

Macroeconomic Challenges and Solutions: Türkiye and Global Perspectives



Editor Fuat Lebe

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Content

The Effect of Government Expenditure on Economic Growth: The Case of Japan
Elif KOÇAK4
The Impact of Financial Expansion on Unemployment: The Case of Thailand
Reassessing the Phillips Curve Relevance in Turkiye
Maya Moalla
Evidence from the Toda-Yamamoto Causality Approach on the Relationship Between Migration, Inflation, and Economic Growth in Turkey
Women's Employment and Sustainable Development in Türkiye and Selected Middle Eastern Countries
Serdar ÖZTÜRK66

CHAPTER I

The Effect of Government Expenditure on Economic Growth: The Case of Japan

Elif KOÇAK¹

Introduction

Public expenditures are one of the main tools that governments use to stimulate economic growth, increase social welfare and ensure economic stability. Public expenditures on areas such as education, health, infrastructure, security and social services both increase the living standards of individuals and support economic growth (Kneller et al., 1999). In the economic literature, the impact of public expenditures on growth varies depending on factors such as the nature, size and financing method of expenditures. In this context, the question of whether public expenditures support growth is an important issue that has been discussed for a long time, especially among policy makers and economists.

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According to Keynesian economic theory, public spending can accelerate economic growth in the short term by increasing aggregate demand. Especially during periods of economic recession, governments can stimulate economic activity by implementing expansionary fiscal policies and supporting private sector investments (Ramey, 2011). However, neoclassical approaches are critical of this view and argue that high public spending can slow down economic growth in the long term due to the crowding out effect of private sector investments. In addition, high public spending can increase budget deficits and lead to debt sustainability problems (Barro, 1979).

When the literature is examined, it is seen that the results obtained regarding the effects of public expenditures on economic growth are heterogeneous: Eze et al., 2024; Arawatari at al., 2023; Samuel and Oruta, 2021; Ahuja and Pandit, 2020; Parui, 2022; Nguyen and Bui, 2022; Le and Tran, 2021; Kutasi and Marton, 2020; Liu et al., 2020; Prasetyo, 2020; Le, 2020; Irmen and Kuehnel, 2009; Landau, 1985; Kolluri, 2000; Odhiambo, 2015; Nurudeen and Usman, 2010.

The impact of public expenditures on economic growth is related to the nature and management of expenditures as well as the economic and institutional structure of the country. While the impact of public expenditures on growth is generally limited in developed countries, it is observed that this impact is more pronounced in developing countries where infrastructure is lacking and development needs are high. In addition, the growth-supporting effect of public expenditures is closely related to the efficiency of expenditures. While expenditures on productive areas such as education and health support growth in the long term, inefficient and wasteful expenditures can negatively affect economic performance (Devarajan et al., 1996).

Despite Japan being one of the world's largest economies, the relationship between public spending and economic growth

varies significantly across the country's demographics, debt levels, and economic policies. In particular, after the "lost decade" of the 1990s, the Japanese government chose to increase public spending to overcome economic stagnation (Hayashi and Prescott, 2002). Expansionary fiscal policies were implemented during this period, aiming to stimulate economic growth through infrastructure projects and social spending. However, the impact of these spending continues to be debated both nationally and internationally (Doi et al., 2011).

The impact of Japan's public spending on growth is contextualized differently due to the country's high public debt and aging population. Japan is the world's most indebted advanced economy, with debt levels reaching nearly 200% of GDP. This creates serious challenges to financing public spending and limits its impact on growth. However, much of Japan's public spending focuses on the needs of an aging population, such as healthcare and social security. While these expenditures increase individual wellbeing, they have limited impact on productive areas such as infrastructure or research and development, which directly support economic growth (IMF, 2020).

According to the Keynesian perspective, Japan's promotion of aggregate demand by increasing public spending can be an effective method to overcome economic stagnation. Indeed, the Japanese government frequently used this strategy in the 1990s and after the 2008 global financial crisis. However, the long-term impact of these policies is debatable. Neoclassical approaches argue that Japan's high public spending can crowd out private sector investment and that unsustainable debt levels can slow economic growth. Hayashi and Prescott, 2002).

The impact of public spending on growth in Japan also depends on the country's institutional structure and efficiency. Japan, which has high standards in areas such as education and health, has been able to optimize the impact of such spending on welfare. However, inefficiencies have occasionally been observed in infrastructure projects, and criticism has been made that resources are allocated to projects that have limited contribution to economic growth (Kato and Miyamoto, 2013).

In this study, the relationship between public expenditures and economic growth will be discussed from theoretical and empirical perspectives. The study aims to provide a comprehensive analysis to evaluate the contribution of public policies to economic growth and to provide guiding suggestions for policy makers.

In this study, the impact of Japan's public expenditures on economic growth will be discussed in a theoretical and empirical framework. Considering Japan's unique economic and demographic conditions, the efficiency and long-term sustainability of public expenditures will be examined. In this context, the Japanese case provides an important case to understand the complexity of the relationship between public expenditures and growth.

EMPIRICAL STRATEGY

Model, Data and Methodology

This study examines the effects of public expenditures on economic growth for Japan during the period 1971-2022.

$$lnGDP_t = \beta_0 + \beta 1 lnGOV_t + \beta 2 lnFDI_t + \mu_t \tag{1}$$

In the equation, GDP, economic growth; GOV, government expenditure; FDI, Foreign direct investment and μ_t represents the error term. In the study, ADF unit root test and Johansen cointegration test were used for the unit root test. Finally, FMOLS-DOLS-CCR long-run coefficient estimators are used.

EMPIRICAL FINDINGS

While the ADF unit root test results showed that the series had a unit root in the level values, when the difference values of the series were examined, it was concluded that the series were stationary.

Level Values	t-statistic	Prob.
lnGDP	-4.158033	0.101
lnGOV	-3.786811	0.105
lnFDI	-2.498226	0.121
Difference Values	t-statistic	Prob.
dlnGDP	-5.333729	0.000***
DlnGOV	-9.269480	0.000***
dlnFDI	-8.639006	0.000***

Table 1: Unit Root Test

Note: ***, **, * indicate 1%, 5%, 10% significance level, respectively.

Since a cointegration relationship was determined between the variables according to the values in Table 2, long-term coefficient estimation will be made.

Trace Statistic	0.05 Critical Value	Prob.**	Max. Eigen Statistic	0.05 Critical Value	Prob.**
36.545	29.7970	0.007***	21.4871	21.131	0.044**
15.058	15.4947	0.058*	8.31943	14.264	0.347
6.738	3.84146	0.009***	6.73890	3.8414	0.009***

Table 2: Cointegration Test

Note: ***, **, * indicate 1%, 5%, 10% significance level, respectively.

	FMOLS		DOLS		CCR	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
GOV	-0.2567	0.000***	-0.3136	0.001***	-0.263016	0.000***
FDI	0.0423	0.1401	0.0128	0.757	0.040493	0.1956

Table 3: Long-Term Coefficient Estimation Results

Note: ***, **, * indicate 1%, 5%, 10% significance level, respectively.

According to Table 3, an increase in GOV reduces GDP. There are several possible reasons for this. When public spending is directed more toward current spending than toward productive areas such as infrastructure, education, or R&D, growth cannot be supported. Japan has one of the highest public debts in the world. Financing public spending through borrowing can increase interest payments, making it harder to allocate budget resources elsewhere. High debt levels can undermine market confidence and suppress private investment (crowding-out effect). The increasing tax burden to finance public expenditures may reduce the capacity of individuals and firms to consume and invest. This situation negatively affects economic growth. The decrease in private sector investment limits capital accumulation and total factor productivity (TFP). The aging population in Japan directs a large portion of public resources to health and retirement payments. This may result in fewer resources being allocated for productive investments. The lack of a young population limits economic dynamism and growth potential. Competition may occur between the private and public sectors. For example, if public expenditures play a substitutive role instead of supporting private sector investment, growth may slow down. High expenditures of the public sector may distort resource allocation and reduce economic efficiency. Public expenditures that are incompatible with growth strategies may hinder economic dynamism.

The increase in FDI does not significantly increase GDP. Several reasons may explain this result. Japan has experienced significant economic growth since the industrial revolution and is one of the most advanced economies in the world. This may mean that foreign investment may be less effective in directly contributing to the increased growth rate. Japan is strongly supported by domestic investors and large-scale local firms. This may mean that foreign investment has a more limited impact on growth. Foreign direct investment into Japan is generally concentrated in the financial services and high-tech sectors. However, the contribution of such investments to the local economy may be more limited than investments in less productive areas. Foreign investors often seek tax havens or lower-cost areas in Japan, which may reduce the contribution to economic growth. Most investors come from developed countries (such as the United States and Europe). Such investments can further improve Japan's already strong industrial infrastructure, but they may be limited in accelerating the growth rate of the local economy. Japan has one of the fastest-aging populations in the world. An aging population can limit domestic consumption and productivity. This may reduce the positive impact of foreign investment on growth. Japan has one of the highest public debts in the world. This debt can negatively impact the investment climate as it is channeled into public spending. Japan is very strict in its

regulations and business processes. This can create barriers to foreign investment. Foreign investors may have difficulty entering the local market or making new investments. Since Japan has a highly developed industrial and financial sector, foreign investment can make it difficult for local investors to gain a larger presence in the market. This can restrict the growth of the local sector and lead to a crowding-out effect. Japan is a major exporter and has strong trade relations, particularly with China and other Asian countries. However, the uncertainties in world trade in recent years (trade wars, global economic slowdown, etc.) may have limited the impact of foreign investment on growth in Japan. The lack of a significant impact of foreign investment on growth may be due to the limited integration of these investments with foreign trade. Some internal barriers in Japan also limit the impact of FDI. In particular, difficulties in doing business in the local market, extreme competition, and high tax rates may limit the contribution of foreign investment to growth.

Conclusion and Policy Implication

This study examines the effects of public expenditure and foreign direct investment (FDI) on economic growth in Japan for the period 1971-2022.

It has been found that increasing government final consumption expenditure (GOV) in public spending reduces GDP. This situation can be attributed to several factors. First, public spending in Japan is generally directed towards current expenditure rather than productive investments that support growth, such as infrastructure, education, or research and development. Moreover, Japan has the highest public debt among developed countries, which further deepens this problem. Financing public spending through borrowing increases interest payments, limiting the allocation of resources to other critical areas. High debt burdens can undermine market confidence and suppress private sector investment. In turn, increased taxes to finance public spending reduce the consumption and investment capacity of individuals and firms, which negatively affects economic growth. The aging population directs a large portion of public funds to retirement and healthcare expenditures, further restricting the resources allocated for productive investments and reducing economic dynamism.

