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South Korea's Current Status of FMS

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THESIS

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Abstract

South Korea has been threatened by North Korea and surrounded by powerful countries since the Korean War in 1950~1953. One resource that maintains South Korea's security is the strong alliance with the U.S. The primary function of the alliance has been Foreign Military Sales (FMS). As the world circumstances change, South Korea may need more self-reliant defense power that can maintain its security with its own authority.

This thesis looks at where South Korea stands on FMS from the U.S, considering its economy, technology development, military expenditure, and dispute condition using Multiple Regression model. South Korea's current FMS trade amount is compared to the amount predicted by the regression model using data from 2001~2005. The result shows that South Korea imports weapon system through FMS from the U.S much more than is predicted multiple regression model. This means that South Korea is very dependent on the FMS for importing its weapon system.

Acknowledgments

First, I owe a great deal of thanks to my nation South Korea and Army for sending me here and providing me with this wonderful master's program opportunity. I will use this knowledge for my nation.

A debt of gratitude is owed to several people who gave me good advices. First and foremost, I would like to express my gratitude to maj Sonia E Leach. She always tried to understand me and lead me very kindly. And I want to express my big thank to Lt colonel Bradley E Anderson and Dr William K Stockman. Their expertise, advice, and dedication made this effort successful.

Most importantly, I am indebted to my beloved wife for her great sacrifice by supporting and providing me the time to complete this study. Specially, I want to dedicate this effort to my mother who passed away by the time I almost done this effort. She always prayed for me to succeed this program. I will love her forever in my life.

Hyoungill Moon

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I. INTRODUCTION

A. GENERAL

Following its independence from Japanese colonization in 1945, South Korea was put under the U.S military government trusteeship for 3 years until its new government was set up on Aug 15, 1948 (Lee, 2001: 6). At this time, the U.S initiated free military assistance to South Korea. Having gained its independence, South Korea needed to build new defense power to protect itself from North Korea, which was supported by China and the Soviet Union (Chung, 2000: 4).

Since the Korean War (1950-1953), the United States and South Korea have maintained a strong alliance to protect democracy from communism. Because South Korea had no arms-producing capability until the early 1970's, the U.S supported free assistance to South Korea an average of $250 million annually in the period following the Korean War from 1953 to 1973 (Shaw, 1984: 1-2). The U.S and South Korea set up the US-ROK Combined Forces Command (CFC) in Nov 17, 1978 [1] to firm military relationship and have held U.S–South Korea Security Consultative Meeting (SCM) annually to solve and discuss the subjects of security and the military by the Secretary of Defenses of the two countries[2]. This free assistance has changed gradually into Foreign Military Sales (FMS) since the 1973. South Korea's economy has grown stronger (Jang, 2004) and has begun to have its own capability for producing weapon systems with U.S financial and technical support (Shaw, 1984: 3). South Korea has expended a great amount for its weapon systems. Because of the strong alliance between the U.S and South Korea,

[1] . USFK Home page: www.usfk.mil/usfk/index.html/org/cfc.html
[2] . World Wide Web source: http://terms.naver.com/item.php?d1id=7&docid=8481

and the special defense system of the U.S, South Korea's major military deals and trades have primarily been with the U.S. However, the military and political dynamics of Northeast Asia are changing and South Korea has started to give serious consideration to diversifying its buyer countries. Considering the relationship with China and Japan for the unity of Korea in the future, South Korea needs its own strong defense technology and industries in order to keep the unity (Chung, 2000). China and Japan invaded Korea many times historically and have disputed the exclusive economic zone (EEZ) up to now[3].

B. PURPOSE OF THE STUDY

South Korea has imported weapon systems through FMS for a long time and FMS has been the foundation of the alliance between the U.S and South Korea. However, as South Korea continues to grow its economy and technology and changing security environment in the world, there are suggestions that South Korea needs self-defense military power to cope with new threats in the future. Therefore, it is necessary to understand where South Korea stands on the weapon system trade with the U.S. The purpose of this study is to investigate how much South Korea should invest in the importation of weapon systems through FMS, as predicted by its Technology level development, increasing Military Expenditure, and dispute environment as its economy grow stronger and as compared to estimating that amount using a regression model. This study will also examine the relationships between the amounts of FMS and each condition; Economy, Technology, and Military Expenditure.

C. BACKGROUND

3. Chosun newspaper, *Dokdo-Endless dispute*, Aug 21, 2006.

1. Historical and geographical situation of South Korea

Through history, Korea has experienced invasions from powerful countries. Korea, both South and North, was under the colonization of Japan for 36 years (1910-1945). It has also been invaded by China, Mongolia, and numerous times by Japan. This long history of invasions has caused South Korea to develop its own power in order to protect itself. This defense system desired by South Korea is not simply for an immediate need, but also an inevitable necessity (Kim, 2001).

Geographically, Korea is surrounded by the most powerful countries in the world, such as Japan, Russia, and China. The U.S., the most powerful military country in the world, has also stationed its strong troops at South Korea and Japan. In response to North Korea's constant threat and confrontation, South Korea should construct strong military power in order to prevent future national security problems. From the recent dispute with Japan for the *Dokdo*[4], South Korea realized again that it will not be able to live without self-defense power in the future (Bak, 2005).

2. Military buildup on Northeast Asia

The military buildup of countries surrounding the Korean peninsula is definitely one main factor to consider. Table 1 shows the expenditure these countries have spent for their national defense. And as we can see, 4 of the top 10 countries on this list engage in military actions near the Korean Peninsulas (Russia has not published its expenditures). This situation in the peninsula is a concern for South Korea.

[4] . Name of small island placed between South Korea and Japan.

Table 1. Military Expenditures rank orders

Rank	**Country**	**Military expenditures** (Billion dollars)	**Date of Information**
1	United States	518.100	2005 est.
2	China	81.470	2005 est.
3	France	45.000	2005
4	Japan	44.310	2005 est.
5	United Kingdom	42.836	2005 est.
6	Germany	35.063	2003
7	Italy	28.182	2003
8	Korea, South	21.050	2005 est.
9	India	19.040	2005 est.
10	Saudi Arabia	18.000	2005 est.
:	**:**	**:**	**:**
22	Korea, North	5.000	FY02

Source: Central Intelligence Agency(CIA), The World Factbook, 2005.
(www.cia.gov/cia/publications/factbook/rankorder)

Moreover, China and Japan, which have had historical troubles for a long time with Korea, have increased military expenditure continually as shown in Figure 1. Although they already have strong military power present, they have tried to develop their power constantly.

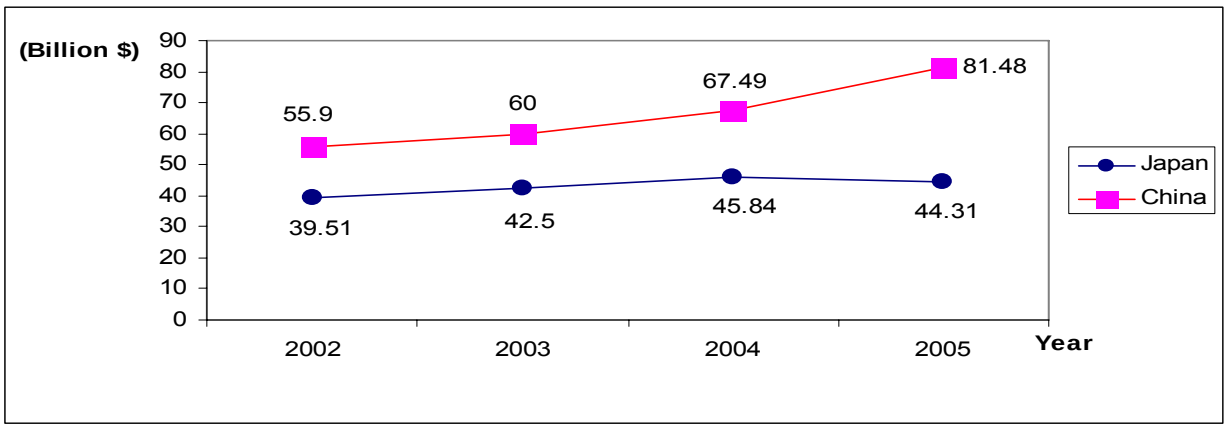

Figure 1. Increasing of Military expenditures – Japan, China

Source: Central Intelligence Agency (CIA), Ibid.

In particular, South Korea is under continuous threat from North Korea, which claims to have increased its military power in recent years despite its poor economy (Lee, 2001). North Korea

has also threatened South Korea and alliances with nuclear bomb experiments.

3. Limitation of reliance on the U.S

South Korea has been very dependent on the U.S for its military and defense, and the U.S stationed 36,000 armed forces in South Korea (Lee, 2005). However, this has been changed in the recent years because the U.S. has considered replacement of its armed forces stationed on foreign countries (GPR: Global force Posture Review)[5]. After the World War Ⅱ, the U.S. stationed its troops at Western Europe and North East Asia to cope with threat of communism. However, as the world security environment has changed after the Cold-War, the U.S needs to modify its strategy for managing troops stationed in allied countries. This is to cope with new threats such as terrorism or Weapons of Mass Destruction (WMD). As a part of this plan, the U.S. already transferred the 3,600 armed forces of U.S. army 2nd Division stationed in South Korea to Iraq in August 2004 since the aggravation in Iraq war. Another 9,000 troops will be withdrawn from South Korea to the U.S by 2008 (Lee, 2005).

In addition to this, the negotiation about handing over the wartime operational control (OPCON) by 2009 through 2012 has already started between the U.S. and South Korea (Bush, 2006). Up to now, the U.S. has had the strategy in which it executes the war while controlling South Korea's forces in the Korean Peninsula. However, South Korea should carry out the war with supporting from the U.S. after withdrawing the authority of operational control.

4. Endeavor of military buildup for self-defense

1) Present government's direction for military buildup

[5]. U.S Department of State, *Foreign Press Center Briefing*, Washington DC, Aug 16, 2004. (http://fpc.state.gov/fpc/35246.htm)

The South Korean President currently in office has advocated reform policies of military defense from the inauguration (Lawless, 2006). Traditionally, self-reliant defense had been desired to enable a nation to protect itself by one's own power alone. However nowadays, it is impossible to protect a nation by oneself and cooperation with friendly nations is needed (Lee, 2005).

To secure peace of the Korean peninsula, the present government of South Korea established strong self-reliant defense power as well as sustaining alliance with the U.S firmly as the goal. That is to say, the national security points of *cooperative-self reliant defense* are management of alliance and strengthen nation's defense. In particular from the view of self-reliant defense, it is crucial that South Korea develop the necessary war potential to control North Korea's military power (Lee, 2005).

2) Opening new agency for acquisition[6]: DAPA

In Jan 2006, the South Korea government established a new agency called the Defense Acquisition Program Administration (DAPA), which will charge provision military supplies and acquire weapon system from foreign countries. This project originated in 2003 as part of military reform because South Korea realized that efficient weapon system acquisition is the foundation for making strong military power. DAPA was set up to integrate several departments dispersed at Ministry of National Defense, army, air force, and navy.

There were reasons that South Korea established DAPA. Among them, shrinking of R&D because of importing weapon system is the prime point. The increasing number of weapon systems imported from foreign countries results in a weakened South Korea's R&D and military industry.

[6] .DEFENSE&TECHNOLOGY, KOREA, Vol .323, Jan. 2006.

For overcoming these problems, DAPA established two objectives[7]. The first objective is to increase R&D instead of purchasing from foreign countries if circumstances allow. To do this, DAPA will combine academy with industry to develop core technology. And the second objective is to promote transparent procedures and efficiency. DAPA will pursue getting technology more with offset to improve its technology if it buys the weapon systems from foreign countries. From these fundamental concepts, South Korea will increase R&D as well as strive for growing domestic military industries.

3) Defense reform 2020[8]

South Korea government setup the plan reforming defense structure for preparation *cooperative self reliant defense* by 2020 including project about possessing new and core technology weapon system for showing real strong self-reliant defense. The points are that secure information collecting ability for free from depending on the U.S information system and have operational power executing war by one's own ability.

This implies that South Korea will need so much new technology and weapon system in the future. These new weapon systems will be equipped both by R&D domestic and by purchasing from foreign developed countries include FMS.

4) Need for independence of South Korea military

No country is able to defend itself without any support and alliance from other countries. This is also true in the case of South Korea. There are always some mutual benefits and interests behind any alliance and military ties. But no alliance is strong and long-lasting (Seo, 1997). For example, we saw how Vietnam collapsed under the communist regime in the1970's. Vietnam was very dependent on the U.S but after the withdrawal of the U.S troops, it subsided eventually

[7] .Defense Acquisition Program Administration (DAPA). *Introduce DAPA for active duty officers*, South Korea, Apr, 2006.

[8] . Dong-A Newspaper, South Korea, July 11, 2006.

because they did not have any military buildup of their own. South Korea might follow the same path if it does not start developing its own independent military power, because it can no longer exclusively rely on the alliance with the U.S in the future (Ro, 1975).

Moreover, it is the time to look again at our military strategies and policies because of the recent changes both in the world and region. South Korea's priorities in military and politics have changed drastically in general. It does not need now the simple weapon system that was provided by the U.S. in the early 1960s. Rather, South Korea needs to have high technology weapon systems from the U.S. in order to keep the alliance strong and cope with future circumstances (Seo, 1997).

It also had to do a lot with North Korea, the main enemy for South Korea still today. However, there might come the time soon in near future when the two Koreas would unite. If so, what countries would be the main enemies for Korea in the future? As stated above, China and Japan could build an alliance and change the whole dynamic not only in the whole Northeast Asian region, but also in the world. (Kwun, 1999).

To avoid these inevitable future problems mentioned above, South Korea definitely needs to have its own military buildup and power soon.

D. HYPOTHESIS

The main issue in this study will be South Korea's FMS trade. In order to investigate FMS, the relationship between FMS and Economy, Technology, Military Expenditure will also need to be investigated. To set hypothesis for verifying, I consider the cases about developing countries such as China, India, and South Korea. China is the fastest growing economy in the world, with

what may be the fastest growing military budget (Kristof, 1993). Actually, China has increased its military budget, and bought many weapon systems from Russia as growing economy. India is the same case. As growing India economy, it increased its military budget and importing weapon system (Kelly, 2000). As economy has been increased, technology levels raise also as we can see amazing growth of Technology in India as growing economy (Stahl, 2006). In case of South Korea, it has invested on the R&D and increase military budget as its economy grows (Jung, 2002).

From this previous research, we can know that a nation's Technology and Military Expenditure tend to increase as a nation's economy becomes stronger and can be considered to be related to Economy, Technology, and Military Expenditure. So, I set the following hypotheses.

1. The relationship between Economic development and the amount FMS is positive
2. The relationship between Technology development and the amount FMS is positive
3. The relationship between Military Expenditures and the amount FMS is positive
4. The amount of FMS of South Korea is beyond the level of its economic development, technology development, Military Expenditure level, and dispute probability.

Ⅱ. LITERATURE REVIEW

A. INTRODUCTION

The South Korea Airforce is a big recipient of FMS. It acquires many weapon systems from foreign country, and the FMS program makes up 72% of all foreign imports (Lee, 2001: 4). Therefore, much research has been done on FMS extensively in South Korea as well as in the U.S.

In this research, I will study the amount FMS and Economy, Technology, Military expenditures and dispute condition. To do this, I will investigate FMS policy, process, and its overall effect on South Korea. In this chapter, I will review previous studies and research to explain FMS definition, development history, especially the U.S. Security Assistance Program, and internal/external problems. Next, I will look briefly at the history of military transfer development between the U.S and South Korea. Finally, I will check the validity using GDP and Patents as factors for a regression model.

B. UNITED STATES FOREIGN MILITARY SALES PROGRAM OVERVIEW

1. What is Foreign Military Sales (FMS)

Foreign Military Sales (FMS) is defined as a process through which eligible foreign governments and international organizations may purchase defense articles and services from the United States Government[9]. It is the largest program of the overall U.S security assistance program[10]. In regard to FMS, the FMS customer country is the buyer and the U.S government is

[9] . FMS Customer Financial Management Handbook, 1981.

the seller. The U.S government provides the articles or services from stock, but often will issue a contract with industry to acquire the items or services for subsequent delivery to the FMS customer. In this case, the U.S government is acting on the FMS customer's behalf (DISAM, 2003: 234).

Then why does the U.S. government have a FMS program? There are many reasons. Since World WarⅡ, the United States has provided various forms of security assistance to other nations in furtherance of the principle of collective security. In furtherance of this principle, section 1 of the Arms Export Control Act (AECA) establishes the rational for FMS:

> *The Congress recognizes…that the United States and other free and independent countries continue to have valid requirements for effective and mutually growing cost and complexity of defense equipment, it is increasingly difficult and uneconomic for any country, particularly a developing country, to fill all of its legitimate defense requirements from its own design and production base*(DISAM, 2003: 53).

The FMS program was legislated by the Foreign Assistance Act (FAA) of 1961 and the Arms Export Control Act (AECA) of 1976 (Najmuddin, 2004). We can see that the reasons for executing and developing FMS are three viewpoints. First, to secure the democratic nations' peace and security confronting with the communism. Next, to get economic benefit from developing military industrial base and exporting weapon system to the alliances. And finally, to maintain military industrial base which will be able to supply large amount of weapon systems to secure the U.S security in the future (Jacob, 2001).

To understand the role of FMS today, I should first look at the origins of arms sales during

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[10] . Other program elements include : The military Assistance Program(MAP); The international Military Education and Training Program(IMETP); the Economic Support Fund(ESF); and Peacekeeping Operations(PKO).

parts of the 20th Century.

2. FMS historical perspectives

The military support to the foreign alliances by the U.S. began on World War Ⅱ. The United States has always maintained non-entanglement and non-commitment policies from outer war[11]. However, in 1939 Congress revised the "Neutrality Act," thereby permitting the sale of arms during peacetime to the British on a cash-and –carry basis. The next major U.S. decision to the British was the "Lend-Lease" program initiated by an Act of Congress on March 11, 1941. Lend-Lease eventually supplied about $50 billion of arms, food, and other aids to Allies, including, as they became engaged in the war, the Russians and the Chinese (DISAM, 2003: 17-20).

Table 2. Change policy for weapon sales

Periods	President	Situation / Basic Policy	Practice
1945's~1950's	•Truman •Eisenhower	•Check from threat of Communism •Protect Alliances	• The methods for protecting from Soviet. • Stockpiles of surplus : free of charge
1960's	•Kennedy •Johnson	•The policy of "massive retaliation" against Soveit • Improve revenue •Reduce stockpile post war	• Change free→pay • Sales promotion actively to the according to the country's ability
1970's	•Nixon •Ford •Carter	• Control the sales weapon	• Negative perspective for weapon sale • Make regulations Congress permission •Continue sale to sustain check for communism and relationship with alliances
1980's	•Reagan	•Arms transfer as an essential element global defense policy •Improve the U.S economy by stable defense production base	• Increase sales weapon •Reinforce military capabilities to assist in the deterrence of aggression from the USSR
1990's	•Bush •Clinton	•Collapse Iron Curtain •Serious domestic economic problem •mutual burden	•New arms transfer policy include the promotion of control and transparency • The excess sales weapon is negative for U.S security

Source: DISAM, Ibid, pp.20~38.

[11] . DISAM, Ibid, p.1.

After this, the U.S. changed the FMS policy coincidence with changing the world environment situation. And, there always has been a big premise. That is, the U.S' security (Hebert, 1998). We can see the change of weapon sales by period in Table 2.

This FMS program is based on the U.S. Security Assistance Program which includes general defense services. It is necessary that we should know the change of the Security Assistance Program, given in Figure 2, to understand FMS program more.

Figure 2. U.S. Security Assistance Program change

Source: Lee, Seung chun, Research for FMS forward plan, 2001, p.7.

The U.S. Security Assistance program was started by "Lend-Lease program" in 1941. It was amended to Mutual Security Act in 1951, Foreign Military Sales Act in 1968, and reformed as Arms Export Control Act in 1976.

1) Foreign Assistance Act (1961)[12]: FAA

The Foreign Assistance Act was made by amending the previous Act which assisted the military and economic programs. Foreign Assistance Act stated clearly that the U.S. security might be strengthened more by ensuring the alliances' security. By this Act, the U.S. could provide all the assistances such like lease, exchange, free charge military aids, loan, and sale without limitation if needed

2) Foreign Military Sales Act (1968)[13]: FMSA

The Foreign Military Sales Act was made by separating Military sales from the Foreign Assistance Act. Before 1968, the basis authority for foreign military sales was the FAA. This Act enabled the U.S. legalized unit law for defense material sale including co-production to the alliances and the international organization.

3) Arms Export Control Act (1976)[14]: AECA

The Arms Export Control Act of 1976 changed the title of the FMSA to the AECA. This 1976 Act also repealed the Mutual Security Act of 1954 (which provided authority for commercial licensing through the International Traffic in Arms Regulation); this authority was placed in a new Control of Arms Exports and Imports of the AECA which governs the licensing and sale of items through direct commercial channels. The AECA is the statuary basis for the conduct of foreign military sales and the control of commercial sales of defense articles and services. And Arms Export Control Act of 1976 changed the title of the FMSA to the AECA. This Act makes clear that the U.S. can exercise initiative for reducing trade weapon system between countries in

[12] . DISAM, Ibid, p.55.
[13] . Lee, Ibid, p.7-8.
[14] . DISAM, Ibid, p.55.

the World and present FMS policy comply with this Act.

3. The FMS Organizations and process

1) U.S government organizations for FMS[15]

An awareness of the U.S government organizations involved in FMS is crucial to understanding FMS because it is a large, complex program which cuts across several U.S government organizational lines.

