Quarterly Journal of Quantitative Economics(JQE) **(2025) 22(3) 208-254**

Shahid Chamran University of Ahvaz

Quarterly Journal of Quantitative Economics

Journal Homepage: www.jqe.scu.ac.ir
Print ISSN: 2008-5850
Online ISSN: 2717-4271



Analysis of the determinants of education costs in Iran

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ARTICLE HISTORY	JEL CLASSIFICATION	KEYWORDS
Received: 25 March 2023 ***revision: 17 May 2023*** ***acceptance: 11 September 2023***	***H52,H51***	***Education costs, government, influencing factors, autoregression with distributed lag, error correction model***

Acknowledgments: Acknowledgments may be made to individuals or institutions that have made an important contribution.
Conflict of Interest: The authors declare no conflict of interest.
Funding: The authors received no financial support for the research, authorship, and publication of this article.

How to Cite:
fatholahi, Elham. (2025). Analysis of the determinants of education costs in Iran. *Quarterly Journal of Quantitative Economics(JQE)*, 22 (3), 208-254. (in Persian)
10.22055/jqe.2023.43353.2551

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Quarterly Journal of Quantitative Economics
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EXTENDED ABSTRACT

INTRODUCTION

Education plays an essential role in pursuing the economic growth and development of any country. A well-developed human capital increases productivity and boosts the economic growth of any country and contributes to the economic wealth of individuals. For this reason, the educational system in countries has been a continuous effort to develop a balanced and harmonious intellectual, spiritual, emotional, and physical society. The educational system is designed with the hope of producing knowledgeable, skilled and capable people who support high moral values. In this regard, there are three main goals of education that all countries sought: free access to quality education, wider coverage and adequate provision. These main goals can only be achieved if public education expenditures are allocated. The benefits of government investment in education to help better resource management lead to faster technological innovation and increased productivity. Therefore, it is necessary to expand educational opportunities through increasing public education costs (Yun and Youssef, 2018).

The relatively poor economic growth performance of most developing economies in the past few decades raises the question of whether this is not due to a lack of capacity and, as a result, insufficient education. These problems create an urgent need to analyze the trend of public education expenses and investigate the factors affecting the growth of government education expenses. Determinants of public policy are very important; Because they provide important information for a country to achieve desired results. An analysis that determines the determinants of public education expenditures produces profound findings that may be useful for policy makers to develop an effective education policy in the future. Furthermore, such an analysis would be crucial to address the gap in the literature on the determinants of public education expenditures. This paper will try to integrate several theories to form a relevant model that explains the determinants of public education costs in Iran. To have an opinion contribution. Integrating two contrasting theories into the study model helps determine which of the specific theories best describes the behavior of public education spending

levels. Therefore, the purpose of this article is to provide answers to the questions by looking at the priorities of allocation costs and with a special focus on educational costs.

METHODOLOGY

Economic fluctuations are justified as the main reason for the extensive budget reduction in education (Abdullah, 2017). This shows the important role of economic variables in influencing the allocation of public education costs. The economic variables of real gross domestic product growth rate (GDP), inflation rate (INF) and unemployment rate (UNEM), which are in accordance with Wagner's law and Keynesian countercyclical theory, were selected for analysis. In addition, since past studies have shown that the child population and the elderly population have a significant effect on the allocation of government expenditures, therefore, it is necessary not to ignore demographic variables as determinants of public expenditures. Therefore, instead of focusing on the population of children (age less than 14 years) and the elderly population (age over 65 years), the possible effects of the working age population (age 15 to 64 years) because this group of the population as the largest proportion of the total The population in Iran was investigated on the cost of public education. In an article by Lewis (1961), he pointed out that the educational system can produce educated people who are easily absorbed in the labor market. The fastest way to increase productivity in developing countries is by training adults who are already working. It also explained that education for young children would have a smaller potential contribution compared to efforts to improve the skills of the working-age population. According to this recommendation, the introduction of the working age population (15 to 64 years) is justified, because this group directly contributes to the production of human capital. Demographic concerns arising from past research highlighted the controversial results obtained. Some studies such as Bischof and Prestia (2015) showed positive results between child population and cost allocation. Meanwhile, a research paper by Chatterjee et al. (2014) argued and showed a contradictory result. In another paper by Korban et al. (2015), positive results were found between the elderly population and public education expenditures. However, Grub and Wolter (2005) rejected these findings.

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Due to the conflicting issues regarding the effect of different age groups on public education costs, it caused the demographic variables of different age groups to be considered. In addition, according to Okafor and Eya (2011), public debt may affect the public budget to the extent that it favors government spending in certain sectors. In other words, public debt may help to increase the size of public sector budget allocation. Similarly, it is suggested that income size may positively affect the size of the public sector. However, Okoeze (2015) pointed out that public debt may act as a debt. Continuous borrowing of money leads to an increase in the cost of debt service. Similarly, it is suggested that the size of government revenue may positively affect the size of the public sector. Therefore, after the studies of Okafor and Aya (2011) and Okoeze (2015), tax revenue and public debt were included in the model. Therefore, the experimental model of the current research will be developed from the study of Okafor and Aya (2011) and Sagarik (2012). The current research model for the empirical analysis of public education expenditures, which is derived from the model of Sing Yun and Yousef (2018), will use the economic and demographic factors of Iran for the years ۱۹۷۹ to ۲۰۱۹ and is as follows

$$EDU_t = f(GDP_t, UNEM_t, INF_t, TAX_t, DEBT_t, POP1_t, POP2_t, POP3_t) \quad (1)$$