Regarding FDI, the study found that the effect of FDI on GDP is not statistically significant. Japan's advanced economy supported by strong domestic investors and large-scale local firms may reduce the contribution of FDI to growth. In addition, FDI to Japan is generally concentrated in high-tech and financial sectors, and the economic impact of these investments is limited compared to more productive areas. Foreign investors may be reluctant to invest due to Japan's strict regulatory barriers and complex business processes. Japan's aging population also reduces domestic consumption and productivity, weakening the positive effects of FDI on growth. Finally, external factors such as global trade uncertainties and Japan's integration into foreign trade networks may limit the contribution of FDI to growthAs a result, Japan's economic growth is significantly affected by the allocation of public expenditure and structural limitations on FDI.

Some policy recommendations will be made in line with these results. Public spending should be shifted to productive areas that directly support economic growth. For example, infrastructure projects, technology-focused R&D studies, and education programs that increase labor productivity should be prioritized. High public debt increases pressure on the budget by increasing interest payments. Fiscal discipline should be ensured to keep the debt at a sustainable level, unnecessary spending should be restricted, and debt management strategies should be developed. Bureaucratic obstacles and complex regulations faced by foreign investors should be reduced. Investment permit processes can be simplified to make Japan a more attractive investment center. FDI incentives can be increased to create a wider investment area in sectors other than high technology. Tax advantages and financial support can be provided, especially in productive sectors. It is important to increase the contribution of FDI to balance the decreasing domestic consumption and labor supply due to the aging of the population. In this context, policies that facilitate the integration of foreign labor can be developed. Public expenditures should be ensured to support private sector investments. Public expenditure policies that do not compete with the private sector but rather play a complementary role should be adopted.

These policies provide a critical roadmap to support Japan's economic growth, keep public debt manageable, and increase the effectiveness of foreign investment. The reforms will enhance Japan's long-term economic stability and competitiveness.

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CHAPTER II

The Impact of Financial Expansion on Unemployment: The Case of Thailand

Elif KOÇAK¹

INTRODUCTION

Financialization plays a major role in shaping major structural changes in the global economy.With the growth of financialization, financial markets and institutions have become the basic components of economies, the mobility of capital and liquidity forces, data on economic growth and employment have become more apparent. In the speed range of financialization, the movement of capital away from the real economy and towards the search for financial gain has caused transformations in traditional production and growth structures. This transformation process, especially the development of order, economic stability, income and conditions, the basic problems have also become complicated (Dore, 2008).

The fact that financialization leads economic structures to focus on short-term profitability encourages capital to be directed towards financial assets rather than production, which in turn leads

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to a decrease in productive investments and thus employment When companies develop strategies to increase their profitability in the short term in order to maximize financial returns, combined with efforts to reduce labor costs, this can have an increasing effect on unemployment. For example, when companies resort to practices such as reducing the number of workers, subcontracting, or switching to automation in order to reduce costs, this creates instability in the labor market and increases unemployment rates. In particular, the growth of the financial sector and the dominance of profit-oriented structures in the economy have become a factor that threatens the continuity of employment (Stockhammer, 2004).

Unemployment is not only considered as an economic problem but also as a phenomenon affecting social and political structures. The impact of financialization on labor markets increases inequalities in income distribution and has negative effects on social welfare. In economies where financialization is accelerating, fluctuations in capital markets have the potential to threaten the stability of the labor force and lead to social unrest. In this context, examining the effects of financialization on unemployment is of strategic importance, especially for developing countries (Lapavitsas, 2013).

When the literature is examined, it is seen that heterogeneous results are obtained between financial development and unemployment: Assa, 2012; Constantinescu and Nguyen, 2018; Raifu and Afolabi, 2023; Raifu, 2019; Chen et al., 2021; Ibrahiem and Sameh, 2020; Raifu et al., 2024; Ogbeide et al., 2016; Aliero et al., 2013; Usmanova, 2022; Kim et al., 2019; Tsaurai, 2022; Yixin, 2024; Stemmer, 2016; Shabbir et al., 2012; Olowu et al., 2019; Ajide, 2020; Nayyf et al., 2021; Ernst, 2019; Gatti et al., 2012; Arestis and Demetriades, 1997; Afonso and Blanco-Arana, 2023.

Thailand stands out as a country that has rapidly integrated into the global economy and has deeply felt the effects of financialization. The Thai economy has opened up more to the global financial system, especially since the 1980s, through the development of financial markets and the liberalization of capital movements. During this process, the effects of financialization on the Thai economy have become increasingly evident; the shift of capital from production to the search for financial gain has led to structural transformations in Thailand's labor markets (Kohpaiboon and Jongwanich, 2021).

The increase in financialization has caused capital to withdraw from traditional industrial and agricultural sectors in Thailand, causing volatility in the labor market. In an effort to reduce labor costs in order to increase financial returns, many companies in Thailand have resorted to practices such as layoffs, temporary work contracts, and subcontracting. Small and medium-sized enterprises, especially those in Thailand's industrial structure, have difficulty maintaining their competitiveness due to the dominance of the financial sector, leading to instability in the labor market. This situation brings with it problems such as structural unemployment and the young workforce facing unemployment (Charoenloet, 2015).

In addition, the increase in financialization in Thailand increases economic uncertainty by causing exchange rate fluctuations and capital movements, which in turn creates fragility in the labor market. For example, the 1997 Asian financial crisis dramatically revealed the effects of Thailand's financialization process on unemployment. The imbalances observed in the labor market during the post-crisis recovery process revealed the sensitivity of financialization to economic crises and the reflections of these crises on the labor market (Phongpaichit and Baker, 2002).

While the impact of financialization on the economy is generally associated with its short-term contributions to economic growth, the long-term effects of this process on labor markets and unemployment in particular have been less studied. This study aims to empirically analyze the effects of financialization on unemployment in Thailand and to reveal how the Thai economy evolved into a labor market structure during the financialization process. The case of Thailand is an important case in understanding how financialization puts pressure on unemployment in developing countries. In this context, examining the relationship between financialization and unemployment in Thailand will contribute to developing policy recommendations not only for Thailand but also for other countries with similar economic characteristics.

EMPIRICAL STRATEGY

Model, Data and Methodology

In this study examining the effects of financial development on unemployment, the period 1971-2023 was taken as basis for Thailand.

$$lnUN_t = \beta_0 + \beta 1 lnM3t + \beta 2 lnCRt + \mu_t \tag{1}$$

In the equation, UN, unemployment; M3, money supply; CR private sector credit and μ_t represents the error term. In the study, ADF unit root test and Johansen cointegration test were used for the unit root test. Finally, FMOLS-DOLS long-run coefficient estimators are used.

EMPIRICAL FINDINGS

While the ADF unit root test results showed that the series had a unit root in the level values, when the difference values of the series were examined, it was concluded that the series were stationary (Table 1).

Level Values	t-statistic	Prob.
lnUN	-1.692108	0.4285
LnM3	-1.482546	0.5345
lnCR	-0.681066	0.499
Difference Values	t-statistic	Prob.
dlnUN	-8.710937	0.000***
dlnUN dlnM3	-8.710937 -5.921929	0.000*** 0.000***

 Table 1: Unit Root Test

Note: ***, **, * indicate 1%, 5%, 10% significance level, respectively.

Trace Statistic	0.05 Critical Value	Prob.**	Max. Eigen Statistic	0.05 Critical Value	Prob.**
32.75395	29.79707	0.022**	15.34633	21.13162	0.265
17.40762	15.49471	0.025**	12.89033	14.26460	0.081*
4.517293	3.841466	0.033**	4.517293	3.841466	0.033**

Table 2: Cointegration Test

Note: ***, **, * indicate 1%, 5%, 10% significance level, respectively.

It has been determined that there is a cointegration relationship between the variables for Thailand (Table 2). In this direction, the coefficient estimation stage can be started.

		00			
FMOLS				DOL	S
	Coefficient	Prob.		Coefficient	Prob.
M3	-1.510932	0.0524*	M3	-1.871783	0.0718*
CR	1.224637	0.0613*	CR	1.495319	0.0834*

 Table 3: Coefficient Estimation Results

Note: ***, **, * indicate 1%, 5%, 10% significance level, respectively.

According to the FMOLS and DOLS coefficient estimation results for the period 1971-2023 in Thailand, a 1% increase in money supply reduces unemployment rates by "-1.510" - "-1.871" %. (Table 3). This shows that expanding money supply reduces unemployment rates. Increases in money supply help banks and financial institutions increase their credit capacity by improving liquidity conditions. Thus, businesses can more easily find financing and growth, expands employment for investment which opportunities and reduces unemployment. This is also strong evidence of the power of changes in money supply to affect unemployment rates. This finding shows that monetary policy can have a direct effect on unemployment in Thailand, and monetary expansion can support employment. It supports the conclusion that expanding the money supply can be an effective tool against unemployment, especially during recessions or economic slowdowns. However, it should be noted that increases in the money supply can lead to inflationary pressures in the long run.

There are several reasons why an increase in the money supply in Thailand could reduce unemployment. First, when the money supply expands, banks' liquidity improves, making it easier for them to lend. Companies can find financing at lower interest rates during this period, making them more likely to make new investments and increase their workforce. Increased investment and workforce employment, expanded increase reducing an unemployment. Second, when the money supply expands, there is more liquidity in the market and consumer spending increases. This increases demand for goods and services, leading to firms increasing their production capacity. To meet the increased demand, firms can hire more workers, reducing unemployment. Third, increases in the money supply can generally have a stimulating effect on the economy, increasing investor and consumer confidence. Investors may be inclined to invest more because they think that expansionary monetary policies will stimulate economic growth. This can reduce unemployment by increasing the demand for labor. Another reason is that an increase in the money supply can increase inflation expectations, which means that firms will adjust their prices and earn higher sales revenues. Increased revenues allow firms to grow and create new job opportunities. However, this situation can be reversed if inflation gets out of control in the long run, because unemployment can also increase in a high inflation environment. Finally, expansion of the money supply is usually carried out by expansionary monetary policies of central banks. These policies aim to stimulate the economy and reduce unemployment. Expansionary monetary policies reduce interest rates, encourage investment and consumption, and increase labor demand. When these factors are evaluated together, it is understood that the expansion of the money supply in Thailand has an effect of reducing unemployment. However, careful policy management is required for this effect to be sustainable, because an uncontrolled expansion of the money supply can create inflation and financial imbalances in the long run.

