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**THESIS**

**THE FINNISH DEFENSE FORCES' BUDGET, 1986–2020:  
ANALYSIS OF FUNDING VARIABILITY**

by

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December 2021

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**THE FINNISH DEFENSE FORCES' BUDGET, 1986–2020:  
ANALYSIS OF FUNDING VARIABILITY**

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## **ABSTRACT**

Funding is the backbone of national defense; without adequate funding there will not be adequate capabilities to defend a nation. In many cases, the largest discretionary part of a nation's budget is defense related. This is the case also in Finland. Based on a review on the literature on factors influencing defense budgets in Western nations, this paper builds a theoretical model and uses it to analyze the changes in the Finnish Defense Forces budget between 1986 and 2020. The developed model and analysis consider the following variables: Gross domestic product (GDP), political composition of government, threat, and public support. The analysis reveals that the typical variables known to correlate with Western defense appropriations are not valid for Finland. The explanatory variables that do correlate with the Finnish Defense Forces' budget are GDP and threat. The study, however, also acknowledges that unlike its Western counterparts, Finland not only shares a border with Russia and has engaged in conflicts with that country twice, but Finland is also not a member of the North Atlantic Treaty Organization. Such factors may emphasize Finland's self-reliance in defense matters. Furthermore, the small sample size used in the study may also account for the differences in the correlation of variables and the Finnish Defense Forces' budget and suggest opportunities for follow-on research.

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

DCF	Defense Command Finland
DE	Defense Expenditure
EDA	Exploratory Data Analysis
FDF	Finnish Defense Forces
GDP	Gross Domestic Product
MOD	Ministry of Defense
MOF	Ministry of Finance
MP	Member of Parliament
NATO	North Atlantic Treaty Organization
SIPRI	Stockholm International Peace Research Institute
USD	U.S. Dollar

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To my wife, Henna, thank you for being the foundation of my life and our family.

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# **I. INTRODUCTION**

## **A. BACKGROUND**

Political views vary, but excluding anarchism, defense against foreign threats is perceived as the backbone of every sovereign nation. Even minarchism, a model of state with a minimal role of central government supports this view (Block, 2015). The military options for a nation to defend its citizens from foreign enemies are building and maintaining a military force, allying with other nation/s, or joining a defense alliance or the combination of the three.

This study examines Finland, where defense is based on Finland's own military combined with partnering but not joining NATO (Government of Finland, 2021a). In many cases, the largest discretionary part of a nation's budget is defense related. This is the case also in Finland (Jyränki & Husa, 2012), and thus, the size of the defense budget plays a big role each year when decisions regarding the budget are made.

Although the reasons to either decrease or increase defense spending are numerous, a few drivers behind these decisions can be identified. First is the obvious one: the size of the economy, which puts natural limits to all spending. Second is the prevailing political composition of the legislative body; defense spending is a matter of preference, and different political groups have different preferences. Third is public acceptance: How broad is the public support for defense spending? And the fourth is the perceived threat: Are there forces that threaten either the security interests or sovereignty of the nation, and if so, how imminent is that threat? what does their development look like?

But how have these variables affected the Finnish defense budget, if at all? Is there a way to forecast future budgets based on these attributes, or is the defense budget based on some other variable not yet identified?

## **B. RESEARCH QUESTIONS**

The following is the primary research question: Are there variables which could be used when explaining the changes in Finland's defense budget?

Sub-questions related to the primary research question include the following:

1. What is the theoretical model to explain defense spending?
2. How can the theoretical model be operationalized?
3. Can the identified variables be used in estimating trends or forecasting Finland's defense spending?

### **C. SCOPE**

This study is limited to a comparative analysis between the Finnish Defense Forces' (FDF) budget and the identified explanatory variables. The study covers years 1986–2020 and focuses only on the changes in the Finnish Defense Forces budget and two of its subcategories, salaries and capability acquisitions. These two were selected as they represent a clearly bounded area of funding and are the backbone of military spending. The remainder of the Finnish Defense Forces budget is addressed as well, but as a whole rather than broken down further by category.

Additionally, it should be noted that since the study concentrates on the Finnish Defense Forces' budget, it does not include any other defense-related expenditure, such as operating budget of the Ministry of Defense, value added taxes, or costs related to government-owned companies supporting defense.

### **D. METHODOLOGY AND RESEARCH APPROACH**

The research approach, depicted in Figure 1, is as follows. First, a literature review is performed to establish the basis for theory. This is followed by designing a theoretical model to depict the cause-effect relation of the defense budget. Next, the model is operationalized to reveal measurable indicators. Then, the data related to the indicators are searched and analyzed utilizing both exploratory data analysis and main event analysis. And, finally, the findings are introduced and discussed.

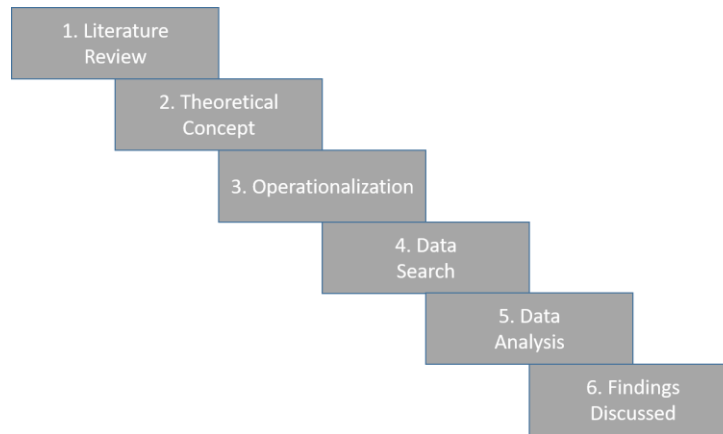


Figure 1. Research Approach

### **E. EXPLORATORY DATA ANALYSIS**

Exploratory data analysis (EDA), also referred to as graphical analysis (Maindonald & Brown, 2012), is a critical process in which data is investigated to reveal patterns, identify anomalies, and to verify assumptions. It utilizes the help of summary statistics and graphical presentations (Patil, 2018).

Once the data has been collated, it can be analyzed by using EDA based on both graphs and tables. To make the most out of the analysis, a number of different types of graphs are to be used. Since, according to the literature (Henry, 1995), the scales of the graphs are important, all the graphs (with common variable) are presented with the same scale. This study utilizes EDA to find answers to the research questions presented in Chapter I and to spot anomalies.

### **F. EVENT HISTORY ANALYSIS**

The anomalies and outliers that are discovered by EDA are further scrutinized with event history analysis. Event history analysis enables us to connect some of the anomalies to historical events which can be used to explain the sudden fluctuation in the data (Brostrom, 2012). As an example, we may be able to credit a major decrease in defense spending to the concurrent economic recession. It is likely that historical events will not explain many or most of the fluctuations, but without considering them, there is a chance we might justify correlation on faulty assumption.

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## **II. LITERATURE REVIEW**

### **A. OVERVIEW**

The premise of the study is that there are independent variables that could explain the FDF budget. This chapter provides vital background information for the reader to understand the relations between the FDF budget and the independent variables chosen for the study. The literature review looks into the foundations of Finland's political system and explains how the FDF budget is built and approved. Additionally, the explanatory variables are discussed.

### **B. FINLAND'S POLITICAL SYSTEM**

Finland is a parliamentary democracy in which the legislative power is held by the parliament, and the highest level of government is officially called the Council of State (Finland Promotion Board [FPB], n.d.).

The parliament has 200 members who are elected to serve for a four-year term. Members of parliament (MP) represent several different political parties with different political interests. After the parliamentary elections, the party with most MPs will be in charge of forming the government and will nominate the prime minister. The composition is based on negotiations between all, or at least most, of the parties. Since there are numerous different parties in the parliament, the composition of the government does not necessarily include the second or the third largest parties. However, although not required, the government nearly always has the majority in the parliament (PPB, n.d.).

The government consists of the prime minister and any number of ministers the parties involved find requisite. During the timeframe of the study, the ministers always included a Minister of Defense and a Minister of Finance. Among other things, the government is in charge of preparing the national budget, which is then introduced to the parliament for approval (PPB, n.d.).

## **C. FINNISH DEFENSE FORCES' BUDGET**

The following introduces the structure and funding mechanism of the Finnish Defense Forces' budget.

### **1. Structure**

The defense funding is covered in the national budget under main title 27, "Ministry of Defense." It includes three separate items: defense policy and administration, military defense, and military crisis management (Government of Finland, 2021). This study focuses only on the funding of military defense, which, in essence, is the budget of the Finnish Defense Forces. In addition to the overall military defense budget, this study also analyzes two of its sub-items, the acquisition budget and the salaries.

### **2. Funding Mechanism**

Forming the national budget is an annual process beginning each year in January when all ministries send their preliminary spending proposals to the Ministry of Finance. These proposals are based on each ministry's multi-year planning process. This is followed by the Ministry of Finance compiling the central government's spending limits, which are then approved by the government (Ministry of Finance [MOF], n.d.).

Based on these spending limits, the ministries prepare their respective budget proposals, which are then reviewed by the Ministry of Finance and formulated into the Ministry of Finance's budget proposal. This proposal is used as a baseline for negotiations between the Minister of Finance and the relevant ministers about possible differences in the level of appropriations. After the negotiations the government reviews and approves the budget and sends it to the parliament to be discussed and approved before the end of the year (MOF, n.d.).

The approval phase includes motions made by the MPs for changing the budget, but these tend not to change the "big picture." This is mainly because the government has majority in the parliament, so the budget composition has already been agreed to by the ruling parties. It is also noteworthy that especially regarding the defense funding, there are hardly ever any motions (Hyvärinen, 2006).

## **D. THEORETICAL MODEL**

Next, this section introduces the causes literature typically uses to explain military expenditure in the Western countries. Based on these factors, a theoretical model is formed and operationalized to enable searching observable data for the analysis phase presented in Chapter V.

The literature lists numerous factors guiding defense spending, and the topic is widely studied and covered. First, and the probably the most obvious factor, is the number and complexity of tasks assigned to a nation's military, including the area of interest (O'Hanlon, 2019). Multiple complex tasks with a global reach require far more capabilities, and thus funding, than one or two tasks in the nearby region. Although the number and complexity of tasks could be measured and thus included in the theoretical model, they are outside the scope of this study and therefore not included in the theoretical model. Furthermore, even when included, more than likely they would not change anything as the tasks of FDF have been practically permanent during the period the study examines.

