THE ACTUARIAL BALANCE OF THE SOCIAL SECURITY SYSTEM IN TÜRKİYE AND ITS INTERACTION WITH MONETARY POLICY

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Abstract

The sustainability of the pension system in Türkiye has not been adequately addressed in the literature in terms of monetary policies, and existing studies generally focus on actuarial analyses or fiscal and social policy solutions. This paper presents a framework that integrates the direct and indirect effects of monetary policy instruments on the system at the macroeconomic level. Taking into account the global challenges in social security systems, the paper aims to provide a perspective on policy proposals for the sustainability of the pension system in Türkiye from a monetary policy perspective.

The article demonstrates that social security reform is not merely a matter of social policy, but also a fundamental guarantor of macroeconomic stability and monetary policy independence. The study follows a methodology based on the establishment of a theoretical framework that includes the international system, a systematic review of the relevant literature, and a descriptive analysis of macroeconomic data. In this context, the financial dynamics of the pension system are assessed in light of the current economic structure and monetary policy instruments, with the aim of proposing a sustainable model. The results of the study reveal that success in monetary policies and social security policies is inevitably dependent on the sustainability of the other. Furthermore, they show that inflation and interest rates are important for budget projections, directly affecting the real value of expenditures, the interest burden of public debt, and the overall sustainability of the pension system.

Keywords: Inflation, Monetary Policy, Actuarial Balance, Retirement System, Türkiye

Introduction

Social security and social protection schemes were developed to protect individuals against loss of income in unexpected circumstances such as illness, unemployment, and old age. This field gained momentum particularly in developed economies after the Second World War and took on an institutional form in welfare states between 1945 and 1975. During this period, the concept of the social state ensured that citizens' basic needs, such as health, employment and education, were met by the state and that these services were regarded as a right. Thus, social protection became a fundamental policy tool for reducing poverty and maintaining living standards.

The most important international document forming the institutional basis of today’s social protection systems is the International Labour Organisation's (ILO) 1952 Convention No. 102 concerning Minimum Standards of Social Security. Taking advantage of the exemption provisions in the Convention, Türkiye accepted the basic insurance branches other than family benefits and unemployment insurance in 1971; the provisions of the Convention entered into force in 1975. Within this framework, Türkiye’s social security legislation has been structured

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in line with international standards, and obligations to ensure minimum standards in the field of social protection have been institutionalised (SGK, 2021:14-15).

The General Public Health Law, which came into force in Türkiye in 1930, established mandatory standards regarding working hours, health conditions and the minimum working age. The Municipalities Law, adopted in the same year, imposed an obligation on municipalities to provide on-site services to disadvantaged groups such as the homeless, disabled and poor. These regulations formed an important infrastructure for the organisation and implementation of social assistance at the local level. In our country, the structuring of the social security system gained momentum in the period following the Second World War. Indeed, steps such as the establishment of the Ministry of Labour in 1945, the creation of the Old Age Insurance and Pension Fund Institution in 1949, and the adoption of the Sickness and Maternity Insurance Law in 1950 expanded the scope of social protection mechanisms. From the 1960s onwards, significant developments took place in the field of social services based on the Western model. The Social Services Academy graduating its first students in 1961 and the establishment of the General Directorate of Social Services in 1963 increased institutional capacity in this area (Taşgın & Özel, 2011:180).

As is well known, social security systems are a fundamental social mechanism aimed at protecting individuals against various social risks they may encounter throughout their lives. However, the long-term sustainability of pension systems depends on the balance between income and expenditure, known as actuarial balance. This balance is directly influenced not only by demographic and structural factors but also by macroeconomic variables. In particular, monetary policy and, consequently, inflation are among the key external factors shaping the financial structure of the pension system and individuals' post-retirement living standards. Monetary policy is conducted by central banks; it primarily targets price stability and macroeconomic balance. In contrast, social security policy is the primary responsibility of governments and aims to provide welfare and economic security for individuals. However, recent global crises, demographic shifts, and increases in public debt across countries on the international stage have called into question the validity of the traditional distinctions between these policies. Consequently, these experiences reveal that monetary and social security policies do not function independently of each other; rather, they inevitably interact and influence each other's success.

Social security/protection expenditure data clearly demonstrates the weight of social welfare policies within economic priorities across the European Union and the differences between countries. The data shows that Belgium, France and Austria rank at the top of the list, spending approximately one-third of their gross domestic product (GDP) on social protection. Countries such as Italy, Germany, Denmark, the Netherlands, Spain, Portugal and Finland also stand out with spending levels above the European Union average. In contrast, countries such as Poland, Luxembourg, Croatia, Slovakia and the Czech Republic form a middle-level spending group, allocating a significant portion of their GDP to social protection, albeit below the EU average (Eurostat, 2025).

Türkiye, at the bottom of the list, lags behind both the EU average and many countries in the region in terms of the ratio of social protection expenditure to GDP. This indicates that Türkiye's social protection system has a more limited structure compared to European countries in terms of its scope, financial capacity, and budget priorities. The main reasons for the low share of social protection expenditure in GDP in Türkiye include limited financial resources, budget priorities being concentrated on specific items such as pensions, the relatively low share allocated to areas such as education, health and unemployment insurance, the prevalence of informal employment, and the narrow contribution base. The consequences of this situation are limited impact on reducing poverty and income inequality, insufficient

protection for vulnerable groups (children, the unemployed, people with disabilities), weakening of the social state principle, and increased risks in terms of social cohesion and economic sustainability in the long term. [2]

Table.1: Social Security/Protection Expenditures of Selected Countries (Percentage of National Income)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
France	33,8	34,2	34,4	34,2	34,3	34,1	33,8	33,5	38,0	35,7	34,0
Austria	29,3	29,8	30,0	30,0	29,9	29,5	29,2	29,4	34,1	32,8	30,5
Finland	30,0	31,1	31,8	32,0	31,9	30,8	30,3	30,2	32,1	31,3	30,1
Germany	28,3	28,7	28,5	28,8	29,0	28,9	29,1	29,6	32,4	31,4	30,0
Italy	28,7	29,3	29,5	29,5	29,0	28,7	28,7	29,1	34,2	31,4	29,8
EU	29,2	29,5	29,4	29,1	28,9	28,6	28,5	28,6	32,5	30,6	28,8
Belgium	29,6	29,9	29,9	29,9	29,4	29,0	28,8	28,6	32,5	30,1	28,6
Netherlands	31,2	31,3	31,0	29,9	29,4	28,8	28,4	28,2	32,0	30,1	27,1
Spain	25,6	25,8	25,4	24,5	23,7	23,3	23,4	24,0	29,8	27,8	25,9
Portugal	26,4	27,6	26,9	25,8	25,1	24,7	24,0	24,0	27,4	26,8	24,7
Greece	29,0	26,9	26,2	26,4	26,6	25,6	25,3	25,2	29,1	26,6	24,1
Poland	19,0	19,8	19,4	19,3	21,0	20,2	19,5	21,0	23,4	22,6	21,0
Croatia	21,1	20,9	21,4	21,4	21,4	21,1	21,1	21,2	23,9	22,4	20,9
Czechia	20,2	19,8	19,4	18,7	18,6	18,1	18,2	18,5	21,5	21,2	19,9
Serbia	21,7	21,0	21,1	19,8	19,5	18,7	18,6	18,6	20,9	19,3	18,5
Slovakia	17,8	18,2	18,4	17,9	18,3	18,1	17,8	17,8	19,4	19,0	18,2
Hungary	21,2	20,7	19,7	19,0	18,7	18,2	17,5	16,5	18,2	17,6	16,7
Romania	14,7	15,0	14,7	14,6	14,9	14,9	14,9	15,2	17,7	16,6	16,5
Estonia	14,9	14,7	14,7	15,8	16,2	15,6	16,0	16,1	18,9	17,2	15,7
Ireland	23,9	22,5	20,7	15,6	15,7	14,5	13,8	13,4	15,0	13,2	11,4
Türkiye	12,4	12,1	12,0	11,9	12,8	12,2	11,9	12,6	13,0	10,9	8,6

Source: Created by the author using Eurostat data.

The primary objective of this article is to analyse the complex interaction mechanisms between the actuarial balance of Türkiye's pension system and the monetary policy pursued by the Central Bank, and consequently inflation. In this regard, the financial dynamics and vulnerabilities of the pension system have been assessed from the perspective of the current economic structure and monetary policy, while also proposing potential areas of intervention for policymakers and a sustainable model. In this context, the scope of the study covers the international outlook for the social security system in terms of actuarial balance, the effects of inflation and interest rates on the pension system in Türkiye, the role of actuarial balance in this process, and the indirect reflections of monetary policy instruments on the system.

1. Actuarial Balance of Social Security Systems and Retirement Systems

Social security systems are generally built on multiple pillars, rather than a single structure, that complement each other and are based on different financing methods and risk-taking principles. This multi-pillar approach increases the sustainability of the system and allows it to adapt more flexibly to changing demographic, economic, and social conditions. Single-pillar pension systems are structures where retirement income is almost entirely based on compulsory public pensions provided by the state, with the risk and financial burden largely falling on the public budget. However, demographic changes, increasing life expectancy, and deteriorating active/passive ratios make this single-source model difficult to sustain. Therefore,

[2] Romania, Estonia, Malta, and Ireland rank behind this group with lower rates. Among non-EU countries, Switzerland and Norway stand out with their high spending rates, while social protection spending as a share of GDP is significantly lower in Western Balkan countries such as Bosnia and Herzegovina, Montenegro, Serbia, and Albania (Eurostat, 2025).

many countries are turning to multi-pillar systems, which aim to both share the financial burden and increase income diversity for individuals in retirement by distributing retirement income across different sources. Indeed, multi-pillar models aim to create a more balanced and resilient retirement structure, both economically and socially, by combining public pensions, employer-sponsored supplementary plans, and voluntary individual savings systems.

