



Applied-Research Paper

## The Effect of Fiscal Policies on Labor Demand in Iran

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### ABSTRACT

The labor market is one of the main markets in the national economy and the equilibrium of the labor market is one of the main concerns of policymakers in every country. Theoretical foundations and empirical studies show that labor demand is the main factor in creating employment and equilibrium in the labor market. This article evaluates the effect of fiscal policy on labor demand in Iran from 1976-2018. During this period, the government has implemented employment-generating projects, tax and insurance exemptions via annual development programs and budgets, and encouraged investment in areas with high unemployment rates. We examined the effect of current government expenditures, government development expenditures, and taxes to study the effect of government fiscal policies on labor demand. In this article, we estimate the dynamic function of labor demand using the ARDL technique. According to the theoretical foundations and empirical studies in the specified function, labor demand is a function of intermittent values and independent variables of Gross Domestic Product (GDP), real wages, capital stock, current government expenditures, government development expenditures, tax revenues, and dummy variables of imposed war and the UN Security Council sanction. The results showed that fiscal policy has not had a positive effect on labor demand in the Iranian labor market in the short and long term.

## 1 Introduction

Economic policymakers can influence economic variables with monetary (under the control of the central bank) and financial (under the control of the government) policies. Monetarists claim that, since positive financial shocks may be met with unexpected reactions from the private sector, they lose their effect to a large extent, and in fact, private sector reactions may hinder the effects of the government's financial policies. While Millon believes that the level of employment and prices can be controlled with financial policies. [21,30]. Human capital has always been the focus of countries' development, and the labor force is considered not only a factor of economic growth but also a fundamental factor in the development and creation of the wealth of nations. Thus, the labor market, as one of the four economic markets, plays an important role in economic, social, and cultural development. Therefore, the adoption

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of appropriate regulations and policies in the regulation of labor relations and the balance between the supply and demand of labor can play a significant role in creating jobs and reducing unemployment, subsequently increasing economic growth and reducing inflation. In Iran, the government plays a dominant role in economic activities, this was stabilized with the increase in oil prices from the beginning of the 1950s and continued after the Islamic revolution, in such a way that despite reform policies including privatization policies and the policies of Article 44 of the Constitution, major economic activities are still at the disposal of the government. The significant growth of the country's population in the past decades has made many young populations at working age; in addition, the inappropriate situation of creating employment in the economic sectors has failed to provide job opportunities commensurate with the labor supply. During the past decades, various measures have been adopted to create job opportunities and reduce the unemployment rate. Some of these policies are classified as financial policies and some are classified as fiscal policies. During the last economic crisis worldwide, the usefulness of fiscal policy was noticed for two reasons First, the argument was that at that time, monetary policy was weak enough (less than zero) that policymakers had no choice but to rely on fiscal policy to stimulate economic activity and employment during recessionary periods. Secondly, it was expected that there will be a long-term recession in all countries. In this situation, fiscal stimulus will have enough time to achieve positive results and a stable economy, regardless of the normal interruption in implementation [13]. In this article, we examine the impact of the government's fiscal policies on labor demand from 1977 to 2018. Considering the impact of the important events of the imposed war and UN Security Council sanctions on Iran's economy during the period under review, we tried to have a more accurate estimate of the studied variables by introducing two dummy variables. We intend to answer the following questions.

- Has the fiscal policy of the government's current expenditure been effective on the labor demand?
- Has the fiscal policy of the government's construction expenditure been effective on labor demand?
- Has the fiscal policy of taxes been effective on labor demand?

Much research has been done about unemployment, employment, and job demand. Some researchers have investigated the effect of some fiscal policy variables, including government expenditures, taxes, or the effect of a combination of different policies on employment. The distinctive feature of this article is the emphasis on the effect of fiscal policies, as the main means of implementing government policies, on labor demand. Thus, the fiscal policy variables have been added to the conventional labor demand model to investigate the simultaneous effect of total tax revenue and government expenditure on employment. Also, this paper has investigated the long-term effect of fiscal policy on labor demand. In this article, we first examined fiscal policy and employment theories in economic schools in the theoretical foundations' section. In the following, we reviewed domestic and foreign studies on the topic of the article. After that, the research model has been defined and the method of its calculation has been stated while introducing the research variables.

Then the specified model was estimated and its results were analyzed. In conclusion, while summarizing, we presented suggestions. Considering the financial dominance of the government in Iran's economy, especially after obtaining oil income from the early fifties, in this article we have investigated the effect of the government's financial policies on employment in a long-term period. It is expected that considering the time period under investigation and considering the effect of the main exogenous shocks by using virtual variables, we will achieve more reliable results compared to similar researches.

## 2 Theoretical Foundations

### 2.1 Fiscal policy in different economic school

In the school of mercantilism, the goals of fiscal policy are non-financial. The measures include reducing the tariff on the import of raw materials, increasing the tax on the export of raw materials, supporting trade and industry, providing financial assistance to improve the quality of manufactured goods, creating a centralized government with a strong army, and trying to dominate the colonies and bear the cost of wars and colonial policies. In the classical school, taxation is considered a neutral financial lever and it should be imposed in such a way that it does not create a deviation in the economic decisions of individuals and companies. From their point of view, it is necessary to observe the principle of balance in the government budget, and the increase in government debt will lead to inflation or financial bankruptcy. Determining the dimensions of the government budget at least would be appropriate. According to Keynes, all economic activities; in particular, the level of employment depends on income. Of course, this dependence is not permanent and necessary. Keynes considers and analyzes issues in a short period. Proponents of Millon's theory believe that investment demand is determined exogenously. In this case, with each level of investment known and establishing a stable relationship between income and consumption expenditure, only the changes in government purchases ( $g$ ) or tax rate ( $t$ ) change the real output. Therefore, the IS equation is as follows:

$$y = c \left( y - t(y), \frac{A}{P} \right) + i + g \quad (1)$$

Where the tax revenue is a function of the real income level; however, consumption and savings depend on disposable income and the real wealth of households. At any given level of  $i$  (interest rate) and  $g$  (government expenditure), with a given tax function and level of real assets; the above equation determines the level of  $y$  (national income) independent of the money market. As a result, at each level, the interest rate and the IS curve are vertical, and the money market equation determines the equilibrium interest rate. Therefore, from the point of view of supporters of financial theory, assuming that investment demand is not sensitive to interest rate changes, the connection between monetary policy and other sectors of the economy, including the general level of prices, has been cut. This extreme financial model may be suitable only in various recessionary conditions, but it seems that such a view is especially appropriate for an economy that operates close to full employment [5].