The next factor is the wealth of a nation. This is a natural limiting factor as there are limits to any nation's spending, including defense spending. Spending can be funded by revenues, mainly taxes, and by borrowing (Peters, 2018). Even if most defense spending is funded with debt, the country must still be able to make the payments to the creditor. Hence, borrowing cannot be a long-term solution to pay for defense.

Another component tied to defense spending is threat (Gleditsch, 1992, and Aizenman & Glick 2003). It has a close relationship with the tasks assigned to the military. Threat is a somewhat abstract variable as it is almost impossible to define factually. This is because threat, in its simple form, is commonly considered as the sum of an adversary's capability and intent, and they are both quite difficult to define (CNAS, 2009).

In a democracy, defense spending, like any spending, must be accepted by the taxpayers. The public can, by their voting behavior, either reward or punish the politicians in power (Eichenberg & Stoll, 2017). This is the reason politicians are interested in public opinion, albeit the actual funding decisions are done by the legislative body with the

mandate given by the voters. In short, public support has, at least over the election cycle, a causal relationship with defense spending.

Since foreign and defense policy and the funding thereof is decided by the politicians in power, it is evident that party politics play a part of defense funding. Several authors argue that right-wing parties are more pro-military and hence more inclined to increase defense spending (Klingemann, Hofferbert, & Budge 1994; Bove, Efthymoulou & Navas, 2017). The division is not, however, so clear as is indicated, for example, by Whitten and Williams (2011). They state that left-wing parties support job growth even through defense, whereas conservatives are more prone to support defense acquisition.

Based on the findings from the literature, we develop a theoretical model explaining the cause-effect relationship underpinning the defense budget, as depicted in Figure 2. The model identifies the four main factors (causes) for the size of a nation’s defense budget: the wealth of a nation, threat, public support, and politics.

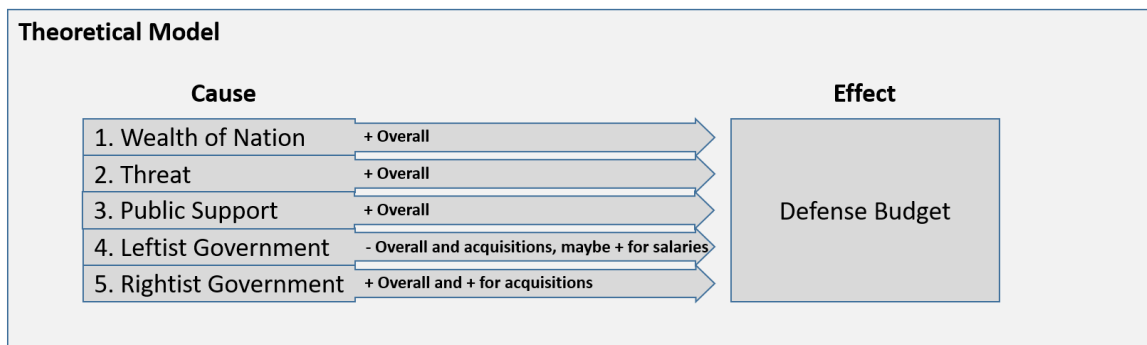


Figure 2. Theoretical Model of the Cause-and-Effect Relationship Determining a Defense Budget

### E. OPERATIONALIZATION OF THE THEORETICAL MODEL

Next, we operationalize the theoretical model presented in Figure 2. This means we identify measurable indicators which enable us to quantify all of the four root causes introduced: the wealth of the nation, threat, public support, and politics. These causes and their respective indicators are discussed next.

(1) National Wealth

The wealth of a nation can be measured in several ways; however, the most common method is by looking at the nation's Gross Domestic Product (GDP). GDP tells us how much income exists in the nation that could be devoted to defense. Additionally, GDP is known to correlate with defense spending (Dicle & Dicle, 2010). With this in mind, we use GDP as an indicator for the wealth of the nation.

(2) Threat

Military capability is generally built with the perceived threat in mind. According to Aizenman & Glick (2003), threat and spending have a relation. Finland shares a total of 835 miles of border with Russia and has fought against it in two wars. Further, recent Russian aggressions against other neighboring countries and Russian/Soviet defense spending serve in this study as a proxy for the external threat.

(3) Public Support

Most common method to measure public support is performing a survey. A permanent parliamentary committee, the Planning Commission for Defense Information, administratively under the Ministry of Defense, organizes an annual survey concerning foreign and security policy, national defense, and security in Finland (Ministry of Defense [MoD], n.d.). The poll dates back to 1964, and some of the questions have been unchanged since. For the purposes of this study, an ideal question would have asked about defense funding. Unfortunately, direct questions related to defense funding have not been consistently asked throughout the period examined by this study (MoD, 2006). Therefore, it was decided to look at questions that would imply public support for defense funding. A question related to willingness to defend the nation was found to meet the requirements, and thus, the results from the question "If Finland is attacked, in your opinion, should Finns defend with arms in all situations, even when the outcome would seem uncertain?" are used to represent the level of public support.

#### (4) Politics

To measure the influence of politics we need data about how the political parties were represented in government during the period concerned. As described earlier, it is the parties who sit in the government that get to decide the apportionment of the budget, and thus the composition of the parliament is not examined. It is noteworthy that since Finland is not part of NATO, it cannot substitute its defense spending with North Atlantic Treaty Organization (NATO) spending levels. Hence, regardless of the government composition, it is estimated that there is a certain continuum in defense spending.

There is no official divide between left and right in the Finnish political party map, and additionally some of the parties position themselves in the center, making the division between left and right unclear. Based on these considerations, this study inspects the composition of the government and the proportionate representation of the parties on the right-left axis as a proxy to politics.

Since the literature showed that there is a tendency for the left-wing parties to support personnel costs whereas the right-wing parties are proponents of acquisition-driven defense spending, the effect of government composition is also analyzed by looking at the appropriations for manpower and acquisitions.

The operationalization of the theoretical model is depicted in Figure 3. The theoretical causes are operationalized into measurable indicators which provide data that is utilized to analyze their impact on the defense budget.

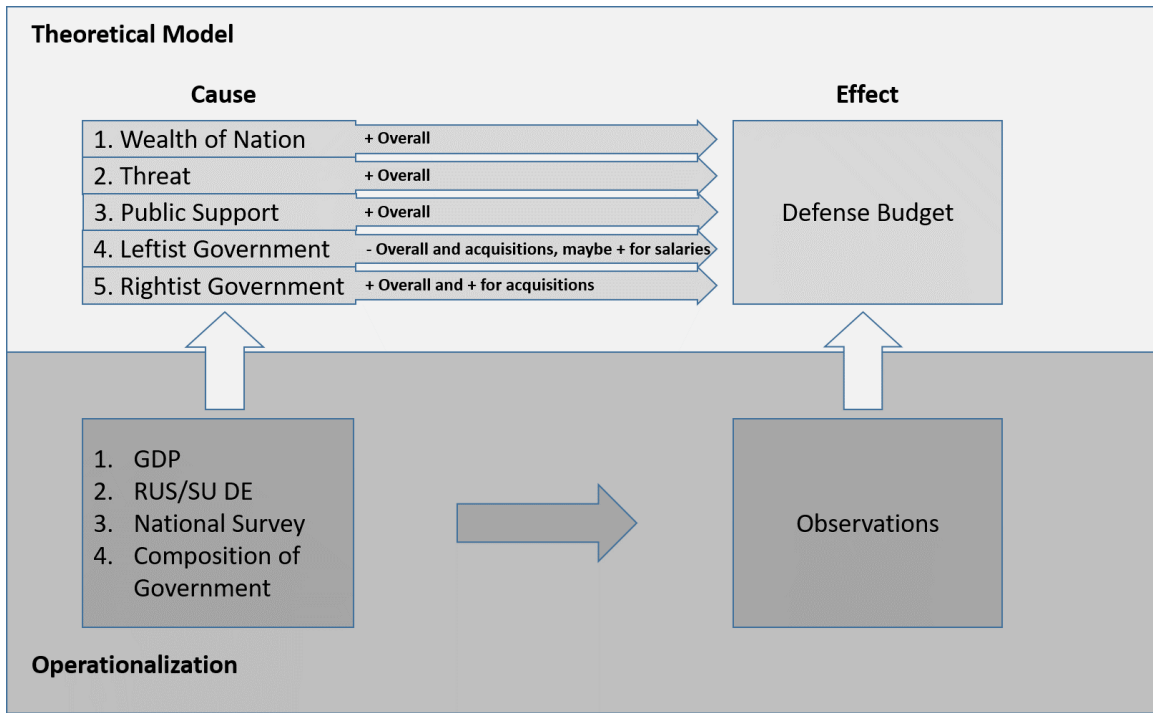


Figure 3. Operationalization of the Theoretical Model

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### III. DATA

This section introduces the data findings relevant to the research questions presented in Chapter I.

#### A. FDF BUDGET

The data for the FDF total budget and the FDF acquisition appropriations were collated from the government’s proposals for next year’s budget, which included the actual numbers from the previous year (Government of Finland, 1986–2022). As the budget decomposition was not consistently presented in the budget proposals, however, the salary figures were obtained from several sources (Government of Finland, 1986–2022; Defense Command Finland [DCF] 92, 94, 95; DCF 2005–2020; MoD 2003). All the figures were adjusted for inflation and converted into U.S. dollars (USD) in the millions (Figure 4).

