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國際學碩士學位論文

Determinants of Latin American Arms Imports:

**Focusing on a comparison between the Cold War
and Post-Cold War**

중남미 무기 수입 결정요인 분석:

냉전기와 탈냉전기의 비교를 중심으로

2015年 2月

서울대학교 國際大學院

國際學科 國際地域學 專攻

李 惠 眞

Determinants of Latin American Arms Imports:

**Focusing on a comparison between the Cold War
and Post-Cold War**

A thesis Presented

By

Hye Jin Lee

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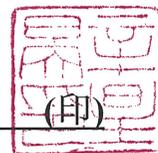
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李 惠 眞

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委員長 _____ 辛 星 昊



副委員長 _____ 李 根



委 員 _____ 金 鍾 燮



Graduate School of International Studies
Seoul National University

THESIS ACCEPTANCE CERTIFICATE

The undersigned, appointed by

The Graduate School of International Studies
Seoul National University

Have examined a thesis entitled

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Focusing on a comparison between the Cold War
and Post-Cold War**

Presented by **Hye Jin LEE**

Candidate for the degree of Master of Art in International Studies and
hereby certify that it is worthy of acceptance

Signature
Committee Chair


Sheen, Seong-Ho

Signature
Committee Vice Chair


Lee, Geun

Signature
Committee Member


Kim, Chong-Sup

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Abstract

Determinants of Latin American Arms Imports:

**Focusing on a comparison between the Cold War
and Post-Cold War**

Hye Jin Lee

American Area Studies Major
Graduate School of International Studies
Seoul National University

Latin America is not a region that imports a large amount of weapons like Middle East or East Asia. Nevertheless, the diversity of suppliers is greater than in any other region, with the United States no longer dominating the market as it did prior to the mid-1960s. For this reason, Latin America is of special interest in analyzing the determinants of arms imports. It is undeniable that the end of the Cold War was a turning point in the global arms trade as demonstrated by a dramatic reduction in the total volume of arms trade. This decline can be primarily explained by the collapse of the Soviet. Hence, many scholars have argued that the main determinants of arms trade changed from political factors to economic factors. The main purpose of this thesis is to identify and compare the main determinants influencing the Latin American arms imports during the Cold War (1970-1991)

and the post-Cold War (1992-2010). In order to identify these determinants, I used an empirical analysis with six clusters of explanatory variables which are assumed to correlate with arms imports such as national characteristics (area size and population), governmental characteristics (regime type and degree of democracy), military characteristics (defense expenditure), economic characteristics (GDP per capita, external debt, and trade openness), international conflict involvements (external war, internal war, and terrorism), and alliance entanglements (alliance with the U.S. or Soviet and value of the US military aid). In doing so, two models of panel regression - country fixed effects and country-time fixed effects - are used in this research.

The regression results clearly show that the determinants influencing Latin American arms imports changed from the political factors to economic factors after the end of the Cold War. Degree of democracy, terrorism, and military aid from the U.S. have a strong influence on Latin American arms imports during the Cold War, while these political factors have absolutely no effect on Latin American arms imports after the end of the Cold War. However, GDP per capita have no impact on Latin American arms imports during the Cold War, while this economic factor has a significant effect on Latin American arms imports after the end of the Cold War.

Keywords: International arms trade, Latin American arms imports, Latin America security, Determinants of arms imports, Panel regression, Comparison between the Cold War and post-Cold War

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Abstract (English)

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1. Introduction

1.1 The meaning of arms trade

Arms trade concerns the acquisition and maintenance of national security by nation-states. In most cases, this security has been achieved through the acquisition of military capability. This capability comes in the form of military equipment and support, and it can be either indigenously produced or imported from another supplier (a commercial firm or a country) via international trade.¹

A characteristic of the arms trade is that it involves military, political, and economic elements for both suppliers and buyers in the international market. Thus, efforts by economists to explain the facts of arms trade have often involved a political economy framework which stresses the role of both political and economic factors. For the political reason, arms-producing nations might export arms to their allies and friends in order to exercise political leverage. For the economic reason, to the exporting nation, arms exports can be a source of employment, of foreign currency earnings, of spreading high fixed R&D costs over a larger output, and of achieving economies of scale and learning. On the other hand, the demand from importing countries is motivated by security considerations with economic factors forming a constraint (e.g. arms imports rising with an oil or commodity price boom). To the importing nation, arms imports might be more

¹ Laurance Edward J, *The International Arms Trade* (New York: Lexington Books, 1992), p.3.

efficient than developing a costly independent defense industrial base. However arms imports make the buying country dependent on overseas suppliers and vulnerable to political leverage; they require foreign currency and can lead to an increase in international borrowing and external debt.²

For those reasons, previous scholars have assessed political, economic, and military situation of both exporting and importing countries.

1.2 International arms trade after the end of the Cold War.

From the early 1960s to the late 1980s, the international arms trade was largely governed by the competitive practices of Washington and Moscow. In order to maintain the balance of power, each of them used arms trade as an instrument within their bloc. As a result, these two countries had occupied the dominant share of the global arms market. According to the US Arms Control and Disarmament Agency (ACDA), arms exports of the US and Soviet accounted for 65% of the international arms trade in 1972-88.³ However, the end of the Cold War and the collapse of the Soviet Union brought dramatic changes in the volume and character of the international arms trade.

Graph 1 indicates that the international arms trade reached a peak in 1981, and then started to decline as the tension of the Cold War eased. For the period of

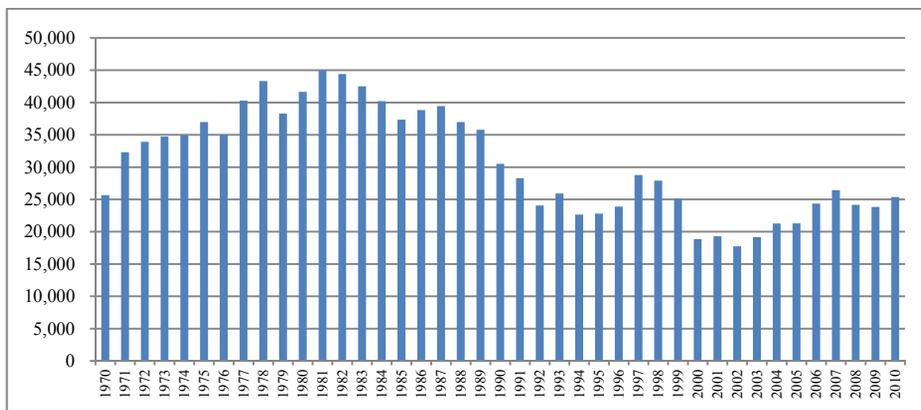
² Sandler T et al, *The Economics of Defense* (Cambridge University Press, 1995), pp.242-247.

³ US Arms Control and Disarmament Agency (ACDA), "World Military Expenditure and Arms Transfers 1989, (Washington, DC: US Government Printing Office, 1990), p.5.

the end of the Cold War, from 1989 (the fall of Berlin Wall) to 1991 (the break-up of the Soviet Union), the arms trade dropped sharply. This was primarily due to the worldwide cutbacks in defense expenditure according to the decrease of military collisions with external threat. It can be said that the volume of the international arms trade was interlinked with the political situation of the world before the end of the Cold War. After the end of the Cold War, however, it has been interlinked with the economic situation of the world. It increased gradually during the mid-1990s when the world economy thrived; yet, it declined again after the Asian financial crisis. After Asia's economies recovered, it started to rise in accordance with the increase in defense expenditure. In contrast, it has been decreased since the global financial crisis in 2008. That is to say, political elements had a strong influence on the arms trade during the Cold War, while economic elements have strongly influenced on the arms trade since the end of the Cold War. Therefore, suffice it to say that the end of the Cold War was a turning point in the international arms trade.⁴

⁴ 김종섭, “한국 방위산업의 중남미시장 진출확대전략”, 한·중남미 경제협력의 현황과 과제 (대외 경제정책연구원, 2010), pp.286-287.