Projections of life expectancy beyond age 65 in retirement are directly linked to the sustainability of pension systems. Increasing life expectancy translates into extended years spent in retirement. This, particularly in systems based on a distributional approach, leads to the same premium payment period financing a much longer pension payment period. Unless measures are taken, increasing life expectancy makes the system financially vulnerable and makes the financial burden on the system unbearable. This situation, in turn, leads to policies such as raising the retirement age, increasing premium rates, and reducing the real value of pensions. According to OECD (2024) data, the OECD average for post-retirement life expectancy is 23.1 years, and this figure is calculated as 21.4 years for Türkiye. This period is 25.5 years in Japan, 24.3 years in South Korea, 23.6 years in the UK, 23.2 years in the US, and 20.2 years in Mexico. [3]

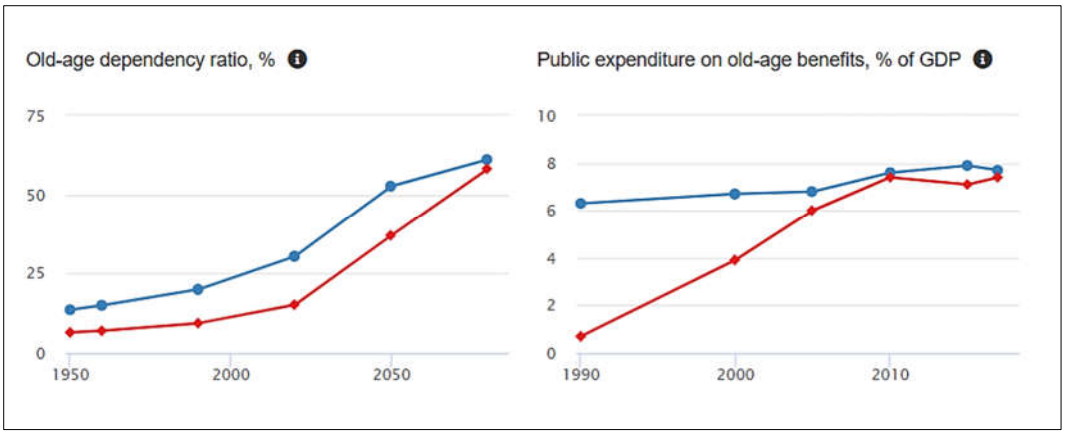
The old-age dependency ratio is another important parameter for the health of public pension systems. This ratio indicates the extent to which the working-age population (those in a producer position) supports the elderly population (those in a consumer position) and is formulated as follows:

Old-age Dependency Ratio = (Population Ages 65 and Over / Population Ages 15-64) x 100

A ratio below 20% indicates a relatively young population. In such a scenario, the working-age population is larger than the elderly population. This situation is called the "demographic window of opportunity." In this scenario, the pension system is under less pressure and the potential for economic growth is high because the number of employees is high. Today, India falls into this category. Generally, a normal level between 20% and 35% is considered a normal level, while a ratio above 35% is a critical threshold and an indicator of an aging population. For example, in developed countries like Japan, Germany, and Italy, the number of elderly people per employed person is increasing. This trend is putting significant pressure on pension systems, healthcare spending, and public finances. Not only the current level of this ratio, but also its evolution over time, is crucial. A rapid rise in this ratio is a sign of serious problems in the future. For Türkiye, while the ratio was very low in the past (around 10% in the 1990s), it has now exceeded 15% and continues to rise rapidly. According to the OECD (2024) report, under current conditions and scenarios, it is projected to rise rapidly to 37% in Türkiye (red line) by 2050 and then to 58.2% in 2080, approaching the OECD average (blue line).

[3] A similar view applies to the European Union. On average, individuals in the EU are expected to spend 21 years in retirement, but this period can vary between 15 and 25 years depending on national factors. In terms of retiree well-being, more than 20% of people over 65 in the EU are at risk of poverty or social exclusion. Older women face higher poverty risks than men across all EU countries. Pensions account for an average of 60% of end-of-career income, with significant gender and country-specific differences (European Commission, 2024, pp. 7-11). In the OECD, according to the latest available figures, relative poverty rates for those over 65 exceed 40% in Korea, over 30% in Estonia and Latvia, and 20% or more in Australia, Costa Rica, Japan, Lithuania, and the United States. In contrast, Czechia, Denmark, France, Iceland, Luxembourg and Norway have the lowest relative poverty rates, close to or below 5% (OECD, 2024: 196).

Graph.1: Elderly Dependency Ratio and Public Pension Expenditures (Percentage of National Income)



Source: OECD (2024), Pensions at a Glance Report-2023

Graph 1 shows that, in addition to actuarial adjustments, monetary and fiscal discipline policies, and other measures, the improvement in the unfavourable trend for Türkiye also requires the promotion of supplementary pension instruments. Indeed, significant steps have been taken in this regard in our country over the past twenty years. For a long time, the pension system in Türkiye was based on a single-pillar structure, i.e. public pensions provided solely through the Social Security Institution (SGK). However, in recent years, particularly with the introduction of the Individual Pension System (BES) in 2003 and the Automatic Participation System (OKS) in 2017, important steps have been taken towards creating a second source of income. Now, the government plans to transform this structure into a more distinct multi-pillar model with the Supplementary Pension System (TES). To this end, TES will be a second-tier pension system, involving contributions from employers and the state, which is expected to be implemented in mid-2026. Under this system, employees will transfer a certain percentage of their salary to the TES in addition to their SGK contributions; employers and the state will also contribute. Thus, in addition to the pension received from the SGK, a second income can be obtained from the TES (BBC News Turkish, 2025).

Sustainability is a multidimensional concept encompassing financial, social and political aspects. Financial sustainability refers to the balance between contribution rates and social assistance in social security systems. Social sustainability focuses on the adequacy of social assistance to prevent poverty and ensure quality of life. Political sustainability refers to the ability of institutions to reform social security systems despite public opposition (D'Antona, 2018: 3). The actuarial balance of social security systems and pension mechanisms is a critical policy area in terms of both financial sustainability and intergenerational justice. Demographic transformation, structural changes in the labour market, rising healthcare costs, and economic fluctuations are among the main factors complicating the maintenance of this balance. In particular, the pressure created by an ageing population, the decline in the active/passive ratio, and informal employment threaten the long-term stability of social security funds. In this context, examining similar problems experienced globally and the innovative policy approaches developed to address them is important for identifying possible solutions that can be implemented at the national level.

The International Labour Organization's flagship report, the " ILO World Social Protection Report 2024-26" provides important data on this subject. In this context, the data in Table 2 comparatively demonstrates the rates of legal coverage of the working-age population aged 15 and over by comprehensive social security systems worldwide as of 2024, by region, income group, and gender. Globally, the coverage rate is only 33.8%, indicating that two in

three adults worldwide lack comprehensive social security. High-income countries have a higher coverage rate of 63.1% compared to other countries/income groups. Conversely, the rate drops to 0.7% in low-income countries. At the regional level, Europe and Central Asia ranks above the global average at 56.3%, while Asia and the Pacific are close to the average at 35.3%, with the Americas slightly above at 40.8%. Arab countries have low coverage at 26.9%, and Africa has a significantly lower coverage rate of 6.7%. In all regions, women's coverage rates are lower than men's, and this gap is particularly pronounced in low- and middle-income countries.

Table 2: Social Security System Coverage Rate

Region/Income Group	Working Age Population Rate (Total,%)	Working Age Population (Male,%)	Working Age Population (Female,%)
World Average	33,8	39,3	28,2
High Income	63,1	66,2	59,9
Upper-Middle Income	51,1	59,1	42,7
Lower-Middle Income	15,2	20,7	9,4
Low Income	0,7	1	0,5
Africa	6,7	10	3,5
America	40,8	44,1	37,5
Arab States	26,9	39,5	11,2
Asia and the Pacific	35,3	42,1	28,2
Europe and Central Asia	56,3	59,3	53,3

Source: ILO World Social Protection Report 2024 -26 ; p.68

2. Literature Review

Monetary policy can influence the structure and scale of social security systems by altering intergenerational transfers and taxation mechanisms. In other words, changes in monetary policy, particularly inflation and reserve requirements, have the power to affect the real value and structure of social security benefits by altering the effective taxation and redistribution mechanisms of social security systems. In many countries, public debt has reached historically high levels, particularly as a result of measures taken in response to the 2008 global financial crisis and the COVID-19 pandemic. This high debt burden, combined with the long-term deficits of social security systems, directly reduces the effectiveness of monetary policy.

The literature shows that the lack of coordination between monetary, public finance, and social security policies is a self-reinforcing process rather than a static event. For example, in a scenario where a government ignores its debt level and the central bank is persistent in fighting inflation, the economy can enter a spiral of ‘lower output, higher inflation and higher debt’. This destructive cycle stems from policies having different objectives and a lack of agreement among policymakers. In this situation, the central bank's efforts to combat inflation by raising interest rates can seriously suppress production and further increase the debt burden. This reinforces market participants' expectations of higher inflation and undermines the central bank's credibility. This spiral demonstrates how important it is for policies to be sustainable individually. In short, if one policy lacks sustainability (e.g., long-term financial deficits in the social security system), this jeopardises the objectives of the other policy (Bianchi & Melosi, 2019: 38).

When examining studies in the literature on the interaction between monetary policy and social security, one study discussing the pressure of an ageing population on social security systems and its relationship with monetary policy has shown that an increase in the elderly population raises social security expenditures, while central banks tend to pursue lower interest rate policies (Lindh & Malmberg, 2009: 284). Another study highlights various ways in which monetary policy can affect social security systems through equivalence results between monetary and fiscal regimes (Bhattacharya et al., 2002: 1-4). According to the authors, monetary policy actions such as increasing the inflation rate are equivalent to fiscal policy actions that adjust the scale of social security systems or tax rates on social security benefits. For example, financing public expenditure by increasing inflation is equivalent to financing it by increasing taxes on social security benefits. Furthermore, according to the article, monetary policy actions such as changes in inflation or reserve requirements affect intergenerational transfers. Since social security systems are an important mechanism for intergenerational redistribution, monetary policy indirectly affects the scale and distribution of social security benefits (Bhattacharya et al., 2002: 19).

Another study on the subject analyses the extent to which indexing social security benefits to inflation in the US protects pensioners' purchasing power. Researchers argue that the officially used consumer price index (CPI-W) may not fully reflect the real inflation rate, particularly for older people with higher healthcare expenditures. This situation demonstrates that inflation resulting from monetary policy can reduce the welfare level of pensioners despite official protection mechanisms (Goda, 2012: 138).

Another analysis examines the effects of monetary policy on the distribution of income and wealth among households. The author demonstrates, both theoretically and empirically, that changes in interest rates create a redistributive effect between lenders and borrowers, between those with different assets and liabilities, and between retirees and workers. The paper emphasises that pensioners, who are particularly dependent on social security benefits, may be adversely affected by unexpected inflation increases, and that this redistribution channel of monetary policy may alter the welfare effects of social security systems. In other words, pensioners are considered in the context of the Fisher channel, where inflation revalues nominal balance sheets. The study highlights that pensioners with fixed nominal pension plans or savings may suffer losses due to inflation, and this situation may reveal their vulnerability to price level changes caused by monetary policy (Auclert, 2017: 37).

A study on how demographic structure mediates the economic effects of monetary policy shows that the impact of monetary policy varies with demographic structure, with the policy effect being stronger in societies where the middle-aged group is in the majority. The study states that the population aged 65 and over shows low sensitivity to monetary policy changes. According to the authors, this is because the income of this group is largely based on fixed social security payments and is only marginally affected by variables such as interest rates. In contrast, according to the study's findings, the population aged 40-65 is more sensitive to monetary policy changes and has experienced greater effects on income and employment, as they are both actively participating in the labour force and more likely to be business owners (Leahy & Thapar, 2019: 32).