A 1% increase in the amount of credit increases unemployment by 1.224-1.495%. This situation shows that the increase in credit provided by banks to the private sector in Thailand increases the unemployment rate. There may be several reasons for this situation. For example, if the credits are not directed to productive projects or productive investments, that is, if the resources are transferred to areas such as financial investments instead of creating production and employment, this may lead to an increase in unemployment rather than increasing employment. Additionally, if loans are directed towards assets such as real estate or stocks, this may not increase productivity and employment. In addition, as the debt rates in the economy increase, the repayment obligation also increases and this burden may strain the financial situation of the companies. In this case, especially during economic downturns, firms may downsize and have to lay off workers due to credit repayments. Another reason is that excessive borrowing can increase financial risks and lead to economic imbalances. Situations such as the formation of financial bubbles or increased credit default risk can negatively affect employment by increasing firms' financing costs in the long run. High borrowing can create fragility in the economy and put pressure on unemployment. Finally, especially large amounts of credit expansion can endanger the sustainability of consumer and business debts. Credit growth can create an economic bubble and lead to a rapid debt reduction process during economic downturns. This can lead to a decrease in demand and layoffs, increasing the unemployment rate. In this context, the fact that the increase in credit in Thailand has a positive effect on unemployment suggests that credit growth does not support sustainable economic activities or may create economic imbalances.

CONCLUSION

This study analyzes the effects of money supply and credit growth on unemployment in Thailand during the period 1971-2023. In the analyses conducted with FMOLS and DOLS methods, it was found that the increase in M3 money supply reduces the unemployment rate, while credit growth increases unemployment.

These findings show that the expanding money supply supports economic activities by improving liquidity conditions and increases employment opportunities. The increase in money supply increases the credit capacity of banks, while also encouraging consumer spending and investor confidence, thus increasing the demand for labor. It was concluded that expansionary monetary policies can have unemployment-reducing effects, especially during economic recession periods. On the other hand, the increase in credit provided to the private sector has an effect of increasing unemployment. The basis of this situation is that credits are directed to financial asset purchases rather than productive investments, the existence of factors that challenge the sustainability of borrowing, and the increase in the risk of financial imbalances in the long term. It is thought that credit expansion may create negative pressure on employment by causing financial fragility rather than economic growth. The risk of excessive borrowing leading to an economic bubble and a contraction in demand is an important factor that may cause the unemployment rate to increase in the long term. As a result, in order to ensure sustainable growth and employment in the Thailandese economy, it is important to carefully manage expansionary monetary policies and direct credit growth to the productive sectors of the economy. Ensuring macroeconomic balance and financial stability indicates that policy makers should take countervailing measures by taking into account the long-term effects of expansionary monetary policies.

Some policy recommendations will be made in line with these results. Considering the negative relationship between M3 money supply and unemployment and the positive relationship between loan amount and unemployment in Thailand, some policy recommendations can be developed to reduce the unemployment rate and ensure economic stability. Sectoral incentive programs can be developed to direct loans to more productive sectors. The government can create special credit support programs for sectors with high job creation potential such as manufacturing industry, technology, and renewable energy. This can contribute to directing loans to productive investments and increasing employment. In

order to reduce financial risks, loans should be provided based on more robust criteria. Tightening credit standards for banks can reduce the risk of default. At the same time, restructuring support can be provided to firms experiencing difficulties in loan repayments, thus preventing layoffs. In Thailand, monetary expansion should be implemented in a controlled manner to ensure that the unemployment-reducing effect of the increase in money supply is sustainable. The central bank should manage these policies in a balanced manner to stimulate the economy by increasing liquidity in the short term, while preventing long-term inflationary pressures. In order to reduce the negative impact of credit on unemployment, policymakers can optimize the distribution and usage areas of credits rather than increasing the amount of credit. For example, instead of providing credit to sectors with high debt risk, credit can be provided to more stable and employment-creating sectors. Borrowing and financial management training can be provided for firms and individuals. These programs can prevent economic imbalances by ensuring that more conscious decisions are made regarding debt management. In this way, credit can be directed to more productive areas and debt-related lavoffs can be prevented. Supports such as tax cuts, incentive packages and low-interest loans can be implemented to encourage investors to create jobs. Such incentives can reduce unemployment by helping to direct credit to employment-creating projects. It is important to regularly analyze the effects of changes in money supply and credit on unemployment and make policy adjustments as necessary. In this way, possible side effects of expansionary monetary policies and credit growth can be quickly identified and countermeasures can be taken. These recommendations can contribute to creating a sustainable economic growth and employment environment in Thailand by optimizing the effects of credit growth and money supply on unemployment.

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CHAPTER III

Reassessing the Phillips Curve Relevance in Turkiye

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INTRODUCTION

Unemployment is a worldwide issue affecting both developed and developing countries, prompting many nations to seek solutions to control it for their social, cultural, and economic development. The nexus between inflation and unemployment is a key factor in this issue, as rising labor costs can influence wages and contribute to inflation. This association was conspicuously articulated by A.W. Phillips. A.W. Phillips (1958) developed the Phillips curve, which describes the trade-off, after observing a negative nexus between the wage rate and unemployment rate in the British economy between 1861 and 1957; indicating that an increase in the cost of goods and administrative expenses can lead to a decrease in the jobseeking rate of the general population. Recently, rising concerns

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over inflation and unemployment have sparked discussions about whether inflation responds differently to changes in unemployment, as inflation is an inevitable phenomenon faced by both large and small-scale economies worldwide. The persistent and rapid rise in the general price level has resulted in a depreciation of money's value, posing an unavoidable risk to economies, and contributing to the escalation of existing issues and the emergence of new challenges. Phillips noted that wages tend to increase rapidly when unemployment is low, while they rise more slowly during periods of high unemployment, identifying an inverse nexus between these two variables. Particularly, Phillips posited that when unemployment rates rise, the competitive pressure on wages diminishes; however, as the unemployment rate declines, the labor market tightens, compelling firms to increase wages more swiftly to attract scarce labor. Phillips's "curve" depicts the potential rate of wage inflation that could arise if a specific level of unemployment persists for an extended period, effectively illustrating the average relationship between unemployment and wage behavior throughout the business cycle. The main objective of this study is to investigate the mien of inflation on unemployment in Turkiye, considering the economic growth and population growth during the period spanning from 1980 to 2023, employing the ARDL Bounds Testing approach, which allows different lag lengths for each explanatory variable captures the complex dynamics over time, while also distinguishing between short-term and long-term effects. Fisher (1926) became the first to statistically analyze the Phillips curve using U.S. monthly data during the period spanning from 1915 to 1925; revealing a strong correlation between unemployment and lagged price changes, asserting a unidirectional causality running from price changes to unemployment. Tinbergen (1936) investigated the nexus between wage changes and unemployment, showing that changes in unemployment affected wage inflation, employing data from the Netherlands during the period spanning from 1923 to 1933 and including lagged price changes. In 1955, Klein and Goldberger

related wage rates to unemployment and lagged price levels, proposing that low unemployment raises wage rates. J. Brown and Paul Sultan further advanced this research, with Sultan (1957) graphically depicting the trade-off between unemployment and price inflation, and Brown (1955) showing a non-linear, negative correlation between unemployment and wage changes. The possible contributions to the existing literature could be summarized as follows: 1) investigating the nexus between unemployment, inflation, economic growth and population growth within the Turkish context. 2) Understanding the dynamics of the mentioned relationship by utilizing longitudinal data spanning from 1980 to 2023. 3) Supporting or challenging the existing economic literature by utilizing the ARDL method. 4) Providing significant policy implications, guiding policymakers in crafting effective strategies to manage unemployment. This paper is organized as follows: the second segment offers an overview of the empirical literature. The third section explicates the data and methodology. The fourth segment presents the Empirical findings. In the fifth and final section, conclusions and policy suggestions are relayed.

LITERATURE REVIEW:

The earliest analysis akin to the Phillips curve can be referred back to David Hume in the eighteenth century, specifically in his 1752 work, where he suggested that rising prices could reduce unemployment; positing that deviations in unemployment from its natural rate were related to changes in price levels. Following Hume, Henry Thornton, in 1802, also argued that increasing income could elevate both output and price levels; exploring the inverse relationship between unemployment and inflation. However, he believed it could lead to inflation, which he viewed as unjust and detrimental; thus opposing using this relationship for policy-making. In the early nineteenth century, this discussion was further developed by Thomas Attwood (1816) and John Stuart Mill (1833). While Mill contended that linking deviations of the price level from the expected price level to deviations of unemployment from its steady-state level would yield only temporary trade-offs; Attwood advocated for a long-term trade-off between unemployment rates and prices. In 1958, A.W. Phillips formed the "Phillips curve equation", establishing the inverse nexus between unemployment and wage/price changes by fitting a statistical model to annual data on percentage changes in unemployment and wages for the UK over nearly a century. He revealed a negative nexus between wage inflation and unemployment, highlighting a direct link between real GDP and inflation in the absence of jobless growth, and indicating a convex, downward-sloping curve that intersected the horizontal axis at a positive level of unemployment. Phillips' analysis was empirical and lacked theoretical foundations; therefore, it did not discuss policy implications or factors that could shift the curve over time. In 1960, Samuelson and Solow further popularized The relationship, leading to the term "Phillips Curve" becoming integral to macroeconomic discourse and large-scale models. Policymakers express significant interest in achieving low inflation and unemployment rates, centering on whether both can be achieved simultaneously or if a trade-off is necessary. This nexus is explored by the Phillips curve. The short and long run relationship between inflation and unemployment could be analyzed by AD-AS models. Fiscal stimulus results in an upward shift in the aggregate demand (AD) curve, leading to increased prices and output in the short run. This increased output can reduce unemployment below its natural rate if the economy operates at its natural level of employment. Increased production puts upward pressure on inflation, as shown on

