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Trade Liberty Policy Despite Shocks and Fluctuations Affecting in Periods of Boom and Bust on Women's Employment

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Abstract

The present study explores the mechanism of trade effects despite the foreign exchange fluctuations and oil shocks on women's job opportunities in the periods of the recession and prosperity in the country using the Markov-switching Regime ARCH Model during 1984-2016. According to the results of the model estimation, Commercial freedom has a negative impact on women's job opportunities during the recession, which means that government spending in this period is mostly spent on imports. Foreign exchange rate fluctuations have a negative impact on women's job opportunities during the recession and with negative oil shocks, foreign exchange earnings are declined, and government spending is dedicated to import to cope up with inflation and this leads to the reduction of job opportunities and women's employment. This has led to reduced job opportunities and reduced employment for women. Also, the impact of international trade variables, economic growth rate and positive oil shock on women's employment during the prosperity period is significant, which means that in a country with high trade openness, women's employment will also improve and there will be more job opportunities for women, which can help the country's employment. Therefore, government and private support for women's

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employment, self-employment, women's entrepreneurship and international trade opportunities can be a positive driver of women's employment growth.

Keywords: Trade, Export growth, Employment of women, Markov Switching Regime Model.

Introduction

Increased birth rates in the first decade of the Islamic revolution and increased labour supply with increased female participation rates due to economic and social changes on the supply side, and limited production capacity of various economic sectors with new innovations and increased labour productivity on demand side have created such a phenomenon in the Iranian economy. However, it must be accepted that the capacity of different sectors of the economy to create job opportunities is limited and one of the ways that it can be effective in job creation is to expand foreign trade in the Iranian economy. Today, foreign trade is one of the most important factors in the global economy and it has considerably increased the wealth of countries. Foreign trade is a factor that plays an important role in shaping the competitive environment. Any improvement in the employment condition of countries depends on economic growth, investment, exports, community policies, education and government behavior. In such an environment, if a country adopts a growing export trend, it will be able to create a strong, efficient and productive domestic market where both resources are able to mobilize and the economy will experience a suitable growth rate. In this way, economic growth rate increases and creates new job opportunities and changes the labor market. So today, globalization is the modern slogan of the scientific societies and has different meanings. According to Pratton, globalization is a process of change that has blurred political and economic boundaries, expanded communications, and enhanced the interaction of cultures. In this sense, globalization is a multidimensional phenomenon whose effects can be extended to social, political, legal and cultural activities. Given the current demographic and economic conditions of developing countries, where employment is one of the country's most important problems, and even given the consequences of the 2008 Western countries' crisis in the coming years, when new waves of unemployment were expected, it is necessary to take some measures to enhance economic growth and increase productive capacities that lead to new job opportunities and, consequently, decrease unemployment. On the other hand, attention to human capital and human perception as one of the main factors and development goals is one of the most important principles of development economics in today's world. But the important point is that human beings become human capital if the society provides the necessary training, motivation, and required infrastructural investment to create employment. As such, trade and export as an important part of external and internal resources suppliers play an effective role in manufacturing capacity building and creating physical capital, human capital productivity and establishing the link with international economy through the development of export markets, improved payment balances and advances in research and development in the host country. On the other hand, there has been a significant increase in the number of

women employed in the world since the second half of the twentieth century (Cotter, 2010). Due to the increase in women's education, especially university education, the increase in the average age of marriage, the decline in fertility, and the increasing trend of positive attitudes toward female employment, women's labour market participation is still low. Usually, the low level of women employment is substantially rooted in the social and cultural contexts that are reproduced through educational systems and open textbooks (Fortuna, 2011). Other studies and researches have shown that common cultural values and beliefs in a society have a direct impact on women's employment (Alizadeh, 2010). Following these issues, women's employment in the country has always been one of the key elements of production in various sectors, and given the role of international trade in the country's economy and the importance of women's employment, examining the role of trade and export growth can be important despite foreign exchange fluctuations and oil shocks in improving women's job opportunities and this study intends to address this issue. The paper is organized as follows: second section provides theoretical basics including theories and results of empirical studies on the topic. Section 3 presents the study methodology and the required tests. Section four is devoted to test results and model estimation. Section 5 summarizes and concludes.

Literature Review

In recent years, many developing countries have used trade policies to increase their economic efficiency. This indicates that in these countries, employment is considered to be an important issue for governments to be guided effectively and continuously because the development process is directly linked to human resources and the inappropriate use of human resources causes inefficient use of facilities and lack of economic development (Raposo & Machado, 2009). Trade and expansion of export through free trade are among the factors affecting human power demand and employment rate. Therefore, globalization is an inevitable process that trade liberalization as its key symbol has created some opportunities and threats for developing countries. The International Monetary Fund defines globalization of the economy as the economic interdependence of the countries around the world by increasing the volume and variety of cross-border transactions in goods, services, as well as the international flow of capital and the faster spread of technology. According to the current definition, trade liberalization has different effects on different sectors of the economy of each country through the easier movement of inputs, goods and services. One of the most important inputs in the production process in the economy is the labor force and the employment of labor force is of great important for the economic policy makers and employment is considered as an important goal for them. In developing countries, because of their economic structure, unemployment has been an economic problem at various periods, and in large-scale policy-making, employment in various sectors has been considered as a strategy for statesmen. These policies have been based on increasing employment (Farrokhi, 2014).

On the one hand, one of the most important criteria for measuring the degree of development of a country is the importance and credibility of women in that country. Now the world views women. Because today, in order to achieve social development, accelerating the process of economic development and achieving social justice, if women viewed as an active and constructive force, this will certainly have a great impact on the development process and the quantitative and qualitative increase of the human resources

of that society. The role of women in development depends directly on the purpose of social and economic development and is therefore a fundamental factor in the evolution of all human societies. With women accounting for half of the world's population, two-thirds working hours is dedicated to women and only one-tenth of the world's income and one-hundredth of the world's property and assets are devoted to women. Therefore, there is more or less women inequality in all societies, which has been the focus of attention in some world organizations in the last few years and has been considered in the microeconomic and macroeconomic planning of various world organizations (Meibody, 2009).