In some studies, structural problems in the social security system have been linked to neoliberal economic policies. For example, in the relevant study, the author's emphasis that "the neoliberal approach, which aims to reduce human life to a 'cost' and social security to a profit-oriented 'activity' has driven social security systems into a financial bottleneck almost everywhere in the world" reflects this perspective (Atatanır, 2023: 337). While this observation carries a certain degree of truth, the problem entails a multidimensional analysis that cannot be reduced to a single dimension. Just as there is no single neoliberal model worldwide,

welfare states with high taxes and strong social safety nets, such as those in Scandinavian countries, continue to exist within the context of neoliberal globalization. The debate essentially concerns the answer to the question “What is the purpose of social security?” Is social security a fundamental social right and a tool for social solidarity, or is it a rational investment activity aimed at individuals' own future? The neoliberal approach favors the latter option. In other words, the neoliberal approach promotes individual retirement accounts and funds over public, solidarity-based retirement systems. This approach undermines collective risk-sharing and transforms life into a “cost” that individuals must primarily save for themselves. In this situation, the system's performance becomes dependent on implemented monetary policies and the returns and interest rates of financial markets.

3. Methodology and Analysis: Interaction Dynamics of the Pension System and Monetary Policy in Türkiye

This study aims to present a comprehensive perspective for developing policy recommendations regarding the sustainability of the pension system in Türkiye from a monetary policy perspective. Therefore, the methodology adopted in this study is a descriptive approach based on theoretical framework analysis, a review of the existing literature and reports from international organisations, and the interpretation of macroeconomic data.

Governments invest the social security contributions collected from employees and employers in various investment instruments to ensure the long-term sustainability of the system and to provide future generations with guarantees such as pensions and healthcare. However, these investment strategies vary radically depending on countries’ legal regulations, risk appetite, and the size of their funds. While some countries actively invest their surplus contributions in global markets to achieve high returns, others prefer a highly conservative approach, investing only in their own government debt instruments.

Norway’s fund, known as the Government Pension Fund Global, is one of the world’s largest public pension/asset funds and manages oil revenues accumulated for the social welfare of future generations and current citizens. Its investment strategy is extremely global and aggressive. Indeed, 70.6% of the fund's assets are invested in the shares of approximately 8,500 companies from 62 countries worldwide. Fixed-income securities (government and corporate bonds) come second with a 27.1% share, while the remainder consists of unlisted real estate and renewable energy infrastructure projects (Norges Bank Investment Management, n.d.).

The US social security system differs sharply from that of many other developed countries. By law, accumulated funds can only be invested in a very limited range of areas. Indeed, the Social Security Administration’s (2024) direct statement on the matter is as follows: “By law, income received by the trust funds must be invested daily in securities guaranteed by the Federal government, both in terms of principal and interest... All securities held by trust funds are special issues of the US Treasury Department.” A study on this subject in the US examined the overall balance effects of the US Social Security Fund investing in special securities through portfolio diversification and discussed only the financial and actuarial consequences of the government's guaranteed bond investment restrictions. According to the study, among the elderly in the United States, 81 per cent of the income of the bottom quintile comes from social security, while only 6 per cent comes from pensions and assets. In contrast, the top quintile receives 23% from social security and 46% from pensions and assets (Diamond and Geanakoplos; 2003: 1047). [4]

[4] The authors argue that moderate diversification is socially beneficial, but excessive exposure to equities can increase risk for employees. A well-managed defined benefit system can increase diversification gains by spreading risk across generations. However, the authors emphasize a caveat in their study, stating that "while diversification

As mentioned in previous sections, the social security system in Türkiye is primarily based on the ‘pay-as-you-go’ principle. Under this system, the contributions paid by active workers are used directly to finance the pensions and current healthcare expenditures of retirees (Presidency of the Republic of Türkiye, Strategy and Budget Presidency, 2018). Consequently, massive investment funds, such as those in Norway or Canada, have not accumulated. However, there are some funds within the system that generate a surplus of contributions, and their investment strategy is quite conservative, similar to the US model.

The pension system in Türkiye has undergone numerous structural transformations since its inception, striving to adapt to both demographic changes and socio-economic fluctuations. In particular, early retirement practices, frequent legal amendments, and informal employment are fundamental characteristics of our country's social security system. Due to these issues, the system faces significant challenges in terms of financial sustainability. Foremost among these difficulties is the phenomenon of high inflation, which has shown a tendency to become chronic in our country for many years. Prior to 2000, particularly during the 1990s, the interaction between monetary policy and the pension system was largely shaped around the fiscal deterioration caused by populist policies and its inflationary consequences. During this period, the pension system was often used as a tool for political and populist purposes rather than being based on long-term actuarial balances and economic realities. Decisions such as lowering the retirement age, in particular, seriously undermined the system's financial equilibrium. The increasing deficits of social security institutions were attempted to be financed through direct transfers from the state budget. This situation increased the need for public borrowing, creating heavy pressure on public finances and becoming one of the main factors fuelling high inflation, the most fundamental economic problem of the period. During this period, the increasing deficits of social security institutions were attempted to be financed through direct transfers from the state budget. This situation increased the need for public borrowing, creating heavy pressure on public finances and becoming one of the main factors fuelling high inflation, the most fundamental economic problem of the period. Consequently, the deterioration of the pension system created a vicious circle that made it very difficult to achieve price stability, the most fundamental objective of monetary policy.

The Social Security Institution’s financial structure consists of three main revenue streams: premium revenues paid by insured individuals and employers, other revenues and non-premium payments from institutional activities, and regular contributions from the state budget. Deficits in the institution's budget balance are covered by direct transfers from the general budget, which are considered state contributions. Excluding state contributions, the revenue-to-expenditure ratio stood at 62.9% in 2008. As a result of significant regulations and measures, although the deficit remained unaddressed, improvements were seen, and this ratio rose to approximately 80% in 2021 and 2022.

into equities offers potential wealth gains and improved risk sharing, its broader economic impact depends on technological and policy factors and requires careful implementation” (Diamond and Geanakoplos; 2003: 1048 & 1066).

Table 3: Social Security Institution Expenditures, Revenues, Financing Deficit and Revenues Covering Expenses (2009-2022) (Thousand TL)

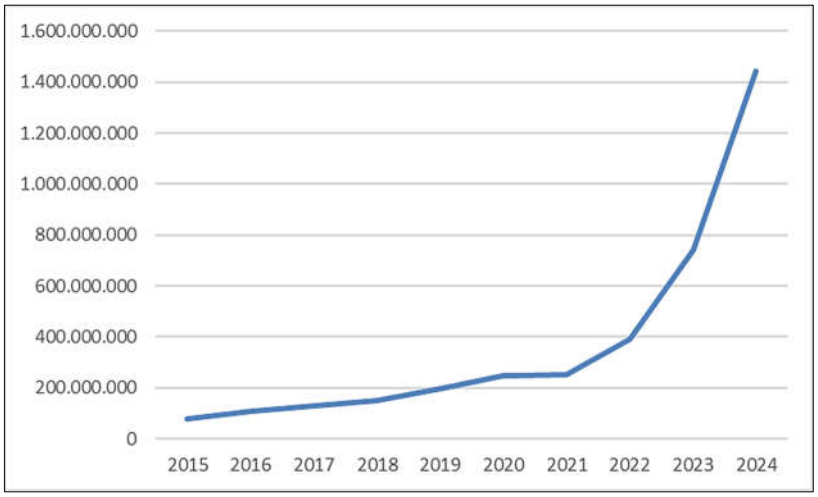
Years	Total Expenditures (A)	Pension and Health Payments	Premium Revenues (B)	Other Revenues (Excl. Gov. Contribution) (C)	Total Revenues (Excl. Gov. Contribution) (B+C)	Financing Deficit (B+C-A)	Revenue-to-Expenditure Coverage Ratio (%)
2009	106.775.443	97.467.241	54.579.182	12.614.312	67.193.494	39.581.949	62,9
2010	121.997.301	111.513.855	66.912.858	13.190.291	80.103.149	41.894.152	65,7
2011	140.715.252	128.157.359	89.560.568	13.743.319	103.303.887	37.411.365	73,4
2012	160.223.453	149.444.393	99.359.243	20.032.113	119.391.356	40.832.097	74,5
2013	182.688.916	169.099.269	118.728.578	16.813.608	135.542.186	47.146.730	74,2
2014	204.400.437	188.094.052	135.238.539	18.578.189	153.816.748	50.583.689	75,3
2015	231.545.969	211.431.992	153.490.056	23.096.254	176.586.310	48.959.660	76,3
2016	276.535.786	253.205.938	184.445.994	24.976.820	209.422.814	67.112.972	75,7
2017	312.734.591	287.232.470	208.064.459	28.739.316	236.792.778	75.941.813	75,7
2018	384.961.895	336.671.512	255.619.125	55.931.064	311.651.051	73.310.844	81,0
2019	464.172.903	409.363.953	293.580.953	59.305.331	352.886.284	111.166.572	76,1
2020	540.095.250	478.719.349	331.183.066	54.324.854	385.507.920	152.539.853	71,8
2021	654.819.630	583.232.010	440.130.381	86.228.254	526.358.636	128.461.004	80,4
2022	1.039.811.397	952.018.681	724.107.544	101.259.255	825.366.799	214.444.598	79,4

Source: SGK, (cited in: Bulut, 2023: 54)

The Social Insurance and General Health Insurance Act No. 5510, which came into force in 2008, brought about a significant transformation in Türkiye's social security system. Under this regulation, the state is required to pay a contribution of 25 per cent based on the premium revenues collected by the Social Security Institution (SGK). This contribution is classified among the ordinary revenue items in the SGK's budget. As a result of this accounting method, a relative improvement in the deficit amount shown in the SGK's financial statements has been recorded in the post-2008 period. Indeed, Kıvanç (2024) touched upon this issue in his article in Habertürk. According to the author, when examining the 2025 projections regarding the institution's financial balance, it is seen that the state contribution of 880 billion TL balances the SGK's projected net deficit of 551.8 billion TL. However, if the aforementioned state contribution is excluded from the income statement, it is calculated that the SGK's gross deficit in 2025 will reach 1 trillion 432 billion TL.

According to the latest data, the SGK's total revenues for 2024 amounted to 3.96 trillion TL, while its total expenditures amounted to 3.97 trillion TL, with revenues covering 99.7% of expenditures. However, the cash transfer from the state budget to the Social Security Institution in 2024 amounted to 1.4 trillion TL, representing the highest budget transfer since 2008. Transfers made in previous years were recorded as 849.8 billion TL in 2023, 389 billion TL in 2022, and 252 billion TL in 2021 (Sigorta Gazetesi, 2025).