Graph 1. International arms trade (US \$ million at constant (1990) prices)



Source: Stockholm International Peace Research Institute (SIPRI)

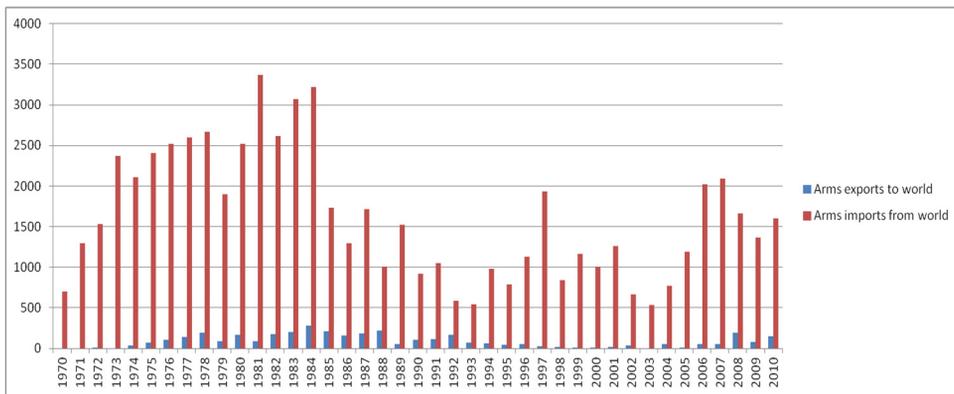
Arms Trend Indicator Values (TIVs)

1.3 General trends of the arms trade in Latin America

It is commonly believed that Latin America is a peaceful region since there is relatively little inter-state antagonism in comparison to Asia or Middle East. Although Latin American countries look similar, big differences among states in terms of race, culture, history, politics and economy exist and these create mutual distrust and enmity. Furthermore, each Latin American country has serious domestic problems such as rebels, drugs, gangs, and so on. For those reasons, Latin American countries have tried to acquire military capabilities and maintain national security through arms trade.

Graph 2 indicates that Latin American countries are primarily arms importing countries and the volume of arms imports in Latin America also remarkably decreased after the end of the Cold War like that of international arms trade. Recently, due to the need for equipment modernization to fight against rebels and drugs, most of Latin American countries have increased both their defense expenditure and arms imports.

Graph 2. Latin American arms trade (US \$ million at constant (1990) prices)



Source: SIPRI Arms Trend Indicator Values (TIVs)

Table 1 shows major importing countries' value of imported arms and their share of total arms imports in Latin America. The notable fact is that Chile's share of Latin American arms imports increased while Argentina's share dropped sharply. This is related to the nation's GDP and defense expenditure. Chile's

defense expenditure to GDP ratio has remained 3.5% for ten years, yet the total amount of defense expenditure has increased as its economy expanded quickly. Accordingly, this led to the increase of arms imports. In contrast, the decrease of Argentina's arms imports stems from the decline of defense expenditure to GDP ratio, which dropped from 1.5% in 1994 to 0.8% in 2008.

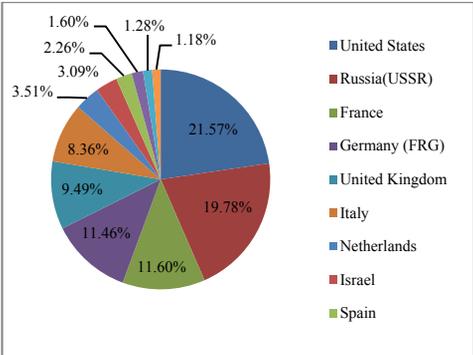
Table 1. Major importing countries of arms in Latin America

Country	1970~1991 (Cold War)		Country	1992~2010 (post-Cold War)	
	Value (US \$ million)	Share (%)		Value (US \$ million)	Share (%)
Peru	8,959	20	Chile	5,465	25
Argentina	8,485	19	Brazil	4,758	21
Brazil	7,139	16	Venezuela	3,056	14
Venezuela	5,473	12	Colombia	2,227	10
Chile	3,767	9	Mexico	2,054	9
Ecuador	2,989	7	Peru	1,955	9
Colombia	2,061	5	Argentina	1,383	6
Mexico	1,911	4	Ecuador	582	3
Nicaragua	1,010	2	Uruguay	280	1
Uruguay	468	1	Dominican	134	1

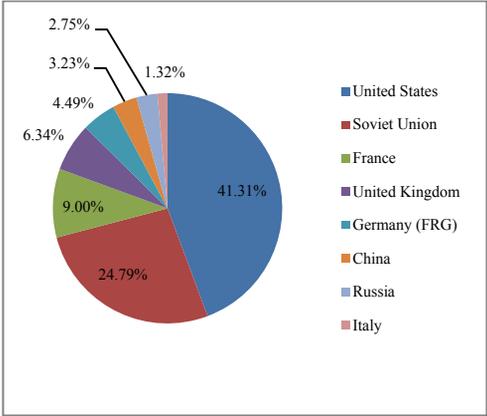
Source: SIPRI Arms Trend Indicator Values (TIVs)

Latin America is not a region importing large amounts of arms in contrast with the Middle East or Northeast Asia in which a lot of economic and military powers are highly concentrated. According to Pierre(1982), however, Latin America is of special interest in examining the global politics of arms imports because of the fact that the diversity of suppliers is greater than in any other region.⁵

Graph 3. Top suppliers of arms by region 1970-2010

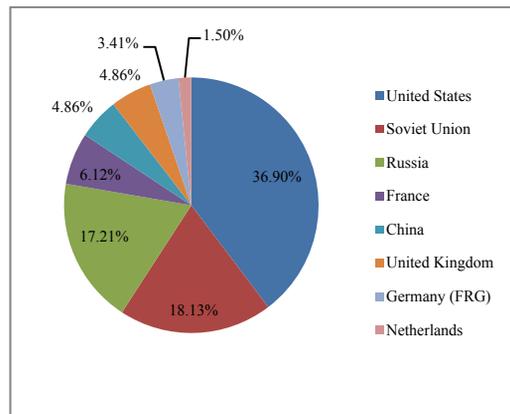


Latin America



Middle East

⁵ Andrew J. Pierre, *The Global Politics of Arms Sales* (Princeton University Press, 1982), p.232.



Asia-Pacific

Source: SIPRI Arms Trend Indicator Values (TIVs)

Table 2 shows major exporting countries' value of exported arms and their share of total arms exports in Latin America. During the Cold War, the Soviet Union was No.1 provider of arms in Latin America (22%). Nevertheless, the exports were mainly concentrated in Cuba, Peru and Nicaragua, accounting for 70%, 23% and 7% respectively. In contrast, United States (21%) exported weapons to 19 Latin American countries. In that sense, the U.S. was more influential than the Soviet Union in Latin American arms market during the Cold War. After the end of the Cold War, the U.S. became the No.1 provider of arms in Latin America (23%), followed by Russia (13%). Although Latin America is considered as Washington's "backyard", the U.S. has not utterly dominated the arms market of Latin America. This implies the competitiveness of the Latin American market in commercial rather than political terms. At the same time, it can be said that any

exporter countries can enter the market since Latin American countries do not depend on specific countries in acquiring weapons. Therefore, Latin America can be a strategic region for South Korea which has tried to expand the arms exports to the world market.