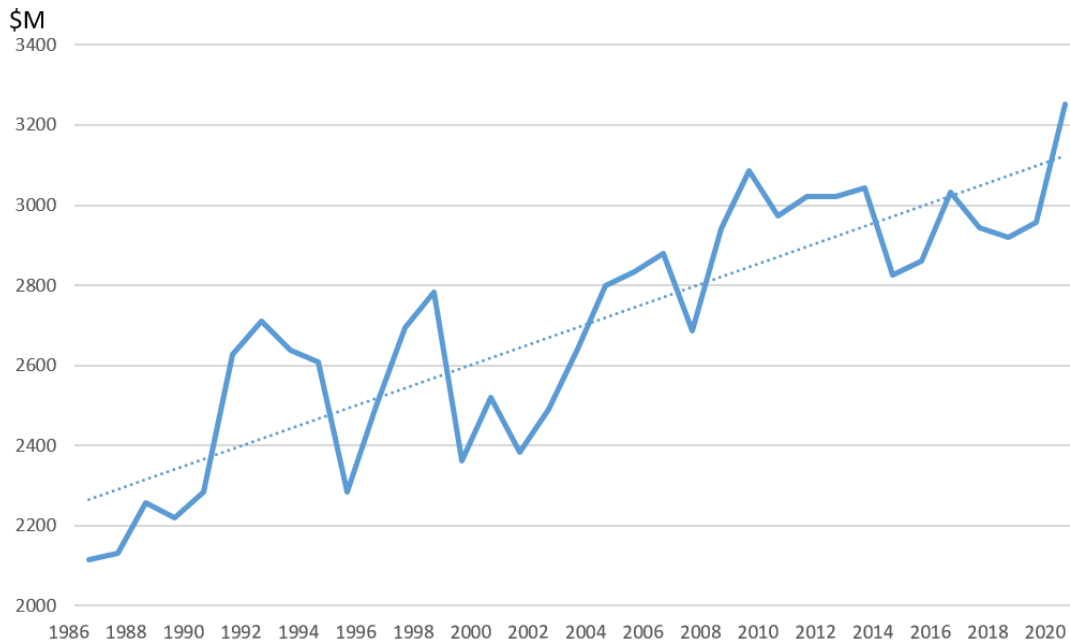


Figure 4. FDF Budget 1986–2020 (converted to real USD, millions)

Figure 4 clearly indicates a steady, although fluctuating, growth in the inflation-adjusted FDF budget starting from USD 2116M in 1986 and ending in USD 3031M in

2020. Total growth during the researched period was USD 915M, indicating a total growth rate of 43 percent over 34 years. The budget data was then transformed to present the percent change from each previous year, as presented in Figure 5. This approach enables us to analyze the change and related correlations, rather than the dollar value.

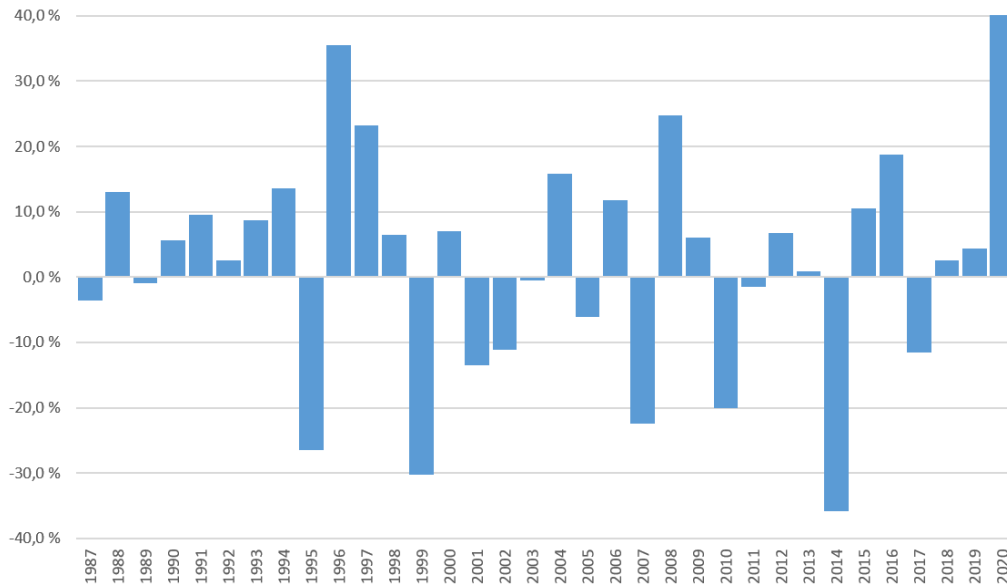


Figure 5. FDF Budget 1986–2020, Percent Change from Previous Year

### 1. Appropriations for Acquisition

The Acquisition budget, however, tells a totally different tale than the overall FDF budget. In Figure 6 we can see a graph showing a heavy fluctuation with a slowly declining trend. The researched period includes several lows and highs, and it seems a new upward trend has just begun. (As it has, this trend is discussed in more detail in the data analysis presented in Chapter V.) During the researched period the acquisition budget reached its peak in 1998 (USD 1358M) and its low in 2014 (USD 525M).

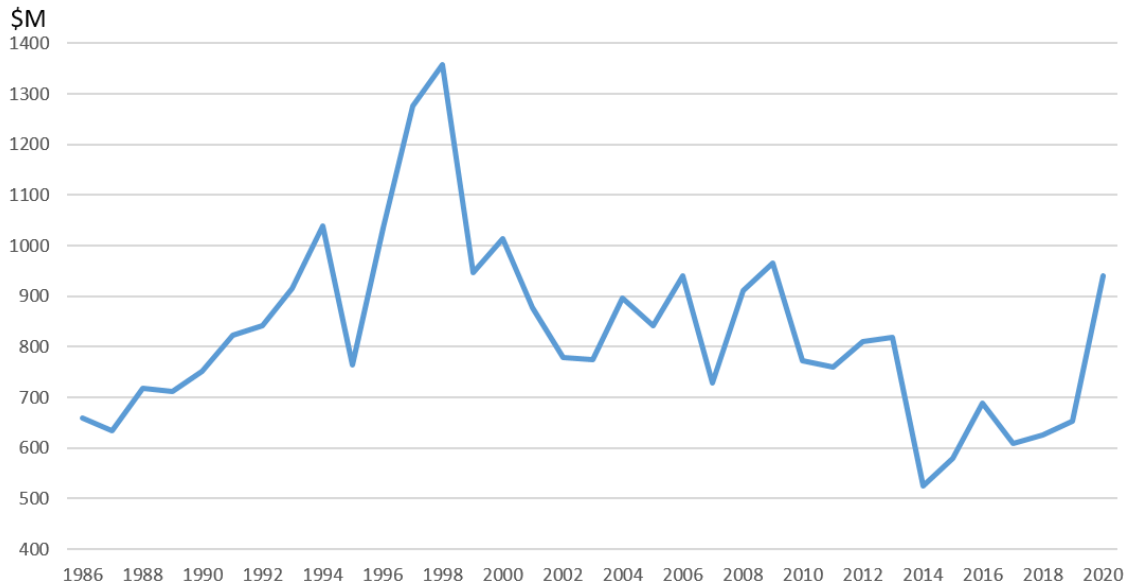


Figure 6. FDF Acquisition Appropriations 1986–2020

Again, as the percent change provides us better data to analyze the changes from one year to another, the data was transformed to show the yearly change percentages. This data is shown in Figure 7.

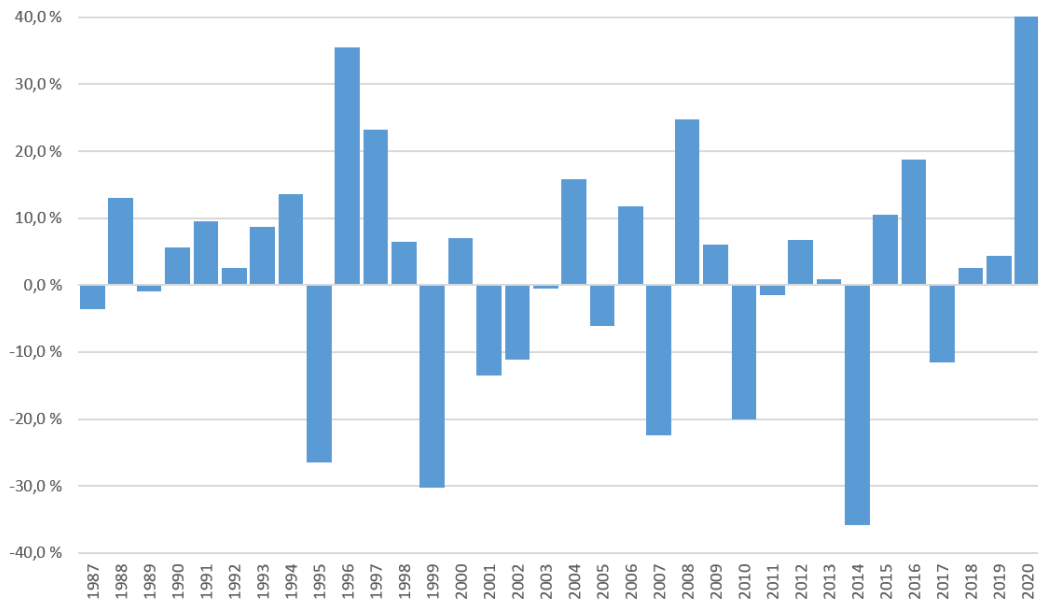


Figure 7. FDF Acquisition Budget 1987–2020, Percent Change from Previous Year

## 2. Appropriations for Salaries

Salaries, as depicted in Figure 8, show an increasing trend, with two main changes against the trend. The importance of transforming the data to illustrate percentage change is clearly visible in Figure 9. The major changes in 1991 and 2015 appear somewhat equal in Figure 8, but Figure 9 shows that the proportional difference is massive.