In general, any improvement in the employment status of countries depends on the economic growth rate, investment, export, demographic policies, education and behavior of governments. In such an environment, if a country adopts a growing export trend, it will be able to create a robust and productive domestic market where both resources have the necessary mobility and the economy to experience suitable growth rate. In this case, the economic growth rate increases and creates new job opportunities and brings about some changes in the labor market (Mehrgan, 2008). Generally, studies on the employment effects of exports and imports in different economic sectors show that in many countries, export has played an important role in job creation, and in some countries, export had less job creation compared to import. In fact, the combination of the factors of production and export depend on the prevailing economic conditions and the degree of development of the various economic sectors and the effectiveness of government policies in determining the relative prices of production factors (Amini, 2001). The following will discuss theories about international trade, export and women employment.

Social, economic theories about women's job opportunities

Sociological approaches

A) Disciplinists

Parsons is a structuralize sociologist who has emphasized the need to roles segregation and labor division and considered it essential for economic and industrial development. In his view, "As the social system is built on the expertise and separation of social roles, in the family itself, which is a small social system, the roles and functions of the members, especially men and women, are based in terms of their inherent and natural characteristics in order that the family can function positively and optimally. He believes that the allocation of roles helps maintain the family system and is the basis for the child socializing. Husband is the head of the family and plays the role of bread winner and the woman plays the role of the householder" (Azazi, 2003).

According to Parsons, when working, a woman competes with her husband, disrupting the roles and duties of each and this dissolute the family system (Michelle, 1981). Like Parsons, Durkheim has emphasized social solidarity in explaining the transformation of society's structure from mechanical form to organic form. He considers the source of marital solidarity in the sexual labor division. In his social labor division, he argues that the difference between male and female human resources in early societies was much less than what is seen today. In these societies, the duties of women did not differ much from

those of men, and men and women lived alike, as we get closer to the present, with the development of nuclear families, we face greater marital bonds and greater obligations. Along with these changes, the gender-based labor division has expanded more. Today, (in Durkheim's lifetime, industrialization in the early nineteenth-century), most women's lives are devoted to family, and more women are devoted to emotional roles and men to intellectual tasks. Durkheim, too, as Parsons believes that community cohesion is ensured by the gender-based labor division (Aazazi, 2003).

B) Developmentists

The difference in the various theories of development is related to the role that human beings play in development. In theories based on economic growth, man is the labor force, at the service of high production. These theories usually focus on the well-being of mothers because they are the producers and maintainers of the labor force and the women are considered as the cheap labor supply. These theories are usually associated with encouraging women to gain financial independence and equal political rights. In another set of development theories, women are the vulnerable part of society that should benefit from development programs. These ideas are based mostly on equality for human beings and seek to eliminate injustice. In these theories, family welfare is usually considered, but experience has shown that family welfare does not necessarily guarantee safety and well-being for women (Ebtajaj Shirazi, 1998).

But according to theories of sustainable development, women are not only considered as the users of development programs, but also are development actors. As such, they are among the policy makers, designers, planners and the manager as well as the user of development interests. That is, they are a part of the nation with equal rights with men in the country's economic resources (Taati, 2008).

These approaches can be grouped into three main views:

(a) Neoclassical theories

In neoclassical theories, economic factors are used to explain the problem of women's employment and the difference between men and women in the labor market. According to this view, women have lower incomes and status because of lower productivity than men. One of the assumptions of classical economists is that in competitive conditions, workers are paid the equivalent of the final value of the product. Less favorable education for women, intermittent avoidance of work due to pregnancy and child-rearing issues, and less experience and occupational skills due to this intermittent avoidance of work are factors causing women enjoy lower human capital, lower productivity and a lower market position according to the neoclassical theorists. This theory explains some of the issues related to women's employment, including multiple roles and family responsibilities, but ignores important parts of it and does not address the social and cultural barriers and issues associated with women's employment (Ashrafzadeh, 2008).

B) Segmentation of labor market theories

In segmentation of labor market theories, the basic assumption is that gender is one of the most important factors dividing the labor market into two separate parts. In the

female segment of the labor market, the number of jobs is artificially and unrealistically limited. This restriction creates congestion in the 'female market' of labor market which is the main reason for the low employment and women's payment. Also, gender segregation in the labor market makes it impossible for women to compete with men in achieving many jobs that are considered "masculine". This, given the greater number of men's jobs, keeps men's wages higher than women's (Anker, 1998; United Nations, 1997).

These theories, while giving an understanding of gender inequality in employment, still do not fully clarify why gender has been a factor in labor market segregation.in such broad and sustainable dimensions . Some thinkers believe that the main cause is probably outside the realm of economics, and some factors such as "prejudice in social customs" and differences in the "socialization process" and unequal access to "educational opportunities" are accountable for discriminating workplaces for women. (Mehregan, 2008).

C) Gender theories

Gender theories explain the difference in social personality through three models: biological, cultural, social and biological. Physical differences between the sexes are also acknowledged by many environmentalists. But understanding the biological nature of gender and the process by which gender groupings are created is complex and difficult. This complexity stems from the interaction of biological and social factors and the influence social and cultural factors on biological phenomena (Fine Gold, 1996).

Experts in gender-based theories have emphasized the importance of employment and financial independence in the development of one's personality, believing that the dependence of women in various situations, such as the labor market, home and family, are interconnected and part of an overall social system in which women are subject to men. In such a system, men's professional organizations are involved in limiting women's job opportunities, which is a threat to men's jobs. Lower wages in this system make women more dependent on men, and this justifies doing house chores by women. Thus, child care is allocated to women. In industrialized countries, even when women work outside, housework and child care are still women's responsibilities. This is more evident in underdeveloped countries. The dual responsibilities of women at home and in the labor market also increase the inability of women in the labor market and exacerbate the problem. Gender theories also emphasize that "women's jobs" such as teaching and nursing are a reflection of the domestic role of women; as in most societies, women housework and the relevant skills and jobs are also undervalued. In fact, the skills required for some women's jobs may be higher than men's, but they may be lower paid. In addition, job evaluation systems in determining "work value" tend to value qualities generally attributed to men, such as physical strength, rather than feminine traits such as agility and patience (Amini, 2001).

As can be seen, with the exception of neoclassical theories that fail to explain an important part of women's employment issues, the other two theories consider the most fundamental factors affecting women's employment and quality of life as issues that are mainly subjective and cultural in nature and stem from the actors' interpretation of the concept of woman and the status of women in society.