the Phillips curve, resulting from utilizing unemployed resources, which, alongside excess spending. Furthermore, higher inflation and lower unemployment are caused by a greater increase in AD. Conversely, a contractionary fiscal policy causes AD to decrease thus decreasing output, resulting in layoffs and a natural rate of unemployment falling below the actual rate, while weak demand pressures lower inflation. Ultimately, assuming a constant short-run aggregate supply curve, low unemployment levels are linked to higher inflation levels, and vice versa, indicating that the trade-off between unemployment and inflation is determined by changes in AD. The long run trade-off between inflation and unemployment disappears due to the distinction between expected and actual inflation. However, workers seek to regain their purchasing power as they realize their nominal wages are not keeping pace with inflation, leading firms to lose the excess profits that prompted increased employment, and subsequently lay off workers, returning the economy to its natural rate of unemployment but with elevated prices. This cycle may repeat, if the increase in AD continues. The result of increased AD would be solely higher inflation at the natural rate of unemployment when expected inflation matches actual inflation. Thus, the Phillips curve becomes a vertical line in the long run, as the trade-off between the two is eliminated (Waheed, 2024). Many studies have documented the muted reaction of inflation to large changes in unemployment during and after the Great Recession, while others have revealed that the Phillips curve has flattened in advanced economies in recent decades (Ari, Garcia-Macia & Mishra, 2023). Investigating the sluggish price inflation in the U.S. over the past two decades, Heise et al. (2022) attribute the slow inflation to a growing disconnect between unemployment and

core goods inflation. They demonstrate that weakening pass-through from wages to prices in the goods-producing sector significantly contributes to this trend, utilizing detailed industry-level data. Heise et al. indicate that increased import competition and rising market concentration diminish the pass-through effect from wages to prices, strongly support channels linking markups and pass-through to firms' market shares. Reevaluating the dynamics of inflation and unemployment, Blanchard (2016) reveals that the U.S. Phillips curve remains relevant, with inflation expectations settling more securely. Blanchard observes a notable decrease in the curve's slope, identifying it as starting in the 1980s, rather than seeing it as a recent occurrence. Moreover, compared to the current low levels of inflation, he highlights that the standard error of the residual in this relationship is large, presenting notable challenges for the formulation of monetary policy. Del Negro et al. (2020) argue that the business cycle continues to be resilient, with real variables responding in their usual manner, as evidenced by the Great Recession; however, there has been a significant decrease in inflation. Utilizing VARs and an estimated DSGE model, the results revealed that the muted reaction of inflation to cost pressures, indicated by a flat aggregate supply curve, is the primary cause of this disconnect. Furthermore, the conclusions revealed that the mien of demand shocks on the real economy has been reduced by a shift toward more aggressive inflation stabilization policies. During the early phase of the economic expansion, Linde and Trabandt (2019) have extensively explored the disconnect between inflation and unemployment, tackling the "missing deflation" puzzle by emphasizing the significance of nonlinearities in price and wagesetting during significant economic shocks. In contradiction to a

linearized version of the model, which falls short, they demonstrate that a nonlinear macroeconomic model that embraces real rigidities efficiently addresses this puzzle. Furthermore, the skewness of inflation and other macroeconomic variables observed in the data of the post-war U.S. is successfully captured by their nonlinear model; indicating a need for caution regarding the common use of linearized models when analyzing inflation and output dynamics. Hooper et al. (2019) question whether the Phillips curve has efficiently become irrelevant due to a flattened slope during the period spanning between the 1950s and 60s. The conclusions reveal strong evidence of negative slopes and significant nonlinearity, with steeper slopes observed in labor markets that are tight. this evidence for the price Phillips curve weakens considerably since the 1980s, while the wage Phillips curve remains robust. Estimates of the price Phillips curve from this period are undermined by the endogeneity of monetary policy and the restricted changes in the unemployment gap. However, significant evidence of both negative slopes and nonlinearity is shown utilizing state and metropolitan statistical area (MSA) data since the 1980s; demonstrating the successful monetary policy efforts to control inflation and anchor inflation expectations. McLeay and Tenreyro (2019) argue that the Phillips curve has weakened or vanished by addressing the perception that inflation follows an exogenous statistical process, seemingly unrelated to the output gap. McLeay and Tenreyro explain that this does not mean the Phillips curve is invalid, demonstrating that if monetary policy aims to minimize welfare losses, central banks will attempt to increase inflation when output falls below potential. This approach complicating the identification of the positively sloped Phillips curve as it creates a negative correlation between inflation and the output
gap. Coibion and Gorodnichenko (2015) indicate that the absence of disinflation can be attributed to the rise in household inflation expectations between 2009 and 2011, presenting new econometric and survey evidence indicating that firms share similar inflation expectations as households. Coibion and Gorodnichenko claim that the rising oil prices is responsible for the increase in household inflation expectations during the analyzed period. Mary C. Daly and Bart Hobijn (2014) demonstrate that both the slope and curvature of the Phillips curve are influenced by the level of inflation and the degree of the downward nominal wage rigidities for both the longrun and short-run. They suggest that downward nominal wage rigidities have a significant mien on the dynamics of unemployment and wage growth during the last three recessions and their subsequent recoveries. Forbes, Gagnon, and Collins (2020) claim that further increases in economic slack have minimal mien on inflation, demonstrating that the curve is steep when output is above potential but flat when output is below it. In addition, they argue that the Phillips curve appears linear and relatively steep when inflation is high. Distinguishing between fixed and flexible exchange rate regimes, Geerolf (2019) finds that in contrast to flexible regimes, inflation negatively correlates with unemployment in fixed exchange rate regimes. However, the results revealed that in both fixed and flexible regimes, there is a consistent negative correlation between real exchange rate appreciation and unemployment, suggesting a substantial shift away from rational-expectation-based explanations for Phillips curve puzzles. Overall, the existing literature suggests a need to reevaluate traditional models to better understand inflation dynamics, underscoring its complexity and the necessity for innovative approaches to monetary policy in advanced economies.

In the context of Turkiye, Mangır and Erdoğan (2012) make use of quarterly data from 1990 to 2011 to examine the economic nexus between unemployment and inflation rates, indicating that the Phillips Curve's theoretical assumptions are not supported in Turkiye in the short term during the analyzed period. Bayrak and Kanca (2013) reveal that, while the Phillips Curve analysis is not valid in the long term for Turkiye, a trade-off between inflation and unemployment exists in the short term over the period from 1970 to 2010. Using monthly data from 2003 to 2016, Tabar and Cetin (2016) suggest that the Phillips Curve does not hold true for Turkiye in either the short or the long term. This result is supported by Birecikli et al. (2020) using GDP, unemployment, and inflation data from Q1 1998 to Q2 2016. However, Göçer (2016) shows that the Phillips Curve is valid for Turkiye in both the short and long term, using data from Q1 2005 to Q1 2015. Yıldız (2021) indicates that the inverse relationship suggested by the Phillips Curve does not hold true for Turkiye over the period from January 2006 to November 2020. The results of Fourier ADF and Fourier KPSS tests revealed that the variables were not stationary at level but were stationary at the first difference, with no long-term nexus between the variables confirmed utilizing Fourier cointegration analysis. Moreover, the Single Fourier-Frequency Toda & Yamamoto causality analysis revealed no causal relationship in either direction between inflation and unemployment in the short term. Using structural break unit root tests, ARDL bounds testing, and VAR Granger causality testing; Ekinci et al. (2023) aimed to examine the Phillips Curve's validity in Turkiye from 1995 to 2021, revealing no long-term causal relationship from unemployment to inflation or vice versa. Furthermore, the long-term p-values were statistically insignificant,

supporting Friedman's view on the Phillips Curve and indicating that the Phillips Curve holds in Turkiye only in the short-term in which a negative relationship between the two variables was evident. Utilizing the Post-Keynesian Phillips Curve suggesting a positive nexus between inflation and unemployment, Şeker (2023) reveals the existence of a negative asymmetric relationship between the two variables in the long term, suggesting that the Phillips Curve in Turkiye is negatively sloped over the period from January 2014 to July 2023. Finally, mixed results were found in the context of Turkiye, highlighting the need for more investigations to examine the validity of the Phillips Curve.

DATA, MODEL AND METHODOLOGY DATA AND MODEL

This paper investigates the miens of economic evolution, inflation, and population on unemployment in Turkiye using annual data spanning from 1980 to 2023. The variables included in the model are the economic growth rate (GDP), overall unemployment rate (UR), overall inflation rate (IR), and population growth rate (PGR). All data were obtained from World Bank statistics (World Development Indicators - WDI) and the Turkish Statistical Institute. Table (1) presents descriptive statistics of the variables.

Variable	Number of	Mean	Standard	Minimu	Maximu
S	Observation		Deviatio	m	m
	s		n		
UR	44	9.37865	1.87040	6.495000	14.02600
		9	0		
GDP	44	4.61557	4.21885	-	11.43938
		1	0	5.750007	
IR	44	39.7228	29.9721	6.250977	105.2150
		5	1		
PGR	44	1.54756	0.41052	0.406430	2.315602
		5	2		

Table 1: Descriptive Statistics

Graph 1 depicts the changes over time of the four variables included in the model. Inflation increased during the period from 1980 to 1995, showing a fluctuating trend, and entering a downward trend between 1995 and 2005 with single digits. It followed a stable course During the 2005-2020 period; however, it has gained upward momentum again from 2020 onwards. GDP showed a tendency to grow during the analyzed period; however, it contracted in the crisis years of 1994, 2001, and 2009. Between 1980 and 2000, unemployment remained in single digits on average; however, it showed a significant increase between 2000 and 2010. The population growth rate decreased over the years.



Equation (1) shows the Phillips Curve in Turkiye:

Unemployment = f(Inflation, GDP growth rate, Population growth rate) (1)

Equation (1) indicates that changes in inflation, GDP, and population growth will affect unemployment. The functional form of equation (1) is shown in equation (2):

UNEMPLOYMENT

$$= \beta_0 + \beta_1 INFLATION + \beta_2 GDP + \beta_3 POPULATION + e_i \qquad (2)$$

Where, β_0 denotes the intercept, which can be either positive or negative, reflecting the mien of an external variable on the model. β_1, β_2 and β_3 denote the slope coefficients of inflation, GDP growth rate, and population growth, respectively. The expected percentage changes in the dependent variable when the explanatory variable changes by one unit are: $\beta_1 < 0$, $\beta_2 < 0$ ve $\beta_3 > 0$.

