AN ANALYSIS ON FISCAL SUSTAINABILITY OF TURKISH HEALTH SYSTEM

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Abstract

This study empirically analyzes the fiscal sustainability of health system before and after the Covid-19 pandemic in Turkey. The data set of the study, through which the analysis is carried out with monthly data, covers the period of 2006: 1-2020: 12. Fiscal sustainability of Turkish health system is analyzed with the ARIMA forecasting method. The results of the study show that Turkish health system provides fiscal sustainability. However, it can be argued that the fiscal sustainability of the health system will be affected in the event of an external shock. In this context, Turkey should create alternative scenarios for health programs in response to unexpected situations.

Keywords: Fiscal Sustainability, Health Systems, Turkish Health System, ARIMA Model, Forecasting

JEL Classification: H51, H68, I18

TÜRK SAĞLIK SİSTEMİNİN MALİ SÜRDÜRÜLEBİLİRLİĞİ ÜZERİNE ANALİZ

Özet

Bu çalışmada Türkiye'de Covid-19 salgını öncesinde ve sonrasında sağlık sisteminin mali sürdürülebilirliği analiz edilmeye çalışılmıştır. Aylık verilerle analizinin yapıldığı çalışmanın veri seti, 2006:1-2020:12 dönemini kapsamaktadır. Türkiye'de sağlık sisteminin mali sürdürülebilirliği ARIMA forecasting yöntemi ile tahmin edilmektedir. Çalışma sonuçları, Türkiye'nin sağlık sisteminin mali sürdürülebilirliği sağladığını göstermektedir. Ancak, dışsal bir şok durumunda sağlık sisteminin mali sürdürülebilirliğinin etkileneceği iddia edilebilir. Bu kapsamda, beklenmedik durumlara karşılık Türkiye'nin, sağlık programları için alternatif senaryolar oluşturması gerekmektedir.

Anahtar Kelimeler: Mali Sürdürülebilirlik, Sağlık Sistemleri, Türk Sağlık Sistemi, ARIMA Modeli, Tahmin

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1. Introduction

The main purpose of the health system is to increase and improve the health level of the society. To achieve this goal, health system must be accessible, equitable, qualified, and sustainable to all citizens. In recent years, fiscal sustainability of health systems has been the main concern raised in the field of sustainability. Relatively, fiscal sustainability constitutes the center of health policy debates as it requires a balance between increasing cost pressures and limited resources. In this context, the sustainability of health system is defined as the ability to meet current needs without losing the ability to meet future needs.

Fiscal sustainability of the health system has become a major problem area in Turkey as thee Covid-19 pandemic, which came into our lives at the beginning of 2020, has particularly increased the pressures on health expenditures, while decreasing the incomes due to regression in economy and production. So, this situation has proven the fiscal unsustainability of Turkish health system. In this regard, the question of how far Turkish health system is fiscally sustainable has initiated the urge for a comprehensive analysis.

With the Covid-19 pandemic, many countries have experienced problems concerning the access to health services. Therefore, the functioning process of health systems and healthcare expenditures in many countries, including Turkey, has started to be discussed intensely. In recent literature on the related field, the relationship between health expenditures and economic growth has been generally discussed. However, with the phenomenon of pandemic, the perspective on health expenditures focused on whether health expenditures were sustainable or not. Uncontrollable numbers of patients and deaths have been straining the health systems including all departments. The economic turndown of health system and its level of sustainability have become even more urgent issues. In this framework, this study analyzes the fiscal sustainability of health systems before and after the pandemic. Thus, the fiscal sustainability in Turkish health system is to be analyzed empirically. The data set of the study, through which the analysis is carried out with monthly data, covers the period of 2006: 1-2020: 12. Fiscal sustainability of Turkish health system is analyzed with the ARIMA forecasting method. This study will make an important contribution to the current literature in terms of analyzing and forecasting the fiscal sustainability of Turkish health system at pandemic conditions.

In the first section of the study, the concept of fiscal sustainability is explained in detail. Secondly, the meaning of fiscal sustainability in health services will be mentioned with regard to its methodology for measurement and achievement. In the third section, studies conducted in the current literature on fiscal sustainability of health systems are included. In

the fourth section, the analyses and results related to the fiscal sustainability of the health system in Turkey will be reported. Finally, the study will be completed with considerations and recommendations.

2. The Concept of Fiscal Sustainability

There is no clear definition that can fully correspond to fiscal sustainability. In general, fiscal policy is sustainable if the policies implemented by a country do not cause a budget deficit in the long term and the debts of the future period are met. Fiscal sustainability is a phenomenon that needs to be examined in the short, medium, and long term, based on the sustainability of budget deficits and therefore debts (İlgün, 2016).

Thus, the definition of fiscal sustainability is often associated with debt. Blanchard (1990) defines fiscal sustainability as a debt/gross national product policy that meets the initial level of debt. On the other hand, Broda and Weinstein (2004) define fiscal sustainability as the state of the public sector borrowing requirement, the non-interest surplus and the ratio of the public debt stock to Gross Domestic Product (GDP) is stable, and the sustainability of current policies with a stable borrowing/GDP ratio. Izquiredo and Panizza (2003) attribute the fiscal sustainability of countries' policies to the ability of countries to meet their budget constraints. They put forward two conditions for this situation: (i) A country should be able to pay its debts and meet the current period budget constraint without facing excessive debt; (ii) Fiscal sustainability is achieved when a country does not keep its accumulated debt, knowing that reform is required to regulate its future debt.

Fiscal sustainability in general means that, a country can keep the amount of debt under control without the need for heavy tax burdens and income restrictions to pay its future debts within the framework of the current budget constraints. It can be expressed as being able to find debts (Izquiredo & Panizza, 2003) Within the framework of the Brundtland Report, adopted at the UN World Sustainable Development Summit in 2002, Şen, Kaya, and Alpaslan (2018) define fiscal sustainability as a process, meeting today's needs in a way that will enable future generations to meet their own needs.

In its simplest form, therefore, fiscal sustainability can be defined as the ability of governments to repay the principal and interest of their debts on maturity and to maintain their fiscal policies (Büyükalın and Kapkara, 2018). Karl Marks (2004), on the other hand, expresses fiscal sustainability as the government's ability to maintain its current fiscal stance to ensure fiscal adequacy or budget constraint without the need to make any adjustments in the tax and expenditure policy. In general, the sustainability of the financial system can be

based on the condition that the net present values of all primary surpluses over time are equal to the present value of the public debt stock (Hakkio and Rush, 1991).

To sum up, fiscal sustainability includes debt sustainability, sustainability of budget deficits, and sustainability of fiscal policies. The willingness of states to make plans and programs for the future makes it necessary to have information about fiscal sustainability. In this context, fiscal sustainability requires conditions such as a sound financial environment, stable money and credit flows, and openness in a macroeconomic environment that helps stable economic growth, as well as a moderate external debt stock. In other words, coordination between the growth factor and monetary policy is required to achieve a sustainability level that will contribute to all macroeconomic objectives of the economy. Defining fiscal sustainability narrowly as only a country can serve its external debt burden is only a part of this concept (Karatay Gögül, 2016). A sustainable budget deficit and therefore a sustainable fiscal structure is one of the most important criteria that reduce the vulnerability of countries against internal and external economic shocks.

In today's world, many factors in economies have an impact on fiscal sustainability. Apart from the recent economic crises and inflation increases, factors such as debt management control and fiscal indiscipline can affect the course of fiscal sustainability.

It is possible to classify the studies for the analysis of fiscal sustainability in five groups in terms of the method followed. The first of these methods, pioneered by Buiter (1985), is the accounting approach to the budget deficit or in other words, the conventional approach, which analyzes fiscal sustainability with economic indicators. Secondly, the budget's present value constraint approach or the econometric approach, or the intertemporal budget deficit constraint approach, pioneered by Hamilton and Flavin (1986), analyzes fiscal sustainability through econometric methods. The third one is the sudden stop approach proposed by Calvo et al. (2003). The fourth one is the probabilistic model approach proposed by Mendoza and Oviedo (2004), and the last one is the human development approach proposed by Sachs (2002). Most of these approaches start from the government budget constraint to fiscal sustainability analysis. These approaches are discussed below, respectively.