The Impact of international trade on creating and eliminating job opportunities

Trade liberalization and foreign trade growth have both positive and negative effects on the labor market. There is no doubt that the increase in trade, especially in export increases production and consequently employment, but the growth of trade is not limited to this aspect of economy. The goods and services offered in world markets must meet international standard specifications and compete with similar foreign goods and services, so the labor force employed in the production of export products must be highly productive. Likewise, with the growth of foreign trade, skilled labor will be shifted to the export sector with high productivity, thus creating job in export sectors is often dedicated for skilled labor and unskilled labor mainly remain in non-export sectors. In this context, in view of the importance of skilled labor and the increase in their wages, education, especially technical and vocational and academic education is necessary to enhance labor force skills.

Thus, increasing international trade will cause one group of labor to lose their interests and jobs and another to gain the suitable interests and jobs, no matter how much employment opportunities are lost and whether they are liberated. Job creation rates vary in countries with the degree of openness of the economy and the share of skilled and unskilled workers. Mainly in the developed countries due to the high share of skilled labor in total employment, the result of job gain and loss is positive. However, in developing countries, this result has an uncertain effect; for example, in Morocco, free trade has not affected average employment in manufacturing sectors, or in Mexico demand for labor has increased, but in Uruguay, trade liberalization has declined demand for labor force.

International Trade (Index of trade liberalization) and employment

When trade liberalization destroys jobs and on the other hand creates job opportunities, the two processes may not be synchronized. During periods of trade liberalization and economic reform for liberalization, it is expected that in the short term, job loss will be greater than new job opportunities, and in this case, liberalization may be associated with unemployment. In addition, exposing the country's economy to the global economy is likely to increase macroeconomic volatilities. For example, increases in exchange rate fluctuations and capital flows lead to changes in unemployment rates. Even if the average unemployment rate remains unchanged during a trading period, the job flow can increase, resulting in job insecurity.

Research Background

Searching and reviewing numerous local and international papers and references indicates that little attention has been paid to the present research independently. However, we can find some traces of the subject in some articles and books that are related to economic crisis and Islamic banking.

Local studies

Tayebi and Zuckerfar (2016) showed that international trade has different effects on the level of employment of the country depending on the type of imported goods. So that imported consumer goods will increase employment only in the short run and intermediate goods only in the long run, while import of capital goods in the short and long run will increase employment and in the long run have more effect on employment.

Ramezanpour (2016) examined the relationship between globalization of economy and employment rate (unemployment rate) in eighteen countries for the period 1980–2010 using correlation coefficient and t-statistic. Based on the findings, some of the correlation coefficients in individual countries are positive and some have been negative. At the same time, the correlation between the indicators of globalization of the economy and unemployment rate has been negatively correlated in three cases and there was a significant correlation in the share of artifacts in exports.

Sarmad (2015), in a paper " The Impact of economic globalization on the employment level of women in Iran and some developing countries, investigated the relationship between economic globalization and employment level in seven developing countries for the Period 1988-2010 using regression analysis of the pooled data. The indicators of export and import to total ratio of GDP and the ratio of foreign investment to total GDP constitute the indicators of the globalization of the economy in the studied countries. According to the results of the sample estimation, increasing trade and expanding interaction with the global economy will have a positive effect on improving labor market and employment variables, but the effect is very small as this is due to the low trade volume in some countries including Iran, Morocco, Tunisia, as well as the financial shocks of Southeast Asian countries during 1997 and 1999.

Barghi Oskuyi (2014) in a paper (The Effects of trade liberalization with emphasis on tariffs on employment and income distribution in Iran using a computable general equilibrium sample) examines the effect of trade liberalization on the level of employment of skilled and inexperienced workers and the wage rate. For this purpose, the social accounting matrix (SAM) 2001 has been used and various scenarios of tariff reduction have been simulated in GAMS software. The results of this study show that with the general decline in the tariff rate of imported goods (as an indicator for trade liberalization) the level of total employment and the level of employment of unskilled labor will increase.

Sadati (2012), in a thesis (Investigating and analyzing the impact of free trade on Iran's employment), examines the relationship between trade liberalization and the level of employment in Iran. The sample was estimated using employment data in nine ISIC industries and estimated by panel method. In the estimation of this sample, the labor demand function (employment) is considered as a function of wages and GDP. In order to activate the sample, employment lags are entered as independent variables. Also, based on the purpose of the research, which is the effect of free trade on employment, variables such as export share of GDP and import share of GDP are used. Therefore, the effect of trade liberalization on employment, which means increased export and import in the country, results from the effect of these two variables and, therefore, since the impact of

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imports is greater than exports, even little liberalization leads to increase of employment in the country.

Foreign studies

Rama (2016) investigated globalization and workers in developing countries and found that in economies with greater connection with other countries, wages grow faster. Although it may be negative in the short term, it tends to become positive in a short time.

In their study, Krister and colleagues (2015) addressed the importance of the effects of trade liberalization on the labor market and employment flow in Ukraine. The result of their study show that trade liberalization creates job, but disrupts employment distribution. In other words, the expertise and skills of the workforce and job creation for skilled people are of great importance in liberalization process.

Miller et al. (2014) examined the effects of openness, trade orientation, and human capital on total factor productivity for a combined sample of developed and developing countries. They showed that countries with a high degree of openness had higher productivity growth compared with the countries with a lower degree of openness. In these countries, human capital also had a positive effect on the growth of total factor productivity, but in countries with a low degree of openness this effect is less important.

Tales, A Rola and John (2013) examined the impact of trade liberalization on the workforce of Mexican women using the statistics of households and firms of the 1990s. Statistics show the relative wage stability of women as well as the increase in their employment, leading to the increase in the nominal wage of women. Also, trade-based industry shifts have increased women's wage growth by 40 percent between 1990 and 2000. The decrease in export tariffs has a positive and significant relationship with the growth of the industry and the rate of interest for women. There has also been a significant increase in the number of women employed in export industries. Finally, evidence has been found to increase the bargaining power of women, such as spending on men's preference goods such as men's clothing, alcohol and tobacco is transferred on women-related goods such as women's clothing and education.

Marna and Rebecca arbacheh (2012) examined the effect of trade liberalization on wage discrimination and used a simple econometric model to examine the effect of economic openness on wages in the industrial sector. The author finds evidence of increased openness in the economy to reduce the wage gap, especially in relation to men's wages, and notes that this is consistent with the Becker theorem that competition reduces discrimination in the labor market. The fact is that trade reform cuts production costs, which are part of wages.