(1) Department of State

In accordance with section 2 of the AECA (Arms Export Control Act), the Secretary of State is responsible for:

- The continuous supervision and general direction of sales (FMS) and commercial exports licensed under the AECA
- Determining whether there shall be a sale to a country and the amount

And the under Secretary of State for Security Assistance, Science, and Technology is the principal advisor and focal point for security assistance(including FMS) matters within the Department of State.

(2) Department of Defense

The overall security assistance program is under the supervision and general direction of the U.S. Secretary of State. However, the Secretary of Defense is responsible for administering certain security assistance program elements, one of which is FMS. In accordance with the AECA, the Secretary of Defense has primary responsibility for:

- The determination of military end-item requirements

[15] . DISAM, Ibid, pp. 85~104.

- The procurement of military equipment in a manner which permits its integration with service programs
- The supervision of the training of foreign military personnel
- The movement and delivery of military end items
- Within the Department of Defense, the performance of any other functions with respect to sales and guarantees

(3) Department of Treasury

The Department of Treasury is involved in FMS in the following ways:

- Receiving and reviewing periodic reports of accountability from the Security Assistance Accounting Center (SAAC)
- Overseeing the functions of the Federal Financing Bank (FFB) which provides guaranteed loans to finance FMS and commercial export sales
- Setting the rate of interest in the event of FMS payment arrearages on the part of the foreign government

(4) Congress[16]

The Congress of the U.S. is vested with all legislative powers. With regard to conventional arms transfers/sales, which constitute a major dimension of the U.S security framework, the Constitution assigns Congress the power to regulate commerce with foreign nations. In terms of FMS, Congress has the authority for approving sales of MDE[17] (Major Defense Equipment).

[16] . Lee, 2001, Ibid.
[17] . MDE(Major Defense Equipment) : total over 50milion dollars / per unit, over 200milion dollars construction

(5) Defense Security Cooperation Agency (DSCA)[18]

DSCA is the main agency for managing FMS. It is established as a separate agency of the DoD under the direction, authority, and control of the Under Secretary of Defense for Policy and receives policy direction and staff supervision.

The principal functions of DSCA include:

- Making determinations with respect to the allocation of FMS administrative funds
- Conducting international logistics and sales negotiations with foreign countries
- Serving as the DoD focal point for liaison with U.S. industry

In addition to above, there are many separate agencies which connect with FMS. And these organizations play a crucial role for granting and managing FMS. These organizations and processes are operated in the system of Security Assistance. The summary of government organizations for Security Assistance is shown in Figure 3.

2) FMS Process[19]

Many of the literature discussed above in various phases. However, the author will mention the core briefly and show by figure in this study. The FMS process is divided into three supporting processes like below.

(1) Letter of Request (LOR) / Offer (LOO) process

LOR is a formal diplomatic letter requesting articles, military construction, or other services submitted by an eligible foreign country. LOR must be reviewed and validated by the military department, Defense Security Cooperative Agency (DSCA), and the Department of State, to

[18] . DISAM, The Management of Security Assitance, 23th edition, 2003, p.95.
[19] . DISAM, Ibid, p.151~175.

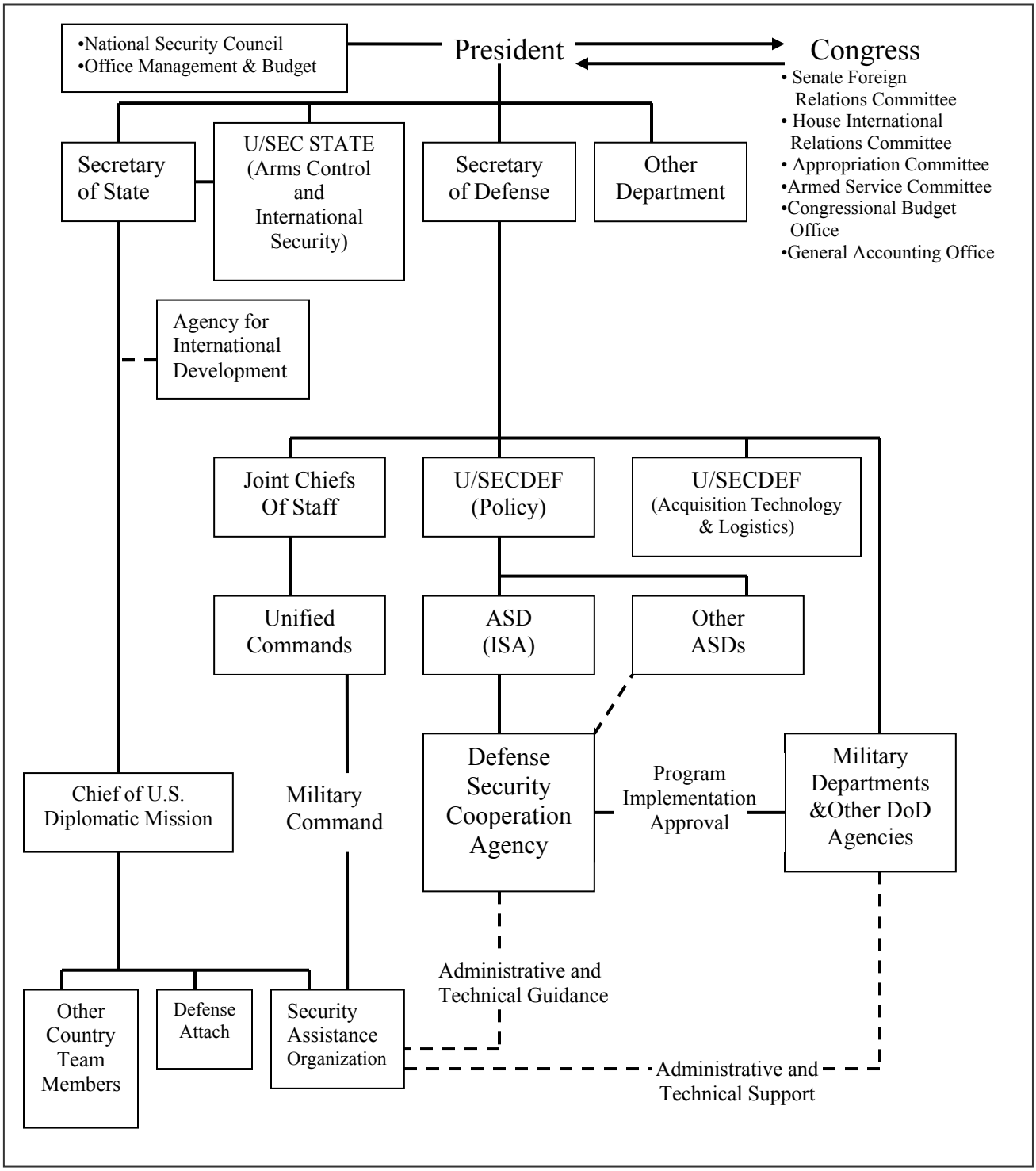


Figure 3. United State Government Organization for Security Assistance

Source: DISAM, Ibid, p.86.

ensure that the prospective FMS purchaser is eligible, that the articles/services may be sold, and that the request went through proper channels.

After LOR is approved, the IA (Implementing Agency, e.g., U.S Army, AF, Navy, etc.) definitizes the Purchaser's requirements in the form of a Price and Availability (P&A) data worksheet and develops a Letter of Offer (LOO). The price is developed in accordance with current pricing practice and is based upon the IA's understanding of the customer's requirements.

The Purchaser, in accordance with the stated terms and conditions on the LOO, agrees to pay all costs once determined.

(2) Letter of Acceptance (LOA) / Implementation process

Once the FMS Purchaser accepts/signs the LOO, it becomes a Letter of Acceptance (LOA). Upon receipt of the signed LOA and, if required, an initial deposit, SAAC (Security Assistance Accounting Center) is in position to issue Obligational Authority (OA) to the IA. OA enables the IA to prepare requisitions that will result in Material Release Orders (MROs). Most FMS cases are implemented by means of an IA implementing directive.

(3) Execution/Performance Reporting process

Performance on a FMS case is demonstrated to the FMS purchaser through receipt of status cards or the quarterly requisition report from the IA, or the reporting of the performance/delivery in the Delivery Listing accompanying each quarterly FMS Billing Stagement.

The FMS process and periods are described like in Figure 4.

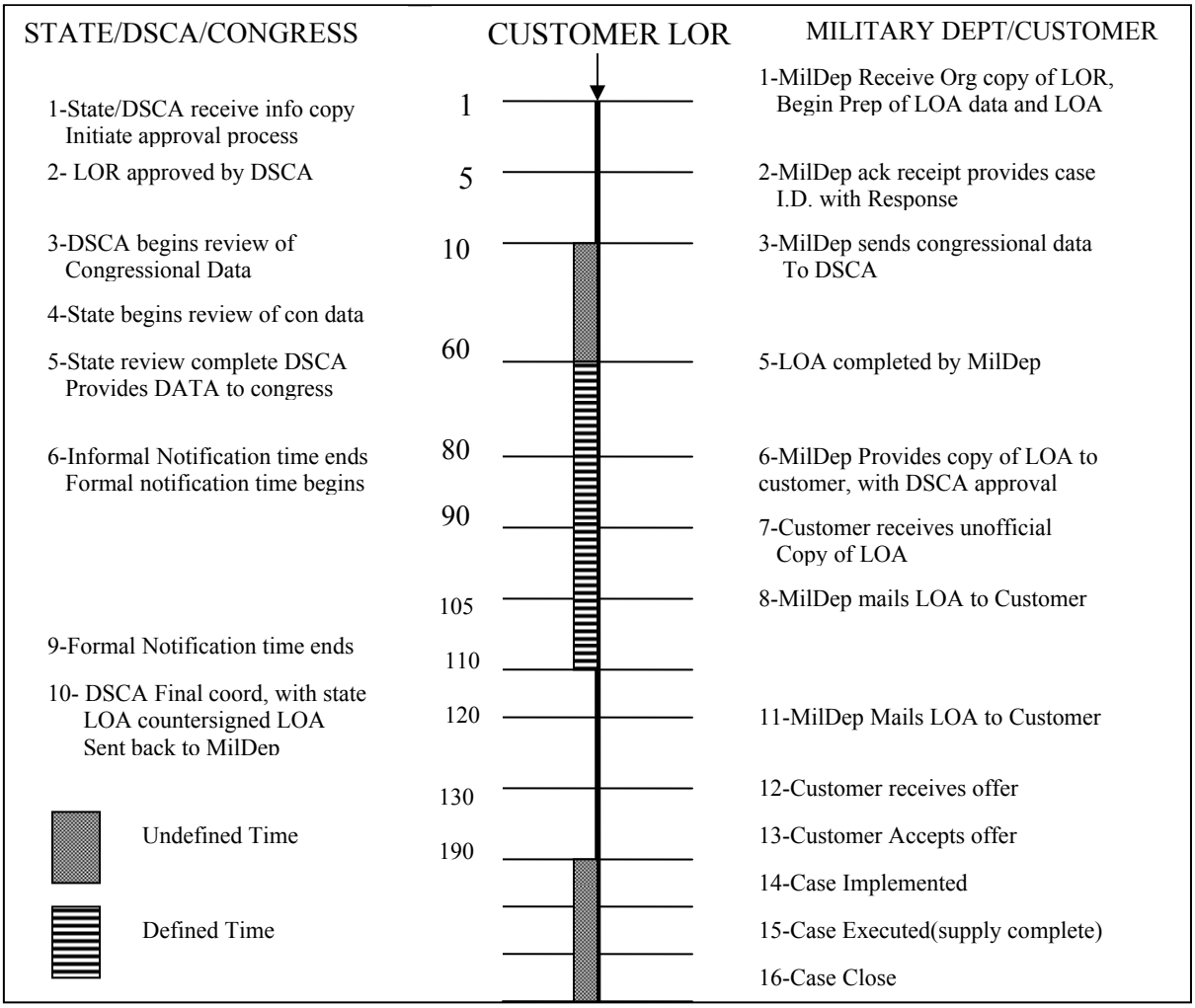


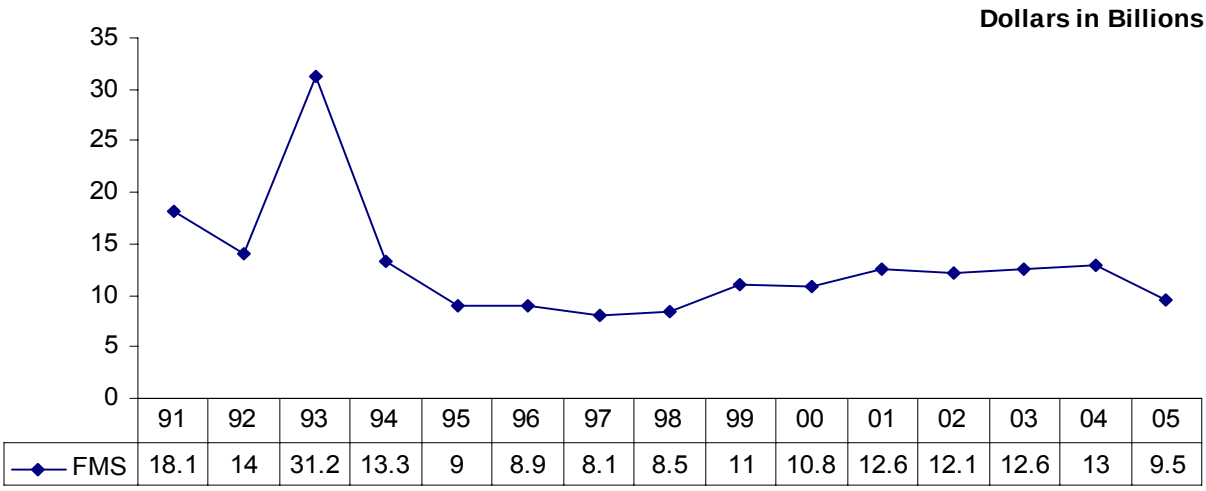
Figure 4. FMS Process (Days)

Source: Gultekin, Foreign Military Sales versus Direct Commercial sales, 1998, p.35.

4. Reform of FMS[20]

As the Cold War era ended, there were big changes in the cognition of FMS because together with varying international weapon system market, each country experienced domestic problems. The purchasers expressed their dissatisfaction including lack of distrust at the FMS policy (Beauchamp, 2001). This dissatisfaction resulted in the decrease of purchasing amounts. The trend of FMS purchase is given in figure 5.

[20] .Beauchamp, Transforming FMS for The 21st Century, The DISAM Journal, winter 2001-2002.



	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05
FMS	18.1	14	31.2	13.3	9	8.9	8.1	8.5	11	10.8	12.6	12.1	12.6	13	9.5

Figure 5. Trend of FMS by Years

Source : DSCA(Defense Security Cooperation Agency) Factbook, 2005, p.6.

As we can see from the figure above, after the Cold War in 1990, the FMS sales decreased to 1998 constantly except FY1993[21] before U.S government began the FMS reform. To meet these world defense trade environment, DSCA (Defense Security Cooperation Agency) has devoted all its strength to FMS policy revolution.

FMS reform was initiated with organizing DPACT (Defense Policy Advisory Committee on Trade) and IPT (Integrated Process Team) in May 1998, by former Under Secretary of Defense Dr.John Hamre. Thereafter U.S government began full-scale reform in April 1999, and emphasis on the importance of FMS reform constantly.

The main goals of the FMS reform are to shorten operating cycle and most suitable of all the relevant agencies, improve service quality to the purchase countries, make flexible business process environment, increasing purchases' voice in the process, and improve U.S. government'

[21] .Bill Clinton assumed the Presidency in 1993. The Clinton government was encouraging U.S embassies to actively assist U.S.marketing efforts overseas to boost the U.S. economy. This was interpreted to include aiding U.S .civilion defense contractors in the pursuit of direct commercial sales and foreign military sales of defense articles, services, and training overseas. FY1993 FMS sales topped $31billion. Those sales kept U.S. production lines open and defense industry employment up.
DISAM.Ibid, p.30.

competitiveness and status.

B. FMS AND SOUTH KOREA

1. FMS between the U.S and South Korea

The South Korea military used Japanese war trophies and stockpiles of U.S. after World WarⅡ in 1946~1950, then it was dependent on aids from alliances during the Korea War in 1950~1953. From 1954, it received free charge military support from the U.S. on the U.S.-R.O.K. Mutual Defense Treaty[22] to 1960. However, this free charge military support changed into payment support in the beginning of 1961, then changed into the FMS again in 1973 (Lee, 2001).

The trend of weapon system transfer between the U.S. and South Korea is given in Table 3.

Table 3. Defense material procure and U.S. Security Assistance change

Periods	Defense material procure from U.S	U.S. Security Assistance
1946~1950	Stockpiles of U.S. after World WarⅡ	
1950~1953	Aid from the U.S. and Alliances	Mutual Security Act, 1951
1954~1960	MAP (Military Assistance Program) and Loan	
1961~1972	MAP and FMS	Foreign Assistance Act, 1961 Foreign Military Sales Act, 1968
1973~Present	FMS	Arms Export Control Act, 1976

Source: DISAM, Ibid, p.55.
Kim, seayoun, A study on the Improvement plan of the FMS system, 2001, p.9.

[22] . Since the end of the Korean War, the United States has committed itself to the security of South Korea. In the 1954 U.S.-R.O.K. Mutual Defense Treaty, the United States commited to help the Republic of Korea defend itself from external aggression. In support of this commitment, the United States currently maintains about 36,000 service personnel in Korea, including the Army's Second Infantry Division and several Air Force tactical squadrons.
Source : Federation of American Scientists
(http://fas.org/asmp/profiles/south_korea.htm#Arms%20Sales%20Tables)

2. Problems of FMS

South Korea has bought the weapon system from the U.S in two ways; Foreign Military Sales (FMS) and Direct Commercial Sales (DCS[23]). Of these two, FMS account for about 85.4% of all the importing weapon system until now (Jung, 2001: 12). That is to say, South Korea imports most of weapon system through FMS.

However, there has been a little change on the acquisition way different with past because South Korea feels that there are some difficulties negotiating with the U.S. in the current FMS policy. Therefore, there have been many studies indicating the FMS program problems from the view of South Korea. Lee (2001) indicates that there is big cognition gap between the two countries. The point is that, the U.S. Government considers the FMS just as a means to security assistance. So, if the South Korea chooses the FMS between the FMS and DCS, the U.S. Government believes South Korea ought to follow the FMS policy and procedures. On the other side, South Korea considers the FMS as means to acquire weapon system like DCS. Therefore, South Korea wants to exercise its privilege as a buyer's standpoint while negotiating on the price of weapon system and offset. However, because the FMS is lacking in flexibilities, South Korea seeks for other means in which South Korea can negotiate more easily like DCS or other countries suggesting better favorable terms[24].

Kim (2001) and Jung (2003) said that this kind of problem is based on the FMS policy itself. The buyer countries including South Korea indicate the inequity in the LOA Standard Terms and

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[23] . DISAM, Ibid, p.49.
Direct Commercial Sales (DCS) licensed under the AECA of 1976 is a sale made by U.S. industry directly to a foreign buyer. Unlike the procedures employed for FMS, DCS transactions are not administered by DoD and do not involve a government-to-government agreement. Rather, the U.S. Governmental 'control' procedure is accomplished through by the Office of Defense Trade Controls in the Department of State.

[24] . Maj Ji Man Roh, ROK Air Force,(Interview, Nov 6, 2006).
He graduated ROK Airforce Academy in 1990 and had worked at South Korea acquisition agency as FMS Officer to 2006. And he has served as a liaison officer between the ROK military attached to an embassy and USAFSAC(U.S. Airforce Security Assistance Command) since Aug ,2006.

Conditions. This policy contains several sections being disadvantageous to the purchasers. The U.S. Government prescribes its principle role as the U.S. Government will use its best efforts to provide the items. But it also sets down that the U.S. Government reserves the right to cancel or suspend all or part of contract when the national interest of the U.S. requires although it shall be responsible for termination cost. This means that the U.S. can revise the contract one-sidedly without purchaser's opinion[25]. In addition, the purchaser should undertake to indemnify for all the risks and losses during process on the procurement[26] and charge the total cost to the U.S. Government of the items even if costs exceed the amounts estimated in original LOA.[27]

Park (2001) studies the inequality in the treatment as FMS big buyer. As we can see Table 4, South Korea is the fifth of all the FMS purchase countries. However, South Korea does not think that it is treated as big buyer comparing to North Atlantic Treaty Organization (NATO) members, Australia, Japan, and New Zealand which even do not rank in top 10. These countries have received

Table 4. The main FMS buyer records (Agreement)

Rank	**Country**	**Amount** (Dollars In Millions)
1	Saudi Arabia	68,125
2	Egypt	28,363
3	Taiwan	27,985
4	Israel	27,014
5	South Korea	15,633
6	United Kingdom	15,277
7	Japan	14,876
8	Turkey	14,670

Source: DSCA Factbook, Ibid, p.2~10.

[25] . Letter of Offer and Acceptance(LOA) Stnandard Terms and Conditions, [Section 1]: United states Government Obligation

[26] . Letter of Offer and Acceptance(LOA) Stnandard Terms and Conditions, [Section 3]: Indemnification and Assumption of Risks.

[27] . Letter of Offer and Acceptance(LOA) Stnandard Terms and Conditions, [Section 4]: Financial Terms and Conditions.

several favors from U.S. Government. For example, the period of Advance Congress Review[28] for these countries is just 15 days. But the other hand, other countries including South Korea it takes 50 days [29] .This period may affect the maintenance of war potential. And FMS Administrative Surcharge[30] which is imposed to the purchaser countries for executing FMS procedure is 3.8%[31] of the case, but NATO members are exempted from this charge [32]. Among the NATO members, there is no country that purchases weapon system through FMS than South Korea as we can see from Table 4. The principal countries buying weapon system through FMS are in the Middle East Asia and Northeast Asia include of South Korea.

