 1987, the GNP ratio again exceeded the 1% guideline. Masaaki Honma pointed out that the main reason for exceeding 1% was a diplomatic issue between the U.S. and Japan. Due to trade frictions, the U.S. accused Japan of being a “free rider” under the umbrella of U.S. defenses.⁶² Japan’s trade surplus with the U.S. amounted to \$52.1 billion in 1987. Due to this imbalance, controversy over the burden of defense expense arose quickly within the U.S. government. It was viewed in Washington that a more cooperative Japan could alleviate the political pressure from special interests such as the automobile industry.⁶³ Consequently, the defense budget was increased to over 1% of the GNP to settle the controversy and show Japan’s willingness to increase expenditures for national defense.

Table 3.1 Expenses Required for the MTDP⁶⁴

Classification	MTDP (FY1996-FY2000) [FY1995 price]	MTDP (FY2001-Fy2005) [FY2000 price]	MTDP (FY2005-FY2009) [FY2004 price]
Total Budget	¥24.23 trillion	¥25.01 trillion	¥24.24 trillion
Personal and Provisions Expense	¥10.39 trillion	¥11.11 trillion	¥10.61 trillion
Nonpersonnel Expense	¥13.84 trillion	¥13.90 trillion	¥13.63 trillion
Others*	¥110 billion *	¥150 billion *	¥100 billion *

Note * Provisions for these expenses will be made on the approval of the Security Council in cases where it is deemed necessary to respond to unpredictable situations in the future.

Instead of 1% of the GNP framework, the framework of total expense was set forth in the Mid-term Defense Program (MTDP) starting in 1987. Current MTDP (FY2005-Fy2009) as shown in Table 3.1 indicates that the total amount of the defense budget shall not exceed approximately ¥24.24 trillion in total budget

⁶² Honma, 404.

⁶³ Hayes, 269.

⁶⁴ “Mid-term Defense Program (FY2005-FY2009),” Defense Agency, 2005, http://www.mod.go.jp/j/defense/policy/17taikou/topix_index.html (accessed February 2007).

using FY2004 pricing. The Table also indicates that the annual defense budget is not expected to grow at least until 2009, because the maximum amount has been set and is never permitted to change unless there is emergency legislation. In other words, 14.40 trillion yen was spent already from FY2005 to FY2007 (FY2007 is estimated); therefore, 9.84 trillion yen is considered a maximum defense expenditure for FY2008 and FY2009.

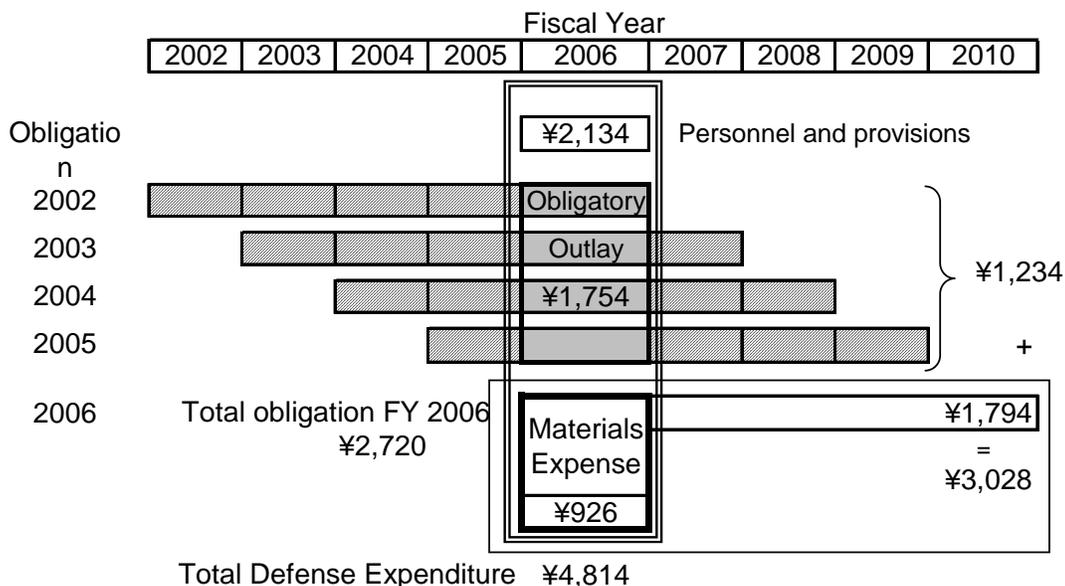
2. Structure

The defense budget is classified into three categories: personnel and food provisions expenses, general material expenses, and obligatory outlay expenses. Personnel and food provisions expenses cover such items as pay and meals for the SDF personnel. General material expenses are paid under current-year contracts that cover the repair and maintenance of equipment, purchase of fuel, education and training for SDF personnel. Obligatory outlay expenses are paid for continuing programs that were approved in the preceding fiscal year. Figure 3.6 shows, for example, the structure of the defense budget for nine consecutive years by three categories.

For example, according to the above classification, the breakdown of defense-related expenditures for FY2006 is as follows: expenses for the current-year personnel and food provisions account for ¥2,134 billion; expenses for the current-year obligatory outlays account for ¥1,754 billion; and expenses for the general materials account for ¥926 billion. Obligatory outlay is paid under previously concluded contracts such as destroyer shipbuilding.⁶⁵ Due to the five-year maximum for continued expense, obligatory outlay is also retroactive to five years.⁶⁶ Material expenses include both general material expenses and first-year payment of continued expense.

⁶⁵ Defense Agency, ed., *Defense of Japan 2006*.

⁶⁶ Public Finance Law (1947).



Note: [Hatched] ; this means continued expenses that are carried over from previous year contracts, such as the shipbuilding account.

Figure 3.6 Structure of the Defense Budget (in billion yen)⁶⁷

In FY2006, the Ministry of Defense could make contracts for 2.7 trillion yen; 926 billion yen would be paid under FY2006 current year contracts; 1,794 billion yen was carried over to the following four years like a shipbuilding program. In other words, a total of three trillion yen would be carried over from the previous years contracts as accounts payable. Similar to the General Account Budget of the government, the accounts payable in the defense budget are required to decrease in order to sustaining the defense policy.⁶⁸

The Ministry of Defense defines the classification method shown above as “Classification by Expense.” Figure 3.7 shows a trend of the defense budget based on the classification by expense. This figure shows that the ratio of obligatory expense has not changed in recent years.

⁶⁷ Noriyuki Okada, “Defense Budget in FY2006,” *The Finance*, February, 2006, 44-55.

⁶⁸ Ibid.

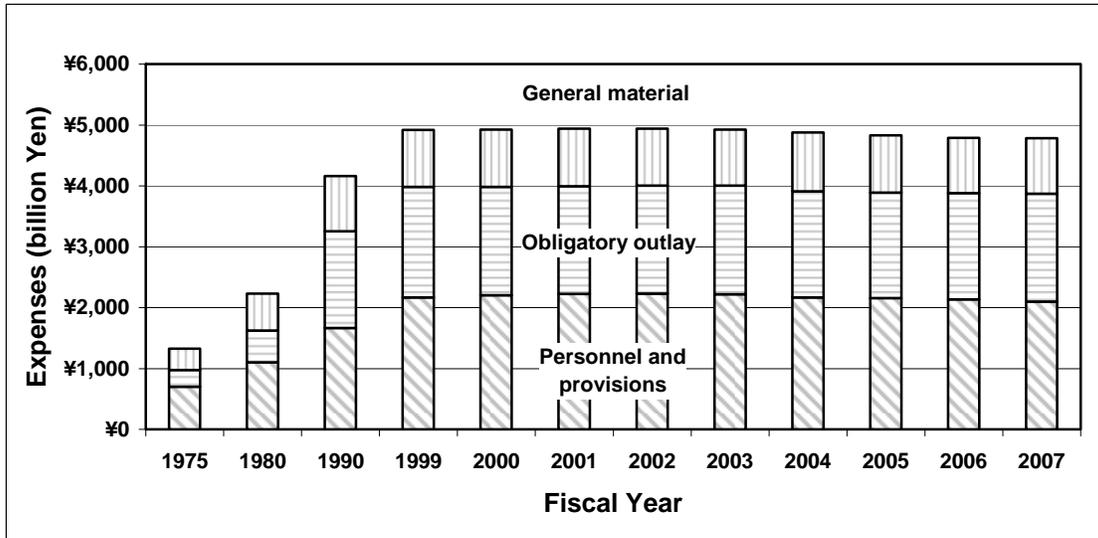
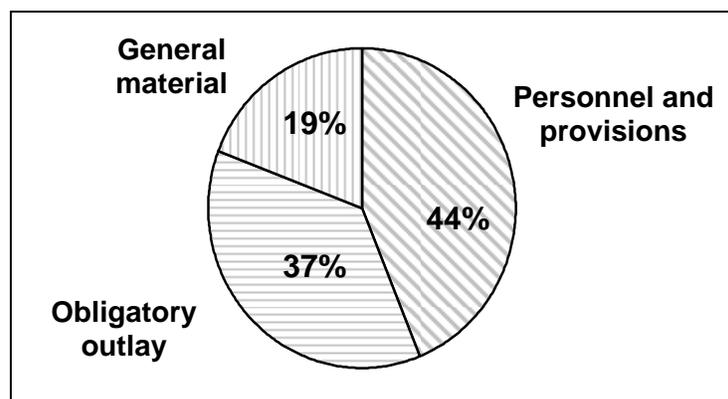


Figure 3.7 Classification by Expense⁶⁹

Furthermore, mandatory expenses short-term (including personnel and provisions, and obligatory outlay) account for 81 percent of the defense budget (see Figure 3.8). Note that 37% of that amount are multi-year expenses derived from the previous planned expenditure through signed contracts. The remaining 19% is used for General Material requirements for a certain fiscal year. In other words, because the previous contracts and personnel expenses account for over 80%, discretionary expense is under 20%. This results in a defense budget with little flexibility to start any new projects and a major roadblock to change.



Mandatory: Discretionary 81: 19
Figure 3.8 Defense Budget FY2006 Classification by Expense⁷⁰

⁶⁹ Defense Agency, ed., *Defense of Japan 2006*.

⁷⁰ Ibid.

C. SHIPBUILDING PROGRAM

1. Ship Inventory

The budget uses the term “escort ship” for a warship, which includes all kinds of warships such as a DD (Defense Destroyer), DDG (Guided Missile Defense Destroyer), DDH (Helicopter Defense Destroyer) and DE (Destroyer Escort). The total number of destroyers was the highest in 1993 at sixty-nine. However, it decreased afterward to a level of fifty-six destroyers in 2006. Eventually, the National Defense Program Guideline after 2005 determined that the JMSDF should reduce the number of destroyers to forty-seven from the current fifty-six destroyers in the future “in order to make Japan’s new defense forces multi-functional, flexible and effective, and able to undertake diverse roles.”⁷¹ Thus, the JMSDF is now required to meet new challenges in an ever-increasing mission with a lower quantity of units.

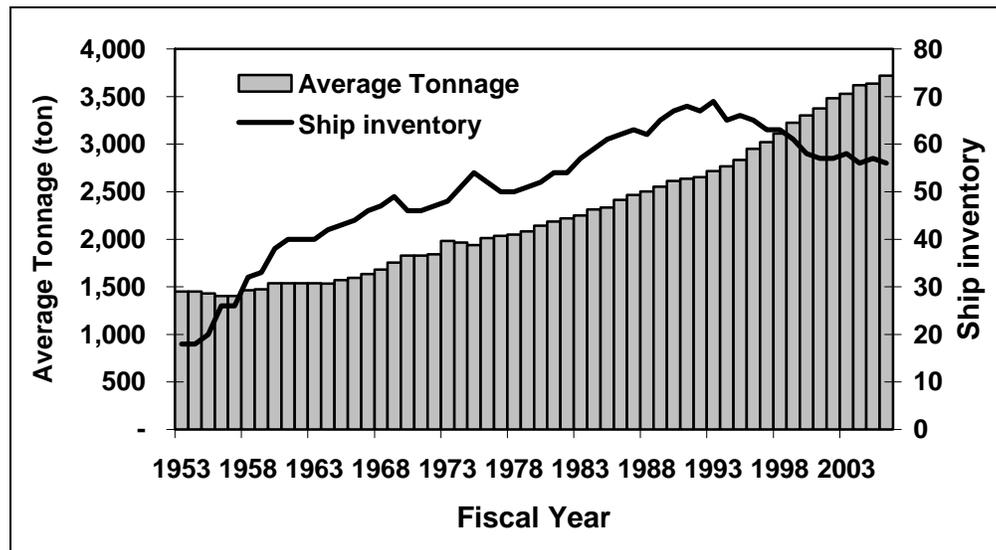


Figure 3.9 Ship Inventory and Average Tonnage⁷²

Until 1993, average tonnage was proportional to the ship inventory. However, the relationship changed to an inverse proportion after that date (see

⁷¹ “National Defense Program Guideline after FY2005,” Defense Agency, 2005, http://www.mod.go.jp/j/defense/policy/17taikou/topix_index.html (accessed February 2007).

⁷² Kaijougijei Shimbunsha, ed., *JMSDF Ships and Aircrafts* (Tokyo: Kaijougijei Shimbunsha, 2005), 134-152.

Figure 3.9). At the same time, the growth rate of the defense budget slowed down and turned into negative growth in 1998. Thus, due to the budget reduction, the number of new destroyers built decreased, but their displacements increased. Actually, the last of the DE type, with a relatively small displacement below 2,000 tons, was built and commissioned in 1993, and the DE type destroyer never built at all after that.

According to the “Regulation of Shipbuilding and Maintenance for the JMSDF,”⁷³ the destroyer should be checked structurally at the twenty-year point and a determination made whether to keep it commissioned or to decommission the ship. Thereafter, it is checked every four years. However, the oldest active destroyer is now thirty-six years old. With special remodeling, the average service life of destroyers is now close to thirty years. The average service life of the active destroyers at the end of FY2006 reached nineteen years for fifty-six destroyers, which included fifteen destroyers over twenty-five years old. Therefore, in order to keep a certain number of destroyers to meet the JMSDF mission, the JMSDF will be required to keep a variety of obsolete ships that require a lot of money to maintain. On the contrary, in order to keep current with technology for the JMSDF, destroyers over twenty-five years old would have to be decommissioned. This would be easy except that the JMSDF must balance this option with the minimum number of destroyers required to meet the mission.

