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The Effect of Defence Expenditures on Inflation: The Case of Selected NATO Countries

Mehtap ÖKSÜZ *(https://orcid.org/0000-0001-5862-5079), Çanakkale Onsekiz Mart University, Türkiye; mehtapoksuz@comu.edu.tr*

Neslihan YILMAZ *(https://orcid.org/0000-0001-9350-9866), Uşak University, Türkiye; neslihan.yilmaz@usak.edu.tr*

Savunma Harcamalarının Enflasyona Etkisi: Seçilmiş NATO Ülkeleri Örneği

Abstract

The impact of defence expenditures on inflation in selected NATO countries was analysed, taking structural breaks into account in this study. The implementation covers the USA, UK, France, Germany, Italy, ranked first to fifth, and Türkiye, ranked 8th in defence expenditures in NATO. The analysis was executed using data from 1960 to 2022. In this respect, the question of whether defence expenditures create inflationary pressure was expanded with the Fourier function. This method integrates the effect of structural breaks into the model by considering and reviewing the ARDL Bounds Test and ADL Cointegration techniques. Consequently, the findings showed that defence expenditures increased inflation in the USA. However, there was no significant effect in the other examined countries. This case suggested that the impact of defence expenditures on inflation greatly differs from country to country.

Keywords : Defence Expenditures, Inflation, NATO, Fourier.

JEL Classification Codes : H41, H54, E31.

Öz

Bu çalışmada, NATO'nun savunma harcamaları bakımından ilk beş sırasında yer alan ABD, Birleşik Krallık, Fransa, Almanya ve İtalya ile sekizinci sırada bulunan Türkiye özelinde, savunma harcamalarının enflasyon üzerindeki etkisi yapısal kırılmalar dikkate alınarak analiz edilmiştir. 1960-2022 dönemine ait veriler kullanılarak yapılan analizde, savunma harcamalarının enflasyonist baskı yaratıp yaratmadığı sorusu, yapısal kırılmaların etkisini dikkate alarak modele entegre edilebilen Fourier fonksiyonu ile genişletilmiş ARDL Sınır Testi ve ADL Eşbütünleşme Testi teknikleri kullanılarak incelenmiştir. Elde edilen bulgular, ABD'de savunma harcamalarının enflasyonu artırdığını; incelenen diğer ülkelerde ise anlamlı bir etki bulunmadığını göstermiştir. Bu sonuç, savunma harcamalarının enflasyona etkisinin ülkelere göre büyük farklılıklar gösterdiğini güçlü bir şekilde ortaya koymuştur.

Anahtar Sözcükler : Savunma Harcamaları, Enflasyon, NATO, Fourier.

1. Introduction

The economic effects of defence expenditures have become a crucial factor in the policy-making processes of states today. Particularly, defence expenditures and their impact on macroeconomic indicators such as inflation are examined by policymakers and academics cyclically. So this study debates the effects of defence expenditures on inflation in the selected North Atlantic Treaty Organisation (NATO) countries. The study aims to find out the reflections of these expenditures on the economic balance with a comprehensive analysis. In this context, the study analyses whether defence expenditures create inflationary pressures in the selected countries.

Academic studies that survey the relationship between defence expenditures and inflation suggest that these expenditures can pressure inflation by increasing domestic demand (Hartman, 1973; Schultze, 1981). Conversely, some studies (Vitaliano, 1984; Sahu et al., 1995) show that defence expenditures do not directly impact inflation. This timely variety in the literature indicates a requirement to examine the macroeconomic effects of defence expenditures with more advanced analysis techniques. Therefore, this study analyses the impact of defence expenditures on inflation with extended methods and the Fourier equation, and examines structural breaks in depth.

The study aims to analyse the effects of defence expenditures on inflation with the structural breaks. In this scope, the data set contains the period 1960-2022, and it was used for the United States (USA), France, the United Kingdom (UK), Germany and Italy. These countries had the highest defence budgets during 1960-2022 in NATO. Türkiye, which is marked by its strategic location and importance in regional security, was selected, for instance. Thus, a comparative analysis of the effects of defence expenditures on inflation may be possible by including these countries. Besides, differences between countries and Türkiye are determined, and similar results can be found in these countries. The reason for choosing timely econometric methods extended with the Fourier function is to attain more dependable and detailed results with structural breaks. This practice observed the long-term effect of defence expenditures on inflation and the short-term fluctuations in selected countries. In addition, since existing studies in the literature are primarily based on traditional time series methods, which do not sufficiently account for the effects of structural breaks, this study aims to fill the existing gap in the literature through the analysis method and dataset it employs. With this purpose, the data set was extended with this innovative method by combining the effects of defence expenditures on inflation. In this respect, important findings different from the present study were presented for policymakers.

Progressive stages of the study, primarily the general structure of defence services, will be explained. The relations between defence expenditures to fulfil the services and inflation will be analysed theoretically. In the next phase, evidence from empirical studies in the literature will be discussed. The methods and findings of the studies will be observed. Within this scope, the data set and the analysis methods are explained, and the statistical importance of the debate is discussed. In the conclusion phase of the study, policy recommendations are given within the findings obtained.

2. The Relationship Between Defence Expenditures and Inflation

Defence is a part of the basic mission of the government and a tool of protection against internal and external threats. It is also an important constituent of nations' efforts to determine and develop their strategic interests (McGuire, 1995: 16). Thus, defence is not only a protection mechanism but also plays a vital role in specifying the dynamics in national development and international relations with other countries. Defence also has various outputs, such as securing peace and economic stability, protecting individual and national freedoms. Besides, it protects against risks and threats, deterring and ensuring national security. These outputs include cost savings that contribute to national welfare and gross domestic product (GDP). They also contain the economic benefits of the armed forces and national defence industries, including employment, technology, export and import. Incidentally, defence services also presented non-economic benefits such as foreign policy benefits, peacekeeping and disaster relief (Hartley, 2020: 32). A peaceful environment increases economic prosperity and ensures social peace and individual security. Therefore, a state's ability to intervene in natural disasters directly relates to a strong defence infrastructure. Increasing defence capacity provides crucial disaster management and humanitarian aid advantages in this scope. These relevant benefits of defence enforce a country's national unity and social solidarity and increase its importance in the international arena.

Defence services are liable to everyday consumption and offer two basic functions: deterrence and defence in the services provided for the general public interest. Discourage has a vital function, which refers to a strategic approach developed to ensure a country's national security. Because it is an important service that all citizens benefit from equally, they can't be excluded from this service. The repulsion function means getting involved in an offensive situation and preventing the attack from succeeding or forcing it to pull back (Giray, 2004: 183). Especially in war or crisis times, this situation may lead to certain regions benefiting more from defence resources or other regions' ability to provide benefits from such services decreases. These two situations of defence services constitute an important dynamic that should be considered in the design of national security policies.