Graph.2: Budget Transfer Amount to the Social Security System (2009-2023)

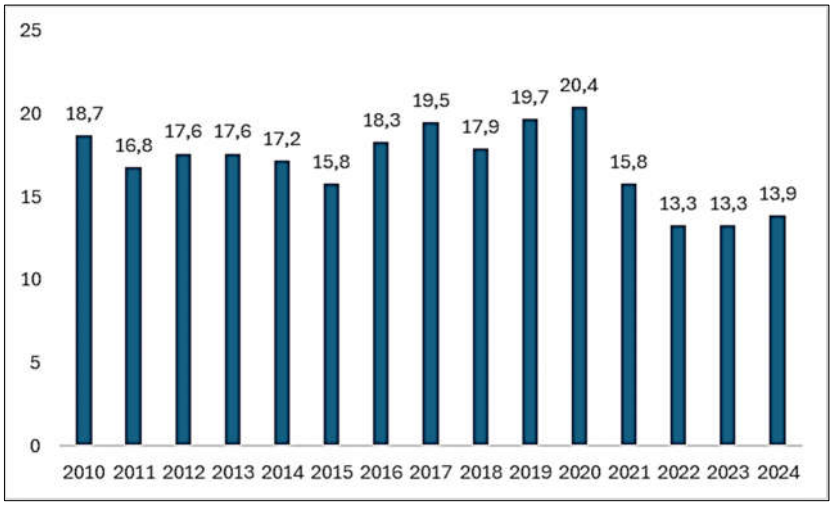


Source: Created by the author using the SGK database.

Article 80 of Social Security and General Health Insurance Law No. 5510 stipulates that if a deficit arises between premium revenues and expenditures, this difference will be covered by the general budget. Looking at premium revenue-expenditure figures, the ratio of SGK revenues to expenditures was 71.5% in 2002, 78.1% in 2010, and 95.9% in 2018. It reached a historical high of 99.7% in 2024 (Sigorta Gazetesi, 2025).

The nominal data in Chart 4 also largely reflects the impact of recent high inflation. Therefore, it is necessary to consider the share of budget transfers to the SGK in total budget expenditures. Although a record 1.4 trillion TL in transfer payments, the pension system's budgetary burden on public finances has recently decreased to its lowest level. In fact, while transfers were 17.9% of total budget expenses in 2018, this share decreased to 13.9% in 2024.

Graph.3: Share of Transfers to Social Security Institution in Total Budget Expenditures



Source: Created by the author using the SGK database.

Despite the SGK's operational balance being 99.7%, the reason for the record transfer of 1.4 trillion TL is that this amount is not an operational deficit payment, but rather the total of legally mandatory social policy costs. In other words, the Social Security Institution's (SGK) financial data for 2024, as presented in the upper rows, appears to contain a serious contradiction at first glance. On the one hand, the fact that the SGK's total revenues cover its total expenditures at a record high rate of 99.7% indicates strong operational performance; on the other hand, the fact that the transfer from the state budget to the SGK during the same period, at 1.4 trillion TL, is the highest nominal amount since 2008 raises questions about the

system's financial independence. This situation is not a financial paradox, but rather the result of an accounting distinction arising from the SGK's complex and dual financing model. The key to resolving this contradiction is to separate the two different balance definitions used in SGK accounts: the Insurance Technical Balance (Operational Balance) and the Comprehensive Financial Balance.

The SGK's 99.7% operational coverage ratio achieved in 2024 is a remarkable and successful performance in terms of the system's ability to collect premiums and manage premium-based expenditures. The 99.7% ratio reflects the Operational Balance, which measures the SGK's performance in its core insurance function.[5] This ratio shows the extent to which the collected premium revenues cover premium-based services and payments (such as pensions and short-term insurance payments). Items excluded from this calculation and forming the basis of the discrepancy are Non-Contributory Payments and social protection policy costs [6], which are required by law to be covered by the Treasury. The record transfer of 1.4 trillion TL was made largely to finance these non-contributory payments (General Health Insurance, insurance premiums for those unable to pay, premium incentives and additional social assistance). In other words, these transfers aim to balance the comprehensive balance sheet of the Social Security Institution (SGK) by enabling it to finance not only its insurance services but also all the social policy tasks it undertakes.

Social protection expenditures in Türkiye, which stood at 13.5 billion TL in 2000, reached 2.69 trillion TL in 2023. This represents a nominal increase exceeding 200 times. However, a significant portion of this increase is due to high inflation. 97-98% of expenditures are allocated directly to social protection benefits, while administrative costs remain at 2-3%. Comparing 2000 and 2023:

- Retirement/elderly benefits maintained the largest share: 39% (2000) → 44% (2023)
- Sickness/health care maintained its second-highest position: 38% (2000) → 30% (2023)

The five-point increase in the retiree/elderly share can be explained by factors such as the increase in the elderly population and the lower retirement age. The eight-point relative decline in health spending can be attributed to faster growth in other expenditures and increased efficiency in health care. The four-point increase in family/child benefits can be explained by strengthening support policies, expanding conditional cash transfers, and increasing birth rate incentive policies.

[5] The primary driver behind the nominal increase in premium revenues in 2024 is the high inflation environment and the resulting nominal wage growth. In addition, improvements in the Institution's collection performance and sustained increases in formal employment also supported premium revenue flows.

[6] Social protection benefits form the basis of social protection expenditures and consist of various sub-items such as health services, disability/disability, retirement/old age, widow and orphan support, family and child benefits, unemployment payments, housing support and expenditures to combat social exclusion.

Table 4: Distribution of Social Protection Expenditures

Million TRY)

	2000	2010	2020	2023	Share (2023)
Total social protection expenditure	**13 496**	**148 203**	**668 387**	**2 693 497**	**100,0%**
Administration costs and other expenditure	375	2 205	10 306	48 230	1,8%
Total social protection benefits	**13 122**	**145 998**	**658 081**	**2 645 267**	**98,2%**
Sickness/health care	5 120	49 429	175 781	809 343	30,0%
Disability	360	4 280	21 792	80 023	3,0%
Old age	5 307	71 725	301 706	1 175 190	43,6%
Survivors	1 392	14 148	74 296	263 219	9,8%
Family/children	352	3 681	36 789	190 465	7,1%
Unemployment	7	1 377	42 142	24 186	0,9%
Social exclusion and n.e.c.	585	1 359	5 575	102 842	3,8%

Source: Created by the author using TUIK Social Protection Statistics database.

The high coverage rate of 99.7 per cent creates a misleading picture of the financial health of the entire social security system. This rate reflects only the efficiency of the premium collection function. Indeed, if this rate represented 99.7% of total expenditure, including social protection expenditure, a transfer of a few billion TL would be sufficient to cover the remaining 0.3% shortfall. Furthermore, the high rate overlooks the underlying demographic reality (the decline in the active worker/retiree ratio). The most critical point is that high-cost items that the Treasury is legally obliged to finance (e.g., non-contributory payments or health expenditures requiring state contributions by law) are excluded from this operational calculation.

While premium revenues remained strong, the SGK faced a historical liability on the operational expenditure side. The Retirement Age Regulation (EYT) caused a major cash outflow starting in 2023 and continuing into 2024. The inclusion of millions of new retirees in the system dramatically increased the expenses of long-term insurance branches. The fact that the 99.7% ratio was maintained despite this historical increase in expenses demonstrates how robust the nominal growth in premium revenues was, keeping pace with the increased benefit payments stemming from EYT.

Table 5 shows the SGK budget balance for 2024 and provides critical insights into the financial sustainability of Türkiye's social security system. Current transfers account for almost all (99%) of the expenditure. This item covers pensions, healthcare expenditure and the majority of social security payments. Personnel costs account for only 0.65% of total expenditure (25.8 billion TL), and naturally, this SGK data reveals that its own institutional costs are very low compared to the social transfers it makes. [7] The 'purchases of goods and services' item on the expenditure side of the SGK budget is 10.3 billion TL for 2024, which corresponds to 0.3% of total expenditure. The figures on the expenditure side show that administrative costs are low in SGK expenditure, but the transfer burden is very high.

On the revenue side, social security revenues (2.86 trillion TL) account for nearly 70% of total revenues. This significant share indicates that the system is still contribution-based, but that this alone is not sufficient. Enterprise and property revenues (643.6 billion TL) comprise the returns on the SGK's funds, assets or resources transferred by the state, and serve as an important additional source of revenue. Other revenues (620.7 billion TL) include budget transfers, Treasury assistance, and resources from various regulations. This item is important

[7] Healthcare expenditures, which stood at 553.1 billion TL in 2023, increased by 77.3% to 980.9 billion TL by the end of 2024. Treatment expenses constituted 67.6% of this total, while pharmaceuticals, prescription service fees, and other items together constituted 32.4% of the expenditures (Social Security Institution Activity Report-2024).

in that it reflects the support the SGK receives from the central government to maintain its budget balance.

To summarise briefly, the 2024 SGK budget shows a surplus on paper, but this surplus stems entirely from budget transfers and additional revenues, not from the strength of premium revenues. While this situation ensures fiscal discipline in the short term, it carries sustainability risks in the long term due to interest rate risk, demographic pressures and informal employment.

Table 5: 2024 SGK Budget Balance Table - Türkiye (Thousand TL)

Expenses	**3.959.729.167**
Personnel Expenses	25.800.265
Social Security Institution State Premium	3.511.589
Purchases of Goods and Services	10.342.277
Interest Expenses	565
Current Transfers	3.918.740.911
Capital Expenses	1.333.560
Capital Transfers	0
Lending	0
Incomes	**4.115.580.166**
Tax Revenues	0
Social Security Revenues	2.864.336.329
Enterprise and Property Income	607.984
Donations, Grants, and Special Revenues	643.633.933
Interest, Shares, and Penalties	606.536.778
Capital Revenues	465.141
Collections from Receivables	0
Budget Balance	**155.850.998**

Source: Ministry of Treasury and Finance – Social Security Institutions Budget Statistics

The data in Table 7 reveals a complex and sometimes paradoxical relationship between the Social Security Institution (SGK) budget balance and inflation in Türkiye. When examining the period from 2011 to 2024, it is seen that the SGK budget fluctuated with shocks such as the 2018 crisis and the 2020 pandemic, but has consistently and increasingly shown a surplus since 2020. Behind this apparent improvement lies the ‘nominal growth illusion’ created by high inflation. The fact that the budget surplus increased exponentially despite inflation reaching 64 per cent, particularly in the 2021-2023 period, can be explained by the rise in the nominal value of money, which increased the SGK's premium revenues and state transfers. However, this increase does not mean that the system has achieved a healthy structure in real terms.

This relative improvement in the SGK budget carries the risk of masking the system's structural problems. In a high inflation environment, the real value of pensions and healthcare expenditures is eroding. This situation alleviates the SGK's expenditure pressure in the short term. On the other hand, recording the state's contributions and transfers to the SGK as a revenue item in the budget raises the question of the extent to which the system can actually finance itself. The fragility experienced in 2018, which resulted in a budget deficit, serves as a reminder of how sensitive the system is to external shocks. Therefore, the positive picture in recent years should be interpreted more as a temporary respite created by the inflationary environment.

Table 6: Türkiye - SGK Budget Balance Table and Inflation (Thousand TL)

Year	Budget Balance	Inflation
2011	-9.295	10,45
2012	1.649.879	6,16
2013	4.850.183	7,40
2014	4.899.976	8,17
2015	4.935.391	8,81
2016	-2.705.975	8,53
2017	3.581.864	11,92
2018	-5.751.887	20,30
2019	-3.891.127	11,84
2020	27.979.335	14,60
2021	18.844.272	36,08
2022	9.816.425	64,27
2023	75.524.661	64,77
2024	155.850.998	44,38

Source: Created using SGK and TÜİK database.

