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An Investigation of Relationship between Education Current Expenditures and Economic Growth: Case Study of Iran

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ABSTRACT

The purpose of this paper is investigating the effects of current expenditure of education on Economic growth in Iran 1994-2010. To do so, the present paper tried to examine the factors affecting the increase in economic growth using the econometric estimation explaining the variable indexes. Regarding the estimation of Econometric Paradigms, in addition to examining and enjoying the theories related to growth in education expenses and its effect on growth of GDP in domestic economy.

The results show that the increase in price indexes in Iranian economy impacts the domestic product.1 percent increase in education expenditures leads to a 0.31% increase in GDP. Also oil revenue in Iranian economy is an effective variable in increasing the production in Iranian economy, indicated well in the results gained by the pattern. According to the results of paper, an increase in the hope to live together with the increasing population rate and consequently effective demand for education and other social services is involved in predicting the government expenses in national economy, and this increase in government expenditure in education sector affects the changes in economic growth.

KEYWORDS: Education, Economic Growth, Education expenditures, Human capital

1- INTRODUCTION

Economic growth is a realty propounded since 1940s mainly for development of the third world nations, and through execution of economic growth plans many countries could achieve levels of social and economic growth. Economic growth is one of the most important economic objectives in the second half of the twentieth century [Mc Mahon & Walter. W,1998]. In definition, economic growth is introduced as a process and the true income per capita of a nation increases in long term. The important issue is the difference between economic development and economic growth. Economic growth is in fact a quantitative concept, while economic growth is a qualitative one [Mottevassli .M ,2002]. Economic growth in simple words is the increase in production of a country in a specific year in comparison with the production in the base year. In macro level, the increase in GNP (GDP) in a given year is relative to its amount in the base year is regarded as economic growth [Healy, Tom, 1998]. To obtain the real growth figure, price change (due to inflation) and depreciation of equipment and capital commodities should be deducted from that. Economic growth is: growth together with the increase in production capacities including physical, human, and social capacities [Pomfert. Richard ,1996 & Oraley .M .Amos. Jr. ,1987]. In economic growth, the production quantitative growth is gained but besides, the social foundations are revolutionized. Attitudes are changed, the ability to operate the present resources is increased continually and everyday a new innovation will be done [Psacharopoulos J & Dehall, M,1990]. In addition it can be said that the production combination of production and the relative share of foundations is changed in production process, Development is a comprehensive issue in the community and cannot occur only in one part of that. There is no boundary for development, and is a qualitative phenomenon due to its dependency on human and it has no limitation. In practice, PGDP is the most prevalent tool to measure economic growth[Ale Ibrahim .B, (2000].

The paradigm of knowledge -orientation can be propounded as a comprehensive development platform with a considerable ability to explain the development process. Attending the issue of knowledge which is proposed in the 20-year prospective document and in the fourth development plan as a critical axis is so important. During the past 50 years systematic efforts were done to explain the achievement of development, but still many countries (in particular developing and less developed countries) seek development [Karimi Petanlar. Saeid & Mehnatfar. Yousef ,2005]. This issue is the mental concern of many thinkers. In this regard, numerous theoretical paradigms are introduced in an evolutionary process of which the knowledge (-based) economy is the newest. Attending the development of necessary capacities to ascertain the development is the common feature of such paradigms which is stressed in all of them. Although capacity development in any paradigm is sought through a particular way such as physical investment, education development, health level enhancement and/or technology development a crucial difference exists between the knowledge economic

paradigm and other paradigms which is the attention to the degree of applying these capacities[Mc Mahon & Walter . W,2000 & Helk .J,1991]. In the other words, the previous paradigms have emphasized the capacity development mainly from aspects such as physical capacities, human resources development, and technological development relying on the essential assumption that the capacities created will be applied properly. The knowledge economy paradigm value both aspects namely capacity development and appropriate usage of that and dismisses this determining assumption[Branson, William. H,1993].

Familiarity with cost measurement methods and advantages of educational systems is the most critical factor in economic and social development, and economic and social development facilitates the better education. Economic growth is one of the important objectives of most countries but is applied with different objectives in developing countries and developed countries[Kremer, Michael ,1993]. In developed countries it means the decrease in unemployment and the increase in peoples' social welfare. In developing countries it both means attempt to increase GDP and enhance the welfare standards to a level enjoyed by developed nations. The role of education as a tool for development and economic development is different [Jones , Hiol , 1991].