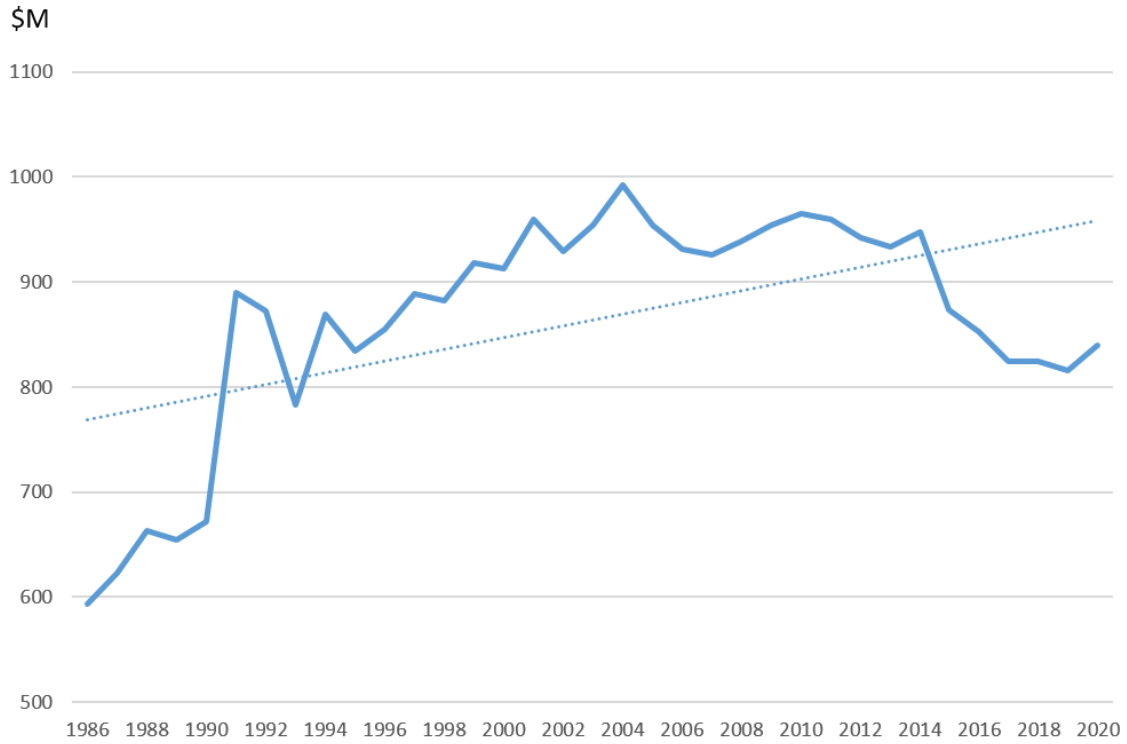


Figure 8. FDF Salaries 1986–2020

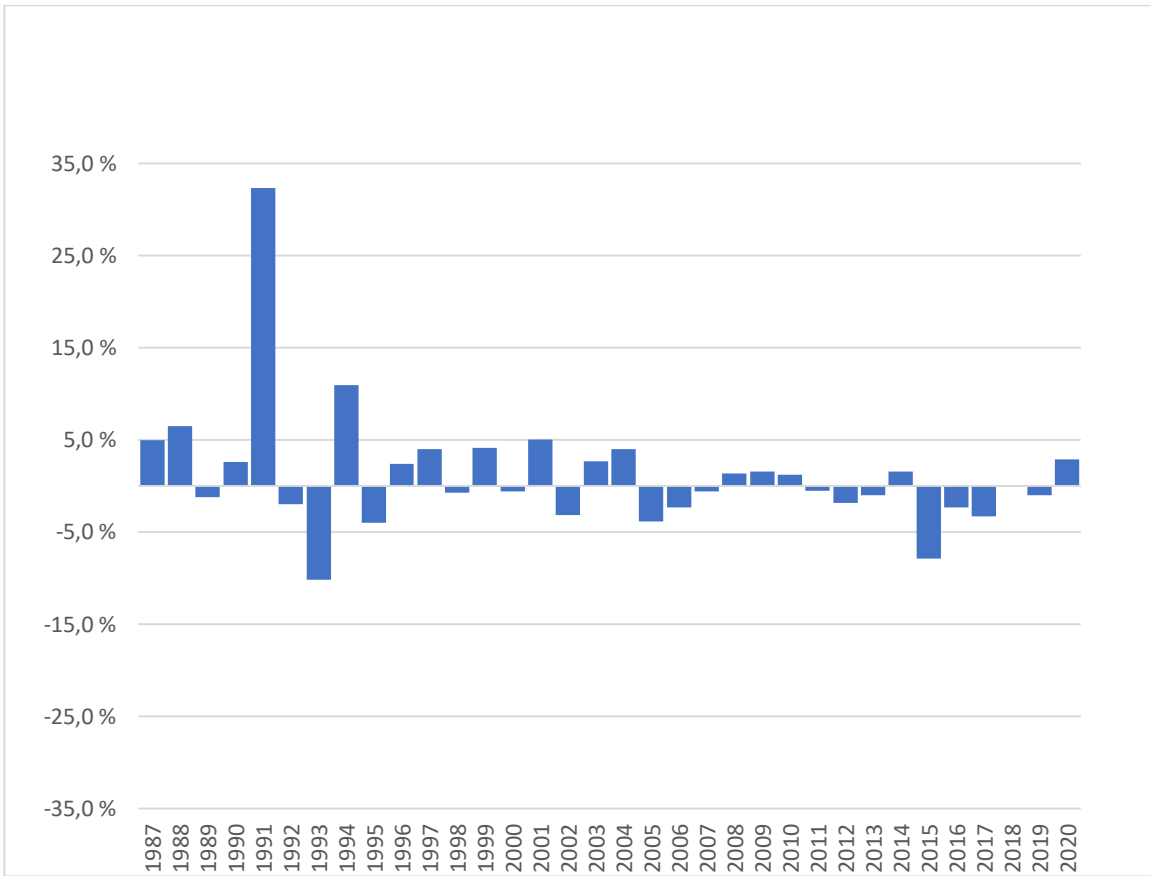


Figure 9. FDF Salaries 1987–2020, Percent Change from Previous Year

### 3. Remaining Budget

The rest of the FDF budget consists of numerous budget items, including but not limited to the following: maintenance of equipment, infrastructure upkeep, conscript maintenance costs, and operating costs of equipment.

The remaining budget, as depicted in Figure 10, also shows a clear increasing trend. This portion of the budget increased from USD 864M to USD 1472M, an increase of 70.3 percent (Figure 11). The researched period includes two major fluctuations, a sharp fall between 1992 and 1999 and a steep increase from 2001 onwards.

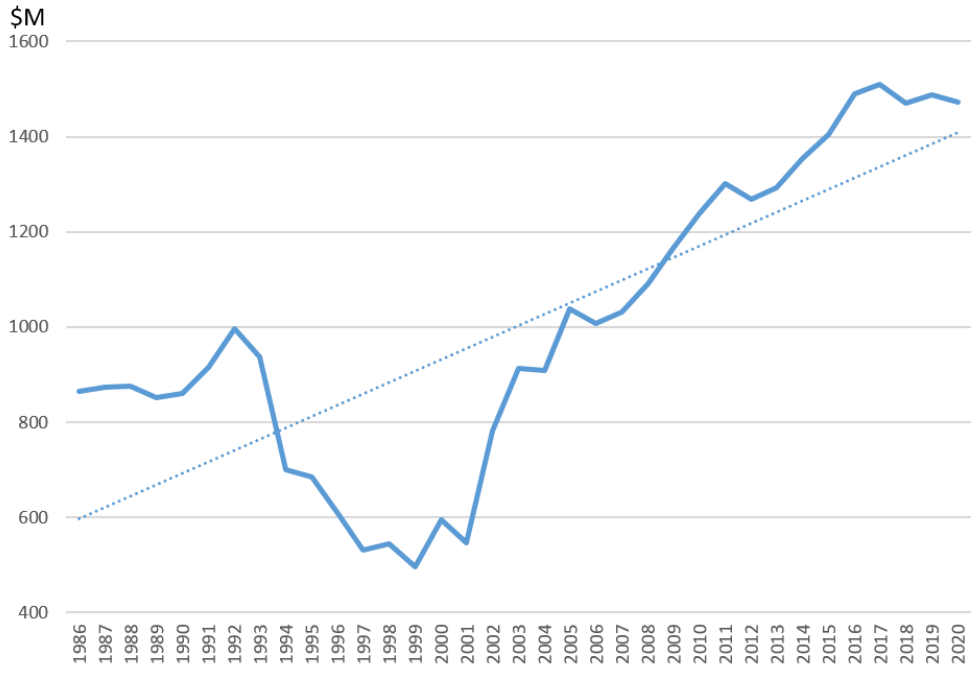


Figure 10. Remaining FDF Budget 1986–2020

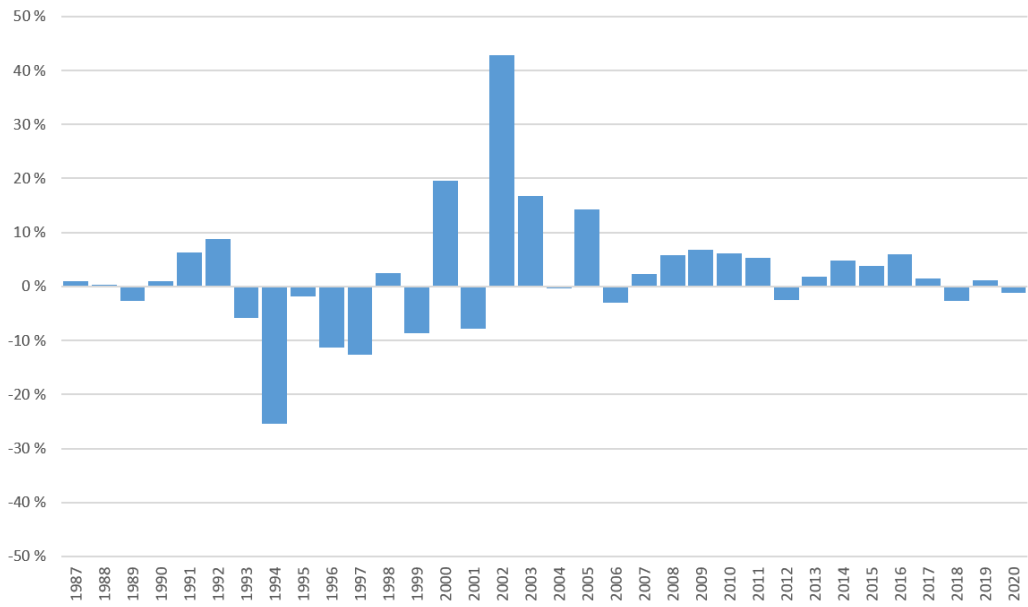


Figure 11. Remaining FDF Budget 1987–2020, Percent Change from Previous Year

## B. FINLAND'S GDP

The data for GDP are based on the official statistics of Finland (Official Statistics of Finland [OSF], 2020). The graph, shown in Figure 12, shows a steady increase in GDP, with three notable exceptions. Nonetheless, Finland's GDP in real USD has risen from 145411M in 1986 to 281679M in 2020, totaling a 94 percent increase during the period studied. Figure 11 shows the annual percent change.