C. MILITARY OFFSET AND TECHNOLOGY TRANSFER

1. What is offset in FMS program

The term offset is defined like this,

A myriad of compensation practices required by a foreign purchasing government as a condition attached to the sale of defense articles or services (Herbert, 1998)

The intent of these arrangements is to decrease the impact of expensive weapon systems on the buyer's balance of payments and to provide the buyer with other advantages. The meaning of the term offset encompasses the entire range of industrial and commercial benefits provided to

[28] . The President shall submit a numbered certification to the Congress before issuing LOA to sell defense articles or services for $50 million or more, or any design and construction services for $200 million or more, or major defense equipment for $14 million or more.
[29] . DISAM, Ibid, p.69.
[30] . The Arms Export Control Act(AECA) requires the U.S.Government to recover the full estimated cost of administration of FMS. The AECA mandates collection of a percentage-based Administrative Surcharge on FMS cases to recover all applicable U.S. costs to execute, manage, and oversee the FMS program. (Keith B.Webster, *Security Assistance Charge Roll-out Briefing*-Public release, Security Cooperation Agency, Mar 15, 2006,p.1.)
[31] . Webster Keith B. Ibid, p.15.
[32] . DISAM, Ibid, p.73.

foreign governments as an inducement or condition to purchase military goods and service including such benefits as coproduction, licensed production, subcontracting, technology transfer, in-country procurement, marketing, financial assistance, and joint ventures (DISAM, 2003: 246)

2. Type of Offset (Direct vs. Indirect) and Technology Transfer[33]

Offset is divided into Direct and Indirect offset. And in the direct category, there is Technology Transfer which South Korea wants to get as offset the most. Let's look at these three definitions.

- Direct offsets- *A form of compensation to a purchaser involving goods which are directly related to the item being purchased.*

As an example, as a condition of a U.S. sale to a foreign purchaser, the U.S. contractor may agree to permit the purchaser to produce in its country certain components or subsystems of the weapon system the country is purchasing.

- Indirect offsets- *A form of compensation to a purchaser involving goods which are unrelated to the item being purchased.*

As an example, as a condition of a U.S. sale, the contractor may agree to purchase certain of the customer country's manufactured products, agricultural commodities, raw materials, or services.

- Technology Transfer – *The transfer of technology occurs as a result of an offset agreement (other than coproduction and licensed production) that may take form of research and development conducted in the buyer country, technical*

[33] . DISAM, Ibid, p.283.

assistance provided to the subsidiary or a joint venture in the foreign country between the U.S. manufacturer and the foreign entity

3. Case study

1) Success Offset – Korean Fighter Program

KFP was a good example of successful direct offset in 1991. South Korea needed new Fighter for the purpose of substituting old F-4 Phantom Fighter as well as wanted to get technology for making new training jet plane.

South Korea purchased twelve F-16 C/D fighters from General Dynamics (subsequently purchased by Lockheed), as well as 36 aircraft "kits" to be assembled in South Korea. Later it produced additional 72 F-16S under license (Hebert, 1998). And South Korea has capability which could make T-50 training plane which supported by Lockheed in 2001[34].

2) Negotiation offset Fail between the U.S and South Korea– Korean Helicopter Program[35]

In December 2005, instead of with American Bell Company, South Korea made an agreement with the EADS (European Aeronautic Defense and Space company, France/German) produces new Helicopters that is worth around $10billions.The point is that South Korea has the initiatives making the Helicopters and the EADS offering technology relevant with it and co-produce. However, the Bell Company only suggested reforming old its Helicopter adapting South Korea's request.

D. GDP (Gross Domestic Product) AND PATENT FOR NATION'S LEVEL

[34] . Internet web source http://100.naver.com/100.nhn?docid=771273
[35] . Defense&Technology, South Korea, Jan 2006.

1. Introduction

The main process of this study is to get reasonable amount of FMS of South Korea according to correlation between amount FMS and Economy, Technology development, Military Expenditure, and dispute possibility in any other countries using regression model.

However, it is possible that there is a controversy what the author can use as an index for measuring Economy and Technology level of each country. In this study, I will use GDP for economy level and amount of patents granted by U.S Patent And Trademark Office (PATO)[36].

2. Role of GDP for evaluating nation's economic level

The definition of GDP (Gross Domestic Product) is that,

> *The total market value of all final goods an services produced in a country in a given year, equal to total consumer, investment and government spending, plus the value of exports, minus the value of imports*[37].

GDP report is released on the last day of quarter and show the last quarter. It reflects nation's economy growth. For example, if GDP of the U.S was increased 7.2% on the third quarter in 2003, we can say that U.S economic growth surged in the third quarter at the fastest pace[38].

It goes without saying that GDP has used for index of Economy in many literatures. Panchak (2005) suggests that over the years U.S economists make efforts to represent better mirror economic changes and started to emphasize have made many changes GDP rather than GNP[39] as

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[36] . There is no common international Patent cover all world. Just WIPO(World Intellectual Property Organization) set the common standard regulation for granting patent in each country. For example, if one set patent in 10 countries should set it each country.
(Korea Intellectual Property Office Q&A, www.kipo.go.kr/kpo/user.tdf)
So, in this study, the author assumes the patents granted by U.S PATO as Technology development. Because the U.S is the biggest market.

[37] . Invest world.com www.investorwords.com/2153/GDP.html

[38] .CNNmoney.com http://money.cnn.com/2003/10/30/news/economy/gdp/index.htm

the primary measure of U.S production in the globalization and information technology environment.

Swann (2006) analyzes the relation between several fields of economic indices and GDP assuming GDP growth means overall Economic index. Fosu (1996) demonstrated that the export effect on GDP growth was found to be positive and associated with overall economy in the less developed countries.

As we can see several previous researches, I can use GDP as the index for each country's economic level.

3. Role of Patents for evaluating nation's technology level

A patent is defined as below (Griliches, 1990),

> *An authorized governmental agency, granting the right to exclude anyone else from the production or use of a specific new device, apparatus, or process for a stated number of years*

Gardner and Joutz (1996) construct a measure of technological innovation with patent filings and determine technological growth. Rossana (2005) assumed that technology stocks or the stock of knowledge are a function of utility patent data because, he thinks, technological progress is at least in part a consequence of new knowledge. Griliches (1990) asserted that patents statistics have fascinated economists for a long time for questions about sources of economic growth, the rate of technological change. And then he argued that patents are good index of inventive activity, a major aspect of which is also measured by R&D expenditures.

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[39] . GDP includes only goods and services produced within the geographic boundaries of the U.S., regardless of the producer's nationality. GNP doesn't include goods and services produced by foreign producers, but does include goods and services produced by U.S. firms operating in foreign countries. (www.investorwords.com/2153/GDP.html)

Although it is still controversial using of patent data in technological level from some literature, many economists have used it. Therefore, it is proper to use the value of patents for evaluating nation's technology level in this research.

Ⅲ. METHODOLOGY

A. STUDY MODEL OVERVIEW

Based on the above hypothesis in chapter Ⅰ and variables in chapter Ⅱ, I set up the overall study model like below Figure 6.

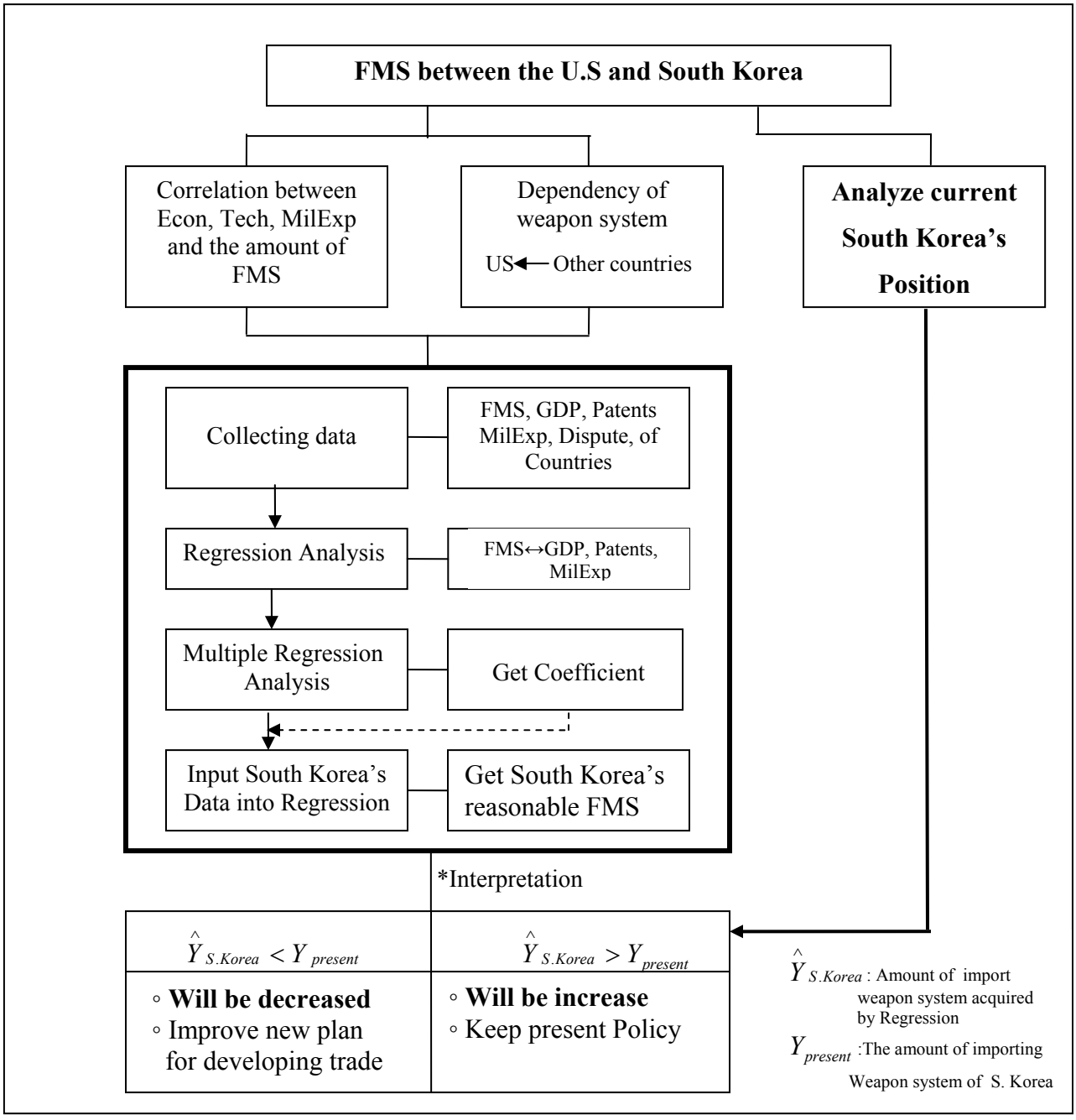

Figure 6. Study Model

The objective of this study is to inspect the dependency on FMS of South Korea as its Economy growing. To do this, at first begin examine the general relationship between the FMS amount and each country's Technology level, Military Expenditure representing its economy growing, and dispute probability using Multiple regression model. Then, apply to South Korea's case using the coefficients from the regression model. I assume if the amount of present FMS is beyond the amount predicted by the regression model, the FMS amount should be decreased gradually in the future because South Korea intents to diversify to develop its own weapon system technology with its economic and technology power unless the FMS policy is benefit to South Korea more than any other means.

B. DATA COLLECTION STRATEGIES

1. Overview

In this study, I need the data about FMS trade amount, GDP, Patents applications filed by residents of foreign countries, Military Expenditure, and dispute probability of countries. To guarantee the objectiveness of regression model, I need as many data as I can.

However for the purpose of matching this study's goal, I set up the necessary and sufficient conditions like below.

1) Collect recent five years data during 2001~2005.
2) Even one year's data omit, the country will be excluded.
3) Not aim to collect a specific country
4) Select the data that satisfy five elements; FMS, GDP, Patents, Military Expenditure, Dispute Probability (Threat by other countries).

2. Data collect

1) FMS Trade amount

I can get the data of which the buyer countries by way of FMS and the amount from DSAA (Defense Security Assistance Agency) Factbook 2005. It includes all the FMS data from 1950 to 2005 dividing into agreement and deliveries. I use the FMS agreement data in this study because the initial intention and neediness are important although the deliveries will be changed according to the countries' condition and the U.S' intention.

There are total 175 countries, but 40 countries which have not been traded during recent 5 years are excluded. So, I use 135 countries' data to analyze sum of FMS amount of each region. But for the hypothesis, I use only 61 countries' data which have all the data on FMS, GDP, Patents, and Military Expenditure, and dispute condition. The FMS trades data are shown Appendix B.

2) Economic development: GDP

GDP is used for measuring countries' economic development level. I can get the data of which countries' GDP from CIA (Central Intelligence Agency) world Factbook 2002~2006. There are overall 189 countries data. However, it is passed over at some countries in some periods. I use only the countries data which have perfect period's data. So, among 189 countries just will be available 142 countries. The GDP of countries are shown Appendix C.

3) Technology development: Patents

The amount of patent filed by Residents of foreign countries to the U.S patent agency will be used for measuring each country's technology development level. I can get the data from the U.S Patent and Trademark Office (UPTO) performance and accountability report 2005. There are two categories. One is patent application to the U.S and the other is approved by the agency. I will use the former data because the origin countries' intention for developing technology is important. In this study I assume that how much each country has intention to develop its own weapon system technology will influence the FMS amount. There are 155 countries' data available. The patents applied to the U.S. patents agency by foreign country residents are shown Appendix D.

4) Military Expenditure

I can get the data of countries' Military Expenditure from CIA (Central Intelligence Agency) world Factbook 2002~2006 also. It contains 152 countries' Military Expenditure data during recent five years. However there are many omissions in this category because some countries did not make public. So there are only 66 countries' data available perfectly recent five years to use in regression model. The Military Expenditure of each country is shown Appendix E.

5) Dispute probability

I refer to the above CIA world Factbook to classify a country is in dispute condition or threaten by others. There 209 countries' explanation. The country which does not have recent or progressing dispute with other countries is given "None". On the contrary, if the country has experiences conflict with others, the dispute probabilities are explained on the recent war experience, territory dispute with adjacent country until a recent date, and what factor is

remained to stir up troubles in the future. I just divide dispute probability into two categories; Yes or No. Therefore, it will be given by dummy variable in the regression model. The detailed dispute explanation of each country is shown Appendix F.

3. Data select

From the above progress, 61 countries can satisfy all the necessary conditions. I use these 61 countries' data to analyze for hypothesis 1, 2, 3, 4. However, in regarding of each regions characteristics on FMS, GDP, Patents, Military Expenditure level, and South Korea's current rank, I use all the data available. I divide the data into five areas. A summary of participating countries in this study is presented as Table 5.

Table 5. Data summary (Number of countries)

Categories	East Asia and Pacific	Near East /South Asia	Europe	Africa	Western Hemisphere	Total
FMS transaction	12	21	43	32	27	135
GDP	17	16	48	35	26	142
PATENTS	22	23	51	24	35	155
Miltary Expenditure	9	14	13	17	13	66
Dispute	31	29	59	50	40	209
OVERLAP	**7**	**11**	**13**	**17**	**13**	**61**

Source: Central Intelligence Agency (CIA) world Factbook, 2002~2006.
Defense Security Assistance Agency (DSAA) Factbook, 2005.
U.S Patent and Trademark Office (UPTO) performance and accountability report, 2005.

The detail data are shown Appendix G.

C. DATA ANALYSIS STRATEGY

1. Analysis Tool

I use MINITAB program to analyze the data. The statistic method for analyzing and verifying validity is *correlation analysis* using simple regression model between each independent variable[40] and dependent variable[41] for hypothesis 1, 2, 3. *Correlation analysis* is the statistic method to show how strong two variables have the linear relationship.

As for hypothesis 4, I use Multiple correlation analysis using Multiple regression model to verify the relationship between FMS and four independent variables – Economic development, Technology level, Military Expenditure, and dispute condition. And to study on South Korea's reasonable FMS amount assumed in Chapter 1, I use multiple regression model too.

2. Methods of achieving validity and data Analysis procedure for hypothesis 1, 2, 3

I need to show the validity for objectivity whether there are mutual close relations between each independent variable and dependent variable. That is FMS-GDP, FMS-Patents, and FMS-Military Expenditure. I will use four independent variables to get the reasonable South Korea's FMS amount regarding South Korea's present conditions. In this analysis Technology and Military Expenditure level as independent variables represent how much each nation's Economy develop, and Dispute condition representing each nations' security condition. If there are not mutual relations among independent variables and FMS, I will not be able to estimate South

[40] . Independent Variables: GDP, Patents, Military Expenditure
[41] . Dependent Variable: FMS amount

Korea's reasonable FMS amount exactly. Further more, even if I get the estimate FMS amount, I can not insist that the value is reasonable without validity.

Correlation analysis in simple regression model will be used for analyzing linear relations between each independent variable and FMS amount; Economic level and FMS, Technology level and FMS, Military Expenditures and FMS.

The below equation 3.1 used for analyze hypotheses 1, 2, and 3.

$$\hat{Y}_i = \alpha + \beta\ X_i + \varepsilon_i \qquad (3.1)$$

where

$\hat{Y}_i = \$FMS$

$X_i = GDP$,
Patents,
Military Expenditure

α = Constant

β = Coefficient

Correlations between two factors are determined by *coefficient of determination* and *coefficient. Coefficient of determination* is denoted by r^2. r^2 is represented how strong two variables have relation. r^2 is between "0" and "1". The closer r^2 is near "1", I can say that there is relation between two variables. On the contrary, if it is close to "0", I can say that there is no relation.

Then *Coefficient* is denoted by β. β will be positive if the relation between one independent variable and FMS has positive relationship. That is as one independent variable increase, the dependent variable will be increased. But if β is negative, the relation will be reverse.

The correlation between four independent variables and FMS is shown by *coefficient of determination* gotten by using *multiple regression model*. It is denoted as R^2. It is also placed between "1" and "0", and show how strong these relations between these relations.

3. Data analysis procedure for predicting South Korea's FMS amount

The method for getting South Korea's reasonable FMS concerning four variables is *multiple regression model*. The formula is like below 3.2.

$$\hat{Y}_i = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \varepsilon_i \qquad (3.2)$$

where,

$\hat{Y}$: *Amount of FMS*
X_1 : *Economy*(*GDP*)
X_2 : *Techno*log *y*(*Patents*)
X_3 : *MilitaryExpenditure*
X_4 : *DisputePossibility*
α : *Cons*tan *t*
$\beta_1, \beta_2, \beta_3, \beta_4$: *Coefficient*

First, I input each four independent variable of 61 countries selected into each $X_{1,}\, X_{2,}\, X_{3,}\, X_4$ and input the FMS amount (dollar figure) of each country into Y. The value of GDP, Patents, Military Expenditure, and FMS amount is sum for five years during 2001~2005. And Dispute possibility is "0" or "1" as dummy. Then I get the constant and coefficient $\alpha, \beta_{1,} \beta_{2,} \beta_3, \beta_4$.

To get the reasonable South Korea's FMS amount, I input the coefficient and South Korea's data into formula 3.2. Then I get the new formula 3.3 like following.

$$\hat{Y}_{S.Korea} = \alpha + \beta_1 X_{S.Korea'sGDP} + \beta_2 X_{S.Korea'Spatent} + \beta_3 X_{S.Korea'sMilExpen} + \beta_4 X_{S.Korea'sDispute} \qquad (3.3)$$

After getting the reasonable South Korea's FMS amount ($\hat{Y}_{S.Korea}$) considering other countries, I will compare reasonable amount and the present South Korea's FMS amount.

Ⅳ. RESULTS

A. VARIABLES COMPARISON AND SOUTH KOREA POSITION

1. FMS trade

During 2001~2005, the total FMS trade amount is 59,570 million dollars with all the 135 countries. Europe ranks the first region with $17,487.739 million and that's almost 30% of the total FMS. Near East and South Asia region is right behind the Europe with $16,553.62(27.8%) million dollars and East Asia and Pacific region very close to with $16,358.32(27.4%) million. Western Hemisphere region is the last one with $2,324.41(3.9%) million. Figure 7 displays the amount of FMS trade in each region.