2- Review of Literature and Research Background

Examining the factors affecting on development in developed communities indicate that most of these countries enjoy capable education. Crystallization of education is in training committed, expert, and scholar work force. In the world today, in which science and technology with the broad growth is considered as the critical factor in economic, social, and cultural development process of human communities, educational foundations and systems have great and important roles. Increasing attention to the type and development of education is an undeniable necessity raised by the fast pace of changes in different economic and social activities [Barro, Robert . J ,2000].

Scientific and technological advancements in today world and the speed of changes and transformations in scientific and technological methodologies is so quick and wonderful and negligence of the necessary education and coordination and conformity of qualitative and quantitative level and human force with the level of scientific and technical growth generates numerous problems on the way toward economic and social development of the community. Education is the main element of development in each country and its necessity is a new issue in economic science and other sciences in the scope of social science manifested in knowledgeorientation and all countries are trying to achieve that day and night. Today, in economic aspect, knowledge economy is emphasized by most of economists. Now, as we are moving toward globalization, human in 20th century moves with such a speed that it lags himself. Illiteracy and poverty of knowledge entails global problems. We should be leading in solving the scientific issues in the present world and should invest in this important task. To obtain knowledge and literacy, the insight and necessity of education is known in many countries and their endeavor is to improve this essential element, and it presupposes the belief that knowledge is power. Of course, today in the present world illiteracy, un education, inability, and the requirements of developing and undeveloped countries is the main factor in their all-out dependency on other colonizing countries [Karimi Petanlar. Saeid & Mehnatfar. Yousef ,2005 & Pritchet , Lant ,1999 & Ann Sanghoom, Hemmings, 2000].

The world today has found out that education is a type of national investment. And every country which tries harder in this way will enjoy higher economic, social and cultural development in the future. Human capital gained by education is a main factor of growth and development. Harbison , says in this respect: human resources form the main principles of nations wealth. Capital and natural resources are subsequent factors of production. While humans are active factors accumulating the capitals, they operate natural resources, accumulate social, economic and political organizations and promote the national development. Obviously, a state which can n develop the knowledge f its people and enjoy it effectively in national economy cannot develop anything else. Education enables the work force to make better use of machineries, equipment and technology and apply them more precisely and on the other hand education increase the scientific-technological capacity of individuals to do applied research, invention, and discovery and make the work force conform themselves to the continuous changes and revolutions created in capital commodities[Karimi Petanlar. Saeid & Mehnatfar. Yousef ,2005].

Golabi (1989) believes that educational system in today world is as the main and effective factors in economic and social transformations has focused its critical duty on all-out education of individual and prosperity and growth of the talents of community members and training expert and proficient work force and transference of cultural, scientific and technical values.

Khalesi (2000) regards the education as the first factor in development and states that increasing the community's knowledge, creation of proper proficiency in the community, professional skill, life skills and healthy living skills and training healthy generation capable of running the development and community's progress are three if's which the Education department should possess. The real independence of any country relative to its abilities is in removing the dependence and proving the self-sufficiency from other nations. No country can achieve real self-sufficiency unless it trains and have in place committed and expert work force

required for its activities. Today education is regarded as the origin of changes and social innovations in the society. The foundation of education is in interaction with social transformations, education is the gradual flow and process, cultural, social changes and national development. Change in education, means to do works and programs and trends in a different manner and considering the expansiveness and variety existing in the social structure of the society. Planning, technology and innovations in methods and ways are new elements affecting the changes and improvement of works and their desirability. Education should be an offsetting tool in changes and innovations. The purpose is development, change, and desirable and all-out transformation in economic, social, political and cultural fields depending on growing of educated brains who can research, innovate and conform themselves with the environment. Education is the main factor and one of its main elements is teachers who can play a major role in developing the country.

3- Reforming the Administrative and Educational Structure in Iran and its Role in Development.