Table 2. Major exporting countries of arms to Latin America

Country	1970~1991 (Cold War)		Country	1992~2010 (post-Cold War)	
	Value (US \$ million)	Share (%)		Value (US \$ million)	Share (%)
Soviet Union	11,769	22	United States	5106	23
United States	10,965	21	Russia	2970	13
France	6,566	13	Germany	2242	10
Germany	6,302	12	France	2078	9
U.K	5,192	10	U.K	1883	9
Italy	5,070	10	Netherlands	1290	6
Netherlands	1,327	3	Israel	1168	5
Israel	1,135	2	Italy	1160	5
Canada	979	2	Spain	1015	5
Switzerland	797	2	Belgium	411	2
South Korea	142	0.3	South Korea	61	0.3

Source: SIPRI Arms Trend Indicator Values (TIVs)

1.4 Research question

As pointed out above, the analyses on the arms trade assess political, economic, and military situation of the exporting and importing countries. Comparatively, little has been written about the demand side of the international arms trade to date. Furthermore, it is difficult to find out the research focused on the Latin American arms imports. Therefore, the basic purpose of this research is to analyze the factors affecting the Latin American arms imports. In analyzing these, a comparison with the factors affecting the other countries' arms imports is relevant to find out the specific factors affecting the Latin American arms imports. Thus, the research starts from this question;

What are the main factors affecting Latin American arms imports that are different from those affecting the other countries' arms imports?

As seen in Graph 1, the end of the Cold War was a turning point in the arms imports. It can be inferred that the motivation of importing arms changed after the end of the Cold War. However, no empirical study has been conducted on a comparison of determinants of Latin American arms imports between the Cold War and the post-Cold War. Accordingly, the main research questions are as follows:

What are the main factors affecting Latin American arms imports during the Cold War and after the end of the Cold War? If the factors have changed, how can it be explained?

For pursuing answers to the above research questions, the empirical analysis will be used. Through this research, the national security tendency in Latin America can be inferred. This research will be useful to understand Latin American motivation to import weapons, especially for South Korea which nowadays is seeking to export weapons to Latin America.

2. Literature review

2.1 Analysis of determinants of arms imports

A considerable number of studies on the determinants of arms imports with an empirical analysis based on the political economy framework have been conducted. Pearson (1989) explained the global arms imports using regression analysis which included six clusters of variables for: national characteristics such as geography and population; governmental characteristics such as regime type; military characteristics such as defense expenditure; economic characteristics such as degree of wealth and level of trade; international conflict involvements; and international political alignment and alliance entanglements.⁶ This analysis explicated over one-third of the variance and the main predictors of arms imports were military spending, foreign policy alignment, and economic variables.

Blomberg and Tocoian (2013) analyzed the global demand for arms using regression which included trade openness, area normalized by the population,

⁶ Pearson, "The Correlates of Arms Importation," in *Journal of Peace Research*(1989), pp.153-163.

degree of democracy, income level, military expenditure, terrorist attack, internal conflict, and external war. This analysis showed that imports respond most strongly to external wars and the impact of terrorism is stronger than that of internal war for arms imports.⁷

Kang and Lee (2011) examined the global demand for arms using regression which included GDP per capita as a control variable and three dummy variables such as D1-Vietnam War and Middle East War (1960-1976), D2-Collapse of East Germany and USSR (1977-2000), and D3-September 11 attacks and Iraq War (2001-2009). This analysis discovered that D1 increased arms imports in the short and long term, while D2 decreased arms imports in the long term. Lastly, D3 has increased arms imports in the short term.⁸

Contrary to these studies, Smith and Tasiran (2005) attempted to estimate demand functions for arms imports as a function of a proxy for price, military expenditure and per capita income using a standard economic model of welfare maximization.⁹ Although this analysis identified that there are significant price effects, the price variable is an incomplete measure of arms prices. That is why this analysis used a proxy for price as a ratio of the value of arms imports published by the Bureau of Verification, Compliance and Implementation (BVCI), US Department of State, to the volume of arms imports published by the

⁷ Blomberg and Tocoian, "Terrorism and Arms Trade," ed. Association(2013), pp.3-11.

⁸ 강한균 and 이영주, "세계 무기체계 수출입국의 변화와 수입수요 결정요인," 『한국국제경영관리학회 2011년 추계학술발표대회 논문집』 (한국국제경영관리학회, 2011), pp.231-247.

⁹ Ron and Tasiran, "The Demand for Arms Imports," in *Journal of Peace Research*(Sage Publications, Ltd., 2005), pp.167-180.

Stockholm International Peace Research Institute (SIPRI). Therefore, the ratio as defined above is not a proxy for arms prices, yet a difference in the methodologies employed by the two-agencies in calculating their respective series.¹⁰ For this reason, this research does not include an arms price variable as an explanatory variable.

2.2 A Change in arms imports after the end of the Cold War

The motivations of purchasing arms, according to Khanna (2010), seem to have changed fundamentally after the end of the Cold War. That is, the main motivations of importing arms were geopolitical factors during the Cold War, whereas the economic factors have been the main motivations of importing arms since the end of the Cold War. He used empirical analysis of global weapons trade between 1989 and 1999, and found a strong statistical association between arms trade and crude oil trade.¹¹

In addition, Brzoska (2003) argued that the arms trade became more commercial after the end of the Cold War; hence, economic and military powers are becoming more closely related than they were before. The reality is that poor countries are generally poorly armed, while richer countries are armed with more sophisticated weaponry.¹²

¹⁰ Khanna and Chapman, "Guns and oil: An analysis of conventional weapons trade in the post-Cold War era," in *Economic Inquiry* (Blackwell Publishing Inc, 2010), pp.2-32.

¹¹ Ibid.

¹² Brzoska, "The economics of arms imports after the end of the cold war," in *Defence and Peace*

3. Analytical framework

The analytical framework of this research is based on the Pearson's model of arms imports, which identified clusters of variables most closely correlated with arms imports such as national characteristics, governmental characteristics, military characteristics, economic characteristics, international conflict involvements, and alliance entanglements.¹³ On the basis of this, some clusters of variables are complemented and the period is extended in this research.¹⁴

This research is composed of two comparisons: a comparison of determinants of arms imports between Latin America and other countries from 1970 to 2010; and a comparison of determinants of Latin American arms imports between the cold war and the post cold war.

3.1 Methodology

In order to prove the influence of the above-mentioned clusters of variables on arms imports, the empirical analysis is employed in the research with panel data, using country fixed effects and country-time fixed effects models. Four panel regressions are used by different cross-sectional data and time series: 1) panel regression with all countries except Latin American countries from 1970 to 2010; 2) panel regression with Latin American countries from 1970 to 2010; 3)

Economics(2010), pp.111-122.

¹³ Pearson(1989), pp.153-163.

¹⁴ The period of Pearson(1989)'s research is the late 1970s to the early 1980s, but that of this research is extended from 1970 to 2010.

panel regression with Latin American countries during the Cold War era (1970-1991)¹⁵; 4) panel regression with Latin American countries during the post-Cold War era (1992-2010).

3.2 Data and variables

As mentioned previously, the main purpose of the research is to find determinants influencing Latin American arms imports. Accordingly, the dependent variable is a volume or value of each country's arms imports, while it is not available to retrieve the exact numbers of arms imports due to several reasons. According to IMF Working Paper (1994), a major problem is that identifying arms trade is not easy since the arms trade does not follow the international trade classifications such as the Standard International Trade Classification (SITC) and the Harmonized System (HS). More importantly, many countries do not report a considerable amount of arms trade by the type of arms, yet lump it together under SITC group 931 "special transactions and commodities not classified according to kind". For these reasons, arms trade cannot be separately identified.¹⁶ In addition, international arms agreements are often secret and there is some illicit trade in arms, thus this makes it more difficult to measure the accurate arms trade.¹⁷

Nevertheless, there are several statistical sources that report arms trade

¹⁵ The fact that the Cold War ended in 1991 with the collapse of the Soviet Union is widely accepted.