Defence can create various externalities in economic and social areas and national security. Therefore, defence services are considered multifaceted with positive and negative externalities (Kaul et al., 1999: 364). Defence services can cause the pullout of qualified labour and capital resources from civilian production in terms of negative externalities. This situation slows down the development rate of civilian sectors, increases production costs and can negatively affect general economic efficiency. In addition, positive externalities of defence services are particularly striking in developing economies. In this direction, the defence sector increases the potential of educated labour in society and encourages the transition of this labour force to the civilian sector (Dunne et al., 2004: 3-4).

Inflation is defined as the increase in prices (McConnell et al., 2009: 82). One of the types of inflation is demand-pull or demand-driven inflation. This type of inflation occurs due to sudden changes in aggregate demand. For example, the inflation observed in the USA in the 1960s and 1980s is demand-pull inflation (Mankiw, 2009: 393). Demand-pull inflation is also defined as the price increase caused by the rapid rise in aggregate demand (Baumol & Blinder, 2011: 702). The policies implemented by the government to increase aggregate demand effectively expose this inflation (Mishkin, 2012: 334).

Another type of inflation is cost inflation due to shocks in aggregate supply. The increase in the cost of production inputs leads to a rise in prices, causing cost inflation. For example, one of the main reasons for the high inflation rates observed in the USA in the 1970s was the increase in oil prices. In the literature, this situation is defined as a negative supply shock. In contrast, the downward pressure on inflation rates caused by decreased oil prices in the 1980s is a positive supply shock (Mankiw, 2009: 393). Cost inflation can also be caused by factors such as temporary supply shocks or wage demands of workers exceeding productivity growth (Mishkin, 2012: 334).

Lastly, profit inflation (profit-driven inflation, markup inflation, seller inflation or greed inflation) is associated with price increases resulting from firms' tendencies to increase their profit margins. Profit inflation occurs when firms increase their prices beyond their cost increases. Therefore, it contains factors such as increases in the prices of commodities and raw materials, disruptions in supply chains, transportation costs or shortages in the supply of a specific raw material (Lavoie, 2024: 233). Profit inflation can be understood from its definition, which is directly related to cost inflation. When costs increase in an economy, firms act greedily and increase prices even more to make extra profits. Instead of only balancing the cost increases, cost inflation and profit inflation can combine to create greater inflationary pressure.

From a macroeconomic perspective, the effects of defence expenditures on national economies have been debated. Many views show that expenditures have a significant impact on variables that concern price stability and especially inflation (Hartman, 1973; Benoit, 1978; Starr et al., 1984; Nourzad, 1987; Wang, 2023). Two basic approaches to the macroeconomic effects of defence expenditures draw attention in theory. The first is the Military Keynesian Paradigm, which suggests that increasing defence expenditures can positively contribute to economic growth by stimulating domestic demand. Another approach is called the Neoclassical Theoretical Approach. It is argued that within the framework of the principle of efficient use of resources. Accordingly, more efficient results will be produced if the resources directed to defence expenditures are evaluated in alternative areas. Therefore, it is debated that the increase in defence expenditures disrupts resource distribution and creates unsustainable financial burdens, and this situation can lead to inflationary pressures (Giray, 2004: 189-191; Görkem & Işık, 2008: 406).

The impact of defence expenditures on inflation has been examined from various perspectives. One practice contends that a sudden increase in defence expenditures during war or crisis times can increase national resource demand and prices. Therefore, Kinsella (1990: 296-297) debates that defence expenditures can raise prices, especially when they cause a rise in demand, which pushes the limits of capacity. Hence, he states that this situation can create inflation. Allocating resources from defence to civilian sectors such as agriculture and industry during war can create a lack of production. Thus, this situation can lead to an increase in prices. Also, there is a predominant view that defence expenditures can lead to inflationary effects in peacetime. Rising defence spending may expand the money supply to meet financing needs in these periods. And it may spark inflation. During the USA's Reagan era (1981-1989), the high defence spending observed led to criticism that inflationary pressures may occur with expanding public spending. This general assumption about defence spending may cause inflation. They are particularly a result of the economic characteristics of military goods. Also, military goods are products with high costs and long production times (Starr et al., 1984: 104-105). These characteristics cause sudden rises in defence spending to cause insufficiencies on the supply side and push prices up (Nourzad, 1987: 58). On the other hand, there is no absolute consensus in empirical studies about the effect of defence spending on inflation.

The effect of defence expenditures on inflation has a complex structure that varies under various economic conditions. According to the explanations, when defence expenditures increase in extraordinary periods such as crisis and war, they generally create an upward pressure on prices and can have an inflationary effect. Moreover, the size and continuity of this effect may differ between extraordinary periods and peacetime periods. Therefore, the impact of defence expenditures on inflation may have different results depending on the current economic conditions, resource distribution, and the structure of the expenditure components.

3. Literature Review

Numerous studies in the literature examine the macroeconomic effects of defence expenditures. These studies have been discussed at the level of individual countries and country groups. Studies debate that individual countries generally aim to analyse the macroeconomic dynamics of a specific country in detail. Studies, covering more than one country, focus on general trends and common points by making cross-country comparisons. In this respect, this section summarises empirical studies aiming to analyse the effect of defence expenditures on inflation. The analyses containing Türkiye and country groups including Türkiye will be discussed. The following section will evaluate studies on other countries and country groups.

Benoit (1978) researched the relationship between defence expenditures and inflation in 44 underdeveloped countries. Türkiye was included along with other countries in this study, using the correlation analysis method with data from 1950 to 1965. Eventually, it was concluded that there was a significant positive correlation between defence expenditures and inflation when the four countries experiencing hyperinflation were excluded.

Günana (2004) surveyed the correlation between defence expenditures and inflation in Türkiye using cointegration and causality test methods with data from 1950-2001. Consequently, an increase in defence expenditures in Türkiye also increases inflation. Thus, there is a bidirectional causality relationship between defence expenditures and inflation.

Özsoy and İpek (2010) researched the correlation between inflation and defence expenditures in Türkiye, Israel, Egypt and Jordan using causality testing, impulse-response analysis and variance decomposition methods with the data from 1980-2006. According to the causality test findings, there is a one-way causality relationship between defence expenditures and inflation in Egypt and Israel. However, it is revealed that defence expenditures raise the inflation rate in times of shock in Israel, according to the impulse-response analysis.

Karakurt et al. (2018) surveyed the relationship between defence expenditures and inflation in Türkiye using structural break cointegration and causality test methods with the data from 1966 to 2016. According to the test results, which allow a maximum of 5 breaks to be added to the model, four structural breaks were detected and included in the model during the term considered. Eventually, defence expenditures in Türkiye affected inflation in the long term. Also, the direction of the relationship has a positive meaning and defence expenditures in Türkiye increase inflation in the long term. Besides, it is seen that this relationship, stated for the long term, is also effective for the short term according to the causality test findings.

Asiloğulları (2020) researched the relationship between defence expenditures and inflation in Türkiye using the bounds test method with the data from 1960 to 2017. According to the bounds test results, it was observed that defence expenditures in Türkiye do not have a significant impact on inflation.

