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THE EFFECT OF THE CRITERIA OF NEED AND CAPACITY IN GOVERNMENT'S BUDGET APPROPRIATIONS ON ECONOMIC DEVELOPMENT OF IRAN'S PROVINCES

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ABSTRACT

This study aims to evaluate government's policies of budget appropriation to provinces. It seeks to estimate the effect of considering provinces' capacity and needs in government's budget appropriation on their economic development. First, the two criteria of provinces' need and capacity are defined and accordingly, indices are proposed for government's budget appropriation to provinces. Then, the provincial data of 2000 to 2009 were collected and the trends and differences were analyzed. The growth model was estimated using panel data econometrics. Gross domestic production and its growth was the dependent variable, and capital stock, labor, the two criteria of provinces' need and capacity in the government's budget appropriation were explanatory variables. The main results are that when the government's budget appropriation exceeds the capacity of the province, it has a negative effect on its production and growth, but if budget appropriation to needy provinces is more than their need, it has a positive effect on their economic growth.

INTRODUCTION

Traditional growth theories consider economic capacities, such as capital, labor and natural resources as the growth and production factors. In contrast, the new theories give more importance to human factors such as empowerment. In Iran, government's budget appropriation to provinces is less based on scientific theories. It is very important, from theoretical applied views, to deal with the issues that what is the effect of such budget appropriation on province's economic growth and in addition, if scientific traditional criteria or new knowledge are applied for budget appropriation, what changes are made in the government's budget appropriation effects' on economic growth of provinces. Accordingly, this study seeks to estimate the effect of considering provinces' capacity and needs in government's budget appropriation on their economic development, with regard to the two aforementioned growth theories. In this study, a brief review of literature is provided, then, the two evaluation criteria for government's budget appropriation to provinces based on their needs and capacity are defined and indices are proposed for them. The provincial data of [2000] to [2009] are collected and the trends and differences are analyzed. The growth model is estimated using panel data econometrics with the application of Eviews software. The main finding of this study is that when the government's budget appropriation exceeds the capacity of the province, it has a negative effect on its production and growth. In addition, if budget appropriation to needy provinces is more than their need – to meet their basic needs-, it has a positive effect on their economic growth.

Research background

In this section, a brief review of growth theories and some of the empirical studies are provided.

Economic growth theories

Different theories have been raised on the determinants of economic growth, which can be divided into three groups of classical growth theories, neoclassical growth theories and endogenous growth theories. In addition to these groups, new theory of development can be considered as the fourth group.

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David Hume and Adam Smith are the pioneers of the idea of growth in classical school. Adam Smith believes that specialization and division of labor is the engine of growth. The classical economists also believed that natural resources are the main constraint of growth opportunities.

The second category is neoclassical growth theories. Neoclassical theories consider advancement of technology as the exogenous factor of production growth and capital accumulation as the endogenous factor of production growth. The neoclassical view of growth theory was proposed by Solow [1956] and Sowan [1956] in the 1950s. The basic feature of the Solow-Sowan model is the figure of the production

function. The assumptions of this function include constant returns to scale, diminishing returns for each input and elasticity of positive substitution between production inputs.

The third category of growth theories is known as the endogenous growth. Endogenous growth theory, which was proposed on the basis of experimental and theoretical researches in the 1980s, rejects classical and neoclassical theories about ideal markets and diminishing returns, especially in the capital. The main thinkers in this category are Arrow [1962], Romer [1986], Lucas [1988], Grossman [1987] and Helpman [1998]. They believe that factors such as increased efficiency of research and development and transfer of knowledge and information, learning from experience, dispersion of technology, social capital, religion and other variables affect economic growth. In addition to these endogenous growth theories, human-oriented development theories, which considered human as the aim of development and also considered human empowerment as the way were proposed by eastern thinkers such as Jamal al-Haq and AmartyaSen and can be considered against the classical theories.

Based on the economic growth models from Yang, Harrod-Domar, Solow- Sowan, Kaldor, Arrow, Romer, Lucas, AmartyaSen to 21st century, great transformations have occurred in terms of factors influencing the growth, endogenous and exogenous variables such as human capital, type of production function, increasing or decreasing effect of inputs, definition of capital and the separation of physical and human capitals and political variables. In other words, in the past six decades, there have been four waves of growth theories that the present study compares the third wave based on the first wave with the fourth wave.