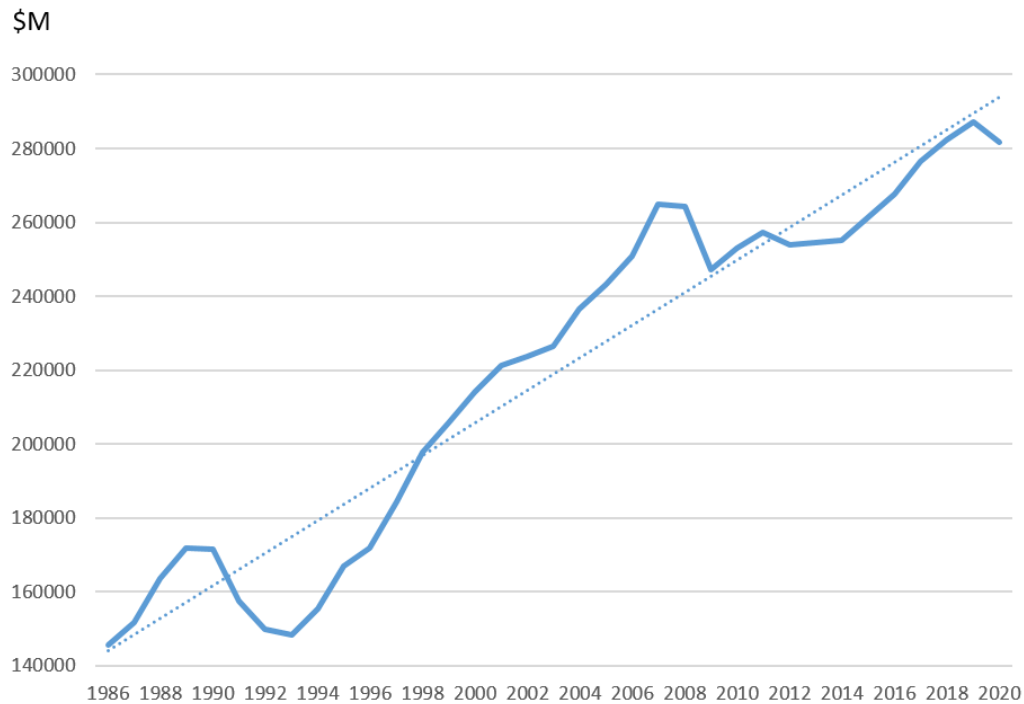


Figure 12. Finland's GDP 1986–2020 (converted to real USD, millions)

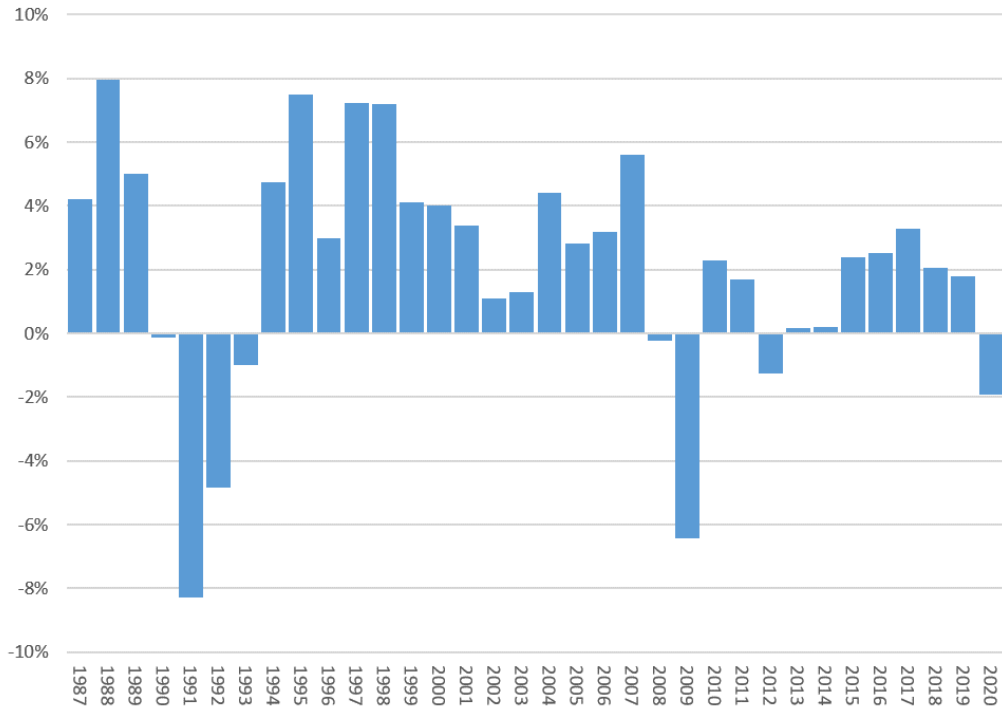


Figure 13. Finland’s GDP, Percent Change from Previous Year

**C. DEFENSE BUDGET OF RUSSIA/SOVIET UNION**

The Russian/Soviet defense budget data used in this research is based on SIPRI’s database (Stockholm International Peace Research Institute [SIPRI], 2020) with one exception. This exception concerns years 1986, 1987, and 1991, which are not found in the SIPRI database. The figures for these years are estimates based on the researched literature (Noren, 1995; Schofield, 2003). The Russian/Soviet defense expenditures are depicted in Figure 14 and the respective annual percent change in Figure 15.

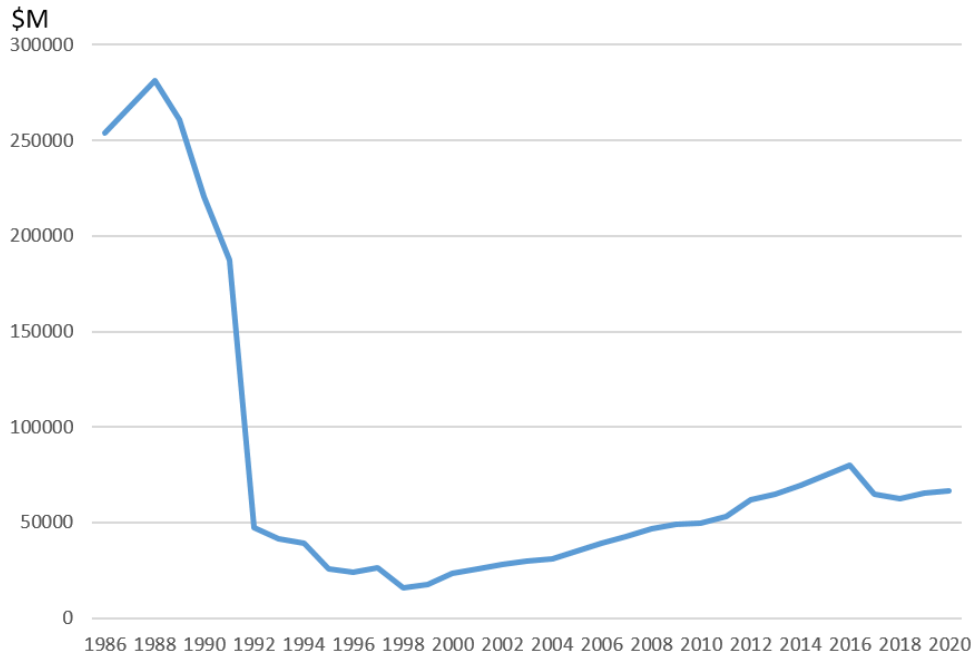


Figure 14. Russian/Soviet Defense Expenditure 1986–2020 (converted to real USD, millions)

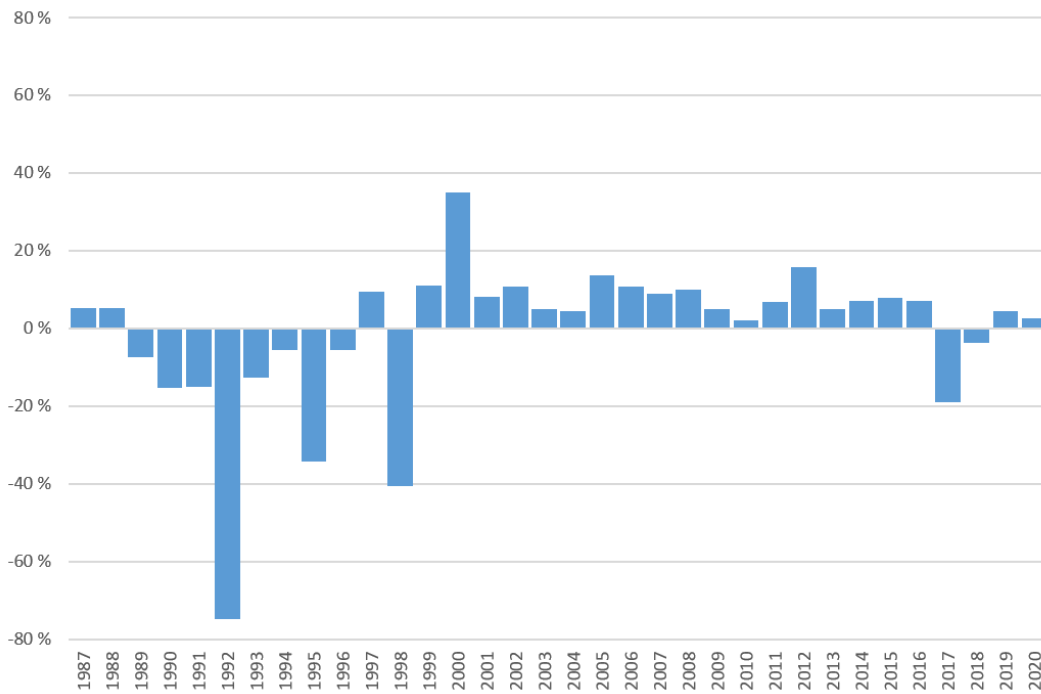


Figure 15. Russian/Soviet Defense Expenditure 1987–2020, Percent Change from Previous Year

#### D. NATIONAL SURVEY ON DEFENSE

The results for the question “If Finland is attacked, in your opinion, should Finns defend with arms in all situations, even when the outcome would seem uncertain?” are shown in Figure 16 in terms of the percentage of change in sentiment. The percentage of ‘yes’ replies ranges from a high of 81 percent in 2000 to the all-time low of 65 percent in 2020. It is noteworthy, however, that the number of ‘no’ answers is also in decline, and it is the ‘Don’t know’ responses that are increasing. To better indicate direction and strength of sentiment, this study uses the data by subtracting the ‘no’ answers from the ‘yes’ answers in the analysis. The data is depicted in Figure 16.