(Million dollars)

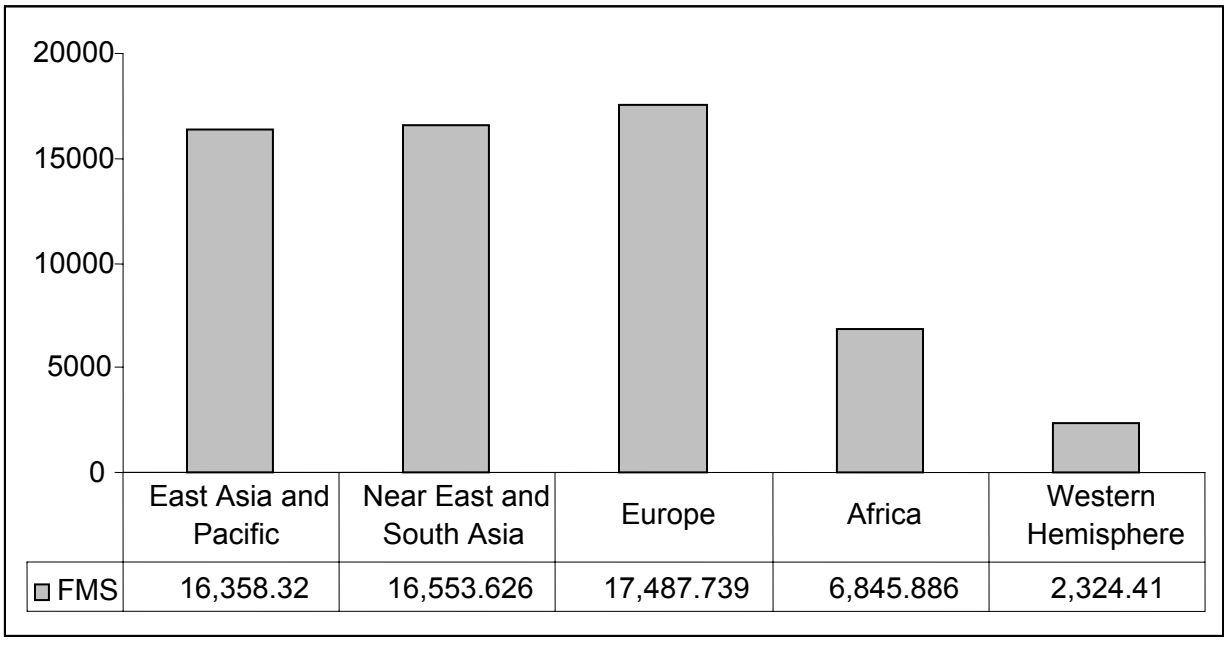

Figure 7. The amount of FMS trade (2001 ~ 2005)

Source: Defense Security Assistance Agency (DSAA) Factbook, Ibid, p.2~11.

Then, I looked at where South Korea stands. South Korea has imported $3,840.44 million worth weapon system through FMS, and it is actually higher than Western Hemisphere total FMS amount. Table 6 shows where South Korea ranks among other FMS trade countries. South Korea is fifth buyer in the last 5 year. And especially in 2002, South Korea is placed first with $1,838.27 million.

Table 6. Rank of big FMS trade countries (2001~2005) (Million dollars)

Rank	County	2001	2002	2003	2004	2005	Total
1	Egypt	1,614.28	1,012.00	925.86	2,061.46	1,107.75	6,721.35
2	Taiwan	1,114.48	734.52	1,445.79	2,238.28	0.24	5,533.32
3	Israel	2,769.62	667.98	460.48	624.54	507.54	5,030.16
4	Saudi Arabia	680.51	851.56	653.30	1,785.13	747.93	4,718.42
5	South Korea	758.54	1,838.27	485.34	345.83	402.47	3,830.44
6	Poland	27.84	66.15	3,535.34	180.02	6.88	3,816.23
7	Japan	350.01	975.59	768.81	679.63	892.47	3,666.51
8	Turkey	122.85	186.70	427.41	168.99	1,330.60	2,236.55
9	United Kingdom	671.70	244.12	464.68	478.48	361.86	2,220.85
10	Kuwait	287.69	984.84	320.51	116.01	101.81	1,810.86

Source: Defense Security Assistance Agency (DSAA) Factbook, Ibid. p.2~3.

2. Economic development: GDP

Table 7. Higher GDP countries (2001~2005) (Billion Dollars)

Rank	Country	2001	2002	2003	2004	2005	Total
1	United States	10,082	10,450	10,990	11,750	12,360	55,632
2	China	6,000	5,989	6,449	7,262	8,859	34,559
3	Japan	3,550	3,651	3,580	3,745	4,018	18,544
4	India	2,660	2,664	3,033	3,319	3,611	15,287
5	Germany	2,184	2,160	2,271	2,362	2,504	11,481
6	United Kingdom	1,520	1,528	1,666	1,782	1,830	8,326
7	France	1,540	1,558	1,661	1,737	1,816	8,312
8	Italy	1,438	1,455	1,550	1,609	1,698	7,750
9	Brazil	1,340	1,376	1,375	1,492	1,556	7,139
10	Russian Federation	1,270	1,409	1,282	1,408	1,589	6,958
11	Canada	928	934	959	1,023	1,114	4,958
12	Mexico	920	924	941	1,006	1,067	4,859
13	South Korea	920	942	858	925	965	4,610
14	Spain	828	851	886	938	1,029	4,531

I can not compare the GDP by region because there are some omissions data in countries. However, I can estimate where South Korea is placed because the countries' data which stand higher than South Korea are fulfilled. Table 7 shows the ranks of higher GDP countries and South Korea is positioned 13th rank. I can guess that South Korea buy weapon systems through FMS more than its economic level from Table 6, 7. That is, although South Korea is 13th country of economic development level but it places the amount FMS as 5th rank.

3. Technology development: Patents

Between last 5 years, in 2001~2005, the total amount of patents filed by residents of foreign

Source: Central Intelligence Agency (CIA) world Factbook, Ibid.

countries to the U.S patent agency is 758,822 regarding 155 countries. Among them, East Asia and Pacific is the first region with 446,930 and it is almost 59% of the total amount. Next, Europe applies 249,824(32.9%), Western Hemisphere applies 42,773(5.6%), Near East and South Asia apply 18,020(2.3%), and Africa applies 1,275(0.16%). Figure 8 shows the number of Patents applied to the U.S. by each region.

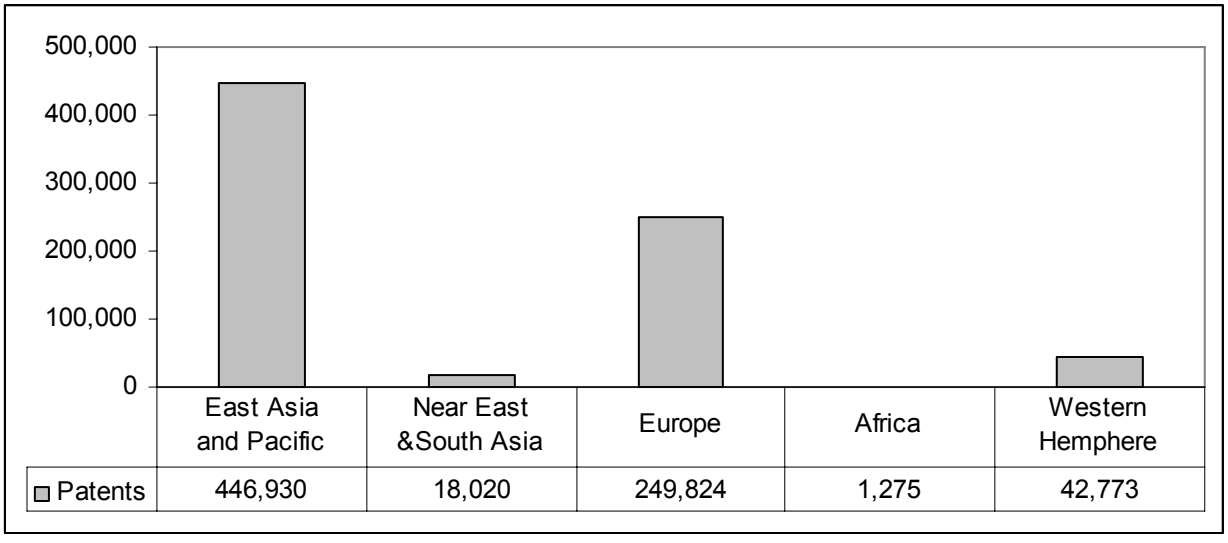

Figure 8.
The amount of patent filed by Residents of foreign countries to the U.S (2001~2005)

Source: U.S Patent and Trademark Office (UPTO) performance and accountability report, Ibid, pp.126~127.

However, I can not jump to a conclusion that East Asia and Pacific is the most applying region to the U.S and has the development technology. The reason is that, Japan applies 296,404 patents solely, and it is almost 63% of all the East Asia and Pacific region. Europe and Western Hemisphere may be the same. Most of patents applied by Europe are came form German, United Kingdom, and France with 162,218 (64.9%). And Canada in Western Hemisphere applies 38,921 (90.9%). That is, most of the technologies leading the world have been invented by some developed countries. As we can see Table 8 following, South Korea is the fourth country applied patents to the U.S recent 5 years, and it occupies about 6.4% of the world. Although I can not say that South Korea is the fifth (including the U.S) technology developed country in the world just with this data, but I can confirm that South Korea has been trying to develop technology and making advance actively.

Table 8. The higher countries applied Patents to the U.S. (2001~2005)

Rank	Country	2001	2002	2003	2004	2005	Total
1	Japan	62,676	61,259	61,177	46,267	65,025	296,404
2	Germany	19,776	21,657	19,646	11,904	18,245	91,228
3	Taiwan	12,403	13,761	14,537	13,129	16,865	70,695
4	South Korea	6,792	7,757	9,614	9,730	15,200	49,093
5	Canada	7,802	7,967	8,138	6,705	8,309	38,921
6	United Kingdom	8,464	9,238	8,215	5,013	7,275	38,205
7	France	7,154	7,434	6,887	4,296	6,298	32,069
8	Italy	3,185	3,336	3,325	2,208	3,170	15,224
9	Netherlands	2,822	3,074	2,382	1,743	2,938	12,959
10	Israel	2,781	2,737	2,611	1,840	2,827	12,796

Source: U.S Patent and Trademark Office (UPTO) performance and accountability report, Ibid, pp.126~127.

4. Military Expenditure and Dispute condition

As briefly stated above Chapter I, South Korea's Military Expenditure is eighth in 2005 and the same during last 5 years. South Korea has expensed more with the Military field compared with its GDP. I can consider this phenomenon relate with dispute condition because if the county

has undergone confliction with other countries or has high possibility for war in the near future, it would make an investment on developing military power. South Korea is the same case. South Korea has threatened by North Korea constantly since the Korean War and should prepare the war. And it needs to cope with future related with adjacent strong countries.

Figure 9 shows that how many countries confront with other countries. It is presented by percentage which denotes in the ratio of undergoing dispute now and near future to all the countries in the region. Most of the Asia countries have undergone conflicts and other areas are not better much.

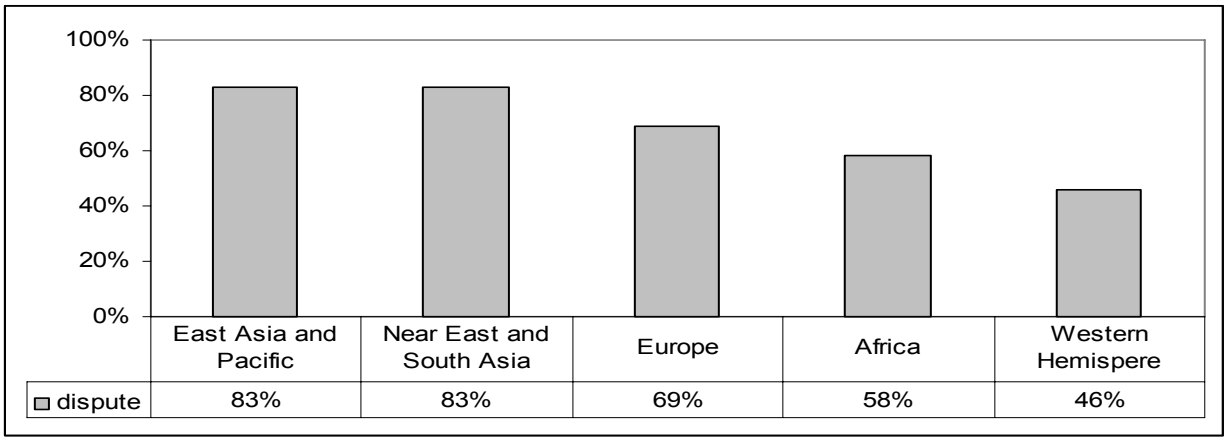

Figure 9. Dispute country percentage by areas (standard 2005)

Source: Central Intelligence Agency (CIA) world Factbook, Ibid.

B. VARIABLES CORRELATIONS

1. FMS-Economic development level (GDP) correlation

Table 9 shows *Coefficient of determination (r^2)* and *Coefficient of correlation(r)* between FMS amount and GDP in each region and the world. And it also demonstrates the constant and coefficient acquiring by regression model using formula 4.1.

$$\hat{Y}_i = \alpha + \beta X_i + \varepsilon_i \qquad (4.1)$$

where

$$\hat{Y}_i = \$FMS$$
$$X_i = GDP$$

Table 9. The result of correlation and regression analysis: FMS & GDP (2001~2005)

Independent Variable	Results	**World**	East Asia /Pacific	Near East /South Asia	Europe	Africa	Western Hemisphere
GDP	r	**0.680 (0.000)**	0.957 (0.001)	- 0.004 (0.992)	0.854 (0.009)	0.341 (0.180)	0.470 (0.105)
	r^2	**0.463**	0.915	0.000	0.730	0.118	0.221
	$r^2_{(adj)}$	**0.454**	0.898	0.000	0.705	0.058	0.150
	α	**91.48 (0.186)**	112.3 (0.582)	297.7 (0.075)	223.6 (0.272)	4.271 (0.106)	54.53 (0.552)
	β	**0.00012535 (0.000)**	0.00019694 (0.001)	- 0.00000034 (0.992)	0.0001523 (0.009)	0.00000361 (0.180)	0.00005617 (0.105)

Note. ( ): *p*-value

From equation table 9, the *p*-value for constant α is not significant with 0.186. With this *p*-value, I can not estimate the exact relationship between FMS and GDP. So, I modify the equation 4.1 into equation 4.2.

$$\hat{Y}_i = \beta\ X_i \qquad (4.2)$$

$$\hat{Y}_i = \$FMS$$
$$X_i = \$GDP$$

With this modified equation 4.2, I can get the result in table 10. In this table, the *p*-value for *Coefficient of determination (r^2)* and coefficient β is significant with 0.0000 and *Coefficient of determination* is 0.463 in the world.

By the regions, *Coefficient of determination* in East Asia and Pacific region is 0.915. That is to say, GDP influences on FMS amount 91.5%, and β is positive with 0.000204. The FMS amount of this region is explained by GDP well. Namely, as the country's GDP rise, the nation imports weapon system through FMS more. And Europe's FMS amount is also influenced by GDP as well. It is about 73% and positive. However Near East and South Asia, Africa, and Western Hemisphere region are not influenced by GDP. Near East and South Asia, and Africa region's relation between FMS amount and GDP is not at all with 0%. And Western Hemisphere region's Coefficient of determination is just 22.1%.

Hypothesis 1[42] is supported with 46.3% of the index in the world. In conclusion, the index shows that a country's FMS amount is related with its GDP about 46.3%. And it is significantly suggested if the country wealthy, it buys weapon system more through FMS in the world with index coefficient β 0.000136.

[42] . Hypothesis 1: The relation between Economic development and the amount FMS is positive

Table 10. The **modified** result of correlation and regression analysis: FMS & GDP (2001~2005)

Independent Variable	Results	**World**	East Asia /Pacific	Near East /South Asia	Europe	Africa	Western Hemisphere
GDP	r	**0.680 (0.000)**	0.957 (0.001)	- 0.004 (0.992)	0.854 (0.009)	0.341 (0.180)	0.470 (0.105)
	r^2	**0.463**	0.915	0.000	0.730	0.118	0.221
	$r^2_{(adj)}$	**0.454**	0.898	0.000	0.705	0.058	0.150
	β	**0.000136 (0.000)**	0.000204 (0.000)	0.000026 (0.457)	0.000187 (0.000)	0.000005 (0.054)	0.000067 (0.023)

2. FMS – Technology level (Patents) correlation

Table 11 shows that the indices of correlation and regression analysis between FMS amount and Patents amount in each region and the world. I also get the constant and coefficient using regression model with formula 4.3.

$$\hat{Y}_i = \alpha + \beta\ X_i + \varepsilon_i \qquad (4.3)$$

Where, $\hat{Y} = \$FMS$

$X_i = \$Patents$

As we can see in the table 11, *Coefficient of determination (r^2)* between FMS amount and patents in the world is 0.582. That is *Hypothesis 2*[43] is supported about 58.2% and the *p*-value for constant and coefficient are significant. This index is also very different by region such like FMS-GDP relation. East Asia and Pacific and Western Hemisphere regions are relatively high with each 0.859 and 0.707. And *Coefficient β* explains that there are positive relations between two factors with each 0.011597 and 0.022537. These values show that if a country's technology development level is high, it would get weapon system through FMS from the U.S.

However Near East and South Asia, and Africa regions' *Coefficient of determination (r^2)* is nearly zero. This means that there are almost no relations between FMS amount and Technology development level in these regions. As for world, coefficient of determination *(r^2)* is 58.2% and has positive relation with coefficient *β* value 0.012882. Therefore, I can say that hypothesis 2 is supported.

[43] . Hypothesis 2: The relation between Technology development and the amount FMS is positive

Table 11. The result of correlation and regression analysis: FMS & PATENTS(2001~2005)

Independent Variable	Results	**World**	East Asia /Pacific	Near East /South Asia	Europe	Africa	Western Hemisphere
PATENTS	r	**0.763 (0.000)**	0.927 (0.003)	- 0.006 (0.987)	0.652 (0.016)	0.285 (0.267)	0.841 (0.000)
	r^2	**0.582**	0.858	0.000	0.426	0.081	0.707
	$r^2_{(adj)}$	**0.575**	0.831	0.000	0.373	0.020	0.680
	α	**202.69 (0.001)**	273.1 (0.298)	298 (0.066)	242 (0.260)	4.83 (0.066)	69.69 (0.169)
	β	**0.012882 (0.000)**	0.011597 (0.003)	- 0.00166 (0.987)	0.0372 (0.016)	0.0105 (0.267)	0.022537 (0.000)

Note. ( ): *p*-value

3. FMS – Military Expenditures correlation

Table 12 shows the indices correlation and regression analysis between FMS and Military Expenditure in each region and the world. The formula used in this regression model is like below formula 4.4.

$$\hat{Y}_i = \alpha + \beta\ X_i + \varepsilon_i \qquad (4.4)$$

where

$$\hat{Y} = \$FMS$$
$$X_i = \$MilitaryExpenditure$$

However with this equation, the *p*-value for the constant α is not significant with 0.141. With this equation, I can not get the exact relationship between FMS and Military Expenditure either. So, I modify this like equation 4.5.

$$\hat{Y}_i = \beta\ X_i \qquad (4.5)$$

where

$$\hat{Y}_i = \$FMS$$
$$X_i = \$MilitaryExpenditures$$

As we can see from the table 13, the *p*-value for *Coefficient of determination* (r^2) and coefficient β are significant with 0.0000. And the *Coefficient of determination* between FMS amount and Military Expenditure in the world is 0.578. That is, *Hypothesis 3*[44] is supported about 57.8% by this index. And, the coefficient β is positive with 0.0108 values as hypothesis 3 is suggested.

The same as above two cases, FMS-Military Expenditures relationship is much different by region. For instance, the *Coefficient of determination* (r^2) indices of East Asia and Pacific is 0.990. It is very strong supporting with nearly "1". However, Near East and South Asia, and Africa regions are both very low nearly zero.

[44] . Hypothesis 3: The relation between Military Expenditures and the amount FMS is strongly positive

Table 12. The result of correlation and regression analysis: FMS & Military Expenditure (2001~2005)

Independent Variable	Results	**World**	East Asia /Pacific	Near East /South Asia	Europe	Africa	Western Hemisphere
Military Expenditure	r	**0.758 (0.000)**	0.995 (0.000)	0.051 (0.082)	0.636 (0.019)	0.195 (0.454)	0.665 (0.013)
	r^2	**0.578**	0.99	0.030	0.404	0.038	0.442
	$r^2_{(adj)}$	**0.568**	0.988	0.000	0.350	0.000	0.392
	α	**89.11 (0.141)**	63.83 (0.379)	284.5 (0.105)	297 (0.160)	4.54 (0.120)	12.5 (0.873)
	β	**0.010075 (0.000)**	0.01738 (0.000)	0.00101 (0.882)	0.00588 (0.019)	0.0005 (0.454)	0.0107 (0.013)

Note. ( ): *p*-value

Table 13. The **modified** result of correlation and regression analysis: FMS & Military Expenditure (2001~2005)

Independent Variable	Results	**World**	East Asia /Pacific	Near East /South Asia	Europe	Africa	Western Hemisphere
Military Expenditure	r	**0.758 (0.000)**	0.995 (0.000)	0.051 (0.082)	0.636 (0.019)	0.195 (0.454)	0.665 (0.013)
	r^2	**0.578**	0.99	0.030	0.404	0.038	0.442
	$r^2_{(adj)}$	**0.568**	0.988	0.000	0.350	0.000	0.392
	β	**0.0108 (0.000)**	0.0178 (0.000)	0.00717 (0.277)	0.00776 (0.001)	0.00102 (0.106)	0.0110 (0.002)

Note. ( ): *p*-value

C. DETERMINE APPROPRIATE EQUATION FOR PREDICTING SOUTH KOREA'S FMS AMOUNT

The first equation for predicting reasonable South Korea's FMS trade amount is like equation 4.6. In this equation dependant variable is each country's FMS trade and four independent variables are GDP, Patents, Military Expenditure, and dispute condition.

$$\hat{Y}_i = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \varepsilon \qquad (4.6)$$

Where

$\hat{Y}$: *Amount of FMS*
X_1 : *Economy*(*GDP*)
X_2 : *Techno* log *y*(*Patents*)
X_3 : *MilitaryExpenditure*
X_4 : *DisputePossibility*
α : *Cons* tan *t*
$\beta_1, \beta_2, \beta_3, \beta_4$: *Coefficient*
i : *Each country*

Table 14 shows values of *Coefficient of determination* (R^2), constant, and coefficient. The *Coefficient of determination* is strong with 0.72. However, the *p*-value for constant α , and coefficient β_1 in the world are not significant each with 0.717, and 0.333. With this value, I can not predict exact South Korea's FMS trade amount and it will be useless although there are strong relations among FMS and four variables. Therefore, I need to modify this equation to get more reliable values in the *Coefficient of determination* and *p*-value.