Gül and Torusdağ (2020) researched the relationship between defence expenditures and inflation in 25 member countries of NATO, including Türkiye, using the panel causality test method with the data from 1990 to 2018. It was defined in the study that the model established from defence expenditures to inflation was homogeneous, while the model based on inflation to defence expenditures was heterogeneous. Thus, a causality test was applied only for the heterogeneous model. Eventually, the model results established a one-way causality relation between inflation and defence expenditures in some countries. However, no statistically significant relationship was found between inflation and defence expenditures in Türkiye.

İşler (2022) surveyed the correlation between defence expenditures and inflation in Türkiye using multiple linear regression and causality test methods with data from 1991 to 2019. The multiple linear regression analysis results showed no relationship between these variables. However, the causality test results showed a unidirectional causality from inflation to defence expenditures.

Çolak et al. (2023) researched the relationship between inflation and defence expenditures in Türkiye using the cointegration test method with the data from 1970 to 2020. The cointegration test results show that defence expenditures in Türkiye affected inflation in the long term. The long-term coefficient estimates showed that the direction of the relationship was positive. Thus, it was concluded that defence expenditures increased inflation in Türkiye.

Other countries and country groups were also evaluated in the study, including the country groups in which Türkiye is included. In this context, the prior studies analysing the relationship between defence expenditures and inflation were explicitly conducted for developed countries. Hartman (1973) surveyed the effects of defence expenditures on inflation in the USA between 1946 and 1972 in his study. He decided that increased defence expenditures could create an inflationary effect on domestic demand. Likewise, Schultze (1981) concluded that the impact of defence spending on inflation in the USA is not absolute. However, when the increase in defence spending sparks demand, inflation will also increase (Xu et al., 2020: 364). Otherwise, Nourzad (1987) confirmed the hypothesis that an increase in defence expenditures in the USA had a significant and positive effect on the inflation rate. Besides, Vitaliano (1984) rejected the hypothesis that an increase in defence expenditures positively affects inflation by using USA defence expenditures and inflation data in his study (Wang, 2023: 263). Similarly, Sahu et al. (1995) confirmed the finding of Vitaliano (1984) by concluding that the rise in defence expenditures did not significantly affect inflation in the USA from 1960 to 1989.

Starr et al. (1984) researched the relationship between inflation and defence expenditures in the countries constituting the four major Western powers (USA, UK, France, and Federal Germany) using the causality test method with data from 1956-1979. The causality test results showed no significant relationship between defence expenditures and inflation in the USA and UK. However, a two-way and considerable relationship between defence expenditures and inflation in France and Federal Germany was found.

Aiyedogbon et al. (2012) surveyed the relation between defence expenditures and inflation in Nigeria and some macroeconomic indicators using the causality test method with data from 1980 to 2010. The causality test results show no statistically significant relationship between defence expenditures and inflation in Nigeria.

Hung-Pin et al. (2016) researched the relationship between inflation and defence expenditures in China, Taiwan, Japan, and South Korea, along with some macroeconomic indicators. They debated the study using cointegration and causality test methods from 1955 to 2010. According to the results, defence expenditures in China and Japan reduced inflation in the long term. Still, defence expenditures increased inflation in Taiwan in the long term.

Onuoha and Okorie (2020) surveyed the correlation between education, health, infrastructure and defence expenditures and inflation rates in selected African countries (Nigeria, Egypt, Tunisia, Ghana, Ethiopia, Botswana, Kenya, Mauritius, South Africa, Sudan and Tanzania). They used panel cointegration analysis for the period 1990-2019. The study concluded that defence expenditures positively affected the inflation rate.

Xu et al. (2020) studied the relationship between the increase in defence expenditures and inflation using China’s data for 1953-2014. In this scope, the continuous wavelet transform technique, one of the time series analysis methods, was used. The research findings show that defence expenditures do not significantly affect inflation in the long run. Also, it was determined that inflation has an adverse effect on defence expenditures, despite being limited during peacetime. This result shows that inflation reduces defence expenditures, but this effect remains low.

Wang (2023) used the Continuous Wavelet Transform technique, which is one of the time series analysis methods, to examine the relationship between the increase in defence expenditures of the USA and the UK and inflation in his study. The data from 1793-2019 for the USA and 1751-2019 for the UK were analysed in the study. The findings debate the growth of defence expenditures in the USA, which increased inflation in the 1840s (2- to 4-year cycles) and between 1825 and 1940 (8- to 24-year cycles). It also suggests that inflation fueled the growth of defence expenditures in the 1830s (5- to 7-year cycles) and between 1825 and 1940 (25- to 64-year cycles). The findings for the UK show a similar development. British defence expenditures' growth positively affected inflation between 1890 and 1940 (8- to 48-year cycles) and between 1790 and 1860 (50- to 65-year cycles). Besides, inflation was found to support the growth of defence expenditures between 1840 and 1870, in the 1940s and the 1980s (7- to 20-year cycles). The findings indicate the existence of a bidirectional relation between defence expenditures and inflation in both countries.

According to the foregoing findings in the literature, defence expenditures and inflation differ by the methods and periods used. While Benoit (1978) found a positive relationship between defence expenditures and inflation through correlation analysis, Günana (2004) and Karakurt et al. (2018) found that defence expenditures increased inflation in Türkiye. They also debated that this relationship is bidirectional through cointegration and causality tests. Otherwise, Asiloğulları (2020) and İşler (2022) did not find the effect of defence expenditures on inflation significant in their studies. In addition, international studies also give different results. Unlike Hartman (1973), Schultze (1981) and Nourzad (1987), who suggested that defence expenditures could increase inflation, Vitaliano (1984) and Sahu et al. (1995) rejected this effect.

Also, more recent studies use advanced methods such as the continuous wavelet transform, which show that the relationship between defence expenditures and inflation in countries such as the USA, UK, and China is cyclical and complex. While Wang (2023) found a bidirectional relationship in the USA and UK, Xu et al. (2020) showed ineffectiveness in the long run in China, but inflation negatively affects defence expenditures in peacetime. Besides, certain studies examine the impact of defence expenditures on inflation by considering the similarities and differences between different countries. These studies reveal how the effect of defence expenditures on inflation varies according to economic, political and geographical conditions. These assessments show that the relation between defence expenditures and inflation is multidimensional and dynamic. Still, they also indicate that this relationship may produce different results in different countries. Consequently, the relationship between defence expenditures and inflation varies according to the methods, the economic conditions of the countries and the periods used in the literature.

This study aims to fill the gap in the literature on the relationship between inflation and defence expenditures by using advanced analysis techniques extended with the Fourier function, which takes structural breaks into account. Current studies in the literature do not sufficiently consider the impacts of structural breaks. They are generally based on traditional time series methods. Studies such as Benoit (1978) and Günana (2004) have studied the impacts of defence expenditures on inflation but have ignored the long-term dynamics of structural changes. This study, which uses an extensive and current data set, examines the effects of structural breaks left out in previous studies in more detail. It is thought that using current analysis techniques extended with the Fourier function will provide more reliable findings on the relation between defence expenditures and inflation. Thus, it contributes to the literature with a more in-depth analysis.

