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Income Distribution, Rate of Crude Oil Exports and Economic Growth Rate in the Iranian Economy: with Regard to Globalization

Abolfazl Talebi*, Houshang Yavarpour, Hasan Valian
Department of Management, Islamic Azad University, Science and Research Branch of Esfehan, Esfehan, Iran.

A B S T R A C T

In today's complex world, the fair distribution of revenues and demand management play an important role in planning the energy sector of the oil-exporting countries and poverty reduction in such countries. This is because the oil is considered as one of the most important factors and parameters for the economic security of the country. On the other hand, a fair distribution of the incomes can enhance the intellectual security and mental health of the community. The aim of this paper is to analyze the relationship between economic growth, income distribution and crude oil export using annual time series data in the course of 28 years from 1981 to 2009. To analyze the data regression analysis was used. The results indicated that there is a negative and reverse relationship between the income distribution and economic growth rate, and there is a positive and direct relationship between the amount of crude oil export and economic growth.

Keywords: Fair Distribution of Revenues, Oil Exports, Poverty, Economic Growth, Globalization.

INTRODUCTION

Today, issues such as globalization, poverty, economic growth, and fair distribution of revenues, are the main subjects for discussion in the political and economic circles of the world(Ang, 2010; Hoekman & Kostecki, 2009; Malik, 2016). Among the main economic issues of the past two centuries is paying attention to the different strata of society by examining the income distribution, wealth and other variables(Bronfenbrenner, 2017; Champernowne & Cowell, 1998). Because improving the public welfare, particularly the welfare of less benefited strata of the society is one important goal of any economic policy. Underdevelopment and poverty due to the domination of imperialism and also slavery are seen as the new world order(Beckford, 1999; Dunleavy, 2014). This world order splits the people of the world into two parts: those who are immersed in comfort and luxury and those suffering from disease and poverty (Enowbi Batuo, Guidi, & Mlambo, 2010; Meyer Bittencourt, 2006; Shahbaz & Islam, 2011). One of the main points mentioned above is that unequal distribution of wealth leads to the deepening of social divisions, accumulation of political-economic power, and the creation of new economic monopolies for certain social classes(Gilpin, 2011; Zhao, 2008); which in turn leads to the unequal

* . Corresponding Author: a.talebi@yahoo.com

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increase in investments. In this regard, Pareto (1984) (Italian economist), monitoring the behavior of the "distribution of wealth and revenue" among minority and majority groups of the society, realized that the issue involves a mathematical logic; that is, the highest income and wealth in society belongs to the minority group of the population with the ratio of eighty to twenty. In fact, eighty percent of the wealth (according to Figure 1) is absorbed by twenty percent of the population(Koch, 2011).