Monetarists consider the use of monetary policy as a cause of instability and are against government intervention. They believe that the economy is inherently stable and will automatically return to the natural unemployment rate in the event of a disturbance. New Keynesians believe that the government should rationally intervene in the economy and provide conditions for improving economic growth and creating employment. Trade cycle commercial school believes that financial and tax policies can cause a lot of damage to the economy, and for this reason, they are against government interference in the economy and believe that governments use economic policies as a tool to maximize their interests. The post-Keynesian school believes that government intervention is necessary for real instability conditions, and the Austrian school believes that government intervention leads to inappropriate allocation of resources and increased unemployment, and for this reason, believes in minimal government intervention in the economy. [23]

## 2.2 Theories of Employment

According to the assumption of complete flexibility of prices and wages, classical economists put forward full employment and no change of real variables in case of adopting monetary and fiscal policies and consider the supply and demand of labor as subordinate to real wages. They believe that if the government does not fully intervene in economic affairs, the economic balance will be established at the level of full employment. The new classics have introduced microeconomic topics into macroeconomic analysis for building macroeconomic models, optimizing production decisions of enterprises, and extracting labor supply and demand functions. In addition to the classical assumptions, they introduce the rational expectations hypothesis into the classical economic model and consider the short-term unforeseen policies as the cause of changes in production and employment. According to this assumption, corporate wages equal the expected wage level and will regulate in the contracts.

In other words, in such a situation, there will not be a systematic tendency for employment to deviate from its natural rate. So that the result of implementing an anti-cyclical monetary policy to reduce the unemployment rate will lead to an increase in the general level of prices and the formation of inflationary expectations. The theory of the natural rate of unemployment is related to the monetary school led by Milton Friedman. According to this theory, every economy has an equilibrium level and unemployment rate, which is determined by the supply of production factors, technology, and economic institutions. In the mentioned theory, if people's expectations about prices and wages are correct, unemployment will remain at the natural rate. The employment rate is also a level of natural employment that equals the equilibrium real wage, labor supply, and demand [14]. Keynesians, believing in the stickiness of nominal wages, consider the deviation from the level of production and employment and the occurrence of involuntary unemployment as a possible thing in the commodity and labor market, and consider such imbalances in the economy to be long from the path of full employment. The accounting for the point of view of determining the level of production and total employment by the total demand, states that the authorities can intervene to influence the effective demand so that a faster return to full employment can be established. Of course, during the stabilization policy, they generally prefer fiscal policy over monetary policy and introduce the government as the agent of maintaining the economy at the full employment level because they consider the impact of fiscal policy on aggregate demand more direct, predictable, and faster [7].

New Keynesians, to defend the monetary wage stickiness theory that was put forward by Keynesian economists, argue that some stages of wage and price adjustment concerning the theories of list cost, efficient wage, and internal-external wage lead to real stickiness [17]. Monetarists also emphasize that the economy may not always be in the real production of full employment. However, according to monetarists, expectations in the economy, including price expectations, are formed comparatively. According to this effect, a change in aggregate demand or monetary policy is partly corrected over time and in each period. Therefore, aggregate demand management policies only affect the level of production and employment in the short term, and in the long term, when expectations are perfect and expected prices are equal to actual prices, the expansionary monetary policy only leads to inflation and with no impact on real GDP. [11]. Emphasizing the role of money in the economy, monetarists do not consider the fiscal policy to be effective on employment. According to the theory of business cycles, real supply-side factors are much more important than demand-side fluctuations, and monetary shocks and other demand-side shocks have no significant effect on production or employment. Therefore, according to this theory, the establishment of the minimum wage policy as one of the fluctuations on the demand



side has no significant effect on production and employment, but it can cause an increase in the inflation rate in society. [24].

### 3 Literature Review

#### 3.1 Internal Studys

Sharifi [27] investigated the effects of indirect taxes on the production of different sectors to cover all kinds of government expenses, on employment and inflation caused by cost pressure, using a data model. This paper simultaneously examines the contractionary effect of taxation with the expansionary effect of paying all kinds of expenses resulting from this tax. The author concludes the implementation of this policy increases the producer price index and employment, but its effects are different in different sectors. Qolizadeh [22] evaluated the effects of the government's fiscal policy (accounting for changes in taxes) on employment using the vector error correction model and the co-accumulation test using the time series data of 1971-2012. The author showed that there is a long-term balanced relationship between the increase in taxes and employment, and during the period under review, the increase in taxes causes a decrease in employment by evaluating the short-term and long-term relationships between the variables. Akhundzadeh et al[1], in a study entitled "The relationship between corporate income tax and unemployment rate in Iran," investigated the relationship between the unemployment rate and corporate income tax policy in the Iranian economy, using the Vector Autoregression Model (VAR) and Vector Error Correction Model (VECM). For this purpose, they used time series data from 1971 to 2011. The results show that the two variables of corporate income tax and minimum wage have a positive and significant effect on the unemployment rate. On the other hand, the effect of the variables of trade openness and government size on the unemployment rate is negative.

Armen et al. [4] investigated the two-way relationship between the minimum wage and unemployment using the approach provided by Todo-Yamato and the self-explanatory autoregressive distributed lag (ARDL) model from 1971 to 2011. The results show that this relationship is not established on both sides. In other words, determining the level of the minimum wage does not affect the level of demand and employment of the labor force, and the behavior of the actual minimum wage level does not follow the unemployment rate, and the prevailing unemployment rate in society is not considered in determining the level of the minimum wage of the labor force. Sajidi et al. [24] investigated the sensitivity of tax bases on macroeconomic variables. In this article, the sensitivity of tax bases on macroeconomic variables (gross domestic product, inflation, unemployment rate) was investigated using time series data from 1989 to 2014 and also using econometric tools. The SUR was used for model estimation. The results show the very low sensitivity of the unemployment rate to changes in all tax revenues.

Manzoor et al.[15] in the article on the effects of increasing the minimum wage on the employment of unskilled and skilled labor, which was done in the framework of a static general equilibrium model, show that the increase in the minimum wage causes a decrease in the employment of unskilled labor and an increase in the demand for skilled labor in the economy. Zaranejad et al[32] in the article on the effect of government size on the unemployment rate investigated the effect of government size on the unemployment rate in Iran's economy using annual data from 1959 to 2011 and Pesaran, Bounds Testing Approaches to the Analysis of Level Relationships by Shin and Smith method, based on the Unconstrained Error Correction Model (UECM) estimation approach including dynamic relationship and long-term equilibrium relationship. The results show that the size of the government has a positive and

significant effect on the unemployment rate, and to reduce the unemployment rate, the size of the government should be reduced in Iran's economy. Sohailli et al. [26] examined the relationship between private and public investment and employment in 30 provinces of the country from 2014 to 2015 using the method of generalized moments in three models, including private sector employment, government employment, and total employment. Research findings confirm the positive relationship between private investment and employment, but government investment has a negative and significant relationship with employment. The simultaneous effect of private and public investment on employment examinations confirmed the positive effect of private investment on employment and the negative effect of public investment on employment. Aziz Mohammadlou [3] examined the role of variables affecting employment and labor demand in the sectors of industry and mining, agriculture and services in the form of convergence analysis and error correction model in the framework of imbalance approach in the labor market based on the dynamic model of labor demand. The estimation of the dynamic model of labor demand showed that among the variables affecting the labor demand, the variables of production, export, and wage index are the most effective variables on the labor demand in different economic sectors; meanwhile, the investment variable has not met the expectations of strengthening and developing employment.