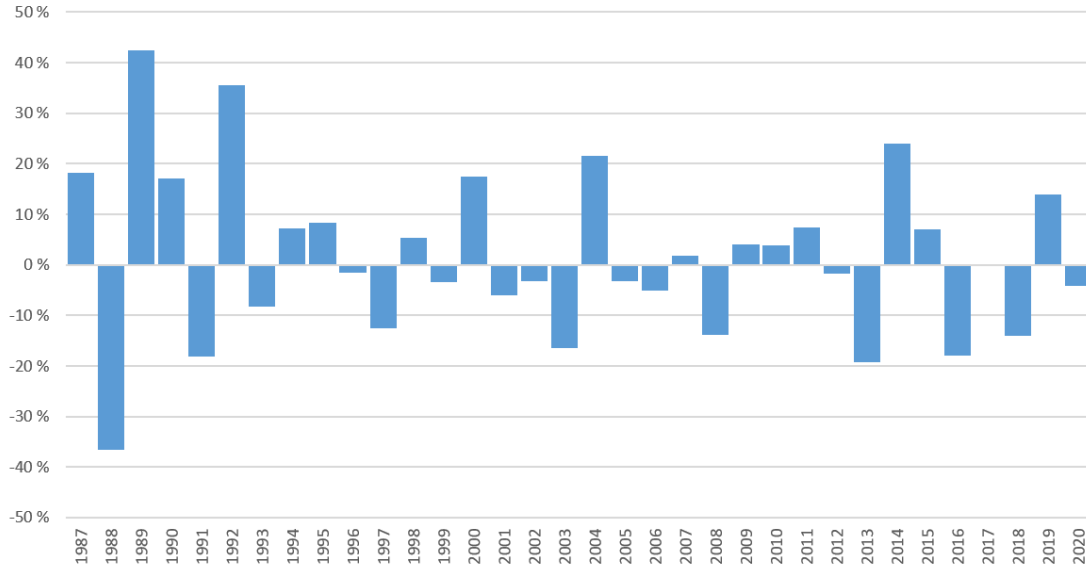


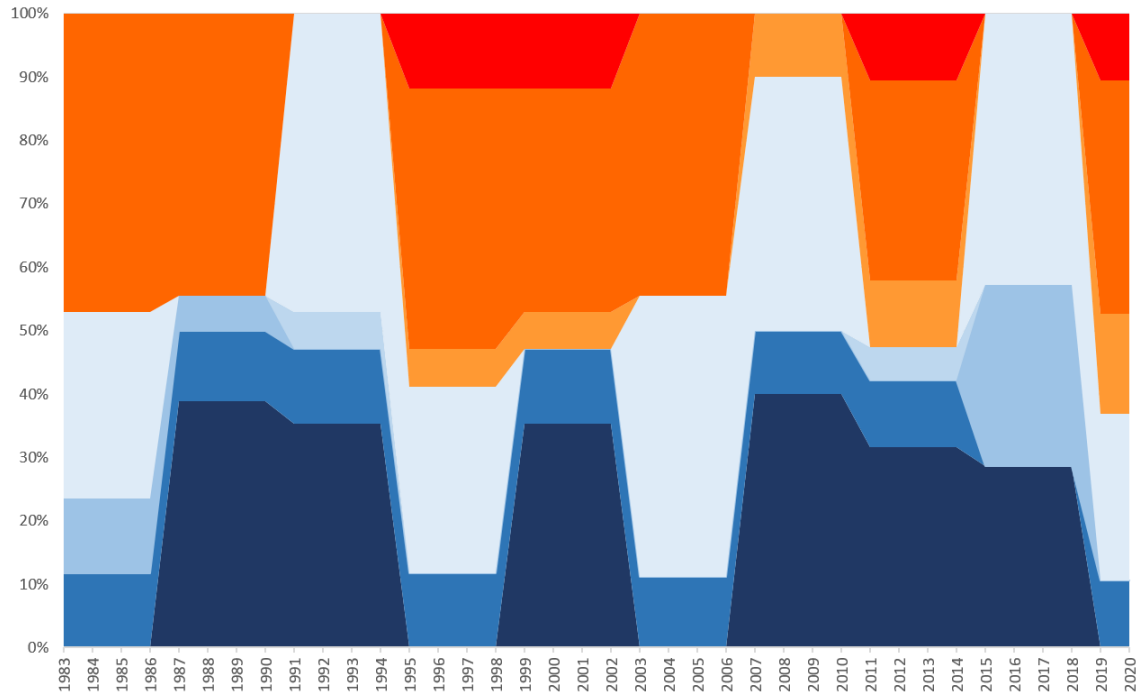
Figure 16. Public Opinion 1986–2020, Percent Change from Previous Year

#### E. COMPOSITION OF GOVERNMENT

The composition of the government and especially its location on the left-right axis for the purposes of the study is based on following. First, the parties represented in the Government of Finland and, second, the proportion of the total number of ministers representing each party. As there is no official divide between left and right in the Finnish political party map, the division was made based on a poll asking voter perception of the matter (Foundation for Municipal Development, 2019). It should be noted that as some of

the parties position themselves in the center, the division between left and right is not unambiguous. Next, the minister positions held by each political bloc was divided by the number of ministers (Government of Finland, n.d.), and this yielded the left-right composition of the Government of Finland for this study.

Figure 17 depicts the government’s composition along the left-right axis. Rightist parties are indicated by the blue color and the leftist with red. During the period of interest there have been a total of ten governments. Right leaning parties have had a majority six times and the leftists four times. It is noteworthy that there are two 100 percent and one 90 percent rightist governments, whereas the biggest left-wing majority has been 63.2 percent.



Rightist parties are indicated by the blue color and the leftist with red.

Figure 17. Finland’s Government Composition 1986–2020

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## **IV. DATA ANALYSIS**

This chapter includes the analysis of the data presented in Chapter IV. The analysis is done in two separate phases. First, we look at the data by utilizing exploratory data analysis to find out how well the theoretical model devised in Chapter III can explain the FDF budget. These results are then further tested by event history analysis. This phase is used to reveal alternative explanations, other than the theoretical model, for the identified correlations and anomalies or outliers.

### **A. THE NATIONAL WEALTH**

The theoretical model suggests that there is a positive relation between an increase in national wealth to defense spending. Figure 18 shows the annual change in FDF budget overlaid with the annual change in GDP. The GDP values are lagged by one year, meaning that the budget for any year is viewed against the GDP of the previous year. Based on the graph, we can see that out of the 33 observations 20 have parallel trends while 13 have opposite trends. Based on this, we can only identify a moderate positive correlation between the two variables.

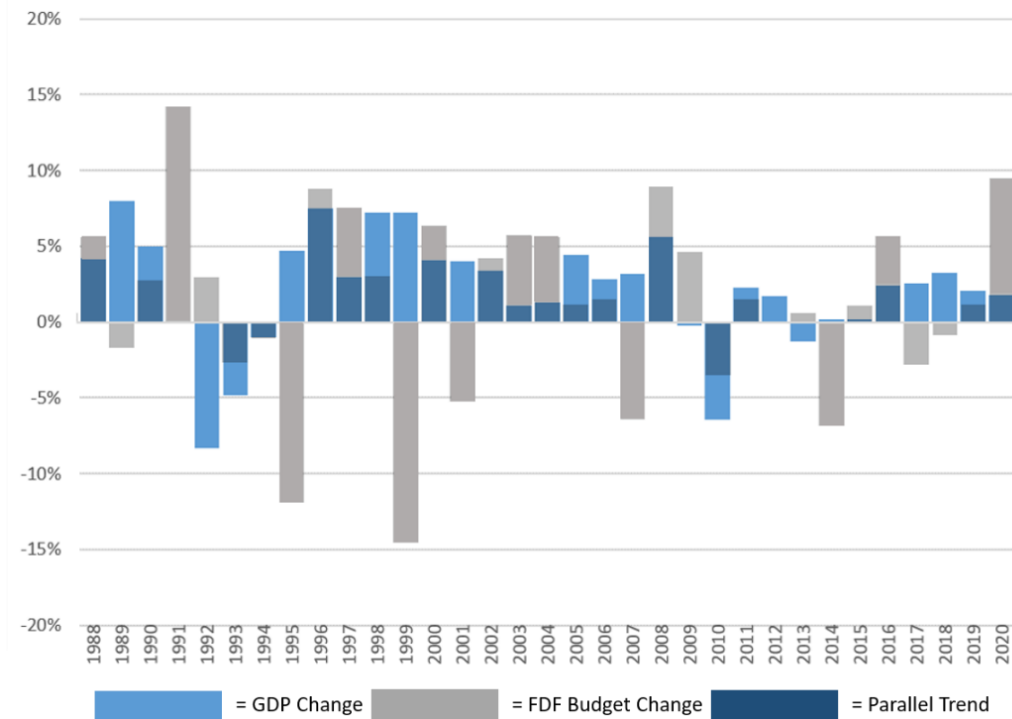


Figure 18. Annual Change of FDF Budget vs. GDP Change (t-1)

By contrast, we can identify that the graph in Figure 18 consists of three major outliers, indicating there has been a drastic difference between the variables. These outliers occur in 1991–1992 and 1995. By excluding these observations, we would see that the number of parallel trends would rise to 20/30 instead of 20/33 when all are included. This means the correlation does not improve significantly even when the outliers are cleared from the data. Hence, we do not perform further analysis to indicate reasons for the outliers.

Figure 19 shows the annual change in the FDF budget per GDP overlaid with the annual change in GDP. The GDP values are not lagged. Based on the graph we can see that out of the 34 observations, nine have parallel trends while 25 have opposite trends. Based on this, we can state that there is a strong negative correlation between the variables.

