

## Evaluating and Investigating the Relationship between the Financial Policies and the Growth Economic

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**Abstract:** This research is applied in terms of objective, with the library type based on the data collection and is among the correlation studies in terms of method and is seeking to explain the relationship and calculate the correlation rate and coefficients of each independent variable with the economic growth by using the econometric models. Data and information needed for the research are collected based on document library studies and information related to research variables are extracted by referring to the websites of Central Bank and Iranian Center of Statistics. First, the significant relationship between the independent and dependent variables was studied by Pearson correlation coefficient test and then the Kolmogorov-Smirnov test was used in order to determine the normality of data dispersion. The accuracy test of classical assumptions was done for estimated functions and assurance of desired estimations accuracy and estimated relationship and the long-term and balance coefficients of independent variables. Evaluation of stability (Durability or reliability) of variables was done by EViews software and the statistics  $R^2$ , F and Durbin-Watson were used in the analysis as the outputs of software. Finally, it was concluded that the tax has no significant relationship with the economic growth and the government spending has a direct and significant relationship with the economic growth.

**Keywords:** Direct tax, economic growth, financial policies, government spending

### INTRODUCTION

Economic growth means the increased production or national per capita income compared to the base year. Based on the simple interpretation, the economic growth is the increased production of a country in a particular year compared with its value in the base year. At the macro level, increased Gross National Product (GNP) or Gross Domestic Product (GDP) is considered as the economic growth in the discussed year according to its value in a base year. The reason for calculating the economic growth compared with the prices of base year is the increase in Gross National Product due to the increase of production and removal of Inflation effect. If the production of goods or services is increased in a country by any possible means, it can be stated that the economic growth has been done in that country. Resources, which result in the economic growth, include the increased production inputs (increased capital or labor), increased productivity of production factors and applying the possible empty capacity of economy (Gilis *et al.*, 2000).

Over the past few centuries, the living standards in developing countries have been reached the level which had never been entered in our ancestors' mind. Economic data indicates that the economic growth rate is not constant in different parts of world and has had an increasing process during the new era. The average growth rate of developed countries in the twentieth

century was higher than the nineteenth century and the nineteenth century higher than the eighteenth century. Moreover, the average income was not significantly far from the minimum needs of life before the industrial revolution and even in rich countries. According to this view, it can be concluded that the average rate of growth had been too few in the millennium before the Industrial Revolution. There are large differences in living standards in different parts of the world. Average real income in countries such as the United States, Germany and Japan is over 20 times higher than the countries such as Bangladesh and Kenya. Like the growth rate, the income difference is also unchangeable among the countries. Usually, the growth rate of a country has a significant difference with the average world growth rate meaning that the relative income of both countries is extremely different. Japan after the World War II and until about 1990 in the most prominent example of large changes. Newly industrialized countries in East Asia like South Korea, Taiwan, Singapore and Hong Kong, where have began their growth way since 1960, are other examples. Despite this mutation in the economic growth, there are countries where pass the way reversely. Two examples of undeveloped countries in terms of economic growth are Argentina and many countries African countries. In 1900, the average income in Argentina was less than rich countries of the world, but its economic growth performance was different in the twentieth century.

This country now is near the middle of the world income distribution. Sub-Saharan countries such as Chad, Ghana and Mozambique have historically been very poor and have never been able to achieve a sustainable growth in the average income. Thus their average income is remained in the minimum need of life, while the average world income has been raised steadily. Other countries have had more complex growth process. For instance, per capita real income of Ivory Coast, where was considered as an example for the African development in the 1970s, had been annually grown 5.3% on average from 1960 to 1978, but their average income fell by a third in the next decade. Another example is Mexico, where its average growth was very high in the 1960s and 1970, then it experienced negative growth in the 1980s and then again was faced with the increasing growth rate.