In the accounting approach, it is tested whether the financial adequacy conditions are met with the previous fiscal policies and the future policies are trying to be put forward. This approach is based on the point that the present and future assets and liabilities of the public sector are equal or their assets are more than their liabilities for budget balance. The

accounting approach focuses on data on debt, especially on the debt/GDP ratio. In this approach, a primary deficit (or excess) that keeps the debt/GDP ratio constant under the assumption of a growth target and unchanging real interest rate is defined as sustainable (Cuddington, 1997). The present value constraint approach is based on the rule that the initial real value of public debt must be equal to the present value of future primary surpluses and the present value of inflation-related revenues to ensure fiscal sustainability. In this approach, the stability of the series of real deficit variables including budget deficit and debt stock, discounted value of debt stock, and real interest payments are tested using econometric methods. In recent years, this approach has come to the fore and has been used more extensively in research. Finally, the sudden and sharp decreases in capital flows, mostly due to the behavior of investors and the attitude of financial markets in developing countries, constitute the basis of the sudden stop approach (Calvo et al., 2004). The sudden stop in capital movements causes an increase in dollar liability. Considering this situation, they developed an indicator type that includes borrowing and GDP. For this purpose, it has been considered that there was a current account deficit before a sudden stop in the open economy. Sudden stops may prevent emerging economies from rolling over their debts, causing liquidity crisis and affecting fiscal sustainability by causing debt to be in default (Göktan, 2008).

A probabilistic model approach is a new approach proposed by Mendoza and Oviedo (2003) for fiscal sustainability. The basic principle of this approach is credible repayment commitment. In other words, government's ability to pay its debts and ensure its credibility is important for reliability. The importance of sustainability of fiscal balances was emphasized by keeping borrowings at the lowest possible levels. If the debt levels are more than the amount shaped by the “reliable commitment to repay”, the probability of debt non-return will be high. At this point, regardless of the conditions, it is evaluated as reliable or unreliable according to the repayment capacity of the debts.

Fiscal sustainability is the situation where the state budget can be financed smoothly without causing serious increases in public debt (or money supply) over time. When this condition is met, it is said that the sustainability of the budget is ensured. In some contexts, it is necessary to make a clear distinction between static fiscal sustainability (when the budget can be financed smoothly period to period) and dynamic fiscal sustainability (when the budget does not lead to explosive increases in public debt over time). In short, static sustainability refers to the ability of the government to finance its budget on a period-by-term basis (financing liquidity), while dynamic sustainability is about very long-term fiscal solvency. Fiscal sustainability is important in both static and dynamic contexts. Threats to

one or both can have implications for macroeconomic and fiscal stability (Adams, et al., 2010).

Quintos (1995), on the other hand, introduced the concepts of strong and weak sustainability to the sustainability literature. The researcher defines strong sustainability when the debt process, which Hamilton and Flavin (1986) regarded as a necessary and sufficient condition, is stagnant, and that the income and expenditures, which Trehan and Walsh (1988) see as necessary and sufficient conditions, are co-integrated. In the case of strong sustainability, the government does not need to change existing policies. Weak sustainability is defined as the situation in which the tendency towards balance is slower than strong sustainability. The weak sustainability situation indicates that the public will not fall short, but the debt path will burst (slower than the growth rate of the economy) and the increase in interest payments may make the public unable to find debt. Cointegration is only a sufficient condition for poor sustainability. The necessary and sufficient condition is that the progress of debt is lower than the rate of increase in average interest. Indeed, as long as the growth rate of debt does not exceed the growth rate of the economy, the budget deficit can be balanced or is still sustainable even if it increases slightly. Although poor sustainability has been achieved, the government needs to change its current policies as it will be in trouble in debt servicing in the long run (Quintos, 1995). It will be a necessity for the public to continue to spend more than its revenues and, on the other hand, to borrow at higher interest rates in the servicing of its debts, since it will not be a policy that can be maintained for a long time, it will be a necessity to change its current policies.

3. Fiscal Sustainability of Health Systems

A good health financing system should be in a structure that enables users to benefit from healthcare services as much as they need by providing adequate health funds so that they do not face financial destruction and impoverishment. Today, it is very hard to achieve a good health financing system. Technological developments, demographic factors, and changes in consumer expectations increase healthcare costs on the one hand and raise demand by increasing needs on the other hand. In this context, health expenditures are increasing in GDP and it is very difficult to finance this with limited resources (Thomson et al., 2009). Therefore, sustainability in health systems has recently become a priority policy agenda for countries. The fact that meeting unlimited needs with limited resources is a difficult goal to achieve for the sustainability of the health system reveals the sustainability gap. In this context, health systems should have sufficient resources to meet and be able to adapt to the changing environment (Coiera and Hovenga, 2007).

Different approaches have been developed about what sustainability means in the health system and what to do for sustainability in the health system. Roberts (1998) defined the sustainability of the health system as the ability to meet current needs without losing the ability to meet future needs. A sustainable health system is an appropriate balance between the cultural, social, and economic environment designed to meet the health and health care needs of individuals and the population (from health protection and disease prevention to end of life and health promotion) (Prada et al., 2014). In this context, the sustainability of the health system, which is a multidimensional concept, has three main components: 1) fiscal sustainability, 2) institutional capacity, and 3) appropriate environment. The socio-economic environment is also one of the most important variables affecting sustainability (Mehdi, 1999). Within the scope of our study, we will examine fiscal sustainability in the health system.

In many countries of the world, increasing health expenditures create a huge burden on the budget and put pressure on taxes. When this situation, which puts the governments in a difficult situation, is combined with inefficiency in output and ineffective management, the need for reform in the system becomes inevitable. Therefore, it is tried to find formulas that will solve the fiscal resource shortage. Ensuring fiscal sustainability in health systems is becoming one of the primary goals. In this regard, the concept of fiscal sustainability in health systems can be handled in two senses. These are sustainability in the narrow sense, and sustainability in a broad sense. In a narrow sense, sustainability is related to the need to balance public revenues and public expenditures in health. In a broad sense, sustainability is a concept that includes the balance of total (public and private) revenues and expenditures in the health system (Eurostat, 2005).

Fiscal sustainability in the health system can be considered as the harmonization of unlimited needs and limited financial resources (Eurostat, 2005). Fiscal sustainability is the ability of a country to finance its health system in the medium and long term with its financial resources (Yıldırım, 2012). To put it more clearly, the concept of fiscal sustainability in the health system can be defined as the ability of the health system to collect enough resources to fulfill its expected responsibilities and to fulfill its responsibility to protect and improve the health status with the resources it collects (Kalkınma Bakanlığı, 2014). Figueras et al. (2008) define the concept of fiscal sustainability in four different ways. Accordingly, fiscal sustainability is; 1) the capacity to generate sufficient resources to ensure the delivery of health services in the face of increasing costs, 2) balance of expenditure and income, 3) determine whether the share of resources allocated to society for health is appropriate and economical, and 4) health expenditures in an increasingly globalized economy contribute to the macroeconomic competition of a country whether it threatens or not.

A health system is sustainable when it is operated by an organization capable of deploying and allocating sufficient and appropriate resources in the long run. Also, sustainability refers to the ability to respond to changing conditions or to finance adequate health quality in the face of increasing pressure factors such as cost increase, aging population, investment in new technologies, and increasing consumer preferences.