Sepherdoost et al. [2] investigated the reaction of the employment rate to the tax structure in Iran while examining the impact of fiscal policy in the form of taxation on employment. They tested the hypothesis that taxes have a negative effect on the employment rate. For this purpose, the vector error correction approach and the Toda-Yamamoto causality test were used for annual time series data during 1978-2017 for Iran. The results of the causality test show that corporate tax and import tax are factors that increase the unemployment rate in Iran. Ebrahimi et al. [8] In the article on The Effect of fiscal Policy on the Unemployment rate and Inflation rate in Provinces of Iran: A GVAR Approach, The effect of fiscal policy on the unemployment rate and inflation rate in the provinces of the country using the global vector auto regression approach in 2005:q1-2016:q4 reviewed. The results of the provincial reaction to the positive shock of financial policy showed that the unemployment rate in some provinces is meaningful and in others it was meaningless. The timing of these reactions was relatively similar, but their size was different, According to the results, policymakers should put on the budget decentralization as well as delegating authority to the provinces to achieve balanced regional development. Fatemi et al. [10], In the article Investigating the effect of the optimal government size on employment in the agricultural sector in Iran's economy the optimal growth rate for the size of the government was estimated using the dynamic optimal control method. In the following, the effect of optimal size of the government on the employment of the agricultural sector was investigated with the ARDL method and the use of Eviwes software. The results of the estimation of the equation show that in the current situation, the variable government expenditure trend has had a negative and significant effect on the employment of the agricultural sector, both in the short term and in the long term.

### 3.2 Foreign studies

Papa [20] investigated the transmission of financial shocks in the labor market. The results of his research for the period of 1969-2001 show that government expenditure and investment shocks increase real wages and employment at the same time. Miyazaki [16] investigated the effect of fiscal policies adopted in Japan on economic variables such as unemployment, consumption, investment, and inflation using the vector autoregression technique. Based on the results obtained from this study, the negative effects of applying financial policies on macroeconomic variables in the 90s in this country were wider

and more stable than its positive effects. Among other things, the reduction of taxes in Japan in the mid-90s has increased unemployment. Yongjin [31] investigated the effect of government size on economic growth and unemployment rate in 32 developed countries and 51 developing countries from 1996 to 2006. The results show the positive relative effect of government size on economic growth in developing countries, while it is negative in developed countries and is 5 times more than in developed countries. Also, in both groups of countries, the increase in the size of the government is proportional to the higher unemployment rate, but its effect is three times higher in developing countries than in developed countries. O'Nwachukwu [19] aimed at determining the factors affecting unemployment in Nigeria, found that, unlike real GDP which has no significant effect on the unemployment rate, variables such as government expenditure, inflation rate, and population have a significant effect on the unemployment rate. In their study, Egebark and Kaunitz [9] investigated the impact of tax reduction on the employment of young workers. The findings of this research showed that there is a significant relationship between income tax and the wages of young workers. These findings also showed that there is no significant relationship between the income tax of skilled (mature) workers and their employment.

## 4 Research Model and Estimation Method

### 4.1 Labor Demand Function Extraction

The imbalance in Iran's labor market in recent decades has been mostly affected by the lack of labor demand, so This paper adopts a dynamic model to estimate labor demand. According to the difference between the actual employment level and the desired employment level, the demand for the labor force is expressed as follows.

$$\text{Ln}N_t^* = \text{Ln}f(X_t) + U_t \quad (2)$$

Where  $N_t^*$  is the optimal level of employment.  $X_t$  includes the set of independent variables affecting the work demand and  $U_t$  is the term of disturbance. Since  $N_t^*$  cannot be directly measured or observed, the Nerlav relation or partial adjustment process is used for econometric estimations and converting it into measurable values. During the partial adjustment process, there are two types of costs, which are:

A) Disequilibrium price: When the company's employment is far from the optimal employment level (be less or more), costs are imposed on the company, which is identified as the disequilibrium price. Obviously, the more the work force in the company is far from the desired level, the higher these costs will be. To reduce these costs, the company must bring its employment closer to the optimal level. But reducing the difference between the existing and optimal (desirable) employment levels and moving to the desired employment level requires paying costs from the company's side, which makes it impossible for the company to move towards optimal employment in the short term. B) Adjustment costs: The costs that the company has to pay to adjust the amount of labor employed to reach the desired employment level are considered adjustment costs. These costs include the cost of hiring labor (including the costs of searching, interviewing and selection, initial training), which varies according to the skill level of the required labor force, as well as the costs of firing labor and labor dismissal costs which include labor regulations, labor unions, and social and political costs to dismiss the workforce. It is clear that the company is trying to minimize the total costs of adjustment and imbalance. The one-period total cost (TC) function is defined as follows:

$$\text{TC} = \alpha_1 (\text{Ln}N_t^* - \text{Ln}N_t)^2 + \alpha_2 (\text{Ln}N_t - \text{Ln}N_{t-1})^2 \quad (3)$$

The function minimizes the total cost compared to the labor factor and by performing a series of mathematical operations and sorting the statements, the following relations is obtained:

$$\text{Ln}N_t - \text{Ln}N_{t-1} = \lambda(\text{Ln}N_t^* - \text{Ln}N_{t-1}) \quad (4)$$

Where  $\lambda = \frac{a_1}{a_1 + a_2}$  is called adjustment coefficient. The adjustment coefficient shows how many percent of the gap between the actual and optimal level of employment is filled per year. The labor adjustment speed, which is equal to  $\frac{1}{\lambda}$ , indicates that after a few years, the gap between the optimal and actual employment levels will be filled. For example, if  $\lambda = 0/5$  it means that every year 50% of the gap between the optimal and actual level of employment is filled, and it takes about two years for this gap to disappear. If we obtain the optimal amount of employment from equation 3 in terms of current and interrupted real employment values and put it in equation 1, the estimable equation of the labor demand function that is obtained using the partial adjustment mechanism can be expressed as obtained the following:

$$\text{Ln}(L_t^d) = (1 - \lambda)\text{Ln}(L_{t-1}^d) + \lambda[\text{Ln}(X_t)] + U_t \quad (5)$$

In the above relationship,  $L_t^d$  is the dependent variable of labor demand and  $X_t$  is the vector of factors affecting employment, such as the amount of production, the cost of using labor, etc., and  $\lambda$  is called the adjustment coefficient and  $U_t$  is called the disturbance term.