Throughout the whole new era, the average income difference among the countries has been increased. Results of large differences in living standards for the welfare of human societies are notable among the countries and over the time. These differences have a strong correlation with the type of nutrition, literacy level, children mortality, life expectancy and other welfare indicators. Obviously, the access rate of countries to the groundwater resources and other surface sources can be a determining factor in increasing their wealth and economic growth. But what we see in many developing countries includes the rich and full resources and low economic growth. Perhaps the low access to specialized human resources and disparate policies with economic growth, particularly in financial policies, are among the major reasons of this issue. Given all above subjects, this study attempts to investigate the relationship between the financial policies and the economic growth. The next section reviews the subject literature including the theoretical principles, research background and the necessity for conducting the research.

## LITERATURE REVIEW

In this section, the theoretical principles, research background, necessity for conducting research, research methodology and research findings are presented, respectively. In this study, direct tax and government spending are considered as two major variables of financial policies; the conducted library studies expressed in this regard are presented as follows.

**Theoretical principles:** The initial theoretical principles related to the economic growth can be traced back to the trade sect. After this sect, the theory of classics is the most important theory advocating the positive effect of trade on the economic growth. In order to examine the effects of financial policies on the economic growth, first a good classification of these tools should be performed and then the effects of each

of them on economic growth should be evaluated separately. These tools can be classified mainly into two groups of taxes and the government spending. The effectiveness ways of these policies are different, but each of them can be studied as a certain set. In clear words, all effects imposed on the economic growth can be classified into several certain sets and then the financial performance of different tools be investigated. From the late 80s, many researches were conducted in the field of growth models and led to the creation of new patterns called "The endogenous growth models". These models argue that the internal mechanisms of economy such as the education, appropriate level of knowledge and skills, research and play a role in the economic growth. However, the endogenous growth theorists' objective is not the lack of considering the capital and technology factors, but they believe that both these cases are essential components for the growth, but applying a set of policies along with the capital and technology can affect the economic growth rate. In this study, the effect of two financial policies is studied in the form of direct tax and government spending. Thus, these two are discussed in order to achieve an equal definition of these two policies.

- Direct taxes are obtained from adding the total corporate tax, income tax and wealth tax. Corporate tax, which is collected in terms of two ways including the governmental corporate tax and the Private corporate tax, has allocated the highest portion of direct taxes collection in Iran in most of the years. This tax has been changing frequently. Income tax, wealth tax, inheritance tax, casual revenues and arid lands are other types of direct tax:
- Government spending is the real costs which are divided and classified into two groups of current and development costs.
- **Current (Real) costs:** Current costs are the pension costs which are provided by the almost permanent state revenues. Paying the salaries, insurance, subsidies and... are the examples of these ongoing costs.
- **Construction (Real) costs:** Construction costs are the expenditures which are approved and provided by the government revenue as the budget for the projects and construction, development and plans.

Subject of Causality between the financial policies and the economic growth was first introduced by Patrick. He raised two theories of supply- operation and demand-following. Theory of supply-operation implicates the causal relationship from the financial development to the economic growth, in other words the voluntary establishment and increase of institutions and financial markets leads to the increased supply of financial services and consequently it causes the real

Table 1: Comparing the conducted studies

No.	Researcher's name	Year	Working area
1	Thornton	1996	Financial and Economic growth in developing countries.
2	Demeriades and Hussein	1996	Does financial development cause economic growth? Time-series evidence from 16 countries.
3	Khotaei	1999	Development of financial markets and economic growth.
4	Fasea and Abma	2003	Financial environment and economic growth in selected Asian countries.
5	Liang and Teng	2005	Financial development and Economic Growth: Evidence from China.
6	Hondroyannis <i>et al.</i>	2005	Financial markets and economic growth in Greece.
7	Hassan <i>et al.</i>	2005	Temporal causality and dynamics of financial development, trade openness and economic growth in Vector Auto Regression (VAR) for Bangladesh.
8	Robert and Martinas	2005	Economic growth and change in a material world.
9	Steger	2006	On the mechanics of economic convergence.
10	Dani	2007	Globalization, institutions and economic growth.
11	Aghion and Griffith	2008	Competition and growth: reconciling theory and evidence.
12	Daron	2009	Introduction to modern economic growth.
13	Besley <i>et al.</i>	2010	Political competition, policy and growth: theory and evidence from the united states.
14	Angus	2010	Comparative experience in Europe and north America.
15	Tim	2011	Prosperity without growth: economics for a finite planet.
16	Hendrik	2012	Economic growth and development.
17	Asafu-Adjaye and Mahadevan	2012	Managing macroeconomic policies for sustainable growth.