METHODOLOGY

The ARDL bounds testing approach, developed by Pesaran et al. (2001), was employed to analyze the long-run and short-run relationships among the variables. When employing the ARDL approach, while independent variables can be either I(0) or I(1), the dependent variable must be I(1). However, before applying the ARDL bounds test unit root tests should be conducted to determine whether the variables are I(2). In this paper, both the Augmented Dickey-Fuller (ADF) test developed by Dickey and Fuller (1981), and Phillips and Perron (PP) (1988) were used. The difference between the two tests is that the Augmented Dickey-Fuller (ADF) test includes the lagged values of variables in intercept and trendintercept models to eliminate potential autocorrelation problems in the error terms, while Phillips and Perron (PP) (1988) test addresses issues related to changing variance and serial correlation in errors. In addition, the Dickey-Fuller equation had been modified and the tstatistics had been recalculated to prevent autocorrelation in the ADF equation.

EMPIRICAL FINDINGS

As a proceeding step, and to define the stationarity level of the variables ADF and PP unit root tests were utilized. The results are shown in table 2.

	I(0)		I(1)		Result
Variables	ADF	PP	ADF	PP	
UR	-	-	-5.575764	-6.009067	I(1)
	1.936426	1.931308	(0.0000)*	(0.0000)*	
	(0.3131)	(0.3153)			
GDP	-	8.396650			I(0)
	7.177142	(0.0000)*			
	(0.0000)*				
IR	-	-	-7.486630	-7.563914	I(1)
	2.297538	2.363152	(0.0000)*	(0.0000)*	
	(0.1774)	(0.1579)			
PGR	-	0.082050	-6.704419	-6.696081	I(1)
	0.141537	(0.9606)	(0.0000)*	(0.0000)*	
	(0.9380)				

Table 2: Results of ADF and PP Unit Root Tests

The results revealed that the GDP series is stationary at a level I(0), while the series for UR, IR, and PGR are stationary at the first difference, I(1), confirming that the variables are not stationary at the second difference, I(2); indicating that the bounds test can be employed to investigate the cointegration nexus between the analyzed variables. To continue with validating the cointegration among the variables, the lag structure of the Vector Autoregressive (VAR) model was examined. Table 3 shows that the optimal lag length is 1.

La	LogL	LR	FPE	AIC	SC	HQ
g						
0	-	NA	2683.05	19.2461	19.4150	19.3072
	380.92		8	8	7	4
	36					
1	-	157.13	67.375	15.556	16.400	15.861
	291.13	78*	26*	53*	97*	85*
	06					
2	-	16.3134	90.9321	15.8302	17.3502	16.3798
	280.60	0	6	9	8	7
	58					
3	-	24.0544	88.7387	15.7393	17.9349	16.5332
	262.78	5	0	8	3	2
	77					
4	-	17.1535	106.943	15.7935	18.6646	16.8316
	247.87	9	0	8	7	7
	15					

Table 3: VAR Lag Order Selection Criteria

Table 4 assesses the long-run relationship among the variables in the specified model, indicating a strong presence of cointegration at the 1% significance level, as the F-statistic (6.345209) exceeds the critical values of 3.65 for I(0) and 4.66 for I(1) at the same level.

Model	F-		I(0)	I(1)		
	statistic					
$UR = \beta_0 + \beta_1 IR + \beta_2 GDP$	6.345209	%1	3.65	4.66		
$+\beta_3 PGR + e_i$		%5	2.79	3.67		
		%10	2.37	3.2		

Table 4: Results of Bounds Test

Table 5 shows the estimated log run coefficients, indicating that a 1% increase in economic growth and inflation is associated with a decrease in unemployment rates of approximately 0.45% and 0.06%, respectively. This highlights the interconnectedness of the analyzed variables, suggesting that both economic growth and inflation play significant roles in influencing unemployment in the long run.

$\mathbf{L}_{ong} \mathbf{u}_{un} \mathbf{A} \mathbf{D} \mathbf{D} \mathbf{I} (1 \ 1 \ 1 \ 0)$		
Long run ARDL(1, 1, 1, 0)		
Variables	Coefficient	P.value
GDP	-0.453107*	0.0032
IR	-0.058779*	0.0000
PGR	-1.092274	0.1657
Diagnostic Tests	Statistics	P.value
Breusch-Godfrey Serial		(0.5983)
Correlation LM Test	0.521466	
Heteroskedasticity Test:		
ARCH	0.257675	(0.6145)
Ramsey reset	0.627519	$(0.5\overline{344})$

Table 5: Long-Run Coefficients Based on ARDL Model

insights into the model's Important adequacy and assumptions were provided utilizing diagnostic tests. There is no significant serial correlation in the residuals, as the Breusch-Godfrey Serial Correlation LM Test yielded a statistic of 0.521466 with a pvalue of 0.5983. Furthermore, there is no heteroscedasticity, as the Heteroskedasticity Test (ARCH) produced a statistic of 0.257675 and a p-value of 0.6145, implying that the variance of the errors is constant across observations. Ultimately, the model is appropriately specified, as the Ramsey RESET test, which checks for model specification errors, returned a statistic of 0.627519 with a p-value of 0.5344. As a result, and based on these results, we can confirm the validity of the model and its underlying assumptions. To estimate the short-run coefficients, an Error Correction Model (ECM) based on the ARDL approach was constructed, allowing for the analysis of short-term dynamics while accounting for the long-term equilibrium relationship identified in the previous steps as shown in Table (6).

Error Correction Model	Coefficient	P. value
D(GDP)	0.128280*	0.0000
D(IR)	-0.006783	0.3869
CointEq(-1)*	-0.441880*	0.0000

Table 6: Error Correction for Selected ARDL Model

Table (6) revealed that inflation has an insignificant negative mien on unemployment; however, economic growth has led to an increase in unemployment in the short run. Furthermore, approximately 44% of the imbalance caused by shocks in the previous year is corrected in the current year, as the coefficient of the error correction term is statistically significant at the 1% level.

Conclusion

This study assesses the validity of the Phillips curve in Turkiye by investigating how inflation affects unemployment considering the economic growth rate, and population growth rate, utilizing an annual time series dataset covering the years 1980-2023, and employing the ARDL bounds testing approach. The results revealed that the population growth rate does not have a significant long-term effect on the unemployment rate; however, inflation and economic growth rate have significant and negative relationships with unemployment. Moreover, a one-unit increase in inflation leads to a 0.05% decrease in unemployment, providing evidence that the Phillips Curve is valid in Turkiye. Furthermore, a one-unit increase in economic evolution results in a 0.45% decrease in unemployment. For policymakers, it is essential to control inflation through effective monetary policies while promoting sustainable economic growth to reduce unemployment rates through investing in infrastructure, supporting small and medium-sized enterprises, and enhancing productivity through education and skill development programs. Moreover, regular assessments of economic indicators are essential for proactive policy adjustments and active labor market policies should be implemented to facilitate job transitions. Raising public awareness and engaging stakeholders about the implications of inflation and economic growth on employment will further support a stable economic environment conducive to job creation.

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CHAPTER IV

Evidence from the Toda-Yamamoto Causality Approach on the Relationship Between Migration, Inflation, and Economic Growth in Turkey

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Introduction

Throughout history, human mobility has been a recurring phenomenon driven by various factors, including political structures, natural conditions, economic circumstances, and healthrelated issues (Kurunova, 2013). This mass movement, defined as migration, has significant economic implications for host countries, arising from the inflows and outflows of people. Consequently, migration has become a focal point of interest for researchers.

Theoretical literature highlights that the impact of migration on inflation occurs through two primary channels. The first mechanism posits that increased demand for goods and services in the host country following migration leads to short-term price hikes and higher inflation. In contrast, a critical perspective suggests that

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an increase in labor supply fosters output growth, potentially resulting in a decline in goods and services prices (Salisu et al., 2024, pp. 59–60). Diverging from this approach, Peñaloza Pacheco (2022) argues that if the labor market operates at full capacity on the supply side, a labor supply shock may reduce workers' incomes, decreasing the marginal value of labor on output. Consequently, wages and prices would decline. Conversely, Nepal (2022) suggests that migration affects the host country through remittance inflows, asserting that the resulting monetary inflows increase the prices of goods and services in the host country.

The relationship between migration and economic growth, similar to its link with inflation, operates through various channels. For instance, remittances sent by migrant workers to their families in origin countries can create a positive impact on the host country's economy (Asad et al., 2016, pp. 360-361). Addison (2004) supports this finding in the case of Ghana. Conversely, Tehseen Jawaid and Raza (2012), in their study on South Korea and China, emphasize that the effects of migrant remittances on the economy differ depending on the structural characteristics of the country. While this impact is positive in South Korea, it is negative in China.Additionally, the economic effect of migration can vary based on the knowledge and productivity levels of migrant groups. If the host country succeeds in attracting skilled individuals, a positive impact on the economy is likely (Konya & Kabaklarlı, 2023, p. 21). On the other hand, from the perspective of the sending country, the loss of qualified human capital may adversely affect the economy.

To establish a meaningful coherence with the analyzed period, migration movements such as the 1988 Iraq migration, the 1989 Bulgaria migration, the 1992–1998 Bosnia migration, the 2001 Macedonia migration, and the post-2013 Syria migration should be considered (Altunç et al., 2017, pp. 199–200). The primary reasons for migration to Turkey during these periods include the relative economic strength of Turkey compared to the origin countries, as well as cultural ties, kinship bonds, and religious factors. On the other hand, external migration from Turkey, particularly brain drain,

is often attributed to economic and political instabilities (Bakırtaş & Kandemir, 2010, p. 968). These observations highlight the presence of a migration issue in Turkey, shaping the main objective of this research. Moreover, as indicated in the summary of the empirical literature above, the lack of sufficient studies addressing these differing perspectives underscores a gap in the existing literature. In this context, the study empirically examines the impact of migration dynamics on inflation and economic growth in Turkey over the observation period of 1991–2023, utilizing the Toda-Yamamoto causality approach.

This study consists of five chapters. The first chapter introduces the research, while the second chapter presents a literature review that aligns with the study's context. The third chapter describes the data and methodology used in the research, followed by the fourth chapter, which discusses the findings from the empirical analysis. The final chapter, Chapter Five, presents the conclusions.