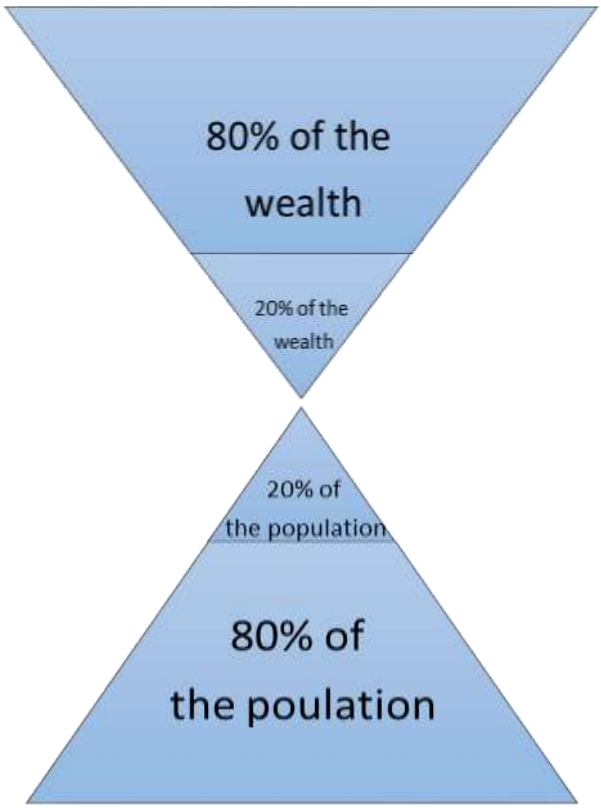

Figure 1. The ratio of income and wealth distribution based on Pareto principle

It was on the basis of this logic that the first brick of capitalism was laid, and gradually the literature associated with that logic influenced the domain of trade and economy. This goes so far that as a common proverb in business space it is said that "80% of your sales come from 20% of your clients" and the rest of the clients (i.e. eighty percent of them) share only 20 percent of the purchase(ALVAREZ SERRANO, DE BORTOLI PURAT, Pozzetto, & Romano, 2016; Banduka, Mačužić, Stojkić, Bošnjak, & Peronja, 2016). Hence, in the capitalist system the main focus of any business, ranging from large economic enterprises to the vendors, goes towards the minority group of the community(Taylor, 2016). This is because the profit-oriented attitude demands focusing on nothing but more sales. However, in new type of economic and financial systems, it's now the majority of the community who keep the wheels of industry and economy turning. Globalization and economic growth are another important topics dealt with in this research. In fact, the relationship between growth and inequality is a complex one and calls for an approach which emphasizes the effects of economic growth on inequality. According to the development plan, the ratio of the growth rate may have important effects on the distribution of the state's income and also on poverty profile, no matter what the criterion would be(Banduka et al., 2016; Leigh & Blakely, 2016; Ravallion, 2017; Taylor, 2016).

On the other hand, natural resources could be considered as an important factor in accelerating investment and economic growth, consequently. However, observations prove the

opposite of this claim. Many countries with abundant natural resources, from Latin America and sub-Saharan Africa to the Middle East oil-dependent countries, had worse performance, in terms of economic growth and poverty, than countries with no reliance on natural resources(Abdullahi, 2017; Nolintha & Lau, 2015). This phenomenon is known as "the paradox of plenty of natural resources", "Natural Resource Curse" or "inauspicious natural resources" in the economic literature. Some economists, have developed the idea that the late and former effects of primary exports on the rest of the economy is weaker than that of manufactured goods; so that unlike the production of natural resources, manufacturing industries leads to more complete distribution of work(Leigh & Blakely, 2016; Simatele, 2015).

And better standards of living. Thus, in countries with abundant natural resources the economic growth is slower(Platteau, 2015). Abundant natural resources have led some states to take wrong approach to economy. This way, they don't utilize policies, such as free trade, to bring about economic growth.

The importance of this research is due to the fact that the oil sector has always played a dominant role in the economy of our country. The evidences indicate that the sector will maintain the dominance in the foreseeable future(Hvidt, 2013). An estimation of the role of the petroleum sector in Iran's economy and its contribution to the gross domestic product(Mahdavy & Cook, 1970), which is an average of about 16 percent over the past 20 years, might lead us to wrongly evaluate it as trivial. Supplying 85 percent of the Iran's foreign currency earnings are the most important role of the petroleum sector(Farzanegan, Khabbazan, & Sadeghi, 2016). Thus, on the one hand, various parts of the economy undeniably rely on revenues from oil exports to import their requirements; on the other hand, it provides for about 98 percent of the country's energy needs. The sector's poor performance in export to global markets or the internal energy supply directly affects the Iran's economic activity. So, the country's economic boom or recession depends significantly on the performance of this section.

Another important role of the petroleum sector in the Iran’s macroeconomics includes its determinant impact on the state's budget balance. Over the past 20 years, an average of about 54 percent of the general budget was provided through the oil export, apart from indirect impact of this section on tax revenues as well as other ones. Generally, a decline in foreign exchange revenues coming from oil exports, leads to unfavorable currency situation. This, in turn, causes reduction in intermediate and capital imports, reduction of capital and also production loss. Oil revenue decline reduces the general budget revenues, and disrupts the state's budget balance, which increases the money supply and inflation as an inevitable consequence. According to what discussed above in brief, we can conclude that the growth in production, investment and employment, and also inflation is directly influenced by the performance of the oil sector. Consequently, it affects social welfare, too. On the other hand, fair distribution of the income plays an important role in creating a long-term economic growth, which could result in social welfare and justice-oriented economy in the community.

Now, we are looking for an answer to these questions: does the new approach to economic growth really defend fair distribution of income? What is the relationship between oil exports, income distribution and the economic growth rate? Does economic growth play any important role in the distribution of revenues and in oil exports?