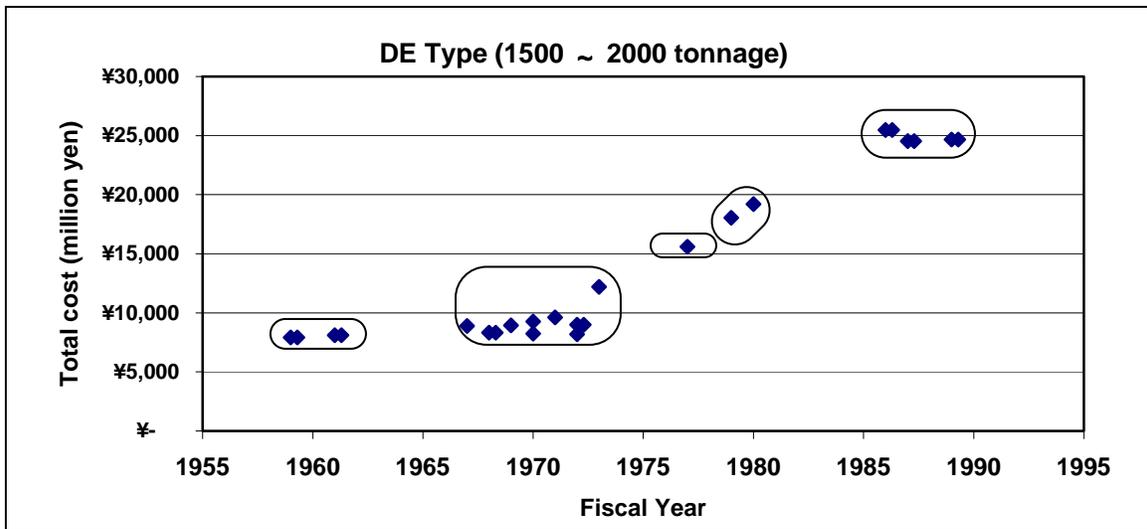
In spite of the fact that the JMSDF is involved in more complex missions that include a variety of evolutions, the major equipment for the JMSDF “destroyers” is in fact decreasing. Recently, the JMSDF has been building large, multipurpose destroyers such as the DDH (13,500 tons) in FY2004 and FY 2006, for a cost of ¥105.7 billion each. The next chapter examines how the destroyer building policy affects the JMSDF maritime strategy and posture.

⁷³ Ministry of Defense Code 43, *Regulation of shipbuilding and maintenance for the JMSDF*, 1957.

2. Shipbuilding Account

The JMSDF has developed a new ship type every 7 to 10 years on average.⁷⁴ The cost of almost every class of destroyers has increased year by year. This logically implies that the weapon systems installed on destroyers have become more expensive with technology and inflation each year. As Shinji Tsukigi stated, initiating a ship modernization with new computerized systems and new missile defense systems caused a significant increase in shipbuilding costs during the late 1970's.⁷⁵ (See Tables 3.2 - 3.5)

Table 3.2 Shipbuilding cost by class (FY00¥M): DE Type⁷⁶



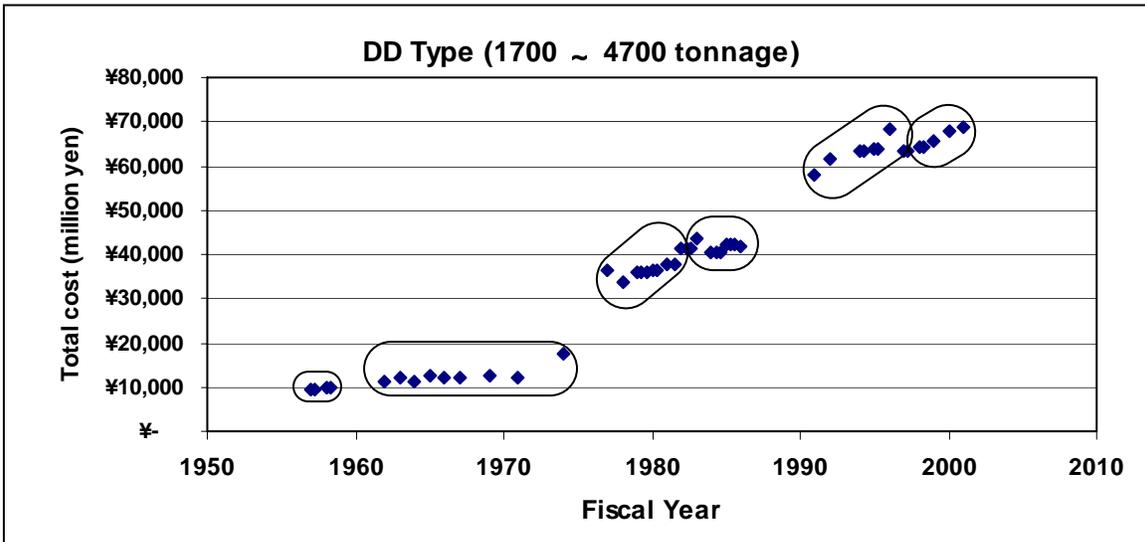
Class	Year	Tonnage	Number Built	Average Cost
Isuzu	1959 – 1961	1,490	4 ships	¥8,009
Chikugo	1967 – 1973	1,470	11 ships	¥9,089
Ishikari	1977	1,290	1 ship	¥15,583
Yubari	1979 – 1980	1,470	2 ships	¥18,621
Abukuma	1986 – 1989	2,000	6 ships	¥24,901

⁷⁴ Shinji Tsukigi, Katsuaki Terasawa, and Gregory G. Hildebrandt, "External and Internal Factors Shaping the Japan Maritime Self-Defense Force (JMSDF)" (M.S. thesis, Naval Postgraduate School, 1993), 16.

⁷⁵ Ibid.

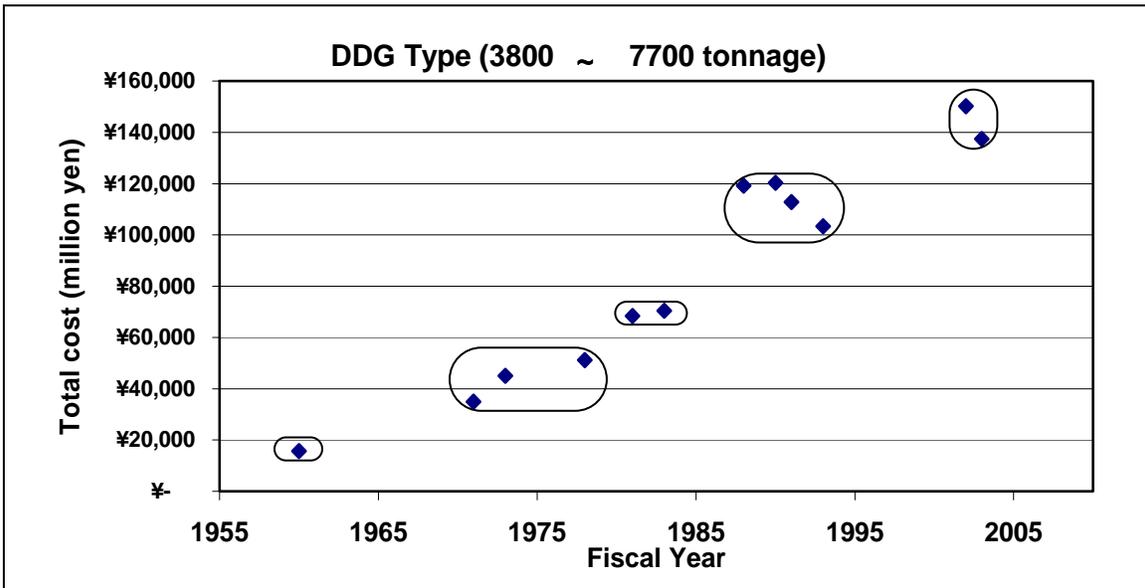
⁷⁶ Ministry of Finance, Budget Database (1953-2006), <http://www1.mof.go.jp/data/index.htm> (accessed February 2007).

Table 3.3 Shipbuilding cost by class (FY00¥M): DD Type⁷⁷



Class	Year	Tonnage	Number Built	Average Cost
Harusame	1957 - 1958	1,800	4 ships	¥9,601
Yamagumo	1962 - 1974	2,050	9 ships	¥12,666
Hatusuyuki	1977 - 1982	2,950	12 ships	¥37,529
Asagiri	1983 - 1986	3,500	8 ships	¥41,605
Murasame	1991 - 1997	4,550	9 ships	¥63,278
Takanami	1998 - 2001	4,650	5 ships	¥66,247

Table 3.4 Shipbuilding cost by class (FY00¥M): DDG Type⁷⁸

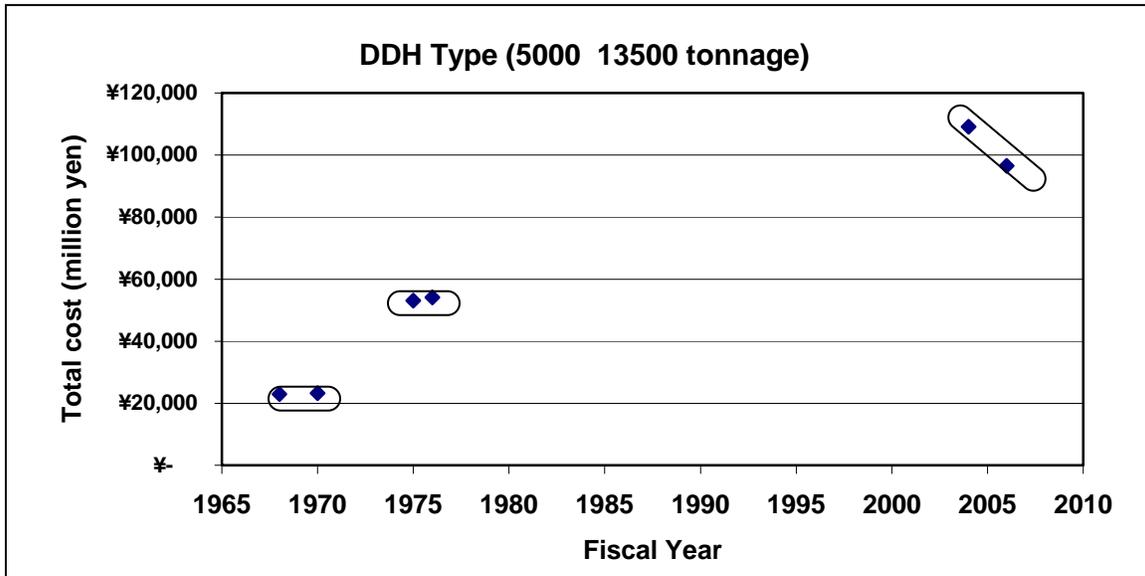


⁷⁷ Ministry of Finance, Budget Database (1953-2006).

⁷⁸ Ibid.

Class	Year	Tonnage	Number Built	Average Cost
Amatsukaze	1960	3,050	1 ship	¥15,644
Tachikaze	1971 – 1978	3,850	3 ships	¥43,711
Hatakaze	1981 – 1983	4,600	2 ships	¥69,468
Kongo	1988 – 1993	7,250	4 ships	¥113,906
Atago	2002 -	7,700	2 ships	¥143,776

Table 3.5 Shipbuilding cost by class (FY00¥M): DDH Type⁷⁹



Class	Year	Tonnage	Number Built	Average Cost
Haruna	1968 - 1970	4,950	2 ships	¥23,128
Shirane	1975 – 1976	5,200	2 ships	¥53,556
16 DDH	2004 -	13,500	2 ships	¥102,844

The Shipbuilding Account is a typical example of the continued expense (planned multi-year expense), where a portion of the total amount is paid in the current year and the remaining expenses are carried over to the following fiscal years (maximum five years). The rate of payment for each fiscal year may be changed based on the foreign exchange rate, timeline and progress in shipbuilding, or other reasons. Table 3.6 shows an example of the continued expenses for the latest Aegis DDG shipbuilding program between FY2002 and FY2006.

The DDG shipbuilding program started in FY2002 with a total projected cost of ¥147 billion. Approximately two billion yen, or 1.36% was paid in 2002

⁷⁹ Ministry of Finance, Budget Database (1953-2006).

(current-year contract) with the remaining ¥145 billion, or 98.64%, carried over to the following fiscal year as accounts payable. In FY2003, the JMSDF paid ¥11 billion, ¥3 billion less than the planned ¥14 billion. However, the total cost slightly decreased. Finally, the total cost of the DDG was only ¥142 billion in FY06¥, or a nominal 4% decrease.

Table 3.6 Transition of payment plan for DDG shipbuilding⁸⁰

		2002	2003	2004	2005	2006	Total
DDG	2002	2,139	14,566	41,477	70,535	18,754	¥ 147,471
	2003	2,139	11,823	44,269	70,535	18,756	¥ 147,523
	2004	2,139	11,823	37,057	72,629	18,761	¥ 142,410
	2005	2,139	11,823	37,057	66,127	24,552	¥ 141,698
	2006	2,139	11,823	37,057	66,127	24,552	¥ 141,698

Note; Every amount is million yen in Actual Payments and Planned Payments. Shaded blocks show actual payments.

The significant character of the Shipbuilding Account is that, for the most part, the payment depends on the following year is planned payments as accounts payable. At present, 1% of the GNP framework is still considered as the maximum defense budget allocation. Under this scenario with a consistent GDP growth of over 5% (see Appendix B), the JMSDF could have had sufficient financial resources to manage the Shipbuilding Account without any financial difficulties.⁸¹ However, due to the long recession starting in 1991, the average GDP growth rate between 1991 and 2005 substantially decreased by 0.6% (see also Appendix B). Consequently, the defense budget, which has a close relationship with GDP, suffered severe financial problems with the stagnant GDP growth.