4. Methodology

This study examined the effect of defence spending on inflation in the first five NATO countries (the USA, the UK, France, Germany, and Italy), which had the highest average defence spending, and in Türkiye, within the scope of the data obtained from the Stockholm International Peace Research Institute (SIPRI) (2024) database. When the average of 1960-2022 is evaluated, it can be seen that these countries play an active role in global security policies due to having the highest defence budgets in NATO. In addition, these countries can directly affect areas such as military innovations, strategic partnerships and international security. Türkiye, of special importance due to its geopolitical location and regional security strategies, ranks eighth in NATO regarding defence spending. The study included the first five countries that stand out in terms of national security and Türkiye, which closely follows national security developments, to allow a comparative analysis of the effects of defence spending on inflation. In this scope, it can be evaluated with the selected sample group whether the impact of defence spending on inflation varies between countries. Besides, it may provide an opportunity for an in-depth observation to find out about the countries which have achieved similar results with Türkiye.

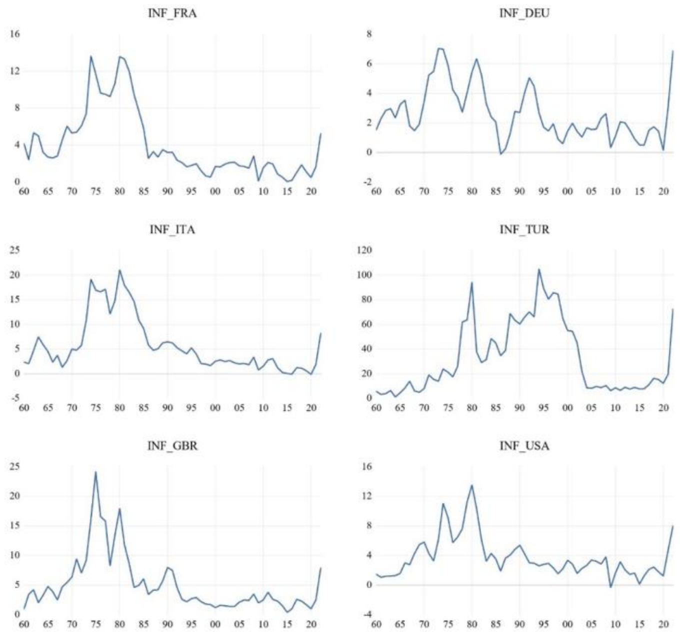
This study used annual data covering 1960-2022 to survey the effects of defence expenditures on inflation in the chosen countries. The study focuses on two main variables: inflation as the dependent variable and defence expenditures as the independent variable. Inflation data were achieved as a percentage, and defence expenditures were collected in US dollars and contained in the model by taking their natural logarithms before the analysis. Inflation data were attained from the Organisation for Economic Co-operation and Development (OECD) (2024) database. Data on defence expenditures were obtained from the SIPRI (2024) database. Detailed information on the variables used in the study is provided in Table 1.

Table: 1
Variables

Country	Variable	Symbol	Unit of Measurement
Germany	Inflation rate	INF_DEU	Percentage (%)
	Defence expenditure	lnMILEX_DEU	US dollar (the natural logarithm was taken)
France	Inflation rate	INF_FRA	Percentage (%)
	Defence expenditure	lnMILEX_FRA	US dollar (the natural logarithm was taken)
UK	Inflation rate	INF_GBR	Percentage (%)
	Defence expenditure	lnMILEX_GBR	US dollar (the natural logarithm was taken)
Italy	Inflation rate	INF_ITA	Percentage (%)
	Defence expenditure	lnMILEX_ITA	US dollar (the natural logarithm was taken)
Türkiye	Inflation rate	INF_TUR	Percentage (%)
	Defence expenditure	lnMILEX_TUR	US dollar (the natural logarithm was taken)
USA	Inflation rate	INF_USA	Percentage (%)
	Defence expenditure	lnMILEX_USA	US dollar (the natural logarithm was taken)

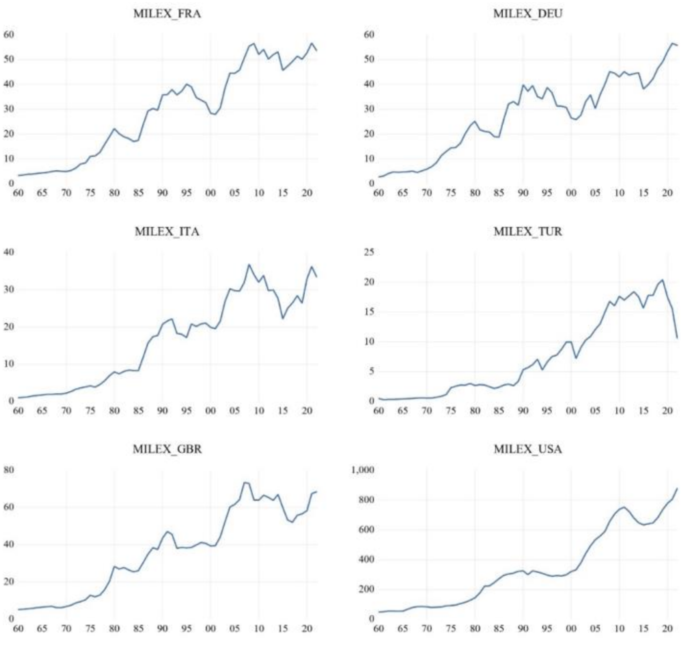
The figures below show the inflation rates and defence expenditures in billions of US dollars for the countries examined from 1960 to 2022. These data reveal the countries' price stability, economic fluctuations, and national security budgets.

Figure: 1
Inflation Rate by Country (%)



Inflation rates in France started to rise in the 1970s, then reached 13.6% in 1974 and reached even higher levels in the 1980s. It showed a downward trend in the 1990s, falling to 0.5% in 1999. In the 2008 crisis, inflation rose again, and in 2022 it reached 5.2%. Inflation rates in Germany were generally low but rose to 7.0% with the oil crisis in the mid-1970s. It increased with the unification of Germany in the 1990s, but fell to 0.6% in 1999. It climbed to 6.9% in 2022. In Italy, inflation rose rapidly in the 1970s, reaching 19.2% in 1974 and 21.1% in 1980. In the 1990s, there was a decline in the harmonisation process with the European Union (Maastricht Treaty), falling to 1.7% in 1999. However, inflation rose to 8.2% in 2022. Inflation in Türkiye increased sharply in the 1970s and 1990s, reaching 105.2% in 1994. It dropped to single digits with reforms in the early 2000s but rose again after 2018, reaching 72.3% in 2022. In the United Kingdom, inflation rose to 24.2% during the oil crisis in the 1970s, and it showed a downward trend after rising to 18.0% in 1980. It stabilised in the 1990s but rose again in 2022 to 7.9%. In the US, inflation rose rapidly during the 1970s with the oil crisis and reached 13.5% in 1980. It decreased with tight monetary policies in the early 1980s and fell to -0.4% with the global crisis of 2009. Inflation reached 8.0% in 2022. Inflation fluctuations in these countries are thought to be related to global crises, energy prices, economic reforms and post-pandemic developments.