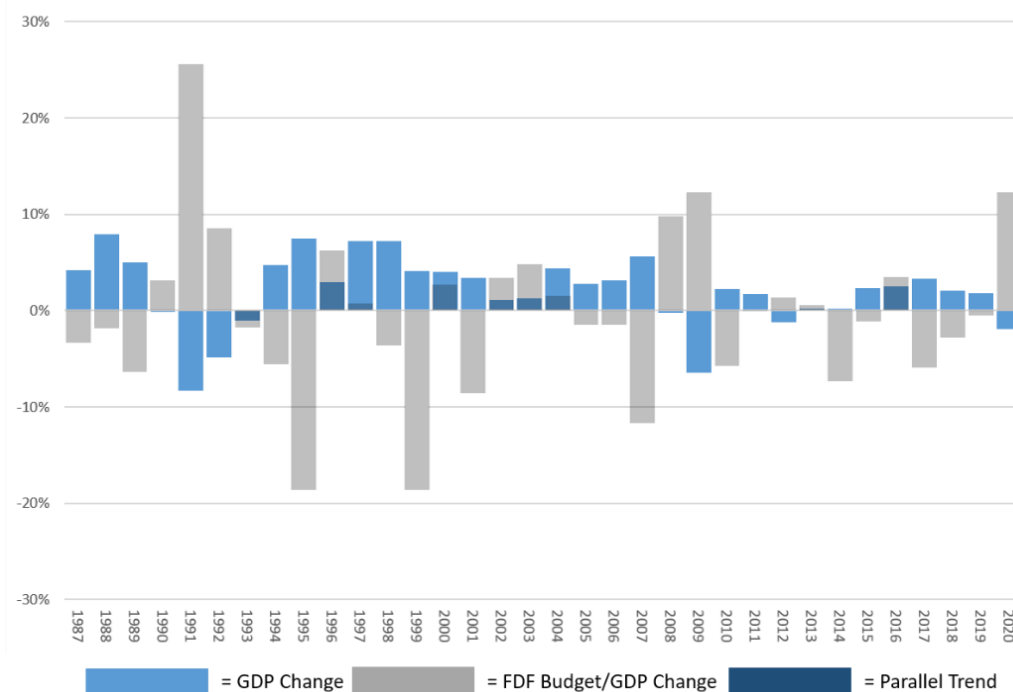


Figure 19. Change in FDF Budget/GDP vs. GDP Change

## B. THREAT

In Figure 20 the annual change in FDF budget is overlaid with the annual change in Russian/Soviet Defense Expenditure (DE). The Russian/Soviet DE values are lagged by one year. By analyzing the graph, we can see that out of the 33 observations, 21 have parallel trends while 12 have opposite trends. Based on this, we can only infer indicate a moderate positive correlation between the two variables.

On the other hand, the graph shows us the collapse of the Soviet Union and the resulting dramatic drop in defense funding. As was shown in Figure 14, the Russian defense budget dropped from USD 281099M to USD 15740M, a reduction of almost 95 percent. Since hitting bottom in 1998, the funding has been on a steady rise. This is a clear outlier with a clear reason. Hence, we also analyze the data by excluding years 1988–1997. The exclusion yields us 23 observations out of which 17 have parallel and only six negative trends. Hence, it is stated that, if the collapse of the Soviet Union is regarded as an outlier, there is a strong correlation between Russian DE and the FDF budget.



Figure 20. Annual Change of FDF Budget vs. Change in Russian/Soviet DE (t-1)

### C. PUBLIC SUPPORT

In Figure 20 the annual change of FDF budget is overlaid with the annual change in public support for Finland’s military response if attacked (yes answers – no answers). The public support values are lagged by one year. Analysis of the graph reveals that out of the 33 observations 15 have parallel trends while 17 have opposite trends. Based on this we can say that there is no correlation between the two variables.

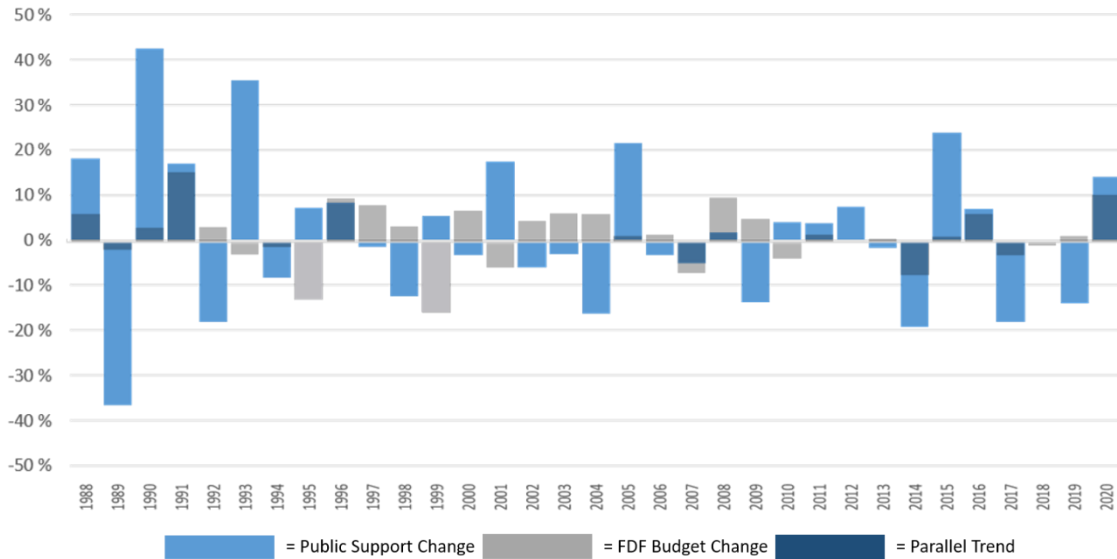


Figure 21. Annual Change in FDF Budget vs. Change in Public Support (t-1)

#### D. POLITICS

Since the model suggests several variations variances in how politics can affect defense expenditure, we look at this cause-effect relationship through several graphs. First is the relationship between the composition of the government and the entire FDF budget. This is depicted in Figure 22. The FDF budget is lagged by one year.

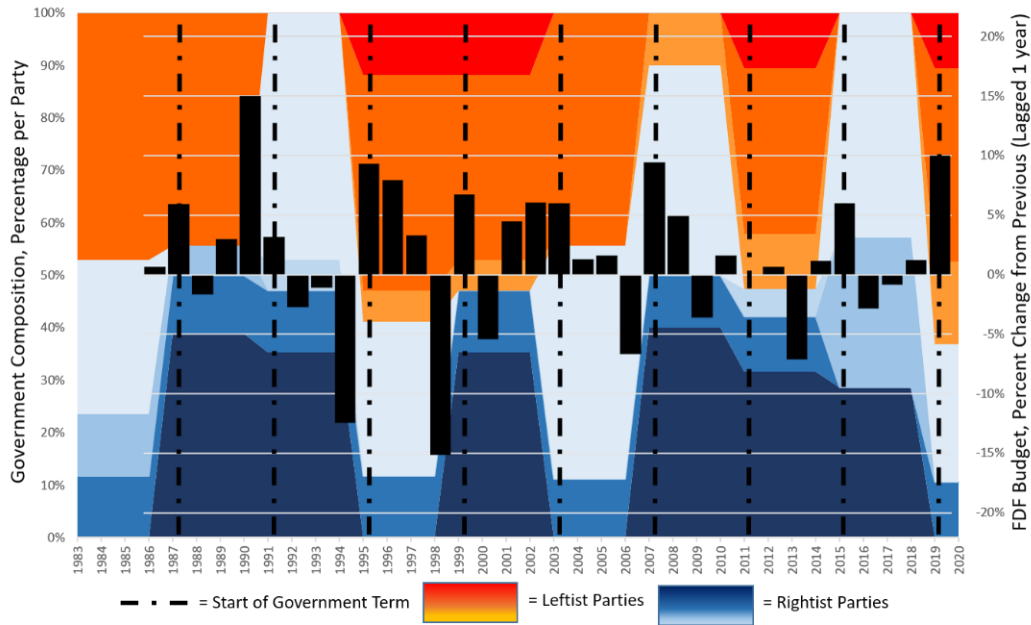


Figure 22. Government Composition vs. FDF Budget Change (t-1)

During the researched period the government has had a right-wing majority for 21 years and left-wing majority for 13 years. Based on the graph, we can observe that the leftist governments have increased the FDF budget ten out of 13 times (77%) and decreased it three out of 13 times (23%). Five (50%) of the increases have been five percent or greater, whereas three (100%) of the cuts have been more than five percent. Meanwhile the rightist governments have increased the FDF budget 13 out of 21 times (62%) and decreased it eight out of 21 times (38%). Six (46%) of the increases have been five percent or more, whereas two (25%) of the cuts have been more than five percent.

The analysis disproves the theoretical model’s claim that right-wing parties are more prone to defense spending than left-wing parties, in the case of Finland. In fact, it shows quite the opposite result. Since the results are opposite from the findings of the literature review, next an attempt is made to see if some of the opposite results could be explained by historical events.

Let us look at the possible counterarguments in chronological order. The first period in which the data clearly does not support the theory includes the years 1992–1994. A 100 percent rightist government cut the FDF budget in those three consecutive years, including

one cut of nearly 20 percent. This coincides with the recession and can be tracked also to the GDP graph in Figure 13. The second period is 1995–1997 when a leftist government increased the FDF budget three years in a row. This can be mostly explained by the ongoing strategic acquisition program, the renewal of the air force’s fighter fleet. This acquisition was financed by a separate funding, which was agreed to by a parliamentary decision and thus all parties supported. This massive spike in acquisitions led to an increase in the entire FDF budget (see Figure 4). Additionally, the big cut displayed in 1998 is not actually a cut but a return to normalcy. Finally, we see the large increase in 2019, again driven by a leftist government. This is caused by another strategic acquisition program, and it was again agreed to all the parties long before the current government composition was known.

Nevertheless, despite the cases just mentioned, historical events cannot explain why the data is not supporting the theoretical model. Hence, it is stated that the composition of the government does not have clear a cause-effect relation to the FDF budget.

Next, let us look at the relationship between the composition of the government and the FDF acquisitions appropriations. This is depicted in Figure 23. The FDF acquisitions appropriations are lagged by one year.

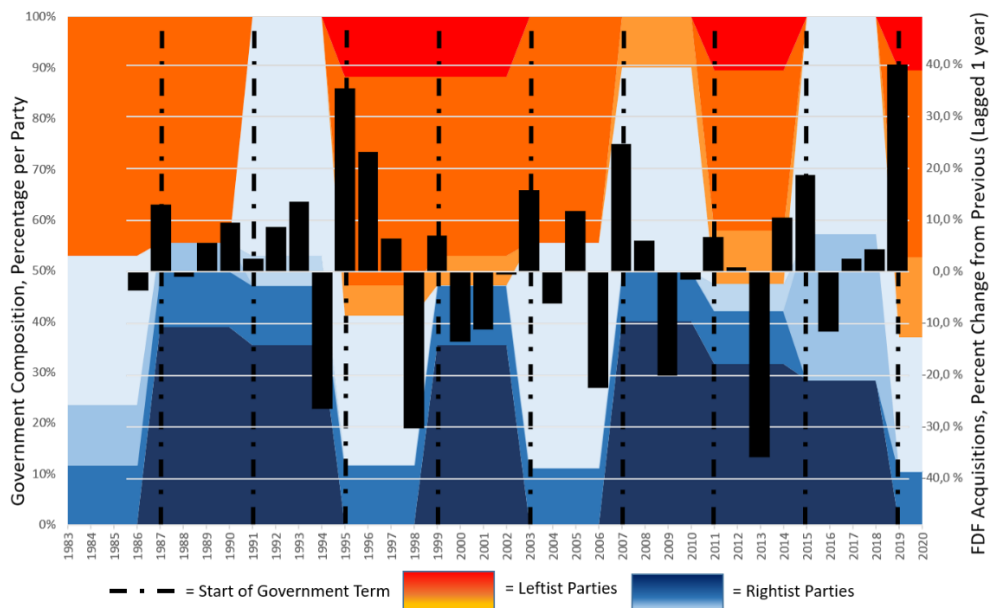


Figure 23. Government Composition vs. FDF Acquisitions (t-1)

Based on the graph in Figure 23, we can observe that the leftist governments have increased FDF acquisitions appropriations eight out of 13 times (62%) and decreased it five out of 13 times (38%). Four (50%) of the increases have been five percent or greater, whereas four (80%) of the cuts have been more than five percent. Meanwhile, the rightist governments have increased FDF acquisitions appropriations 13 out of 21 times (62%) and decreased this amount eight out of 21 times (38%). Six (46%) of the increases have been five percent or more whereas four (50%) of the cuts have been more than five percent.