Table 14. The result of Multiple Regression Analysis: FMS and four independent variables with α

Independent Variables	Results	World	East Asia and Pacific	Near East and South Asia	Europe	Africa	Western Hemisphere
GDP / Patents / Military Exp / Dispute Con	$\mathbf{R^2}$	0.720	1.000	0.146	0.574	0.377	0.945
	$\mathbf{R^2}$ **(adj)**	0.700	1.000	0.000	0.361	0.170	0.917
	α	27.5 **(0.717)**	-56 (0.993)	352.605 (0.416)	-15 (0.958)	-16.57 (0.670)	-15.32 (0.973)
	β_1	-0.000025 **(0.333)**	0.0000254 (0.051)	0.000146 (0.751)	0.000183 (0.422)	0.000026 (0.153)	0.0000234 (0.002)
	β_2	0.00829 (0.000)	0.00539 (0.003)	0.0041 (0.969)	0.027 (0.448)	0.0778 (0.219)	0.0084 (0.038)
	β_3	0.00725 (0.000)	0.0225 (0.000)	0.0346 (0.482)	0.0057 (0.578)	0.000066 (0.944)	0.0382 (0.001)
	β_4	163 (0.089)	4.71 (0.644)	-229.152 (0.651)	354.02 (0.330)	6.902 (0.161)	33.562 (0.558)

Note. ( ): *p*-value

The modified equation is like equation 4.7. This equation comes from equation 4.6 without α because the *p*-value for α is the least significant with 0.717.

$$\hat{Y} = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 \quad (4.7)$$

where

$\hat{Y}$: *FMS*
X_1 : *GDP*
X_2 : *Patents*
X_3 : *MilitaryExp*
X_4 : *DisputeCon*
$\beta_1, \beta_2, \beta_3, \beta_4$: *Coefficient*

Table 15 presents the result of multiple regression analyze just in the world. However even with this equation, I can not predict exactly South Korea's FMS trade amount because the *p*-value for coefficient β_1 is not significant with 0.344 although *Coefficient of determination (R^2)* is raised to 0.7704.

Table 15.
The result of Multiple Regression Analysis: FMS and four independent variables without α

Independent Variables	R^2	R^2 (adj)	β_1	β_2	β_3	β_4
GDP, Patents, Military Exp, Dispute Con,	0.7704	0.7408	-0.000024 **(0.344)**	0.008159 (0.000)	0.007327 (0.000)	188.44 (0.005)

Note. ( ): *p*-value

From this result, I need to modify again. Equation 4.8 comes without constant α and one independent variable (GDP) which have not significant *p*-value.

$$\hat{Y}_i = \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} \quad (4.8)$$

where

Y : *Amount of FMS*
X_1 : *Techno*$\log y$(*Patents*)
X_2 : *MilitaryExpenditure*
X_3 : *DisputePossibility*
$\beta_1, \beta_2, \beta_3$: *Coefficient*

Table 16.
The result of Multiple Regression Analysis: FMS and three independent variables without α

Independent Variables	Results	**World**	**East Asia and Pacific**	**Near East and South Asia**	**Europe**	**Africa**	**Western Hemisphere**
Patents / Military Exp / Dispute Con	**R^2**	**0.767**	1.000	0.36	0.738	0.446	0.829
	R^2 (adj)	**0.741**	1.000	0.22	0.525	0.239	0.799
	β_1	**0.00759 (0.000)**	-0.00432 (0.000)	-0.525 (0.250)	0.0313 (0.320)	0.014 (0.384)	0.0165 (0.008)
	β_2	**0.006162 (0.000)**	0.0231 (0.000)	0.0367 (0.228)	0.00117 (0.828)	0.00027 (0.744)	0.00459 (0.099)
	β_3	**173.08 (0.007)**	22.8 (0.117)	20.2 (0.935)	443 (0.078)	8.64 (0.019)	87.3 (0.180)

Note. ( ): *p*-value

In the Table 16, I can see that the *Coefficient of determination (R^2)* is 76.7% and adjusted with 74.1% in the world with 61 included countries. From this result I can say that three independent variables can be approximately 76.7% attributed to predict FMS amount in the *Multiple regression model*. In addition to this, the *p*-values for coefficient $\beta_{1,}\beta_{2,}\beta_{3}$ are significant with 0.000 and 0.007. This result allows me to proceed with the study.

As for the *Coefficient of determination* by the region, East Asia and Pacific's FMS mount can be predicted by three variables totally with 100%. However in two regions, Near East / South Asia and Africa, the *Coefficient of determination (R^2)* is just each 14% and 37.7%. Especially adjusted indices indicate that the four independents variables in two regions are low to predict FMS amount with each 0% and 17.7%.

At the following section, I will predict South Korea's FMS amount using the coefficient gotten from the same formula 4.8 and analyze South Korea's current status relevant to FMS program.

D. SOUTH KOREA'S REASONABLE AND CURRENT FMS AMOUNT ANALYSIS

1. Input coefficients

Table 16 shows that the indices of three coefficients ($\beta_{1,}\beta_{2,}\beta_{3,}$) using Multiple regression analysis in each region and the world. To guess South Korea's FMS amount between 2001~2005, I use the coefficient gotten from Multiple regression model of the world. In this indices, because coefficient $\beta_{1,}\beta_{2,}\beta_{3,}$ are very significant with p-value each 0.000 and 0.007, I can predict exact South Korea's FMS trade amount.

I input the indices into below formula 4.9 .

$$\hat{Y}_{S.Korea} = 0.00759X_1 + 0.006162X_2 + 173X_3 \quad (4.9)$$

where $\hat{Y}_{S.Korea}$: Predicting FMS amount of South Korea
X_1 : Patents of South Korea
X_2 : Military Expenditure of South Korea
X_3 : Dispute probability of South Korea (dummy)

2. Current status of South Korea

To predict reasonable South Korea's FMS amount, I input South Korea's data into formula 4.9. As stated above section A, South Korea's current status can be summarized like Table 17.

Table 17. Current status of South Korea(2001~2005)

Category	PATENTS	Military Expenditure	Dispute probability	Current FMS amount
Status	**49,093** cases	**77,646** Million Dollars	**Yes**	**3,830.44** Million Dollars

As for dispute probability, I set "Yes" and dummy variable in regression model will be "1", because currently Military Demarcation Line within the 2.5 mile wide *Demilitarized Zone* has separated North from South Korea in the Korean Peninsula since 1953 and periodic maritime disputes with North Korea over the Northern Limit Line. In addition, South Korea and Japan claim the authorization for the small island (*Dok-do*) occupied by South Korea since 1954[45].

3. Compare predict and current South Korea's FMS amount

Using both formula 4.9 and Table 17, I can estimate South Korea's FMS amount between

[45] . Central Intelligence Agency(CIA) World Factbook, October 17, 2006. www.cia.gov/cia/publications/factbook/fields/2070.html

2001 ~ 2005 through below formula 4.10.

$$\hat{Y}_{S.Korea} = 0.00759 * (49{,}093) + 0.006162 * (77{,}646) + 173 * (1) \quad (4.10)$$

$$= 1{,}024.07 \text{ Million Dollars} \quad (4.11)$$

Where,

$\hat{Y}_{S.Korea}$: Predicting FMS amount of South Korea

The result points out that the South Korea's reasonable FMS amount based on the current South Korea's status is about 1,024.07 Million Dollars. However, as we can see from Table 17, the real current South Korea's FMS amount during recent 5 years is 3,840.44 Million Dollars. That is to say, South Korea imported weapon system through FMS about 3.7 times more than its predicting amount between 2001~2005.

Ⅴ. DISCUSSION AND CONCLUSIONS

A. FINDINGS

Based upon regression analysis between FMS and each independent variable; Economic, Technology, Military Expenditure level, I can know that the relation strengths are differentiated with region. And as for overall world, the relation between FMS and Economic level is related with 46.3%. And as regard the relation between FMS and Technology level is related with 58.2% and as for the relation between FMS and Military Expenditures related with 57.8%. And I can find that all the relations are positive from the value of coefficient $\boldsymbol{\beta}$ as I assumed the relations between FMS and Economic, Technology level, and Military Expenditure will be positive as Hypothesis. Specifically, I can observe that certain region, East Asia and Pacific, has strong relations all the criteria.

As saying the current status of South Korea, FMS trade amount during the last five years is fifth ranks while its Economic rank is thirteenth and Technology is fourth. In addition, South Korea expends for Military eighth in the world. Considering the positive relations between FMS amount and economy, technology, and military expenditure level, South Korea's FMS amount could be much overall because its current status is ranked high in all the fields. However, the data shows that South Korea spends more money for FMS even regarding its Economic, technology, and Military Expenditure level. From the result of *Multiple regression model*, I find that South Korea imports weapon system through FMS about 3.7 times more than its predicting value based on current South Korea Economic, Technology, Military Expenditure level, and dispute situation. That is to say, South Korea is very dependent on the FMS currently.

B. DISCUSSION

I set the hypothesis 1, 2 , and 3 for the purpose of supporting hypothesis 4. That is, South Korea's present FMS amount may be much regarding current South Korea's status on the Economic, Technology level and Military Expenditure as I set hypothesis 4. Namely, as we can see from the former chapter, because South Korea's economic rank is 13th and technology level is 4th in the world during recent 5 years, its FMS amount may be less than now although the hypothesis 1, 2 is accepted. And, I can know from the result that if the nation wealthy and have high technology, the nation will import weapon system more from the U.S. through FMS. As for hypothesis 3[46] , I can know that if the nation invests more on the military field, it buys more the weapon system also as I suggested before.

As we can see from the results concerning hypothesis 4[47], South Korea buys the weapon system by about 3.7 times than that of its predicting amount. This result is much more than I expected even though I assume this value will be high. And this result is supported strongly.

1. FMS-Economic development

The relation between FMS amount and economic development is positive. That is, if the nation is afforded to spend more money, it can buy the weapon system from the U.S. more. As for South Korea, we can assume that South Korea increase importing the amount of weapon system through FMS as its economy growing. However, if we compare the FMS rank and the GDP rank on the last 5 years, we can find that the FMS amount is much more considering its GDP rank. The GDP rank is 13th , on the other hand the FMS rank is 5th between 2001~2005.

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[46] . Hypothesis 3: The relationship between Military Expenditures and the amount FMS is positive

[47] .Hypothesis 4: The amount of FMS of South Korea is beyond the level of its economic development, technology development, Military Expenditure level, and dispute probability.

From this reason, I can judge that South Korea is very dependent on the FMS considering its economic level.

2. FMS-Technology development

In the same way with GDP, the relation between FMS and Technology is positive. That is, if the nation's technology level is high, it would import weapon system from the U.S. more. South Korea applied the patents to the U.S. with the 4th rank in the last 5 years. And actually, South Korea enhances its technology level very much including military field in the last decade. South Korea was just able to make the rifles and small conventional weapons by early 1980s. But, it can make many high technology weapon systems such as tank, cruise missile, and even warfighters with its own technology now[48]. On the other hand, South Korea has many fields which it should develop more to achieve self reliance defense power because it is short of infrastructures. I analyze the amount of application patent as the current volition for developing technology. In other word, South Korea has tried to develop technology in the field of military as well as industry though it has short period of industrialize. As for the hypothesis 2, it is consistent that South Korea imports weapon system 5th rank and the volition of develop technology is 5th too, if include the U.S.

The respect which we should concern is that the highest technology nations such as Japan, Taiwan, South Korea, UK, and Israel are in the Top 10 FMS amount countries. And even Germany[49] and France[50] that can produce high – tech weapon system are in a high position in the FMS amount though they are not in the top 10. I conclude that even high technology nations try to acquire new technology from the U.S. through trade weapon system in the form of offset, co-

[48] . VTR source: 'South Korea's development weapon system', 2005.
[49] . Rank 20th, with 843 million dollars(2001~2005)
[50] . Rank 22th, with 631 million dollars(2001~2005)

production, or co-research.

3. FMS-Military Expenditure

The relation between FMS amount and Military Expenditure is positive as hypothesis 3 suggested. That is, if the nation spends in the field of military more, it would buy weapon system from the U.S. more. We can see this relation by way of comparing Table 1[51] with Table 6 [52]as well. 4 of top 10 military expenditure countries including South Korea are in the top 10 FMS amount.

South Korea is one of the highest military expenditure countries with the rank of 8th. However, considering the FMS amount rank, we can assume that South Korea is still very dependent on the FMS.

4. Compare current and predicting FMS amount of South Korea

As we can realize by the result, South Korea's current FMS amount is about 3.7 times more than reasonable amount. This result is already foreseen by preceding three relations. In addition, this result is not explained easily even considering the military tension around the Korean Peninsula. Therefore, this result shows that South Korea is very dependent on the FMS and probably may change this trend gradually. The reasons are that South Korea is not satisfied with the FMS policy and its inflexibility on the technology transfer as several researchers suggested in the chapter Ⅱ although the U.S. Government reformed it. And this change began[53].

Especially from South Korea's view point, the importing weapon system is not mere mean of

[51] . Table 1 shows Military Expenditure rank order
[52] . Table 6 shows rank of big FMS trade countries in 2001~2005
[53] . Maj Ji Man Roh, ROK Air Force,(Interview, Nov 6, 2006).

the strengthening of war potential presently, but rather important way of acquiring high military technology for achieving self-reliant defense power in the future. As I said at chapter I and Ⅲ, South Korea may seek for more alternative ways to acquire more high technologies helping for developing its defense potential if current FMS amount is not adapt for South Korea's line of policy for acquiring technology. For example, South Korea possess the capability for constructing submarines through offset relevant importing submarine from German since 1992 and will co-product Helicopters with EADS (European Aeronautic Defense and Space Company) on the condition of share the technology.

However, the U.S. and South Korea have maintained strong alliance for more than 50 years through free assistance and FMS, and it symbolizes the close relationship between them. The strong relation between two countries will be more needed for not only South Korea's security but also the U.S. profit in the Northeast Asia region. Therefore, the FMS should develop more in the future if the condition is appropriate to both countries.

C. CONCLUSION

I find that South Korea has imported weapon system through FMS about 3.7 times more than estimating amount considering its several statuses. Although, South Korea has developed its economy, technology, and spends much money on the military, 3.7 times spending is abnormal in general. If so, what causes this phenomenon happens? Why South Korea has been dependent on the U.S to that extent different with other countries? We can find these causes from historical and security circumstance bases.

It is obvious that this amount is too much considering South Korea's status, however there are unavoidable and right reasons regarding its security environment and history between two

countries. That is, South Korea has been supported military as well as economy, political, and etc since the Korean War and it has kept its security with the U.S' support and concern. In addition, the U.S gave many aids for South Korea to stand on its own feet in the field of economy and politics. Besides, South Korea has had very unstable security circumstance. It has stood face to face with North Korea, and the powerful countries such as the U.S, Japan, China, and Russia confront each other around South Korea because it has been important region strategically for Democratic and Communism. These reasons make South Korea keep very strong military power abnormally considering its conditions, and South Korea has been very dependent on the U.S for its security. Therefore, it may happen so much importing weapon system amount of South Korea is normal.

The big premise of the U.S for selling weapon system to foreign countries is its national benefits and security, and FMS has been a big frame supporting the strong alliance between the U.S and South Korea. Therefore, it is true that if South Korea imports weapon system more in the future, it will be advantage to the U.S also. For that reason, it will be very helpful to study development plan between two countries on the weapon system trade.

D.RECOMMENDATION FURTHER STUDY

In this study, I use three variables to predict South Korea's FMS amount based on the current its status: Technology, Military expenditure level, and dispute probability. As the indices for the Technology level, I use Patents cases applied to the U.S. from each foreign country. And I apply dummy variable for the dispute condition of each countries regardless of dispute strength and the number of times. Although I get the reliability with 76.67% (adj 74.14%) from the result of the *Multiple regression model* for predicting South Korea's FMS amount, we need to study more

what indices will be appropriate for raising the reliability on predicting South Korea's FMS amount. For instance, we may apply different variable for measuring each country's Technology level not using Patents. And, as for dispute probability, there may be some controversies because the dispute strength and probability is different from countries' situations. For example, South Korea has more serious security problems compare to New Zealand although two countries are set "1" as dummy variable. South Korea confront with strong enemy at face, on the other hand New Zealand just asserts a territorial claim in Antarctica. They can be set different numerous variables if more study completed in the future.

As for FMS development plan, it is need to research more detail what several researchers done so far. Preceding research just pointed out that there are some inequities with the FMS policy, but could not suggest the direction for how the policy develops. And, South Korean has been unsatisfactory that it has not been treated as a big buyer. On the other side some countries such as NATO members, Japan, Australia, and New Zealand have been treated as "exempted countries" and gotten several favors from the U.S. Government although they import less weapon system than South Korea. So, it is need to consider reforming policy that the country more buy, the more favors got.

Appendix A. ABBREVIATION

CFC:	US-ROK Combined Forces Command
SCM:	US-ROK Security Consultative Meeting
EEZ:	Exclusive Economic Zone
FMS:	Foreign Military Sale
DSAA:	Defense Security Assistance Agency
WMD:	Weapon of Mass Destruction
OPCON:	Wartime Operational Control
DAPA:	Defense Acquisition Program Administration in South Korea
AECA:	Arms Export Control Act
FAA:	Foreign Assistance Act
SAAC:	Security Assistance Accounting Center
FFB:	Federal Financing Banks
MDE:	Major Defense Equipment
DSCA:	Defense Security Cooperation Agency
DISAM:	Defense Institute of Security Assistance Management
MAP:	Military Assistance Program
LOR:	Letter of Request
LOO:	Letter of Offer
LOA:	Letter of Accept
KFP:	Korean Fight Program
PATO:	Patent And Trademark Office

Appendix B. FMS trade

East Asia and Pacific

Countries	Foreign Military Sales Agreements(Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Australia	157.124	169.271	389.242	478.278	379.984	1573.899
Fiji	0	0	0	0.6	0.523	1.123
Japan	350.009	975.592	768.81	679.633	892.465	3666.509
South Korea	758.54	1838.269	485.335	345.832	402.466	3830.442
Laos	0.124	0	0	0	0	0.124
Malaysia	3.014	23.196	5.386	19.612	30.43	81.638
Mongolia	2.119	0.277	3.179	1.281	0.066	6.922
New Zealand	56.001	5.85	10.092	14.693	15.733	102.369
Philippines	6.672	14.105	38.983	47.959	46.993	154.712
Singapore	608.175	146.74	161.306	141.535	90.179	1147.935
Taiwan	1114.481	734.523	1445.785	2238.284	0.244	5533.317
Thailand	55.094	79.924	77.847	30.306	16.159	259.33

Near East and South Asia

Countries	Foreign Military Sales Agreements(Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Afghanistan	0	6.066	67.94	226.787	253.108	553.901
Algeria	0.05	0	0	0	0	0.05
Bahrain	123.26	99.023	103.371	71.42	26.547	423.621
Bangladesh	0.886	0	0	5.734	0.571	7.191
India	0	139.89	61.375	0.995	85.592	287.852
Israel	2769.617	667.978	460.482	624.544	507.536	5030.157
Jordan	101.395	110.814	141.44	511.666	123.471	988.786
Kuwait	287.692	984.836	320.513	116.011	101.811	1810.863
Lebanon	5.438	1.342	0.685	1.997	1.25	10.712
Morocco	6.341	20.312	4.506	9.573	16.016	56.748
Nepal	0	3.156	13.079	5.321	4.553	26.109
Oman	3.694	815.853	9.398	111.894	47.062	987.901
Pakistan	0	24.235	167.392	176.286	491.922	859.835
Qatar	0.063	1.176	6	3	0.051	10.29
Saudi Arabia	680.509	851.555	653.296	1785.128	747.929	4718.417
Sri Lanka	0	0	1	7.156	0	8.156
Tunisia	1.849	9.167	7.555	18.677	1.137	38.385
United Arab Emirates	153.809	242.786	124.818	145.51	26.637	693.56
Yemen	0.747	0.115	15.828	3.945	13.62	34.255
East Timor	0	0	1	1.99	2.051	5.041
Untaet	0	1.796	0	0	0	1.796