Methodology and Data

Studies in the country and abroad have not directly addressed the issue of the present study. Therefore, the innovations of this study can be summarized as follows, which include a more comprehensive study period than previous studies. Second, in this paper, by examining the properties of the studied data carefully and how they are influenced, as

well as by using the most valid econometric methods appropriate to these properties, one can provide valid and actually closer results.

As noted in the introduction and theoretical basics, we seek to explore women's job opportunities despite foreign exchange fluctuations and oil shocks and to take advantage of the benefits of international trade and export growth in the stagnation and prosperity periods using Markov-switching ARCH Model

And we want to examine how the use of trade liberalization and export growth, despite currency fluctuations and oil shocks, has managed to guide resources toward the real sector of women's economics and women's employment in Iran during the recession and boom. To this end, we first need to be aware of the impact of positive and negative monetary and oil shocks and foreign exchange fluctuations on the Iranian economy in order to estimate the main research model using the switching model and the Markov switching regime for the period of recession and boom.

EGARCH model

In this study, the EGARCH model (Exponential GARCH) proposed by Nelson (1991) is applied to obtain the oil and monetary price shocks used in the research. One of the important limitations of the ARCH and GARCH method is their symmetry; the effects of negative and positive shocks of the same magnitude on the fluctuation are considered to be equal, while the series fluctuations do not respond to the type of news (positive and negative shocks). Thus, it is necessary to use an asymmetric model to solve the problem and to analyze the behavior of the series volatilities (Verbeek, 2005).

$$Ln\,\sigma_t^2 = \alpha_0 + \alpha_1 \frac{|u_{t-1}|}{\sqrt{\sigma_{t-1}^2}} + \beta Ln\sigma_{t-1}^2 + \gamma \frac{u_{t-1}}{\sqrt{\sigma_{t-1}^2}} \quad , \quad \alpha_0 = \omega - \alpha \sqrt{\frac{2}{\pi}}\; , \alpha_1 = \alpha$$

This model has several advantages, first in this model, the dependent variable σ_t^2 is logarithmic, so the coefficients of the right variables might be positive or negative. As σ_t^2 is positive in any case; thus, there is no need to apply non-negative constraints on the coefficients. Secondly, this model also considers the effect of asymmetric shocks. Because γ is the coefficient of u_{t-1} that u_{t-1} can be positive or negative. Expresses the effect of positive and negative shocks, while α is a factor that considers only absolute $|u_{t-1}|$value. If we have $= 0$, it is asymmetric and otherwise asymmetric. The effect of positive shocks is equal to $\alpha + \gamma$ and the effect of negative shocks is equal to $\alpha - \gamma$. If γ is negative, it indicates that the effect of negative shocks is greater than the effect of positive shocks, and vice versa.

Switching Model and Markov Switching Model (MSM)

The Markov-switching model was first introduced by Quandt (1972) and Goldfeld, S. M. and Quandt, R. E. (1973), then developed by Hamilton (1989) to extract business cycles. Unlike other nonlinear methods, such as STAR and ANN, in which the transition from one regime to the other is gradual, the Markov-switching model is sudden. This model assumes that the regime occurring at time t is not observable and depends on an

invisible (st) process. In a model with two regimes, it can be simply assumed that st has values 1 and 2. A two-regime AR (1) model can be shown as follows:

$$y_t = \begin{cases} \varphi_{0,1} + \varphi_{1,1}y_{t-1} + \varepsilon_t & if \quad s_t = 1 \\ \varphi_{0,2} + \varphi_{1,2}y_{t-1} + \varepsilon_t & if \quad s_t = 2 \end{cases}$$

Or briefly, we can say:

$$y_t = \varphi_{0,s_t} + \varphi_{1,s_t}y_{t-1} + \varepsilon_t$$

To complete the model we need to specify the properties of the st process. In the Markov-switching, st is considered primarily a first rank Markov process. This hypothesis implies that st depends only on the previous period regime, st-1. Here's how we complete our model by introducing the transition probability from one situation to another:

$$p(s_t = 1/s_{t-1} = 1) = p_{11}$$

$$p(s_t = 2/s_{t-1} = 1) = p_{12}$$

$$p(s_t = 1/s_{t-1} = 2) = p_{21}$$

$$p(s_t = 2/s_{t-1} = 2) = p_{22}$$

In the above Equation, $p_{i,j}$ denotes the Markov chain probability of moving from state i at time t-1 to state j at time t and it is always non-negative and the following condition is satisfied:

$$p_{11} + p_{12} = 1$$

$$p_{21} + p_{22} = 1$$

Results and analysis of findings

Various studies have used either monetary base or liquidity variables to explain monetary shocks. The difference between the two variables is that the monetary base is largely determined by government policies (although in countries with an independent monetary system it is the central bank that can directly determine the monetary base), liquidity reflects the effect of increasing monetary coefficient and performance of the Banks and the credit system in general. Comparison of cash components with monetary components shows that the main difference between these two monetary variables lies in the performance of banks. In fact, the monetary base is largely under the control of monetary authorities, and banks (at least directly) have no role in determining it. But liquidity is the result of the performance of the banking sector and the people on a monetary basis, and with the change in the behaviour of banks (banks' precautionary reserves), the behaviour of people (bank-to-deposit ratio), and the central bank's policy (legal reserve rate), the liquidity also changes. Thus,, monetary base shocks do not reflect the banking sector's performance and people's exchange habits and behaviour, while liquidity shocks have these characteristics. This is a factor that we use in our leading study of the liquidity shock variable to examine the impact of monetary shock.

Table 1. The results of EGARCH model

Estimation Conditional Average Equation		
VARIABLES	OIL Shock	M2 Shock
a_0	1. 1819** (0.4208)	12. 2331*** (0. 1720)
$\rho\rho_{t-1}$	0. 6435*** (0. 0499)	0. 8420*** (0. 1949)
$\rho\rho_{t-2}$	0. 3944*** (0. 0336)	0. 2392*** (0. 2289)
$\rho\rho_{t-3}$	-	0. 2537*** (0. 0650)
$(Ln\ \sigma_t^2)(Ln\ \sigma_t^2)$ Conditional Variance Equation		
α_0	***5. 0827 (0. 3473)	0. 4969 (0. 7226)
$Ln\sigma_{t-1}^2$	***0. 1645 (0. 3473)	***0. 5722 (0. 0231)
$\dfrac{u_{t-1}}{\sqrt{\sigma_{t-1}^2}}$	2. 1276*** (0. 4938)	-1. 1835* (0. 6084)
$\dfrac{\|u_{t-1}\|}{\sqrt{\sigma_{t-1}^2}}$	1. 4403** (0. 8498)	0. 8205 (0. 6750)

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p

The positive value of γ parameter in the estimation of EGARCH model shows that the effect of positive oil price shocks for Iran in the world oil markets, have high price volatility (γ +α =35679), but negative oil price shocks for Iran reduce price volatilities in the world oil markets ((γ -α =-0.6873). As the absolute value of the effect of positive and negative shocks on oil price volatilities is not equal, the early price shocks in the oil world markets have asymmetrical effect on the formation of oil price volatilities and the effect of oil positive shock is higher than the negative oil shock for Iran.