Government's enjoyment of oil revenues in the last century has augmented the government and prevented the attention to other resources including human capitals. Usage of oily dollars provides welfare and prosperity in short term but prevents the country from development and growth in long term. Optimum usage of oil revenues like any other source depends on how to manage it to be converted to economic bounty. If the oil price increases but its revenue is spent on the current issues and costs, considering the fact that a nonrenewable capital is being consumed it can satisfy the public in short term but in long term it can prevent the country from development and growth[Abrishami .H & Manzoor. D,1997]. If the revenue of oil in capital issues drives the private and cooperative sectors, promote foreign investments, trade, tourism services training and if it is applied toward meeting the needs and decreasing the costs, unemployment, housing, health and treatment, and transportation it can have positive effects on domestic economy. Of course in 2008 and 2009 oil price fell considerably and the government has decreased the budget for 2009 about 2.6 percent. This is the first effect of the decrease in oil price on the economy. Therefore, it can be stated that fulfillment of human development strategy depends more than anything on how the budget is appropriated and to the cost priorities. Human development plans should be done in the framework of the present income, without any need to increase the tax revenue. This appropriation may be sectional or intersectional[Dadgar . H & Rostami .A ,2000].

Decreasing the size of governmental administrative systems and making them more efficient may save the costs. In case the income is insufficient, the government's income to finance the human development strategy is a way to increase the price of products and public services supplied by government or public economic institutes. The efficiency of this solution presupposes that the price of such products and services should cover the final costs including long term investment. The sums saved in this way can be applied in financing the human development strategy[Emadzadeh . M, and FArjadi .Gh,1991]. Another solution is to establish consumer value system to compensate for part of costs of public free services which should be reconsidered. A great share of country's budget is dedicated to education considering the large number of students. Although the Constitution has delegated such services and other expansive services to government, to achieve the complete and comprehensive operation of such services requires high facilities and services [Karimi Petanlar. Saeid & Mehnatfar. Yousef, 2005]. In these cases maybe it is more appropriate to lead public services toward usage and coverage of low-income class and to oblige high-income classes supply the expenditures for these services. To do so one can suppose involving the private sector in education and even high education and encouraging people to participate. The increase in number of high education centers run by public capital has led to severe increase in government's ongoing budget and even constructional budget. Therefore handling high education centers considering the increase in the number of students, fields of study, physical spaces and administrative and service personnel and admission of new faculty members requires high budget[Tavassoli .H.GH , 1993]. Therefore, government should lead education system toward privatization. The government seems not to have the ability to manage high education in the future. Necessarily, the government should provide specific facilities to establish non-profit institutes both in intermediate and advanced levels.

4- RESEARCH METHODOLOGY

In this research, the required information and statistics have been used from statistical calendars of different years provided by central bank. Considering the statistical methods and analysis of econometric paradigms and its definition, the entire considered paradigms are processed. In this paper, the variables used in econometric paradigms are defined accurately so that to determine the inclusion of variables. In defining the variables, the definitions of economists have been applied and then inspired by those definitions in proportion with the subject of the research and in conformity to the realities of education and economic growth of Islamic Republic of Iran, the given variables are selected. Considering the fact that in every econometric model, the variables existing in each model are divided into two groups of distributing variables and distributed variables, namely independent and dependent variables, in econometric models on government expenses in education, such issue is common and in this part we explain the variables and how to calculate them Education expenses

appearing as independent variable in econometric paradigms, and the purpose is to examine the effect of this variable on economic growth . In the experimental field or assessment of econometric paradigms statistics and information of education (ongoing and constructional) inserted in the informational package of national monetary and fiscal accounts of Central Bank 2010 have been used.

5- Estimation of Econometric Paradigms

In the present paper it is tried to examine the factors affecting the increase in economic growth using the econometric estimation explaining the variable indexes. Regarding the estimation of Econometric Paradigms, in addition to examining and enjoying the theories related to growth in education expenses and its effect on growth of GDP in domestic economy. The examination time range in this paper is (1994-2010) and in estimation of models the information of this period has been used. In estimation of econometric paradigms the software package "E views" and ordinary least squares method have been used. In this part we experimentally examine the importance of the issue under study. In addition to offer different econometric paradigms in the field of reasons of growth in education ongoing expenses and its effect on economic growth, the results of econometric paradigm results are examined.