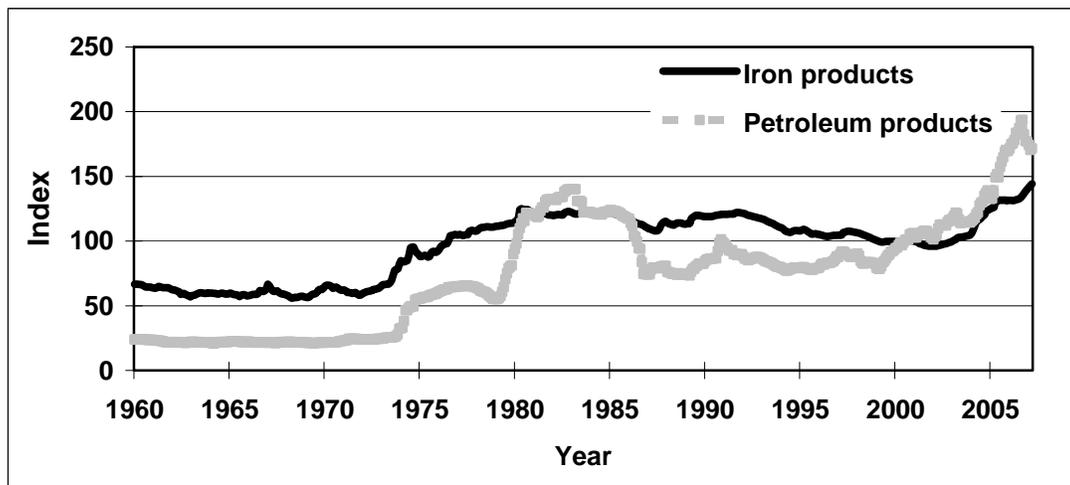
3. Correlation with the Economy

Because of the close relationship between the defense budget and the GDP, the defense budget has been influenced by the change in GDP. On the other hand the shipbuilding program, which usually continues for five years, has

⁸⁰ Ministry of Finance, Budget Database (1953-2006).

⁸¹ Tsukigi, Terasawa, and Hildebrandt, 16.

been influenced by the change in prices during that period. There are two typical examples to show a correlation with the economy: the oil crisis in 1974 and the long recession after 1991.



Note: Year 2000 average = 100

Figure 3.10 Corporate Goods Price Index⁸²

The oil crisis significantly inflated material costs for shipbuilding. Figure 3.10 shows a corporate goods price index both iron products and petroleum products. As a result, the JMSDF was forced to cancel some shipbuilding programs in FY1974. Table 3.7 indicates a negative effect on the actual shipbuilding program. Because of the oil crisis, the shipbuilding account in the FY1973 program increased by 17 billion yen in the FY1974 planned payment. Therefore, the additional cost, increasing by 30% to 60% of shipbuilding costs, was paid from the shipbuilding account. The original cost included a DE and a SS in FY1974, but these shipbuilding programs had to be cancelled.⁸³

⁸² "Corporate Goods Price Index (2000base)," Bank of Japan, posted April 12, 2007, <http://www.boj.or.jp/en/type/stat/dlong/price/cgpi/index.htm> (accessed April 2007).

⁸³ Tsukigi, Terasawa, and Hildebrandt, 16.

Table 3.7 The Effect of the Oil Crisis on the Shipbuilding Program⁸⁴

Fiscal Year	Ship Type	Original Cost (¥ K)	Revised Cost (¥ K)	Change Cost (¥ K)	Change (%)
1973	DDG	¥22,968,064	¥30,136,794	¥7,168,730	31.2
	DE	¥5,101,807	¥8,131,297	¥3,029,490	59.4
	SS	¥9,808,169	¥15,232,172	¥5,424,033	55.3
1974	DD	¥11,610,697	¥12,987,931	¥1,377,234	11.9
	DE	¥6,117,329	¥0	-¥6,117,329	-100
	SS	¥11,037,005	¥0	-¥11,037,005	-100

Another example relates to the long recession between 1991 and 2000. The GDP growth rate was typically 3% to 5% during the 1970s and 1980s. However, after the New York stock market crash of October 19, 1987 (Black Monday), the Tokyo market collapsed by 14.9% on the following day.⁸⁵ Moreover, the turning point came in “Black August” of 1990, when the value of the Japanese stock market fell by over 16% in a single month.⁸⁶ Japanese real economic growth rate fell to 1% in 1992 and the average growth rate for the next ten years was only 0.68%.⁸⁷

Considering the economic condition and the declining defense budget, the JMSDF did not request new shipbuilding in FY2005; this was the first time in the JMSDF’s history that no new destroyer was built. As a result, the total amount for the major equipment procurement was at its lowest point that year.⁸⁸

Furthermore, the shipbuilding account in the JMSDF seemed to be in a precarious situation from the late 1990s. The declining defense budget made it difficult to pay the portion of accounts payable in the shipbuilding account every year as scheduled. Therefore, the payments for certain fiscal years were reduced and deferred to later years. Table 3.8, for example, shows the transition of the payment plan for two DDs’ shipbuilding programs for a five-year period.

⁸⁴ Tsukigi, Terasawa, and Hildebrandt, 16.

⁸⁵ Takafusa Nakamura, *The Postwar Japanese Economy: Its Development and Structure, 1937-1994*, 2nd ed. (Tokyo: University of Tokyo Press, 1995), 272.

⁸⁶ Takashi Ito, *The Japanese Economy* (Mass.: MIT Press, 1992), 433.

⁸⁷ Duncan McCargo, 58.

⁸⁸ Okada, 44-55.

Table 3.8 Transition of Payment plan from FY 1998 (¥ million)⁸⁹

		Expenditure						
		Plan	FY 98	FY 99	FY 00	FY 01	FY 02	Total
DD (2)	FY 98		350	13,728	22,257	65,977	25,568	¥127,880
	FY 99		350	7,351	28,756	65,067	26,579	¥128,012
	FY 00		350	7,351	18,317	74,042	26,451	¥126,510
	FY 01		350	7,351	18,317	60,341	40,518	¥126,876
	FY 02		350	7,351	18,317	60,341	40,653	¥127,011
<hr/>								
		Plan	FY 00	FY 01	FY 02	FY 03	FY 04	Total
DD (1)	FY 00		99	2,817	16,415	31,268	13,472	¥64,071
	FY 01		99	707	18,615	31,311	13,485	¥64,217
	FY 02		99	707	13,648	37,037	13,578	¥65,069
	FY 03		99	707	13,648	32,778	17,918	¥65,150
	FY 04		99	707	13,648	32,778	17,846	¥65,077

Note: Shaded blocks show actual payments.

In FY 1998 two DDs were procured for an estimated total ¥127,880 million and ¥350 million was paid as the first-year payment. ¥13,728 million was scheduled to be paid in FY1999; however, only ¥7,351 million, or 54.3% from the schedule, was actually paid. The FY 2000 scheduled payment was increased to ¥28,756 million. The JMSDF changed the payment schedule again to delay. As a result, ¥18,317 million, or 63.7%, was paid in FY2000.

Two years later in FY2000, the JMSDF procured one DD-type destroyer at an estimated 64,071 million yen. Delayed payments for the FY1998 DD affected payments for the FY2000 DD in FY2001. The planned ¥2,817 million was carried over to the next year and only ¥707 million, or 30%, was paid in FY2001. This continuous delay of payments affected the general material expenses in later years.

Consequently, the JMSDF had difficulty managing the shipbuilding account and this forced the decision not to acquire any destroyer in FY2005. The total defense budget had been stagnant since 1995 so that delayed payments brought heavy pressure on the general material expenses category and the shipbuilding account itself.

⁸⁹ Ministry of Finance, Budget Database (1953-2006).

D. SUMMARY

Historically, the Japanese economy has been developing since the end of WWII as indicated by a GDP that is now fifty times the WWII level. On the other hand, the fiscal condition became worse in recent years with approximately 775 trillion yen of bond issues by the end of FY2006, which is 150.8% of GDP.

The Japanese government declined to follow an austerity policy in the late 1990s. Thus, it is not expected that there will be a significant increase in the general account budget under the current fiscal policy. As for the defense budget, the maximum limit was 1% of the GNP until 1986. Even though the government changed the framework of 1% of the GNP to a framework of total expense set forth in the Mid-Term Defense Program, 1% of the GNP framework has still been considered a criterion for the maximum defense budget expenditure.

The correlation with the economy caused a negative impact on the defense budget when the economy went into a recession. In particular, the oil crisis in 1974 and the long recession since 1991 influenced the shipbuilding program. The JMSDF cancelled shipbuilding programs for FY1974 because of the substantial increase in material costs. In FY2005, the JMSDF did not request any new ships.

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IV. ANALYSIS OF THE IMPACT OF THE DECLINING DEFENSE BUDGETS

A. IMPACT ON THE JMSDF MARITIME STRATEGY

1. Shipbuilding Program Overall

In response to the declining defense budget, the National Defense Program Guideline after FY2005 (NDPG) set the target number of destroyers for the JMSDF at forty-seven, which was six destroyers less than the current number in FY 2006. In fact, FY 2005 was the first time in JMSDF history that a plan to build a new destroyer was not included in the budget. Currently, some Asian countries, such as China, India, and Korea, are involved in “a truly impressive naval shipbuilding race.”⁹⁰ However, considering the date when NDPG was approved by the cabinet in December 2004, and the fact that the Japanese fiscal year starts on April 1st, the decision not to procure a new destroyer in FY2005 was probably influenced by a factor other than the international security environment. Therefore, the decision to reduce new construction costs could be mostly attributed to the defense budget restraint.

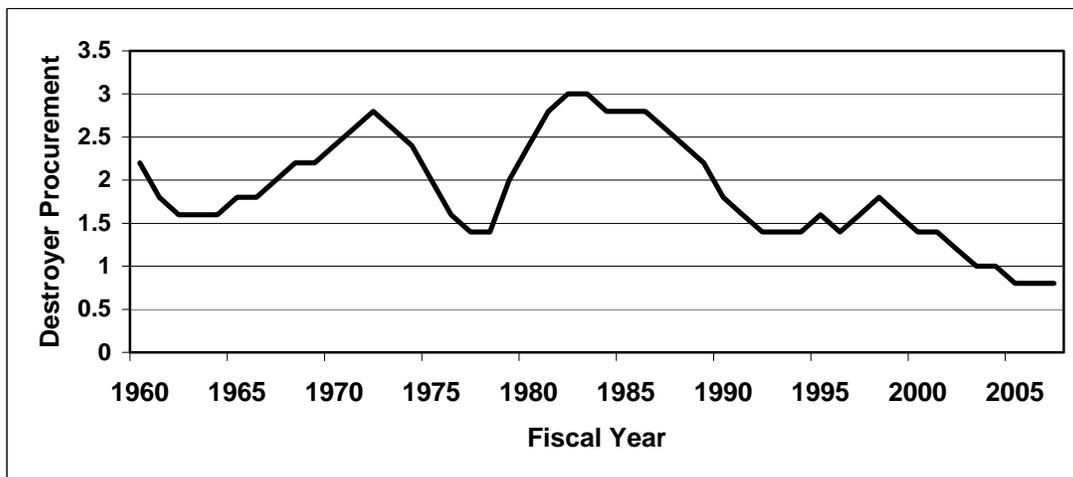


Figure 4.1 Destroyer Procurement in Fiscal Year⁹¹

⁹⁰ Massimo Annati, “The Asian DDG Race,” *Military Technology* 28, no. 11 (Nov, 2004).

⁹¹ Kaijougijei Shimbunsha, ed., *JMSDF Ships and Aircrafts*.

Since the JMSDF was established, destroyers were not built at a constant rate, but not ever lower than 1.0 destroyer per a year until the 1990s. Figure 4.1 shows the moving average of destroyers procured by five-year periods. As the defense budget correlates with the economy, the shipbuilding program has been affected by the declining defense budget rather than the national security condition. As indicated by the data discussed in the previous chapter (see Figure 3.1), in order to manage the shipbuilding account the JMSDF continuously delayed the scheduled payments. Furthermore, the JMSDF procured two Aegis DDGs in FY2002 and FY 2003 and one DDH (13,500 tons) in FY 2004. The total cost for these three destroyers reached 378 billion yen, or an average of 126 billion yen, in comparison to 65 billion yen for the DD (non-Aegis) procurement in FY 2001. The total defense budget had been stagnant since 1995 so delayed payments brought heavy pressure on the general material expenses category and the shipbuilding account itself. Thus, these difficulties logically supported a decision not to acquire any destroyer in FY2005.

Even if modern technology could possibly allow the nation to provide security with fewer destroyers, there is no support for the JMSDF to accomplish their multiple missions with an insufficient number of platforms. This would be considered an impossible challenge. As the NDPG describes the security environment surrounding Japan, even though a full-scale invasion is unlikely, Japan is threatened with diverse situations in addition to regional security issues such as North Korea. Moreover, the NDPG emphasizes the significance of sustaining the “security of sea lines of communication which are indispensable to the country’s prosperity and growth.”⁹²

The Japanese fiscal condition, however, does not provide large enough budget room to build adequate defense forces. Consequently the Ministry of Defense is required to rationalize and streamline personnel, equipment, and

⁹² “NATIONAL DEFENSE PROGRAM GUIDELINE, FY 2005 and after.”

operations so as to attain greater results and provide the best security with the limited resources that are available. Further analysis of the JMSDF fleet concept is examined in the next section.

2. The JMSDF Fleet Concept

The JMSDF has operated the Self Defense Fleet as a mobile force with the basic concept described as the “eight by eight fleet concept.” The Self Defense Fleet included four Escort Flotillas (EF) and each EF was assigned eight destroyers and eight patrol helicopters. Consequently, these flotillas were mainly assigned to support an Anti-Submarine Warfare (ASW) mission.⁹³

However, the JMSDF reviewed the fleet concept in response to the National Defense Program Guideline (NDPG) and approved a new concept in 2004. The latest fleet concept maintained an outline of four EFs, though the division composition was specified as a DDH group to support primarily an ASW mission and a DDG group to support primarily a BMD (Ballistic Missile Defense) mission. The DDH group consists of four destroyers (one DDH, one DDG, and two DDs); the DDG group also consists of four destroyers (one DDG and three DDs). An EF is composed of one DDH group and one DDG group. See Figure 4.2.