This result is consistent with the realities in global oil markets, as positive oil shocks usually occur when the ongoing flow of oil (security of oil supply) in global markets is challenged. This leads to uncertainty for petroleum demanders and ultimately to the formation of price fluctuations in world oil markets. However, negative shocks occur when the actors of world oil markets are assured of a continuous flow of oil (security of oil supply). This situation reduces the concern of the applicants and consequently reduces the oil price volatility. As a result, downward price stickiness is also prevailing in Iran's oil markets. Accordingly, if a negative price shock of the same magnitude as the positive shock that occurred before would occur in the world oil markets for Iran, this negative price shock could not offset the impact of a positive shock of the same magnitude on world markets for Iran and return it to the initial price. For this reason, negative price shocks play a less prominent role in reducing price fluctuations in world oil markets (The results of this section of study are consistent with the results of study of Mehregan et al.,

in the paper "Evaluation of multi-behavioral model of economic growth in response to the raw oil price fluctuations).

On the other hand, the EGARCH model results for monetary shocks study show that the effect of negative shocks for Iran (γ -α = -2.004) is more than that of positive monetary shocks (γ +α = 0.363) for Iran. Theoretically, the asymmetric effects of monetary policies are explained on the basis of price stickiness and information asymmetry. If prices are less flexible downward, monetary policy will have asymmetric effects on real production. Keynesian asymmetry implies that positive money supply shocks are neutral, while negative shocks have real effects. The result can be explained by the downward stickiness of wages and its upward flexibility as well as demand rationing

Results of switching model and Markov switching regime estimation on Iran's recession and boom

After presenting an introduction to the Markov-Switching model, in the second part of this study we will examine how the use of world markets, economic freedom and exports has been able to deal with the impact of oil and monetary shocks and guide currency fluctuations of resources in times of recession and boom to the real sector of women's economics and job opportunities. The main research model is based on the estimation of the switching model and Markov switching regime for the period of recession and boom in Iran as follows:

$$EMP_t = \begin{cases} c(s_t) + \alpha_1 EMP_{t-i} + \beta_1 Oil\ Sh_{t-j} + \gamma_1 M_2 Sh_{t-j} + \theta_1 TL_t + \rho_1 G_t + \tau_1 EX_t + \delta_1 W_t + +\delta_1 GDP_t + \varepsilon_t & if\ \ s_t = 1 \\ c(s_t) + \alpha_2 EMP_{t-i} + \beta_2 Oil\ Sh_{t-j} + \gamma_2 M_2 Sh_{t-j} + \theta_2 TL_t + \rho_2 G_t + \tau_2 EX_t + \delta_2 GDP_t + \varepsilon_t & if\ \ s_t = 2 \end{cases}$$

The above equations, EMP: Women's labor force employment, which, based on World Bank data, use the percentage of women employed in the service sector as a percentage of total female employees (using World Bank data)[2].

TL: International Trade (Trade liberalization variable is used. To calculate this index we use the G- Wartney Index, which includes economic quantities in the form of five variables of state magnitude, property rights, monetary stability, foreign trade, which include the sub-branches of foreign trade, the legal barriers to trade, the real size of the trading sector, the difference between the official rate and the black market, the control of the international capital market and the bureaucratic variable (bureaucracy) have been used. Each of these variables ranges between Zero to 0, the smaller amount indicating less economic freedom and the greater value indicates high economic freedom).

G: Government expenditure; the current and civil costs of government based on GDP are used.

W: Women's labor force pays as a percentage of total female employees (using World Bank data)

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[2] Employment in services, female (% of female employment)

GDP: Gross Domestic Production (GDP growth rate)

Oil Sh: Oil shock

M_2 Sh: monetary shock

EX: Exchange rate fluctuations calculated using the Arch-Garch model and added to the model.

The study period is from 1984 to 2016 in Iran, the study data are extracted from the World Bank (WDI) site.

The Markov-switching model is a good model to estimate if the data model of the study is nonlinear. The LR test is used to ensure that the data model is nonlinear. The statistical value of this test is calculated from the maximum likelihood values of two competing models, one model with one regime (linear model) and the other model with two regimes (nonlinear model) and have chi-square distribution, while the statistical value is greater than the critical values at the required confidence level, the linear model is not a good model and the nonlinear model should be used.

Table 2. LR test results

Statistics	Degree of freedom	Probability value	
24/074	11	0/000	Iran

As the results of Table 2. show, the value of the LR test statistic is higher than the critical value at 5% significance level and therefore it can be concluded that the instead of linear models, it is better to use nonlinear Markov-switching method for estimating the model. Table 3. shows the results of the Markov-switching model estimation for the above equation.

Table 3. Results of estimation of MS (2) -AR (1) Markov switching model parameters in periods of recession and boom

Variable	Coefficient	SD	T statistics	Probability level
c_1	0.547894	0.030959	17.69748	0.0000
c_2	-0.248966	0.074595	-3.337568	0.0010
σ_1	0.632457	0.032843	19.25687	0.0000
σ_2	0.921534	0.054003	17.06458	0.0000
ΔEMP (-1)	0.884058	0.340629	2.595366	0.0101
oil sh (1)	0.151924	0.032023	4.744265	0.0000
oil sh (2)	-0.126631	0.005125	-24.70942	0.0000
EX (1)	0.058309	0.050877	1.146090	0.2524
EX (2)	-0.104075	0.014864	-7.001670	0.0000
M2 sh(1)	-0.019387	0.004942	-3.923147	0.0001
M2 sh(2)	-0.742304	0.027358	-27.13334	0.0000
TL (1)	-0.017057	0.005098	-3.345780	0.0009