Europe

Countries	Foreign Military Sales Agreements(Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Albania	2.872	5.634	9.711	5.14	3.94	27.297
Armenia	0	0	6.947	2.053	0	9
Austria	14.777	4.909	6.343	5.344	4.421	35.794
Belgium	84.803	47.827	68.269	27.736	128.839	357.474
Bulgaria	21.646	4.784	14.278	7.251	7.795	55.754
Croatia	0.326	4.128	14.419	0.006	0	18.879
Czech Repubulic	7.829	20.925	8.75	9.667	37.396	84.567
Denmark	44.391	94.613	21.923	54.188	83.296	298.411
Estonia	3.185	7.881	14.683	6.882	0.389	33.02
Finand	89.185	7.213	4.95	134.219	7.887	243.454
France	268.517	228.027	44.832	66.912	23.4	631.688
Georgia	3.595	34.855	11.985	13.579	35.99	100.004
Germany	91.577	158.241	324.631	172.681	96.654	843.784
Greece	806.178	280.735	66.364	257.456	83.961	1494.694
Hungary	2.632	13.647	5.363	13.442	29.623	64.707
Ireland	0.004	0.008	12.452	0.023	0.138	12.625
Italy	805.219	157.874	148.682	92.581	93.805	1298.161
Kazakhstan	0.13	1.061	1.055	3.05	6.049	11.345
Kyrgyzstan	0	7.337	4.751	1.856	0	13.944
Latvia	1.82	5.991	10.654	4.395	7.437	30.297
Lithuania	5.283	13.752	46.374	2.312	9.653	77.374
Luxembourg	0.566	2.791	2.036	0.96	0.752	7.105
Macedonia	16.164	4.509	10.098	16.016	1.906	48.693
Malta	5.822	0	5.428	0	0	11.25
Moldova	0.629	2.17	1.152	0	0	3.951
Netherlands	261.889	152.833	96.307	445.889	243.414	1200.332
Norway	93.435	85.854	102.364	166.812	78.359	526.824
Poland	27.841	66.154	3535.342	180.015	6.876	3816.228
Portugal	19.597	157.547	7.3	45.768	87.645	317.857
Romania	2.6	17.833	18.423	63.102	14.643	116.601
Slovakia	2.976	15.66	8.419	0.606	4.67	32.331
Slovenia	1.286	6.291	6.646	0.643	5.039	19.905
Spain	65.369	105.571	136.312	84.192	135.685	527.129
Sweden	3.303	6.731	2.09	7.391	102.434	121.949
Switzerland	14.762	132.688	23.797	238.218	21.076	430.541
Turkey	122.853	186.699	427.406	168.986	1330.601	2236.545
Ukraine	2.854	4.978	2.82	11.849	0.28	22.781
United Kingdom	671.702	244.121	464.679	478.48	361.864	2220.846
Uzbekistan	1.786	27.408	16.042	3.932	0	49.168
Azrbaijan	0	0	3.086	2.69	5.092	10.868
Bosnia-Herzegovinia	2.1	2.139	2.595	6.784	5.714	19.332
Tajikistan	0	0	1.684	1.759	0	3.443
Turkmenistan	0	0.962	0.592	0	0.233	1.787

Africa

Countries	Foreign Military Sales Agreements(Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Angola	0	0	0	0	0.15	0.15
Cameroon	0	0	0	0	0.15	0.15
Egypt	1614.278	1012.004	925.861	2061.458	1107.753	6721.354
Ethiopia	0	0	1.777	2.648	0.25	4.675
Gabon	0.07	0	0	0	0.008	0.078
Ghana	0.676	0	0.15	1.23	1.145	3.201
Guinea	0.32	3.078	0	0	0.201	3.599
Kenya	5.491	1.153	14.347	9.062	0.304	30.357
Madagascar	0	1.654	0	0	0	1.654
Mali	0.029	0.2	0.2	0	0	0.429
Mozambique	0.003	0.016	0	0	0.04	0.059
Namibia	0	0.368	0	0	0	0.368
Niger	0	0.294	0.251	0	0	0.545
Nigeria	6.736	8.61	6.754	4.622	2.318	29.04
Senegal	0.939	0.948	0.209	0.076	0.707	2.879
Sierra Leone	0	0	0	0	0.04	0.04
South Africa	0.055	1.916	12.498	0	0.137	14.606
Ugnada	0	0	0.965	3.588	2.106	6.659
Zimbabwe	0.858	0	0	0	0	0.858
Benin	0.145	0.02	0	0	0	0.165
Botswana	0.91	1.115	1.032	0.147	1.723	4.927
Cape verde	0	0	0.003	0	0.068	0.071
Central African Rep	0.003	0	0	0	0	0.003
Chad	0.3	0.588	0.53	0	0	1.418
Djibouti	0	0	2.819	2.129	10.877	15.825
Eritrea	0	0	0	0	0.2	0.2
Gambia	0	0	0	0	0.183	0.183
Malawi	0	0.185	0	0.253	0.003	0.441
Rwanda	0	0	0	0	0.5	0.5
Sao Tome & Principe	0	0	0.5	0	0	0.5
Togo	0	0.098	0.07	0	0.184	0.352
Zambia	0	0	0	0	0.6	0.6

Western Hemisphere

Countries	Foreign Military Sales Agreements(Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Argentina	8.902	3.454	3.563	4.596	15	35.515
Bahamas	0	0	0.619	0	0	0.619
Barbados	0.035	0.116	0.097	0	0	0.248
Bolivia	0.978	0.652	0.01	6.494	0	8.134
Brazil	8.378	35.288	11.2	2.058	141.463	198.387
Canada	98.898	137.396	248.75	170.254	287.411	942.709
Chile	2.499	547.964	0.637	0.462	17.365	568.927
Columbia	13.764	36.537	25.635	104.853	202.584	383.373
Dominica	0.507	0.822	27.777	0.614	0.602	30.322
Ecuador	0.363	5.133	5.491	6.867	5.597	23.451
El Salvador	1.678	3.126	1.945	3.129	6.816	16.694
Guatemala	0	0	0	0	2.46	2.46
Guyana	0.267	0.396	0.13	0	0.456	1.249
Haiti	0	0	0	0.227	0.734	0.961
Honduras	1.066	0.838	0.045	0.699	1.916	4.564
Jamaica	0.544	0.817	0	0.007	1.289	2.657
Mexico	19.406	2.057	6.835	4.447	4.009	36.754
Nicarogua	0	0	0.313	0.945	0.309	1.567
Panama	0.081	0	0	0.205	1.815	2.101
Parauay	0.026	0.597	0	0.021	0	0.644
Peru	0.176	0	0	0.031	0.778	0.985
Suriname	0	0	0	0.045	0	0.045
Trinidad&Tobago	0.143	0.1	0.314	0.079	0.087	0.723
Uruguay	2.995	0.34	0.632	0.087	0.385	4.439
Venezulela	28.168	3.192	6.839	14.33	0	52.529
Antigua & Barbuda	0.45	0.541	0.53	1.733	0	3.254
Belize	0.173	0	0.38	0.274	0.272	1.099

Appendix C. GDP

East Asia and Pacific

Countries	GDP (Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Australia	528,000	525,500	571,400	611,700	640,100	2,876,700
Brunei	6,200	6,500	6,842	–	6,842	–
Buhtan	2,500	2,700	2,900	–	2,900	–
Burma	63,000	73,690	74,530	74,300	78,740	364,260
Cambodia	18,700	20,420	25,020	26,990	30,650	121,780
China	6,000,000	5,989,000	6,449,000	7,262,000	8,859,000	34,559,000
China(Hogn Kong)	180,000	198,500	–	234,500	227,300	–
Fiji	4,400	4,822	5,012	5,173	5,380	24,787
Indonesia	687,000	714,200	758,800	827,400	865,600	3,853,000
Japan	3,550,000	3,651,000	3,580,000	3,745,000	4,018,000	18,544,000
Laos	9,200	10,400	10,320	11,280	12,130	53,330
Macau	8,000	8,600	9,100	–	10,000	–
Malaysia	200,000	198,400	207,800	229,300	290,200	1,125,700
Mongolia	4,700	5,060	4,882	5,332	5,242	25,216
Myanmar	–	–	–	–	–	–
Nauru	–	–	–	–	–	–
New Zealand	75,400	78,400	85,340	92,510	101,800	433,450
Norfolk Island	–	–	–	–	–	–
Palau	–	–	–	–	–	–
Papua New Guinea	12,200	10,860	11,010	11,990	14,370	60,430
Philippines	355,000	379,700	390,700	430,600	451,300	2,007,300
Singapore	106,300	112,400	109,400	120,900	124,300	573,300
Solomon Islands	800	–	–	–	–	–
South Korea	920,000	941,500	857,800	925,100	965,300	4,609,700
Taiwan	386,000	406,000	528,600	576,200	631,200	2,528,000
Thailand	410,000	445,800	477,500	524,800	560,700	2,418,800
Vietnam	168,100	183,800	203,700	227,200	232,200	1,015,000

Near East and South Asia

Countries	GDP (Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Afghanistan	21,000	19,000	20,000	21,500	–	–
Algeria	177,000	173,800	196,000	212,300	233,200	992,300
Bahrain	8,400	9,910	11,290	13,010	15,830	58,440
Bangladesh	230,000	238,200	258,800	275,700	304,300	1,307,000
East Timor	415	440	–	370	–	–
Gaza strip	750	735	768	–	–	–
India	2,660,000	2,664,000	3,033,000	3,319,000	3,611,000	15,287,000
Iran	–	456,000	478,200	516,700	561,600	–
Iraq	59,000	–	37,920	54,400	94,100	–
Israel	–	122,000	120,900	129,000	154,500	–
Jordan	–	22,800	23,640	25,500	26,800	–
Kuwait	30,900	36,850	41,460	48,000	44,770	201,980
Lebanon	18,800	17,610	17,820	18,830	23,690	96,750
Malives	1,200	1,250	–	–	–	–
Morocco	112,000	121,800	128,300	134,600	138,300	635,000
Nepal	35,600	37,320	38,290	39,530	39,900	190,640
Oman	21,500	22,400	36,700	38,090	39,650	158,340
Pakistan	299,000	295,300	318,000	347,300	393,400	1,653,000
Qatar	16,300	15,910	17,540	19,490	23,640	92,880
Saudi Arabia	241,000	268,900	287,800	310,200	338,000	1,445,900
Sri Lanka	62,700	73,700	73,700	80,580	85,340	376,020
Syria	54,200	63,480	58,010	60,440	72,330	308,460
Tunisia	64,500	67,130	68,230	70,880	83,540	354,280
United Arab Emirates	51,000	53,970	57,700	63,670	111,300	337,640
Yemen	14,800	15,070	15,090	16,250	19,370	80,580

Europe

Countries	GDP (Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Albania	14,000	15,690	16,130	17,460	18,970	82,250
Andora	–	–	1,900	–	–	–
Armenia	11,200	12,130	11,790	13,650	13,460	62,230
Aruba	–	1,940	–	–	2,130	–
Austria	226,000	227,700	245,300	255,900	267,600	1,222,500
Azrbaijan	27,000	28,610	–	–	37,920	–
Belarus	84,800	90,190	62,560	70,500	70,680	378,730
Belgium	297,600	299,700	299,100	316,200	325,000	1,537,600
Benin	6,800	7,380	7,742	8,338	8,553	38,813
Bosnia-Herzegovinia	7,000	7,300	24,310	–	22,890	–
Bulgaria	50,600	49,230	57,130	61,630	71,540	290,130
Croatia	38,900	43,120	47,050	50,330	55,760	235,160
Cyprus	9,100	9,400	14,820	15,710	16,780	65,810
Czech Repubulic	155,900	157,100	161,100	172,200	199,400	845,700
Denmark	153,500	155,500	167,200	174,400	188,100	838,700
Estonia	15,200	15,520	17,350	19,230	22,290	89,590
Finand	136,200	133,800	142,200	151,200	161,500	724,900
France	1,540,000	1,558,000	1,661,000	1,737,000	1,816,000	8,312,000
Georgia	15,000	16,050	12,180	14,450	15,560	73,240
Germany	2,184,000	2,160,000	2,271,000	2,362,000	2,504,000	11,481,000
Gibraltar	–	–	–	–	–	–
Greece	201,100	203,300	213,600	226,400	236,800	1,081,200
Hungary	–	134,700	139,800	149,300	162,600	–
Iceland	7,700	8,440	8,678	9,373	10,570	44,761
Ireland	111,300	113,700	116,200	126,400	164,600	632,200
Italy	1,438,000	1,455,000	1,550,000	1,609,000	1,698,000	7,750,000
Kazakhstan	98,100	120,000	105,500	118,400	124,300	566,300
Kyrgyzstan	13,500	13,880	7,808	8,495	10,650	54,333
Latvia	20,000	20,990	23,900	26,530	30,290	121,710
Liechtenstein	–	–	–	–	–	–
Lithuania	29,200	30,080	40,880	45,230	49,210	194,600
Luxembourg	20,000	21,940	25,010	27,270	30,740	124,960
Macedonia	10,000	10,570	13,810	14,400	16,030	64,810
Malta	7,000	6,818	7,082	7,223	7,926	36,049
Moldova	11,000	11,510	7,792	8,581	8,175	47,058
Monaco	–	–	–	–	–	–
Netherlands	434,000	437,800	461,400	481,100	499,800	2,314,100
Norway	143,000	149,100	171,700	183,000	194,100	840,900

Europe (Con'd)

Countries	GDP (Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Poland	368,100	373,200	427,100	463,000	514,000	2,145,400
Portugal	182,000	195,200	181,800	188,700	204,400	952,100
Romania	152,700	169,300	155,000	171,500	183,600	832,100
Russian Federation	1,270,000	1,409,000	1,282,000	1,408,000	1,589,000	6,958,000
San Marino	940	–	–	–	–	–
Serbia and Montenegro	25,300	23,150	23,890	26,270	41,150	139,760
Slovakia	66,000	67,340	72,290	78,890	87,320	371,840
Slovenia	34,090	37,060	36,820	39,410	43,360	190,740
Spain	828,000	850,700	885,500	937,600	1,029,000	4,530,800
Sweden	227,400	230,700	238,300	255,400	268,000	1,219,800
Switzerland	231,000	233,400	239,300	251,900	241,800	1,197,400
Tajikistan	7,500	8,476	6,812	7,950	8,730	39,468
Turkey	468,000	489,700	458,200	508,700	572,000	2,496,600
Turkmenistan	21,500	31,340	27,880	27,600	39,540	147,860
Ukraine	205,000	218,000	260,400	299,100	340,400	1,322,900
United Kingdom	1,520,000	1,528,000	1,666,000	1,782,000	1,830,000	8,326,000
Uzbekistan	62,000	66,060	43,990	47,590	48,240	267,880

Africa

Countries	GDP (Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Angola	13,300	18,360	20,420	23,170	45,930	121,180
Botswana	12,400	13,480	14,200	–	17,240	–
Burkina Faso	12,800	14,510	14,550	15,740	16,950	74,550
Burundi	3,700	3,146	3,780	4,001	5,654	20,281
Cameroon	26,400	26,840	27,750	40,170	40,830	161,990
Central African Rep	4,600	4,296	4,183	4,248	4,784	22,111
Chad	8,900	9,297	10,670	15,660	14,790	59,317
Congo	32,000	34,000	40,050	42,740	40,670	189,460
Egypt	258,000	289,800	295,200	316,300	303,500	1,462,800
Equatorial guinea	1,040	1,270	–	–	25,690	–
Eritrea	3,200	3,300	3,850	4,154	4,471	18,975
Ethiopia	46,000	48,530	46,810	54,890	62,880	259,110
Gabon	6,700	8,354	7,301	7,966	9,535	39,856
Gambia	2,500	2,582	2,560	–	3,024	–
Ghana	39,400	41,250	44,440	48,270	54,450	227,810
Guinea	15,000	18,690	19,020	19,500	18,990	91,200
Kenya	31,000	32,890	33,030	34,680	37,150	168,750
Lesotho	5,300	5,106	5,583	5,892	5,124	27,005
Liberia	3,600	3,116	–	2,903	2,755	12,374
Libya	40,000	33,360	–	37,480	65,790	–
Madagascar	14,000	12,590	13,020	14,560	16,360	70,530
Malawi	7,000	6,811	6,845	7,410	7,524	35,590
Mali	9,200	9,775	10,530	11,000	13,560	54,065
Mauriius	12,900	12,150	13,850	15,680	16,090	70,670
Mauritania	5,000	4,891	5,195	5,534	6,891	27,511
Mozambique	17,500	19,520	21,230	23,380	26,030	107,660
Namibia	8,100	13,150	13,850	14,760	14,230	64,090
Niger	8,400	8,713	9,062	9,716	11,280	47,171
Nigeria	105,900	112,500	114,800	125,700	174,100	633,000
Rwanda	7,200	8,920	10,110	10,430	12,650	49,310
Senegal	16,200	15,640	17,090	18,360	20,530	87,820
Sierra Leone	2,700	2,826	3,057	3,335	4,921	16,839
Somalia	4,100	–	4,361	4,597	4,809	–
South Africa	2,001,000	427,700	456,700	491,400	533,200	3,910,000
Sudan	49,300	52,900	70,950	76,190	85,650	334,990
Swaziland	4,600	5,542	5,702	6,018	5,658	27,520
Tanzania	22,100	20,420	21,580	23,710	27,070	114,880
Togo	7,600	7,594	8,257	8,684	8,965	41,100
Ugnada	29,000	30,490	36,100	39,390	48,730	183,710
Zambia	7,590	8,240	8,596	9,409	10,590	44,425
Zimbabwe	28,000	26,070	24,030	24,370	28,370	130,840

Western Hemisphere

Countries	GDP (Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Anguilla	–	112	–	–	–	–
Antigua & Barbuda	–	750	–	–	–	–
Argentina	391,000	403,800	435,500	483,500	518,100	2,231,900
Bahamas	5,000	4,590	5,049	5,295	6,098	26,032
Barbados	4,000	4,153	4,355	4,569	4,745	21,822
Belize	830	1,280	–	1,778	1,778	–
Bermuda	2,200	2,250	2,330	–	4,500	–
Bolivia	21,400	21,150	21,010	22,330	25,950	111,840
Brazil	1,340,000	1,376,000	1,375,000	1,492,000	1,556,000	7,139,000
Canada	928,000	934,100	958,700	1,023,000	1,114,000	4,957,800
Chile	153,000	156,100	154,700	169,100	187,100	820,000
Columbia	255,000	251,600	263,200	281,100	337,500	1,388,400
Costa Rica	31,900	32,000	35,340	37,970	44,680	181,890
Cuba	25,900	30,690	32,130	33,920	39,170	161,810
Dominica	50,000	53,780	52,710	55,680	63,730	275,900
Ecuador	39,600	42,650	45,650	49,510	56,900	234,310
El Salvador	28,400	29,410	30,990	32,350	31,240	152,390
Grenada	424	440	–	–	–	–
Guadeloupe	–	–	–	–	3,513	–
Guatemala	48,300	53,200	56,500	59,470	56,860	274,330
Guyana	–	–	–	–	3,549	–
Haiti	12,000	10,600	12,300	12,050	14,150	61,100
Honduras	17,000	16,290	17,550	18,790	20,590	90,220
Jamaica	9,800	10,080	10,610	11,130	12,170	53,790
Marshall Islands	115	–	–	–	–	–
Mexico	920,000	924,400	941,200	1,006,000	1,067,000	4,858,600
Montserrat	–	–	–	–	–	–
Nicarogua	12,300	11,160	11,600	12,340	16,090	63,490
Panama	16,900	18,060	18,780	20,570	22,760	97,070
Parauay	26,200	25,190	28,170	29,930	29,080	138,570
Peru	132,000	138,800	146,000	155,300	164,500	736,600
Puerto Rico	43,900	43,010	57,980	68,950	72,700	286,540
Suriname	–	1,469	1,752	1,885	2,818	–
Trinidad&Tobago	10,600	11,070	10,520	11,480	18,010	61,680
Uruguay	31,000	26,820	43,670	49,270	32,960	183,720
Venezulela	146,200	131,700	117,900	145,200	153,700	694,700

Appendix D. United States Patent Applications Filed by Residents of Foreign Countries

East Asia and Pacific

Countries	2001	2002	2003	2004	2005	Total
Australia	2,088	2,246	2,498	1,759	2,873	11,464
China (Hogn Kong)	1,008	1,109	1,159	1,120	1,223	5,619
China	694	966	1,230	1,132	2,043	6,065
Fiji	2	1	1	1		5
Indonesia	10	25	26	32	21	114
Japan	62,676	61,259	61,177	46,267	65,025	296,404
South Korea	6,792	7,757	9,614	9,730	15,200	49,093
Laos	0	0	0	0	0	0
Macau	4	7	7	7	4	29
Malaysia	144	136	237	238	315	1,070
Mongolia	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0
Nauru	0	0	0	0	0	0
New Zealand	355	402	473	202	324	1,756
Norfolk Island	0	1	0	0	0	1
Palau	0	1	0	0	0	1
Philippines	47	72	37	52	53	261
Singapore	766	792	817	676	848	3,899
Solomon Islands	0	0	0	0	0	0
Taiwan	12,403	13,761	14,537	13,129	16,865	70,695
Thailand	106	85	88	85	75	439
Vietnam	5	1	1	2	6	15

Near East and South Asia (Patents)

Countries	2001	2002	2003	2004	2005	Total
Afghanistan	0	0	0	0	1	1
Algeria	2	0	1	0	2	5
Bahrain	0	0	1	1	0	2
Bangladesh	1	1	1	0	0	3
India	636	813	1,105	937	1,278	4,769
Iran	4	4	5	2	3	18
Iraq	1	1	0	0	0	2
Israel	2,781	2,737	2,611	1,840	2,827	12,796
Jordan	4	3	6	4	1	18
Kuwait	6	11	7	4	19	47
Lebanon	9	11	6	5	6	37
Malives	0	0	0	0	0	0
Morocco	1	1	5	3	3	13
Nepal	0	0	0	0	0	0
Oman	0	1	4	0	3	8
Pakistan	2	6	6	8	11	33
Qatar	0	1	1	4	1	7
Saudi Arabia	32	35	33	20	36	156
Sri Lanka	8	20	3	3	3	37
Syria	0	3	4	0	2	9
Tunisia	1	3	2	3	1	10
United Arab Emirates	2	11	10	14	12	49
Yemen	0	0	0	0	0	0

Europe (Patents)