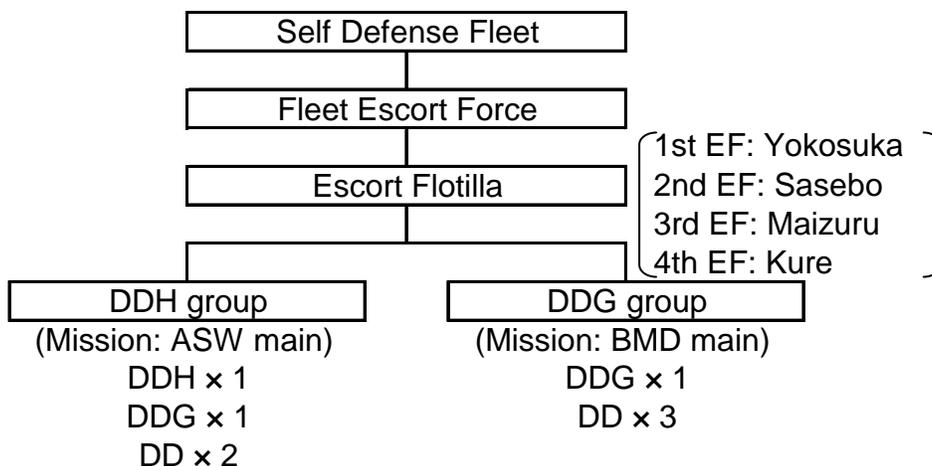


Figure 4.2 Example of Mobile Operation Units⁹⁴

⁹³ “Japan Maritime Self Defense Force,” Global Security, <http://www.globalsecurity.org/military/world/japan/jmsdf.htm> (accessed April 2007).

⁹⁴ Defense Agency, ed., *Defense of Japan 2006*.

The JMSDF currently possess four DDHs as of March 2007. However, the first DDH class destroyer, Haruna, was commissioned in 1973 and has spent over thirty years at sea. The last DDH, Kurama, was commissioned in 1981. Thus, all the DDH class destroyers are considered to be obsolete since they are over twenty-five years old. Consequently, the JMSDF plans to decommission Haruna in 2008. New DDHs were procured in FY2004 and FY 2006. These ships are scheduled to be commissioned in 2008 and 2010.⁹⁵

The Japanese government has not previously approved construction of an aircraft carrier because such a ship's offensive characteristics would be against the spirit of the Constitution and the exclusively defense-oriented policy.⁹⁶ Although the JMSDF procured and started to build two DDH destroyers that are designed to be about 200 meters long with a displacement of 13,500 tons, the JMSDF has insisted that they were not aircraft carriers. JMSDF officials have stated that Japan did not have nor plan to acquire the specialized vertical-takeoff jets that could fly from the new DDH. However, naval experts estimated that the new DDHs could carry twelve helicopters and would be slightly larger than aircraft carriers in both Spain and Thailand.⁹⁷ The new DDH design caused a political controversy after the image design was changed to a full-length flat deck, though the JMSDF has already moved forward to build the new DDH destroyers. Figure 4.3 shows an image design of the new DDH with specifications.

⁹⁵ "Policy Evaluation Before the Program 2003," Defense Agency, <http://www.mod.go.jp/j/info/hyouka/15/jizen/honbun/02.pdf> (accessed February 2007).

⁹⁶ McCargo, 182.

⁹⁷ Moffett and Fackler.

Type	DDH
Displacement	13,500 tonnage
Length	195 meters
Speed	30 knot
Aircraft	4 Helicopters
Major Equipment	
<ul style="list-style-type: none"> • CIWS 20 mm • VLS Missile Launcher • Torpedo Tube • Sonar System 	

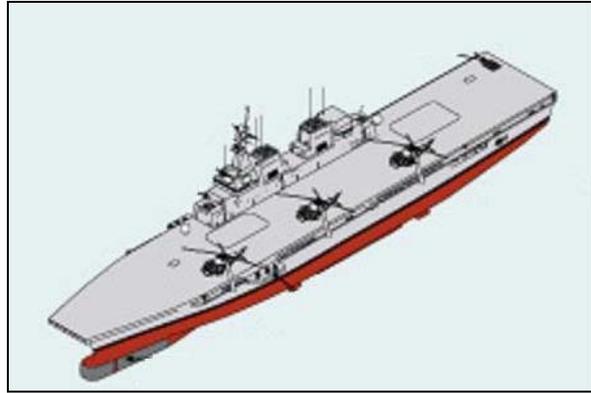


Figure 4.3 New DDH image design and specification⁹⁸

Another hurdle for the DDH program was acquiring a sufficient budget.⁹⁹ The JMSDF had already procured two Aegis destroyers, in FY2001 and FY 2002; those costs amounted to 272 billion yen. In addition, continuously delayed payments from the previous shipbuilding program have been increasing the pressure on the defense budget. The new DDH shipbuilding cost was estimated at 116 billion yen in FY 2003 before approval. Some equipment on board, such as the combat management system and the sonar system, were considered for elimination to reduce the cost.¹⁰⁰ However, the JMSDF resolved the budget difficulty by withdrawing the shipbuilding request in FY 2005. Eventually, the JMSDF procured the new DDH in FY 2006 with the full equipment package.

In order to fill an Escort Flotilla, which is composed of a specified DDH group and DDG group, it is vital to have Aegis destroyers in the DDG group. The JMSDF possessed nine missile guided destroyers (DDG) as of April 2007: five Aegis destroyers and four non-Aegis destroyers. However, one non-Aegis destroyer was designated as the flagship of the Escort Fleet Force. Thus five Aegis destroyers and three non-Aegis destroyers are provided as elements of the Escort Flotilla.

⁹⁸ "Policy Evaluation Before the Program 2003."

⁹⁹ "Japan Continues Helicopter-Carrying Cruiser Program," *Sea Power* 46, no. 10 (Oct 2003).

¹⁰⁰ *Ibid.*

One of the most significant missions of the JMSDF is to secure the sea lines of communication (SLOC) up to a distance of 1,000 miles. Meanwhile, the ASDF's (Air Self Defense Force) capabilities are limited to the home islands of Japan so that the JASDF is not able to provide JMSDF fleet air cover support. In addition, because of the absence of an aircraft carrier in the fleet, the anti-air attack protection is limited.¹⁰¹ Therefore, a critical weakness remains for the JMSDF fleet to defend itself against air attack. The DDG destroyers are considered vital for both securing the nation from ballistic missile attack and sustaining the fleet during air attacks.

The oldest non-Aegis destroyer, Asakaze, was commissioned in 1979 and the latest one, Shimakaze, was commissioned in 1988. After twenty years of service, non-Aegis DDG destroyers are considered to be obsolete. Moreover, there is a significant difference in capability between non-Aegis and Aegis systems in anti-air warfare. Table 4.1 shows a comparison between non-Aegis and Aegis systems.

Table 4.1 Comparison between non-Aegis and Aegis capability¹⁰²

	Non-Aegis Destroyer	Aegis Destroyer
System	Tartar / Standard	Aegis
Radar Coverage (km)	Over a hundred	Over several hundred
Target Tracking Capacity	Several targets	Over ten targets
Reaction Time	N/A	Less than half of non- Aegis
Maximum Range	Over 18 km	Over 100 km

In January 15, 2007, DDG Tachikaze was decommissioned after thirty years of service, while the new Aegis destroyer Atago was commissioned on March 15, 2007. The JMSDF is scheduled to have six Aegis destroyers in 2008, including DDG Ashigara which is currently under construction. These Aegis destroyers account for 141 billion yen and 128 billion yen in the budget. In

¹⁰¹ "Japan Maritime Self Defense Force."

¹⁰² "Policy Evaluation Before the Program 2003."

addition to the expensive shipbuilding costs for the DDG, the latest regular DD destroyer (displacing 5,000 tons) is estimated at 74 billion yen in the FY 2009 defense budget, which is 9 billion yen higher than the previous destroyer procured in FY2001.¹⁰³ It is a very challenging situation for the JMSDF to sustain the total fleet concept with an insufficient defense budget.

3. The Alliance with the U.S. Navy

The former Prime Minister, Yasuhiro Nakasone (1982–1987), described the turning point in the alliance as the JMSDF deployment to the Middle East to support the U.S. led war in Iraq.¹⁰⁴ The then Prime Minister, Junichiro Koizumi, made a significant decision to defy all criticism in 2001. The U.S. Navy expected the JMSDF to be a “shield to the Seventh Fleet’s sword” during the Cold War era, so that they encouraged the JMSDF to concentrate on anti-submarine warfare and mine countermeasures.¹⁰⁵ In other words, the JMSDF acted in a role that complemented the U.S. Navy, fulfilled its overall mission, and met the U.S. expectations. Recently, however, “The JMSDF has played a central role in supporting the U.S.-led war against terrorism.”¹⁰⁶ The alliance with the U.S. Navy is in a period of transition.

The JMSDF provided fuel and logistics support to the U.S. Navy and allied naval ships during Operation Enduring Freedom with an Aegis destroyer deployment since 2001.¹⁰⁷ There was a political controversy in Japan over the Aegis DDG deployment to the Indian Ocean that did require resolution. The argument was whether an attack by a third party based on the information from the JMSDF Aegis destroyer would allow the use of force and thereby violate

¹⁰³ Ministry of Finance, Budget Database (1953-2006).

¹⁰⁴ Tim Shorrock, “Japan: While Koizumi Break Barriers, the Past Lingers On,” *Global Information Network* (Nov 24, 2004).

¹⁰⁵ “Japan: Security Fears Prompt New Naval Roles,” *OxResearch* (Sep 25, 2000).

¹⁰⁶ Andrew Cummings, “The U.S.-Japan Alliance is Vital,” *United States Naval Institute Proceedings* 128, no. 3 (March 2002).

¹⁰⁷ “Japan Seeks \$458 Million Sale of Missiles, Upgrades for Aegis Weapon System,” *Defense Daily International* 7, no. 23 (Jun 9, 2006).

Article 9.¹⁰⁸ However, Prime Minister Koizumi made a decision on the use of force by stating that, “[The proposed antiterrorist support law] is within the framework of the present Constitution, but just barely. Anything beyond this, and we will have no choice but to deal with it by revising the Constitution.”¹⁰⁹

In addition to joining the Global War on Terrorism, the JMSDF has collaborated with the U.S. in the Ballistic Missile Defense (BMD) program. After North Korea launched the Taepodong missile in 1998, the Japanese government examined the situation and decided to join the U.S. missile defense system. In 2003, the BMD program was approved by the Security Council and the Koizumi cabinet, and scheduled to be in operation starting in 2007.

The JMSDF regularly operates with the surface-to-air Standard missile; the SM-1 and SM-2 were developed for the U.S. Navy as anti-air warfare weapons by Raytheon. However, these are not useful for missile defense.¹¹⁰ Thus, the JMSDF was required to switch the Aegis destroyers to SM-3 launchers for the missile defense capability. In FY 2006, the JMSDF allocated 31 billion yen for improvements to the existing Aegis system and acquisition of missiles for one Aegis destroyer. The total budget related to the BMD program was 157 billion yen in FY 2007, 140 billion yen in FY 2006, 120 billion yen in FY 2005, and 107 billion yen in FY 2004. The JMSDF faced considerable budget restraints in modernizing the capability and solidifying the BMD program. Figure 4.4 shows a BMD system and the evolution of U.S. approaches.

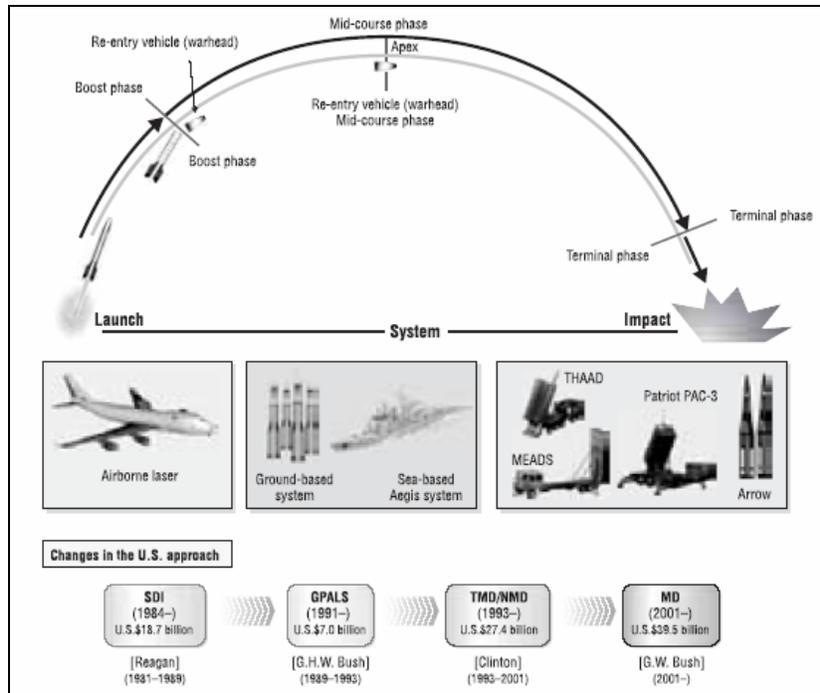
Admiral Toru Ishikawa, the JMSDF chief of staff (retired), reminisced that while the nature of the military threat has changed from the days of the Cold War

¹⁰⁸ Defense Agency, ed., *Defense of Japan 2003* (Tokyo: Gyosei, 2003), http://www.clearing.mod.go.jp/hakusho_data/2003/w2003_00.html (accessed April 2007).

¹⁰⁹ Cummings.