Literature Review

A review of the literature on the effects of migration in economics reveals that migration has varying impacts on macroeconomic dynamics. The research findings indicate that the effects of migration differ according to the internal dynamics of the countries involved. Furthermore, it is emphasized that differences in the policies implemented by host countries towards migrants also influence these outcomes. The literature highlights that the impact of migration on economic development is contingent upon the skills and abilities of the migrants entering the host country (Barro & Salai-Martin, 1995; Dolado et al., 1994). In this context, it can be argued that the effects of migration on macroeconomic dynamics are complex. This chapter will examine the effects of migration on economic growth and inflation to establish a meaningful connection with the study

In a study by Dolado et al. (1994), panel data analysis was applied to 23 OECD countries over the period 1960-1985, and it was

found that migration had a positive impact on economic growth. Similarly, Bove and Elia (2017) conducted a study using OLS methodology for developed countries over the 1960-2010 period and found a positive effect of migration on economic growth. Iscan and Demirel (2021) also supported these findings in their research. They examined the relationship between migration, economic growth, and unemployment for OECD countries over the 2000-2019 period and concluded that migration increases economic growth while reducing unemployment. However, a critical review of the literature reveals that some studies report opposing findings. For example, Ahmed (2010), in a study examining the Bangladeshi economy over the 1995-2016 period using the Johansen Cointegration Test, reported a negative effect of migrant workers on economic growth. Similarly, Kahanec and Pytliková (2017), in their study of EU countries over the 1995-2010 period, found that migration had a detrimental effect on economic growth.

A literature reveals that the impact of migration, particularly refugees, on inflation in host countries varies depending on the specific goods and services sectors. For instance, Garcia and Saah (2010), in their study covering the period 1993-1994, found that refugees from Burundi and Rwanda caused an increase in food prices in Tanzania. On the other hand, Nygaard (2011) identified that migration led to higher housing prices in the United Kingdom. Similarly, Akgündüz et al. (2015) found that following the influx of Syrian refugees into Turkey, housing prices increased in areas with high refugee concentrations, although there was no significant impact on wage levels. In contrast, Lach (2007), in his study on Israel, found that migration contributed to a reduction in inflation.

Data and Methods

This study investigates the relationship between migration mobility, inflation, and economic growth in Turkey from 1991 to 2023. An empirical analysis is conducted using the causality test technique developed by Toda and Yamamoto. The analysis incorporates several variables. First, migration mobility data is calculated by subtracting the number of emigrants returning to their country of origin from the number of immigrants entering Turkey. The logarithmic transformation of this data is performed using the [log-modulus transformation: lm(x) = sign(x) / ln(abs(x) + 1)] technique, which is applied to negative values as suggested by Sobiech (Alix-Garcia & Saah, 2010). For economic growth, the logarithmic form of real GDP, based on purchasing power parity in 2021 constant prices and expressed in U.S. dollars, is utilized. Inflation is represented by the annual percentage change in the consumer price index. All data used in this analysis are obtained from the World Bank World Development Indicators database

The Toda-Yamamoto technique (1995) is based on the VAR model, incorporating the optimal lag length, k, and the maximum integration degree of the variables (d_max), leading to an expanded VAR model ($p=k+d_max$). This procedure was developed to test traditional Granger causality within the VAR model framework (Adriana, 2014, p. 229). The technique offers several key benefits. First, its primary advantage over the traditional Granger method is its ability to determine the lag length in a fixed VAR system, ensuring more reliable results (Allou et al., 2020, p. 504). Another advantage is its capacity to handle variables with differing integration levels (García-del-Hoyo et al., 2021, p. 8)

The test procedure involves two steps. In the first step, the optimal lag length (k) and maximum integration degrees (d_max) of the series in the analysis are identified. In the second step, the Wald procedure is used to test causality based on the VAR model with the determined lag length ($p=k+d_max$) (Esso, 2010). The functional form representation of the two-variable Toda-Yamamoto causality technique, based on the VAR model, is shown below.

$$Y_{t} = \delta_{0} + \sum_{i=1}^{k} \omega_{1i} Y_{t-i} + \sum_{i=k+1}^{k+d_{max}} \omega_{2i} Y_{t-i} + \sum_{i=1}^{k} \theta_{1i} X_{t-i} + \sum_{i=k+1}^{k+d_{max}} \theta_{2i} X_{t-i} + \mu_{1t}$$
(1)

.

$$X_{t} = \tau_{0} + \sum_{i=1}^{k} \vartheta_{1i} Y_{t-i} + \sum_{i=k+1}^{k+d_{max}} \vartheta_{2i} X_{t-i} + \sum_{i=1}^{k} \varphi_{1i} Y_{t-i} + \sum_{i=k+1}^{k+d_{max}} \varphi_{2i} Y_{t-i} + \mu_{2t}$$
(2)

In Equation 2, the null hypothesis $(H_0: \theta_1 i = 0, i = 1,...k)$ is tested, which suggests that X is not the cause of Y, i.e., there is no causality running from X to Y. In Equation 3, the null hypothesis $(H_0: \phi_1 i = 0, i = 1,...k)$ is tested, indicating that Y is not the cause of X. These null hypotheses are then evaluated using the Wald statistic.

Findings

This section outlines the results of the empirical analysis conducted to address the main objective of the study. Initially, the integration levels of the series are assessed using the Augmented Dickey-Fuller (ADF) test, developed by Dickey and Fuller (1981), and the Phillips-Perron (PP) test, introduced by Phillips and Perron (1988). Diagnostic test results are then presented to evaluate the reliability of the analysis results. Finally, the results of the Toda-Yamamoto (1995) causality test, introduced in the literature, are discussed

	1		
Stats	lnMIG	INF	lnY
Maximum	6.026	105.215	12.467
Minimum	-5.502	6.250	11.835
Mean	-1.051	36.248	12.132
Median	-4.698	16.332	12.124
Standard Error	0.890	5.599	0.033
Observation	33	33	33

Table 1: Descriptive Statistics

The descriptive statistics for the variables utilized in the study are reported in Table 1. An analysis of the statistical values reveals that the inflation rate holds the highest values for all statistical measures.

Unit Root Test	Variable	Intercept	Intercept and
		Ĩ	Trend
ADF at Level	lnMIG	-1.902	-1.845
		(0.327)	(0.658)
	INF	-1.369	-0.874
		(0.584)	(0.946)
	lnY	0.324	-2.512
		(0.976)	(0.320)
ADF at First	ΔlnMIG	-5.547***	-5.638***
Difference		(0.000)	(0.000)
	Δ INF	-5.774***	-3.992**
		(0.0000)	(0.020)
	ΔlnY	-5.664***	-5.653***
		(0.000)	(0.000)
PP at Level	lnMIG	-1.770	-1.750
		(0.387)	(0.704)
	INF	-1.348	-0.807
		(0.594)	(0.954)
	lnY	1.014	-2.412
		(0.995)	(0.366)
PP at First	lnMIG	-7.010***	-6.864***
Difference		(0.000)	(0.000)
	INF	-5.778***	-6.006***
		(0.000)	(0.000)
	lnY	-6.637***	-7.425***
		(0.000)	(0.000)

Table 2: ADF-PP Unit Root Test Results

Note: The null hypotheses of the ADF-PP unit root tests posit that the series contains a unit root and is non-stationary. The symbols "*: 1%" and ": 5%" indicate the rejection of the null hypothesis at the corresponding significance levels.

The results of the ADF and PP unit root tests applied to determine the integration levels of the series are presented in Table 2. The findings show that for all series, the ADF-PP tests under both the Intercept and Intercept and Trend models do not indicate stationarity at the level. However, when the first differences of the series are analyzed, both unit root tests reveal stationarity under the Intercept and Intercept and Trend models. In conclusion, the integration degree of all series is at the first difference.

Diagnostic Tests	Stats	p-Values
LM	1.712	0.121
White χ 2	117.992	0.240
Jarque Bera	3.814	0.148
AR Roots	Stable	Stable

Table 3: Diagnostic Tests Results

To ensure the reliability of the analysis results, several diagnostic tests are performed, and the results are summarized in Table 4. Based on the findings, the LM test reveals no autocorrelation, the White test confirms the absence of heteroscedasticity, the Jarque-Bera test indicates that the error term follows a normal distribution, and the AR roots lie within the unit circle, ensuring model stability. These results thus support the validity and consistency of the findings derived from the Toda-Yamamoto technique (Duasa, 2007).



Figure 1: Inverse Roots of AR Characteristic Polynomial

Null hypothesis	p=k+d _{max}	χ^2 statistics	p- values	Decision
H ₀ : lnMIG does not Granger cause INF	3	5.314	0.070*	Rejet H ₀
H ₀ : INF does not Granger cause lnMIG	3	1.983	0.370	Do not reject H ₀
H ₀ : lnMIG does not Granger cause lnY	3	0.152	0.926	Do not reject H ₀
H ₀ : lnY does not Granger cause lnMIG	3	3.430	0.179	Do not reject H ₀
H ₀ : INF does not Granger cause lnY	3	0.652	0.721	Do not reject H ₀
H ₀ : lnY does not Granger cause INF	3	6.062	0.048**	Rejet H ₀

Table 4:	Toda-Yama	moto Causa	ality Tes	t Results
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Note: "*, **" indicates rejection of the null at the 1% level, respectively 5% level. The Akaike Information Criterion is used to determine the optimal lag length.

In light of the findings presented in Table 2, the Toda-Yamamoto Causality Test is selected as the appropriate analysis technique for the study's objective. The results of this test are shown in Table 4. As explained in detail in the methodology section, the VAR model is extended by adding one additional lag (d_max=1) to the optimal lag length of 2 (k=2), and a Wald statistic-based prediction is made at the p level. The findings from Table 4 reveal that migration mobility is a Granger cause of inflation, and economic growth is also a Granger cause of inflation. No causality is detected between the other variables. This suggests that migration mobility in Turkey affects inflation through its impact on domestic demand, and the increase in national prosperity leads to greater demand for goods and services, which in turn affects inflation.

Conclusions

In the context of a globalised world, technological advances and the resulting ease of transport, together with international trade agreements, have made migration flows more flexible. The economic impact of this trend is tangible. Turkey is both a source and a destination of migration due to its strategic location and economic structure. Given the complexity of the effects of migration and the limited empirical research in the existing literature, this study examines the relationship between migration mobility, economic growth and inflation in Turkey during the period 1991-2023. An empirical analysis is conducted using the Toda-Yamamoto causality testing technique.