In another method, labor demand is obtained by maximizing the company's profit function. In this method, labor demand is considered equal to the level of employment. It is obvious that there will be a difference between the desired demand and the existing demand of labor according to the adjustment costs. Therefore, it is necessary to establish a relationship between these two types of labor demand. For this purpose, partial adjustment mechanism is used. The labor demand function in the long run is expressed as follows:

$$N_t^d = f(X_t) + u_t \quad (6)$$

Where,  $N_t^d$  is the optimal demand for labor and  $X_t$  is the vector of independent variables and  $u_t$  is also the same as the previous case of the disturbance term. Since the variable  $N^d$  is invisible, we convert it into real and measurable values using a partial adjustment mechanism. In this method, the real net income function is identified as  $R = R(N_t, D_t, \frac{P_m}{P_t}, K_t)$ , where  $N_t$  is employment,  $K_t$  is capital stock,  $P_m$  is the price of raw materials,  $P_t$  is the price of the product, and  $D_t$  represents the demand transfer variables. Of course, in this model, the assumption of imperfect competition is applied and therefore, the price is different from the final cost. Now the firm chooses  $N_t$  in such a way that its profit is maximized:

$$N_t - N_{t-1} = \lambda(N_t^d - N_{t-1}) \quad (7)$$

$$W_t N_t - C_t W_t [N_t - N_{t-1}(1 - q_t)]^2 \quad (8)$$

$$\pi = \sum_{t=1}^{\infty} P_t \left\{ R \left( N_t, D_t \left( \frac{P_m}{P_t} \right) \right) \right\}$$

In which,  $W_t$  is the real wage rate,  $\frac{P_m}{P_t}$  is the material price to the product ratio,  $C_t$  is the adjustment costs relative to the wage and  $q_t$  is the quit rate, the job that we will have fixed and fixed for  $q_t$  and  $C_t$  by solving the mentioned problem:

$$N_t = \lambda N_{t-1} (1 - \lambda) (1 - a\lambda) \sum_{i=0}^{\infty} (a\lambda)^i N_{t+i}^* \quad (9)$$

Where  $a$  is a parameter, such that  $1 - a$  is equal to the real interest rate.  $N_{t+i}^*$  represents the expected employment level in period  $t+i$  and  $\lambda$  is the adjustment coefficient, which is a function of  $q_t$ ,  $C_t$  for the given future. Of course,  $q_t$ ,  $C_t$  cannot be predicted in any way. At the beginning of the next period  $q_t$ ,  $C_t$  will change and a new optimal plan will be formed, as a result, a different value for  $\lambda$  will be obtained.



So  $\lambda$  is constant within a design, but will change between designs. Since the appropriate value of the interest rate will be fixed in the long term,  $\lambda$  is defined as follows:

$$\lambda = \lambda(C_t, q_t), \quad \frac{\partial \lambda}{\partial C} > 0, \frac{\partial \lambda}{\partial q} > 0$$

Here, the shape of the model is considered logarithmically. For model variables, more than one intercept is expected. Suppose  $i = 1, 2, \dots, I$  exists with different optimization costs, and hence, there will be  $\lambda_i$  in the model, but the long-term equilibrium is the same as  $N^*$ , which is determined by the following equation in terms of total employment :

$$\left[ \prod_{i=1}^I (1 - \lambda_i L) N_t = \sum_{i=1}^I (1 - \lambda_i) (1 - a\lambda_i) \sum_{j=0}^{\infty} (a\lambda_j)^j (1 - \lambda_j L) N_{t+j}^* \right] \tag{10}$$

Where  $L$  is the interrupt operator. Aggregation of different types of labor, with different hiring and firing costs, will have the same effects. The form of equation 9 is expected to have a more complex structure than equation 7 with several breaks on the dependent variable. Now, if we replace  $(5N_t^d)$  in equation 9, we will have:

$$N_t = \sum_{j=1}^j \gamma_j(C_t, q_t) N_{t-j} + \sum_{j=0, k=1}^j B_{kj}(C_t, q_t) X_{kt-j} + \varepsilon \tag{11}$$

Which in this template  $X_t$  is the independent variable vector. This model can be presented as follows by changing the parameters:

$$\Delta N_t = \theta_0 N_{t-1} + \sum_{j=1}^j \theta_j \Delta N_{t-j} + \sum_{k=1}^j (\phi_{K_0} X_{K_{t-1}} + \sum \phi_{K_{j+1}} \Delta X_{K_{T-j}}) \tag{12}$$

$$\Delta N_t = \theta_0 (N_{t-1} + \sum_{k=1}^k \Pi_k X_{K_{t-1}}) + \sum_{j=1}^j \theta_j \Delta N_{t-j} + \sum_{k=1}^k \sum_{j=1}^j \phi_{K_{j+1}} \Delta X_{K_{t-j}}$$

Where  $\Delta = (1 - L)$  and  $\Pi_K = \phi_{K_0} / \theta_0$  and  $\theta_0 < 0$ .

Based on the theoretical model, the vector of dependent and independent variables in the regression relationship is considered in the form of equation 12, so that employment in a period is a function of the values with its interruptions and also a function of the vector of independent variables.

In this article, after examining different models, the dynamic model of labor demand, its selection and variables was adjusted and completed as follows according to the theoretical foundations and the subject under investigation to examine the research questions.

$$EMP_t = f(EMP_t(-1), GDP_t, SC_t, WR_t, GE_{1t}, GE_{2t}, TTAX_t, DUM1, DUM2) \tag{13}$$

So that labor demand in a period is a function of intermittent employment values and a set of independent variables. In the mentioned relation,  $EMP_t$  is labor demand in period  $t$ ,  $EMP(-1)$ , is values with

interruption of labor demand,  $GDP$  gross domestic product,  $SC_t$  capital reserve,  $WR_t$  real minimum wage,  $GE_{1t}$  government current expenditures,  $GE_{2t}$  is government construction expenditures,  $TTAX_t$  tax income Government,  $DUM1$  is dummy variable of imposed war,  $DUM2$  is dummy variable of UN Security Council sanctions.

#### 4.2 Introduction of Research Variables and Calculation Method

**Employment and its intermittent value:** The intermittent employment value has been entered into the model as an indicator of the flexibility of the labor market to introduce adjustment costs, which is expected to have a positive effect on job demand. The coefficient of the value with intermittent employment must be smaller than the unit to obtain the adjustment coefficient in the labor market. This value indicates the amount of difference between actual and desired demand that is lost in each period. The closer this value is to one, the more flexible the labor market will be, and vice versa. Employment statistics are extracted from the data of the Statistics Center.

**Gross domestic product (GDP):** Gross domestic product is the monetary value of the sum of final goods and services that are produced within the country's geographical boundaries during a certain period. And it is expected that the demand for labor and employment will increase with an increase in GDP. Economic growth is the increase in real GDP per year compared to the previous year. The amount of GDP (at constant prices of 2011) was extracted from the time series database of the Central Bank. The logarithmic value of GDP is used as a measure of economic growth.