Figure: 2
Defence Expenditure by Country (billion US dollars)



France's defence spending has increased in the long term, from $3.3 billion in 1960 to $53.6 billion in 2022. The increase has accelerated since the 1970s, with a significant increase from 1986 to 1988. The upward trend has continued since the 2000s, reaching $55.4 billion in 2008. Although a decrease was observed in 2015, it reached its highest level again in 2022. German defence spending has generally tended to increase but has experienced periodic fluctuations. Spending, which was $2.7 billion in 1960, reached $55.8 billion in 2022. There was a significant increase in the 1980s, and fluctuations were observed in the 1990s with the end of the Cold War. In the 2000s, spending increased, reaching $45.1 billion in 2008. Although there was a decrease in 2015, an increase continued after 2016 and reached its highest level in 2022. Despite Italy's defence spending increasing, there have been fluctuations in certain years. The budget of $1.1 billion in 1960 reached $33.5 billion in 2022. The increase gained momentum in the 1980s, and a fluctuating course was observed in the 1990s. Spending decreased in the early 2000s, increased again after 2003 and reached $36.8 billion in 2008. There was a decrease in 2015, but it increased again to $33.5 billion as of 2021. Türkiye's defence spending has tended to increase, but periodic fluctuations have been observed. Expenditures of $468.8 million 1960 increased to $10.6 billion in 2022. A significant increase was observed after 1974; the increase continued in the 1990s and reached $16.8 billion in 2008. Expenditures, which peaked at $20.4 billion in 2019, decreased after 2020 and fell to $10.6 billion as of 2022. The UK's defence expenditures have increased in the long term, from $5.1 billion in 1960 to $68.5 billion in 2022. Expenditures, which were $28.4 billion in 1980, peaked at $73.5 billion in 2007. There was a decrease in 2015, but it increased again after 2018 and reached its highest level in 2022. The US defence spending has shown a constant upward trend; the budget, which was $47.3 billion in 1960, reached $876.9 billion in 2022. The increase accelerated with the Vietnam War from the mid-1960s onwards, and in the 1980s, due to the Cold War, it rose to $321.9 billion in 1989. In the 2000s, after September 11, spending increased rapidly, reaching $656.8 billion in 2008. Although a decrease was seen in 2013-2014, it increased again in 2017 and reached a record level in 2022. It evaluates these trends related to the countries' periodic security policies, economic conditions and global military strategies.

With this scope, a wide time series of 63 years between 1960 and 2022 was used in the study. It is observed that many economic and political changes occurred in the selected countries during the period examined when the structural breaks occurred. The number, timing and structure of some of these breaks (such as the COVID-19 pandemic, the 2008 global economic crisis, and the 1973 oil crisis) can be known in advance, but some may not be known, so they occur smoothly. Deficiency of information and ignored structural breaks can cause classical econometric models to produce incorrect or biased results. Both sudden and soft breaks occur and are correctly integrated into the model to overcome such problems. The Fourier approach is based on a variant of the Flexible Fourier Form developed by Gallant (1981), which was used in the study. The Fourier approach can capture structural breaks smoothly and include them in the model without prior knowledge about the breaks' number, time and structure (Nazlıoğlu et al., 2016: 172). For this reason, the method makes the model's parameter estimates more reliable and considers the effect of structural changes in the cases where traditional approaches are inadequate.

In this context, integrating the Fourier function into the classical unit root and cointegration tests has contributed to obtaining stronger and more reliable results. Thus, the Augmented Dickey Fuller (ADF) unit root test, Autoregressive Distributed Lag (ARDL) bounds test, and Autoregressive Distributed Lag (ADL) cointegration test strengthened with the Fourier function have been used. The Fourier versions of these tests have been applied by including the effects of structural breaks over time in the model to attain stable results, even if traditional methods cannot detect break points. Fourier approach tests increase the model's performance and better reflect the dynamic structure of economic events. This extension aims to explain the methods used in more detail and to create a strong basis for why the applied analyses are preferred.

4.1. Fourier ADF Unit Root Test

The ADF unit root test is one of the most widely used methods to determine whether a time series contains unit roots. This test can analyse whether the coefficient of the lagged value (ρ) is significant in the model containing a constant and trend while testing whether the series is stationary. In the model shown in Equation 1, the y series represents the series that is checked for unit roots, while the coefficients are checked for statistical significance. The estimated test statistic is compared with specific critical values. When the test statistic is smaller than the critical values, the null hypothesis (that the series is not stationary) is rejected, and the series is declared stable.

$$\Delta y_t = \alpha + \beta t + \rho y_{t-1} + \sum_{i=1}^{k} \beta_i \, \Delta y_{t-1} + u_t \tag{1}$$

In Equation 1, the symbol y represents the series whose stationarity is tested, Δy represents the first difference of the series, y_{t-1} represents the lagged value of the series, α represents the constant term, ρ and β represent the coefficients, u represents the error term, and t represents the trend. An important limitation of the standard ADF test is that it does not consider structural breaks. This may be insufficient to determine the true stationarity level of the series. To overcome this deficiency, Enders and Lee (2012) added Fourier functions to the ADF unit root test in Equation 1, thus ensuring that structural changes are covered in the test. The addition of Fourier functions allows the model to capture structural breaks more flexibly and increases the overall predictive power of the model. The Fourier ADF model is stated as follows:

$$\Delta y_t = \rho y_{t-1} + \beta_1 + \beta_2 t + \beta_3 sin\left(\frac{2\pi kt}{T}\right) + \beta_4 cos\left(\frac{2\pi kt}{T}\right) + u_t \tag{2}$$

Equation 2 increases flexibility by adding Fourier terms to the classical ADF model. T represents the number of observations; k represents the number of appropriate frequencies. Using Fourier functions allows the estimation and modelling of structural changes that may be present in the series. Determining the proper number of frequencies is modelled by giving values between 1 and 5 to the k parameter. The frequency value that provides the lowest residual sum of squares is selected as the appropriate frequency. Thus, the aim is to find the most appropriate Fourier frequency so that the model can make more precise estimates. This extended explanation emphasises more clearly how the Fourier ADF test strengthens the unit root test and contributes to the modelling of structural breaks. Integrating Fourier functions gives the model a more dynamic and realistic structure.