In the empirical analysis of this study, the integration order of the series is first examined using the ADF and PP unit root techniques. The findings indicate that all series are stationary at the first difference level. Consequently, under this assumption, the Toda-Yamamoto causality technique is employed for the analysis. The reliability of the findings is examined through diagnostic tests, confirming the robustness of the results. According to the findings, a causality relationship from migration mobility to inflation is observed in Turkey. In this context, it can be interpreted that migration inflows create an increase in domestic demand, leading to a positive impact on prices. On the other hand, no causality relationship is found between economic growth and migration mobility. Furthermore, a causality relationship from economic growth to inflation is identified.

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BÖLÜM V

Women's Employment and Sustainable Development in Türkiye and Selected Middle Eastern Countries

Tuğba İBİK¹ Serdar ÖZTÜRK²

Introduction

Sustainable development is seen as an increasingly important concept that meets the needs of all generations while respecting the rights of others. It aims to ensure economic, social and environmental continuity. In addition, it can be said that sustainable development seeks to change the role of women in society. Among the Sustainable Development Goals, there are some goals for equality between women and men. These goals can be effective in enabling women to access their fundamental rights without being exposed to discriminatory approaches.

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Especially in Türkiye and Middle Eastern countries, it is seen that women do not have the same rights and freedoms as men. It can be said that the perception of women in society in most Muslim countries is shaped under the guise of religion and men are considered superior to women. This situation can lead to the backwardness of countries. In order for a society to develop, it is believed that it is important to change attitudes towards women and ensure that they have a greater place in the economy. However, it is seen that the steps taken to ensure gender equality in Türkiye and Middle Eastern countries are not sufficient.

In this context, the study aims to determine the position of the countries in terms of gender inequality and human development indices, and to make a sectoral comparison of women and men. Determining the position of women in employment is important for drawing conclusions in line with the selected indices. The Middle Eastern countries used in the study were selected from among countries with lower and higher human development and gender inequality indices than Türkiye. The countries used in the study are Türkiye, Iran, Cyprus, Iraq, Yemen, Syria, Kuwait, United Arab Emirates, Egypt and Israel. The comparison of these countries was restricted to data for the years 2000 and 2022.³

Firstly, sustainable development and women are discussed in the study. In the next section, the place of women in Türkiye and Middle Eastern countries is discussed. The next section is divided into two sub-headings: the first sub-heading deals with human development and gender inequality in Türkiye and selected Middle Eastern countries, and the second subheading deals with female and male employment by sectors. The study is completed with a conclusion and evaluation section.

³ These countries were selected among the countries with human development index and gender inequality index higher and lower than Turkey, based on the availability of data only between 2000 and 2022.

Sustainable Development and Women

In the historical process, it is seen that the concept of sustainable development became popular at the end of the 20th century. Developments that occurred in previous periods may have an impact on this. It can be said that sustainable development goals emerged by considering economic, social and environmental issues.

The concept of sustainable development came to the agenda after it was realised that the development goals implemented after the end of the Second World War were not globally applicable. In 1972, new views on economic sustainability emerged in the 'Limits to Growth' report of the Club of Rome (Caldwell, 1994:193). Therefore, the origins of the 1972 and 1987 reports on sustainable development are based on this report (Vornholz, 1994:194). In the report published by the UN in 1972, when the Man and Environment conference was held, the concept of sustainable development gained a legal dimension (Capitani & Comazzetto,2019:37).

The concept of sustainable development was first mentioned in the report titled 'Our Common Future' published in 1987 (Bienia, Dykiel & Bragies, 2019:18). Conceptually, sustainable development is used in the report titled 'Our Common Future' as meeting the needs of all generations by considering the needs of each other (WCED, 1987). The expression in this report means caring for the needs of individuals in all periods, limiting the use of natural resources and various elements, fairness of duties and rights, and considering the environment and development together (Kenig-Witkowska, 2017:64). Since this report generally emphasises the damages of human activities on the environment, it has led to some debates. Some views have argued that this concept should primarily be aimed at protecting nature. They also stated that the welfare of individuals should not be prioritised over the environment (Medvedev, 2023:3).

Sustainable development encompasses the principles of integrating environmental protection with social development,

meeting the mandatory needs of individuals, equality and justice, social freedom and the emergence of diverse cultures, and realising this in connection with environmental sustainability (Matskevych, 2020:303). Looking at sustainable development from economic, social and environmental perspectives, economic sustainability is associated with production and capital. Ensuring the equality of the economy and individuals by preventing damage to the environment is within the scope of environmental sustainability. There is also social sustainability, which includes health, education, political and social rights integrated with the environment (Harris, 2003:2).

The focal point of the Agenda 21 decisions adopted at the Environment and Development Conference held in Rio de Janeiro in 1992 was sustainable development. It was stated that economic and social phenomena affect the environment and that these issues should be focused on (Medvedev, 2023:4). Apart from the Climate Change Convention, many conferences have been organised by the UN to ensure sustainability (Fischer & et al., 2023:24). The sustainable development goals adopted in New York in 2015 with 169 goals were implemented in 2016 (Pathania, 2017:73-74). With the Agenda 30 decisions based on Agenda 21, an agreement was reached on 17 goals for sustainable development (Fischer & et al., 2023:24). Figure 1 shows the 17 goals set for sustainable development.



Figure 1: Sustainable Development Goals Source: United Nations, https://sdgs.un.org/goals Access Date: 02.11.2024

It is designed to fulfill some objectives by 2030 with sustainable development goals. These goals were set in line with the Millennium Development Goals. Unlike these goals, the goals set for sustainable development are intended to have a global impact. With the sustainable development goals, especially the rights of individuals are taken into consideration and discrimination between women and men is tried to be prevented (Pathania, 2017:74). In the 5th goal of sustainable development, there are articles such as preventing different treatments to which women and girls are exposed, preventing all forms of violence, preventing underage marriage and preventing genital damage, implementing practices for care and home work, ensuring their participation in the economic and political process, access to reproductive and health rights, recognising various property rights, increasing access to information and technology and making legal arrangements (United Nations, Access Date: 02.11.2024).

The quality of the lives of women and girls, who have equal proportions with men in the global population, has an impact on societies. Women's employment and income can be associated with the 1st goal of sustainable development, which covers poverty, while quality of life, access to food and education can be associated with the 2nd, 3rd and 4th goals. In addition, preventing violence against women is related to goals 3 and 5, which cover health and wellbeing. Women who are subjected to these behaviours suffer from physical and mental health problems, and this situation also affects their children. Although the elimination of discrimination between women and men is important for the realisation of the sustainable development goals, there has not yet been sufficient progress. Although progress has been made in the 4th goal related to education, it has been insufficient. In the 9th goal of sustainable development, which includes innovation, and the 8th goal, which includes employment, the discrimination between women and men still continues. In addition, the prevention of genital mutilation of women, which covers the 3rd goal, and the increase in the population despite the decrease in maternal mortality bring up the possibility that these situations will increase again (Sana, 2024:926-927). In the 10th goal of sustainable development, there is an article on supporting all individuals economically, socially and politically, regardless of their physical condition, being male or female, age, belief, race, ethnic group, location and economic conditions (United Nations, Access Date: 02.11.2024).

The absence of discrimination between women and men is prominent in the goals of sustainable development until 2030. In order to ensure the continuity of the basic dimensions of sustainable development, there is a need for women to take part in these areas. The fact that all individuals are aware of their rights to use environmental resources effectively and environmental problems can contribute to environmental sustainability. Gender-oriented arrangements in the economy are necessary for economic sustainability. The continued existence of individuals with no income or low income makes it difficult to realise economic development (Yumami & Amaratunga, 2018:1).

Protection of the rights of women and girls and prevention of gender discrimination, differentiation and continuity of societies are tried to be achieved through sustainable development goals. Therefore, sustainability can be achieved on a global scale with women having more say and eliminating discrimination. Goal 5, which covers women's equal rights with the opposite sex, which has an impact on economic, social and environmental sustainability, also contributes to the realisation of all sustainable development goals (Sana, 2024:926).

In short, it is seen that sustainable development has goals aimed at reducing and eliminating the areas where women and girls are exposed to oppression in society. Although there are targets for discrimination between women and men, these targets can also be associated with other sustainable development goals.

The Place of Women in Türkiye and Middle Eastern Countries

It is seen that the concept of gender has a definition that is affected by many factors as opposed to being characterised as male and female. Especially in Türkiye and Middle Eastern countries, it can be said that men and women are treated differently in terms of their gender.

Conceptually, gender can be defined as the relationship between individuals and their socially dissimilar aspects. Thus,
social and cultural duties are imposed on individuals. This concept refers to the duties assigned to individuals according to their age, race, social and ethnic class, belief, place of residence, economy and political status rather than their biologically dissimilar characteristics. The concept of gender equality can be defined as the fair treatment of individuals. In this case, all individuals are equal in all situations (Pathania, 2017:76).

Equality between women and men, which is a right that individuals have, is effective in eliminating the problems encountered in economic, social, environmental and health issues. This situation is more reflected on women, but women have the potential to prevent this situation. Despite this, women are kept in the background in many societies (Alzubaidi, 2021:4). Many regions such as the Middle East, the Gulf Region, Africa, Asia, Latin America, Europe and North America are places where women face different treatment (Kelly, 2009:1).

In Muslim countries in the Middle East, there is a conservative attitude. Islam and old habits are continued and changes are prevented or take a long time. Compared to Western societies, the position of women in religious and legal terms is far behind. According to some views, women are even forced to endure an oppressive order. On the contrary, there are also those who argue that Islam values women and adds strength and kindness to those living in the Middle East (Moghadam, 1992:4).

In Muslim countries, women are subjected to different treatment in the process of living in society. Although the actions of women in these countries are subject to certain rules, some privileges have been recognised in later periods. In Saudi Arabia, non-blood relatives are not allowed to be in the same car with women. These rules are not included in the religion, but they are applied by drawing their own conclusions. Although there is no restriction in the Qur'an on women's participation in employment, it is generally believed that working in a job restricts women from fulfilling their domestic roles. In some Arab countries, although women are allowed to take part in employment, they cannot have their own income and their husbands have a say in this matter (Hashmi, 2000).