The outlook outlined above highlights the need for comprehensive reform, in addition to combating inflation, for the sustainability of the Social Security Institution (SGK). In an environment where demographic pressures continue to rise, structural adjustments such as reducing the informal economy and expanding the premium base, strengthening the private pension system, gradualizing the retirement age [8], and increasing the efficiency of healthcare spending appear essential to ensure the system's long-term fiscal balance. Otherwise, nominal surpluses are likely to disappear when inflation declines, and the chronic deficits underlying the system will resurface.

Monetary policy and social security policies are two critical policy areas in an economy that appear independent yet interact with each other. The necessity of coordination can be understood primarily through the shared objectives of these policies: Price stability and sustainable growth are the foundations of both a healthy social security system and an effective monetary policy. A lack of coordination between these two areas can threaten macroeconomic stability and social welfare. For example, in the US, Social Security funds are largely invested in government bonds. Social security taxes and other income are deposited into these accounts, and social security payments are paid from these accounts. If the central bank keeps interest rates low for an extended period, the returns on these funds decrease, making it harder to meet future liabilities (USA Social Security Administration, n.d.). Another example comes from Europe. During the 2008 global financial crisis, tight monetary policies and low growth increased unemployment in Europe. As unemployment rose, the number of people paying social security contributions decreased, while unemployment benefits and social assistance increased. Therefore, monetary policy affects growth and employment, determining the income-expenditure balance of the social security system.

Failed monetary policies lead to high and volatile inflation, which in turn erodes the real value of pensions and can result in poverty among the elderly. When pensions are indexed to

[8] In Türkiye, steps were taken in this regard in 2008, and with Law No. 5510, the retirement age for all employees, male and female, will be 65, effective 2048. According to this law, retirement ages will continue to increase annually until 2048, but the retirement ages for women and men will remain at 58 and 60, respectively, until 2035. More information on this topic is provided on the following pages.

inflation, high inflation renders the state's social security transfer expenditures uncontrollable and challenges budgetary discipline. Furthermore, rising interest rates in an inflationary environment can reduce the real return on social security funds to negative levels, eroding fund assets and putting the rights of future generations at risk. Therefore, the Central Bank's successful fight against inflation is one of the most fundamental supports for social security authorities. On the other hand, social security policies also determine the effectiveness of monetary policy. For example, budget deficits created by a pension system that has become unsustainable due to demographic pressures can lead to fiscal dominance risk. In this case, the inflationary pressures created by fiscal policy can push the Central Bank's price stability target into the background. Furthermore, structural reforms such as the retirement age or contribution rates directly affect the transmission mechanism of monetary policy by influencing labour market supply and, consequently, wage inflation dynamics.

In Türkiye, the interaction between monetary policy and the pension system has become even more pronounced in the context of economic fluctuations, demographic transformations and social security reforms since the 2000s. Deep economic shocks, such as the 2001 crisis, have placed significant pressure on public finances. The deficits in the social security system have become one of the most important burdens on the budget, complicating the fundamental objectives of monetary policy, such as combating inflation.

In the recent period, the low interest rate policies implemented after 2018 and rising inflation have put pressure on the financial structure of the pension system, influencing individuals' savings behaviour and the portfolio preferences of pension funds. During this process, regulations implemented to maintain the system's actuarial balance have often provided short-term financial relief but produced controversial results in terms of long-term sustainability. The heterodox monetary policy practices observed in the Turkish economy after 2018, namely keeping the policy interest rate significantly below the inflation rate, have had multi-layered effects on the pension system. These effects have directly impacted the system's financial architecture while reshaping the behavioural patterns of individual and institutional actors. The policy responses adopted during this process have created a dilemma between short-term social objectives and long-term financial sustainability. The fundamental characteristic of this period is the negative real interest rate policy pursued in an environment of chronic high inflation. This macroeconomic backdrop has had a direct erosive effect on both the income and expenditure items of the pension system and the real value of fund assets. For fund-based systems such as the Individual Pension System (IPS), negative real interest rates meant that fixed-income securities (e.g. government bonds), the most important anchor of portfolios, suffered real losses. This situation made it difficult for funds to even preserve the purchasing power of their principal. In the Social Security Institution system, which operates on a pay-as-you-go basis, high and unpredictable inflation has rapidly eroded the purchasing power of existing pensions, creating a serious social welfare problem.

This macroeconomic environment has led to a deterioration in the actuarial balance of the Social Security Institution (SGK). This can be summarised as follows: During this period, the expenditure side of the state's social security system has risen rapidly in nominal terms due to inflation-indexed pension increases. However, the revenue side, i.e. contributions, has not increased at the same rate. This is because premium revenues are generally indexed to wage increases, which lag behind inflation. This widening of the revenue-expenditure gap has increased the burden on the system's budget and disrupted the actuarial balance. [9]

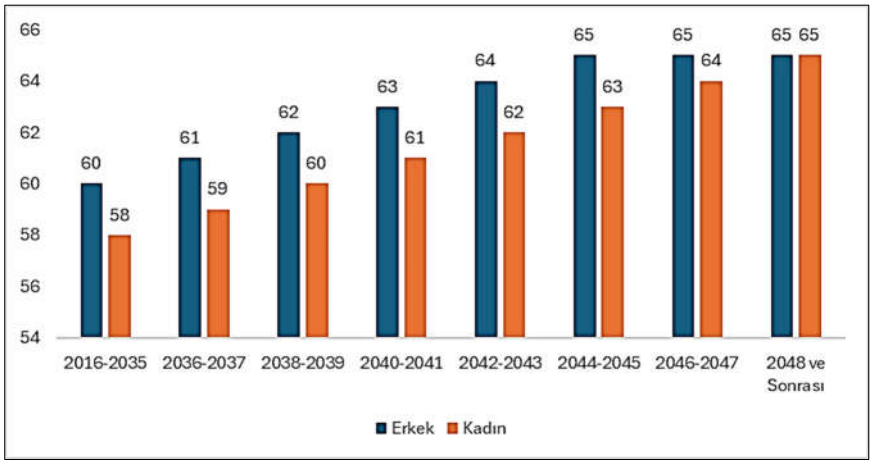
[9] The negative real interest rate environment during this period radically altered individuals' savings behavior. Individual Retirement System (BES) participants, observing a real erosion of their funds, exhibited a rational flight from traditional, low-risk debt funds. During this period, a historically high increase was observed in the share of equity-heavy funds in BES participants' portfolio allocations.

The government has implemented a series of regulations in response to the social and political pressure created by the dramatic decline in pensioners' purchasing power. One of the most concrete examples is the ‘minimum pension’ scheme, introduced to ensure that no pension falls below a certain base level and periodically increased. While this policy serves an important social function in the short term by protecting the lowest-income pensioners, it carries the risk of eroding the fundamental principles of the system in the long term. Indeed, this practice weakens the relationship between the amount of contributions paid by an individual throughout their life and the pension they receive. The fact that the pensions of a person who has paid very low contributions and a person who has paid more contributions converge at the same base level removes the incentive to contribute more to the system. This situation carries the risk of encouraging informality and reducing the motivation to collect contributions. In addition, on top of inflation adjustments to pension payments, increases made outside the legal formula under the names of ‘welfare share’ or ‘lump sum increase’ have placed an additional financial burden on the system through political decisions. These increases create an unfunded liability that is not financed by premium revenues and is passed on to future generations. [10]

Regarding demographic transformation, demographic trends such as the increase in life expectancy in Türkiye, the increase in the elderly population, and shifting elderly dependency ratios became more pronounced in the 2000s. This situation began to threaten the actuarial balance of the retirement system, that is, the income-expenditure balance, in the long term. This demographic transformation was one of the most significant reasons for the need for reform to manage the future financial burden and ensure the system's sustainability. In line with these factors, social security reforms, the first steps of which were taken in 1999 and which became comprehensive between 2006 and 2008, were implemented. These reforms consolidated scattered structures such as the SSK, Bağ-Kur, and Emekli Sandığı (Retirement Fund) under the umbrella of the Social Security Institution (SGK), gradually raised the retirement age, and adjusted pension rates. Accordingly, it is envisaged that the age requirement specified in Law No. 5510 will be gradually increased to 65 for both male and female insured individuals, starting from 2036, until 2048 (SGK, 2019: 32).

[10] An “unfunded liability” is the failure to accumulate sufficient assets today to cover promised payments, such as future pensions. The fundamental consequence of this is that it creates intergenerational inequity by shifting the financial burden of current generations’ benefits to future workers and taxpayers. This deferred cost, when mature, puts significant pressure on public budgets, forcing governments to face difficult economic and political choices: raising taxes, cutting other critical public expenditures like healthcare and education, or increasing public debt. At the same time, uncertainty about how these promises will be financed fundamentally undermines trust in the system and, in a worst-case scenario, carries the potential for significant risks of governments failing to meet these commitments or cutting pensions in the future.

Graph.4: Retirement Ages to be Applied by Year



Source: SGK (2019), Institution Introduction Book, p.32

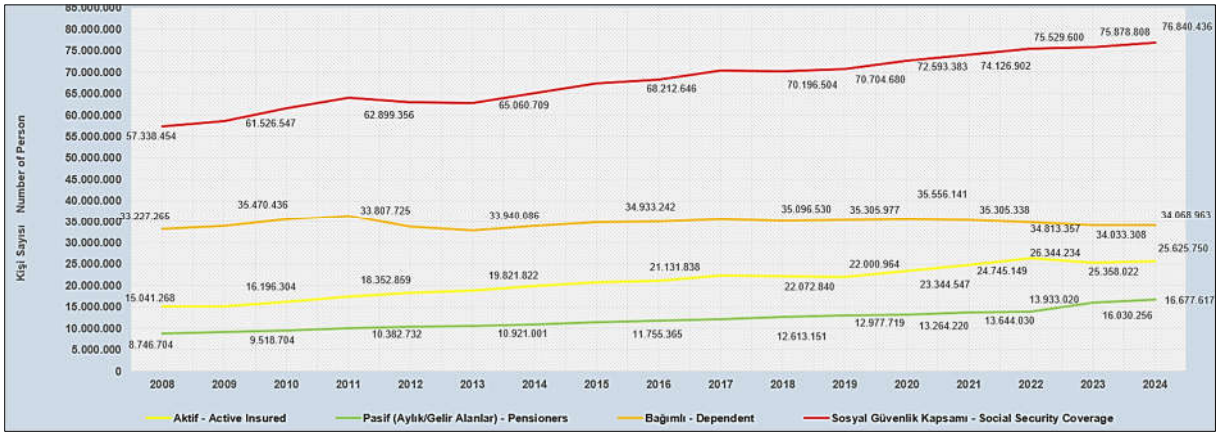
Following social security reforms, the percentage of the population covered by the social security system in Türkiye increased from 80% to 85%.[11] However, despite this increase, various structural obstacles remain to achieving universal coverage. Factors such as the exclusion of workers in certain sectors from compulsory insurance under Law No. 5510 on Social Security and General Health Insurance, high unemployment rates, low labor force participation, and widespread informal employment are among the key factors limiting the ability to cover the entire population under social security. Despite these reforms, a significant reduction in the social security system's financial deficit as a percentage of Gross Domestic Product has not been achieved. The primary reasons for this include the ongoing responsibilities of individuals insured before 1999, the continuation of relatively early retirement despite the long-term gradual increase in the retirement age, the standard raises for retirees, and salary increases that exceed inflation. In addition, high levels of health expenditures and structural problems in the labor market negatively affect the income side of the social security system, weakening financial sustainability (Presidency of the Republic of Türkiye, Strategy and Budget Directorate, 2018: 10-11).