METHODOLOGY

The present study is a causal-comparative (ex post facto) research and an applied one which uses the inductive method. Annual data are used to test the research hypotheses. To do this, I will test each of the hypotheses and will approve or reject it accordingly. The population of this

research includes Iranian economy. Referring to the economic statistics and information released by Central Bank of Islamic Republic of Iran and on the basis of the studies carried out heretofore, we will investigate the impact of the fair distribution of income and the amount of crude oil exports on economic growth, using linear regression. Annual time series data for the period of 28 years, from 1981 to 2009, were used. Regression method applied to analyze the data. The prerequisite for the use of this method is given in the table below, and the results are obtained by SPSS software.

RESULT

Table 1. Correlations of study variables

		Economic Growth	Income Distribution Rate	Crude Oil Exports
Economic Growth	Pearson Correlation	1		
	Sig. (2-tailed)	0		
	N	29		
Income Distribution Rate	Pearson Correlation	-.539(**)	1	
	Sig. (2-tailed)	.003	0	
	N	29	29	
Crude Oil Exports (1000 barrels per Day)	Pearson Correlation	.610(**)	-.479(**)	1
	Sig. (2-tailed)	0.001	0.010	0
	N	28	28	28

** Correlation is significant at the 0.01 level (2-tailed).

Model Evaluation and Analysis

To evaluate the research hypotheses, the method of ordinary least squares (ols) has been used SPSS software was used. The following includes results and analysis of six models based on research hypotheses.

Hypothesis 1: There is a relationship between crude oil exports and economic growth. (H1)

Regression analysis is used to answer the research question of "whether there is a relationship between crude oil exports and economic growth." The following table reflects regression and equation involved.

Table 2. Regression results (H1)

correlation coefficient	squared correlation coefficient	Adjusted squared Correlation coefficient	Standard error of estimate
0.610	0.372	0.347	5.26574

The table above shows correlation coefficient and squared correlation coefficient or coefficient of determination, so that there is a strong correlation of 0.61 between variables. Too, the coefficient of determination indicates that 37% of the variation of the dependent variable (i.e. economic growth) is covered by crude oil exports.

Table 3. ANOVA table

	Total Squares	Degrees of Freedom	Mean Square	F	Significant Level
Regression	426.240	1	426.240	15.372	.000
Residue	720.927	26	27.728		
Total	1147.167	27			

With the significant level presented in the table above, and regarding the value of *f*, which is 15.37 and significant at the level less than 0.01, the regression model is verified. So, the independent variable will be able to predict changes to the dependent variable.

Table 4. The coefficients of independent variables in terms of standard and nonstandard values

Independent Variable	Unstandardized Coefficients		Standardized coefficients	t	Significant Level
	B	Standard Error	Beta		
Constant	-15.488	4.875		-3.177	0.004
Crude Oil Exports	0.009	0.002	0.610	3.921	0.001

Correlation between economic growth and exports of crude oil is 0.61 and determination coefficient equals to 0.37. To be more precise, 37% of the variation of economic growth rate is covered by the independent variable. The amount of beta for crude oil export variable in predicting the dependent variable is 0.61. Correlation diagram, graphs this relationship.