4.2. Fourier ARDL Bounds Test

Cointegration tests are based on the principle that all series are integrated in the same order (i.e., all series are *I(1)*). Pesaran et al. (2001) proposed a bounds test that can give robust results in cases where the series are not stationary at the same order (i.e., some are *I(0)* and some are *I(1)*). The ARDL bounds test attitude is stated as follows in the case where the addict variable is y and the nonaddict variable is X:

$$\Delta y_t = \beta_0 + \beta_1 y_{t-1} + \beta_2 X_{t-1} + \sum_{i=1}^{p-1} \varphi_i' \Delta y_{t-i} + \sum_{i=1}^{p-1} \delta_i' \Delta X_{t-i} + u_t \tag{3}$$

The p symbol in Equation 3 represents the appropriate lag length selected according to the Akaike information criteria, the φ' symbol represents the coefficient of the lagged values of the dependent variable, the δ' symbol represents the coefficient of the lagged values of the independent variable, and the u symbol represents the error term. Yılancı et al. (2020) expanded the ARDL bounds test in Equation 3 with Fourier functions, providing that the new test also considers structural changes.

$$\Delta y_t = \beta_0 + \sigma_1 sin\left(\frac{2\pi kt}{T}\right) + \sigma_2 cos\left(\frac{2\pi kt}{T}\right) + \beta_1 y_{t-1} + \beta_2 X_{t-1} + \sum_{i=1}^{p-1} \varphi_i' \Delta y_{t-i} + \sum_{i=1}^{p-1} \delta_i' \Delta X_{t-i} + u_t \tag{4}$$

Unlike Equation 3, the T symbol in Equation 4 represents the number of surveys, and the k symbol represents the number of suitable frequencies. To find the appropriate frequency value, the models are first estimated by giving values between 1 and 5 to k, and then the k that gives the smallest residual sum of squares from the 5 estimated models is considered suitable. Also, all critical values in this test are predicted with a bootstrap simulation.

4.3. Fourier ADL Cointegration Test

Likewise, traditional cointegration tests do not consider structural breaks in the Engle-Granger and Johansen approaches. This may induce the results of tests that attempt to determine long-term relationships between series to be erroneous. Alternative progress, such as Gregory-Hansen, Hatemi-J and Maki, which allow structural breaks with dummy variables, have been developed to overcome such deficiencies. They cannot include many structural breaks in the model, so this situation is one of the weaknesses of these advances. These requirements may reduce the models' flexibility and limit the accuracy of the estimates. Banerjee et al. (2017) proposed extending the ADL cointegration test with Fourier functions to reach stronger results and overcome these limitations. The integration of Fourier functions allows the inclusion of breaks in the model smoothly and flexibly without requiring prior knowledge about the number and timing of structural breaks. This advance allows for a specific analysis of long-term relationships by considering the breaks that traditional methods cannot absorb. The extended version of the ADL cointegration test with the deterministic term is shown in Equation 5, and the deterministic term with Fourier functions is shown in Equation 6:

$$\Delta y_t = d(t) + \beta_1 y_{t-1} + \gamma_1' X_{t-1} + \emptyset' \Delta X_t + u_t \tag{5}$$

$$d(t) = \alpha_0 + \gamma_1 \sin\left(\frac{2\pi kt}{T}\right) + \gamma_2 \cos\left(\frac{2\pi kt}{T}\right) \tag{6}$$

In Equation 5, $d(t)$ represents the deterministic term, which involves structural principles expanded with Fourier functions. In this model, y_t represents the dependent variable and X_t represents the independent variable. With Fourier functions, breaks can be flexibly included in the model without needing information on the number and timing of structural breaks. In this test, the null hypothesis, determined as "there is no long-term relationship between the variables", is valued based on the significance of the coefficient of the lagged value of the responding variable. For this purpose, the standard t-test is applied, and the hypothesis is tested as shown in Equation 7:

$$H_0 = \beta_1 = 0 \tag{7}$$

The significance of the test statistic obtained in testing the null hypothesis is evaluated by comparing it with the critical values specified in Banerjee et al. (2017: 116). If the test statistic is smaller than the specified critical values, the null hypothesis is rejected, and it is concluded that the variables have a long-term relationship. This flexible structure of the Fourier ADL test eliminates the shortcomings of traditional tests and provides more reliable and accurate results. This extension more clearly emphasises both the methodological power and the advantages offered by the Fourier ADL cointegration test compared to traditional tests.

5. Findings and Discussion

The stationarity properties of the time series belonging to the selected countries were examined using the ADF test, which was extended with the Fourier function. The Fourier ADF test provides a more flexible approach to stationarity analysis with the effect of structural breaks in the series. Also, this test was preferred because of its opportunity to model with periodic changes through Fourier functions in determining whether the series is stationary. However, in the cases where the Fourier ADF test is not valid, the stationarity properties of the series were re-evaluated by applying the traditional ADF test. Thus, it aimed to analyse each series' stationarity structure reliably. The findings regarding the Fourier ADF unit root test results are presented in Table 2.

Table: 2
Fourier ADF Unit Root Test Results

Series	Fixed Model			
	Fourier ADF Test Statistics	***k***	***p***	**F statistics**
lnMILEX_DEU	-2.651	4	8	**6.524***
ΔlnMILEX_DEU	-1.138	4	7	6.193
lnMILEX_FRA	-2.933	4	0	6.311
lnMILEX_GBR	-2.028	4	1	5.517
lnMILEX_ITA	**-3.202****	4	0	6.304
lnMILEX_TUR	-1.586	3	0	2.133
lnMILEX_USA	-1.566	3	8	**21.601*****
ΔlnMILEX_USA	-1.936	3	8	4.867
INF_DEU	**-4.244****	1	4	5.537
INF_FRA	-3.099	1	6	3.612
INF_GBR	-2.958	1	5	3.779
INF_ITA	-2.906	1	3	5.553
INF_TUR	-2.858	2	0	2.359
INF_USA	-2.809	1	2	**6.483***
ΔINF_USA	**-5.730*****	1	3	2.791

****, ** and * respectively %1, %5 ve %10 shows significance at levels. k symbol appropriate frequency, p symbol indicates the appropriate delay length. For the Fourier ADF test statistic, the critical values at the % 1%, 5% and % 10% levels are respectively -4.420, -3.810, and -3.490 when k is 1. When k is 2, they are respectively -3.970, -3.270, and -2.910. When k is 3, they are respectively -3.770, -3.070, and -2.710. When k is 4, they are respectively. -3.640, -2.970, -2.640. The critical values for the F statistic at the 1%, 5% and 10% levels are, respectively, 10.350, 7.580, and 6.350. Critical values are obtained from Enders and Lee (2012: 197).*

Table 2 involves the Fourier ADF test statistics of the series, as well as suitable frequency values and appropriate lag lengths. In addition, the F constraint test statistics, which test the validity of the results of this test, are also included. It was concluded that the lnMILEX_ITA, INF_DEU series were stationary at the level, and the INF_USA series were stationary at the first difference. Besides, when the accuracy of these findings was tested with the F constraint test, it was seen that the conclusions were unusable. In this scope, it was understood that the stationarity of the series could not be tested with the Fourier ADF test, and it was concluded that the classical method was appropriate.