In parallel with Türkiye's demographic and socioeconomic dynamics, the social security system has been growing over the last two decades, creating both opportunities and challenges (especially financial ones). Regarding this matter, the graph regarding the population coverage of Türkiye's social security system shows the numerical development of four main groups (actively insured, retirees, dependents, and total social security coverage) registered in the system between 2008 and 2024. According to SGK (2025) data, the number of actively insured individuals has generally shown a steady increase since 2008. A more pronounced increase is observed, particularly in the period after 2020, and this can be attributed to growth in employment and increased insurance rates as part of the fight against the informal economy. The number of retirees has consistently increased due to the aging population and adjustments to the retirement age. The decreasing ratio of active workers to retirees poses significant pressure on the financial sustainability of the social security system. The dependents group, which includes the dependents of insured individuals, has tended to increase in parallel with population growth and changes in social assistance policies in Türkiye. As of the end of 2024, the number of actively insured individuals reached 25.6 million, while the number of passively insured individuals receiving monthly income reached 15.9 million. The EYT, which went into effect in the spring of 2023, is the primary driver of the rapid increase

[11] The main reason why this rate is higher than the OECD report is that it also includes beneficiaries and dependents under general health insurance.

in the number of passively insured individuals. Indeed, as of the end of 2022, the number of passively insured individuals was 13.1 million. The distribution of active insured individuals is as follows: 4/a: 18.9 million, 4/b: 3.1 million, and 4/c: 3.6 million. The active/passive ratio, which was 1.89 in 2016, decreased to 1.61 in 2024.

Graph.5: Social Security Coverage in Türkiye (4/a, 4/b, 4/c)[12]



Source: Social Security Institution – SGK (2025))

Inflation and interest rates are the cornerstones of budget projections used when planning a state's fiscal future. These two macroeconomic variables are more than just assumptions; they are dynamic forces that directly shape the state's fiscal health and the quality of services it provides to its citizens. Inflation weakens the social aspect of the system by eroding the real value of pensions, while also having a decisive impact on fund management and investment returns. When a budget is prepared, expenditure items (education, healthcare, infrastructure, staff salaries, etc.) are planned based on a specific monetary, or nominal, value. However, the real equivalent of this nominal value determines how many goods and services the budget can actually purchase. Inflation disrupts this balance because it reduces the purchasing power of money. For example, salary increases for civil servants and retirees are typically adjusted based on past or expected inflation. If inflation exceeds these adjustments, their purchasing power decreases. This creates social and political pressure on the government to issue further increases. Similarly, the real value of social assistance for the poor erodes with inflation, preventing these aid programs from achieving their intended purpose. Indeed, maintaining the nominal amount allocated for these aid programs in the budget means fewer people are actually reached or the same people are provided with less support.

Another dimension of the relationship between monetary policies and social security systems relates to natural interest rates. An aging population determines the effectiveness of monetary policy by lowering the long-term real interest rate (natural interest rate) through the balance between savings and investment. The natural interest rate is the real interest rate level that balances the economy under conditions of full employment and price stability; demographic structure is one of the main supply and demand factors affecting this balance. This, in turn, puts pressure on the financial sustainability of social security systems. The system's functioning can be explained in several ways: A slowdown in population growth raises

[12] The social security system in Türkiye is commonly divided into three main categories based on employee status: 4/a, 4/b, and 4/c. 4/a insurance covers workers in the private sector under a contract of service for an employer, with premiums paid by the employer; this system is the equivalent of the former Social Security Institution (SSK). 4/b covers self-employed individuals (tradesmen, farmers, freelancers, and business partners); these individuals pay their own premiums, and the system is the continuation of the former Bağ-Kur (Social Security Institution). 4/c covers civil servants (teachers, police, soldiers, judges, etc.) working on a permanent basis in public institutions; premiums are deducted from salaries by the relevant public institution and transferred to the Social Security Institution (SGK). This system is the equivalent of the former Emekli Sandığı (Retirement Fund).

the capital-labor ratio. This leads to a decline in the marginal productivity of capital, which in turn puts pressure on real interest rates. Furthermore, societal aging can reduce potential growth by affecting a country's consumption structure and propensity for innovative investment; low growth expectations lead to a decline in the natural interest rate. In a macroeconomic framework where the natural interest rate is low, central banks' neutral/normal policy rate will also be low. In recessions or negative shocks, the policy rate is closer to zero, so the impact of the interest rate weapon, the traditional and most fundamental tool of central banks in monetary policy management, will be quite limited. Furthermore, a low natural interest rate, with its long-term low returns, drives investors toward riskier assets. This leads to credit expansion and asset pricing bubbles, creating financial fragility. In such a macroeconomic environment, central banks face tighter tensions between interest rate policy and financial stability.

The Central Bank's price stability objective is crucial for the financial sustainability of the social security system. Unsuccessful monetary policy, and consequently, high and volatile inflation, weakens the social security system through several channels. In economies with high inflationary trends like Türkiye, the resilience of the pension system to inflation is crucial for ensuring social justice and economic security. While mechanisms such as indexing pensions to the CPI provide short-term protection, they increase the system's financial burden in the long run and threaten actuarial balance. In this context, it is clear that inflation is not merely a source of price instability but also a structural risk affecting the sustainability of the social security system.[13] However, on the other side of the coin, this relationship also has a reverse dimension: the deteriorated asset-liability balance in the social security system and the resulting actuarial deficits create a persistent burden on the public budget, weakening fiscal discipline. These structural budget deficits, in turn, constitute a fundamental obstacle that hinders monetary policy's efforts to reduce inflation and hinders the achievement of sustained price stability. Therefore, there is a complex two-way interaction between monetary policy and the pension system. These basic interaction mechanisms can be categorized as follows:

3.1. Inflation → Real Wages → System Burden → Fiscal Transfer Need Cycle

Inflationary processes erode the purchasing power of economic actors through persistent increases in the general price level, leading to a decline in real wages, particularly when nominal wage increases lag behind inflation. Declining real wages, in turn, limit households' consumption capacity and create socioeconomic consequences/vulnerabilities such as deterioration in income distribution and an increased risk of poverty. Declining real wages also exacerbate the financial burden on the system by increasing demand on social security systems, unemployment insurance funds, and other public support mechanisms. This increased burden, in turn, creates additional pressure on the public budget, posing a risk to fiscal sustainability.

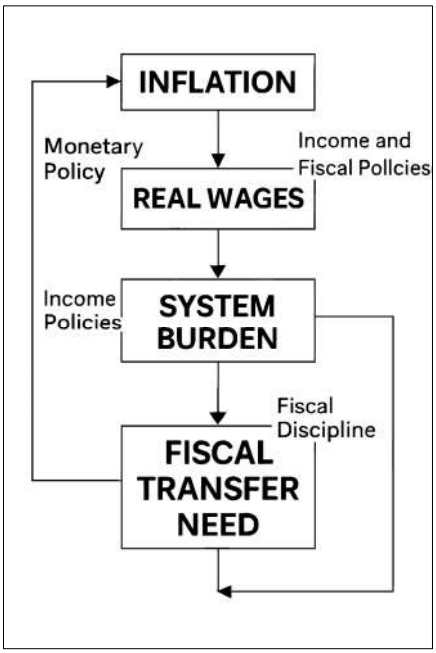
Pensions in many countries are often indexed to inflation to protect retirees' purchasing power. For example, more than half of OECD countries fully protect retirees from inflation through price indexation or by combining prices with a portion of real wage growth (OECD, 2024:11). More recently, some countries have been added to this group. For example, the same report notes that Spain "officially abolished the automatic adjustment mechanisms previously enacted to ensure fiscal sustainability and reintroduced price indexation of pensions

[13] Monetary policy implementations, however, have more indirect but equally powerful effects on the pension system. Central bank interest rate decisions directly affect the investment returns of pension funds, thus determining the system's financial performance. Low interest rate policies reduce the funds' real returns, thus both devaluing individual savings and making it harder for the system to meet its future liabilities. Conversely, while tight monetary policies may control inflation in the short term, they can also reduce premium revenues due to their negative impact on economic growth and employment.

paid" (OECD, 2024:18). Higher-than-expected inflation automatically increases the amount of pensions the state must pay to retirees. This unpredictably increases the pension system's expenses, exacerbating the budgetary burden. How pensions are indexed to inflation is a critical issue. If pensions are fully indexed to the consumer inflation rate, the fiscal burden on the budget increases in direct proportion to inflation. If the indexation rate remains below inflation, retirees' purchasing power declines rapidly, creating serious problems for social justice and the fight against poverty. Therefore, low inflation is the most fundamental way to preserve the real value of pensions and keep the system's costs under control.

For the system to absorb the additional burden described in the previous paragraph, it is often necessary to implement fiscal transfer mechanisms. These transfers can take the form of direct income support, tax reductions, subsidies, or social assistance programs. However, such fiscal transfers can widen the budget deficit and, by increasing the public borrowing requirement, also pave the way for the resurgence of inflationary pressures in the long run. Therefore, the cycle of "inflation → real wages → system burden → fiscal transfer requirement" is a vicious cycle that feeds on itself in terms of both economic and fiscal policies. Breaking this cycle requires the coordinated implementation of monetary policies and income policies that ensure price stability, and the maintenance of fiscal discipline.

Table 7: Inflation → Real Wages → System Burden → Fiscal Transfer Need Cycle



Source: Created by the author.

3.2. Monetary Policy → Interest Rates → Fund Returns → Actuarial Balance Cycle

Monetary policy is the set of tools central banks employ to maintain price stability, support economic growth, and maintain financial stability. As is well known, the most important of these tools is the setting of policy interest rates. Indeed, changes in interest rates directly affect return expectations in financial markets, becoming a primary factor shaping investment, saving, and borrowing behavior.

Social security funds generate income by investing collected premiums in various financial instruments (government bonds, treasury bills, etc.). For these funds to achieve their long-term objectives, the real returns they generate from their investments must be positive and sufficient. A combination of high inflation and low interest rates is one of the worst-case scenarios for these funds. A fund earning a 20% nominal interest rate could actually incur a

20% real loss in an environment of 40% inflation. The real depletion of funds weakens the system's ability to pay future pensions and jeopardizes its sustainability.