¹⁶ Happe and Wakeman-Linn, "Military expenditure and arms trade: alternative data sources," in *IMF Working Paper No. 94/69*(1994), pp.4-5.

¹⁷ Sandler(1995), p.244.

data, and among them the volume of arms imports issued by the Stockholm International Peace Research Institute (SIPRI) is used as a dependent variable.¹⁸ SIPRI arms trade data covers only major conventional weapons¹⁹ excluding not only weapons of mass destruction (WMD) but also small arms and light weapons (SALW).²⁰ According to Pearson(1989), regressions are run for their logarithmic transformations in order to reduce the skewness of the arms imports variable.²¹

Independent variables assumed to influence the arms imports are as follows.

3.2.1 National characteristics

Population²² is a variable representing national characteristic which correlates with arms imports, since countries with more population may need more arms to defend than those countries with less population. On the other hand, there is an opposite argument, which more population may decrease need to import arms. In other words, countries with large populations may be more likely to rely on manpower, while small countries turn instead to high-tech weaponry, which is

¹⁸ The SIPRI arms trade data, though reported in real US\$, is designed to reflect the volume of trade of major conventional weapons.

¹⁹ Types of weapons which SIPRI provides are aircraft, air defence systems, artillery, Anti-submarine warfare weapons, armoured vehicles, engines, sensors, missiles, satellites, ships, and other. (<http://www.sipri.org>)

²⁰ WMD cover nuclear, biological and chemical weapons and long-range missiles and SALW cover rifles, pistols, machine guns, land mines, small mortars and man-portable missiles.

²¹ Pearson(1989), p.155.

²² Data from World Bank, World Development Indicators, <http://databank.worldbank.org> (accessed: October 9, 2014).

relatively more expensive.²³

3.2.2 Governmental characteristics

Two variables are used for the governmental characteristics: regime type and degree of democracy. Regime type is a dummy variable that takes value 1 if military regime comes to power in that year and 0 if civil regime comes to power, with the assumption that military regime is more sympathetic towards defense procurement requests than is civil regime. Indeed, military regime imports more weapons than civil regime.²⁴ In addition, democracy index is used as an explanatory variable representing governmental characteristic. This index reflects the degree of democracy ranging from 1 (very autocratic) to 6 (very democratic).²⁵ The assumption is that autocratic government imports more weapons than does democratic government. There are some reasons why democracies may import less number of weapons than autocracies. One is that democratic leaders tend to prioritize social spending over military spending. According to Rosh (1988), this is because “the degree of openness of the political process with regard to debates on resource extraction and allocations serves to limit both the public economy and the military burden of a given state”.²⁶ Another reason is that democracies are less

²³ Dunne and Perlo-Freeman, "The demand for military spending in developing countries: A dynamic panel analysis*," in *Defence and Peace Economics*(2003), p.468.

²⁴ Data from Lund University, The Authoritarian Regime Dataset, <http://www.svet.lu.se/ARD> (accessed: October 7, 2014).

²⁵ Data from Aarhus University, Democratic Deepening and Regression (DEDERE) Project, <http://ps.au.dk/en/research/research-projects/dedere/> (accessed: October 15, 2014).

²⁶ Rosh, "Third World Militarization Security Webs and the States They Ensnare," in *Journal of*

likely to go to war according to so-called Democratic Peace Theory

3.2.3 Economic characteristics

There are many variables to represent a country's economic characteristics. Among them, the variables used in this research are national income (GDP per capita), external debt (% of GDP), and trade openness (exports + imports/ GDP)²⁷, with the assumption that higher national income increases the demand for arms and the ability to pay for the imported arms, whereas higher external debt decreases the ability to pay for the imported arms.²⁸

With regard to the trade openness, Blomberg and Tocoian(2013) assume that interdependence through trade will lead to peace by increasing the opportunity cost of conflict.²⁹ Furthermore, according to Martin et al. (2008), civil war can be facilitated by trade openness as the relationships with foreign agents can act as substitute to intra-country trade.³⁰ Considering these previous researches, the assumption is concluded that trade openness decreases arms imports.

Conflict Resolution(1988), pp.671-698.

²⁷ Data from World Bank, World Development Indicators, <http://databank.worldbank.org> (accessed: October 9, 2014).

²⁸ Pearson(1989) used volume of international trade instead of trade openness, and does not include external debt.

²⁹ Blomberg and Tocoian(2013), p.4.

³⁰ Martin, et al., "Civil wars and international trade," in *Journal of the European Economic Association*(2008), pp.1-11.

3.2.4 Military characteristics

Defense expenditure is used as an explanatory variable for military characteristics, with the assumption that more spending on defense expenditure brings more arms imports. However, the opposite assumption claims that more spending on defense expenditure is used to develop and improve national defense industries, which results in decrease of arms imports.

3.2.5 Conflict involvements

Suffice it to say that conflicts drive defense procurements and arms imports. Two types of conflict are considered in this research: external war and terrorism.³¹ These are dummy variables that take value 1 if these arise in a given country in that year.

External war³² is the initiation or escalation of a foreign policy crisis that results in violence. A foreign policy crisis is defined by Brecher et al. (1988) as "a specific act, event or situational change which leads decision-makers to perceive a threat to basic values, time pressure for response and heightened probability of involvement in military hostilities. A trigger may be initiated by: an adversary state; a non-state actor; or a group of states (military alliance). It may be an

³¹ Blomberg and Tocoian(2013), pp.4-6.

³² Data from University of Maryland, International Crisis Behavior (ICB) Project, <http://www.cidcm.umd.edu/icb/> (accessed: August 20, 2014).

environmental change; or it may be internally generated. "³³

According to Global Terrorism Database (GTD), terrorism is defined as the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation.³⁴ Following Blomberg et al. (2004), this research defines a dummy variable *Terror* that takes value 1 if a terrorist incident was recorded for the country in that year.³⁵

3.2.6 Alliance entanglements

During the Cold War, strong political and military alliances were established, namely, NATO (Americas and West Germany) and Warsaw Pact (Soviet Union and 8 communist countries). United States and Soviet Union provided arms to their allied countries and the Third World for the purpose of maintaining close military ties. Two dummy variables are used for the alliance entanglements: alliance with the U.S. and alliance with the Soviet.³⁶ The assumption is that countries which signed a military alliance agreement with either the United States or Soviet import more weapons. In case of Latin American countries, since they are all allies of the U.S. except Cuba, the dummy variable will

³³ Brecher et al., *Crises in the twentieth century* (Pergamon Press, 1988), p.3.

³⁴ "Global Terrorism Database Codebook," *Global Terrorism Database*
<http://www.start.umd.edu/gtd/downloads/Codebook.pdf> (accessed: August 20, 2014).

³⁵ Blomberg et al.(2004), p.6.

³⁶ Data from Rice University, The Alliance Treaty Obligations and Provisions Project (ATOP),
<http://atop.rice.edu/> (accessed: October 9, 2014).

be omitted in the regression of Latin American countries due to multicollinearity. For this reason, U.S. military aid to each Latin American country³⁷ will be used instead of the U.S. ally variable, with the assumption that countries which receive more military aid import more weapons than those receive less military aid.

Table 3. List of independent variables

National factors	Governmental factors	Economic factors	Military factors	Conflict involvements	Alliance entanglements
Population	Regime type (military or civil)	GDP per capita	Defense expenditure (% of GDP)	Terrorism	Ally of the US or USSR
		External debt		External war	US military aid
	Degree of democracy	Trade openness			

* Cold War dummy variable is added.