economic growth. This study is done by transferring the rare resources from minor savers to the large investments and is implemented based on the relative efficiency rates. On the other hand, the demand-following hypothesis emphasizes on the economic growth to the financial development due to the causal relationship. Therefore, the economic growth leads to the increased demand for newer and more complex financial services and institutions and consequently the financial development. Based on this different view, any change and evolution in the financial markets is a passive reaction to the economical growth in a simple expression (Patrick, 1966). In contrast, other economists have different opinions. For example, Lucas (2002) argues that the economists have exaggerated about the importance of financial markets in the economic growth and these markets have only a minimal role in the economic growth process in the best condition (Lucas, 2002). Studies have shown that Fritz (1984) and Jung (1986) were the first researchers who examined the causal relationship between the financial development and the economic growth. Gupta (1984) showed in his study that there was numerous evidence in terms of causal relationship between the financial development and the economic growth and he confirmed the supply operation. Generally, it can be stated that no regular model has been obtained for confirming Patrick theory during these years. The research background in the field of study and evaluation of the relationship between the financial policies (Direct tax and government spending) as the independent variables and the economic growth as the dependent variable are studied as follows.

**Research background:** Thornton (1996) investigated the causality relationship between two variables of Gross Domestic Product and the ratio of bank deposits to the GDP in 22 developing countries by using Granger causality test (Thornton, 1996). Demeriades and Hussein (1996) examined the relationship between

the financial development and the economic growth in 16 countries by using new methods of time series (Unit Root) (Demeriades and Hussein, 1996). Fasea and Abma (2003) confirmed the causal relationship between the financial development and the economic in 9 South Asian countries in their studies. Liang and Teng (2006) confirmed the one-way causal relationship between the economic growth and financial development in China by using the VAR model (Liang and Teng, 2006). Hondroyannis *et al.* (2005), achieved no causal relationship between the financial development and the economic growth in Greece in their studies by using the VAR model. Rafael (2009), achieved the absence of any causal relationship between the financial development and the economic growth in his studies about the economy of Kenya. Hassan *et al.* (2005) achieved the absence of causal relationship between the financial development and the economic growth in their studies on economy of Bangladesh. Robert and Martinas (2005), researched about the economic growth and change in a Material World. Steger (2006), has studied the Mechanics of Economic Convergence in the economy of Germany. Dani (2007) has studied the Globalization, Institutions and economic growth. Aghion and Griffith (2008), have studied and researched about the Competition and Growth. Daron (2009), has provided an introduction to Modern Economic Growth. Besley *et al.* (2010), has provided their theory and Evidence from the United States in the field of Political Competition, Policy and Growth. Angus (2010), has done a Comparative Experience about the Economic Growth in the West with Europe and North America. Tim (2011), has analyzed and studied the Prosperity without Growth. Hendrik (2012), has discussed about the economic and growth development and its factors and variables. Asafu-Adjaye *et al.* (2012), has proposed the managing Macroeconomic Policies for Sustainable Growth. Comparing the conducted studies is shown in Table 1.

**RESEARCH METHODOLOGY**

This research is applied in terms of objective, with the library type based on the data collection and is among the correlation studies in terms of method because it seeks to explain the relationship and calculate the correlation rate and coefficients of each independent variable (direct tax, government spending) with the economic growth by using the econometric models. Data and information needed for the research are collected based on document library studies and information related to research variables are extracted by referring to the websites of Central Bank, economic Indicators and website of Iranian National Center of Statistics. Information related to the research variables covers the years from 1357 to 1387 annually. In this study, first, the reliability-determining tests like Dickey- Fuller unit root test were used in order to determine the stability and reliability of variables used in various forms of production.