**Capital reserve:** According to the principle of Le Châtelier, the fewer restrictions consumers and producers face in the economy, the easier they react to changes in their economic environment. In the long term, it is possible to replace labor and capital for companies, but it is not possible to replace labor and capital in the short term, due to the fixed capital. Therefore, it is expected that there will be an inverse relationship between capital reserves and labor demand in the long term. The data from the time series data bank of the Central Bank have been used to calculate the capital reserve. The capital reserve has been used at the constant price of 2011.

**Real minimum wage:** The minimum wage is one of the support policies of governments, which is adopted in most countries to achieve social justice, prevent the exploitation of low-skilled workers and improve income distribution. Economic theories and research has identified the real wage as a variable affecting labor demand. The result of establishing the minimum wage in a competitive market is unambiguous, but this issue is ambiguous in developing countries, and empirical studies provide different results. According to the cycle theory, establishing the minimum wage as one of the fluctuations on the demand side has no significant effect on employment or production. [24] To calculate the real minimum wage, first, the nominal minimum wage was extracted from the balance sheet of the Central Bank, and then, using the price index, the real minimum wage was calculated at the constant price of 2011.

**Government expenditures:** Economic theories present conflicting views regarding the effect of government economic policies, including fiscal policy, on labor demand. The conducted research also gives different results in this regard. Some emphasize the positive effect of increasing government expenditure on labor demand, and some emphasize the negative relationship between government expenditure and labor demand. We consider the effect of government expenditure on labor demand separately for the different natures of current and construction government expenditure. The current expenditure of the government is the expenses that are paid to continue the normal activities of the gov-

ernment. Construction expenses are government investment expenses that are carried out in the framework of short-term and long-term plans. The information about government expenditure is extracted from the time series data of the central bank.

**Tax revenue of the government:** Small changes in taxes can have a significant effect on the level of total demand and national production, and consequently, affect the demand for labor. Regarding the effect of tax on employment, economic theories and studies have reached different results. The studies of Taqavi and Rezaei[29] show that employment does not respond to the increase in taxes in the country. According to Abbasian [2], the uncertainty caused by tax fluctuations has a negative effect on employment. The information about the government's tax revenues is extracted from the time series data bank of the Central Bank.

**The dummy variable of the imposed war:** The Iraq and Iran war outbreaked in part of the years of the research period, which affected the economic activities. A dummy variable has been entered into the model to consider the effect of the war; it was considered one for 1979-1988, and zero for the rest of the years.

**The dummy variable of the Security Council Sanctions:** Although in the years after the victory of the Islamic Revolution, Iran's economy has always been under sanctions. However, after Iran's nuclear case was referred to the Security Council, unprecedented sanctions were imposed in the form of UN resolutions, which affected Iran's economy. A dummy variable was entered into the model to consider the effect of sanctions, which is equal to one for 2006-2018 and zero for the rest of the years.

## 5 Model Estimation Method

The use of traditional and usual econometric methods in estimating model coefficients using time series data is based on the assumption that model variables are stationary. If the time series variables used in estimating the coefficients of the model are non-stationary, while there may be no conceptual relationship between the model variables, the coefficient of determination obtained can be very high and cause the researcher to make mistakes about the amount of relationship between the variables. If time series variables that are non-stationary are used in the estimation of model coefficients, the result may lead to a spurious regression, because in the variables with a trend, the tendency is seen that they show a strong correlation even in cases where there is no significant economic relationship between them. The traditional way to avoid reaching a spurious association between time series variables has been to include a time trend variable  $T$  among the independent variables of the model.

Recently, a group of economists questioned the above traditional method. According to them, this method can be correct and acceptable when the time trend of the variables is a definite trend, not a random one [18]. When the time series variables are not durable, adding the time trend  $T$  among the variables or subtracting the definite trend from the variables will not cause these variables to be durable. As a result, the use of the usual econometric methods with the use of unreliable statistical data will cause the  $t$  and  $F$  tests to not have the necessary validity and the researcher will reach wrong perceptions about the intensity and extent of the relationship between the variables. Although the durability condition of the time series variables of a regression relationship can be provided through differentiation, nothing special can be done to preserve the information related to the level of the variables. Using the collocation method, a regression can be estimated without fear of spurious variables based on the level of time series variables.

**Table 1:** Results of the Unit Root Test for the Level and Difference of Model Variables

Variable	Symbol	Critical value	Computational statistics	Optimal interval	Intercept and trend	Result
Employment	EMP	-3.5279	-3.0595	3	Intercept and trend	Non-durable
Employment	DEMP	-3.5313	-2.8233	3	Intercept and trend	Non-durable
Employment	DDEMP	-2.9422	-3.8435	3	Intercept without trend	Durable
Domestic Gross Production	GDP	-2.9387	-0.9398	2	Intercept without trend	Non-durable
Domestic Gross Production	DGDP	-2.9400	-3.2705	1	Intercept without trend	Durable
Capital reserve	SC	-3.5348	-1.2934	3	Intercept and trend	Non-durable
Capital reserve	DSC	-3.538	-1.9050	3	Intercept and trend	Non-durable
Capital reserve	DDSC	-2.9472	-3.4467	3	Intercept and trend	Durable
Real wage	WR	-3.5279	-4.3330	3	Intercept and trend	Durable
current expenditures	GE1	-3.5313	-2.5030	3	Intercept and trend	Non-durable
current expenditures	DGE1	-2.9422	-4.9842	3	Intercept without trend	Durable
Construction expenditures	GE2	-3.5313	-2.6972	3	Intercept and trend	Non-durable
Construction expenditures	DGE2	-3.5348	-10.5636	0	Intercept and trend	Durable
Tax revenue	TTAX	-3.5279	-1.9241	0	Intercept and trend	Non-durable
Tax revenue	DTTAX	-3.5313	-3.7938	3	Intercept and trend	Durable

Source: Research findings

According to the Cointegration theory in modern econometrics, when using time series variables, it is necessary to use estimation methods that address the problem of reliability and co-accumulation. Accordingly, in applied econometrics, different approaches has been used to estimate the long-term relationship between variables when the variables are non-stationary. One of the advantages of the ARDL technique is that regardless of whether the variables in the model are  $I(0)$  or  $I(1)$  can be used. Another reason is that this method is relatively more efficient in small or limited samples compared to other methods. Also, this method estimates the long-term and short-term patterns in the model at the same



time and solves the problems related to omitted variables, autocorrelation, and endogeneity. Therefore, this article adopts (ARDL) approach to investigate the relationship between the variables for its advantages compared to the other mentioned approaches.