³⁷ Data from USAID, <https://eads.usaid.gov/gbk/> (accessed: November 4, 2014).

3.3 Basic regression equation

This research employs two models of regressions. In case of the first model, the analysis of all countries except Latin American countries is based on data for 82 countries, and Latin American countries for 16 countries³⁸ from 1970 to 2010. In case of the second model, the analysis of Latin American countries is based on data for the period of 1970 to 1991, and 1992 to 2010.

Model 1. Comparison of arms imports between Latin America and other countries

$$\begin{aligned} \text{Lnarmsim}_{it} = & \alpha + \beta_1 \text{Lnpopul}_{it} + \beta_2 \text{Lngdppp}_{it} + \beta_3 \text{debt}_{it} + \beta_4 \text{open}_{it} + \beta_5 \text{defense}_{it} \\ & + \beta_6 \text{milregim}_{it} + \beta_7 \text{demo}_{it} + \beta_8 \text{extwar}_{it} + \beta_9 \text{terror}_{it} + \beta_{10} \text{usally}_{it} \\ & + \beta_{11} \text{soally}_{it} + \beta_{12} \text{cold}_t + \varepsilon \end{aligned}$$

Model 2. Comparison of Latin American arms imports between the Cold War and the post-Cold War

$$\begin{aligned} \text{Lnarmsim}_{it} = & \alpha + \beta_1 \text{Lnpopul}_{it} + \beta_2 \text{Lngdppp}_{it} + \beta_3 \text{debt}_{it} + \beta_4 \text{open}_{it} + \beta_5 \text{defense}_{it} \\ & + \beta_6 \text{demo}_{it} + \beta_7 \text{extwar}_{it} + \beta_8 \text{terror}_{it} + \beta_9 \text{milaid}_{it} + \varepsilon \end{aligned}$$

³⁸ Due to data limitations, this research includes only 98 countries. Latin American countries included in this research are Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Panama, Paraguay, Peru, Uruguay, and Venezuela.

3.4 Hypotheses

Panel regression 1 (Other countries) and Panel regression 2 (Latin American countries), 1970-2010

H1 (National characteristics)

: Population will have a positive relationship with arms imports in both regression 1 and 2 since countries with more population may need more arms to defend than countries with less population.

H2 (Governmental characteristics)

: Regime type (1: military regime, 0: civil regime) will have a positive relationship with arms imports in both regression 1 and 2. That is, military regime will increase arms imports. Degree of democracy (1: very autocratic, 6: very democratic) will have a negative relationship with arms imports in both regression 1 and 2. That is, democratic government will decrease arms imports.

H3 (Economic characteristics)

: GDP per capita will have a positive relationship with arms imports in both regression 1 and 2 since wealth may increase the demand to import weapons and the ability to pay for the imported weapons. External debt will have a negative relationship with arms imports in both regression 1 and 2. In addition, external debt will be more significant in regression 2 than in regression 1 as Latin American

countries have a relatively large amount of debt. Trade openness will have a negative relationship with arms imports in both regression 1 and 2.

H4 (Military characteristics)

: Defense expenditure will have a positive relationship with arms imports in both regression 1 and 2 since larger military spending may generate greater demand for advanced imported weapons.

H5 (Conflict involvements)

: External war and terrorism will have a positive relationship with arms imports in both regression 1 and 2 since greater involvement may generate the need for more weapons. Specifically, external war will be more significant than terrorism in regression1, yet not in regression2. In regression2, terrorism will be significant rather than external war as the possibility of outbreak of external war is small in Latin America.

H6 (Alliance entanglements)

: Alliance entanglement will have a positive relationship with arms imports as it may increase the pressure for purchasing ally's weapons.

Panel regression 3 (Latin during Cold War) and Panel regression 4 (Latin after Cold War)

The main hypothesis is that the main factors affecting arms imports changed from the political factors to economic factors after the end of the Cold War. In this research, governmental characteristics such as degree of democracy and alliance entanglements can be categorized as political factors. Moreover, conflict involvements can be regarded as a political factor depending on the cause of outbreak.

H1 (Governmental characteristics)

: Degree of democracy will be significant in regression 3, but insignificant in regression 4 as the effect of political factor on arms imports decreased after the end of the Cold War.

H2 (Economic characteristics)

: GDP per capita, external debt and trade openness will be significant in regression 4, yet insignificant in regression 3 as the effect of economic factor on arms imports increased after the end of the Cold War.

H3 (Conflict involvements)

: External war will be significant in regression 3, yet insignificant in regression 4.

On the contrary, terrorism will be significant in regression 4, yet insignificant in regression 3. This is due to an extreme tension between two super powers during the Cold War. Hence, ethnic or religious conflicts were somewhat suppressed before the end of the Cold War.

H4 (Alliance entanglements)

: Alliance entanglement will be significant in regression 3, yet insignificant in regression 4. During the Cold War, both the U.S.A. and the Soviet provided large amounts of the military aid to the allied nations. The recipient nations may have been forced to import weapons from the donor nation to commensurate with the aid they received.

4. Empirical analysis

4.1 Comparison of arms imports between Latin America and other countries

Table 4 displays a series of regressions explaining the arms imports of Latin American countries and other countries. The variable with the largest evident impact on arms imports in regression 1 (All countries except Latin) is GDP per capita, trade openness, defense expenditure, and external war. Alliance entanglements are next in overall importance, followed by military regime; external debt has no influence. The result of regression 2 (Latin American countries) shows that GDP per capita, trade openness, and defense expenditure have the strongest association with Latin American arms imports, followed by military regime and terror; external debt has no influence.

GDP per capita, trade openness, and defense expenditure are the most significant determinants of arms imports in both of them. The most distinguishing feature is that in case of Latin America, countries in which military regimes come to power import more weapons. However, the case of other countries demonstrated an opposite result, which military regimes import fewer weapons. In case of the two conflicts, external war has a strong impact on the World's arms imports, while terrorism is the most influential determinant of Latin American arms imports.

Table 4. Panel regression 1

	All countries except Latin (1970-2010)			
	Reg. 1 Country fixed	Reg. 1 Country-time fixed	Reg. 2 Country fixed	Reg. 2 Country-time fixed
Population	-0.621*** (-2.43)	0.461 (0.79)	-0.416* (-1.72)	0.490 (0.95)
GDP per capita	1.063*** (6.80)	1.278*** (6.55)	1.062*** (6.72)	1.246*** (6.54)
Debt (% of GDP)	-0.001 (-0.96)	0.000 (0.03)	-0.001 (-1.20)	0.000 (0.04)
Openness	-0.008*** (-3.53)	-0.009*** (-3.77)	-0.008*** (-3.61)	-0.009*** (-3.93)
Defense expenditure (% of GDP)	0.089*** (5.79)	0.076*** (4.85)	0.097*** (6.46)	0.082*** (5.34)
Military regime	-0.206 (-1.36)	-0.270* (-1.76)	-0.305** (-2.07)	-0.348** (-2.31)
Democracy	-0.004 (-0.06)	0.017 (0.27)	-0.072 (-1.24)	-0.035 (-0.58)
Terror	0.112 (1.29)	0.132 (1.43)	0.091 (1.05)	0.108 (1.16)
External war	0.526*** (4.90)	0.470*** (4.26)	0.514*** (4.77)	0.455*** (4.10)
US ally	0.735*** (2.49)	0.956*** (3.07)		
USSR ally	1.423*** (3.03)	1.339*** (2.80)		
Cold War	0.144 (1.00)		0.240* (1.70)	
US military aid			-0.002 (-0.25)	-0.005 (-0.67)
Obs.	1147	1147	1147	1147
R-sq	0.66	0.67	0.65	0.66

Note : Dependent variable is a logarithmic transformation of arms imports.
Significance indicated is at 10% (*), 5% (**), and 1% (***).