¹¹⁰ “The Standard Missile Family,” Raytheon, http://www.raytheon.com/products/standard_missile/ (accessed March 2007).

to the Global War on Terrorism, the Japan/U.S. alliance has become more important in the common quest to maintain peace and stability in the global arena.¹¹¹



SDI	Strategic Defense Initiative
GPALS	Global Protection Against Limited Strikes
NMD	National Missile Defense
TMD	Theater Missile Defense
MD	Missile Defense

Figure 4.4 BMD system and evolution of U.S. approaches ¹¹²

B. SHIPBUILDING PROGRAM

In this section, the future shipbuilding costs are estimated based on the historic shipbuilding cost for each type of destroyer, including the DDG, DDH, DD, and DE. Simultaneously, the probability that a particular type of destroyer will be built is examined under the defense budget constraints of the Mid-Term Defense Program (FY2005 – FY2009).

¹¹¹ Toru Ishikawa, "Japan Maritime Self Defense Force's Enduring Relationship with the U.S. Navy," *Sea Power* 45, no.12 (December 2002).

¹¹² Defense Agency, ed., *Defense of Japan 2006*.

1. Mid-Term Defense Program

The Mid-Term Defense Program (MTDP) is a plan defining the policies of building up the defense capability and main projects for five years to achieve the new defense forces specified in the National Defense Program Guidelines.¹¹³ Table 4.2 shows the transition of the MDTP since 1986. While the MTDPs (1991-1995, 1996-2000) were revised to reduce the total amount of defense expenditures and number of destroyers, and the MTDP (2001-2005) was cancelled, the JMSDF has still successfully accomplished the acquisition of most of the planned number of destroyers.

Table 4.2 Transition of Mid-Term Defense program¹¹⁴

Period (Fiscal year)	1986 - 1990	1991 - 1995	1996 - 2000	2001- 2005	2005 - 2009
Total Amount (trillion yen)	¥ 18.40	¥ 22.17	¥ 24.23	¥ 25.01	¥ 24.24
Destroyers (planned)	9	8	7	5	5
Destroyers (acquired)	9	8	7	4	
Accomplishment (%)	100	100	100	100	

Note: MTDP (2001 - 2005) was cancelled in December, 2004, and current MTDP was introduced from FY 2005.

Initially, at the beginning of the MTDP (2005-2009), the JMSDF did not acquire a destroyer in FY 2005. The JMSDF has already acquired one destroyer in FY2006 and is budgeted for one destroyer in FY2007. In other words, the JMSDF will acquire three destroyers between FY 2008 and FY 2009, if the Ministry of Defense is able to adhere to the current effective MTDP. Otherwise, a revision to the MTDP will need to be proposed.

¹¹³ Defense Agency, ed., *Defense of Japan 2006*.

¹¹⁴ Katayama, 40-53.

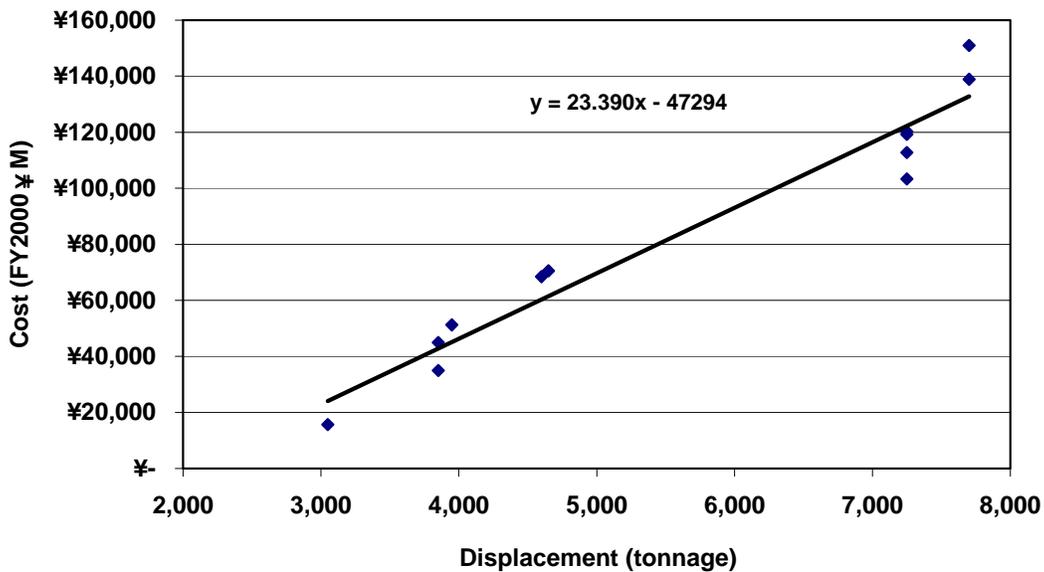
In the next section, in order to project a probability that a particular type of destroyer would be built, the cost estimation was made with simple linear regression based on the historical data and then analyzed.

2. Cost Estimation

Using the simple linear regression method, shipbuilding costs are shown in regression equations with a single variable of displacement.

a. DDG

The JMSDF has acquired twelve DDG-type destroyers since 1960. The first DDG Amatsukaze (3,050 tons) cost 4.0 billion yen in total, or 15.6 billion yen in FY 2000 yen. The latest DDG Ashigara (7,700 tons), commissioned in March 2007, amounted to 128.9 billion yen in total, or 138.9 billion yen in FY 2000 yen. Figure 4.5 shows a regression between displacement and the unit cost for the DDG.



Summary output

Multiple R	0.9726	Standard Error	¥10,727 M
R Square	0.9460	Significance F	0.00

Figure 4.5 DDG Linear Regression Model

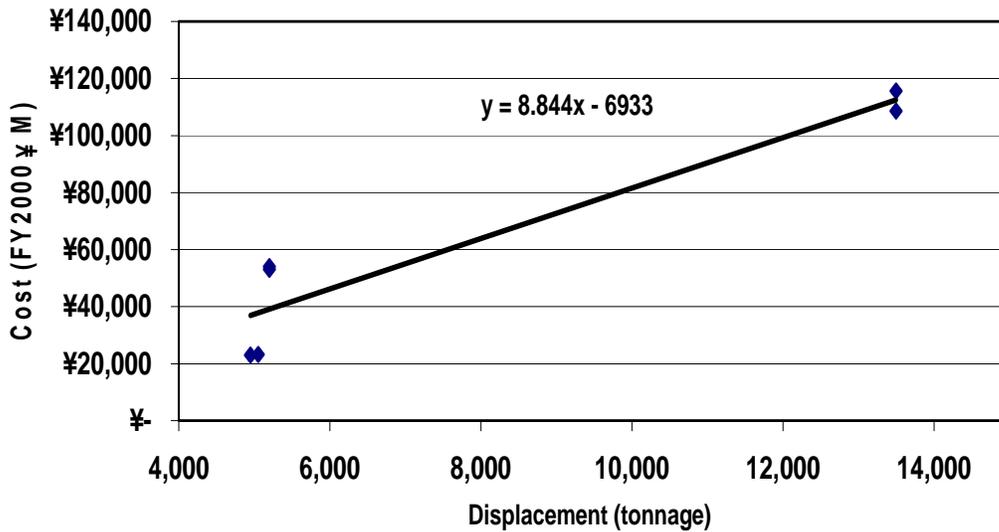
There is a significant difference between non-Aegis and Aegis destroyers in terms of shipbuilding cost, because the Aegis system alone is

estimated to cost approximately 50 billion yen. Assuming that the JMSDF will build the next DDG as an Aegis platform, the cost estimation should therefore be based on the costs of Aegis destroyers only.

b. DDH

The JMSDF acquired four DDH-type destroyers between 1968 and 1976. It took over twenty-eight years to acquire the fifth DDH destroyer in 2002. Figure 4.4 shows a regression for the DDH. However, due to the small number of observations (6) and a time break, it may be inappropriate to predict a future shipbuilding cost by using this equation.

Figure 4.6 shows the DDH regression model. As the figure indicates, the old type of DDH has approximately a 5,000-ton displacement, as opposed to the new type of DDH with a 13,500-ton displacement. There is more than twice the difference in displacement. In addition, there was a twenty-five year production break before the new shipbuilding started. Therefore, the prediction of the future DDH costs should be based on the latest two DDHs' shipbuilding costs, rather than including the four old DDH destroyers.



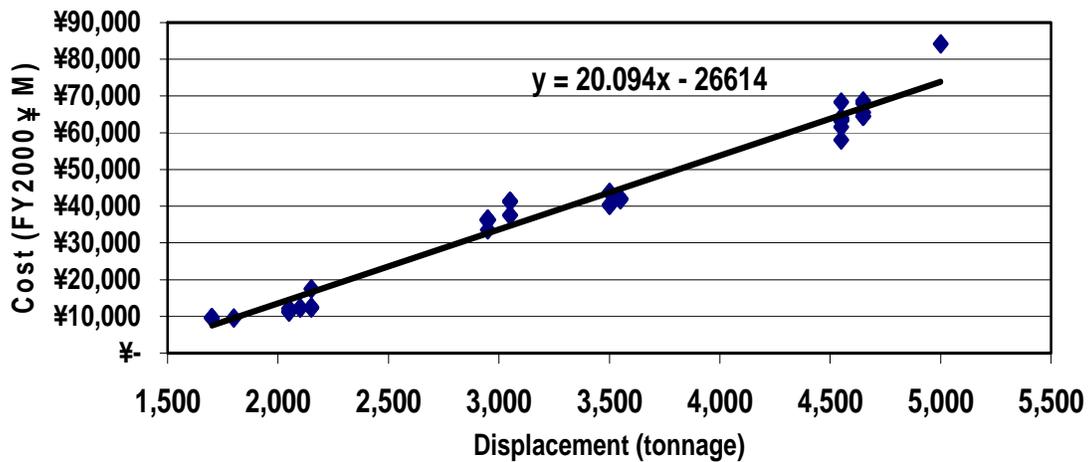
Summary output

Multiple R	0.9470	Standard Error	¥14,550 M
R Square	0.8968	Significance F	0.004

Figure 4.6 DDH Linear Regression Model

c. DD

The JMSDF has acquired forty-eight DD-type destroyers since 1957. The first DD, Harusame (1,800 tons) cost 1.9 billion yen in total or 9.5 billion yen in FY 2000 yen. The latest DD (5,000 tons) was budgeted at 75.0 billion yen in FY 2007, and is scheduled to be commissioned in 2012. Figure 4.5 shows the DD linear regression model. As the figure indicates, the relationship between displacement and unit cost is well described by the regression equation. Also, multiple R, R square, and F stat reveal that the linear regression model clearly reflects the relationship between displacement and unit cost. Figure 4.7 shows the DDH regression model



Summary output

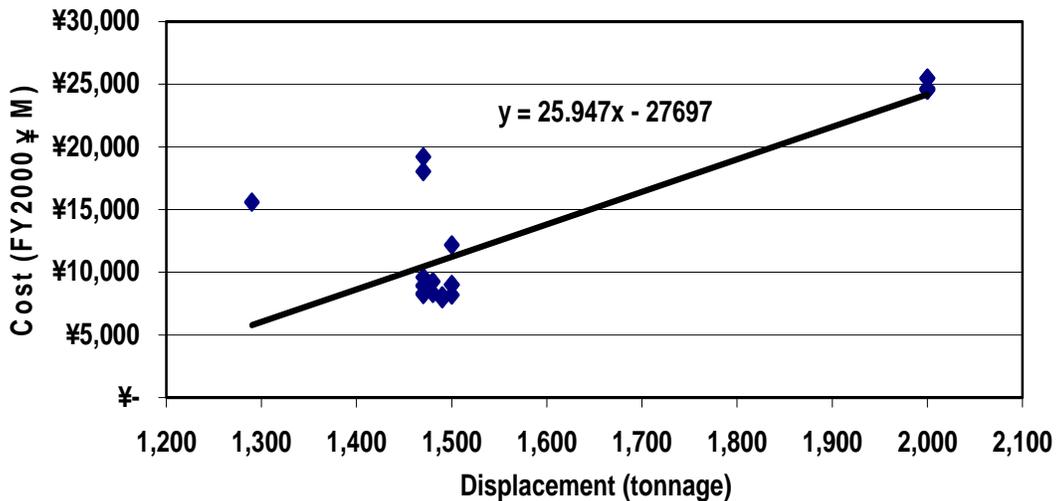
Multiple R	0.9853	Standard Error	¥3,641 M
R Square	0.9709	Significance F	0.00

Figure 4.7 DD Linear Regression Model

d. DE

The JMSDF has procured twenty-four DE-type destroyers since 1959. The last one, Tone (2,000 tons), was procured at a cost of 25.2 billion yen in FY 1989 and was commissioned in 1993. The JMSDF has not built a follow on DE-type destroyer. DE destroyers were eventually transferred to the Regional Districts, primarily in a Coast Guard role.

Figure 4.8 shows the DE linear regression model. Due to the outdated and somewhat clustered data set, this model does not reflect the DE regression adequately. However, the previous DD regression model output almost covered the displacement range of 1,500 to 2,000 tons. Therefore, the DD regression model could be used instead of the DE model for projections.



Summary output

Multiple R	0.8578	Standard Error	¥3,765 M
R Square	0.7358	Significance F	0.00

Figure 4.8 DE Linear Regression Model

3. Future Projections for the Shipbuilding Program

In the MTDP (FY2005-FY2009), the JMSDF is scheduled to acquire five destroyers. Two destroyers have been acquired and three more destroyers will be acquired within two years. Based on the previous analyses, fleet concept and shipbuilding program, it is important to examine the probability of what type of destroyers will be procured for the two fiscal years under the current MTDP.

Two DDG have already been procured under the previous MTDP and are ready to replace old non-Aegis DDGs. The oldest DDG in the Escort Flotilla (EF), Hatakaze, was procured in 1981 and has been in service for twenty-one years. In comparison, the previous DDG was decommissioned after thirty-one years of service. The JMSDF has not forecasted the procurement of a DDG destroyer

under the current MTDP, but one may be required during the next MTDP to sustain the eight DDG destroyers in the EF.