## 6 Estimation of the Model and Analysis of Results

### 6.1 Reliability Test of Variables

Before dealing with the estimation of the model, we examine the durability of the model variables. Because in case of non-durability of variables used in estimating the coefficients of the model, the results of the estimation will not be very reliable and as a result, the researcher reaches wrong conclusions about the degree of relationship between the variables. For this purpose, the generalized Dickey-Fuller test was used. Table (1) depicts the above test results for all variables. The results from the unit root test show that the real wage variable is at the durable level, the variables of employment and capital reserve with double differentiation, and the variables of gross domestic product, government current expenditures, government construction expenditures, and tax revenues are durable with one differentiation. Considering that the variables in the specified model do not have the same order of summation, the best estimation method is the ARDL method, which is not sensitive to the degree of summation of the variables.

### 6.2 Model Estimation Results Based on the ARDL

the variables of the model can be estimated using the ARDL method because they are stationary in different intervals. The main reason for choosing such a method is that the degree of correlation of the variables is not important in the desired method and also by determining the appropriate intervals for the variables, the desired model can be selected based on the economic theory. The model considers labor demand as a dependent variable and GDP, real wages, capital reserves, government current expenditures, government construction expenditures, and government tax revenue variables as independent variables, while accounting imposed war and Security Council sanctions as dummy variables. The independent variable was estimated, taking into account the research questions that are focused on the assessment of the government's financial policies on labor demand using the Durbin Watson and F statistics and the significance level of the variables. All variables have been used as natural logarithms. The logarithmic writing of variables, can convert non-manual variables in some cases and solves the problem of different variable units. Also, the coefficients, in this case, show the percentage of dependent variable changes per one percent change of each of the explanatory variables. Due to the annuality of the data, the maximum interval of two years was determined. In estimating the model with the ARDL pattern, in the first step, the short-term dynamic model is estimated using Microfit software. The optimal interval of variables based on the Schwarz-Bayesian criterion is ARDL(1,2,1,2,2,0,0,0,2). Table (2) presents the results. The dynamic model results show that the zero and second intervals of GDP and the real wage variable first interval have a positive and significant effect on labor demand. The zero and second intervals of the capital reserve variable, the zero, first and second intervals of current government expenditures, the zero interval of the dummy variable of the imposed war, and the second interval of the dummy variable of Security Council sanctions have a negative and significant relationship with

labor demand. No significant relationship was observed between the variables of construction expenditures and government tax revenues with labor demand. The F statistic shows that the whole model is significant at the error level of 0.01%. Also, statistics show that the model has high explanatory power.

**Table 2:** Short-Term Dynamic Model (Determining The Optimal Intermittent) for the Dependent Variable of Lemp Employment Logarithm Using ardl (1,2,0,1,0,0,0,0,2) Based on Sbc Criteria

Probability	Statistics	SD.	Coefficient or parameter	Symbol	Variable
0.001	3.7091	0.093343	0.34622	LEMP(-1)	Logarithm of employment (intermittent)
0.036	2.254	0.033770	0.089318	LGDP(0)	Logarithm of GDP
0.92i5	-0.095833	0.042507	0.0040737h	LGDP(-1)	Logarithm of GDP (intermittent)
0.002	3.6290	0.034613	0.12561	LGDP(-2)	Logarithm of GDP (intermittent)
0.181	-1.3847	0.020411f	-0.028264	LWR(0)	Logarithm of real wages
0.003	3.3145	0.026186	0.086794	LWR(-1)	Logarithm of real wages (intermittent)
0.013	-2.7378	0.0039916	-0.010928	LSC	Logarithm of capital reserve
0.794	-0.02643	0.0042787	0.0011309	LSC(-1)	Logarithm of capital stock (intermittent)
0.010	-2.2806	0.039863	-0.0011404	LSC(-2)	Logarithm of capital reserve (intermittent)
0.023	-2.4617	0.080925	-0.019921	LGE1(0)	The logarithm of current government expenditure
0.002	-3.5846	0.0075787	-0.027166	LGE1(-1)	Logarithm of current government expenditures (intermittent)
0.003	-3.4019	0.0077243	-0.026277	LGE1(-2)	Logarithm of current government expenditure (intermittent)
0.121	-1.6208	0.0050829	-0.082383	LGE2(0)	The logarithm of government construction expenditures
0.242	-1.2069	0.0075524	-0.0053566	LTTAX(0)	The logarithm of government tax revenue
0.000	4.5368	0.013651	-0.061796	DUMI1	Imposed war dummy variable
0.241	-1.2084	0.019271	-0.023287	DUMI2	Sanction dummy variable
0.138	-1.5442	0.023920	-0.035394	DUMI2(-1)	Sanction dummy variable (intermittent)
0.007	-3.0021	0.020477	0.064512	DUMI2(-2)	Sanction dummy variable (intermittent)
0.000	8.6449	0.0033841	0.029323	TREND	Trend variable
0.000	5.8183	1.3401	7.7972	A	Intercept
$R^2 = 0.99$		$\bar{R}^2 = 0.99$		$DW = 1.5$	$HDW = 1.6$
$F=757.0985(0.000)$					

Source: Research Findings

The dynamic model results show that the zero and second intervals of GDP and the real wage variable first interval have a positive and significant effect on labor demand. The zero and second intervals of the capital reserve variable, the zero, first and second intervals of current government expenditures, the

zero interval of the dummy variable of the imposed war, and the second interval of the dummy variable of Security Council sanctions have a negative and significant relationship with labor demand. No significant relationship was observed between the variables of construction expenditures and government tax revenues with labor demand. The F statistic shows that the whole model is significant at the error level of 0.01%. Also, statistics show that the model has high explanatory power.

### 6.3 Diagnostic tests of the ARDL Model

Before estimating the long-term coefficients of the model, it is necessary to test the primary model ARDL presented in the previous section in terms of classical assumptions. Table (3) presents the diagnostic tests of the classical assumptions. The table results show the disorder statement has all the classical conditions in terms of autocorrelation, dependent form, normality of distribution, and homogeneity of variance, and it passes all tests of good fit.