The fiscal sustainability problem can be characterized by resource constraints based on the government's inability or unwillingness to provide sufficient resources for the health system. Resource constraints and increasing healthcare costs cause a challenge for a health system to meet its goals in the future. Matching fiscal sustainability with fiscal balance can lead to inappropriate policy choices that may fail to relieve pressure on the public budget and have negative results for other health system goals. It would be wrong to reduce the problem only to a financial balance. In this regard, the main target will be to reduce expenditures. It will bring problems such as narrowing the scope of expenditures and decreasing the guarantees, and it will raise the question of which expenditures will be prioritized. It would not be possible to ensure fiscal sustainability without solving inefficiencies in resource use. Taking only fiscal balance as a target leads to new inefficiencies and inefficiencies. It makes it difficult to reach equity, value increase, quality, and efficiency in health. All of these constitute the basis of fiscal sustainability in health. Trying to increase value by doing more with resources allocated to healthcare should be the government's first choice. As this task involves identifying and addressing underlying inefficiencies, it reduces the pressure faced by the public budget and at the same time emphasizes improving the performance of the health system. However, the 'problem' of fiscal sustainability is political in nature. In most cases, the financial constraint faced by governments is created by the priority given to the health sector relevant in relation to and by political choices about the size of the government budget. So, part of the 'solution' should be to accept this fundamental dimension of political choice (Thomson, et al. 2009).

Although there are no general criteria for measuring and evaluating fiscal sustainability in health systems, the indicators used to measure and evaluate whether a health system is fiscally sustainable can be considered in two main groups. These are measurements and evaluations based on health expenditures and revenues/resources; and measurements and evaluations based on stakeholder views. The most common indicators related to sustainability within the scope of measurements and evaluations based on health expenditures and revenues/resources: the ratio of total health expenditures to GDP, the ratio of public health expenditures to GDP, the ratio of public health expenditures to the public, the average growth rate of GDP versus the average growth rate of public health expenditures, and the

share of public health expenditures in total health expenditures (Ruggeri, 2006; Skinner and Rovere, 2011). If the average growth of health expenditures is higher than the average growth of GDP and if this situation tends to increase gradually, then there is a sustainability problem/risk. If these expenditures grow at a faster rate than the expenditures in other components of the economy, a larger share of GDP will therefore be depleted and there is a concern that there will be no room for the other goods and services expenditures that increase welfare (Thomson et al., 2008).

Di Matteo and Di Matteo (2012) use the following indicators to measure sustainability: general macro indicators of health expenditures and expenditure-resource-based sustainability indicators for specific comparisons. Basic macro indicators of health expenditures; 1) the ratio of public health expenditures to total public expenditures; and 2) the ratio of public health expenditures to GDP. While the rising trend in the rates indicates the burden of increasing health expenditures, it cannot be accepted as evidence of sustainability without a resource base. The expenditure-resource-based indicators of sustainability seek answers based on whether public health expenditures are increasing faster than the resource base. This approach compares public health spending growth rates and public spending growth rates to measure resource base growth.

Many factors affect fiscal sustainability in health systems. The challenges associated with fiscal sustainability in the health system are predominantly related to the increase in health costs and expenditures. The World Economic Forum (WEF) examines the reasons for the increase in health expenditures under two headings: demand-side factors and supply-side factors. The growing demand for healthcare is particularly dependent on four important factors: demographic factors, the aging of the population, the rise of lifestyle-related diseases, an increase in public expectations, and a lack of value-awareness among healthcare consumers. Increasing health spending is primarily due to these four factors. The most basic factors affecting costs on the supply side of health services are the insufficient allocation of resources and new technologies. New therapies and technologies provide care options for patients and often improve clinical outcomes, but these can also increase unit costs. This is partly because; it is the focus of innovators on obtaining more output rather than the value, which is a function of the quality, price, and therefore cost-effectiveness of new treatments (WEF, 2012). In developing countries, in addition to these; other reasons that are affecting the sustainability of the health system such as insufficiency of resources allocated to social security, informality, unemployment and lack of family allowance insurance branches, insufficient income guarantee, low service quality, insufficient health insurance coverage due to increase in health expenditures, institutional inefficiencies, practices

contrary to insurance principles for political purposes, abuse and misuse, etc. (Alper et al., 2012).

In general, it can be stated that some approaches have been put forward about what should be done to ensure fiscal sustainability in health systems. One of these approaches is the "strategies approach to ensure the balance of income and expenditure". According to this approach, a health system with a balance of income and expenditure should be established for measures to eliminate the sustainability gap. Actuarial balance (in the medium and long term) can be achieved by the simultaneous implementation of "two-sided" measures that increase the incomes of the health system and reduce its expenses (increase income and decrease expenses). It is possible to consider potential strategies to close the sustainability gap, in other words, to balance the income-expenditure balance, in two groups; income increasing approaches and cost reduction approaches (Alper, 2011; Thomson et al., 2008; Thomson et al., 2009). Within the scope of income-increasing measures to ensure fiscal sustainability in health systems; i) taxes, premiums, and/or contributions may be increased, ii) resources allocated to other sectors may be restricted, iii) unemployment and unregistered employment can be effectively dealt with, iv) health can be prioritized in the allocation of public resources, and 5) borrowing can be applied or money can be printed. (WEF, 2012: 12). On the other hand, to limit the increasing health expenditures or costs; strategies such as limiting the scope of health services (reducing the population covered or narrowing the basic coverage package), limiting the quality and use of health services, ensuring rational drug use and ensuring efficiency in the health system can be adopted and implemented (Henke and Schreyögg, 2004; Cichon et al., 1999).

The second approach is the "road to sustainability" framework approach formed by the World Economic Forum (WEF, 2012) based on the factors affecting sustainability. In the light of the interviews with experts at the WEF, seven areas that are most promising to improve potential productivity are determined and it is stated that these areas are also important factors for the fiscal sustainability of the health system: (i) Measuring value and investing for the greatest returns: It must be invested more resources for greater returns in terms of health and quality of life earned; (ii) Developing skills and creating value-conscious consumers: Patients and societies should have the right information at the right time. So, they can make right choices; (iii) Paying for value, not for volume: Incentives to pay for holistic maintenance of entire populations or pathways must be realigned; (iv) Taking proactive measures to predict and prevent ill and manage disease: Health systems should focus on the integrated care required to identify the most at-risk patients, proactively plan and manage their care, and prevent escalation to higher cost settings; (v) Reinventing the ser-

vice delivery system with new healthcare models: Capital-light settings, leveraged capability models and low-cost channels such as home-based and patient-centred models can help deliver higher volumes of high-quality care. Higher cost channels must be accompanied by capacity reductions; (vi) Empowering technological innovations that reduce costs and increase capabilities: It is necessary situation for quality. Incentives and regulations can promote innovation that optimizes both quality and cost by providing lower-cost treatments, using the digital revolution to increase clinicians' productivity, or eliminating the need for other interventions. (vii) Applying modern management and performance-centered practices: For the productivity of service delivery, lean transformation and similar techniques should be used in health systems. Besides, they should establish stricter management practices that focus on performance in all areas.

The third approach is the approach that includes guiding principles and key factors for the sustainability of the health system and is called "a framework for sustainable health systems". In this regard, Prada et al. (2014) has proposed four guiding principles for the sustainability of health systems. Four guiding principles have been proposed to manage the principles, strategies, and policies that contribute to the sustainability of the health system, and to support policy decisions and decision-making. These principles are accountability for results, value for money, fair and timely access, and availability. The basic factors of sustainable health systems are to effectively prevent diseases affecting the health system and improve health, effective and efficient health systems: creating value in health systems: performance enhancement/development, financing models that lead to desired behavioral changes, developing innovation and innovative technologies, adaptation, support and optimal development of human resources, strategic alignment with determinants of health.

In the study conducted by OECD (2015), it is stated that especially governments have very important roles in ensuring fiscal sustainability of health systems. Three tools that governments should implement to achieve fiscal sustainability are mentioned. In this regard, governments should (i) diagnose and monitor the fiscal sustainability of their health systems, (ii) assess political and institutional risk factors to the fiscal sustainability of health systems, and (iii) implement policy levers and tools to ensure greater sustainability of health spending. In particular, it is necessary to strengthen the mechanisms controlling supply and demand, to improve public administration reform efforts, and to achieve revenue growth to cope with increasing spending pressures.