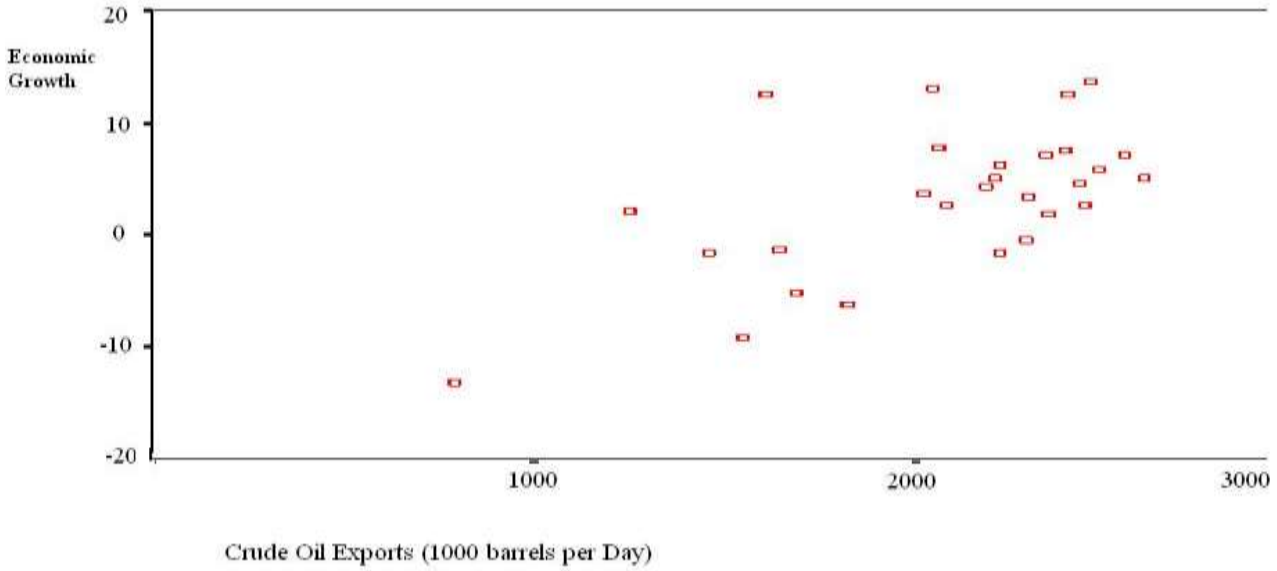

Figure 2. Correlation between crude oil exports and economic growth

The correlation diagram shows the relationship between the two variables. In other words, the increase in crude oil exports enhances the economic growth and the points on the diagram, i.e. confluence points of dependent and independent variables, show uptrend. As these points get closer to each other, we could see stronger correlation. Based on this, we could say that there is a strong correlation between the rate of oil exports and economic growth.

Hypothesis 2: There is a relationship between income distribution and economic growth. (H1)

Regression was used in order to answer the research question of "whether there is a relationship between the rate of economic growth and income distribution."

Table 5. Regression results (H2)

correlation coefficient	squared correlation coefficient	Adjusted squared correlation coefficient	Standard error of estimate
0.537	0.288	0.263	5.40689

The table above shows correlation coefficient and squared correlation coefficient or coefficient of determination. The table indicates that the correlation between these variables is 0.53, which is an average level of correlation. The coefficient of determination indicates that 28% of the variation of growth rate as a dependent variable is covered by the income distribution rate.

Table 6. ANOVA Table

	Total Squares	Degrees of Freedom	Mean Square	F	Significant Level
Regression	331.290	1	331.290	11.332	0.002
Residue	818.564	28	29.234		
Total	1147.167	27			

With the significant level presented in the table above, and regarding the value of *f*, which is 11.33 and significant at the level of less than 0.05, the regression model is verified. So, the independent variable will be able to predict changes to the dependent variable.

Table 7. The coefficients of independent variables in terms of standard and nonstandard values

Independent Variable	Unstandardized Coefficients		Standardized coefficients	T	Significant Level
	B	Standard Error	Beta		
Constant	100.986	29.082		3.472	0.002
Income Distribution Rate	-242.416	72.012	-0.537	-3.366	0.002

Correlation between income distribution rate and economic growth rate is 0.53 and determination coefficient equals to 0.28. To be more precise, 28% of the variation of economic growth rate is covered by the independent variable. The amount of beta for economic growth rate variable in predicting the dependent variable is -0.53, which shows a negative reverse relationship. Correlation diagram, graphs the relationship.