5-1. Experimental Examination Using Econometric Paradigms.

The purpose of this paper is to theoretically and experimentally examine the factors affecting economic growth. It is examined that how the education expenses which are part of government's purchasing in economy affects the economic growth. Hence, relying on different theories related to [public expenses, different econometric paradigms are assessed. Before offering the paradigms related to the increase in government ongoing expenses and also education costs a great part of which is on the government considering the nature of free education and its inclusion in the Constitution, it is necessary to examine the importance of the issue using econometric paradigms. Relying on time series information in 1994-2010), the entire share of government in (GDP) and 11.8 percent of which is related to the share of government capital assets. Also, regarding the examination of government current expenses, totally the government expenses equals with 75 percent and the share of government's capital expenditures is approximately equal to 30 percent. The portion of education expenses relative to the entire government's expenditures is over 60 percent. This issue will increase considerably, considering the increase in educational services and usage of new technology at present and in future. Its effect can lead to budget deficiency. Statistical evidence during the recent years indicates that education sector faces with budget deficiency every year.

Now considering the fact that budget deficiency results from the difference between public revenues and expenditures it can be concluded that the share of government's current expenses is higher in the increase in budget deficiency. Therefore, it is necessary to identify the factors affecting on the increase in economic growth and public expenditures. Government's ongoing expenditures, education expenditures, GDP, oil revenues, tax revenues, and inflation rate is required to process an econometric paradigm which can measure the variable parameters. We will interpret these paradigms relying on their process. The paradigm considered in this paper is a logarithmic paradigm, in which GEC is government existing costs, GDPR is gross domestic product according to the fixed price of 1997, EEG is education expenditures, CPI is the price index (inflation). Of course other variables may be applied in this paper considering the necessity.

5-2. Estimating Education Expenses and Iranian Economic Growth

During the twentieth century, governments have devoted higher proportions of national revenue to their expenditures. In the discussion regarding the increase in government expenditures in developing countries three questions are propounded: How are the Public expenses of developing countries in comparison with industrial countries? Which factors determine the public expenditures? What effects does this expense increase have on economic growth? What is the share of government expenditure of GDP in countries with low or moderate expenditures and in comparison with countries with market-based economies? Different factors including ideology, population issues, positive income tendency for public products, increase in the cost of public commodities toward private commodities and both the theory and act of development explain such a growth. In practice, it is proved that there is no severe cohesion between public expenses and economic growth. The amounts of expenses of government especially in education sector may raise various ideological discussions. The discussion that the total level of government expenses is an important factor in determining the rate of economic growth is less supported. Maybe, considering the nature and type of government expenses in different levels, its degree of effect on economic growth is under question; but this fact should be examined. Due to the importance of the issue under study, based on the econometric models, we examine the results of these models: Final Econometric Models

LGDPR=10.564 -0.241LCPI+0.311LEEG+0.0230LOIRG (96.50) (-4.072) (7.79) (2.610)

 $R^2 = 0.99 DW = 2.12$

(The numbers in brackets are statistic.)

The change in price indexes in Iranian economy is another factor affecting the increase in government current expenses in education in Iranian economy. As indicated in the paradigm, the increase in price indexes in Iranian economy impacts the domestic product.1 percent increase in education expenditures leads to a 0.31% increase in GDP. Oil revenue in Iranian economy is an effective variable in increasing the production in Iranian economy, indicated well in the results gained by the pattern. But the important fact is that the amount of oil revenues during the study term has no important effect on the increase in economic growth, and so is not examined in this paper. it should be notified that part of the expected growth in government expenses is accompanied by the changes related to population statistics. The increase in the hope to live together with the increasing population rate and consequently effective demand for education and other social services is involved in predicting the government expenses in national economy, and this increase in government expenditure in education sector affects the changes in economic growth.

6- Single Root Test²

In this section, using the model presented, the relationship and manner of long term effect of financial policy on private sector investment in Iranian economy during 1994 to 2010 is examined.