4. Literature on The Fiscal Sustainability of Health Systems

In the literature, there are some studies which examine fiscal sustainability of health systems. In this part, some studies examining and analyzing the fiscal sustainability of health systems on different examples are included. By the way, it is aimed to create a guide for our own study and those who are interested in the subject. First one of these studies was made by Eskesen (2002). In his study, it is argued that population aging in Australia is a factor that has a great impact on increasing healthcare expenditure. The study considers the necessary measurements in terms of long-term fiscal sustainability. It aims to illustrate different scenarios in maintaining long-term fiscal sustainability in Australia. In the light of the research, it argues that healthcare expenditure influenced by demographic trends such as aging will continue to increase. This is a major concern for fiscal sustainability in Austria. The author argues that it is important to focus on saving policies and authorities are responsible for undertaking reforms to reduce spending. So, he emphasizes the need for fiscal discipline in the long term.

Thompson et al. (2009), find out that the main problems faced in terms of fiscal sustainability in the healthcare systems are based on the ability of governments to finance the healthcare system against growing cost pressures, aging population, new technologies, and consumer expectations. They argue the problem of the fiscal sustainability of health systems stems from resource constraints that arise because of governments' inability or unwillingness to generate sufficient resources to properly deliver these services. Also, they state that this situation, which they examined in the context of the European Union, can be derived from the priority given to fiscal balance. However, prioritizing fiscal balance may fail to relieve the pressure on the public budget, as well as have negative consequences for other health system goals and lead to inappropriate policy choices. Cutting expenditures can serve both fiscal balance and fiscal sustainability. But The important steps must be taken are the identifying situations that create inefficiencies in expenditure, not reducing the value, and avoiding harmful effects on equity. It greatly reduces the pressure faced by the public budget and at the same time emphasizes improving the performance of the health system. So, it must include systematic evaluation and allocation of resources based on need-based or risk-adjusted. Lastly, they argue that the 'problem' of fiscal sustainability is political in nature, so part of the 'solution' is based on political choice.

Falk et al. (2011) in their article provide an analysis on the fiscal sustainability and the transformation of Canada’s Healthcare System. Canada faces transformative changes in terms of the healthcare industry. The most important change which healthcare has gone through is technological change. Technological changes were expected to reduce govern-

ment expenditures by improving healthcare quality. But the cost of the volumes added increased the public spending, thus increasing the fiscal unsustainability in the healthcare sector. In the light of their findings, it argues that healthcare is a high-tech innovative knowledge-based industry. Technology is a big challenge for the healthcare sector. As healthcare unit costs have fallen in many areas, expenditures have continued to rise. Policymakers can sometimes struggle to understand what is happening in the clinical arena and occasionally feel that the knowledge asymmetry is being used against them in funding negotiations. This situation generates fiscal uncertainty and unsustainability.

Orszag (2011) considers the rising healthcare costs in the USA and its states that these rising costs generate a fiscal imbalance in the long - term. If the USA does not reach fiscal sustainability in the health system, a serious fiscal crisis seems inevitable. Due to the rising costs, governments in the USA have had to transfer funding from other sources such as educational programs to healthcare. Besides, it argues that higher-cost areas tend to spend more on health systems compared to lower-cost areas. However, higher costs do not necessarily mean better service. In the light of his research, he strongly emphasizes the fact that the most efficient way to reduce fiscal imbalances in the USA is by addressing the high-cost cases.

Olgiati et al. (2012) aim to provide an analysis of the financial depression that Italy and the Eurozone faced during 2012 with anticipated fiscal emergency interventions and contradictory public economic interventions. These interventions affect public and private health expenditures and sustainability. Their main goal is to find out whether the interventions can be correlated with a single quantitative index and evaluate their influence on the sustainability of the public healthcare system and universal coverage. In the light of this research, they argue that if the increase in the GDP of the country during 2011-2014 is insufficient, then the expectations of the Italian Economic and Stability Reform Program 2011-2014 will be declined, and it will generate unsustainability in universal coverage. Due to these results, they suggest that healthcare professionals should negotiate with Italian and Eurozone authorities to ensure fiscal sustainability in the healthcare system.

Charlesworth (2013) argues that the expenditures in the healthcare system in the UK face a challenge in terms of fiscal sustainability in the long - run. It emphasizes the fact that the UK government has taken several measures to limit the expenditures and reduce the cost of healthcare. However, fiscal sustainability remains a big challenge for the government. The most important reasons for the increase in health expenditures are attributed to demographic change, increasing and aging population, as well as the increase in chronic diseases, new technologies, and productivity problems. The expenditures in the healthcare

sector keep increasing faster than the government revenues. Tackling these challenges is important in terms of achieving fiscal sustainability without having to increase taxes or find new funding sources in the healthcare industry.

Liaropoulos and Goranitis (2015) consider healthcare sustainability as an issue that deserves attention in the developed countries. They argue that globalization has a great impact on increasing income inequality. In a globalized economy, as the share of labor decreases relative to that of capital, wage income becomes increasingly insufficient to meet the rising cost of healthcare. In addition, the cost of Social Health Insurance increases with medical costs. Considering their findings from their analysis, the study states that the fiscal sustainability of the healthcare sector can be achieved through comprehensive National Health Insurance financed by progressive taxation of income from all sources. According to them, this situation prevents deviation in the targets of the health system and ensures the sustainability of the system, especially during economic recessions. Besides, fiscal sustainability through this way is likely to develop quickly and generate more responsive health systems.

Tan (2015) takes into consideration the challenges and responses of fiscal sustainability of healthcare financing in Asia. Tan argues that a well-designed healthcare system should ensure equal access to healthcare and must be sustainable and affordable. In the light of his findings, it discusses the challenges for sustainability and concludes that the costs of healthcare tend to increase with aging populations. These challenges can be addressed through saving in advance, taking several measures in terms of preventing the increase of costs, providing appropriate services in the future, and finding ways to facilitate the pay for healthcare expenditures.

Popescu et al. (2016), in their study, argue that there is a significant fiscal sustainability problem in European Union because of the aging population, uneven distribution of health professionals, rising costs of innovative technologies and medicines, and unevenly distribution of access to healthcare. By building a composite index, the study tries to investigate the relationship between health performance and fiscal sustainability of health systems in EU countries. The composite index ensures a clear ranking of EU countries based on their health system performance. In this regard, the following conclusions are reached that higher ranks are associated with higher shares of health expenditures in the GDP, a large share of employment in the health sector, and a higher duration of working life. This situation shows us that EU countries should start their reform efforts rapidly for adequate, affordable, and efficient health services.

Barua, Palacios and Emes (2016) argue that the changes in healthcare expenditures can

affect the government's fiscal balance significantly because healthcare is the largest item in the Canadian budget. In this regard, they build a model to project and assess the sustainability of healthcare expenditures between 2016 and 2030. First of all, they provide an overview of current healthcare expenditures and examines how expenditures changed by provincial governments between 1998 and 2015. Then, they reach the results of two scenarios built by the model. The first scenario includes assumptions regarding reasonable expectations of general inflation and demographic trends in the future, as well as health-specific inflation, and other factors based on trends observed between 1998 and 2013. Under this scenario, healthcare expenditures are projected to increase at about 6.3 percent per annum on average between 2015 and 2030. The second scenario includes the assumptions regarding health-specific inflation and other factors are changed to reflect trends between the shorter and more recent period between 2008 and 2013. Under this scenario, healthcare expenditures are projected to increase at about 4.6 percent per annum on average between 2015 and 2030. The expected increase in health expenditures will result in an increase in taxes or a decrease in other expenditure items. Therefore, it is difficult to argue that healthcare services in Canada are fiscally sustainable until 2030 in the current situation.