The classical ADF unit root test was applied using the fixed and fixed and trend models to determine the stationarity levels of the series. Table 3 shows the test results in which the most appropriate lag length was determined according to the Schwarz information criterion. Because the test statistics of all series except the INF_DEU series are greater than the calculated critical value, the null hypothesis cannot be rejected, and the series are not stationary. The same test was repeated by taking the first degree difference of the non-stationary series, and it was seen that the series became stationary at the first degree. This means that the INF_DEU series is stationary at the level, and all other series are stationary at the first degree. Consequently, it was allowable to use the Fourier ARDL method in estimating Germany and the Fourier ADL method in estimating other countries.

Table: 3
ADF Unit Root Test Results

Series	Fixed Model		Fixed and Trend Model	
	Test statistics	Critical value for % 5%	Test statistics	Critical value for % 5%
lnMILEX_DEU	-2.8761	-2.9092	-1.9452	-3.4839
ΔlnMILEX_DEU	**-5.7247*** **	-2.9100	**-5.9959*** **	-3.4852
lnMILEX_FRA	-2.3371	-2.9092	-1.3392	-3.4852
ΔlnMILEX_FRA	**-5.3166*** **	-2.9100	**-5.6100*** **	-3.4852
lnMILEX_GBR	-1.6970	-2.9100	-1.4246	-3.4852
ΔlnMILEX_GBR	**-5.2373*** **	-2.9100	**-5.4081*** **	-3.4852
lnMILEX_ITA	-2.7015	-2.9092	-0.9970	-3.4839
ΔlnMILEX_ITA	**-5.9704*** **	-2.9100	**-6.4891*** **	-3.4852
lnMILEX_TUR	-1.4873	-2.9092	-0.3423	-3.4839
ΔlnMILEX_TUR	**-6.4937*** **	-2.9100	**-6.9129*** **	-3.4852
lnMILEX_USA	-1.3686	-2.9176	-2.3430	-3.4865
ΔlnMILEX_USA	**-4.1163*** **	-2.9100	**-4.9532*** **	-3.4969
INF_DEU	**-3.3043** **	-2.9100	**-3.3724* **	-3.4852
INF_FRA	-1.6208	-2.9092	-1.8419	-3.4839
ΔINF_FRA	**-6.6493*** **	-2.9100	**-6.5876*** **	-3.4852
INF_GBR	-2.3464	-2.9092	-2.7033	-3.4839
ΔINF_GBR	**-7.3503*** **	-2.9100	**-7.2630*** **	-3.4852
INF_ITA	-1.7045	-2.9092	-1.9902	-3.4839
ΔINF_ITA	**-6.0527*** **	-2.9100	**-5.9751*** **	-3.4852
INF_TUR	-1.9350	-2.9092	-1.9276	-3.4839
ΔINF_TUR	**-7.2847*** **	-2.9100	**-7.1895*** **	-3.4852
INF_USA	-2.1572	-2.9108	**-3.3272* **	-3.4851
ΔINF_USA	**-7.1241*** **	-2.9108	**-7.0419*** **	-3.4865

****, ** and respectively * indicates significance at 1%, 5% and 10% levels.*

Table 4 shows the Fourier ARDL bounds test findings for the cointegration relation between the lnMILEX_DEU series and the INF_DEU series created for Germany. The bootstrap critical values to test the significance of the statistics are based on 5000 replications. According to the results, the F_A statistic was calculated as 9.11, the *t* statistic as -4.26 and the F_B statistic as 0.77. As the F_A and t statistic values were greater in implicit value than the critical values estimated by the bootstrap simulation, since the F_B statistic was smaller in absolute value than the critical values. It was concluded that there was no cointegration relation between the lnMILEX_DEU series and the INF_DEU series. However, the cointegration relationship between the other models was tested with the Fourier ADL test. The models were established for France, the UK, Italy, Türkiye and the USA. The t_{ADL}^{F} test statistic for the cointegration relationship between lnMILEX_FRA series and INF_FRA series created for France was estimated as -3.28; the t_{ADL}^{F} test statistic for the cointegration relationship between lnMILEX_GBR series and INF_GBR series created for UK was calculated as -2.78; the t_{ADL}^{F} test statistic for the cointegration relationship between lnMILEX_ITA series and INF_ITA series created for Italy was calculated as -3.39; the t_{ADL}^{F} test statistic for the cointegration relationship between lnMILEX_TUR series and INF_TUR series created for Türkiye was calculated as -2.39; and the t_{ADL}^{F} test statistic for the cointegration relationship between lnMILEX_USA series and INF_USA series created for the USA was calculated as -4.25. Because o„,f the t_{ADL}^{F} test statistics estimated for France, UK, Italy and Türkiye are greater than the critical values specified in Banerjee et al. (2017), it can be said that there is no cointegration relationship between lnMILEX_FRA series and INF_FRA series, between lnMILEX_GBR series and INF_GBR series, between lnMILEX_ITA series and INF_ITA series and between lnMILEX_TUR series and

INF_TUR series. In addition, since the t_{ADL}^{F} test statistics calculated for the USA is smaller than the critical values specified in Banerjee et al. (2017: 116), it can be said that there is a cointegration relationship between the lnMILEX_USA series and the INF_USA series. Also, it has been specified that defence expenditures have no statistically significant effect on inflation in France, the UK, Italy and Türkiye. It concludes defence expenditures in the USA, which affect inflation statistically and significantly. So, in the next stage, the "fully modified OLS" (FMOLS) predictor was used to determine the long-term coefficients of the cointegration relationship. This technique was designed to perform optimum estimates of cointegration regressions. Also, asymptotic efficiency is achieved by serial correlation effects and changing the OLS estimator to test the endogeneity (Aljebrin, 2012: 274).

Table: 4
Results of the Bounds Test and the Cointegration Test for Models

Dependent Variable:	**INF_DEU**		Optimal Frequency:	**1**
Independent Variable:	**lnMILEX_DEU**		Minimum AIC:	**2.8315**
Test Statistics		**Bootstrap Critical Values**		
		%1	**%5**	**%10**
F_A	**9.1127****	12.5046	8.8643	7.1601
t	**-4.2678****	-4.8599	-4.0315	-3.5825
F_B	0.7736	4.8736	4.0096	3.5706
Dependent Variable:	**INF_FRA**		Optimal Frequency:	**1**
Independent Variable:	**lnMILEX_FRA**		Minimum AIC:	**3.4976**
Test Statistics		**Table Critical Values**		
		%1	**%5**	**%10**
t_{ADL}^{F}	-3.2892	−4.73	−4.09	−3.76
Dependent Variable:	**INF_GBR**		Optimal Frequency:	**4**
Independent Variable:	**lnMILEX_GBR**		Minimum AIC:	**4.7151**
Test Statistics		**Table Critical Values**		
		%1	**%5**	**%10**
t_{ADL}^{F}	-2.7897	−4.07	−3.38	−3.03
Dependent Variable:	**INF_ITA**		Optimal Frequency:	**1**
Independent Variable:	**lnMILEX_ITA**		Minimum AIC:	**4.4163**
Test Statistics		**Table Critical Values**		
		%1	**%5**	**%10**
t_{ADL}^{F}	-3.3921	−4.73	−4.09	−3.76
Dependent Variable:	**INF_TUR**		Optimal Frequency:	**1**
Independent Variable:	**lnMILEX_TUR**		Minimum AIC:	**8.2838**
Test Statistics		**Table Critical Values**		
		%1	**%5**	**%10**
t_{ADL}^{F}	-2.0926	−4.73	−4.09	−3.76
Dependent Variable:	**INF_USA**		Optimal Frequency:	**1**
Independent Variable:	**lnMILEX_USA**		Minimum AIC:	**3.7938**
Test Statistics		**Table Critical Values**		
		%1	**%5**	**%10**
t_{ADL}^{F}	**-4.2523*****	−4.73	−4.09	−3.76