Two DDHs were procured in FY 2004 and FY 2006 to replace old DDHs that were procured in FY1968 and FY 1970. Thus, the oldest DDH would be Shirane, procured in FY 1975. The JMSDF does not forecast the procurement of a DDH destroyer under the current MTDP for the same reason as that for the DDG destroyer. The JMSDF, however, may be required to acquire two DDH destroyers under the next MTDP.

Currently, the JMSDF is forecasting the procurement of three DD or DE destroyers under the current MTDP. Considering the shipbuilding expenditures ratio in the total amount of the MTDP, the average is calculated at 0.28% per ship (see Table 4.3). Thus, shipbuilding expenditures in the MTDP are estimated to be 339.4 billion yen for five destroyers. 172 billion yen has already been spent, so that the JMSDF is projected to expend the remaining 167 billion yen for the shipbuilding program in FY 2008 and FY 2009.

Table 4.3 Shipbuilding expenditures ratio in the MTDP¹¹⁵

Period (Fiscal year)	1986 - 1990	1991 - 1995	1996 - 2000		2005 - 2009
Total Amount (billion yen)	¥ 18,400	¥ 22,170	¥ 24,230		¥ 24,240
Shipbuilding expenditures (billion yen)	¥ 408.6 9 ships	¥ 609.3 8 ships	¥ 451.9 7 ships		¥ 339.4 5 ships
Ratio per ship (%)	0.25	0.31	0.27	→	0.28

Note: MTDP (FY2001-FY2005) was cancelled so that it was not included in determining the average.

Using the DD linear regression equation, the JMSDF can forecast which class of DD could be procured and how much the tonnage would be. For example, assuming the JMSDF will procure three of the same class of DD destroyers, the average cost should be 59 billion yen in FY 2000 yen and this is converted to a tonnage of 4,260.

¹¹⁵ Defense Agency, ed., *Defense of Japan 2006*.

C. TECHNOLOGY AND THE SHIPBUILDING INDUSTRY

1. Three Principles on Arms Export

Prime Minister Eisaku Sato, Nobel Prize for Peace winner in 1974, stated the Three Principles on Arms Export in 1967. The principles provide that the arms exports to the following countries shall not be permitted:

- Communist Bloc Countries;
- Countries to which arms exports are prohibited under the United Nations resolutions; or
- Countries those are actually involved or likely to become involved in international conflicts.¹¹⁶

Subsequently, in February 1976, the Japanese Government announced the collateral guideline to strengthen the policy. It said that, "The 'arms' exports to other areas not included in the Three Principles will also be restrained in conformity with Japan's position as a peace-loving nation."¹¹⁷ In other words, the government shall abstain from promoting arms exports, regardless of the destinations.¹¹⁸ In 1983, the government changed its policy to open the way for the transfer of military technology to the United States as the only exception to their principles. However, the U.S. already held large defense industries, so this change was not seen as a relaxation of standards for Japanese defense industries.

While, the Japanese government imposed a strict restriction on arms exports, it remains a major arms importer; Japan was the largest importer among the industrially advanced nations and was fifth in total amounts of arms imports from 1976 to 2005.¹¹⁹ According to the Stockholm International Peace Research Institute (SIPRI) database, most of the arms are imported from the U.S. and

¹¹⁶ Defense Agency, ed., *Defense of Japan 2006*.

¹¹⁷ Ibid.

¹¹⁸ "Japan's Policies on the Control of Arms Exports," Ministry of Foreign Affairs, <http://www.mofa.go.jp/policy/un/disarmament/policy/index.html> (accessed March 2007).

¹¹⁹ Hiroshi Ikawa, "Arms Exports and Three Principles," *DRC Annual Report 2004* (Oct 2004), <http://www.drc-jpn.org/AR-8/ikawa-04j.htm> (accessed March 2007).

Table 4.4 shows the trend of arms transfers (FY1990\$M) from 1998 to 2005. The amount significantly decreased in 2000 and with the exception of 2003 continues to decrease.

Table 4.4 Arms Transfer to Japan (FY1990\$M) ¹²⁰

Year	1998	1999	2000	2001	2002	2003	2004	2005
Arms Transfer	1,249	1,080	302	333	307	351	298	250

As Iwata Norio, Deputy Director of the Research and Development Planning Division, Bureau of Equipment, Japan Defense Agency, pointed out, “a country's defense capability, in equipment terms, is based primarily on its manufacturing capability. The Defense Agency believes that a healthy and efficient defense industry is an essential condition for the appropriate build-up of defense capability.”¹²¹

The Three Principles on Arms Export, however, prevent the defense industry from seeking a foreign market outside of Japan. If the government adheres to the principles on arms exports, care should be taken to maintain a vigorous domestic defense market as an inducement for the defense industry to remain capable of producing the equipment the country needs. Otherwise, Japanese defense companies would exit the market and the SDF would suffer enormously and have some difficulties in acquiring equipment.

2. Impacts on the Shipbuilding Industry

The total amount for defense procurement has been on a downward trend. That puts increasing financial stress on the defense industry.¹²² However, it must be remembered that the total amount of defense production was only 0.64% of the total amount of industrial production in FY2004. (See Appendix C) Moreover,

¹²⁰ “The Top-20: Arms Importers and Exporters 1976-2005,” Stockholm International Peace Research Institute (SIPRI), <http://www.sipri.org/contents/armstrad/access.html#twenty> (accessed March 2007).

¹²¹ Norio Iwata, “Procurement Policy and Defense Industry in Japan,” *DISAM Journal of International Security Assistance Management* 21, no. 4 (Summer 1999).

¹²² *Ibid.*

shipbuilding expenses by the Ministry of Defense were less than 0.1%. Therefore, the declining defense budget has not impacted detrimentally the overall industry. In Japan, there are six major shipbuilding companies:

- Mitsubishi Heavy Industries, Ltd.
- IHI Marine United Inc.
- Kawasaki Shipbuilding Corporation
- Mitsui Engineering & Shipbuilding Co., Ltd.
- Universal Shipbuilding Corporation
- Sasebo Heavy Industries Co., Ltd.

(See details in Appendix D)

By comparing the latest destroyer shipbuilding costs (¥80 billion) to the total sales revenue of shipbuilding companies, one can determine that the defense shipbuilding accounts for 6% of the total revenue. The ratio of shipbuilding expense by the Ministry of Defense to total sales of each shipbuilding company is very small. Consequently, the declining defense budget has not severely impacted the shipbuilding industry itself.

However, due to increasing steel material costs and foreign shipbuilding companies, the Japanese shipbuilding industry is suffering reduced profits and moving to restructure. For example, a major shipbuilding company, Hitachi Zosen, offered to sell its shipbuilding department to JFE Shoji Holdings, Inc. in 2006.¹²³ If the offer is approved, it will be the first case where a major shipbuilding company exits from the industry. In spite of the worldwide shipbuilding boom, the Japanese shipbuilding companies have not necessarily received the benefits.

Meanwhile, in entering the shipbuilding market, a company will incur a large initial investment in areas such as facilities, drydocks, materials, and human resources. There are many barriers for entry into the shipbuilding market.

¹²³ "Hitachi Zosen Exits from Shipbuilding," *Nikkei Net Kansai*, Nov 11, 2006, <http://www.nikkei.co.jp/kansai/topics/36576.html> (accessed March 2007).

This implies that if a company exits the shipbuilding industry, new companies will rarely enter the market to compensate, so that the overall domestic market will decrease.

This shrinking shipbuilding industry negatively affects the JMSDF's ability to acquire destroyers. Assuming that the shipbuilding demand all over the world will be increasing or steady in the near future, the industry shrinkage in Japan will cause an increase in unit cost for the JMSDF destroyers, because shipbuilding companies will gain bargaining power with less competitiveness. In addition, in spite of several shipbuilding companies existing in the market, competition over defense contracts is less likely to occur over orders from the JMSDF. Recently, some shipbuilding companies did not join in bidding for such contracts because of their production capacities.¹²⁴

Furthermore, another problem is a lack of a timely response in case of emergency. A large initial investment makes it impossible to establish a shipbuilding company in a short time period, so that a large expenditure of funds would be required to recover the shipbuilding skills and facilities. "It is therefore increasingly important to secure and maintain a sound and efficient defense production and technological base."¹²⁵ The impact on shipbuilding techniques and continued maintenance of high quality is examined in the next section.

3. Technical Impact on Shipbuilding

The declining defense budget negatively impacts the sustenance of the high skill and quality in shipbuilding. Put another way, the declining defense budget mandates reductions in shipbuilding costs, with corresponding deterioration in quality as shipbuilders seek to cut those costs. In order to maintain a certain level of skill in shipbuilding, companies need to build destroyers continuously at a cost that will earn them a profit. However, because orders from the JMSDF have decreased, shipbuilding companies are having

¹²⁴ Ryota Ishida, "An Analysis of Political and Economic Factors that Impact Sustainment of the Japanese Defense Industry" (M.S. thesis, Naval Postgraduate School, 2002), 7.

¹²⁵ Iwata.

trouble keeping workers proficient. In fact, some destroyers have had significant problems just after commissioning or during the periodic maintenance availabilities.

For example, the destroyer Oonami was commissioned in March, 2003 and conducted annual maintenance between December 2003 and January 2004. During that maintenance, a crack was found on the mast and as a result of the investigation, it was recognized that a welding error during construction caused the crack. After the problem was ascertained, the JMSDF was ordered to inspect the eleven destroyers which mounted the same type of mast.



Source: Asagumo News

Figure 4.9 Kirisame's Broken Mast

Even after the inspection, the destroyer Kirisame's mast broke during a sortie to avoid a typhoon in September, 2005 (See Figure 4.9).¹²⁶ Kirisame is a sister ship to Oonami and passed the inspection at the time of Oonami's mast problem. However, since Kirisame recorded a strong gust of wind (50m/second) during the evacuation, the snapping of its mast cannot as easily be connected to a welding error. However, it should concern the JMSDF that there could be a connection with shipbuilding quality. It should also be noted that Oonami and Kirisame were built by the largest shipbuilding company in Japan.

Sustaining highly skilled workers is even more important for submarines, where the smallest technical error might result in tragedy with a detrimental political impact. There are two shipbuilding companies for submarines in Japan

¹²⁶ "Kirisame's Mast Broken Down," *Asagumo News*, Sep 15, 2005, <http://www.asagumo-news.com/index.html> (accessed March 2007).

and the JMSDF has procured one submarine every year continually from 1956. In each year of the previous Mid-Term Defense Programs (1986-2005), the number of new submarines to be built was five, and actually, five submarines were built in five years. However, in the latest MTDP, the number was reduced to four submarines.

D. SUMMARY

Several impacts of the declining defense budget indicate that the JMSDF has to confront a challengeable situation to sustain capability and to review maritime strategy. The JMSDF acquired six Aegis destroyers and two 13,500-ton DDHs in recent years; simultaneously, the shipbuilding account seemed to be difficult to manage and this forced the decision not to acquire any destroyer in FY2005. Under such a situation, cost estimation is significant for future projections. For example, using a simple linear regression method, it can be projected what kind of destroyers and their tonnages are likely to be procured.

Meanwhile, ship sales to the JMSDF account for very a small part of the shipbuilding industry and the government's severe restriction on arms exports made the defense market less attractive. This may cause the shipbuilding companies to exit the defense industry. As a result, the JMSDF would have some difficulty in sustaining the quality of shipbuilding for combatant ships.

The next chapter summarizes the studies conducted in the previous chapters to describe an appropriate level of the future defense budget. It also contains the recommendations and areas of further research that should be considered with regard to the Japanese budget as a whole.

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V. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

National defense is an example of a public good, because it is neither excludable nor rivalled.¹²⁷ Excludable means that people can be prevented from using the service; rivalled means that one person's use reduces another person's ability to use the service. The character of national defense as a public good makes it difficult to find the standard level of national defense expenditure. Thus, the argument is always whether the defense budget is too small or too large. Due to the uncertainty of preventing war and difficulty of protecting one's own property alone, the requirement for a defense budget may be overestimated and the budget may be overspent under an uncertain international security environment.¹²⁸ Furthermore, the cost of failure in national security is extremely high and the whole nation would suffer significant losses.

The argument about national defense expenditures is a classic economic example of the tradeoff between guns and butter. "The more we spend on national defense (guns) to protect our shores from foreign aggressors, the less we can spend on consumer goods (butter) to raise our standard of living at home."¹²⁹ In other words, every country should determine the size of its military and the defense budget to maintain national security, in competition with domestic demands for public resources.

Japan regained sovereignty in 1951 by the San Francisco Peace Treaty with the Allied Powers. However, at that time, it was not expected to sustain full-scale military forces, so the Japanese government could place emphasis on accelerating economic development. In other words, the government budgeted for "butter" in order to enrich daily life. As the economy recovered and grew rapidly, it was no longer considered acceptable to concentrate only on the home

¹²⁷ Gregory N. Mankiw, *Economics*, 3rd ed. (Mason: Thomson South-Western, 2004), 226.

¹²⁸ Honma, 421.

¹²⁹ Mankiw, 5.

country alone. Japan should contribute immensely to the international peace and stability as a developed country. The argument is over how much defense budget should be spent for “guns” as appropriate.

The international security environment has drastically changed since the terrorist attacks on September 11, 2001. Countries are required to cooperate in their fight against global terrorism. As the country with the world's second largest GNP, Japan should contribute to global security.¹³⁰ The JMSDF should complete its dual missions of national security and contribution to worldwide stability in strong and close connection with the U.S. Navy. The JMSDF is in a period of transition in terms of maritime strategy, fleet concept, and the U.S. alliance.

The declining defense budget has had a significant influence on the JMSDF, especially on the shipbuilding program. The defense budgetary cutback, however, was caused by the retrenchment in fiscal policy, rather than the alteration of defense policy. The long recession in the 1990s decreased tax revenue and increased the government bond debt. The Japanese fiscal condition will continue to be on the brink of a crisis with such a large amount of bond obligations outstanding. Considering such a fiscal condition, the defense budget was no longer exempt from the restructuring in Japanese fiscal policy. It could be said that the result of the declining defense budget was the lack of destroyer procurement in FY 2005.