Table 5. Panel regression 2

	Latin American countries (1970-2010)			
	Reg. 1 Country fixed	Reg. 1 Country-time fixed	Reg. 2 Country fixed	Reg. 2 Country-time fixed
Population	-0.947 (-1.34)	0.007 (0.00)	-1.213* (-1.81)	-0.436 (-0.19)
GDP per capita	2.338*** (4.06)	2.550*** (3.56)	2.551*** (4.36)	2.837*** (3.97)
Debt (% of GDP)	-0.003 (-0.69)	-0.001 (-0.27)	-0.003 (-0.70)	-0.001 (-0.20)
Openness	-0.022*** (-2.67)	-0.020** (-2.19)	-0.019** (-2.40)	-0.016* (-1.77)
Defense expenditure (% of GDP)	0.334*** (4.12)	0.353*** (4.24)	0.316*** (3.87)	0.320*** (3.78)
Military regime	0.474* (1.67)	0.792*** (2.58)		
Democracy			-0.088 (-1.41)	-0.124* (-1.77)
Terror	0.354** (2.00)	0.459** (2.15)	0.325* (1.84)	0.412* (1.93)
External war	0.425 (1.25)	0.343 (0.88)	0.431 (1.26)	0.357 (0.91)
Cold War	0.656** (2.40)		0.705*** (2.56)	
US military aid	0.080** (2.18)	0.052 (1.25)	0.091** (2.51)	0.070* (1.69)
Obs.	316	316	316	316
R-sq	0.59	0.60	0.59	0.59

Note : Dependent variable is a logarithmic transformation of arms imports.

Significance indicated is at 10% (*), 5% (**), and 1% (***)

Arms imports and military regime

Military governments are generally sympathetic towards defense procurement. The regression result indicates that Latin American countries in which military regimes reign import more weapons. However, the case of other countries shows an opposite result: military regimes import fewer weapons. It can be assumed that they sought to develop their own defense industries for keeping the defense capacity. In fact, most of other countries except Latin American countries which military regimes came to power were Third World countries. The Third World countries, which depend on the weapon systems of the powerful nations such as the US, can hardly escape from the political intervention of the powerful nations. Particularly, arms embargo against the Third World countries was a fatal blow to them. In order to overcome these vulnerabilities and secure a political autonomy, some of them endeavored to improve the self-production capacity of major weapons.³⁹

On the other hand, the military captured power in many Latin American countries in conditions of economic crisis and political instability. By the 1970s, military dictatorship was the dominant form of rule in Argentina, Bolivia, Brazil, Chile, Ecuador, Paraguay, Peru, Uruguay and the Central American countries except Costa Rica.⁴⁰ Military-led regimes sought to keep defense capacity through

³⁹ 정진태, 『방위사업학개론』 (파주: 21세기북스, 2012), pp.133-135.

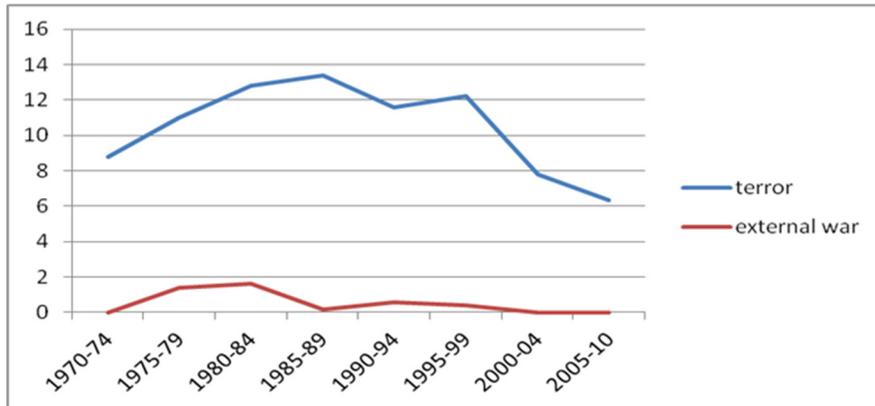
⁴⁰ <http://udugandans.org/cms/media-section/270-why-civilians-replaced-military-regimes-in-latin-america>

importing arms instead of developing their own defense industries, since developing defense technology and industrial base required a great cost. Only Brazil among Latin American countries has arms-producing ability. According to 『The SIPRI Top 100 arms-producing and military services companies in the world』, Brazilian company “Embraer” is ranked at 66th in 2012, which started to be included in top 100 after 2010.

Arms imports and conflict involvements

The regression result indicates that the impact of terrorism is stronger than that of external war for arms imports in Latin America, while the impact of external war is stronger than that of terrorism in other countries. The main purpose of armed forces is to defend the nation against external aggression; however, there are relatively less external threats in Latin America than other countries. Therefore, the actual mission of the military is to suppress a rebel forces or counter terrorism.

**Graph 4. Number of Latin American countries in which conflicts
(terror & external war) broke out**



Source: Global Terrorism Database and International Crisis Behavior Project

4.2 Comparison of Latin American arms imports between the Cold War and the post-Cold War

Table 5 displays the regression results of the determinants of the Latin American arms imports during the Cold War and the post-Cold War. Defense expenditure is the most influential determinant of the Latin American arms imports in both periods of the Cold War and the post-Cold War. As assumed by the author, the outcome clearly shows that the determinants influencing Latin American arms imports changed from the political factors to economic factors after the end of the Cold War. Degree of democracy, terrorism, and military aid from the U.S. have a

strong influence on Latin American arms imports during the Cold War, while these political factors have absolutely no effect on Latin American arms imports after the end of the Cold War. However, GDP per capita have no impact on Latin American arms imports during the Cold War, while this economic factor has a significant effect on Latin American arms imports after the end of the Cold War.

Table 6. Panel regression 3 and 4

	Latin America Cold War (1970-1991)		Latin America post-Cold War(1992-2010)	
	Reg. 1 Country fixed	Reg. 2 Country-time fixed	Reg. 1 Country fixed	Reg. 2 Country-time fixed
Population	-3.474* (-1.80)	-1.440 (-0.21)	-5.742** (-2.11)	3.530 (0.50)
GDP per capita	2.690 (1.54)	1.645 (0.86)	4.163** (2.22)	5.525** (2.06)
Debt (% of GDP)	-0.001 (-0.13)	0.005 (0.53)	0.003 (0.50)	0.012 (1.30)
Openness	-0.036* (-1.73)	-0.016 (-0.69)	-0.016 (-1.02)	0.004 (0.25)
Defense expenditure (% of GDP)	1.371*** (3.06)	1.582*** (3.71)	0.382** (2.20)	0.555*** (3.03)
Democracy	-0.135 (-1.14)	-0.388*** (-3.15)	0.003 (0.02)	0.271 (1.61)
Terror	1.161*** (2.85)	1.483*** (3.73)	-0.016 (-0.07)	-0.170 (-0.56)
External war	0.103 (0.21)	-0.044 (-0.09)	-0.364 (-0.32)	-0.124 (-0.11)
US military aid	0.153*** (2.86)	0.140*** (2.59)	0.079 (0.92)	0.093 (0.91)
Obs.	109	109	124	124
R-sq	0.57	0.68	0.61	0.65

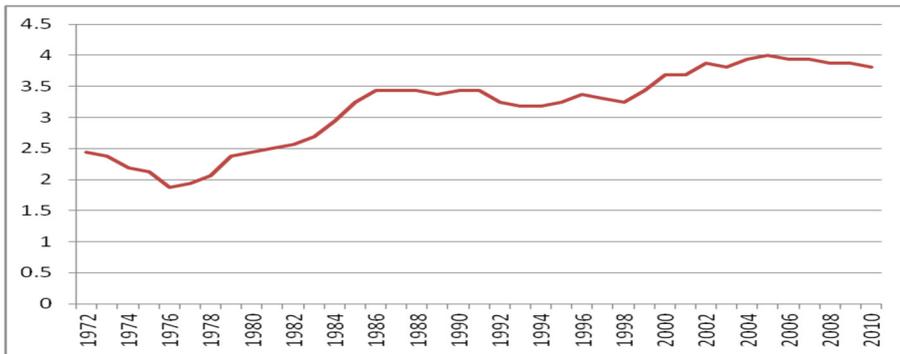
Note : Dependent variable is a logarithmic transformation of arms imports.