Rising policy rates generally increase market interest rates, thereby increasing the returns on fixed-income securities and mutual funds. This can positively impact the portfolio performance of institutional investors, particularly those with long-term liabilities, such as pension funds, insurance companies, and others. Increased fund returns allow these institutions to more rapidly increase the assets required to meet their future liabilities. Improving fund returns have a direct impact on actuarial balance. Higher returns strengthen the fund's asset-liability ratio, reducing the need for additional premium increases or government contributions. Conversely, a low interest rate environment can limit fund returns, widening the actuarial deficit and requiring additional financing.

While pension liabilities generate long-term cash flows, funds are generally positioned in short- to medium-term assets. When monetary policy tightens, portfolio repricing can lead to losses, while when it loosens, it can lead to a loss of real returns. Therefore, the “Monetary Policy → Interest Rates → Fund Returns → Actuarial Balance” cycle represents the critical link between macroeconomic decisions and long-term financial sustainability. The healthy functioning of this cycle requires that monetary policy be designed not only with the goal of short-term price stability but also to secure the long-term liabilities of the financial system.

3.3. Monetary Policy → Credit Standards → Economic Activity → Actuarial Balance Cycle

Monetary policy decisions can also create an externality that directly impacts employment through the credit channel and, consequently, the financial health of the social security system. To control inflation and stabilize the economy, central banks implement tight monetary policy measures, such as raising interest rates and tightening credit conditions using their available financial instruments. These measures aim to slow down the overall economy. However, this often leads to undesirable side effects that strain the financial structure of the social security system in two ways. These policies further slow down an already struggling economy and increase the burden on the social security system. In other words, they exacerbate the situation during a period when the system is under strain. Companies unable to access credit postpone investments and lay off workers, slowing economic activity. In such a macroeconomic climate, unemployment rises, premium revenues fall, and social assistance demands increase. This negative trend disrupts the Social Security Institution's actuarial balance, causing the fiscal deficit to widen. In short, the chain reaction triggered throughout the economy by the steps taken by Central Banks is most clearly reflected in the balance between the money coming into the Social Security Institution's coffers and the money going out (pensions, health expenditures). [14]

3.4. Social Security Payments → Capital Accumulation → Intergenerational Transfer → Monetary Policy Effectiveness

Increasing or expanding social security benefits is not only a social welfare tool but also a complex macroeconomic policy tool that profoundly affects the fundamental dynamics of the economy. The impact of these policies on capital accumulation lies in the balance between individual savings behavior and compulsory savings mechanisms. Expanding social security benefits can have a two-way impact on national savings and, consequently, capital accumulation. According to traditional approaches, the fact that retirement benefits provide a reliable source of income can lead individuals to save less privately to finance future

[14] For example, when the Central Bank of Türkiye raised its policy rate to 24% in late 2018, credit growth decreased from 60% to below 5% annually (CBRT, 2019), the unemployment rate rose from 11% to 14%, and unemployment benefit claims increased by approximately 30% (Ministry of Family, Labor and Social Services, 2019).

consumption, leading to a decline in savings rates and, consequently, a slowdown in capital accumulation. This effect is often referred to in the literature as the “substitution effect.” In other words, individuals may increase their current consumption by relying on the social security system instead of saving for retirement. However, social security benefits can increase savings rates in some cases. This can be explained by the early retirement effect. This effect arises when the social security system encourages individuals to retire earlier. Individuals may feel the need to save more privately for their remaining life before reaching retirement age.

Social security systems are inherently intergenerational transfer mechanisms. Most existing systems are based on the “pay-as-you-go” principle, where premiums paid by the working generation finance the benefits of the retiring generation. However, demographic changes in many developed and developing countries are challenging this intergenerational transfer mechanism. The increase in the elderly population relative to the younger population increases the financial burden on the working generation to finance existing retirees. Increasing social security benefits affects the aggregate demand structure of the economy and, consequently, the operating mechanism of monetary policy. Increased benefits directly increase household incomes, stimulating consumption spending and boosting aggregate demand. However, this can lead to inflationary pressures and complicate central banks' anti-inflation policies. In such cases, central banks may be forced to implement tight monetary policies, such as raising interest rates, to counteract rising demand. This necessity can cause social security spending to become incompatible with monetary policy objectives.

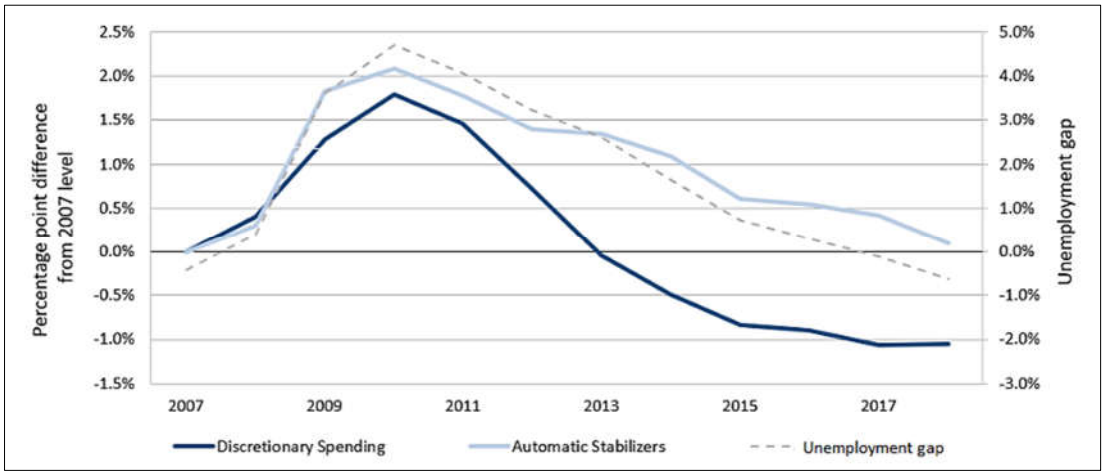
3.5. Social Security System → Automatic Stabilizer → Spread of Monetary Easing → Monetary Policy Effectiveness

The automatic stability provided by social security and income transfer systems in the face of macroeconomic shocks can significantly strengthen the overall balance transmission of monetary easing. Automatic stabilizers are programs built into the central budget that automatically increase spending or reduce the tax burden depending on economic conditions. From a Keynesian perspective, this mechanism automatically smooths out declines in aggregate demand. By absorbing a negative shock to the economy, the system mitigates the impact of the multiplier mechanism and prevents an economy entering a recession from sliding into a deeper downturn. [15] This mechanism quickly activates to smooth out fluctuations in the business cycle, eliminating the need for discretionary actions/policies by policymakers. In other words, they have the ability to act immediately, without the debate, rulemaking, and administrative delays required by legislative processes. The findings of a study on the subject share a similar perspective. According to the article, while social security systems traditionally function to provide income security in old age, disability, or death, these structural programs also provide a powerful, automatic buffering mechanism in the face of economic downturns. The automatic increase of social transfers supports aggregate demand by preserving household disposable income during economic recession (Quinby et al., 2021; 10-11).

Another critical difference between discretionary policies and automatic stabilizers is the duration of support. During the Great Recession that began in 2007-08, the largest discretionary stimulus package was authorized five quarters after the recession began, while automatic stabilizers had already generated spending growth of up to 2% of potential GDP during that time.

[15] Discretionary policies are conscious intervention decisions taken by governments or central banks in response to a shock in the economy, in a way that is instantaneous, situation-specific and not dependent on a predetermined rule.

Graph.6: The Impact of Automatic Stabilizers on National Income in the Global Crisis



Source: CBO (Jan. 2019), cited in: Lee and Sheiner (2019)

Analyses of countries with high Human Development Indexes (HDIs) (Norway, Switzerland, Denmark, and Sweden) reveal that successful social security systems structurally adopt multi-pillar frameworks (covering public, occupational, and private sectors) and automatic adjustment mechanisms that enhance sustainability without constant political intervention (Lee, 2025: 330). When the central bank implements monetary easing (interest rate cuts, quantitative easing, etc.) to stimulate the economy, the effectiveness of its policy transmission channels is influenced by the presence of automatic stabilizers such as social security. Monetary easing aims to increase consumption and investment spending. The income support provided by the social security system keeps households' marginal propensity to consume (MPC) high. Automatic stabilizers shorten the time it takes for the impact of monetary policy to be felt. When the policy rate is lowered, the economy responds more quickly because the social safety net has already begun to support demand. Furthermore, in a near-zero interest rate environment, central banks' traditional tools are limited. In such liquidity trap scenarios, strong automatic stabilizers can strengthen the impact of monetary policy even without the support of fiscal policy.

However, the strength of this chain depends on the coverage, generosity, and fiscal sustainability of the social security system. A weak social safety net cannot fulfill this automatic stabilizing function. Furthermore, interventions undertaken under the guise of structural reform that weaken the system (increasing the retirement age, extending contribution periods) risk eroding this critical macroeconomic stabilization mechanism and indirectly reducing the effectiveness of monetary policy.

3.6. Social Security System Design → Financial Sustainability of the System → Public Debt → Inflationary Spiral

When social security systems experience structural actuarial deficits, particularly in the context of aging populations and maturing systems, these deficits directly put pressure on public finances. In distributive systems, when premium revenues are insufficient to cover pensions, continuous transfers from the state budget are required to cover this deficit. These transfers will be financed either by increasing taxes or by increasing public debt.

After the 2008 global financial crisis, Greece clearly demonstrated the devastating effects of structural problems in the social security system on public debt. Overly generous pension systems and inadequate fiscal oversight played a significant role in the country's debt crisis. The uncontrolled increase in social security spending severely strained public finances, ultimately necessitating international bailouts. Japan is another relevant example. This country, due to its ultra-aged population, plays a critical role in the financial sustainability of social

security systems on a global scale. Low birth rates and high life expectancy forced the country to restructure its pension system and led to radical changes in monetary policy. The Bank of Japan has implemented a globally unprecedented negative interest rate policy. This policy was developed to encourage banks to lend and inject money into the economy. The central bank implemented massive bond purchases and quantitative easing policies to stimulate the economy and combat deflation. The country adopted yield curve control to keep long-term interest rates artificially low.

Rising public debt profoundly impacts the implementation of monetary policy. This relationship can be explained as follows: As the debt-to-GDP ratio rises, the government's debt servicing costs also increase. At this point, a regime of fiscal dominance, as mentioned above, can emerge—in which fiscal policy overrides monetary policy. In this regime, the central bank's primary objective of price stability becomes secondary, and the primary objective is to keep interest costs low to maintain government debt sustainability. The central bank may be forced to maintain a low interest rate policy or even resort to direct monetary financing to finance the government's high debt or mitigate interest costs. This situation causes monetary policy to lose its independence and credibility.