Furthermore, the structure of the shipbuilding account in the defense budget is considered one of the problems. The shipbuilding account is a typical example of a continuing expense, which makes it possible to delay payments within five years. While the flexibility of payments provides a big advantage for managing the shipbuilding account, it easily leads to delayed payments and promotes a tendency to depend heavily on payments being carried over.

Finally, Adam Smith, the father of economics, described the expense of defense in his book *“An Inquiry into the Nature and Causes of the Wealth of*

¹³⁰ Angus Maddison, *The World Economy: Historical Statistics* (France: Development Center of the Organization for Economic Co-operation and Development, 2003), 174.

Nations.” He said that, “The first duty of the sovereign, that of protecting the society from the violence and invasion of other independent societies, can be performed only by means of a military force.”¹³¹ He also added, however, “The first duty of the sovereign...grows gradually more and more expensive, as the society advances in civilization.”¹³²

B. RECOMMENDATIONS

1. Toward a Sustainable Fiscal Structure

The structure of the defense budget should be changed to a sustainable fiscal structure. The current structure of the shipbuilding account relies too much on future-year expenditures. In other words, accounts payable have been increasing significantly as a result of the declining defense budget. This results in a diminished elasticity in the defense budget and affects not only defense policy decisions such as the fleet concept, but also daily operation and maintenance. Therefore, the defense budgets should be built based on a solid estimation of internal and external situations.

2. Prioritization of Budget Allocation

An allotment of funds according to established priorities would be very important under the circumstances in which the defense budget has been stagnant and uncertainty is increasing. Even though the defense budget has been reduced, year-end (sweep-up) funds never disappear because of the reservation of funds for an emergency. End-of-year spending can be inefficient and wasteful because of the notion of use it, or lose it. Even though there are some legal regulations about duration, purpose, and amount expended, some amount of the budget might be used to offset money already spent.

Therefore, prioritization through revision of all expenditure items is significant among the whole budget cycle, which starts from planning to actual payment. Unless a solid future defense plan exists, prioritizing the policy and

¹³¹ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Harvard Classics; v.10.: Collier, 1956), 653.

¹³² *Ibid*, 668.

allocating the budget adequately is impossible. Thus, the JMSDF should prepare to provide a feasible and an effective future plan with precise cost estimation.

3. Promotion of the Domestic Defense Industry

The Japanese government has imposed strict restrictions on arms exports due to the Three Principles on Arms Export. The JMSDF is required to get permission from the Ministry of Economy, Trade, and Industry (METI) even to send repair parts to fleet elements deployed to a foreign country. Such a strict control on arms sales makes the defense market less attractive to potential suppliers. Therefore, in order to promote the defense industry in Japan, the Three Principles on Arms Export should be considered for review.

If the principles were to be somewhat relaxed, it would be beneficial to both the Ministry of Defense and the defense industry. For example, increasing production volume reduces unit cost and increases productivity; international competition contributes to increased capability and quality.¹³³ At the same time, the government should establish a way to track arms exports from the point of view of the Global War on Terrorism. It cannot be complicit in passing arms to terrorists.

4. Sustain the Alliance with the U.S.

Consistently, Japanese defense policy has been based on the alliance with the U.S. since the establishment of the Self Defense Force. Even though the Cold War is over, the security environment has been confronted with new threats such as the terrorist attacks in the U.S. on September 11, 2001. These attacks indicated a difficulty in securing the nation by an individual country. Therefore, Japan should sustain close cooperation with the U.S. to secure the nation and its vicinity.

The Japan-U.S. Security Treaty and the U.S. forces stationed in Japan have deterred instability in the area and any direct invasion of Japan. It would cost a prohibitive amount of money for Japan to secure itself on its own.

¹³³ Ikawa.

Moreover, Japan's own defense capability is not by itself enough for national security and the fiscal conditions do not permit such a defense burden. Japan should continue to maintain credibility with the U.S and the JMSDF should work with the U.S. Navy to enhance interoperability through mutual understanding.

C. AREAS OF FURTHER RESEARCH

The current Mid-Term Defense Program covers the period between FY2005 and FY2009. The Ministry of Defense will prepare for the next MTDP (covering FY2010 through FY2014), which will be approved by the Cabinet around December 2009. The method of estimating the feasibility of acquiring destroyers under the current MTDP was introduced and examined in this thesis. In order to create the next MTDP, more precise cost estimation should be conducted.

The U.S. Navy operates the Naval Center for Cost Analysis (NCCA), whose missions are:

- to guide, direct and strengthen cost analysis within the Department of the Navy;
- to ensure the preparation of credible cost estimates of the resources required to develop, procure and operate military systems and forces in support of planning, programming, budgeting and acquisition management;
- to perform such other functions and tasks as may be directed by higher authority.¹³⁴

"NCCA uses cost analysis techniques to estimate the acquisition, operation and support costs (e.g., life-cycle costs) of new Navy systems in order to assist top-level management in determining the optimal use of resources and assist program managers in making cost-effective decisions through the life-cycle of systems."¹³⁵ Appendix E shows an organization chart for NCCA.

¹³⁴ "NCAA Mission," Naval Center for Cost Analysis, <http://www.ncca.navy.mil/about/mission.cfm> (accessed April 2007).

¹³⁵ "NCAA Cost Analysis 101," Naval Center for Cost Analysis, <http://www.ncca.navy.mil/about/101.cfm> (accessed April 2007).

In comparison to the U.S. Navy, which has projected cost estimation quite systematically with historical data collection, the JMSDF cost estimation methods are far behind. Therefore, the JMSDF should consider examining and introducing the cost analysis method from the U.S. Navy.

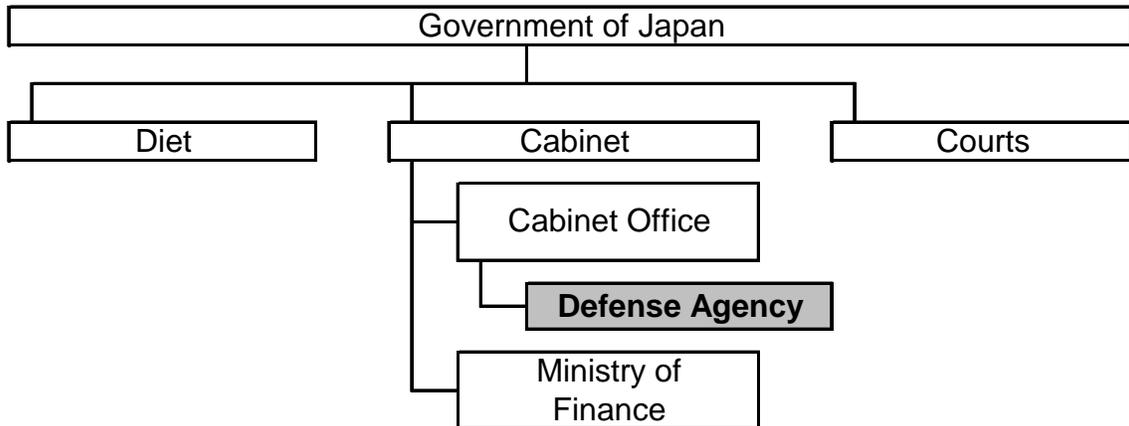
Finally, the last consideration is to measure the optimal size of the defense budget. The average age of the population is progressing and is expected to continue growing in Japan. Social security expenditures increase with aging, so that the proportion of social security to general expenditures exceeded forty percent of total expenditures in the FY 2006 budget.¹³⁶

In order to use scarce budget resources effectively, the balance between guns and butter should be carefully considered when allocating expenditures. Formerly, the Japanese regarded “butter” expenditure as important for postwar rehabilitation and this choice seemed appropriate. As a result, the defense budget was restricted under the GNP to a 1-percent limit. Both the domestic and international environments, however, have changed considerably during the sixty years since WW II. Even though it is a very challenging task, the government should examine the allocation between these two conflicting needs. It is time to re-evaluate the balance between guns and butter.

¹³⁶ Teruhiko Mano, “The Balance Between Guns and Butter” *Mitsubishi UFJ Research & Consulting*, Aug 9, 2006, <http://www.murc.jp/info/detail.php?i=275> (accessed April 2007).

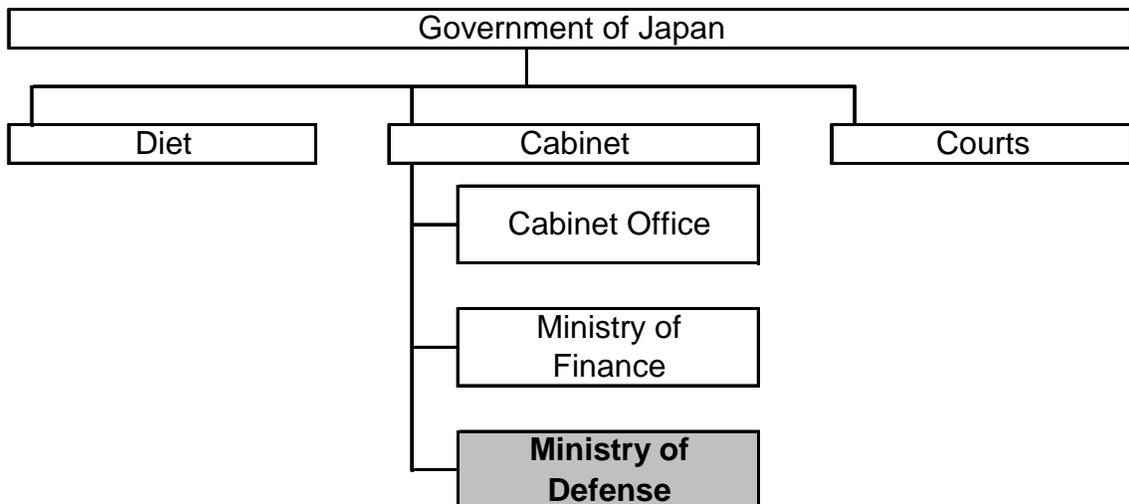
APPENDIX A: THE JAPANESE GOVERNMENT STRUCTURE (EXTRACT)

[Before promotion to the ministry]



[After promotion to the ministry]

Effective from January 8, 2007



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APPENDIX B: JAPANESE ECONOMIC DATA

Fiscal Year	Nominal GDP (¥Billion)	Real GDP (¥Billion)	Inflation Rate	Inflation Indices
1955	¥8,597.90	¥47,939.30	-	-
1956	¥9,647.70	¥51,194.80	5.10%	0.1860
1957	¥11,064.10	¥55,364.70	6.00%	0.1971
1958	¥11,845.10	¥59,010.10	0.40%	0.1979
1959	¥13,897.00	¥65,628.20	5.50%	0.2088
1960	¥16,680.60	¥73,504.10	7.20%	0.2238
1961	¥20,170.80	¥82,124.90	8.20%	0.2422
1962	¥22,328.80	¥88,318.30	2.90%	0.2492
1963	¥26,228.60	¥97,502.50	6.40%	0.2652
1964	¥30,399.70	¥106,753.70	5.90%	0.2808
1965	¥33,765.30	¥113,361.90	4.60%	0.2937
1966	¥39,698.90	¥125,882.20	5.90%	0.3111
1967	¥46,445.40	¥139,779.90	5.40%	0.3279
1968	¥54,947.00	¥157,058.90	5.30%	0.3452
1969	¥65,061.40	¥175,940.10	5.70%	0.3649
1970	¥75,298.50	¥190,448.00	6.90%	0.3901
1971	¥82,899.30	¥200,051.90	4.80%	0.4088
1972	¥96,486.30	¥218,214.50	6.70%	0.4362
1973	¥116,715.00	¥229,326.20	15.10%	0.5021
1974	¥138,451.10	¥228,242.50	19.20%	0.5985
1975	¥152,361.60	¥237,329.50	5.80%	0.6332
1976	¥171,293.40	¥246,262.10	8.30%	0.6857
1977	¥190,094.50	¥257,411.80	6.20%	0.7283
1978	¥208,602.20	¥271,349.30	4.10%	0.7581
1979	¥225,237.20	¥285,320.50	2.70%	0.7786
1980	¥245,546.60	¥292,737.40	6.30%	0.8276
1981	¥260,801.30	¥301,489.50	3.10%	0.8533
1982	¥273,322.40	¥310,825.60	1.70%	0.8678
1983	¥285,593.40	¥318,689.60	1.90%	0.8843
1984	¥305,144.10	¥331,753.70	2.60%	0.9073
1985	¥324,289.60	¥345,446.00	2.10%	0.9263
1986	¥339,363.30	¥356,286.30	1.50%	0.9402
1987	¥355,521.80	¥373,233.20	0.00%	0.9402

(Continued)

Fiscal Year	Nominal GDP (¥Billion)	Real GDP (¥Billion)	Inflation Rate	Inflation Indices
1988	¥379,656.80	¥395,531.60	0.80%	0.9478
1989	¥406,476.80	¥413,120.40	2.50%	0.9715
1990	¥438,815.80	¥436,043.80	2.30%	0.9938
1991	¥463,174.40	¥448,902.70	2.50%	1.0186
1992	¥471,882.00	¥450,605.90	1.50%	1.0339
1993	¥476,746.10	¥452,757.60	0.60%	1.0401
1994	¥487,017.50	¥470,888.00	-0.20%	1.0380
1995	¥496,457.30	¥482,749.50	-0.60%	1.0318
1996	¥508,432.80	¥496,903.80	-0.50%	1.0267
1997	¥513,306.40	¥496,877.20	1.00%	1.0369
1998	¥503,304.40	¥489,438.10	-0.50%	1.0317
1999	¥499,544.20	¥493,048.70	-1.50%	1.0163
2000	¥504,118.80	¥505,621.90	-1.60%	1.0000
2001	¥493,644.70	¥501,617.50	-1.30%	0.9870
2002	¥489,875.20	¥507,014.90	-1.80%	0.9692
2003	¥493,747.50	¥517,714.70	-1.30%	0.9566
2004	¥498,275.00	¥527,825.80	-1.00%	0.9471
2005	¥503,293.20	¥540,400.60	-1.30%	0.9348
2006	N/A	N/A	-1.00%	0.9254
2007	N/A	N/A	-1.00%	0.9162
2008	N/A	N/A	-1.00%	0.9070
2009	N/A	N/A	-1.00%	0.8979
2010	N/A	N/A	-1.00%	0.8889

Note: GDP FY1955-1993: 68SNA basis, FY1994-2005: 93SNA basis
Base Year FY 2000 (Billion Yen)
Inflation rate is based on GDP deflators (Changes from the previous year)
According to the Council on Economic and Fiscal Policy, the Japanese economy is still in the deflation.