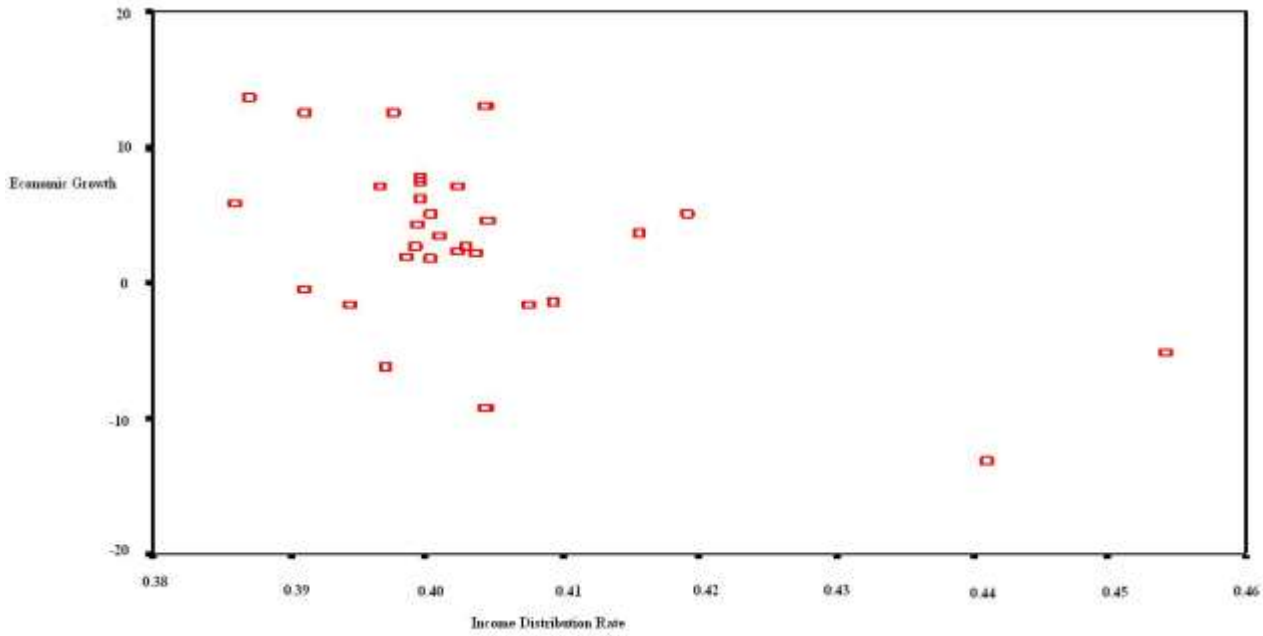

Figure 3. Correlation between income distribution and economic growth

The correlation diagram shows the relationship between the two variables. In other words, as the rate of income distribution goes higher, the economic growth rate slows down accordingly, and the points on the diagram, i.e. confluence points of dependent and independent variables, become descending. The more these points get close to each other, the more we could see the correlation strength.

Hypothesis 3: There is a relationship between income distribution, crude oil exports and economic growth rates. (H1)

Regression of the relationship between income distribution and crude oil exports (a thousand barrels per day), and the rate of economic growth

A regression analysis was done to find the answer for the research question of "whether there is a relationship between income distribution and crude oil exports rates on the one hand, and economic growth rate, on the other hand."

Table 8. Regression results (H3)

correlation coefficient	squared correlation coefficient		Standard error of estimate
0.672	0.452	0.408	5.01656

The table above shows correlation coefficient and squared correlation coefficient or coefficient of determination. The table indicates that the correlation between these variables is 0.67, which is a high level of correlation. The coefficient of determination indicates that 45% of the variation of growth rate as a dependent variable is covered by the income distribution and crude oil exports rates.

Table 9. ANOVA Table

	Total Squares	Degrees of Freedom	Mean Square	F	Significant Level
Regression	518.021	2	259.011	10.292	0.001
Residue	629.146	25	25.166		
Total	1147.167	27			

With the significant level presented in the table above, and regarding the value of *f*, which is 10.29 and significant at the level of less than 0.05, the regression model is verified. So, the independent variable will be able to predict variations of the dependent variable.

Table 10. The coefficients of independent variables in terms of standard and nonstandard values

Independent Variable	Unstandardized Coefficients		Standardized coefficients	t	Significant Level
	B	Standard Error	Beta		
Constant	48.008	33.571		0.430	0.165
Income Distribution Rate	-145.521	76.200	-0.322	-1.910	0.068
Crude Oil Exports	0.007	0.003	0.455	2.698	0.012

Correlation between income distribution rate and crude oil exports on the one hand, and economic growth rate on the other hand, equals to 0.67 and the determination coefficient equals to 0.45. To be more precise, 45% of the variation of economic growth rate as the dependent variable is covered by the independent variable. The amount of beta for crude oil exports rate variable in predicting the dependent variable is 0.45, which indicates a direct relationship. The amount of beta for income distribution rate variable in predicting the dependent variable is -0.32, which shows a negative and reverse relationship.