Countries in the Arab Region have different characteristics in terms of economy, population and socio-cultural aspects. On the other hand, they have many similar aspects. Although there are some developments in the education of individuals, marriage and birth continue rapidly in regions where income is not high. This situation gender discrimination. In addition, human causes capital investments do not have an impact on women having a say in the economy and politics (El Laithy, 2016:21). Some of the countries in the Middle East have various legal regulations against differential treatment of individuals. In particular, with the exception of Iran and Qatar, women's rights have been acceded to the 'Convention on the Elimination of All Forms of Discrimination against Women'. Nevertheless, this has not prevented women from being subjected to discrimination regarding their rights. This may be due to the fact that women have less political voice (Rubin, 2007:16).

Compared to Middle Eastern countries, Türkiye is a forwardthinking and modernised country. However, it has lagged behind in education compared to Europe and North America. Although reforms for the development of women date back to the Ottoman Empire, women have not been able to make significant progress in terms of their position and rights (Ahmad, 2013:8). With the proclamation of the Republic in Türkiye, radical changes were made to address gender discrimination. In 1924, women had the same right to education as men, and in 1926 they gained basic rights with the Civil Code. In 1930 and 1934, political rights were recognised at local and national level respectively. Nevertheless, radical changes were limited to certain areas, and modern and traditional lifestyles prevailed. Despite the changes and secularisation, there were no significant developments after 1940. In the 1950s, although the beginning of settlement in cities contributed to modernisation, the desired level could not be reached. Towards the end of the 20th century, the importance of the economy and the recognition of rights was understood, legal institutionalisation developed, and the changes made for the European Union enabled women to be granted some rights (Küçük, 2013:27-28).

It is possible to classify women in Türkiye according to their freedoms. Therefore, there are modern and free women and conservative women in Türkiye. However, there are different opinions about which group constitutes the majority. The fact that modern women in Türkiye, who are in the minority, are specialised and educated is effective in showing that women and men are not treated differently as in the Middle Eastern countries belonging to the same religion. Nevertheless, there are problems in various issues such as rights, democracy and secularism. However, regardless of whether they have a modern or traditional structure, women are subjected to discrimination in many economic, social, political and legal issues on a global scale (Müftüler-Bac, 1999:304).

To put it briefly, it is seen that women generally remain in the background in countries belonging to the Islamic religion. Especially in the Middle Eastern countries, it can be said that there are heavy pressures and sanctions in this regard, and the steps taken to eliminate discrimination against women have not resulted in an effective way. In Türkiye, it is seen that women, who have more rights compared to Middle Eastern countries, are still subjected to discrimination, in other words, sufficient progress has not been achieved.

Gender Discrimination in Türkiye and Selected Middle Eastern Countries and Its Impact on Employment

In this section of the study, human development and gender inequality in Türkiye and selected Middle Eastern countries, and then female and male employment by sectors are presented under subheadings.

Human Development and Gender Inequality Index in Türkiye and Selected Middle Eastern Countries

Human development and gender inequality in Türkiye and selected Middle Eastern countries can be represented by indices. For

this purpose, data for Türkiye, Iran, Cyprus, Iraq, Yemen, Syria, Kuwait, the United Arab Emirates, Egypt and Israel are used.

The human development index is an indicator of three basic developments such as health, knowledge and a good life. Indices between 0 and 1 show the minimum and maximum value respectively (UNDP, 2022:2). The Gender Inequality Index is an indicator of the reproductive health, power and labour force dimension of discrimination that individuals are exposed to in human development. The increase in the index with values between 0 and 1 indicates that the size of inequality increases and human development decreases (UNDP, Access Date: 05.11.2024).

The Middle Eastern countries include Egypt, Qatar, Iran, Iraq, Bahrain, Bahrain, United Arab Emirates, Oman, Yemen, Saudi Arabia, Israel, Palestine, Cyprus, Kuwait, Lebanon and Syria (Kartal & Öztürk, 2018:30). Therefore, it is necessary to show these indices to see human development and gender inequality in selected Middle Eastern countries and Türkiye. Figure 2, which shows the human development index in Türkiye and selected Middle Eastern countries, shows that Iran, Egypt, Iraq, Syria and Yemen lag behind Türkiye, while Kuwait the United Arab Emirates, Israel and Cyprus are further ahead. However the indices with Kuwait been close in recent periods.



Figure 2: Human Development Index in Türkiye and Selected Middle Eastern Countries

Source: UNDP, https://hdr.undp.org, Access Date: 1.11.2024

Figure 3, which shows the gender inequality index in Türkiye and selected Middle Eastern countries, shows that Cyprus, Israel, Kuwait and the United Arab Emirates are ahead of Türkiye. Yemen, Iraq, Syria, Iran and Egypt are behind. However, it is observed that the index in Kuwait showed a significant decline in 2005. It can be said that this decline continued until 2014, and that the index increased in 2014 and afterwards compared to the previous periods, and that it was above Türkiye in 2021.



Figure 3: Gender Inequality Index in Türkiye and Selected Middle Eastern Countries

Source: UNDP, https://hdr.undp.org, Access Date: 1.11.2024

Employment by Sector and Gender in Türkiye and Selected Middle Eastern Countries

In this section of the study, employment of women and men in sectors according to income groups is included. In addition, the employment of women and men in agriculture, industry and services in Türkiye and Iran, Cyprus, Iraq, Yemen, Syria, Kuwait, United Arab Emirates, Egypt and Israel is also included. Figure 4 shows the share of female employment in agriculture by income groups in 2000 and 2022. Accordingly, female employment in the agricultural sector is highest in low-income countries and lowest in high-income countries.



Figure 4: Female Employment in Agriculture by Income Groups (%-ILO Model Estimation)

Figure 5 shows the share of male employment in agriculture by income groups in 2000 and 2022. Accordingly, it is seen that the employment is highest in low-income countries and lowest in highincome countries.



Figure 5: Male Employment in Agriculture by Income Group (%-ILO Model Estimation)

Source: Worldbank

Figure 6 shows the share of female employment in the industrial sector by income group between 2000 and 2022. Accordingly, it is seen that employment is at least in low-income countries and at most in upper-middle-income countries.



Figure 6: Industrial Sector Female Employment by Income Groups (%-ILO Model Estimate)

Source: Worldbank

Figure 7 shows the share of male employment in the industrial sector by income group between 2000 and 2022. Accordingly, it is seen that employment is at its lowest in lowincome countries and at its highest in high-income countries



Figure 7: Male Employment in the Industrial Sector by Income Group (%-ILO Model Estimation)

Figure 8 shows the share of female employment in the service sector by income group between 2000 and 2022. Accordingly, it is seen that employment is at least in low-income countries and at most in high-income countries.



Figure 8: Female Employment in the Service Sector by Income Group (%-ILO Model Estimation)

Source: Worldbank

Figure 9 shows the share of male employment in the service sector by income group between 2000 and 2022. Accordingly, it is seen that employment is at least in low-income countries and at most in upper-middle-income countries.



Figure 9: Male Employment in the Services Sector by Income Group (%-ILO Model Estimation)

Source: Worldbank

Figure 10 shows the ratio of female and male employment in the agricultural sector in Türkiye and selected Middle Eastern countries between 2000 and 2022. Accordingly, it can be said that employment in the agricultural sector generally tends to decrease.







Figure 10: Female/Male Employment in Agriculture (%-ILO Model Estimation)

Figure 11 shows the share of female and male employment in the industrial sector in Türkiye and selected Middle Eastern countries between 2000 and 2022. Accordingly, it is seen that this rate is generally low for women.







Figure 11: Female/Male Employment in the Industrial Sector (%-ILO Model Estimation)

Figure 12 shows the share of female and male employment in the service sector in Türkiye and selected Middle Eastern countries between 2000 and 2022. Accordingly, it is seen that female employment is generally high in the service sector. Therefore, it can be said that the service sector has the highest share in these countries among other sectors. Among these countries, it is seen that the female employment rate in the United Arab Emirates, Kuwait, Israel and Cyprus is at level of high-income group rates.







Figure 12: Female/Male Employment in the Service Sector (% -ILO Model Estimation)

Conclusion and Evaluation

It is seen that women are subject to different attitudes than men in society and that various factors have an effect on this situation. It can be said that especially in Muslim countries, some issues regarding women that are not included in Islam are evaluated differently and have become a traditional belief of the society. In these societies where women are oppressed and deprived of various rights, women have fallen behind men. Although some initiatives have been made regarding the rights that women should have, it is seen that these are not enough. Middle Eastern countries and Türkiye can be considered as places where an effective fight against gender discrimination is not carried out. However, a global movement towards sustainable development can be effective in this regard.

Sustainable development is based on sustainability in economic, social and environmental terms and has targets regarding inequality between women and men. It is seen that the sustainable development targets found to prevent and reduce discrimination between women and men are connected with other targets. Women being equal to men in all matters, especially in education, health and economy, can be effective in achieving sustainable development. Especially women being more involved in employment in the economy can be beneficial in terms of development. In fact, when the share of women employed according to income level in women's employment is examined, it is seen that women in the service sector are more in high-income countries.

In the study, it can be said that the human development of Türkiye and the Middle East countries selected in line with the human development index and gender inequality index, the United Arab Emirates, Kuwait, Israel and Cyprus, are higher than Türkiye, and gender inequality is lower. In these countries, women's employment in the service sector is higher. In Kuwait, the United Arab Emirates, Israel and Cyprus, the share of women's employment is seen to be the highest in the service sector. The service sector is followed by the industry sector. In Türkiye, Yemen, Syria, Egypt, Iran and Iraq, the least women's employment is in the industry sector. It can be said that the share in the agricultural sector is generally decreasing. Although the share of these countries is increasing in the service sector, the share of women's employment in Syria and Egypt has been ahead of other countries in recent years. Therefore, the fact that women are employed may have an effect on whether these indexes are low or high.

Türkiye is a country where many rights are granted to women compared to Middle Eastern countries. However, it is seen that it lags behind some Middle Eastern countries in terms of human development and gender inequality index. This situation may have negative consequences on the development and economy of the country. In Türkiye, women should be given more space in the economy and this may contribute to growth and development. It is necessary to increase women's employment in all sectors, not only in Türkiye but also in Middle Eastern countries, and to make legal arrangements to eliminate the concept of discrimination. Raising awareness so that women have equal rights with men and change the perception that they are behind men can change the fate of not only a society but also the entire world.

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