**Table 3:** Goodness of Fit Tests in the ARDL Model

Test Statistics	LM Version	F Version
Serial Correlation	CHSQ(1) = 2/0222(0.155)	F(1,19) = 1.0117(0.327)
Functional Form	CHSQ(1) = 0.021455(0.884)	F(1,19) = 0.010197(0.921)
Normality	CHSQ(2) = 29.9227(0.776)	Not applicable
Heteroscedasticity	CHSQ(1) = 0.12090(0.728)	F(1,38) = 0.11520(0.736)

Source: Research findings

### 6.4 Testing the Hypothesis of Cointegration (Long-Term Relationship)

Basically, before estimating the long-term coefficients in the ARDL model, it is necessary to perform the unit root test of the null hypothesis of the absence of cointegration. Because the condition for the dynamic pattern estimated in this method to tend towards long-term equilibrium is that the sum of the coefficients of the dependent variable of the pattern is less than one. Here, using the results of Table 2, the null hypothesis of the non-existence of cointegration between the variables of the labor demand pattern can be tested, so that:

$$H_0 : \sum_{i=1}^N \beta_i - 1 \geq 0$$

$$H_1 : \sum_{i=1}^N \beta_i - 1 < 0$$

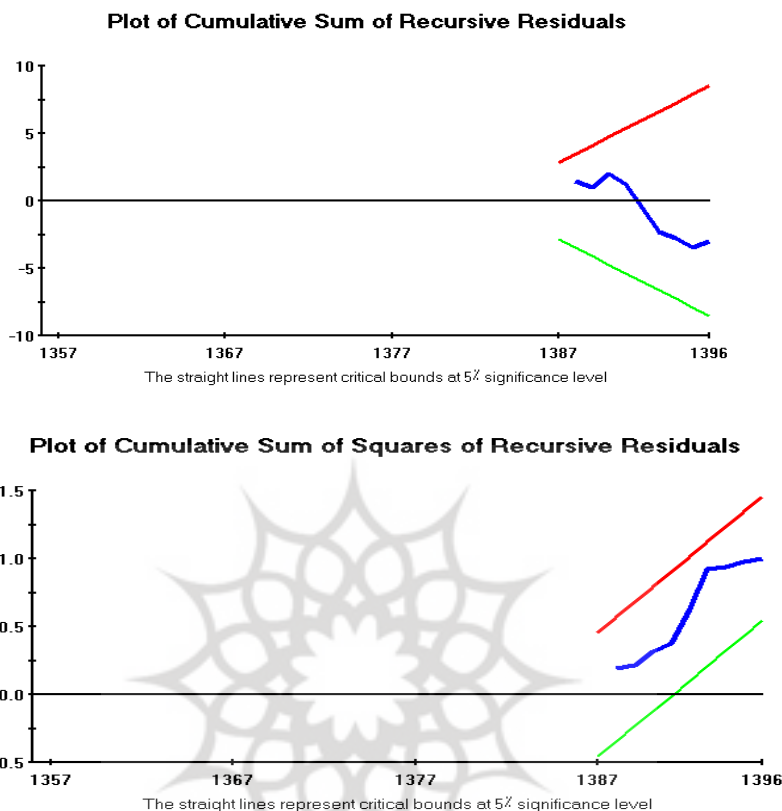
The presence of critical bounds will be necessary to test the above hypothesis. To calculate the critical bounds, we divide the sum of the coefficients of the dependent variable (intermittent) from a fraction and by its standard deviation [28].

$$\frac{0.34622 - 1}{.09334} = -7.004$$

The obtained test statistic (-7.004) is more than the critical value of Banerjee, Delgado, and Master's table (4.6) in terms of absolute value. Therefore, the null hypothesis that there is no long-term relationship is rejected and the presence of a long-term relationship is confirmed.

### 6.5 Estimation stability test

To ensure the structural stability of the model, we perform CUSUM and CUCUMSQ tests. This test, presented by Hansen, states that the estimated parameters of a time series may change over time and unstable parameters may not lead to correct detection. Therefore, it seems necessary to perform the parametric stability test.



Accordingly, both graphs are between the two lines that define the critical bounds at the 5% error level, therefore, at the 95% confidence level, it can be said that the model is structurally stable.

### 6.6 Examine the Long-Term Relationship of the ARDL Method

Now, the long-term coefficients of the labor demand model can be estimated according to the results of the previous tests and the good fit in the first stage of the ARDL model. The long-term relationship can be written as follows:

$$\begin{aligned} \text{LEMP} = & 10.9 + 0.30\text{LGDP} + 0.089\text{LWR} - 0.035\text{LSC} - 0.11\text{LGE1} - 0.012\text{LGE2} - 0.014\text{LTTAX} - 0.094\text{DUMI1} - 0.18\text{DUMI2} \\ \text{T} & \quad 18.1 \quad 5.8 \quad 2.4 \quad -2.9 \quad -4.2 \quad -1.5 \quad -1.1 \quad -4.3 \quad -7.02 \\ & (0.000) \quad (0.000) \quad (0.025) \quad (0.008) \quad (0.000) \quad (0.144) \quad (0.248) \quad (0.000) \quad (0.000) \end{aligned}$$

According to the results of the long-term relationship estimation, labor demand has a positive and significant relationship with GDP, and real wages during the period under review, but there is no significant relationship between construction expenditures and government tax income with labor demand. There is a negative and significant relationship between the variables of capital reserves and current



government expenditures and the dummy variables of imposed war and UN sanctions with labor demand in the long term. With an increase in the economic growth rate by one percent, labor demand increases by 0.30 percent in the long term. The positive relationship between GDP growth and labor demand, in the long run, is consistent with economic theories and empirical studies. A one percent increase in the real minimum wage increases employment by 0.08 percent in the long run. According to Ham [12], the result of establishing a minimum wage in a competitive market is clear and unambiguous, but it is ambiguous in developing countries, according to the research of Falihi and Oroji (2013). The absence of competition in the unskilled labor market and the power of employers in determining wages means that determining the minimum wage does not necessarily increase unemployment. Some researchers such as Akhundzadeh have confirmed the lack of a relationship between real wages and job demand. Arman et al. also concluded that determining the minimum wage does not affect the amount of labor demand and employment.

This article justifies the positive relationship between the real wage and labor demand since the nominal minimum wage has been converted into real wage using the price index and in most of the years under review, the increase in wages has been lower than the inflation rate, and the share of wages in production costs has not been significant (an average of ten percent). A one percent increase in capital stock reduces employment by 0.03 percent. This can be affected by the use of capital-intensive technologies in the production process and the substitution of capital instead of labor. Also, a 1% increase in the government's current expenditures in the long term reduces the labor demand by 0.11%. The increase in government construction expenditure does not have a significant effect on labor demand in the short and long term. According to some empirical studies, although the increase in government expenditure increases government employment, in the long run, it will reduce total employment by reducing private employment. There is no significant relationship between government tax revenue and labor demand. Tax revenue is only a part of the government's collection of people's income (real and legal). The amounts that are taken from people's income under titles such as insurance, duties, etc., are not included in the total tax income, and this has affected the results obtained. The function of exemptions, tax reductions, and tax evasion as well as the small share of taxes in the GDP (the ratio of taxes to GDP is less than ten percent) in the period under review are other reasons for the absence of a significant relationship between taxes and labor demand.