Licchetta and Stemach (2016) in their article consider the issue of fiscal sustainability in UK's healthcare sector in terms of demographic and non-demographic factors. They argue that demographic factors provide explanations for increased costs in the health system only to a certain extent. On the other hand, other factors such as technology have a great impact on the increase in health spending. Moreover, these factors are expected to be important cost determinants in the long - term.

Colombier and Braendle (2018) take into consideration the fact that the growing healthcare costs may harm fiscal sustainability. They discuss the case of fiscal sustainability in the health system of Switzerland. Considering their findings, it argues that population aging has a great impact on the increase of healthcare expenditures. Also, they claim that non - demographic factors such as medical technology advance, changes in national income, or Baumol's cost disease influence fiscal sustainability. It implies that the major concerns about expenditures derive from the expectations from the future of health and the Baumol's cost disease. Lastly, they suggest that actions should be undertaken to increase efficiency and prevent financial issues.

In the study which is made by the House of Commons, Committee of Public Accounts (2019), it is argued that there is a fiscal sustainability problem in UK's National Health System (NHS). The conditions about the increasing loans to support trusts in difficulty,

raids on capital budgets to cover revenue shortfalls, and the growth in waiting lists and slippage in waiting times threaten the fiscal sustainability of NHS. To solve the unsustainability problem, the long-term funding settlement for the NHS and the NHS Long Term Plan is tried to implement. But there are still some shortages in the NHS. NHS loses staff and not attracts enough employees from overseas. Also, there is a financial shortage in adult social care, capital, public health, and education and training. So, these are also important risks to the NHS's ability to implement the long-term plan and achieve the fiscal sustainability of NHS in the UK.

Yoshino et al. (2019) in their article discuss the fact that population aging is a major issue for G20 countries. The aging population influences fiscal sustainability in several ways. The aging population especially generates a decline in government revenues. Nevertheless, G20 countries have spent large amounts of money on healthcare services. When expenditures exceed revenues, public finance is heavily affected and economic unsustainability becomes a serious problem. In this regard, they make policy recommendations, covering comprehensive structural reforms, public finance reforms, and reform of public and private pension schemes.

Sepetis (2020) provides a new method for the evaluation of sustainable health management systems fiscally. The study builds the ESG index model for evaluating hospitals considered in the decision-making process of health managers, determining its effects on sustainability of fiscal systems, and evaluating the comparison of health care systems. This model provides a new fiscal analysis assessment framework to identify environmental, social, and governance (ESG) issues in health care system with fiscal sustainability methods. The ESG index is an important tool to identify risks and opportunities for sustainable healthcare systems.

Holt (2020) argues that although the US Congress enacted $4 trillion for public health expenditures there is the risk of a financial deficit, taking into consideration the increase in expenditures. The study focuses on how the deficit can be paid. According to data, medicare spent $396 billion more on services in 2019 than its payroll taxes and monthly premiums. Healthcare experts anticipate that medicare will go to bankruptcy by 2026 due to the lack of structural reforms. In the next few months, the government will put the focus on the expansion of the federal health programs to prevent any potential healthcare financial crisis.

There are few studies on the fiscal sustainability of Turkish health system. It is seen that most of the studies conducted are based on an evaluation of the available data. There is

only one study that tests the fiscal sustainability of the health system with econometric analysis. This study was carried out by Özer (2015). There has been already examined the fiscal sustainability of the health system in Turkey in the context of stakeholders' views. Based on these views, she has evaluated the health policy of Turkey and made recommendations in this direction. In the study, the individual interview technique, which is one of the qualitative research methods, was used and the qualitative data obtained as a result of the interviews were evaluated with the content analysis method. As a result of the study, a significant portion of the stakeholders stated that the healthcare system is not fiscally sustainable in Turkey. Stakeholders stated that to ensure fiscal sustainability in the healthcare system, especially preventive health services should be given importance, the necessary arrangements should be made by reviewing the existing assurance package and the referral chain should be implemented. Most stakeholders stated that the obstacles/risks that arise in terms of fiscal sustainability are mostly based on political obstacles. 37.35% of the stakeholders do not find the complementary health insurance positive, but still think that the complementary health insurance will contribute to fiscal sustainability. However, the study claimed that Turkish health system has not a serious fiscal sustainability problem.

In a study conducted by Özer, Yıldırım, and Yıldırım (2015), the issue of fiscal sustainability of health systems, in general, is comprehensively discussed. Based on the numerical data and stakeholders' views, they have tried to reveal the fiscal sustainability of Turkish health system. So, some assessments have been made based on available data and stakeholder's views. In his direction, some suggestions have been made for Turkey's policy. Moreover, Atasever, Karaca and Örnek (2017) analyze the fiscal sustainability of Turkish health system within the framework of official national indicators and have made the situation assessment. According to them, health expenditures in Turkey do not cause a fiscal sustainability problem. The health expenditures can be financed in the long run without causing a fiscal constraint.

5. Data and Methodology

This study aims to analyze the existence of fiscal sustainability in Turkish health system using empirical methods. In Turkey, the health expenditures are located in the central government budget expenditures. Healthcare spending consists of public personnel health expenditures, general treatment, and health supplies expenditures, treatment, and health supplies expenditures of green card holders as well as pharmaceutical expenditures of green cardholders. To determine the fiscal sustainability of the health system, the ratio of health

expenditures to GDP[1] and the ratio of health expenditures to non-interest central government budget expenditures are used. In the literature, Thomson et al. (2009), Charlesworth (2013), Özer (2015), Licchetta and Stelmach (2016), Barua et al. (2016), Atasever, et al., (2017), Colombier and Braendle (2018) emphasize these variables in determining fiscal sustainability of health system.

The data set of the study covers the period 2006: 1 to 2020: 12 and the analysis is made monthly. The reason for determining this data set is Law No. 5018 which has been entered into force in 2003 and implemented in all public institutions since 2006. This Law has introduced the analytical budget classification and the calculation management of central government budget expenditure items has been changed. Also, all data are taken from the CBRT Electronic Data Distribution System (EVDS) and seasonally adjusted using the Tramo-Seats method. More detailed information on the variables can be found in Table 1 and Figure 1 and Figure 2. Among the variables whose logarithms are taken, the ratio of health expenditures to IPI ΔLSO and the ratio of health expenditures to central government budget expenditures excluding interest ΔLSH are shown.

Table 1: Definition of Variables

Variable	Definition	Explanation	Source
ΔLSO	Health expenditures /IPI	It is seasonally adjusted using the Tramo-Seats method and a logarithm is taken.	TCMB (EVDS)
ΔLSH	Health expenditures /Central government budget expenditures	It is seasonally adjusted using the Tramo-Seats method and a logarithm is taken.	TCMB (EVDS)

As seen in Figure 1 and Figure 2, there is a break in the series in 2011 and 2012. This is assumed to be a result of the health transformation program started to be implemented in Turkey. According to Sülkü (2011), the aim of the Health Transformation Program which has been implemented in Turkish health system since 2003-2011 is to establish a fiscally sustainable system that provides quality and modern health services to the public in a fair and equitable manner, provides effective financial protection against high health expenses.

[4] Although the Gross Domestic Product (GDP) data are used more in empirical studies, this series is not measured with monthly frequency. Therefore, monthly data of the industrial production index (IPE) following a similar path were used instead of GDP. For this reason, SUE data are presented in the following parts of the study.