**Mathematical function and conceptual model of research:** For determining the major hypothesis, this question is raised whether there is a significant correlation between the financial policies (Direct tax, government spending), as the independent variable and the economic growth, as the dependent variable? In response to this question, the research assumptions are determined as follows:

- **Main hypothesis:** There is a significant correlation between the Economic growth, as the dependent variable and the Financial policies (Direct tax, government spending) as the independent variables.
- **Subsidiary hypotheses:**
  - There is a significant correlation between the direct tax and the economic growth.
  - There is a significant correlation between the government spending and the economic growth.

Model used in this study consists of a dependent variable which is the economic growth and two independent variables including:

- Direct tax (T)
- Government spending (G)

Thus, the research model is displayed as the following function:

$$\theta = C + \beta_1 T + \beta_2 G + \varepsilon_i$$

In the above equation:

$\theta$  : Represents the economic growth function



Fig. 1:

Table 2: Pearson correlation coefficient for dependent and independent variables

Independent variables	Correlation coefficient	Sig.	Test results
Direct tax	0.934	0.000	A significant direct correlation
Government spending	0.961	0.000	A significant direct correlation

- C : Constant factor
- T : Direct tax
- G : Government spending
- E : Error Term
- $\beta_1$  to  $\beta_2$  : Coefficients of independent variables

Conceptual model of relationship between the independent variables (Direct tax, Government spending) and the dependent variable (Economic growth) is as shown in Fig. 1.

**RESEARCH FINDINGS**

Research findings for proving the main hypotheses have been obtained by using Pearson correlation coefficient. SPSS software has been used for calculation.

**Correlation coefficient results for the main hypotheses:**

- H<sub>01</sub>:** There is a significant correlation between direct tax and the economic growth.
- H<sub>11</sub>:** There is no significant correlation between direct tax and the economic growth.
- H<sub>02</sub>:** There is a significant correlation between the government spending and the economic growth.
- H<sub>12</sub>:** There is no significant correlation between the government spending and the economic growth.

Table 2 represents the results of Pearson correlation coefficient test for the main research hypotheses.

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

The coefficient value of direct tax is equal to 0.0203, the government spending equal to 0.0198 and their significant level (Sig) less than 5%. This suggests that the significant correlation of all variables with the economic growth is direct and this correlation is confirmed with significant level 99%. Therefore, the hypotheses H<sub>01</sub> and H<sub>02</sub> are confirmed.

**Kolmogorov-smirnov normality test:** The test of data normality is used in order to determine the amount of

Table 3: Kolmogorov-Smirnov normality test

		EG	T	G
Normal parameters	Mean	2.7427E5	3.7507E4	9.1771E4
	Standard deviation	9.17993E4	6.24235E4	1.06285E5
	Absolute	0.159	0.276	0.225
	Positive	0.159	0.260	0.255
	Negative	-0.129	-0.276	-0.230
Kolmogorov-Smirnov Z	0.871	1.511	1.006	
Asymp. Sig. (2-tailed)	0.434	0.021	0.24	
a.test distribution is normal.E71				

Table 4: Estimating the econometric model by using the ordinary least square method

Dependent Variable: Economic Growth				
Method: Least Squares				
Sample (adjusted): 1367 1388				
Included observations: 21 after adjustments				
Variable	Coefficient	S.E.	t-statistic	Prob.
Direct tax	0.002599	0.459850	0.005653	0.9956
Government spending	0.800983	0.315086	2.542111	0.0204
C	239680.1	7806.507	30.70260	0.0000
R-squared	0.937280	Mean dependent var		322225.1
Adjusted R-squared	0.930311	S.D. dependent var		95648.88
S.E. of regression	25250.01	Akaike info criterion		23.24260
Sum of squared resid	1.15E+10	Schwarz criterion		23.39182
Log likelihood		Hannan-quinn criterion		23.27499
F-statistic	114.36	Durbin-Watson stat		1.356829
Prob (F-statistic)	0.000000			

data close to each other. Test results of Kolmogorov-Smirnov test are shown in Table 3.

As observed in Table 3, the value of P in the row Kolmogorov- Smirnov Z is larger than zero and the value of Sig. (2-tailed) is also larger than 0.05. Thus, the data dispersion or distribution or is normal.

**The coefficients of model and the variables estimate:**

The results have been obtained from the estimation of the above model by the least squares method and calculated by the help of EViews software as presented in Table 4.