These numbers do not provide evidence for the theory that left-wing parties are for decreasing defense acquisitions and rightist parties are prone to increase acquisition funding. All the counterarguments just covered also apply to acquisitions funding. The left-wing governments happen to have coincided with the strategic acquisition programs. In spite of this, the data does not support the theory.

The theoretical model suggests that left-wing parties are possibly prone to increase defense-related salaries. This is studied next. The relationship between the composition of the government and the FDF salary appropriations is depicted in Figure 24. The FDF salary appropriations are lagged by one year.

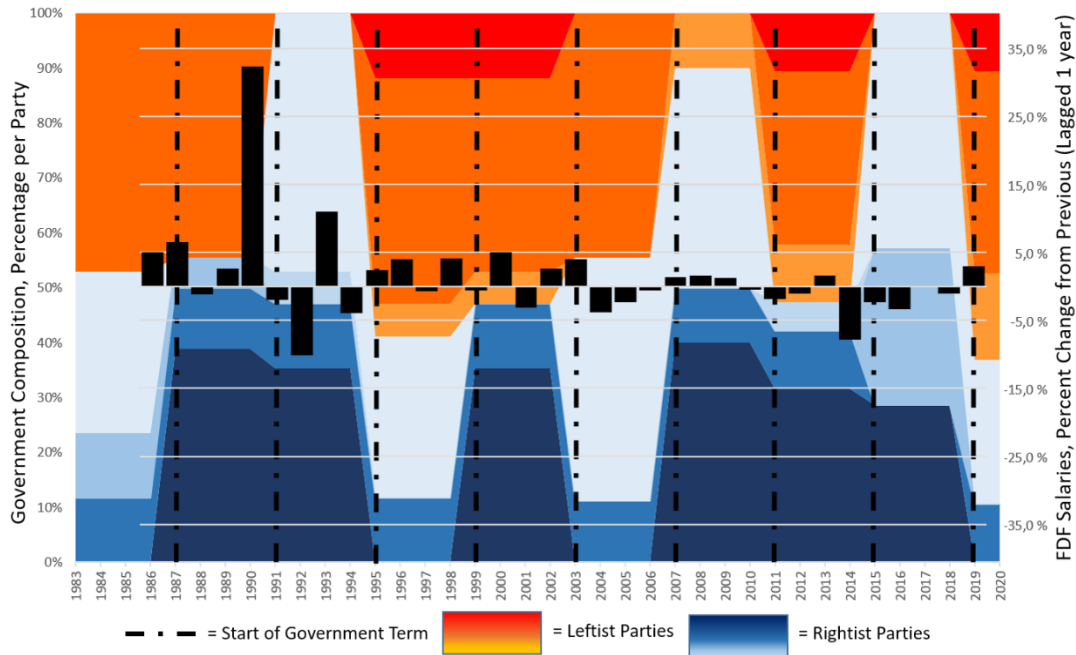


Figure 24. Government Composition vs. FDF Salaries (t-1)

The graph clearly differs from the volatile graphs analyzed earlier. The fluctuation is small, with only one exception in 1990. Based on the graph, we can observe that the leftist governments have increased FDF salary appropriations seven out of 13 times (54%) and decreased these appropriations six out of 13 times (46%). One (14%) of the increases has been five percent or more, whereas one (17%) of the cuts has been more than five percent. Meanwhile the rightist governments have increased FDF acquisitions appropriations nine out of 21 times (43%) and decreased the budget amount twelve out of 21 times (57%). Three (33%) of the increases have been five percent or more, whereas two (17%) of the cuts have been more than five percent.

Although these numbers lend moderate support to the theory, they are not conclusive. Hence it is concluded that the data proves the theory wrong, although not reversed, as was with previous examples. There is a logical explanation for the anomaly that occurred in 1990. It is a result of changed accounting procedures, and from 1991 onwards, payments to the government pension fund were budgeted under FDF salaries (Government Pension Fund Act, 1989). It was not an increase in salaries per se, but an

accounting procedure concerning all government bureaus and agencies. Even if 1991 is regarded as an outlier, the data does not support the theory.

The proportions between acquisitions, salaries, and the rest of the FDF expenses in 1986–2020 are shown in Figure 25. The graph shows us the spike in acquisitions appropriations in the mid-1990s, again the result of the fighter acquisition program, but it also depicts a steady increase in the rest of the expenses after 2005. Two most likely explanations for the constant escalation are related to outsourcing. First, in 2003 the FDF had to hand over all of its real estate to a government-owned company, which then became the landlord (GOF, 2002). This resulted in a steady increase in rents, which contributed to the overall rise in the expenses in the ‘other’ category. The other major outsourcing concerns maintenance of all army equipment. The contract was signed in 2009, and then it was expanded in 2014 to include navy equipment as well (GOF, 2014).

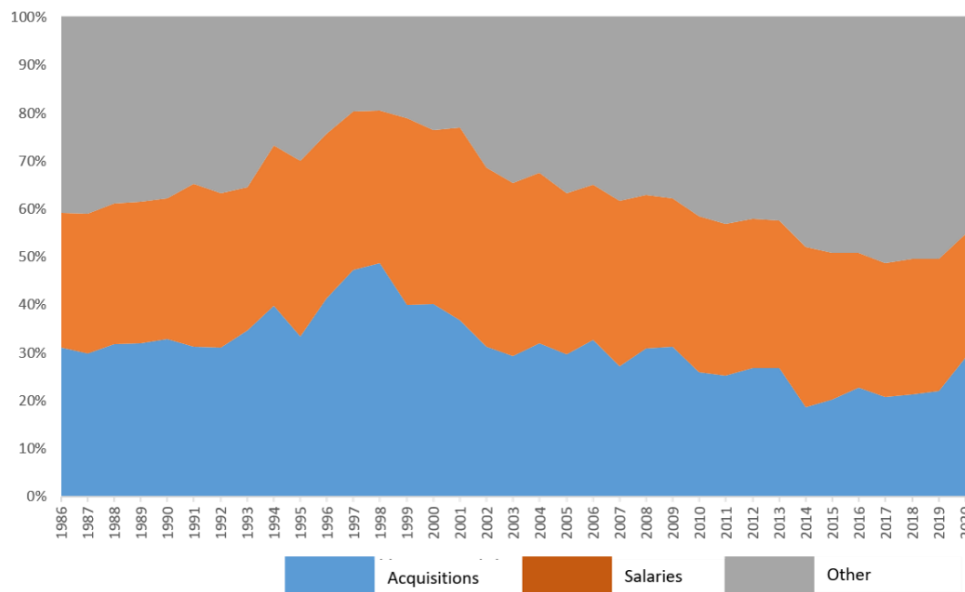


Figure 25. Division of Main Items in FDF Budget 1986–2020

## V. CONCLUSIONS AND DISCUSSION

### A. CONCLUSIONS

The theoretical model suggested that the following cause-effect relations are reflected in the defense budget:

1. National wealth: positive effect on the overall defense budget
2. Threat: positive effect on the overall defense budget
3. Public support: positive effect on the overall defense budget
4. Leftist government: negative effect on the overall defense budget, possible positive effect on salaries
5. Rightist government: positive effect on the overall defense budget and on acquisition appropriations, negative effect on salaries

The analysis showed a moderate cause-effect relationship between national wealth in terms of GDP and the FDF budget and a strong cause-effect relationship between threat and the FDF budget. No evidence was found to support any of the politics-related theories or the level of public support for defense. The results suggest that Finland's defense funding is based on foundations different from those of the other Western countries on which the literature findings were based. So, the question arises as to why the model was not applicable for Finland although it is for most Western countries. Some possible explanations are the following:

- Funding decisions regarding strategic acquisition programs in Finland are made inclusively with all the parties well before the actual program. This results in consistency and the agreed upon appropriations are made when passed by the lawmakers, regardless of the composition of the government.
- Finland has a mandatory conscript service for all males, and women can serve on a voluntary basis. This means that almost all male politicians

have served in the military and almost all female politicians have either served or they have someone who served in the close family. Hence the politicians and the public are not as removed from the military as they might be in other Western nations with an all-volunteer force.

- Finland shares a long border with Russia and wars fought against it are in the collective memory. Additionally, Russia's constant military build-up and aggressions against its neighboring countries speak for themselves.
- Finland is not part of NATO. It does not have the substitution or complimentary effects of defense spending that allied Western nations do. It can only rely on its own military capabilities and, thus, combined with the previous point, cannot loosen its approach on military spending.
- Finland's governments are rarely 100 percent right or left leaning. This means that there are a lot of compromises made before a government is formed. It may be that even if a party wants to cut defense spending, it has to sacrifice this goal to gain something it wants more.

## **B. LIMITATIONS**

The main limitation of this study is the rather small sample size,  $n=34$ . This may have distorted the results. Additionally, the event history lacks 'behind the scenes' data from political decisions. This may have led to oversimplification in some parts.

## **C. RECOMMENDATIONS FOR FUTURE RESEARCH**

Future research should include a bigger sample size whenever possible. A decision was made for this study to remain in a time frame where data from all variables was available. Specifically, government composition and FDF funding data are available from a significantly longer time period. It might also be beneficial to perform a study to find out whether the explanations given for why the model did not work in Finland's case are valid. Additionally, using the theoretical model developed in this study, it would be interesting to compare these results with those for other European states.

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