Figure 1: The Ratio of Health Expenditures to IPI (LSO)

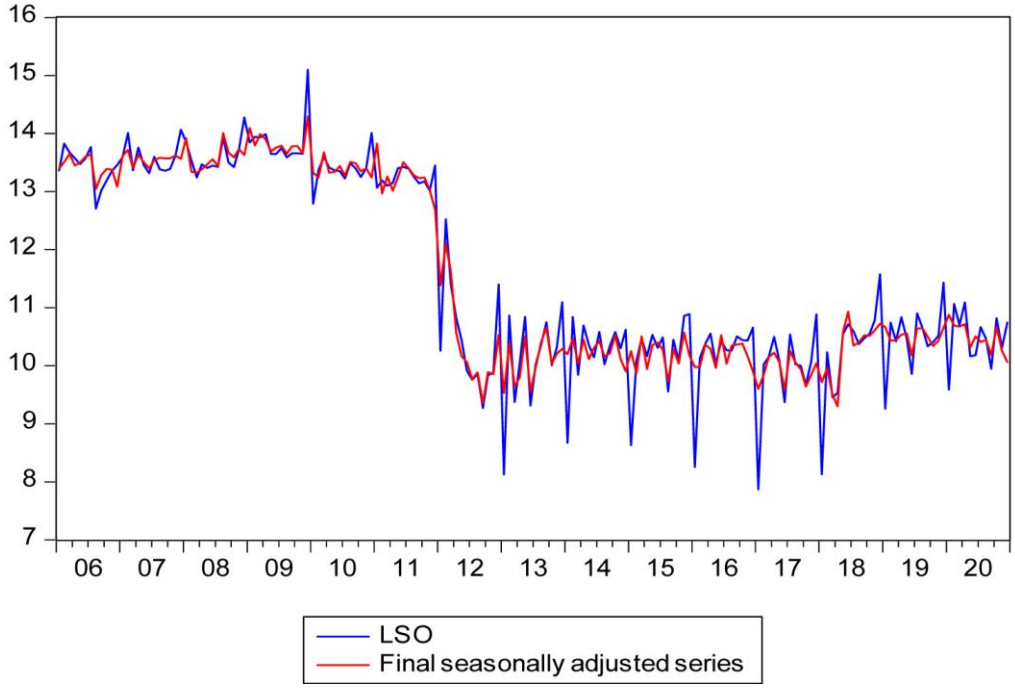
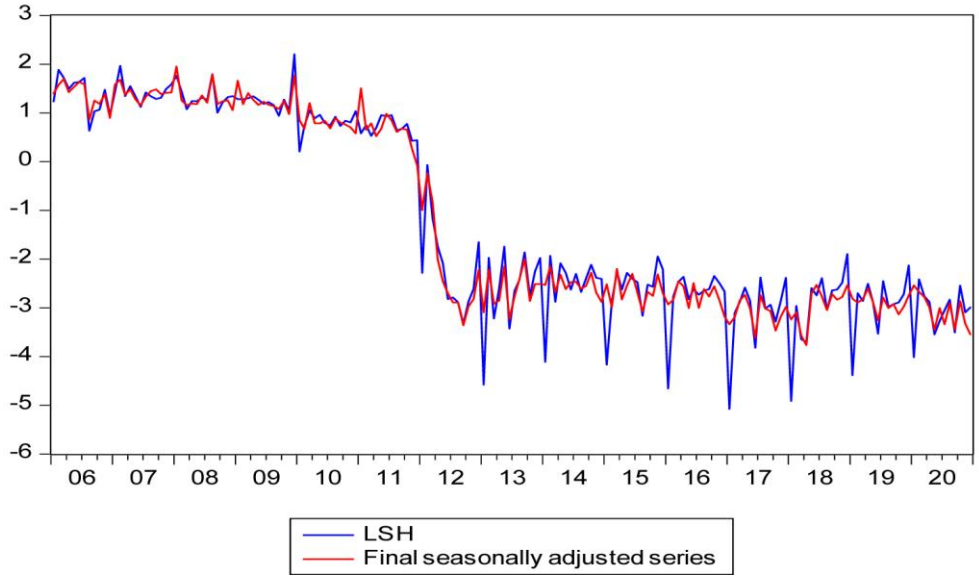


Figure 2: The Ratio of Health Expenditures to Central Government Budget Expenditures (LSH)



Descriptive statistics of the variables in the study are presented in Table 2. In Table 2, there are mean, median, maximum, and minimum values, standard deviation, and number of observations for each variable. ΔLSH ΔLSO

Table 2: Descriptive Statistics Table of Variables

	ΔLSO	ΔLSH
Mean	11.560	-1.188
Median	10.799	-2.270
Maximum	15.099	2.207
Minimum	7.869	-5.078
Std. Dev.	1.703	2.014
Skewness	0.129	0.215
Kurtois	1.632	1.462
Jarque-Bera	14.522	19.135
Observations	180	180

When examining Table 2, it can be observed that the average, median, standard error, maximum and minimum values are higher than the ratio of health expenditures to CPS compared to central government budget expenditures. When the skewness and kurtosis values are examined, it is observed that the variables are positively skewed, and the series are flattened compared to the normal distribution. It has been proved by the Jarque-Bera test, which tests the null hypothesis that the series is not normal, and the distribution is normal.

6. Model and Empirical Findings

In the literature, instead of using estimation methods in determining fiscal sustainability in the health sector, the forecasting and projection method has been used (Charlesworth, 2013; Licchetta and Stelmach, 2016; Colombier and Braendle, 2018; Barua et al., 2016; Özer, 2015).

Autoregressive Integrated Moving Average (ARIMA) models are considered to model the time series of our variable. ARIMA models among the most commonly used time series analysis techniques, especially in predictive studies (Akar, 2014). Hence, the ARIMA forecasting method is preferred in the study, to analyze fiscal sustainability in the healthcare system.

Forecasting can be defined as predicting or understanding what the outcome of an event will be. Nowadays, being able to predict the future macroeconomic conditions of economies in an atmosphere of uncertainty with high accuracy can provide great advantages to governments (Akar, 2018). One of the most significant aims in the analysis of a time series is to forecast its future values. Even if the final aim of time series modelling is for control of a system, its process is generally based on forecasting. The term forecasting is used more frequently in recent time-series literature than the term prediction. Consider the general ARIMA (p, d, q) model (Wei, 1989: 86):

$$\emptyset(B)\,(1-B)^{d}Y_t = \theta(B)u_t \qquad (1)$$

Where $\emptyset(B) = (1 - \emptyset_1 B - \cdots - \emptyset_p B^p)$ is stationary AR operator and $\theta(B) = 1 - \theta_1 B - \cdots - \theta_q B^q)$ is an invertible MA operator and the series u_t is Gaussian $N(0, \sigma_a^2$ white noise process. The determinist trend parameter θ_0 is omitted for simplicity but no loss of generality. Equation (1) is one of the most commonly used models in forecasting applications. It is well known that using this approach concerning the mean square error criterion, which corresponds to a squared loss function when the series is known up to time, the optimal forecast of Y_{t+1} is given by its conditional expectation $E(Y_{t+1}|Y_t, Y_{t-1}, \ldots)$ (Wei, 1989: 86). With the ARIMA model, Y_t series is estimated for the period $T + l$ (one period ahead) ($l \geq 1$). The prediction is shown as $\hat{Y}_t\,(l)$. ARIMA's basic principle for calculating forecasting is expressed by equation (2). δ_{1+j} weights minimize the sum of squares of prediction errors (Kutlar, 2000):

$$\hat{Y}_t\,(l) = \sum_{j=0}^{\infty} \delta_{1+j}\, u_{t-j} = \mathrm{E}(Y_{t+1}|Y_t \ldots .. Y_1) \qquad (2)$$

The first step of the time series analysis is to test the stationarity of the variables included in the model with unit root tests. Different unit root tests such as Augmented Dickey-Fuller (ADF), Phillips-Perron (PP), and Kwiatkowski, Phillips, Schmidt, and Shin (KPSS) are applied to identify the degree of integration of the variables. Unit root test results are shown in Table 3. According to Table 3, it can be observed that the series have unit roots at their logarithmic levels and they are I(1) stationary in their first difference.