Variable	Coefficient	SD	T statistics	Probability level
TL (2)	0.119064	0.007606	15.65365	0.0000
W (1)	0.013803	0.042590	0.324092	0.7460
W (2)	0.002339	0.001458	1.604768	0.1092
G (1)	-0.146263	0.076123	-1.921416	0.0554
G (2)	-0.484454	0.063549	-7.623370	0.0000
GDP (1)	-0.065043	0.020628	-3.153079	0.0018
GDP (2)	0.086100	0.028107	3.063258	0.0025

According to the results of Markov model estimation, most of the coefficients are significant at 95% confidence level and their sign is in line with theoretical basics, the intercept in the first regime is 0.54 and in the second regime it is -0.24. According to Hamilton (1988) in the paper by Kazeroni et al., A regime with a negative intercept width indicates a stagnation regime and a positive intercept shows the boom regime. Therefore, in this study, the first regime represents the boom period and the second regime represents the recession. The variance of disturbance components in the first regime is 0.6324 and in the second regime is 0.9215. In fact, these numbers indicate that the second regime (the recession period) has more fluctuations in the present study than the first regime (the boom period). As the results of the EGARCH model estimation in Table (1) show us, the impact of positive oil shocks and negative monetary shocks on the Iranian economy is greater. According to the results of the Markov model estimation in Table 3 and the impact of these shocks on the Iranian economy, it is shown that positive oil shocks and negative monetary shocks during the recession (second regime) have a negative impact on women's job opportunities. It can be argued that by increasing foreign exchange earnings as a result of rising oil prices, these funds will be spent on imports rather than on the real sector of the economy, production and investment in productive sectors, which are generally aimed at fighting against inflation. In this case, many manufacturing sectors will be seriously damaged and will be out of the production cycle, and therefore some of the investment in the economy will remain unused and the production rate will decrease. If foreign exchange earnings are declined, import also is reduced and a part of import reduction is dedicated to capital goods and manufacturing machineries and to reduced investment, production and employment. Sectors that were left out of production as a result of widespread imports of consumer goods during the period of rising oil revenues will not be revived in this period. So, in general, it can be said that the impact of monetary and oil shocks on the Iranian economy is more dependent on the inflation situation under study, so that with the increase in inflation, the impact of monetary shocks (implementation of expansion and contraction policies) on production is reduced and even at very high levels of inflation can have a negative impact on real production and employment, with the results confirming that economic liberalization during the recession has a negative impact on women's job opportunities, which government spending during this period was dedicated more to import and the foreign exchange rate fluctuations during the recession had a negative impact on job opportunities of women. With negative oil shocks, foreign exchange earnings are reduced and despite monetary shocks and rising inflation, government expenditures to counteract inflation have been spent on imports, which in turn have reduced job opportunities and reduced women's employment. .

There is no doubt that the increase in trade, especially in exports, will increase production and consequently increase employment, but the growth of trade is not limited to this event in economy alone. The goods and services offered in world markets must meet international standard specifications and compete with similar foreign goods and services, so the labor force employed in the production of export products must be highly productive. Likewise, with the growth of foreign trade, skilled labor will be shifted to the export sector with high productivity, thus creating employment in the export sector is often for skilled labor, and the unskilled labor mainly remains in the non-export sectors. In this context, in view of the importance of skilled labor and the increase of their wages, education, especially technical, vocational and academic education, is necessary to increase the skill of the workforce. Thus, increasing international trade will cause one group of labor to lose their interests and jobs and another to gain the suitable interests and jobs, no matter how much employment opportunities are lost and whether they are liberated. Job creation rates vary in countries with the degree of openness of the economy and the share of skilled and unskilled workers. Mainly in the developed countries due to the high share of skilled labor in total employment, the result of job gain and loss is positive. However, in developing countries, this result has an uncertain effect.

But the important issue in the Iranian economy is the rate of stagnation and boom durations. According to Table 4, it can be concluded that the rate of economic exposure to the stagnation period for the period studied in the present study is 21 versus 16 periods of boom. Since expectations play an important role in investment decision making, any political and economic instability and the occurrence of shocks and fluctuations can have a negative impact on investment and production, increasing long-term investment risk and distorting price information and even lead to capital exiting the country. Under these circumstances, the investment composition changes in favor of speculative activities that yield immediate returns and are against the productive investment.
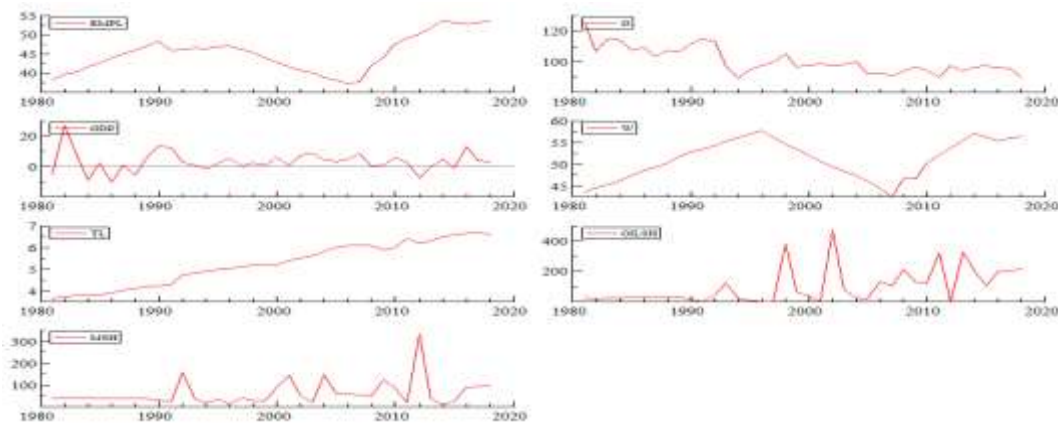