Significance indicated is at 10% (*), 5% (**), and 1% (***)

Arms imports and democracy

The regression result indicates that degree of democracy has a negative correlation with Latin American arms imports during the Cold War, while it does not have any effect on Latin American arms imports after the end of the Cold War. That is, during the cold war as the degree of democracy increases, countries import fewer arms than before. It can be explained by the fact that undemocratic countries import more arms than democratic governments to maintain dictatorship, while democratic governments used government spending not for military build-up, but for economic development and welfare improvement. Then, why did the effect of democracy on Latin American arms imports changed after the end of the Cold War? It can be interpreted that the level of sensitivity of democracy to the Latin American arms imports decreased after the end of the Cold War. The reason for the decreased level of sensitivity may vary by country. One that the author assumes is that as seen in graph 5, democratization in Latin America grew at a rapid rate during the Cold War. Thus, degree of democracy influenced on arms imports. However, after the end of the Cold War, degree of democracy has not influenced arms imports as democratization had been stabilized in Latin America.

Graph 5. Average of democracy score in Latin America (1970-2010)



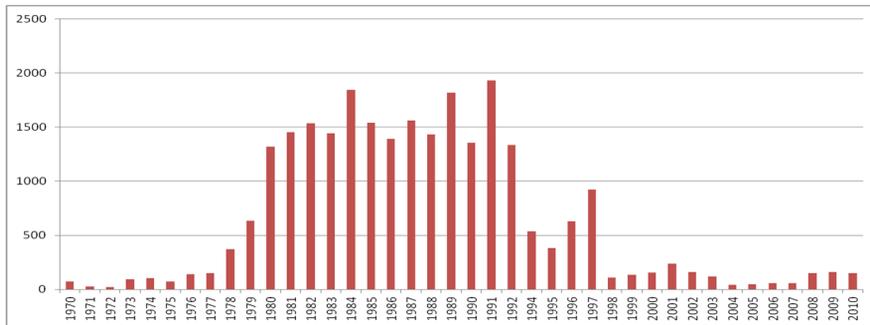
Source: Aarhus University, Democratic Deepening and Regression (DEDERE) Project

Arms imports and terrorism

The regression result indicates that terrorism has a significant positive correlation with Latin American arms imports during the Cold War, while it does not have any effect on Latin American arms imports after the end of the Cold War. That is attributable to frequent occurrence of terrorism during the Cold War as seen in graph 6; yet, it dropped sharply after the end of the Cold War.

Actually, most of acts of terrorism during the Cold War were caused by communist insurgencies. Therefore, terrorism no longer affected Latin American arms imports after the end of the Cold War. For example, during the Cold War, Communist Party of Peru, commonly known as Shining Path, committed 80% of all terrorisms in Peru. Hence, the influence of terrorism on Latin American arms imports waned after the end of the Cold War.

Graph 6. Number of terrorism in Latin America (1970-2010)

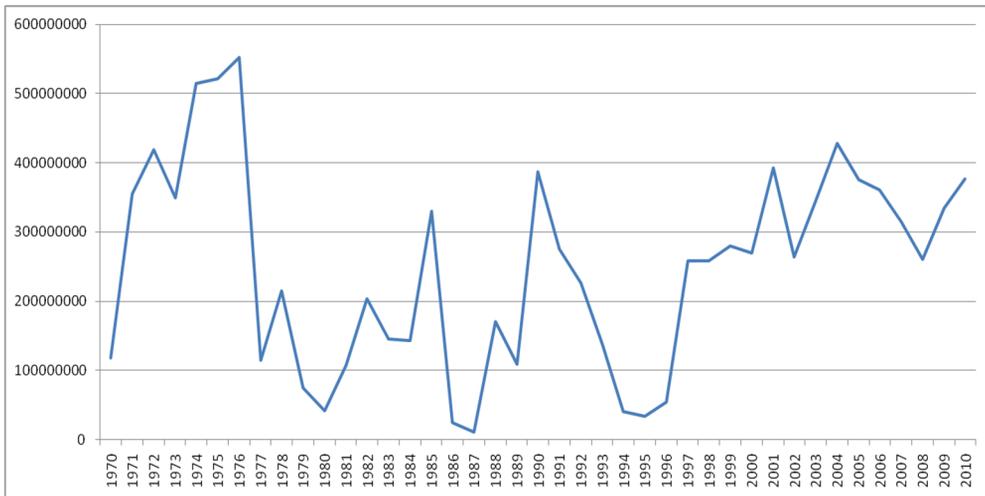


Source: Global Terrorism Database

Arms imports and U.S. military aid

The regression result indicates that U.S. military aid has a significant positive correlation with Latin American arms imports during the Cold War, while it does not have any effect on Latin American arms imports after the end of the Cold War. Then, did the U.S. reduce its military aid to Latin America after the end of the Cold War? No, U.S. military aid has been changed in line with the U.S. president's view towards the region or the current international situation regardless of the end of the Cold War. It can be assumed that Latin American countries import arms regardless of the rise or decline in the U.S. military aid after the end of the Cold War. In the arms imports, Latin American countries responded sensitively to the US military aid during the Cold War, yet after the end of the Cold War, the level of sensitivity of the U.S. military aid to the Latin American arms imports decreased.

Graph 7. US military aid to Latin America (1970-2010)



Source: US AID (<https://eads.usaid.gov/gbk>)

Arms imports and GDP per capita

The regression result indicates that GDP per capita did not affect Latin American arms imports during the Cold War, while it has a significant positive correlation with arms imports after the end of the Cold War. It can be interpreted that GDP per capita was less sensitive to Latin American arms imports during the Cold War, yet the sensitivity of GDP per capita to Latin American arms imports increased after the end of the Cold War.

4.3 U.S. influence on Latin American arms imports

As seen in the above regression results, U.S. military aid to Latin America has no longer affected Latin American arms imports although it did not decrease after the end of the Cold War. In other words, U.S. influence on Latin American arms imports decreased after the end of the Cold War. There are several reasons to support such argument.

First, the left parties have come to power recently in most of South American countries, such as Argentina, Bolivia, Brazil, Chile, Cuba, Ecuador, Guatemala, Uruguay and Venezuela etc., due to the failure of neo-liberal policy forced by the U.S. Among these countries, Venezuela, Bolivia, Cuba, Ecuador, and Nicaragua etc. organized ALBA (Bolivarian Alliance for the Peoples of Our America) in 2004 in order to act as a counterbalance to the economic model proposed by the U.S. - Free Trade Area of the Americas (FTAA). It aims to promote political, social and economic cooperation between socialist countries in Latin America. Above all, it serves as an axis of anti-American sentiment. ALBA countries with Venezuela as its center, which is the most representative anti-American country, do not hesitate to use abusive language against the U.S. In the inaugural address of the 22nd Summit of ALBA (March 2013), Ecuadoran President Rafael Correa stated that its members “must create a shield against exploitation, a shield against neocolonialism.” ALBA nations have established their own School of Sovereignty and Defense in Bolivia to keep U.S. imperialist

intervention at bay. A main security argument is that drug trafficking is a problem for the U.S. and not necessarily a policy issue for the South American countries.⁴¹ Furthermore, ALBA member countries have attempted to establish multilateral diplomacy with China and Russia through economic cooperation and purchasing weapons.