Countries	2001	2002	2003	2004	2005	Total
Albania	0	0	0	0	1	1
Andora	3	3	2	1	1	10
Armenia	4	1	1	0	3	9
Aruba	1	1	0	0	0	2
Austria	945	1,134	1,009	627	941	4,656
Belarus	4	8	6	7	4	29
Belgium	1,341	1,435	1,420	884	1,314	6,394
Bulgaria	10	10	8	74	53	155
Croatia	22	20	23	17	38	120
Cyprus	7	5	7	5	9	33
Czech Repubulic	83	55	52	46	80	316
Denmark	1,130	1,227	1,145	700	947	5,149
Estonia	7	8	6	5	18	44
Finand	1,799	2,045	1,866	1,279	1,851	8,840
France	7,154	7,434	6,887	4,296	6,298	32,069
Georgia	5	3	5	3	5	21
Germany	19,776	21,657	19,646	11,904	18,245	91,228
Gibraltar	0	1	0	0	5	6
Greece	48	56	44	37	52	237
Hungary	91	135	128	71	105	530
Iceland	39	40	49	36	38	202
Ireland	401	448	382	311	446	1,988
Italy	3,185	3,336	3,325	2,208	3,170	15,224
Kazakhstan	2	1	2	1	2	8
Kyrgyzstan	0	0	0	0	0	0
Latvia	5	2	2	3	6	18
Liechtenstein	33	28	34	16	23	134
Lithuania	8	2	8	14	9	41
Luxembourg	77	81	72	51	71	352
Macedonia	2	0	0	3	1	6
Malta	6	5	3	2	6	22
Moldova	2	3	2	1	0	8
Monaco	29	27	29	10	16	111
Netherlands	2,822	3,074	2,382	1,743	2,938	12,959
Norway	452	587	470	275	463	2,247

Europe (Patents)

Countries	2001	2002	2003	2004	2005	Total
Poland	43	46	48	58	101	296
Portugal	27	31	22	15	51	146
Romania	13	9	10	12	14	58
Russian Federation	417	403	345	195	313	1,673
San Marino	1	0	0	0	0	1
Slovakia	3	15	6	2	14	40
Slovenia	21	21	55	32	40	169
Spain	611	690	633	460	727	3,121
Sweden	3,001	2,692	2,311	1,360	2,002	11,366
Switzerland	2,494	2,560	2,362	1,525	2,222	11,163
Turkey	31	39	41	34	53	198
Ukraine	39	46	39	27	33	184
United Kingdom	8,464	9,238	8,215	5,013	7,275	38,205
Uzbekistan	0	3	1	1	0	5
Vatican City	0	1	0	0	0	1
Yugoslavia	4	8	10	2	5	29

Africa (Patents)

Countries	2001	2002	2003	2004	2005	Total
Angola	0	1	0	0	0	1
Cameroon	0	0	0	0	2	2
Egypt	16	13	13	6	13	61
Ethiopia	0	0	0	0	0	0
Gabon	0	0	0	0	0	0
Ghana	0	1	0	0	3	4
Guinea	0	0	0	0	0	0
Kenya	13	12	28	3	7	63
Lesotho	0	0	0	0	0	0
Madagascar	2	0	0	0	0	2
Mali	0	0	0	0	0	0
Mauriius	1	0	2	0	0	3
Mozambique	0	0	0	1	0	1
Namibia	0	0	0	0	0	0
Niger	0	0	0	0	0	0
Nigeria	7	3	4	2	3	19
Senegal	0	0	0	0	0	0
Seychelles	1	0	3	1	2	7
Sierra Leone	0	0	0	0	0	0
South Africa	259	248	263	122	210	1,102
Swaziland	0	0	0	0	0	0
Tanzania	1	1	1	0	0	3
Ugnada	0	0	0	0	0	0
Zimbabwe	1	2	1	2	1	7

Western Hemisphere (Patents)

Countries	2001	2002	2003	2004	2005	Total
Anguilla	0	1	0	0	0	1
Argentina	146	109	123	86	83	547
Bahamas	14	26	22	24	17	103
Barbados	4	4	0	7	9	24
Bermuda	4	12	11	3	7	37
Bolivia	1	1	0	1	1	4
Brazil	247	288	333	203	276	1,347
Canada	7,802	7,967	8,138	6,705	8,309	38,921
Chile	29	44	27	42	48	190
Columbia	28	26	22	16	13	105
Costa Rica	8	18	17	15	47	105
Cuba	6	11	7	1	7	32
Dominica	0	0	0	1	0	1
Ecuador	8	11	9	5	4	37
El Salvador	3	1	2	2		8
Grenada	0	0	1	0	0	1
Guadeloupe	0	0	0	0	0	0
Guatemala	12	3	1	0	1	17
Guyana	1	0	0	0	0	1
Haiti	0	1	0	0	0	1
Honduras	1	0	0	3	3	7
Jamaica	1	2	3	3	5	14
Marshall Islands	1	0	0	0	0	1
Mexico	220	167	213	152	197	949
Montserrat	0	0	0	0	0	0
Nicarogua	1	0	0	0	0	1
Panama	10	4	6	8	3	31
Parauay	0	0	0	1	0	1
Peru	8	9	7	2	3	29
St. Lucia	1	1	0	0	0	2
Suriname	0	0	0	0	0	0
Trinidad&Tobago	1	1	4	0	4	10
Turks and Caicos Islands	5	7	6	1	2	21
Uruguay	7	8	10	6	10	41
Venezulela	65	41	30	18	30	184

Appendix E. Military Expenditure

East Asia and Pacific

Country	Military Expenditure (Dollars in Millions)					
	2001	**2002**	**2003**	**2004**	**2005**	**Total**
Australia	9,300	11,390	14,120	16,650	17,840	69,300
Fiji	35	39	34	36	37	181
Japan	40,774	39,520	42,488	45,841	44,310	212,933
South Korea	12,800	13,094	14,522	16,180	21,050	77,646
Laos	9	10	11	11	11	51
Malaysia	1,690	–	–	–	–	–
Mongolia	23	24	26	26	27	126
New Zealand	490	516	606	1,147	1,147	3,905
Philippines	1,025	1,056	781	806	837	4,504
Singapore	4,470	5,000	–	–	–	–
Taiwan	8,041	7,574	7,612	7,685	7,923	38,835
Thailand	1,775	–	–	–	–	–

Near East And South Asia

Country	Military Expenditure (Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Algeria	2,068	2,132	2,197	2,480	2,994	11,870
Bahrain	526	560	618	629	628	2,960
Bangladesh	571	589	607	995	1,008	3,770
India	12,079	11,520	14,019	18,860	19,040	75,518
Israel	8,701	8,970	9,110	9,161	9,444	45,386
Jordan	758	1,982	2,043	1,460	1,392	7,635
Kuwait	1,900	1,967	2,500	2,585	3,007	11,959
Lebanon	343	541	557	541	557	2,539
Morocco	1,400	2,228	2,297	2,306	2,306	10,537
Nepal	56	57	295	99	105	612
Oman	242	235	242	253	253	1,225
Pakistan	2,546	2,964	2,700	3,848	4,253	16,311
Qatar	723	–	–	–	–	–
Saudi Arabia	–	18,300	–	–	18,000	–
Sri Lanka	719	697	518	515	500	2,949
Yemen	483	684	886	962	992	4,007

Europe

Country	Military Expenditure (Dollars in Millions)					
	2001	2002	2003	2004	2005	Total
Albania	–	57	–	–	–	–
Armenia	135	–	–	–	–	–
Belgium	2,500	3,076	3,999	4,119	4,243	17,936
Bulgaria	–	356	–	–	–	–
Croatia	–	520	–	620	–	–
Czech Repubulic	1,200	1,190	2,105	2,170	2,235	8,900
Denmark	2,470	–	3,272	–	–	–
Estonia	–	155	–	–	–	–
France	46,500	47,895	45,238	45,119	45,000	229,752
Georgia	23	–	–	–	–	–
Germany	–	38,800	35,063	–	–	–
Greece	6,120	7,070	7,289	5,890	6,067	32,436
Hungary	–	1,080	–	–	–	–
Ireland	700	738	–	–	–	–
Italy	20,700	20,200	28,183	29,028	29,899	128,010
Kazakhstan	173	222	–	–	–	–
Kyrgyzstan	19	–	–	–	–	–
Latvia	87	–	–	–	–	–
Lithuania	231	–	–	–	–	–
Luxembourg	148	150	232	248	265	1,042
Macedonia	76	200	206	212	218	913
Malta	60	58	33	31	45	227
Moldova	6	6	10	9	9	39
Netherlands	6,500	7,803	8,044	9,408	9,408	41,164
Norway	3,113	–	4,034	–	–	–
Poland	–	3,500	–	–	–	–
Portugal	–	–	3,498	–	–	–
Romania	–	985	–	–	–	–
Slovakia	–	406	–	–	–	–
Spain	–	8,600	9,907	–	–	–
Sweden	4,395	4,527	5,557	5,729	5,501	25,709
Switzerland	2,548	2,600	2,678	2,472	2,548	12,846
Turkey	–	8,100	12,155	–	–	–
Ukraine	–	618	–	–	–	–
United Kingdom	30,749	31,700	42,837	41,551	42,836	189,672

Africa

Country	Military Expenditure (Dollars in Milions)					
	2001	**2002**	**2003**	**2004**	**2005**	**Total**
Angola	2,160	2,227	2,651	1,836	2,000	10,874
Cameroon	119	184	189	211	230	933
Egypt	4,040	–	2,443	–	–	–
Ethiopia	800	–	–	337	260	–
Gabon	71	82	149	185	254	740
Ghana	35	36	44	49	84	248
Guinea	137	154	59	57	120	526
Kenya	179	185	231	177	281	1,053
Madagascar	49	52	70	45	329	544
Mali	50	420	52	22	106	650
Mozambique	35	98	101	117	78	430
Namibia	52	73	112	168	150	554
Niger	21	21	22	33	45	141
Nigeria	375	418	470	545	737	2,544
Senegal	67	69	96	107	117	456
Sierra Leone	10	10	12	13	14	60
South Africa	1,790	2,000	2,653	3,172	3,548	13,163
Ugnada	121	125	128	170	193	737
Zimbabwe	351	625	105	217	125	1,422

Western Hemisphere

Country	Military Expenditure (Dollars in Milions)					
	2001	**2002**	**2003**	**2004**	**2005**	**Total**
Argentina	4,300	–	–	–	–	–
Bolivia	120	123	127	133	130	632
Brazil	9,822	10,126	10,439	11,000	9,933	51,321
Canada	7,500	7,860	9,802	10,095	10,398	45,655
Chile	2,671	2,754	2,840	3,420	3,907	15,592
Columbia	3,300	–	–	–	–	–
Ecuador	612	631	650	655	650	3,197
El Salvador	–	–	157	–	162	–
Guatemala	191	197	203	202	170	961
Haiti	50	–	26	26	–	–
Honduras	94	97	100	101	99	491
Jamaica	–	–	31	31	–	–
Mexico	4,400	5,169	5,168	6,043	6,062	26,843
Nicarogua	29	30	31	33	32	155
Panama	138	143	145	147	150	723
Parauay	–	–	52	53	–	–
Peru	1,000	970	829	804	829	4,433
Trinidad&Tobago	–	–	67	–	–	–
Uruguay	250	243	218	258	265	1,233
Venezulela	1,000	1,030	1,126	1,558	1,606	6,319

Appendix F. Dispute

East Asia and Pacific

Country	Dispute Status
Australia	- Asserts land and maritime claims to Antarctica - East Timor and Australia agreed in 2005 to defer the disputed portion of the boundary for fifty years and to split hydrocarbon revenues evenly outside the Joint Petroleum Development Area covered by the 2002 Timor Sea Treaty
Fiji	none
Japan	- The sovereignty dispute over the islands of Etorofu, Kunashiri, and Shikotan, and the Habomai group, known in Japan as the "Northern Territories" and in Russia as the "Southern Kuril Islands," occupied by the Soviet Union in 1945, now administered by Russia and claimed by Japan, remains the primary sticking point to signing a peace treaty formally ending World War II hostilities - Japan and South Korea claim Liancourt Rocks (Take-shima/Tok-do) occupied by South Korea since 1954 - China and Taiwan dispute both Japan's claims to the uninhabited islands of the Senkaku-shoto (Diaoyu Tai)
Laos	- Southeast Asian states have enhanced border surveillance to check the spread of avian flu - talks continue on completion of demarcation with Thailand but disputes remain over several areas along Mekong River and Thai squatters - concern among Mekong Commission members that China's construction of dams on the Mekong River will affect water levels
Mongolia	none
New Zealand	- Asserts a territorial claim in Antarctica
Philippines	- Philippines claims sovereignty over certain of the Spratly Islands, known locally as the Kalayaan (Freedom) Islands, also claimed by China, Malaysia, Taiwan, and Vietnam - Philippines retains a dormant claim to Malaysia's Sabah State in northern Borneo based on the Sultanate of Sulu's granting the Philippines Government power of attorney to pursue a sovereignty claim on his behalf
South Korea	- Military Demarcation Line within the 4-km wide Demilitarized Zone has separated North from South Korea since 1953 - Periodic maritime disputes with North Korea over the Northern Limit Line - South Korea and Japan claim Liancourt Rocks (Tok-do/Take-shima), occupied by South Korea since 1954

Near East and South Asia

Country	Dispute Status
Algeria	- Algeria's border with Morocco remains an irritant to bilateral relations, each nation accusing the other of harboring militants and arms smuggling
Bangladesh	- discussions with India remain stalled to delimit a small section of river boundary, exchange 162 miniscule enclaves in both countries, allocate divided villages, and stop illegal cross-border trade, migration, violence, and transit of terrorists through the porous border; Bangladesh resists India's attempts to fence or wall off high-traffic sections of the porous boundary; a joint Bangladesh-India boundary inspection in 2005 revealed 92 pillars are missing; dispute with India over New Moore/South Talpatty/Purbasha Island in the Bay of Bengal deters maritime boundary delimitation; Burmese Muslim refugees strain Bangladesh's meager resources
India	- Since China and India launched a security and foreign policy dialogue in 2005, consolidated discussions related to the dispute over most of their rugged, militarized boundary, regional nuclear proliferation - Indian claims that China transferred missiles to Pakistan, and other matters continue; various talks and confidence-building measures have cautiously begun to defuse tensions over Kashmir, particularly since the October 2005 earthquake in the region; Kashmir nevertheless remains the site of the world's largest and most militarized territorial dispute with portions under the de facto administration of China (Aksai Chin), India (Jammu and Kashmir), and Pakistan (Azad Kashmir and Northern Areas); in 2004, India and Pakistan instituted a cease fire in Kashmir and in 2005, restored bus service across the highly militarized Line of Control; Pakistan has taken its
Jordan	- 2004 Agreement settles border dispute with Syria pending demarcation
Lebanon	- Lebanese Government claims Shab'a Farms area of Israeli-occupied Golan Heights; the roughly 2,000-strong UN Interim Force in Lebanon (UNIFIL) has been in place since 1978 - Military conflict with Israel(July, 2006)
Moroco	- claims and administers Western Sahara whose sovereignty remains unresolved
Nepal	- joint border commission continues to work on small disputed sections of boundary with India
Oman	- boundary agreement reportedly signed and ratified with UAE in 2003 for entire border, including Oman's Musandam Peninsula and Al Madhah exclave, but details have not been made public
Pakistan	- Various talks and confidence-building measures cautiously have begun to defuse tensions over Kashmir with India, but not solved yet
Sri Lanka	none
Yemen	- Saudi Arabia still maintains the concrete-filled pipe as a security barrier along sections of the border with Yemen in 2004 to stem illegal cross-border activities; Yemen protests Saudi erection of a concrete-filled pipe as a security barrier

Europe

Country	Dispute Status
Belgium	none
Czech Repubulic	-In February 2005, the ICJ refused to rule on the restitution of Liechtenstein's land and property assets in the Czech Republic confiscated in 1945 as German property - Austrian anti-nuclear activists have revived blockades of the Czech-Austrian border to protest operation of the Temelin nuclear power plant in the Czech Republic
France	- Madagascar claims the French territories of Bassas da India, Europa Island, Glorioso Islands, and Juan de Nova Island - Comoros claims Mayotte - Territorial dispute between Suriname and the French overseas department of French Guiana - France asserts a territorial claim in Antarctica - France and Vanuatu claim Matthew and Hunter Islands, east of New Caledonia
Greece	- Greece and Turkey continue discussions to resolve their complex maritime, air, territorial, and boundary disputes in the Aegean Sea
Italy	- Italy's long coastline and developed economy entices tens of thousands of illegal immigrants from southeastern Europe and northern Africa
Luxembourg	- none
Macedonia	- ethnic Albanians in Kosovo object to demarcation of the boundary with Macedonia in accordance with the 2000 Macedonia-Serbia and Montenegro delimitation agreement
Malta	none
Moldova	- Moldova and Ukraine have established joint customs posts to monitor transit through Moldova's break-away Transnistria region which remains under OSCE supervision
Netherlands	none
Sweden	none
Switzerland	none
United Kingdom	- In 2002, Gibraltar residents voted overwhelmingly by referendum to reject any "shared sovereignty" arrangement between the UK and Spain; the Government of Gibraltar insists on equal participation in talks between the two countries; Spain disapproves of UK plans to grant Gibraltar greater autonomy - UK rejects sovereignty talks requested by Argentina, which still claims the Falkland Islands - and Ireland dispute Denmark's claim that the Faroe Islands' continental shelf extends beyond 200 nm

Africa

Country	Dispute Status
Angola	- Many Cabinda exclave secessionists have sought shelter in neighboring states
Cameroon	- Cameroon-Nigeria land and maritime boundary
Gabon	- the Sovereignty dispute with Equatorial over Gabon-occupied Mbane Island
Ghana	- Ghana struggles to accommodate returning nationals who worked in the cocoa plantations and escaped fighting in Cote d'Ivoire
Guinea	- Conflicts among rebel groups, warlords, and youth gangs in neighboring states have spilled over into Guinea, resulting in domestic instability - Sierra Leone has pressured Guinea to remove its forces from the town of Yenga, occupied since 1998
Kenya	- Kenya served as an important mediator in brokering Sudan's north-south separation in February 2005 - Kenya provides shelter to approximately a quarter of a million refugees including Ugandans who flee across the border periodically to seek protection from Lord's Resistance Army (LRA) rebels
Madagascar	- claims Bassas da India, Europa Island, Glorioso Islands, and Juan de Nova Island
Mali	none
Mozambique	none
Namibia	- Dispute with South Africa over the location of the boundary in the Orange River
Niger	- Libya claims about 25,000 sq km in a currently dormant dispute
Nigeria	- Conflict with Cameroon, Niger, Chad
Senegal	- The Gambia and Guinea-Bissau attempt to stem Senegalese citizens from the Casamance region fleeing separatist violence, cross border raids, and arms smuggling
Sierra Leone	- Domestic fighting among disparate rebel groups, warlords, and youth gangs in Cote d'Ivoire, Guinea, Liberia, and Sierra Leone perpetuate insurgencies since 1999
South Africa	- Managed dispute with Namibia over the location of the boundary
Uganda	- Uganda is subject to armed fighting among hostile ethnic groups, rebels, armed gangs, militias, and various government forces
Zimbabwe	- Botswana has built electric fences and South Africa has placed military along the border to stem the flow of thousands of Zimbabweans fleeing to find work and escape political persecution - Not clearly delimited Botswana-Zambia boundary in the river

Western Hemisphere

Country	Dispute Status
Bolivia	- Chile rebuffs Bolivia's reactivated claim to restore the Atacama corridor, ceded to Chile in 1884, offering instead unrestricted but not sovereign maritime access through Chile for Bolivian natural gas and other commodities
Brazil	- Unruly region at convergence of Argentina-Brazil-Paraguay borders is locus of money laundering, smuggling, arms and illegal narcotics trafficking, and fundraising for extremist organizations
Canada	- Managed maritime boundary disputes with the US at Dixon Entrance, Beaufort Sea, Strait of Juan de Fuca, and around the disputed Machias Seal Island and North Rock - Uncontested sovereignty dispute with Denmark over Hans Island in the Kennedy Channel between Ellesmere Island and Greenland
Chile	- Chile rebuffs Bolivia's reactivated claim to restore the Atacama corridor, ceded to Chile in 1884, offering instead unrestricted but not sovereign maritime access through Chile to Bolivian gas and other commodities - Peru proposes changing its latitudinal maritime boundary with Chile to an equidistance line with a southwestern
Ecuador	- Organized illegal narcotics operations in Colombia penetrate across Ecuador's shared border and caused over 20,000 refugees to flee into Ecuador in 2004
Guatemala	- Differendum that created a small adjustment to land boundary, a Guatemalan maritime corridor in Caribbean, a joint ecological park for the disputed Sapodilla Cays, and a substantial US-UK financial package
Honduras	- Border dispute with El Salvador
Mexico	- Prolonged drought, population growth, and outmoded practices and infrastructure in the border region have strained water-sharing arrangements with the US - The US has stepped up efforts to stem nationals from Mexico, Central America, and other parts of the world from illegally crossing the border with Mexico
Nicarogua	- Nicaragua filed a claim against Honduras in 1999 and against Colombia in 2001 at the ICJ over disputed maritime boundary involving 50,000 sq km in the Caribbean Sea - legal dispute over navigational rights of San Juan River on border with Costa Rica
Panama	- Organized illegal narcotics operations in Colombia operate within the border region with Panama
Peru	- Maritime dispute with Chile and Equador
Uruguay	-Uuncontested dispute with Brazil over certain islands in the Quarai/Cuareim and Invernada streams and the resulting tripoint with Argentina
Venezulela	- Dispute with Guyana and Colombia