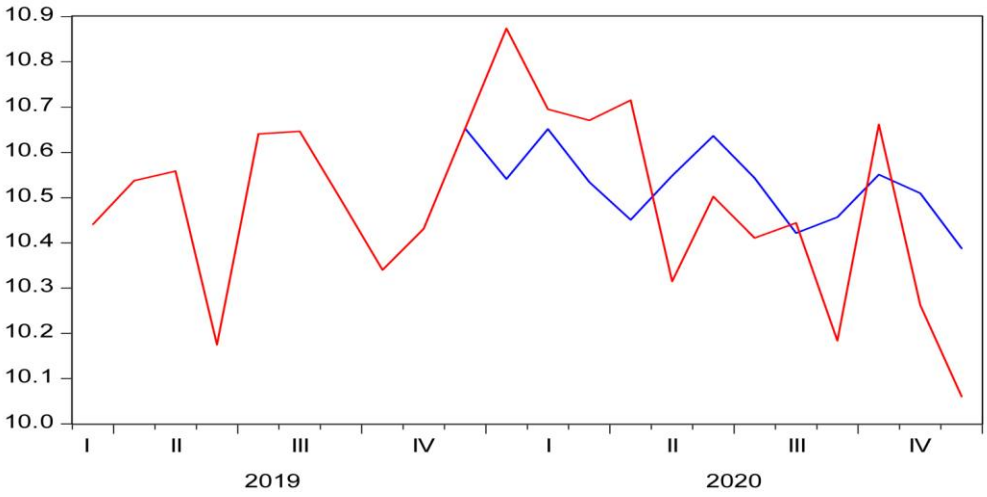
Table 3: ADF, PP, and KPSS Unit Root Test Results

	ΔLSO			ΔLSH			**Decision**
	N	**I**	**T and I**	**N**	**I**	**T and I**	
ADF (Level)	-1.395 (0.151)	-1.375 (0.593)	-1.943 (0.627)	-0.099 (0.648)	-0.927 (0.777)	-1.889 (0.655)	I(1)
ADF (1st difference)	-4.263 (0.000)*	-13.179 (0.000)*	-13.155 (0.000)*	-4.235 (0.000)*	-4.440 (0.000)*	-4.422 (0.002)**	
P–P (Level)	-0.886 (0.330)	-1.161 (0.690)	-2.229 (0.470)	-0.151 (0.630)	-1.005 (0.751)	-2.539 (0.309)	I(1)
P – P (1st difference)	-20.671 (0.000)*	-21.082 (0.000)*	-21.044 (0.000)*	-22.033 (0.000)*	-22.209 (0.000)*	-22.155 (0.000)*	
KPSS (Level)		1.349	0.240		1.515	0.234	I(1)
KPSS (1st difference)		0.042*	0.038*		0.079 *	0.074*	

Note: In the ADF test, lag lengths were determined by AIC criteria. Bartlett Kernell estimation method was used in PP and KPSS tests, and the bandwidth was determined as Newey-West. KPSS intercept asymptotic critical values 0.739 for %1 level and 0.463 for %5 level. KPSS trend and intercept asymptotic critical values 0.216 for %1 level and 0.4146 for %5 level. N: None; I: Intercept; T and I: Trend and intercept. * shows the 1% significance level and ** shows the 5% significance level.

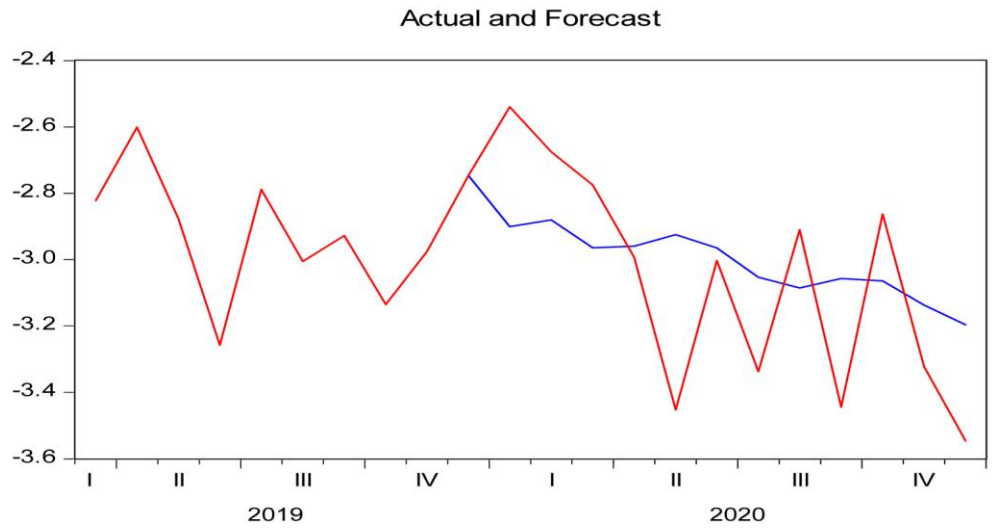
First of all, this study considers the observation forecast of the variables for the 12 months of 2019-2020- and the 12-month period of 2020-2021. Secondly, the forecasting performance is shown for the model estimation. The 12-month observation forecast for the 2019-2020 period for the ΔLSO series is estimated as ARIMA (3,1,4) as determined by AIC. The forecasting for this series is shown in Graph 1

Graph 1: ΔLSO Series and 2019-2020 Forecast according to ARIMA (3,1,4)



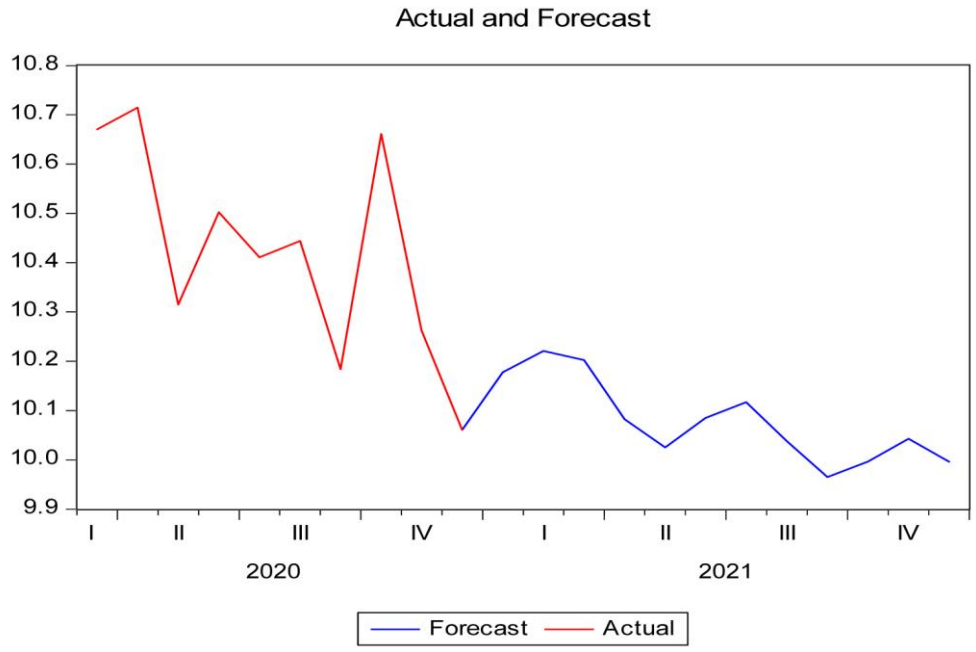
The 12-months observation forecast of the ΔLSH series for the period 2019-2020 is estimated as ARIMA (2,1,4) as determined by AIC. The forecasting for this series is shown in Graph 2.

Graph 2: ΔLSH Series and 2019-2020 Forecast according to ARIMA (2,1,4)



The 12-months observation forecast for the period 2020-2021 for the ΔLSO series is estimated as ARIMA (3,1,4) as determined by AIC. The forecasting for this series is shown in Graph 3.

Graph 3: ΔLSO Series and 2020-2021 Forecast according to ARIMA (3,1,4)



The 12-months observation forecast for the period 2020-2021 for the ΔLSH series is estimated as ARIMA (2,1,4) as determined by AIC. The forecasting for this series is shown in Graph 4.