Second, the U.S. arms transfer policy to Latin America has been very flexible (or fluctuating). The Foreign Assistance Act of 1961 served as the cornerstone for weapons transfers during the early stages of the Cold War. Rooted in the Truman Doctrine of containment, this Act provided the legal means for the U.S. to sell or transfer weapons to Latin American governments that supported the U.S. national security objectives. However, in the mid-1970s, the U.S. congress began to pay closer attention to human rights problems in Latin America, as reports of torture, disappearances, and other abuses became more widespread. In 1977, President Jimmy Carter issued President Directive 13 (PD-13), which blocked the sale of advanced military technology in Latin America. In 1997, President Clinton ended the 20-year-old ban and reversed the Carter administration's PD-13. As a result, the self-imposed U.S. embargo did not limit the entry of advanced weapons into the region. Over the two decades, France, United Kingdom, Israel, and other countries sold their arms in Latin America, undaunted by U.S. efforts to limit the

⁴¹ <http://yaleglobal.yale.edu/content/latin-america-anti-us-words-not-deeds> (accessed: January 10, 2015).

sales.⁴² Latin American countries had no choice yet to diversify the import sources to maintain the defense capacity.

Finally, Russia has sought to restore influence in Latin America. Russia's quest for influence in Latin America began in 1997 and its goals have been remarkably consistent. Russia started seeing Latin America as an area of increasing global economic importance in 2003 and began selling weapons in the region in 2004. From 2005 to 2009, the largest percentage of imported arms in Latin America has been from Russia (26%), followed by Italy (12%), Netherlands (11%), and U.S. (10%).⁴³ Furthermore, recently, according to Russia's defense minister, Sergei Shogu, Moscow is seeking to build military bases in Cuba, Venezuela and Nicaragua. Then the Russia's military power in Latin America is expected to grow more than before and also the Russia's arms exports to Latin America will consistently increase.⁴⁴

⁴² Mora and Pala, "US Arms Transfer Policy for Latin America," in *Airpower Journal*(1999), pp.76-79.

⁴³ Stockholm International Peace Research Institute (SIPRI) Arms Trend Indicator Values (TIVs)

⁴⁴ <http://voxxi.com/2014/02/russia-adds-military-bases-latin-america/> (accessed: March 18, 2014).

5. Conclusion

5.1 Summary of major findings

Through the regression results, the main hypothesis was verified. The main factors affecting Latin American arms imports changed from political factors to economic factors after the end of the Cold War. The main factors during the Cold War were US military aid, democracy, terrorism, and defense expenditure. U.S. military aid and terrorism increased Latin American arms imports during the Cold War, while it did not show any effect after the end of the Cold War. In addition, high degree of democracy decreased Latin American arms imports during the Cold War, while it did not have any effect after the end of the Cold War. On the other hand, the main factors during the post-Cold War are GDP per capita and defense expenditure. GDP per capita did not affect Latin American arms imports during the Cold War, while it increased Latin American arms imports after the end of the Cold War.

During the Cold War, Latin America increased or decreased arms imports according to the amount of the U.S. military aid and in response to the outbreak of conflicts. This implies that the plan for importing arms was fluid and unstable during the Cold War. After the end of the Cold War, however, Latin America has increased or decreased arms imports according to the GDP per capita and defense expenditure. That is, they import arms according to their budget. Accordingly, the

plan for importing arms becomes stabilized; this possibly stems from the decreased American influence over Latin America.

5.2 Policy implications

As evidenced by the above findings, it is needless to say that priorities on economic elements such as weapons prices over political elements in deciding arms imports are given in Latin America. In terms of the arms trade, Latin America is no longer backyard of the U.S.

Russia, China and other European countries have remarkably expanded the arms exports to Latin America. For South Korean government which has tried to enter the Latin American arms market and expand the arms exports, these findings imply an importance of a price competitiveness of weapons. South Korean government needs to analyze the above exporting countries' weapons systems and prices and establish a differentiation strategy for selling weapons to Latin American countries.

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국 문 초 록

냉전의 종식은 전 세계 무기 거래량의 현저한 감소를 가져온 무기 거래에 있어 결정적인 전환점이라고 할 수 있다. 냉전 기간 동안 미국을 중심으로 하는 나토 진영과 소련을 중심으로 하는 바르샤바 진영은 고조되는 긴장 속에서 지속적으로 군비를 증강하고 각 진영 내에서는 힘의 균형을 위해 무기 거래를 통해 국방력을 강화시켰다. 그러나 소련의 붕괴로 많은 학자들이 냉전 기간에는 무기 수입을 결정하는 데 있어 정치적 요인이 중요했던 반면 냉전 종식 이후 경제적 요인이 중요하게 되었다고 주장해왔으나, 이와 관련하여 냉전 종식 이전과 이후의 무기 수입 결정요인을 정량적 분석을 이용하여 비교하는 연구는 찾아보기 힘들다.

중동이나 유럽과 비교하면 중남미의 무기 수입의 액수는 크지 않으나, 2000년 이후 꾸준히 증가하고 있다. 중남미의 무기 수입 경향을 보면 흥미로운 것은 다른 어떤 지역들보다 무기 공급 국가들이 굉장히 다양하며, 1960년대 중반 이후 미국이 중남미 무기 시장을 지배하고 있지 않다는 점이다. 그렇기 때문에 중남미는 앞으로 우리나라 방산 시장의 수출 확대를 위한 전략적 지역으로 중남미의 무기 수입 경향에 대해서는 더욱 심도 있는 연구가 필요하다. 이에 본 논문에서는 수입국의 입장에서 중남미의 무기 수입 결정요인에 대해 정량적 분석을

하는 것을 기본 목적으로 하며, 구체적으로 냉전기간과 냉전 종식 기간 중남미의 무기 수입 결정요인이 어떻게 변화되었는지 비교하고자 한다. 기존 연구들에 기반하여 무기 수입 결정요인을 국가적 요인(인구수), 경제적 요인(1인당 국민 소득, 해외부채, 무역개방지수), 정부 형태(군사정권 여부, 민주주의 정도), 분쟁 개입 여부(테러, 외전), 동맹 관계(미국/소련과 군사 동맹 체결 여부, 미국의 군사 원조 금액) 6가지 분야로 나누었고, 중남미 국가들의 냉전 시기 (1970~1991년)의 무기 수입량과 탈냉전 시기 (1992~2010년)의 무기 수입량을 종속변수로 한 회귀분석을 각각 실시하여 두 결과를 비교 분석하였다.

냉전 기간 동안 민주화 정도, 테러 발생여부, 미국의 군사원조 등 정치적 요인이 무기 수입의 주 결정요인이었다면, 탈냉전 기간 동안에는 1인당 국민소득과 같은 경제적 요인이 무기 수입의 주 결정요인이었다. 결과적으로, 기존의 학자들이 주장한 냉전 종식 이후 무기 수입 결정요인의 변화가 중남미에서 나타났으며, 이는 무기 수입의 주 결정요인이 정치적 요인에서 경제적 요인으로 변화되었다는 것을 의미한다.

주요어 : 세계 무기 거래, 중남미 무기 수입, 무기 수입 결정 요인,

중남미 안보, 패널 회귀분석, 냉전기와 탈냉전기 비교

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