Source: Department of National Accounts, Cabinet Office, GDP Long-Term Time Series
Council on Economic and Fiscal Policy, "Basic Policies for Economic and Fiscal Management and Structural Reform 2004" (January, 2007)

APPENDIX C: CHANGES IN AMOUNT OF JAPAN'S DEFENSE PRODUCTION

Fiscal Year	Total Amount of Defense Production	Total Amount of Industrial Production*	Ratio (%)
1993	¥1,783,063	¥310,130,630	0.57
1994	¥1,828,774	¥298,039,512	0.61
1995	¥1,857,911	¥306,625,837	0.61
1996	¥1,960,507	¥313,617,190	0.63
1997	¥1,858,929	¥323,914,665	0.57
1998	¥1,740,774	¥305,510,465	0.57
1999	¥1,803,697	¥289,879,438	0.62
2000	¥1,842,805	¥318,104,966	0.58
2001	¥1,860,817	¥286,045,175	0.65
2002	¥1,840,037	¥268,205,996	0.69
2003	¥1,792,869	¥273,404,240	0.66
2004	¥1,830,494	¥284,7463,61	0.64

Notes: * Entries for Industrial Production are based on figures in the Census of Manufactures compiled by the Research and Statistics Department, Ministry of Economy, Trade, and Industry (METI).

Source: Defense of Japan 2006

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APPENDIX D: MAJOR SHIPBUILDING COMPANIES IN JAPAN

Mitsubishi Heavy Industries, Ltd.

Capital	265.6 billion yen
Employees	32,627
Total Sales (consolidated)	2,792.1 billion yen
Defense Sales	241.7 billion yen
Website	http://www.mhi.co.jp

IHI Marine United Inc.

Capital	10.1 billion yen
Employees	2,000
Net Sales	100 billion yen
Defense Sales (consolidated)	34.8 billion yen
Website	http://ihins.ihimaru.co.jp/ihimaru/

Universal Shipbuilding Corporation

Capital	25 billion yen
Employees	3,200
Sales Total	139.7 billion yen
Defense Sales	39.7 billion yen
Website	http://www.u-zosen.co.jp

Kawasaki Shipbuilding Corporation

Employees	1,922
Total Sales	109.6 billion yen
Defense Sales	35.3 billion yen
Website	http://www.kawasakizosen.co.jp/index.html

Mitsui Engineering & Shipbuilding Co., Ltd.

Capital	44.385 billion yen
Employees	3,832
Sales Total	293.987 billion yen
Website	http://www.mes.co.jp

Sasebo Heavy Industries Co., Ltd.

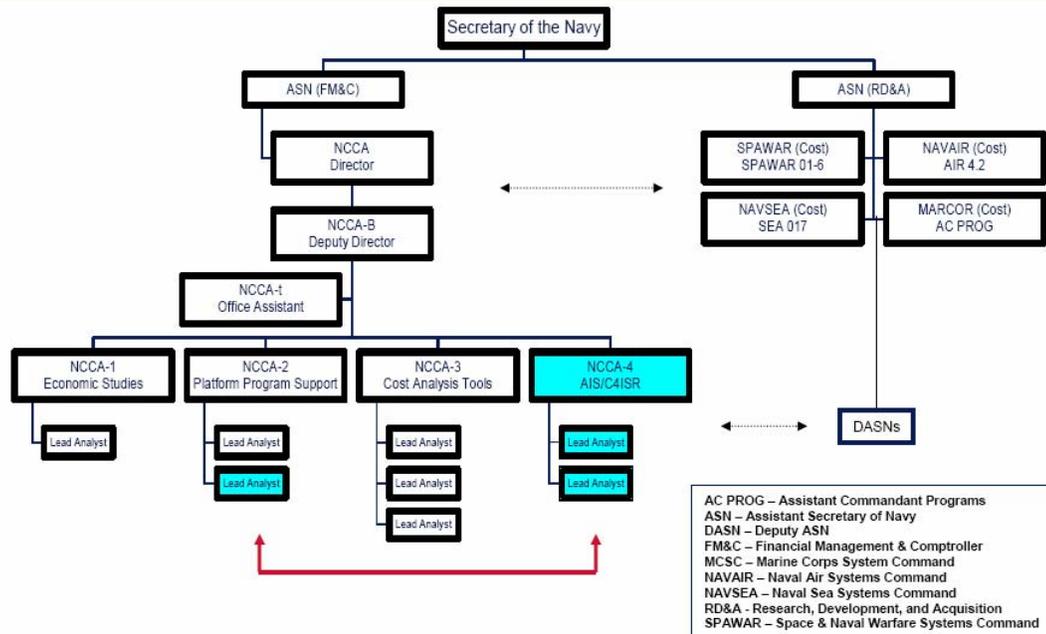
Capital	8.4 billion yen
Employees	1,114
Sales Total	50.4 billion yen
Website	http://www.ssk-sasebo.co.jp

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APPENDIX E: NAVAL CENTER FOR COST ANALYSIS



Organization Current



As of Oct 2006

Unclassified

Source: Naval Center for Cost Analysis

<<http://www.ncca.navy.mil/about/NCCA-4RoadShowWeb.pdf>>

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LIST OF REFERENCES

- "Japan Seeks \$458 Million Sale of Missiles, Upgrades for Aegis Weapon System." *Defense Daily International* 7, no. 23 (Jun 9, 2006): 1,
<http://proquest.umi.com/pqdweb?did=1061606601&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- "Japan Continues Helicopter-Carrying Cruiser Program." *Sea Power* 46, no. 10 (Oct, 2003): 46,
<http://proquest.umi.com/pqdweb?did=441379031&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- "JAPAN: Security Fears Prompt New Naval Roles." *OxResearch* (Sep 25, 2000): 1,
<http://proquest.umi.com/pqdweb?did=551253131&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- Abe, Hitoshi, Muneyuki Shindo, and Sadafumi Kawato. *The Government and Politics of Japan*. Tokyo: University of Tokyo Press, 1994.
- Annati, Massimo. "The Asian DDG Race." *Military Technology* 28, no. 11 (Nov. 2004): 31,
<http://proquest.umi.com/pqdweb?did=770269761&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- Árnason, Jóhann Páll. *Social Theory and Japanese Experience: The Dual Civilization*. Japanese Studies. London; New York: Kegan Paul International; Distributed by Columbia University Press, 1997.
- Beasley, W. G. *The Rise of Modern Japan*. New York: St. Martin's Press, 1990.
- Campbell, John Creighton. *Contemporary Japanese Budget Politics*. Studies of the East Asian Institute. Berkeley: University of California Press, 1977.
- Cummings, Andrew. "The U.S.-Japan Alliance is Vital." *United States Naval Institute Proceedings* 128, no. 3 (Mar 2002): 58,
<http://proquest.umi.com/pqdweb?did=110103011&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- Defense Agency, ed. *Defense of Japan 2005* [NIHON NO BOUEI - BOUEI HAKUSYO]. Tokyo: Gyosei, 2005.
- Defense Agency, ed. *Defense of Japan 2006* [NIHON NO BOUEI - BOUEI HAKUSYO]. Tokyo: Gyosei, 2006.

- Gallagher, Daniel I., Claude Albert Buss, and Edward A. Olsen. "Sea Lane Defense: Japanese Capabilities and Imperatives." M.A. in National Security Affairs, Naval Postgraduate School, 1987.
- Hayes, Louis D. *Introduction to Japanese Politics*. 1st ed. New York: Paragon House, 1992.
- Iida, Yumiko. *Rethinking Identity in Modern Japan: Nationalism as Aesthetics*. East Asia Series Routledge/Asian Studies Association of Australia ASAA, 3. London; New York: Routledge, 2002.
- Institute for Strategic Studies (London, England) and International Institute for Strategic Studies. "The Military Balance 2005/2006." *The Military Balance* (1963-1964-).
- Ishida, Ryota. "An Analysis of Political and Economic Factors that Impact Sustainment of the Japanese Defense Industry." M.S. thesis, Naval Postgraduate School, 2002.
- Ishikawa, Toru. "Japan Maritime Self Defense Force's Enduring Relationship with the U.S. Navy." *Sea Power* 45, no. 12 (Dec 2002): 31,
<http://proquest.umi.com/pqdweb?did=269243261&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- Ito, Hideto and Robert E. Ball. "A Study of the Measures of Effectiveness for the JMSDF Aegis Destroyer in a Littoral, Air Defense Environment." M.S. thesis, Naval Postgraduate School, 1995.
- Iwata, Norio. "Procurement Policy and Defense Industry in Japan." *DISAM Journal of International Security Assistance Management* 21, no. 4 (Summer 1999): 90,
<http://proquest.umi.com/pqdweb?did=45189881&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- Japan Economic Institute of America. *U.S.-Japan Economic Relations Yearbook*. Washington, D.C: Japan Economic Institute of America, 1986.
- Katayama, Satsuki. "National Defense Program Outline in and after FY2005 and Mid-Term Defense Program (FY2005-FY2009)," *The Finance*, Feb 2005.
- Keddell, Joseph P. *The Politics of Defense in Japan: Managing Internal and External Pressures*. Armonk, N.Y; London, England: M.E. Sharpe, 1993.

- Maddison, Angus and Organisation for Economic Co-operation and Development. Development Centre. *The World Economy: Historical Statistics*. Development Centre Studies. Paris, France: Development Centre of the Organisation for Economic Co-operation and Development, 2003.
- Mankiw, Gregory N. *Economics*. 3rd ed. Mason, Ohio: Thomson South-Western, 2004.
- Martin, W. O. L. F. "Asia Needs the Freedom of Its Own Monetary Fund." *Financial Times*, May 19, 2004,
<http://proquest.umi.com/pqdweb?did=638686981&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- Mashiko, Mitsuhsa. "Defense Policy of Japan Maritime Self-Defense Force (JMSDF) in the Early 21st Century." M.S. thesis, Naval Postgraduate School, 1995.
- McCargo, Duncan. *Contemporary Japan*. 2nd ed. New York: Palgrave Macmillan, 2004.
- Minnick, Wendell and Sam Jameson. "Japan Debates Pre-Emptive Strike." *Defense News*, Aug 14, 2006,
<http://www.defensenews.com/story.php?F=2016893&C=asiapac>.
- Motohashi, Toshihiko, Katsuaki Terasawa, and John A. Hosford. "An Analysis of MH-53E Aircraft Maintenance Manpower in Japan Maritime Self-Defense Force (JMSDF)." M.S. thesis, Naval Postgraduate School, 1994.
- Nakamura, Takafusa. *The Postwar Japanese Economy: Its Development and Structure, 1937-1994*. 2nd ed. Tokyo: University of Tokyo Press, 1995.
- Noguchi, Yukio. "The "Bubble" and Economic Policies in the 1980s." *Journal of Japanese Studies* 20, no. 2 (Summer 1994).
<http://links.jstor.org/sici?sici=0095-6848%28199422%2920%3A2%3C291%3AT%22AEPI%3E2.0.CO%3B2-3>.
- Norimatsu, Takeshi. "Management in the Japan Maritime Self Defense Force: The Effects of Japanese Values and Beliefs." M.S. thesis, Naval Postgraduate School, 1997.
- Okada, Noriyuki. "Defense Budget in FY2006." *The Finance*, Feb 2006.
- Okazaki, Hisahiko. *A Grand Strategy for Japanese Defense*. Lanham: University Press of America, 1986.

- Philip, C. O. G. G. A. N. "Inflation Worries are Back on a Rising Curve PHILIP COGGAN THE LONG VIEW." *Financial Times*, Feb 28, 2004, <http://proquest.umi.com/pqdweb?did=554109251&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- REUTERS. "Japan LDP Debates Ability to Hit Enemy Bases." *Defense News* (2006).
- Rosen, Harvey S. *Public Finance*. 7th ed. N.Y: McGraw-Hill, 2005.
- Schick, Allen, University of Maryland, College Park. Center for International Security Studies at Maryland, and Tsukuba Daigaku. *Fiscal Externalities in U.S. and Japanese Budget Policies*. Maryland/Tsukuba Papers on U.S.-Japan Relations. College Park, MD: Center for International and Security Studies at Maryland, University of Maryland at College Park, 1996.
- Shorrock, Tim. "Japan: While Koizumi Breaks Barriers, the Past Lingers on." *Global Information Network* (Nov 24, 2004): 1, <http://proquest.umi.com/pqdweb?did=743538561&Fmt=7&clientId=65345&RQT=309&VName=PQD>.
- Smith, Adam. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Harvard Classics; v. 10. Collier, 1956.
- Tamura, Yuzuru. "The History of Self Defense Force and the National Defense Program Guideline." <http://www.cc.matsuyama-u.ac.jp/~tamura/jieitainoennkakutosinnboutaikou.htm>.
- Tsukigi, Shinji, Katsuaki Terasawa, and Gregory G. Hildebrandt. "External and Internal Factors Shaping the Japan Maritime Self-Defense Force (JMSDF)." M.S. thesis, Naval Postgraduate School, 1993.
- Wile, Ted Shannon. "Sealane Defense: An Emerging Role for the JMSDF?" M.A. thesis, Naval Postgraduate School, 1981.
- Yamamura, Kozo and Yasukichi Yasuba. *The Political Economy of Japan*. Stanford, Calif: Stanford University Press, 1987.

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