Graph 4: ΔLSH Series and 2020-2021 Forecast according to ARIMA (2,1,4)

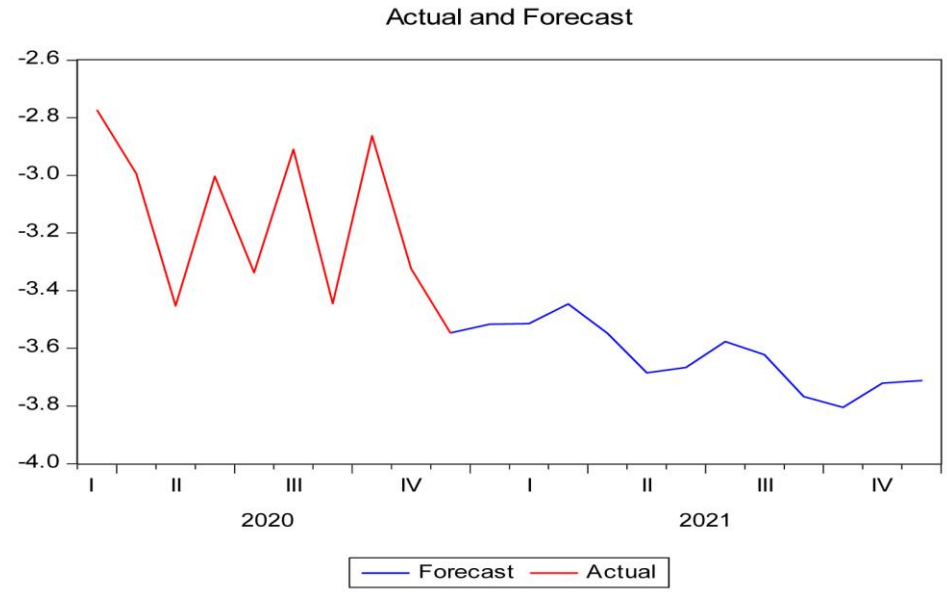


Table 4 and Table 5 show forecast performance values. According to Akar (2018: 261), prediction performance is the measurement of how close a prediction is to the actual value. In other words, it is the determination of to what degree the prediction deviates from the actual values. There are some criteria used for this purpose. These are Root Mean Squared Error (RMSE), Mean Absolute Error (MAE), Mean Absolute Percent Error (MAPE), and Theil Inequality Coefficient (TIC). Models having as low error values as possible indicates good forecast performance.

Table 4: ΔLSO Forecast Performance Evaluation Criteria

	ARIMA(3,14)*	**ARIMA (3,1,4)****
RMSE	0.322	1.104
MAE	0.236	0.903
MAPE	2.132	8.367
TIC	0.013	0.046

*Static forecast values **Dynamic forecast values

Table 5: ΔLSH Forecast Performance Evaluation Criteria

	ARIMA(2,1,4)*	**ARIMA (2,1,4)****
RMSE	0.340	1.032
MAE	0.258	0.823
MAPE	18.637	45.697
TIC	0.073	0.262

*Static forecast values **Dynamic forecast values

The forecasts for the periods 2019-2020 and 2020-2021 for ΔLSO and ΔLSH series are implemented. The 2019-2020 period also indicates the year when the Covid-19 pandemic began. During this period, the change between the actual values and forecast values of both the healthcare expenditures/GDP ratio and the ratio of health expenditures to central government budget expenditures show the effects of the Covid-19 pandemic. It can be argued that it is difficult for Turkey to achieve fiscal sustainability in terms of the healthcare sector. According to the forecast for the 2020-2021 period, the ratio of healthcare expenditure/ GDP and the ratio of healthcare expenditures to central government budget expenditures are sort of decreasing. Thereby, compared to the first year of the Covid-19 pandemic, the effect of the pandemic in the following year is more moderate.

7. Concluding Remarks

The emergence of technological innovations and developments with globalization, the increase in the population of the country and the prolongation of life expectancy have led to an increase in the costs of health services in the health sector. Obviously, the increase in health costs affects the income and expense balance of health services. In this context, the concept of fiscal sustainability in the field of health is widely discussed.

In addition to these developments, the Covid-19 pandemic, which emerged all over the world in 2009 and had a great impact during 2020, deeply affected the health systems of countries. Despite the Covid-19 vaccine program, which started to be implemented in 2021, the pandemic is expected to have an impact on 2021 too. By all odds, the emergence of Covid – 19 pandemic and vaccine distribution programs had a great impact on the health sector, which experienced major problems during this period. The increase in the number of patients, the increase in the need for intensive care units, respirators, vaccines, and medications has increased the health expenditures and the costs of health services. In this context, the concept of fiscal sustainability in health, which is currently being discussed, has become the most important element in the agenda of the countries.

The study provides an analysis of the fiscal sustainability in Turkey's health sector by using ARIMA forecasting model. The variables of health expenditures/IPI ratio and ratio of health expenditures to central government budget expenditures are used in the study. With the health transformation program implemented in Turkey between the years 2003-2011, it was observed that these variables decreased in 2011 and 2012. Reforms such as gathering different insurance programs under a single insurance institution, establishing a family medicine system, restructuring the organization of the Ministry of Health and transition to the health appointment system are particularly effective in this program. These variables follow a horizontal course in the period of 2012-2020. This is the case with Özer (2015), Çavmak and Çavmak (2017) and Atasever et al. It is also consistent with the findings of (2017: 46). However, in the study, it is seen that there were significant fluctuations in both series in 2019 and 2020, when the Covid-19 process was experienced. Especially during the pandemic process, it is expected to increase health expenditures and decrease production. Looking at the 2020-2021 forecast, it is expected that the effects of the Covid-19 pandemic will begin to decrease, and the course will follow at the old usual level. Taking into consideration the number of cases in Turkey in April 2021 exceeding 60 thousand, it could not be argued that this forecasting is valid in this case.

In this context, Turkey's health system provides fiscal sustainability. However, in the event of an external shock, it could be argued that health system is affected in terms of fiscal sustainability. In this context, Turkey needs to create alternative scenarios for health programs in response to unexpected situations.

Obviously, the current pandemic will continue for a while and such extraordinary situations are likely to happen in the future. Therefore, measures should be taken to slow down the rapid increase trend of health expenditures. In this context, citizen awareness should be increased, and more attention should be paid to preventive health services. This will provide a significant cost advantage. In addition, it is necessary to implement short-term strict social measures. Otherwise, in the long – term the cost will grow. The increasing demand for healthcare services will rapidly increase the need for physical and human capital, which is not only difficult to be provided in a short time, but also generates a large financial burden. However, it is necessary to create a fiscal space in the system to meet the financing needs. Therefore, the government needs to work with experts on what can be done on this issue.

What can be done regarding incomes constitutes a separate dimension of the issue. After the implementation of the Health Transformation Program, significant progress has been made in terms of financing health services. However, we cannot argue that the goal has been reached yet. At this point, the importance of effective operation of inspection and control mechanisms is crucial. However, the key is to improve personal well-being.

The steps that can be taken in terms of all expenses and income are important for the fiscal sustainability, as well as ensuring financial balance in the health system. Taking the consideration the fact that the burden placed on the system by the Covid-19 pandemic is high and its impact will continue for a while, the measures to be taken are vital for the system. It is a fact that the Covid-19 pandemic deeply affects people's economic power as well as their health. The social welfare level has decreased. Therefore, the government should compensate welfare losses. Compensation for welfare losses is also necessary to avoid any decrease in the financing capacity of health services. Moreover, the rapid and widespread implementation of vaccination will prevent high health costs to be faced in the short and medium term. Otherwise, both the capacity of the system and health expenditures will be insufficient and higher. In addition to all these, the issue of quality and efficiency of health systems should be considered in every step.

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