Considering the non stationary of most of time series in macro-economy and the inefficiency of the traditional methods in estimation and economic models and also considering the suspect in econometrics toward the competency of Single Root Tests in identifying the stationary and non stationary of economic variables; coin tegrated economic concept is that when two or more time series variables are linked through theoretical principles to form a long-term balanced relationship. Although the very time series may be of random trends(non stationary) they follow each other well over the time in a way that the difference between them is stationary. Therefore the concept of collective economy implies a long term balanced relationship toward which the economic system us moving over time³. To do so, we use Dickey -Fuller Test on singular error statement known as Angel- Granger experiment, in this test we first assess the pattern in OLS model and then we apply single root test for the equations. Then, if the error statements of the entire estimated equations are stationary it denotes on false regression and it can be concluded that the equation estimated in long term is stable, and consequently, a balanced long term relationship is established between the dependant variables and explanatory variables. In this paper, using Dickey-Fuller Test on singular root and non stationary, the results are indicated in table 1.

Table 1.Study of the generalized Angel- Granger Test for cointegrated, recognized (stationary & non stationary)

Variable name	ADF Statistic	Critical Amounts of Makinon		
		1%	5%	10%
D(LGDPR)	3.291	3.63	2.962	2.6148
D(LCPI)	3.65	4.26	3.45	3.21
D(LTEEG)	3.517	3.64	2.953	2.6148

Augmented Dickey – Fuller Test Question

The results of single root tests for 4 variables of GDP, prices index, expenditures of capital asset ownership, and TEEG in Iranian economy is indicated in the above table. To estimate the test, first degree difference is applied and the results indicate that the entire variables are stable in 1 and 5%.

7- Conclusion

If we have begun the fourth development plan with the slogan "knowledge-orientation" we should know that we should consider the knowledge-orientated economy as the economic prospective in our country and plan in interaction with that. It can be said that oil is the most important economic section in Iran. Since 2003, oil price has raised from 23\$ in each barrel to more than 120\$ in each barrel in 2010. Considering the ration of oil and GDP, and oil price rises it was expected that GDP in 2006, 2007, and 2008 to have higher economic growth. The government should improve its economic performance so that to achieve young work force and high saving considering the oil price rises. Of course the government during the four recent years has done desirable acts on entrepreneurship as instant-profiting projects and unfortunately oil price has fallen down severely and this is an important challenge toward performing the forth economic development plan. I believe that the year 2009 which is called as the Conservation year by the supreme leader it is possible to overcome the problems through fundamental reforms in the government's expenses and optimization of consumption. The administrative system has focuses on supremacy and concentration since its formation. During the years of reliance on singular-product economy an inappropriate revenue-Cist ratio has formed. Continuing so has formed the most effective and most important factor in administrative concentration factor of the country. It is obvious that earning

revenues from a single source in a single treasury has entailed concentrated cost. Hence, since the government is pioneer in the economic development process in Iran, the development trend in Iran has followed the government and has got a concentrated form. Such development management not only increases the size of government but also has widened the interference of government in different issues. The expansiveness of public bodies over the time, not only has made the government one of the most money-consuming economic corporations, but it is proved to be a critical obstacle in balanced and rational development. Hence it is necessary to revise the role of government in education regarding revenue-expenditure structure. During the twentieth century, governments devote higher proportion of domestic income to their constructional expenses. In Iran, during the studied years, ongoing costs in education have increased and this imposes high incomes and credits to Iranian economy. Although during the years under study, the increased inflation is a factor affecting on government's and in particular education's current costs, in most of the countries including developed and developing nations public economy development has had considerable growth in different years, and consequently the portion of government's costs in GDP has increased over time. While since the late 1980s due to different reasons in particular privatization the ownership and tenure of government has become slower, still the reasons of public sector growth are a very important issue in economy and management. in recent years, namely since 2006, considering the increase in size of the government, and consequently its costs, article 44 of the Constitution was notified by the supreme leader. The purpose of this important effort is economic growth, and accelerating that and involving the private sector in economy so that the government can reduce its costs and prevent its increase. Having examined and analyzed different studies it can be concluded that these efforts can lead to economic growth only if they are used by educated people whenever appropriate. In the other words, investment in human capital leads to economic growth only if it is in response to increasing economic needs to use the latest scientific technologies. But it should be kept in mind that educational corporations are not exposed to internal and external competition. And essentially they do not feel they need the latest production methods, and also without such efforts they can meet their needs. Although their educational and research activity does not affect economic growth, knowledge-orientation should be taken seriously in compiling economic development plans. So that to change the productivity of education. On the other hand, this increase in productivity in different educational levels may affect the productivity in domestic product, generate national welfare, amend the production and distribution system and decrease the poverty. Therefore, considering the fourth and fifth economic development plan the government should take serious steps toward increasing national product based on knowledge-orientation to accomplish its ends. Otherwise, the increase in educational costs does not affect seriously on the increase in domestic product and growth.