****, ** and * respectively shows significance at 1%, 5% and 10% levels. Table critical values are obtained from Banerjee et al. (2017: 116).*

Table 5 indicates the long-term estimation results. The effect of USA defence expenditures (lnMILEX_USA) on inflation (INF_USA) is clearly seen. These results show that a 1% increase in the lnMILEX_USA variable will increase the INF_USA variable by approximately 1.25%; the calculation of the coefficient as 1.25 and the significance level as 0.07 shows that this relationship is statistically significant. In this context, this finding supports the results obtained in studies such as Hartman (1973), Schultze (1981), Nourzad (1987) and Wang (2023) that defence expenditures increase inflation. Besides, some studies, such as Vitaliano (1984), Starr et al. (1984) and Sahu et al. (1995), propose that defence expenditures do not have a statistically significant effect on inflation. So, the impact of defence expenditures on inflation may vary depending on factors such as periodic differences, data sets, and method selection.

Table: 5
Long-Term Forecast Results

Dependent Variable:	**INF_USA**			
Independent Variable:	**Coefficient**	**Standard Error**	**t-statistic**	**Probability Value**
lnMILEX_USA	**1.2518***	0.7017	1.7838	0.0796
C	-11.8998	8.7256	-1.3637	0.1779
Sin	**3.5795*****	0.8559	4.1820	0.0001
Cos	-0.7588	0.5554	-1.3663	0.1771

****, ** and * respectively indicates significance at 1%, 5% and 10% levels.*

The error correction model estimation results are presented in Table 6. This table shows the short-term effects of defence expenditures on inflation. The fact that the error correction coefficient obtained in the analysis is negative (-0.3547) and the significance level is below 1% (p=0.0022<0.01) shows not only that the model is valid but also how the short-term findings adapt to the long-term balance. The error correction coefficient estimated as -0.3547 indicates that approximately 35.7% of the imbalances which occurred in the short term were eliminated within one year. This situation shows that a significant portion of the short-term deviations were quickly corrected, and the short-term effects of defence expenditures on inflation gradually approached the long-term balance. Also, when the coefficient value is obtained, it is understood that the adaptation process in the model lasts approximately 2.8 years (1/0.3547 ≈ 2.8 years). It can be said that short-term fluctuations have largely disappeared, and the long-term balance has reached the end of this period.

Table: 6
Error Correction Model Results

Dependent Variable:	**ΔINF_USA**			
Independent Variable:	**Coefficient**	**Standard Error**	**t-statistic**	**Probability Value**
C	-0.0247	0.2613	-0.0947	0.9248
ΔlnMILEX_USA	3.5021	3.3374	1.0493	0.2983
ECT(-1)	**-0.3547*****	0.1108	-3.2016	0.0022

****, ** and * respectively indicates significance at 1%, 5% and 10% levels.*

6. Conclusion

Defence expenditures are an important component of national security policy that significantly affects economic and social areas. The Military Keynesian Approach debates that these expenditures contribute to economic growth by increasing domestic demand. On the other hand, the Neoclassical Theoretical Approach proposes that transferring defence expenditure resources may lead to inflationary pressures and can be used more efficiently in alternative areas. Many empirical studies examine the relationship between defence expenditures and inflation in the literature. Studies generally show that defence expenditures positively affect inflation in Türkiye. Likewise, results are emphasised with studies by Benoit (1978), Günana (2004), Karakurt et al. (2018) and Çolak et al. (2023). According to Asiloğulları (2020), Gül and Torusdağ (2020) and İşler (2022), this effect is not statistically significant. Similar contradictions are also found in the international literature. In addition to views discussing that defence spending increases inflation, some reject this effect. These inconsistencies arise from the different data sets and methods used in the studies. The impact of defence spending on inflation is a multidimensional and dynamic process.

In this study, the data for 1960-2022 were used to define the effect of defence expenditures on inflation. Therefore, the analysis involves the first five countries with the highest average defence expenditures: the UK, France, the USA, Italy, Germany and Türkiye. The study intended to examine the impact of structural breaks using the Fourier function and extended econometric methods. Since the Fourier function allows the integration of sudden and gradual structural breaks into the model, it provides a more accurate measurement of the effect of defence expenditures on inflation. For this method's practicability, the series' stationarity was first evaluated with the Fourier ADF and classical ADF tests. The Fourier ARDL bounds test was applied for Germany, and the Fourier ADL cointegration test was used for the other countries examined. The effect of defence expenditures on inflation was analysed from different aspects for each country. The study's methodological approach ensures a more precise analysis of the impact of defence expenditures on inflation, allowing policy makers to make important inferences.

The findings show that the effect of defence expenditures on inflation varies among countries. According to the results of the analysis, only the USA's defence expenditures have a positive and statistically significant effect on inflation. This effect induces an increase of 1.25%. It is understood that defence expenditures in the USA create inflationary pressures by increasing domestic demand. However, examinations of other NATO countries show that defence expenditures do not significantly affect inflation. The findings of this study show that the impact of defence expenditures on inflation can vary depending on the structure of the country's economy, fiscal policies and the level of defence expenditures. While a positive effect on inflation occurs in the USA, it is noteworthy that this effect is not statistically significant in other countries. Also, this situation shows that the impact of defence expenditures on country economies is shaped according to different conditions.

Various policy recommendations have been developed to minimise the impact of defence expenditures on inflation and contribute to the country's macroeconomic stability within the study's scope. Thus, the primary recommendation covers the optimisation of defence expenditures in countries where the increasing defence expenditures create inflationary pressures. And the expenditure structure can be re-evaluated, and budget optimisation can be carried out. In this way, the effects on inflation can be reduced by directing the budget to more efficient areas. Secondly, strategic planning is important in resource allocation. In the long term, countries can aim to direct resource allocation to strategic sectors that will support economic and social development to minimise expenditures on inflation. So a positive contribution can be made to sustainable growth and price stability. The third proposition is related to using flexible financing models in defence expenditures. Although sudden increases in defence expenditures during extraordinary periods such as economic crisis or war can create inflationary pressures, it is recommended to moderate these effects with alternative financing methods such as long-term government bonds. The fourth proposition is to make framework budget regulations for defence expenditures. In this scope, it is important to limit defence expenditures to a specific rate and to ensure a controlled increase outside extraordinary periods. Thus, the expansionary fiscal effect of expenditures can be limited, and their impact on inflation can be reduced.

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