Appendix G. Selected Data

Region	Country	GDP	Patents	FMS	*Dispute	MilExp
East Asia and Pacific	Australia	2,876,700	11464	1,573.899	1	69,300.100
	Fiji	24,787	5	1.123	0	181.290
	Japan	18,544,000	296404	3,666.509	1	212,933.100
	Laos	53,330	0	0.124	1	51.040
	Mongolia	25,216	0	6.922	0	126.270
	New Zealand	433,450	1756	102.369	1	3,905.300
	Philippines	2,007,300	261	154.712	1	4,503.900
Near East /South Asia	Algeria	992,300	5	0.050	1	11,870.00
	Bangladesh	1,307,000	3	7.191	1	3,769.60
	India	15,287,000	4769	287.852	1	75,517.80
	Jordan	98,740	18	988.786	0	7,634.60
	Lebanon	96,750	37	10.712	1	2,538.60
	Morocco	635,000	13	56.748	1	10,536.90
	Nepal	190,640	0	26.109	1	611.82
	Oman	158,340	8	987.901	1	1,225.15
	Pakistan	1,653,000	33	859.835	1	16,310.50
	Sri Lanka	376,020	37	8.156	0	2,948.70
	Yemen	80,580	0	34.255	1	4,006.70
Europe	Belgium	1,537,600	6394	357.474	0	17,936.40
	Czech Repubulic	845,700	316	84.567	1	8,900.00
	France	8,312,000	32069	631.688	0	229,752.10
	Greece	1,081,200	237	1494.694	1	32,435.80
	Italy	7,750,000	15224	1298.161	1	128,010.30
	Luxembourg	124,960	352	7.105	0	1,042.37
	Macedonia	64,810	6	48.693	1	912.95
	Malta	36,049	22	11.25	0	227.24
	Moldova	47,058	8	3.951	1	39.40
	Netherlands	2,314,100	12,959	1200.332	0	41,163.50
	Sweden	1,219,800	11366	121.949	0	25,708.90
	Switzerland	1,197,400	11163	430.541	1	12,845.50
	United Kingdom	8,326,000	38205	2220.846	1	189,672.40

*Dispute: 1-dispute condition, 0-None

Region	Country	GDP	Patents	FMS	*Dispute	MilExp
Africa	Angola	121,180	1	0.15	0	10,874.00
	Cameroon	161,990	2	0.15	1	932.62
	Gabon	39,856	0	0.078	1	740.30
	Ghana	227,810	4	3.201	0	248.06
	Guinea	91,200	0	3.599	1	525.90
	Kenya	168,750	63	30.357	1	1,053.00
	Madagascar	70,530	2	1.654	1	544.40
	Mali	54,065	0	0.429	0	649.90
	Mozambique	107,660	1	0.059	0	430.03
	Namibia	64,090	0	0.368	0	554.10
	Niger	47,171	0	0.545	1	141.22
	Nigeria	633,000	19	29.04	1	2,543.90
	Senegal	87,820	0	2.879	0	455.50
	Sierra Leone	16,839	0	0.04	0	59.71
	South Africa	3,910,000	1,102	14.606	0	13,163.40
	Ugnada	183,710	0	6.659	1	737.30
	Zimbabwe	130,840	7	0.858	0	1,422.40
Western Hemisph	Bolivia	111,840	4	8.134	1	632.20
	Brazil	7,139,000	1347	198.387	0	51,321.00
	Canada	4,957,800	38921	942.709	1	45,654.60
	Chile	820,000	190	568.927	1	15,592.00
	Ecuador	234,310	37	23.451	0	3,197.10
	Guatemala	274,330	17	2.46	1	961.40
	Honduras	90,220	7	4.564	1	490.51
	Mexico	4,858,600	949	36.754	0	26,842.57
	Nicarogua	63,490	1	1.567	1	154.67
	Panama	97,070	31	2.101	0	722.90
	Peru	736,600	29	0.985	0	4,432.70
	Uruguay	183,720	41	4.439	0	1,233.20
	Venezulela	694,700	184	52.529	1	6,319.40

*Dispute: 1-dispute condition, 0-None

Appendix H.

Letter of Offer and Acceptance(LOA) Standard Terms and Conditions

Section

1. Conditions – United States Government(USG) Obligations
2. Conditions – General Purchaser Agreements
3. Indemnification and Assumption of Risks
4. Financial Terms and Conditions
5. Transportation and Discrepancy Provisions
6. Warranties
7. Dispute Resolution

1 Conditions-United States Government(USG) Obligations

1.1 Unless otherwise specified, items will be those which are standard to the U.S. Department of Defense (DoD), without regard to make or model.

1.2 The USG will furnish the items from its stocks and resources, or will procure them under terms and conditions consistent with DoD regulations and procedures. When procuring for the Pruchaser, DoD will, in general, employ the same contract clauses, the same contract administration, and the same quality and audit inspection procedure as would be used in procuring for itself; except as otherwise requested by the Purchaser and as agreed to by DoD and set forth in this LOA. Unless the Purchaser has requested, in writing, that a sole source contractor be designed, and this LOA reflects acceptance of such designation by DoD, the purchaser understands that selection of the contractor source to fill requirements is the responsibility of the USG, which will select the contractor on the same basis used to select contractors for USG requirements. Further, the Purchaser agrees that the U.S.DoD is solely responsible for negotiating the terms and conditions of contracts necessary to fulfill the requirements in this LOA.

1.3 The USG will use its best efforts to provide the items for the dollar amount and within the availability cited.

1.4 Under unusual and compelling circumstances, when the national interest of the U.S.requires, the USG reserves the right to cancel or suspend all or part this LOA at any time prior to the delivery of defense articles or performance of defense services. The USG shall be responsible for termination costs of its suppliers resulting from cancellation or suspension under this section. Termination by the USG of its contractors with its suppliers, other actions pertaining to such contracts, or cessation of deliveries or performance of defense services is not to be construed as cancellation or suspension of this LOA itself under this section

1.5 U.S. personnel performing defense services under this LOA will not perform duties of a combatant nature, including duties relating to training and advising that may engage

U.S.personnel in combat activities outside the U.S., in connection with the performance of these defense services.

1.6 The assignment or employment of U.S. personnel for the performance of this LOA by the USG will not take into account race, religion, national origin, or sex.

1.7 Unless otherwise specified, this LOA may be made available for public inspection consistent with the national security of the United States.

2 Conditions-General Purchaser Agreements

2.1 The Purchaser may cancel this LOA or delete items at any time prior to delivery of defense article or performance of defense services. The Purchaser is responsible for all costs resulting from cancellation under this section

2.2 The Purchaser agrees, except as may otherwise be mutually agreed in writing, to use the defense articles sold hereunder only:

2.2.1 For purposes specified in any Mutual agreed in writing, to use the defense articles sold

2.2.2 For purposes specified in any bilateral or regional defense treaty to which the USG and the Purchaser are both parties, if section 2.2. is inapplicable; or,

2.2.3 For internal security, individual self-defense, preventing or hindering the proliferation of weapons of mass destruction and the means of delivering such weapons, or civic action, if sections 2.2.1 and 2.2.2 are inapplicable.

2.3 The purchaser will not transfer title to, or possession of, the defense articles, components and associated support material, related training or other defense services(including plans, specification, or information), or technology furnished under this LOA to anyone who is not an officer, employee, or agent of the Purchaser(excluding transportation agencies), and shall not use or permit their use for purposes other than those authorized, unless the written consent of the USG has first been obtained. The Purchaser will ensure, by all means available to it, respect for proprietary rights in any items and any plans, specifications, or information furnished, whether patented or not. The Purchaser also agrees that the defense articles offered will not be transferred to Cyprus or otherwise used to further the severance or division of Cyprus, and recognized that the U.S. Congress is required to be notified of any substantial evidence that the defense articles sold in this LOA have been used in a manner that is inconsistent with this provision.

2.4 To the extent that items, including plans, designs, specifications, technical data, or information, furnished in connection with this LOA may be classified by the USG for security purposes, the Purchaser certifies that it will maintain a similar classification and employ measures necessary to preserve such security, equivalent to those employed by the USG and commensurate with security agreements between the USG and the Purchaser. If

such security agreements do not exist, the Purchaser certifies that classified items will be provided only to those individuals having an adequate security clearance and a specific need to know in order to carry out the LOA program and that it will promptly and fully inform the USG of any compromise, or possible compromise, of U.S. classified material or information furnished pursuant to this LOA. The Purchaser further certifies that if a U.S. classified item is to be furnished to its contractor pursuant to this LOA: (a) item will be exchanged through official Government channels, (b) the specified contractor has been granted a facility security clearance by the Purchaser will assume responsibility for administering security measures while in the contractor's possession. If a commercial transportation agent is to be used for shipment, the Purchaser certified that such agent has been cleared at the appropriate level for handling classified items. These measures will be maintained throughout the period during which the USG may maintain such classification. The USG will use its best efforts to notify the Purchaser if the classification is changed.

3 Indemnification and Assumption of Risks

3.1 The Purchaser recognizes that the USG will procure and furnish the items described in this LOA on a non-profit basis for the benefit of the Purchaser. The Purchaser therefore undertakes to indemnify and hold the USG, its agents, officers, and employees harmless form any and all loss or liability(whether in tort or in contract) which might arise in connection with this LOA because of:

3.3.1 Injury to or death personnel of Purchaser or third parties, or

3.1.2 Damage to or destruction of (a) property of DoD furnished to Purchaser or suppliers specifically to implement this LOA, (b) property of Purchaser (including the items ordered by Purchaser pursuant to this LOA, before or after passage of title to Purchaser), or (3) property of third parties, or

3.1.3 Infringement or other violation of intellectual property or technical data rights.

3.2 Subject to express, special contractual warranties obtained for the Purchaser, the Purchaser agrees to relieve the contractors and subcontractors of the USG from liability for, and will assume the risk of, loss or damage to:

3.2.1 Purchaser's property(including items procured pursuant to this LOA, before or after passage of title to Purchaser), and

3.2.2 Property of DoD furnished to suppliers to implement this LOA, to the extent that the USG would assume for its property if it were procuring for itself the items being procured.

4 Financial Term and Conditions

4.1 The prices of items to be procured will be billed at their total cost to the USG. Unless otherwise specified, the cost of items to be procured, availability determination, payment schedule, and delivery projections quoted are estimates based on the best available data. The USG will use its best efforts to advise the Purchaser or its authorized representatives of;

4.1.1 Identifiable cost increase that might result in an overall increase in the estimated costs in excess of ten percent of the total value of this LOA.

4.1.2 Changes in the payment schedule, and

4.1.3 Delays which might significantly affect estimated delivery dates. USG failure to advise of the above will not change the Purchaser's obligation under all subsections of section 4.4.

4.2 The USG will refund any payments received for this LOA which prove to be in excess of the final total cost of delivery and performance and which are not required to cover arrearages on other LOAs of the Purchaser.

4.3 Purchaser failure to make timely payments in the amounts due may result in delays in contract performance by DoD contractors, claims by contractor s for increased costs, claims by contractors for termination liability for breach of contract, claims by USG or DoD contractors for storage costs, or termination of contracts by the USG under this or other open Letter of Offer and Acceptance of the Purchaser at the Purchaser's expense.

4.4 The Purchaser agrees:

4.4.1 to pay the USG the total cost to the USG of the items even if costs exceed the amounts estimated in this LOA

4.4.2 to make payment(s) by check or wire transfer payable in U.S. dollars to the Treasure of the United States.

4.4.3 if Terms of Sale specify "Cash with acceptance", to forward with this LOA a check or wire transfer in the full amount shown as the estimated Total cost, and agrees to make additional payments(s) upon notification of cost increase(s) and request(s) for funds to cover such increase(s).

4.4.4 if Terms of Sale specify payment to be "Cash prior to delivery", to pay to the USG such amounts at such times as may be specified by the USG (including initial deposit) in order to meet payment requirements for items to by furnished from the resources of DoD. USG requests for funds may be based on estimated costs to cover forecasted deliveries of items. Payments are required 90 days in advance of the time DoD plans such deliveries or incurs such expenses on behalf of the Purchaser.

4.4.5 if Terms of Sale specify payment by "Dependable Undertaking," to pay to the USG such amounts at such times as may be specified by the USG(including initial deposit) in order to meet payments required by contracts under which items are being procured, and any

damages and costs that may accrue form termination of contracts by the USG because of Purchaser's cancellation of this LOA. USG requests for funds may be based upon estimated requirements for advance and progress payments to suppliers, estimated termination liability, delivery forecasts, or evidence of constructive delivery, as the case may be. Payments are required 90 days in advance of the time USG makes payments on behalf of the Purchaser.

4.4.6 if Terms of Sale specify "Payment on delivery", that bills may be dated as of the date(s) of delivery of the items, or upon forecasts of the date(s) thereof.

4.4.7 that requests for funds or billing are due and payable in full on presentation or, if a payment date is specified in the request for funds or bill, on the payments date so specified, even if such payment date is not in accord with the estimated payment schedule, if any, contained in this LOA. Without affecting Purchaser's obligation to make such payment(s) when due, documentation concerning advance and progress payments, estimated termination liability, or evidence of constructive delivery or shipment in support of requests for funds or bills will be made available to the Purchaser by DoD upon request. When appropriate, the Purchaser may request adjustment of any questioned billed items by subsequent submission of a discrepancy report.

4.4.8 to pay interest on any net amount by which it is in arrears on payments, determined by considering collectively all of the Purchaser's open LOAs with DoD. Interest will be calculated on a daily basis. The principal amount of the acreage will be computed as the excess of cumulative financial requirements of the Purchaser over total cumulative payments after quarterly billing payments due dates. The rate of interest paid will be a rate not less than a rate determined by the Secretary of the Treasury taking into consideration the current average market yield on outstanding short-term obligations of the USG as of the last day of the month preceding the net arrearage and shall be computed from the date of net arrearage.

4.4.9 to designate the Procuring Agency and responsible Paying Office and address thereof to which the USG will submit requests for funds and bill sunder this LOA.

5 Transportation and Discrepancy Provisions

5.1 The USG agrees to deliver and pass title to the Purchaser at the initial point of shipment unless otherwise specified in this LOA. With respect to items procured for sale to the Purchaser, this will normally be at the manufacturer's loading facility; with respect to items furnished from USG stocks, this will normally be at the U.S. depot. Articles will be packed, created, or otherwise prepared for shipment prior to the time title passes. If "Point of Delivery" is specified other than the initial point of shipment, the supplying U.S. Department or Agency will arrange movement of the articles to the authorized delivery point as a reimbursable service but will pass title at the initial point of shipment. The USG disclaims any liability for damage or loss to the items incurred after passage of title irrespective of whether transportation is by common carrier or by the U.S. Defense Transportation System.

5.2 The Purchaser agrees to furnish shipping instructions which include Mark For and Freight Forwarder Codes based on the Offer Release Code.

5.3 The Purchaser is responsible for obtaining insurance coverage and customs clearances. Except for articles exported by the USG, the Purchaser is responsible for ensuring that export licenses are obtained prior to export of U.S. defense articles. The USG incurs no liability if export licenses are not granted or they are withdrawn before items are exported.

5.4 The Purchaser agrees to accept DD Forms 645 or other delivery documents as evidence that title has passed and items have been delivered. Title to defense articles transported by parcel post passes to the Purchaser at the time of parcel post shipment. Standard Form 364 will be used in submitting claims to the USG for overage, shortage, damage, duplicate billing, item deficiency, improper identification, improper documentation, or nonshipment of defense articles and non-performance of defense services and will be submitted promptly by the Purchaser. DoD will not accept claims related to items of $200 or less for overage, shortage, damages, non shipment, or non-performance. Any claim, including a claim for shortage, received after 1 year from passage of title to the article or from scheduled performance of the service will be disallowed by the USG unless the USG determines that unusual and compelling circumstances involving latent defects justify consideration of the claim. Claims, received after 1 year from date of passage of title or initial billing, whichever is later, for non-shipment/non-receipt of an entire lot will be disallowed by the USG. The Purchaser agrees to return discrepant articles to USG custody within 180 days from the date of USG approval of such return.

6 Warranties

6.1 The USG does not warrant or guarantee any of the items dold pursuant to this LOA except as provided in section 6.1.1. DoD contracts include warranty clauses only on an exception basis. If requested by the Purchaser, the USG will, with respect to items being procured, and upon timely notice, attempt to obtain contract provisions to provide the requested warranties. The USG further agrees to exercise, upon the Purchaser's request, rights the USG may have under contracts connected with the procurement of these items. Additional costs resulting from obtaining special contract provisions or warranties, or the exercise of rights under such provisions or warranties, will be charged to the Purchaser.

6.1.1 The USG warrants the title of items sold to the Purchaser hereunder but makes no warranties other than those set forth herein. In particular the USG disclaims liability resulting from infringement or other violation of intellectual property or technical data rights occasioned by the use or manufacture outside the U.S. by or for the Purchaser of items supplied hereunder.

6.1.2 The USG agrees to exercise warranties on behalf of the Purchaser to assure, to the extent provided by the warranty, replacement or correction of such items found to be defective, when such materiel is procured for the Purchaser.

6.2 Unless the condition of defense articles is identified to be other than serviceable, DoD will repair or replace at no extra cost defense articles supplied from DoD stocks which are damaged or found to be defective in respect to materiel or workmanship when it is established that these deficiencies existed prior to passage of title, or found to be defective in design to such a degree that the items cannot be used for the purpose for which they were designed. Qualified representatives of the USG and of the Purchaser will agree on the liability hereunder and the corrective steps to be taken.

7 Dispute Resolution

7.1 This LOA is subject to U.S. Federal procurement law.

7.2 The USG and the Purchaser agree to resolve any disagreement regarding this LOA by consultations between the USG and the Purchaser and not to refer any such disagreement to any international tribunal or third party for settlement

Appendix I.

Defense Trade Security Initiatives (DTSI)

Ⅰ. Creation of new license authorizations

1. Major Program Authorization
This single comprehensive authorization, issued at the start of a U.S.Governmet(USG)-sanctioned program, will target the U.S. firm as the original equipment manufacturer(OEM). The new initiative will allow the USG to license major programs upfront, rather than by piecemeal

2. Major Project Authorization
This comprehensive authorization is issued to one or more registered U.S. prime contractors for a major project such as a foreign government commercial competition

3. **Global Project Authorization**
This initiative will reduce the amount of authorizations government must seek to perform actives in furtherance of government-to-government international agreements or Memorandums of Understanding concluded between the governments or DoD and a foreign Ministry of Defense to carry out cooperative programs for research and development, including test and evaluation of defense systems and technologies or cooperative production

4. Technical Data Exports for Acquisitions, Teaming Arrangements, Mergers, Joint Ventures and Similar Arrangements
This initiatives would enable qualified U.S. defense companies to apply for licenses that authorize exchange with approved, NATO-member countries, Australia, and Japan firms, technical data to explore cooperative ventures

Ⅱ. Expanding the scope of existing licensing practices

5. Multiple Destination Licenses
This authorization is designed to encourage the use of multiple destination licenses when a U.S. firm enters into commercial cooperative projects with foreign companies.

6. Warehousing and Distribution Agreements
This initiative will permit U.S. companies to export bulk items to a foreign company, to include U.S.

7. Expedited License Review Process for Defense Capabilities Initiatives
This initiative is designed to expedite U.S. review of licenses determined to be in support of Defense Capabilities Initiative(DCI)

8. Expedited Embassy Licensing Review Process
This initiative is designed to expedite the handling of license application for key supplies submitted to the Office of Defense Trade Controls, DoS, by foreign embassies based in Washington

9. Improving U.S. Government Export License Automation Systems
This initiative would standardize incompatible computer systems between DoD and State and between the USG and industry

Ⅲ. Enhancing existing ITAR exemptions

10. Extension of ITAR Exemption to Qualified Countries
This initiative applies to allied countries that adopt and demonstrate export controls and Technology stems that are comparable to those in the U.S.

11. Exemption for Export Licensing of Maintenance Services and Training
This initiatives expands the ITAR exemption to authorize U.S. companies, without licensing requirements, to provide basic maintenance and/or maintenance training for inventories allied equipment

12. Exemption for Export of Technical Data in Response to DoD Requests for Proposals
This initiative expands the ITAR exemption to allow U.S. firms, without licensing requirements, to provide basic maintenance and/or maintenance training for inventory allied equipment

13. Improving DoD's Use of ITAR Exemptions
This initiative authorize DoD to use the numerous exemptions to licensing requirements that the DoD can utilize in connection with exports of defense articles, technical data, and defense services

14. Special Commercial Satellite Licensing Regime
This initiative implements, sec.103(a), FY2000 and 2001 Foreign Relation Act which authorizes expedited treatment of commercial satellite, technologies, components, and systems while ensuring priority to national security and U.S. obligations under the Missile Technology Control Regime

Ⅳ. Improving transfers relative to government-to-government program

15. ITAR Exemption for FMS Defense Services
This initiative revises the ITAR regulations to provide exemptions for defense services under FMS

16. Advance Retransfer Consent for USG Sold or Granted items
This initiative expands a similar initiative that was originally offered several years ago

advance retransfer consent for USG sold or granted items

17. Periodic Review of the U.S. Munitions List

This initiative provides a mechanism for the U.S. Munitions List to be reviewed completely every four years by requiring sections of the USML to be reviewed on an annual basis

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14. ABSTRACT

South Korea has been threatened by North Korea and surrounded by powerful countries since the Korean War in 1950~1953. One resource that maintains South Korea's security is the strong alliance with the U.S. The primary function of the alliance has been Foreign Military Sales (FMS). As the world circumstances change, South Korea may need more self-reliant defense power that can maintain its security with its own authority.

This thesis looks at where South Korea stands on FMS from the U.S, considering its economy, technology development, military expenditure, and dispute condition using Multiple Regression model. South Korea's current FMS trade amount is compared to the amount predicted by the regression model using data from 2001~2005. The result shows that South Korea imports weapon system through FMS from the U.S much more than is predicted multiple regression model. This means that South Korea is very dependent on the FMS for importing its weapon system.

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