REFERENCES

Abrishami .H & Manzoor. D,(1997), "Comparative Analysis of Endogenous & New Classic Economic Growth Models", Economic Research Journal, No.55, Fall & Winter.

Ale Ibrahim .B, (2000), "Role of School Fundamentals for culture & Sustainable Development", Esfahan: Education General Office of Esfahan Province.

Ann Sanghoom, Hemmings, (2000), "Policy Influences on Economics Growth in OECD Countries", Economic Department, ECO/WKP.

Barro ,Robert . J ,(2000), "Education & Growth", Harvard University.

Branson, William. H,(1993), "Micro Economy Policies & Theories",(Translated : Abbas Shakeri), Ney Publishing.

Central Bank of Islamic Republic of Iran (2012), "Economic Data: Time series", Iranian Economic Reports, available at:www.cbi.ir.

Dadgar . H & Rostami .A ,(2000), "Role of School Fundamentals for culture & the Sustainable Development", Esfahan: Education General Office of Esfahan Province.

Emadzadeh . M, (2002) "Discussions of Education Economy", (University Jihad of Esfahan University.

FArjadi .Gh,(1991), "Introduction to Economic Growth & Development Theories", Alborz Publishing .

Golabi .S,(1988), "Research on Educational Planning", Tehran: Ferdos.

Healy, Tom, (1998), "Counting Human Capital", The OECD Observe, No. 212.

Helk .J,(1991), "Investment for Future", (Translated: Abdolhossein Nafissi), Madrese Publising.

Jones , Hiol , (1991), "Introduction to New Theories of Economic Growth" ,(Translated: Saleh Lotfi), University Center Press.

Jones . Churls .I ,(1981), "Introduction to Economic Growth",(Translated: Hamid Sohrabi & Gholamreza Graeinejad), Budget & Plan Organization Press .

Karimi Petanlar. Saeid & Mehnatfar. Yousef, (2005), "Investigating of Oil Incomes Role on Government Size in Iran Economy", National Conference on General Policy of article 44 of the Constitution, Tehran.

Kheyabani.N,(2002) " Economic Growth Models Design Emphasis on Labor Market", Labor Institute .

Kremer, Michael ,(1993), "Population Growth & Technological Change", Quarterly Journal of Economics .

Mc Mahon & Walter . W,(2000), "The Impact of Human Capital on Non –Market Out comes & Feedbacks on Economic Development", Given from Internet.

Mc Mahon & Walter. W,(1998), "Education & Growth in East Asia", Economics of Education review. Vo.17,No.2.

Mirfakhraei .M . K,(1984), " Education & Manpower Importance", Culture Issue ,no.5.

Mottevassli .M. (2002), "Economic Development", Study & Writing Humanity Science Text(SAMT).

Oraley .M .Amos. Jr. ,(1987), "Economics - Concepts & Applications", Wadsworth Publishing Company Belmont, California.

Pomfert. Richard ,(1996), "Different Ways of Economic Development",(Translated: Ahmad Mojtahed), Tehran: Allame Tabatabai University Press.

Prasad Mira .R ,(1986), "New Adaptation of Development Issues" ,(Translated : Hamid Reza Frahani), Social & Economic Selected Issues Journal , Forth Edit,Fall1986, Budget & plan Organization.

Pritchet, Lant, (1999), "Where Has All the Education Gone?", The World Bank.

Psacharopoulos ,J & Dehall. M,(1990), "Education For Development – Analysis of Selected Investments" ,(Translated: Paridokht Vahidi & Hamid Sohrabi) Economic ,Social &Cultural Center, Budget & Plan Organization.

Tavassoli .H.GH, (1993), "Universality of Development Concept & Its Relation to Culture", No.15, PP.23-24.