Chart 3. Graphic process of research variables

The chart below shows the probability of each of the years studied in either of the two regimes. The dotted lines in the two diagrams below illustrate these possibilities. As shown in the Chart, the sum of the probabilities of one and two regimes per year is equal to one. The bold areas in the Charts also indicate the classification of years between the two regimes.
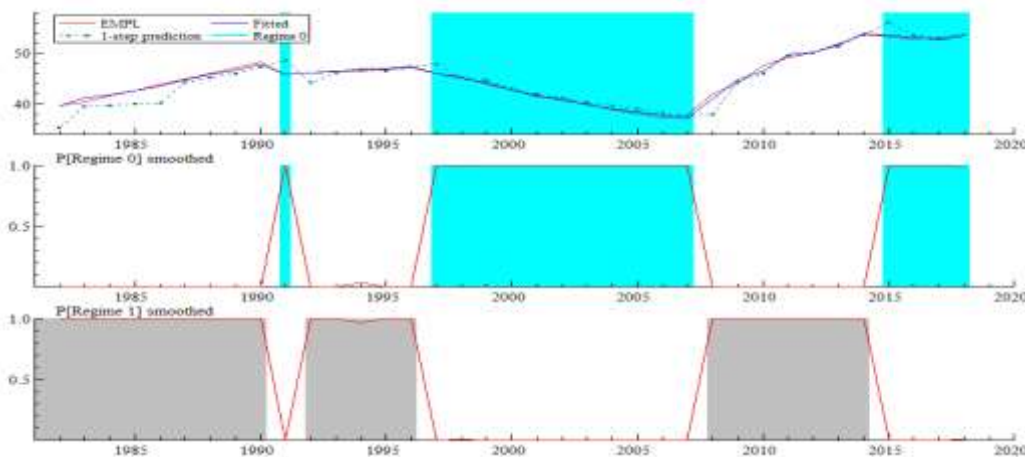
Chart 4. The probability of being in the two regimes extracted each year

Table 4 shows the years in each of the regimes, or in other words, the business cycles of the Iranian economy in using women's job opportunities for periods of recession and boom. As the results of the following table show, during the years 1990, (1996-2006), the use of economic liberalization, trade, and export growth led to employment during the prosperity years and in the years (1981-1989), (1991-1995) and (2007-2013), using economic liberalization, trade and export growth due to oil and monetary shocks did not lead to the real sector of economy and employment during the recession.

Table 4- The years included in each regime

Regime 1	1:(1990-1990)) 11:(1996-2006) 4:(2014-2017)
Regime 2	9:(1981-1989) 5:(1991-1995) 7:(2007-2013)

Table 5 shows the probabilities of transition from one regime to another and the duration of the regime, as can be seen, based on the probability functions of the transitions related to the estimation model of the Iranian economy in the following table, if the Iranian economy lies at t during boom, it remains at the same situation at the probability 0 and the 0.13 probability shows that the Iranian economy will revert to a state of recession under other factors, now if the country's economy remains in recession at time t, despite oil price fluctuations and Monetary crises , at the probability 0.13, it is likely to remain in the same position at t + 1, and at 0.86 it is likely that the Iranian economy is 16 periods vs. 21 periods of recession. It is thus seen that the rate of survival during the recession and the return to the recession (and vice versa) in the Iranian economy are highly probable.

The economic growth during the years 1978-1988 has been significantly fluctuated, increasing from -23.2% in 1981 to 22.8% in 1982, except for the years 1983 (9.7%), 1985

(1.8%) and 1987 (0.2%) to 1988 experienced negative rates. The average annual growth rate for this period is-3.5%

Post-1979 developments such as the victory of the Islamic Revolution, various economic sanctions, and the imposed war have hit the economy with supply shocks. In order to prevent real production decline, the government implemented demand-side expansionary policies, which, given the low supply-side structure, increased prices and eventually reduced average production during this period.

The decline in foreign exchange earnings compared to the years before the Islamic Revolution reduced imports, and alongside supply-side bottlenecks, domestic production declined. This decline in output was more evident in sectors more dependent on foreign exchange earnings (including industry). Due to the decline in GDP, the formation of gross fixed capital was also severely affected by the inappropriate context of the period, with an average annual decline of 5.5%.

With the end of the war and the adoption of the First Economic Development Plan Act, the country's positive currency balance, the use of increased oil revenues and foreign borrowing, investment in the country improved. This fact with the use of surplus production capacities and economic adjustment policy, led to a favorable economic growth during the years 1989 to 1991, with an average positive growth rate of 7.3 percent during this period. Investment in the final years of the first plan is negative due to uncertainty caused by monetary and currency policy instability, exchange rate fluctuations and the emergence of currency debt crises, inflationary expectations, and the orientation of part of society's limited savings toward unproductive markets (such as currency, coins and gold). Hence, the growth rate of investment decreased from 52.5% in 1991 to -13.9% in 1993.

The unsuitable external conditions and the monetary and exchange rate policy instability in the final years of the first development plan, especially in 1994, led the government to establish stable economic stability and balance of foreign payments balance in early 1995, at the same time as the second policy development program began, consolidation policies were implemented. Despite the significant growth in investment since 1996, the increasing trend in OPEC's oil supply, and consequently the decline in world crude oil prices, has slowed the pace of economic growth in the program. During this period, the average growth rate of GDP and investment were 2.6% and 6.6%, respectively, which is lower than the first development plan.

The highest growth rates in the program in 2002 and 2003 were achieved by 8.1% and 8.4%, respectively, which exceeded the 6% target set in the Third Development Plan. This can be attributed to increased oil revenues, favorable weather conditions and improved value added for agriculture and livestock sectors and structural reform policies.

The highest investment growth was achieved by 24.6% in 2001. The final year of the Third Development Plan ended last year with a mild rise in oil prices with government policies caused the positive growth of production and investment in Iran's economy despite the relative recession of the world economy and unfavorable political

developments in the Gulf region and structural problems of the manufacturing and service industries.

The study of economic growth shows that the program performance during 2005-2007 was close to the program goals due to rising crude oil prices and expansionary monetary and fiscal policies and growth in value added activities of the oil, industry and mines and services group. In 2008 and 2009, due to the global crisis, the decline in the value of oil exports and the subsequent decline in foreign exchange earnings, the Iranian economy was significantly affected and economic growth was limited to 0.6% and 1.3%. The program's goal for 2008 was 8.4 percent and for 2009 was 9.3 percent.

The average growth rate of gross fixed capital during 2011-2016 was -5%. In 2011, gross fixed capital formation grew by 4.6%, but in 2012, total investment experienced a sharp -19% drop due to reduced capital goods imports arising from currency restrictions and economic sanctions, unfavorable business environment conditions and high return on capital investment in substitute markets (gold, currency). However, factors such as reducing uncertainty in the country's economic environment, the government's approach to empowering the private sector, controlling inflation in the producer and consumer sectors, and stabilizing the exchange rate improved investment growth in subsequent years, as it increased to 7.8% in 2014. But again as a result of falling oil prices and oil revenues, gross fixed capital formation declined by about 12 percent in 2015 and this decline reached -3.7% in 2016.