In his research, Miyazaki concluded that the reduction of taxes in Japan has caused an increase in unemployment. According to the estimation results of the model, the imposed war had a negative and significant effect on labor demand. Although sanctions have been a part of Iran's economic reality since the beginning of the victory of the Islamic Revolution, the sanctions imposed by the United Nations Security Council since the mid-1980s have had a significant impact on Iran's economy, and as the estimate shows these sanctions have had a negative and significant impact on labor demand. The model estimation results show that the effect of independent variables on the dependent variable is similar in the short-term and long-term periods, but the coefficients of the variables in the long-term are larger than in the short-term. The results of the present research are consistent with the research done by Akhundzadeh et al., Sohaili et al., and Miyazaki but inconsistent with the results obtained by Reza Qolizadeh, and Sepherdoost et al. In summary, the estimate shows that the government's current expenditures in the short and long term have a negative and significant relationship with labor demand. Also, no significant relationship was observed between construction expenditures and taxes with labor demand.

### 6.7 Error Correction Model (ECM)

The presence of a long-term relationship between variables provides the basis for using the error correction model (ECM). The above pattern relates short-term fluctuations of variables to long-term equilibrium values and measures its velocity. The results of the error correction test show that the error correction coefficient of the model is smaller than one and statistically significant, and its negativity indicates that any non-equilibrium moves towards equilibrium in the long term. The error correction coefficient of the model is equal to -0.65, which means that in each period, about 65% of employment non-equilibrium is eliminated and the model returns to long-term equilibrium. Table (4) presents the test results of the error correction model.

**Table 4:** The Results of the Long-Term ECM Error Correction Model for the Dependent Variable dLEP Using ARDL (1,2,1,2,0,0,0,2) Based on SBC Criteria

Statistics t	SD.	Coefficient	Explanatory variable
2.24540(0.034)	00.035770	0.080318	DlGdp
-3.6290(0.001)	0.034613	-0.12561	dLGDP1
-1.3847(0.187)	0.020411	-0.028264	dLWR
-3.6292(0.011)	0.0039916	-0.010928	dLS
2.8608(0.008j)	0.0039863	0.011404	dLSC1
-2.4617(0.021)	0.0080925	-0.019921	dLGE 1
3.4019(0.002)	0.0077243	0.026277	dLGE1 1
-1.6208(0.118)	0.0050829	-0.0082383	dLGE2
-1.2069(0.239)	0.0077526	-0.0093566	dLTTAX
-4.5168(0.000)	0.013681	0.061796j	dDUM1
-1.2086(0.238)	0.019271	-0.023287	dDUM2
3.0021(0.006)	0.020477	0.061382	dDUM21
8.6649(0.000)	0.0033841	0.029323	dTREND
7.0041(0.000)	0.093343	-0.65378	ecm(-1)

Source: Research find

$R^2=.88$   $DW=1.5$   $F=10.6094(.000)$

### 7 Conclusion

In Iran, the government has always played a major role in the economy. This role was strengthened by the increase of oil revenues from the 1950s and after the Islamic revolution, it was stabilized with the drafting of the constitution, and the activities of the government expanded even more. During these years the complexity of the country's economic environment was increased with the formulation of various laws and regulations and the creation of various organizations; in addition, the rentier economy and rentier institutions dominated the country in such a way that the implementation of reform policies, including privatization policies, liberalization policies, and original policies of article 44 did not have

much success. Under such circumstances, the government has adopted various policies, including financial policies, to solve economic problems, one of the most important of which is unemployment. In this article, we investigated the effect of the government's fiscal policy on labor demand during 1976-2018. For this purpose, the labor force demand function was selected as a research model, and it was completed and specified by adding fiscal policy variables using theoretical and empirical studies. Also, considering that during the study period, the imposed war and UN Security Council sanctions as external shocks have affected economic activities, its effects were introduced into the analysis by introducing two dummy variables. Then, it was estimated using official statistics of the specified model. The results show that there is a positive and significant relationship between economic growth and labor demand. This result is consistent with economic theories and empirical studies. Moreover, there is a positive and significant relationship between the real minimum wage and labor demand. Some theories of applying the minimum wage policy cause stability of employment and increase in national income (World Bank) and some declared its effects to be decreasing or ambiguous.

Also, based on the theory of real business cycles, establishing a minimum wage does not have a significant effect on national production and employment. In most of the investigated years, as a result of employer bargaining, wage increases have been lower than the inflation rate, on the other hand, the share of wages in production costs is low (an average of ten percent), so the positive relationship between the minimum wage and labor demand is justified. Armen et al. stated that there is no relationship between the minimum wage and employment. Manzoor et al. emphasized the positive relationship between the demand for skilled labor and the minimum wage. Furthermore, the capital reserve has a negative and significant relationship with labor demand. The effect of investment in creating job opportunities varies in different economic sectors and different periods because different structures and combinations of technologies are adopted. During the studied period, depending on the oil income, investment in large industries with capital-intensive technology has been done mainly by the government. In a sense, capital has replaced labor. Therefore, we have seen a negative relationship between capital reserves and labor demand. Soheili found a negative relationship between government investments and employment. There is a negative and significant relationship between current government expenditure and labor demand. An increase in current government expenditure can increase the demand for labor in the public sector, but the expansion of administrative bureaucracy causes a decrease in the demand for labor in the private sector and overall employment.

Also, Zaranejad concluded that it is necessary to reduce the size of the government to reduce the unemployment rate. The results of the model estimation showed that during the period under review, the government's construction costs have no significant relationship with the labor demand. The implementation of projects without economic justification, the dispersion, and prolongation of the project implementation period, and the implementation of large projects with insignificant job creation are the reasons for the absence of a meaningful relationship between the government's construction expenditures and labor demand. Sohaili and Yangjin found no significant relationship between tax revenues and labor demand. The extent of tax exemptions and discounts and the small share of tax revenues from national production (less than ten percent) and the non-inclusiveness of the tax system during the period under review are the reasons for the above result. Sajjadi et al., in their study, found the insignificant sensitivity of the unemployment rate to changes in all tax revenues. Miyazaki showed that in the 1990s in Japan, the reduction of taxes increased the unemployment rate. However, Sepherdoost concluded that corporate taxes have a negative relationship with the unemployment rate. The dummy variables of the imposed war and sanctions of the United Nations Security Council have had a negative and significant

relationship with labor demand. These external shocks have increased uncertainty, decreased investment and national production, and as a result, labor demand. The results of this study showed that the fiscal policy variables that were the subject of this study were not effective on labor demand in Iran. The governance system and administrative bureaucracy should be reformed in such a way that the administrative bureaucracy does not have a deterrent role and serves the productive activities of the private sector. Also, in allocating construction budgets, attention should be paid to the economic and technical evaluation and proper management of projects, and refrain from implementing construction projects under the influence of political and regional pressures that cause waste of national resources. One of the country's problems is the prosperity of non-productive activities with little job creation. It is necessary to reform the tax system in such a way that prevents tax evasion of non-productive sectors, improving the relative efficiency of productive and non-productive sectors and motivating investment in the productive sector. Also, it seems that the tax discounts and exemptions have not reached the desired goals of the policymaker, so it is appropriate to revise them so that the tax system helps to increase the demand for labor and employment by strengthening productive activities.

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