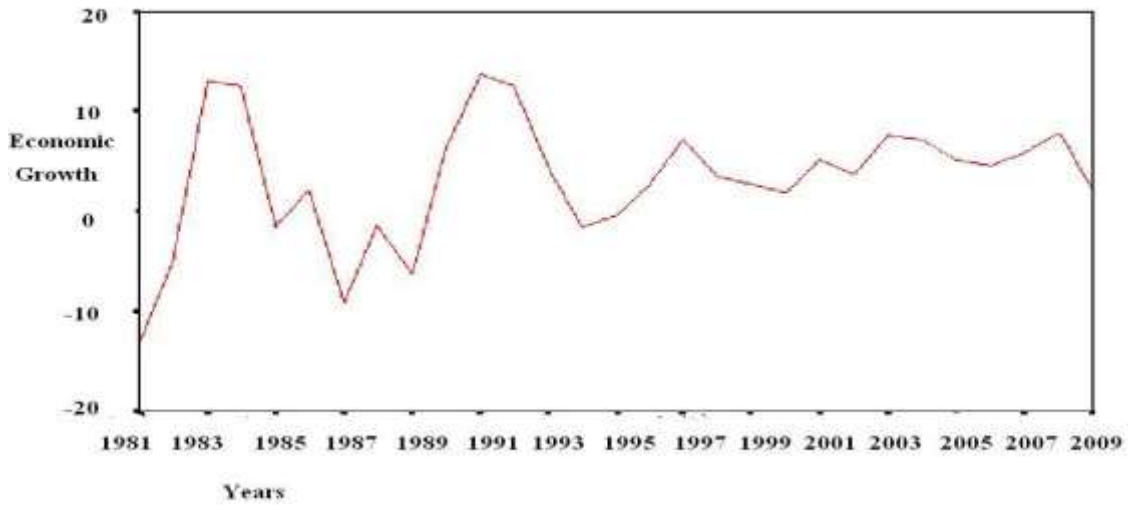

Figure 4. Economic growth rates, from 1981 to 2009

CONCLUSION

The growth of production is one of the most important economic factors influencing poverty reduction and inequality in developing countries. Moreover, structural changes (including economic, cultural and social changes) as well as infrastructure and superstructure facilities available in various countries have played an undeniable role in reducing absolute poverty (i.e. minimal income and the poverty line). The relationship between income inequality and economic growth rate has been one of the most challenging areas of economics in the second half of the twentieth century. Fair income distribution in society helps the poor to meet the least of their needs and to recover from absolute poverty. Based on the results of the study, it should be said that there is a significant relationship among all variables. The relationship between income distribution and economic growth is a reverse and negative one, so that one percent of increase in income distribution rate will reduce economic growth rate by 32 percent.

These observations are consistent with the results of researches done. In this regard, it should be noted that the increase in income distribution rate will lead to an economic slowdown. Accordingly, a model of income distribution along with growth, or growth along with emphasis on fight against poverty is proposed. This is because reduction in income inequality and economic growth are incompatible, but related. It is important to select a path for economic growth which brings a fair income distribution with itself. So, in its economic development programs, the government should find ways to help allocate the community resources in a way that economic growth would reduce income inequality.

One finding of this study suggests a direct and positive relationship between the rates of crude oil exports economic growth rate. But Cavalcanti, Mohaddes, and Raissi (2011) argued that there is a negative relationship between the plenty of natural resources (i.e. oil) and economic growth (production per capita, GDP). Regarding this and on the basis on the findings of the present study, it should generally be noted that, developing countries with a single product or with limited number of export products should strongly pay attention export industries. They have to expand their industries and try to free themselves from dependence on single-product exports, such as oil.

According to what discussed above, it can be concluded that because of the increasing demand for the country's crude oil, the use of alternative technology has not expanded along with increased economic growth across the country. As an example, the industry sector that acts as the engine of economic stimulus, has failed to have a significant contribution to our economic growth. And it's still the crude oil (and its derivatives) that provides the main funding source for the country. Besides, crude oil exports to other countries can be considered as our main exports. Due to the limitations of this gifted resource, we will not be able to replace it with new energy carriers in the near future, so because of our lack of foresight, the oil reserves, which act as the engine of our economic growth, will face a severe reduction.

On the other hand, globalization is one of the most important concerns for developing countries. In some cases, the indicators of globalization are strongly influenced by Western culture and the standards of great industrialized countries. However, it must be admitted that those standards have become universal indicators for the equal presence in the international arena. These standards are not anything but preparing for participation in global markets with the help of information and communication technology.

To cope with globalization, we need to adhere to some prerequisites; otherwise, not only it keeps us from achieving the human goals, but also paves the way for poverty, inequality and unfair distribution of wealth. Therefore, *policy convergence* in accordance with well-defined indicators in

the world and utilizing international laws is considered not as a solution but as a binding policy for developing countries. Moreover, in order to create advantages, these states must speed up the trend of exploiting tools of communication and information technology by improving the associated infrastructures.

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