It is precisely at this point that the lack of coordination between social security, public debt, and monetary policy can trigger an inflationary spiral:

- Step 1: An unsustainable social security system chronically increases budget deficits and public debt.
- Step 2: High and rising public debt creates a risk premium in the markets, pushing up interest rates. According to the debt dynamics equation, if the interest rate (r) is higher than the economic growth rate (g) ($r > g$), the debt-to-GDP ratio begins to grow significantly.
- Step 3: This risk of a debt crisis pushes policymakers into a fiscal dominance regime. The Central Bank either keeps interest rates well below inflation or resorts to direct monetary financing to prevent government bankruptcy and reduce debt service costs.,
- Step 4: This loose monetary policy entrenches inflation expectations. As inflation rises, the cost of the social security system increases further because pensions must be indexed to inflation. At the same time, the Tanzi effect described in the previous paragraphs emerges, resulting in high inflation eroding real tax revenues and deepening the budget deficit.
- Step 5: The growing budget deficit further increases public debt, and the cycle feeds on itself. Due to fiscal pressures, the Central Bank cannot effectively combat inflation, and as a result, the economy may enter a spiral of structural inflation or even hyperinflation.

Conclusion

A well-designed and financially sound social security system forms the backbone of a country's economic and social resilience against crises. At the same time, establishing macroeconomic stability that supports this social security system is also crucial. In this context, optimal monetary policies and structural reforms that increase employment in the labor market and reduce the informal economy are needed. This article provides a detailed analysis of the interaction between monetary policy and social security policies, drawing on relevant findings in the literature and international reports. The study discusses how contemporary challenges such as demographic changes and high public debt complicate this interaction and the potential negative consequences of unsynchronized policies.

The Central Bank's inflation projections and interest rate decisions are critical inputs for social security authorities' long-term actuarial projections. Similarly, transparent data on the financial condition of the social security system allows the Central Bank to better assess potential financial risks. Understanding the impact of macroeconomic stability on social security systems is not only a technical analysis but also a strategic necessity for social justice and economic inclusion. In this context, evaluations based on the Turkish example will also serve as a guide for developing countries with similar structural characteristics. Pension systems in Türkiye exhibit a dual nature in terms of management and governance. While the Private Pension System (BES) stands out with its more robust governance principles and professional management approach compared to the past, the SGK, which carries the country's primary social security burden, faces a chronic structural and financial sustainability problem despite operational improvements. In other words, while the SGK in Türkiye has achieved a more streamlined administrative structure over the last 20-25 years, its structural and financial sustainability remains under threat, and resources continue to be diverted from the central government budget to cover the SGK deficit[16].

The legacy of the pre-2000 social security system in Türkiye, rather than the natural pressures stemming from the aging population seen in developed countries, was a flawed, fragmented, institutionally mismanaged, and vulnerable to political interference. While many successful social security initiatives were implemented after 2000, the post-2018 period served as a concrete example of the complex challenges that high inflation and negative real interest rates can present to a retirement system. While the implemented policy interventions succeeded in alleviating short-term social problems, the impact of the global pandemic, combined with the impact of the pandemic, weakened the system's fundamental insurance principles and raised serious questions about its long-term financial sustainability.

The low asset/liability ratio indicates that the number of insured individuals paying premiums in the social security system is insufficient compared to the number of retirees and beneficiaries. This leads to increased budget transfers to finance pensions, thus widening the budget deficit. This is because the resulting deficit is often financed through increasing the money supply, borrowing, or raising tax rates. These financing methods, particularly money supply expansion and cost-increasing tax regulations, reinforce inflationary pressures in the economy. In a high-inflation environment, because pensions are generally indexed to the CPI, automatic salary increases impose a burden on public finances. These increases increase the disposable income of retired households, thus maintaining a buoyant aggregate demand. This demand-side resistance prevents price increases from slowing and fuels persistent inflation. Over time, the persistence of price increases leads economic actors to fixate on upward and rigid inflation expectations. This "sticky" expectation reduces the effectiveness of monetary policy and promotes persistent inflation. Thus, fiscal pressure, initially stemming from the imbalances in the social security system, transforms into a structural inflationary cycle at the macroeconomic level. Another dimension of the relationship between monetary policies and social security systems relates to natural interest rates. The aging population, through the balance between savings and investment, determines the effectiveness of monetary policy by lowering the long-term real interest rate (the natural interest rate).

There has been recent improvement in the financing of premium services within the Social Security Institution (SGK). However, the state's overall cost burden due to its social policy responsibilities (non-premium payments) necessitates record-high budget support. This transfer will account for two-thirds of the central budget deficit in 2024 and significantly

[16] In Türkiye, resources began to be transferred from the budget to social security in the 1990s. Transfers to the social security system became the fastest-growing item in central government budget expenditures in the 2000s, becoming known as a "black hole" (Cural, 2016: 698).

negatively impact the primary balance. The long-term sustainability of the social security system is at risk due to its structural dependence on the state's overall fiscal capacity, rather than premium revenues. However, it is possible to sustainably improve Türkiye's asset-liability ratio, but this requires a decisive, consistent, and long-term transformation strategy across all areas, from the economy to politics, from social consensus to bureaucratic capacity.

The ideal asset-liability ratio of 4.0, considered the ideal ratio in the literature, is a very ambitious target given Türkiye's current demographic structure and the reality of the informal economy. Reaching a ratio of 3.0 would be considered more realistic and successful. No single policy tool (growth alone, combating the informal economy alone, or monetary policy alone) will be sufficient to achieve this goal. Coordinated implementation of all policies is essential. To combat inflation permanently, structural reforms that improve the asset-liability ratio (effectively increasing the retirement age, formalizing the informal economy, increasing female employment, and ensuring employment growth through skilled and productive jobs) are essential. Otherwise, inflation becomes structural and sticky, making it much more difficult to reduce. Conversely, pension reform and combating informality (as they can increase operating costs in the short term) carry a high political cost. Therefore, implementing reforms gradually and with social consensus is crucial.

In conclusion, monetary policies, and consequently inflation and interest rates, are not merely technical indicators of economists' interest. They constitute the cornerstones of a state's fiscal health and the social security it provides to its citizens. High and unstable inflation resulting from irrational monetary policies renders budget projections meaningless, renders the state's debt burden unbearable, and pushes the pension system to a point where it cannot be financed. Interest rates are a concrete indicator of this cost. Achieving stability at reasonable interest rates while resolutely combating inflation is an essential prerequisite for a sustainable public finance and social security system. In light of the findings, a well-structured public pension system should be financially sound, offer optimal coverage, offer satisfactory net replacement rates for retirees, uphold the principles of fairness, transparency, and trust between generations, and be flexible and multi-layered, allowing for individual choices. While achieving this balance is challenging, it will be a cornerstone of social peace and economic stability in the long term, unlike systems that ignore demographic realities, create the need for constant reform, and lose the trust of citizens. In this context, the demographic transition process Türkiye is currently experiencing and the budget deficits in the social security system make reform based on these fundamental principles inevitable.

References

Atatanır, H. (2023). The Development Axis of Social Security and Employment in Türkiye. *Süleyman Demirel University Visionary Journal,* 14(100th Year Special Issue), 319-341.

Auclert, A. (2019). Monetary Policy and the Redistribution Channel. *American Economic Review,* 109(6), 2333-2367.

BBC News Turkish (2025, September 17). *What is the Supplementary Pension System, why is it being debated, is it applicable?* Access Date: September 18, 2025. https://www.bbc.com/turkce/articles/cpvljnel2wno

Bhattacharya, J., Haslag, J., & Russell, S. H. (2002). Monetary Policy, Fiscal Policy, and the Inflation Tax: Equivalence Results. *Social Science Research Network*. https://doi.org/10.2139/ssrn.321098

Bianchi, F., & Melosi, L. (2019). The Dire Effects of the Lack of Monetary and Fiscal Coordination. *Journal of Monetary Economics,* 104, 1-22. https://doi.org/10.1016/j.jmoneco.2018.09.001

Bulut, M. (2023). Budget Transfers to the Social Security Institution in Türkiye as a Black Hole Indicator. *International Journal of Social, Political and Financial Research,* 3(1), 50-61.

Cural, M. (2016). Financial Structure of the Turkish Social Security System and Economic Reflections of Budget Transfers to the System. *Süleyman Demirel University Faculty of Economics and Administrative Sciences Journal,* 21(2), 693-706.

D'Antona, M. (2018). Sustainable Social Security. *Center for the Study of European Labor Law Working Papers* – 145/2018.

Diamond, P., & Geanakoplos, J. (2003). Social Security Investment in Equities. *American Economic Review,* 93(4), 1047-1074.

European Commission (2024). *2024 Pension Adequacy Report: Current and Future Income Adequacy in Old Age in the EU*. The Social Protection Commission (SPC) and the European Commission (DG EMPL) Vol. 1

Eurostat (2025). *Social Protection Statistics – Overview.* Access Date: 23.08.2025. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Social_protection_statistics_-_overview

Goda, G. S., Shoven, J. B., & Slavov, S. N. (2011). How Well Are Social Security Recipients Protected from Inflation?. *National Tax Journal,* 64(2), 429-449.

Kıvanç, A. (2024, November 1). *What will happen to the minimum wage increase according to the Social Security Institution?.* Habertürk. Access Date: 14.08.2025. https://www.haberturk.com/sgk-butcesinde-asgari-ucret-surprizi-3733698-ekonomi

ILO – International Labor Office (2025). *ILO World Social Protection Report 2024 – 26.* Access Date: 07.08.2025. https://www.ilo.org/sites/default/files/2024-09/WSPR_2024_EN_WEB_1.pdf

Leahy, J.V., & Thapar, A. (2019). Demographic Effects on the Impact of Monetary Policy. *NBER Working Paper* No. 26324.

Lee, J. (2025). Comparative Analysis of Social Security Systems in High HDI Nations: Extractable Features for U.S. Reform. *Advances in Social Sciences Research Journal.* 12. 330-348.

Lindh, T., & Malmberg, B. (2009). European Union economic growth and the age structure of the population. *European Journal of Political Economy,* 25(3), 283 - 292.

Norges Bank Investment Management (T.Y.). *How the Fund is Invested.* Access Date: 21.08.2025. https://www.nbim.no/en/

OECD (2024). *Pensions at a Glance - 2023.* Access Date: 09.08.2025. https://www.compareyourcountry.org/pensions/en/2/all/default/all/OECD+TUR

SGK - Social Security Institution (2025). *Statistics.* Access Date: 21.07.2025. https://www.sgk.gov.tr/Istatistik/Yillik/fcd5e59b-6af9-4d90-a451-ee7500eb1cb4

SGK - Social Security Institution (2025). *SGK Activity Report – 2024.* Access Date: July 18, 2025. https://www.sgk.gov.tr/YayinveProjeler/Yayinlar/7f65e722-ba64-48df-a5ca-c60336c2fbc5/

SGK - Social Security Institution (2019). *Institution Introduction Book.* Access Date: July 21, 2025. https://ekutuphane.csgb.gov.tr/Media