**Interpretation of test results:** The results of estimating the model and other calculations and tests indicate that:

- T statistics and the probability related to it (Prob) suggests a significant correlation between the economic growth and the government spending at the significant level 95 percent (T-statistic is higher than the absolute value 1.96).
- R<sup>2</sup> statistic indicates that 94% of changes in independent variable can be explained with the explanatory variable the government spending.
- High F statistic of the model (134.5) and the probability related to it (Prob = 0.000) indicate a significant overall regression.
- Durbin-Watson statistic in the model equal to 1.36 rejected the assumption of correlation among the model components.
- Independent variable coefficient of government spending indicates that the government spending has a significant correlation with the economic

growth. In fact, by one unit increase in the variable of government spending, the economic growth is increased 80%.

- Tax has no impact on the economic growth.

**CONCLUSION AND SUGGESTION**

- Results of Pearson correlation coefficient test confirm the subsidiary hypotheses. The coefficient value of direct tax is equal to 0.0203, the government spending equal to 0.0198 and their significant level (sig) less than 5%. This suggests that there is a significant direct correlation between all variables and the economic growth with significant level 99%.
- Kolmogorov-Smirnov test is used in order to determine the amount of data close to each other. As observed in Table 3, the value of P in the row Kolmogorov-Smirnov Z is larger than zero and the value of Sig. (2-tailed) is also larger than 0.05. Thus, the data dispersion or distribution or is normal.
- Model coefficients and variables have been calculated by the least squares method and by the help of E-views software. Table 4 indicates that T statistics and the probability related to it (Prob) suggests a significant correlation between the economic growth and the government spending at the significant level 95% (T-statistic is higher than the absolute value 1.96). Moreover, R<sup>2</sup> statistic suggests that 94% of changes in independent variable can be explained with the explanatory variable the government spending. High F statistic of model (134.5) and the probability related to it (Prob = 0.000) indicate a significant overall regression.

- Durbin-Watson statistic in the model equal to 1.36 rejected the assumption of correlation among the model components and the independent variable coefficient of government spending indicates that the government spending has a significant correlation with the economic growth. In fact, by one unit increase in the variable of government spending, the economic growth is increased 80%. Eventually it becomes clear that the tax has no impact on the economic growth.
- The regression model of paper is as follows according to the defined variables:

$$\theta = C + 0.002599 T + 0.800983 G + \varepsilon_i$$

This model represents the correlation between the function  $\theta$  (Economic growth) and the variables of government spending and direct tax.

The study found that there is significantly correlated between fiscal policies scales (government spending and direct tax) and economic growth. This relation defines through a regression model:

- **Suggestion:** For increasing the economic growth and given the calculation coefficients, a unit increase in government spending leads to a 0.8-unit increase in the economic growth. As mentioned, tax has no effect on the increased economic growth. This suggests that the components of Gross Domestic Product calculation formula can have a direct impact on the economic growth and a significant correlation with the economic growth. Thus, with regard to other variables affecting the way of calculating the Gross Domestic Product ( $C + I + G + X_n$ ), it is recommended that:
- The corresponding coefficient and coefficients of other components in the Gross Domestic Product calculation model including the public consumption of households, Investment and foreign trade balance should also be calculated and applied appropriately in planning to increase the Gross Domestic Product.
- The endogenous and exogenous economic growth model should be defined along with the components of each model and the optimized model should be designed and proposed for planning of Iranian economic growth by the help of proposed method in this study.
- According to the theory of supply and demand elasticity (Patrick), the correlation of other domestic economic sectors (Microeconomics) with the economic growth should be determined and their impact coefficients be calculated and finally the (State) macro function of economic growth be used for economic development planning.

- **Suggestions for other researchers:** Determining other Factors affecting the economic growth based on Durbin-Watson test.
- Determining the domestic economic growth function based on other tested indicators by using the stepwise regression statistics as the function of Iranian economic growth.
- Mathematical modeling based on maximizing the domestic economic growth according to the variables, which have a direct and significant correlation with the economic growth and by considering the coefficients of each variable.

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