In order to model regression and estimation, the variables of public education expenditure (EDU), tax revenue (TAX), public debt (DEBT), population 0 to 14 years old (POP1), population 15 to 64 years old (POP2) and population 65 years and older (POP3) is used in this research in logarithmic form. Therefore, the desired model is specified as follows:

$$\mathrm{LEDU_t} = \beta_0 + \beta_1 \mathrm{GDP_t} + \beta_2 \mathrm{UNEM_t} + \beta_3 \mathrm{INF_t} + \beta_4 \mathrm{LTAX_t} + \beta_5 \mathrm{LDEBT_t} + \beta_6 LPOP1_t + \beta_7 LPOP2_t + \beta_8 LPOP3_t + \varepsilon_t \quad (2)$$

which in relation to (2) $\mathrm{EDU_t}$ general cost of education (billions of Rials), GDP real growth rate of gross domestic product (percentage), UNEM unemployment rate (percentage), INF inflation rate (percentage), TAX tax revenue (billions of Rials), DEBT public debt (billions of Rials), $\mathrm{POP1_t}$population 0 to 14 years old, $\mathrm{POP2_t}$population 15 to 64 years old, $\mathrm{POP3_t}$population 65 years old and above, ε is an error and t represents time.

It should be noted that the data used in this research were extracted from the Iranian Statistics Center and Central Bank.

FINDINGS

In summary, the analyzes of the present research allowed distinguishing between long-term and short-term determinants of public education expenditures. Relevant economic and demographic variables were integrated with public education expenditures in the long run. In the light of this study, except for the population variable of 0 to 14 years, the remaining variables were identified as long-term determinants of public education expenditures in Iran. The ARDL marginal test showed a significant negative relationship between the growth rate of real gross domestic product (GDP) and public education expenditures (EDU). Also, a positive result was recorded between the unemployment rate (UNEM) and public education expenditures (EDU). These findings showed that the Keynesian countercyclical theory is true for public education expenditures in Iran. The evidence supporting the Keynesian countercyclical theory simply shows that public education expenditures are increased to stimulate the economy during recessions. Education allocations are prepared in a countercyclical manner in response to deteriorating economic conditions. Keynesian countercyclical theory explains how economic conditions affect government allocation decisions. The level of educational expenses affects the behavior of public education expenses in Iran. A positive relationship was established between public education expenses and the inflation rate in the long run. Higher inflation increased the price of all goods and services, including education expenses. The increase in education expenditure now requires the government to intervene by allocating more expenditure to the education sector. It was significantly positive. This indicates that the increase in working age population (15 to 64 years) (LNPOP2) encourages more government investment to create more productive human capital. The error correction coefficient (ECT(-1)) showed the speed of adjustment towards the long-run equilibrium. The negative and significant sign of this coefficient confirms the existence of a long-run relationship between the variables. However, it is expected that short-term fluctuations in costs Public education resulting from real gross domestic product growth rate (D(GDP)), unemployment rate (D(UNEM)), inflation rate, population under 15 years old (D(LNPOP1), and population over 64 years old (D (LNPOP3). The variables that affect the level of public education expenditures are different in the short and long term.

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CONCLUSION

The present study provided a new insight showing that the response of government education spending to its determinants varies over time. The following policy implications can be drawn based on the findings of the study. First, the empirical findings showed that government education expenditures in the long run are sensitive to the economic variables of GDP growth rate, unemployment rate (UNEM) and inflation rate (INF). Therefore, the government will be able to control these variables. economy in the country to adjust its budget allocation. By finding the allocation of educational expenses in accordance with the Keynesian countercyclical theory in the long run, researches can use this expectation to predict and develop educational policy, which corresponds to changing economic conditions. Now, in the short term, relevant policies should be formed by combining significant indicators of real GDP, unemployment rate, inflation rate, child population and elderly population. This study showed that the demographic variable that the population at working age (LPOP2) has a significant effect on Iran's education costs in the long run. This finding supports Lewis (1961) who suggested that the fastest way to increase productivity in developing countries is through training adults who are already at work. This is clearly the reason why policymakers emphasize the size of the working-age population It explains that a positive and significant result has been shown. Although this implication showed that policymakers increased investment in public education spending as the working-age population increased, the allocation of education spending was not sensitive to child population growth (LPOP1). In this way, it highlighted the weakness of the country's educational policy, which seems to have ignored the child population in its policy-making.

Finally, the policy implications of the country pointed to the need for the government to increase sensitivity and responsiveness to its public education expenditures in response to the needs and demands of society, especially the children population. As Isaacs (2009) emphasized, educational expenditures during childhood are considered as a clear example of investment in human capital, which in adulthood has significant returns for the individual and society. Also, the United Nations (2003) highlighted studies that showed primary education as a powerful tool for reducing poverty and inequality. Investing in the education of children at an early age helps to better manage natural resources and adapt technology and innovation faster,

increases productivity in more efficient and effective policies in the future, and leads to more responsive public education spending policies and, as a result, results. It will bring satisfaction. In addition, the government could consider implementing financial reforms that include a more responsive and participatory education spending policy to improve the efficiency of education allocation. If politicians increase spending by focusing on quantity rather than quality, such investments will only lead to a misallocation of resources that can hinder growth. Policy makers can determine more than the effects of time variables of the factors, use them to formulate their future strategy according to the changes of these variables.

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