Table 5-Transition probabilities from one regime to another

	Regime 1	Regime 2
Regime 1	85530/0	13946/0
Regime 2	86054/0	14470/0

As noted in the model introduction section, the disturbance terms of Markov-switching must be normal and free of variance autocorrelation and variance Heteroskedasticity. Below are the results of the tests related to these features.

Table 6- Results of relevant tests

Test type	Test statistics	Test statistics value	Probability value
Non-auto correlation test[3]	$X^2(3)$	5381/5	3538/0
Normality test[4]	$X^2(2)$	46371/0	7931/0
Variance homogeneity test[5]	$F(1,1)$	51551/0	2277/0

The results of the autocorrelation test show that at the significant level of 5%, we cannot reject non- autocorrelation, so it can be deduced that the disturbance terms are not auto correlated. The normality test also shows that the normality distribution of the

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[3] . Ljung-Box Portmanteau Test

[4] . Jarque–Bera Test

[5] . ARCH Test

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disturbances terms of the estimated model is not rejected. Also, the results of the homogeneity variance test show that the homogeneity of the variance of the disturbing term is not rejected.

Summary and Conclusion

Women are one of the most important social groups influenced by quality of life. Because of their effective relationship with social groups in society, this large social group plays an active role in social development and sustainable development, in addition to personal and family duties. Women have a very sensitive and decisive role in social activities. They have a very serious and decisive responsibility to accelerate the process of sustainable change and development of society. For this reason, countries in the path of constructive development have realized that the need to create a healthy society depends on the existence of active and effective women in society. Education of women and their participation play an important role in the development of the country, with about half of the working population being women. This widespread presence has had significant outcomes such as increasing family income levels, reducing the burden on men in the family and reducing economic pressure on them, increasing the supply of labor by women and, consequently, lowering production and service costs in society as a whole and also it has stimulated economic growth and development. Today, with the economic development and mechanization of production, physical strength is no longer a determining factor in many jobs. On the contrary, in many societies women have played a significant part in the miraculous economic growth of their countries, so that, in the modern world, in modern economies, it is not gender that determines the merit of male and female, but the participation of everyone without considering gender can be an important criterion. Each of the business and economic sectors also responds to trade liberalization, depending on their sensitivity and vulnerability to imports, which relies heavily on other factors such as exchange rate fluctuations and its positive or negative consequences underlying trade. In general, any fall in the exchange rate can disrupt the growth of net employment in a country, which is also evident that by the fall in the exchange rate, the creation of new jobs is stopped, and the dismissal of workers from factories and organizations are increased. However, this labor market sensitivity to exchange rate fluctuations is less in countries such as Japan and Germany, which have strong and influential trade unions. However, in developing countries, the condition is different. Rama's research (1994) on the effects of competition from trade liberalization on 39 industrial sectors in Uruguay during the years 1979 to 1986 showed that there is a direct and strong relationship between government support for domestic industries and employment in these industries (namely regarding manufacturing industries), so that each percent decrease in the amount of these supports reduces employment by four to five percent. Rijnja's research (1) on the dramatic impact of tariff reductions on employment reduction in Mexico's manufacturing sector also yielded similar results. The impact of removing or reducing tariffs on imports on the wage level is also significant.

1- According to the estimation of the model, the impact of international trade and Economic liberalization on women's employment is positive and significant during prosperity, thus some suggestions are offered for increasing economic liberalization:

Implement long-term economic policies, especially in the foreign sector, in line with trade liberalization, which will change the real sectors of the economy, including employment.

Foreign trade requires reforming a country's international trade regulations to improve economic prosperity through better allocation of resources in the long run, and it is imperative that, as trade regulations are amended, further steps are taken to stabilize the economy and move towards reforming economic structures to ensure that the economic imbalances are resolved. It also seems that in countries with a closed economy, they must rapidly develop economic liberalization (with precision, supervision and efficiency) and, as a first step, reduce government and reform the tax system.

Although most of the peculiarities of economic liberalization lie with governments, some of its key components lie in the monopoly of people and society. To this end, it seems that efficiency in the politics of economic freedom demands national decision and long-term planning coupled with the growth of political freedom and good governance.

It should also be noted that by increasing GDP and by increasing the degree of economic openness, we can have considerable effects of this variable.

2- The impact of government spending variable also on women's employment is significant and negative, but such policies are often also affected by inflation. Some suggestions are made to improve and control this impact:

It is suggested that the government should not increase its spending because it could reverse the relationship between the size of government spending and GDP and slow economic growth. Much of government spending comes from government employees' salaries and subsidies. Adopting key mechanisms to prevent the current increase in government spending requires very fundamental structural reforms, such as delegating activities to the private sector, revising government duties and outsourcing government services to the private sector are a set of many deep economic policies and reforms need to move towards privatization and reduce of government duties. Reforming the subsidy system is also another way to optimize government spending.

3. As expected in this study, the production variable has a positive and significant impact on women's employment during the boom period, so it is suggested that:

In order to increase the efficiency of production resources and to contribute to economic growth, it is necessary to revise the structure of support and procedures for supporting various sectors of production, subsidizing energy carriers, paying facilities to small firms, and distributing cash subsidies. Dense resources need to be redistributed in low-return sectors.

Achieving high economic growth requires removing barriers to the interaction of the banking system with the international financial system and reforming the banking system, which also requires measures such as implementing serious anti-money laundering programs and enhancing international co-operation in this area, ensuring transparency and financial health in the system, raising the standards related to banks' risk

management, taking serious and practical steps to integrate and reform the structure of banks and credit institutions, resolving the dilemma of non-current loans and so on.

There is a uniform policy on equal pay between men and women, especially in developing countries, so that the wage of women is fair. It is only through a shift in the private and public spheres that we can achieve a new kind of social stability in the employment of women, and all of these issues can be important in the path of growth and development of these countries to reduce gender inequality.

Development can improve the position of women in the labor market by increasing access to better education, health services, etc. However, development itself cannot eliminate gender inequality in the labor market, unless accompanied by some changes in the cultural, social and institutional structure of society namely the labor market. Development can reduce gender inequalities in general and gender inequalities specifically in the labor market by changing the culture and trust in the performance of individuals as a basis for resource allocation and division of labor.

Government support and private institutions supporting women's employment, self-employment and women's entrepreneurship can be a positive driver for economic growth in the country. The prominent presence of women in civic institutions and social activities in the country is important.

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