Empirical studies

There is no experimental study on the effect of government's budget appropriation based on need and capacity in the literature on economic growth. However, there have been studies on factors affecting economic growth, especially economic growth in Iran that will be mentioned here.

Ebrahimi, Mohsen and Ali Soori [1] assessed the effect of loss of oil revenues uncertainty on economic growth and the need for foreign exchange reserves. Rahmani, Abbasi Nezhad and Amiri [2] estimated the effect of social capital on economic growth of Iran in a regression model with econometric methods. Boroumand [3] estimated the effect of corruption and private sector investment on economic growth of Iran in a regression model with econometric methods. Ezzati and Agheli [4] estimated the effect of religious capital on economic growth of Iran's provinces in a regression model with econometric methods. Ebrahimi, Mohsen and Mohammad Salariyan [5] examined the natural resource curse phenomenon in Petroleum Exporting Countries (OPEC) and the effect of presence in OPEC on the economic growth of its member states using econometric methods. Abrishami, Mehr-Ara and Zamanzadeh Nasrabadi [6] investigated the relationship between oil shocks and economic growth in OPEC member states in an econometric models. Sabahi and Malekosadati[7] examined the control effect of financial corruption on economic growth using econometric methods. Mehr-Ara and MakkiNayeri[8] estimated the mean of Iran's oil revenues and economic growth using threshold of non-linear relationship. Mehr-Ara, and Miri[9] estimated the relationship between oil revenues and value-added of different economic sectors in the oil exporting countries of Iran, Mexico and Venezuela. Ezzati, Shahriari, Najafi and Shafie [2013] investigated the effect of inter-regional economic discrimination on economic growth of Iran's provinces.

The two indices of criteria for budget appropriation among the provinces on the basis of capacity and need

In this study, two different indices have been created for the criteria of budget appropriation among the provinces on the basis of capacity and on the basis of needs. To create these indices, it is appropriate to clarify the criteria of budget appropriation among the provinces on the basis of capacity and on the basis of needs. These criteria are:

1. Needs of provinces: today, work, education and health (wellness) are known as three basic human needs.
2. Growth capacity of provinces: resources (area), production and population are known as three basic factor for creation of capacity of an area.

Accordingly, the criteria of budget appropriation among provinces can be indexed using the following sub-criteria.

The how of measurement of the sub-indices of the two indices for the criteria of budget appropriation among provinces

It can be said that the capacity of an area (a province) is composed of human resources in the province, the work done in the province and the province's environment and land resources. According to the available data, three variables can be considered to determine the capacity of each province: first, population; second, economic activities that can be measured using value added; and third, area (extent) of the province. The indices of this study, in the form of six sub-indices of the criteria of budget appropriation among provinces on the basis of capacity and needs, are defined as follows:

• The ratio of the proportion of the current costs of government in each province compared to the current expenses of the government in the country over the proportion of the population of each province in the country
• The ratio of the proportion of the capital costs of government in each province compared to the capital expenses of the government in the country over the proportion of the population of each province in the country
• The ratio of the proportion of the current costs of government in each province compared to the current expenses of the government in the country over the proportion of the breadth of each province in the country
• The ratio of the proportion of the capital costs of government in each province compared to the capital expenses of the government in the country over the proportion of the breadth of each province in the country
• The ratio of the proportion of the current costs of government in each province compared to the current expenses of the government in the country over the proportion of the value added of each province from the total of value added in the country
• The ratio of the proportion of the capital costs of government in each province compared to the capital expenses of the government in the country over the proportion of the value added of each province from the total of value added in the country
The average of these six indices is the index of the criteria for the budget appropriation among the provinces on the basis of capacity.
It can be said that the needs of an area (province) are composed of unemployment, illiteracy and life expectancy (health indicator). According to the available data, three variables can be considered to determine the needs of each province. The indices of the need criterion in this study is defined in the form of six indices as follows:
• The ratio of the proportion of the current costs of government in each province compared to the current expenses of the government in the country over the proportion of the illiterate people of each province in the country
• The ratio of the proportion of the capital costs of government in each province compared to the capital expenses of the government in the country over the proportion of the illiterate people of each province in the country
• The ratio of the proportion of the current costs of government in each province compared to the current expenses of the government in the country over the proportion of the unemployed people of each province in the country
• The ratio of the proportion of the capital costs of government in each province compared to the capital expenses of the government in the country over the proportion of the unemployed people of each province in the country
• The ratio of the proportion of the current costs of government in each province compared to the current expenses of the government in the country over the reverse proportion of the life expectancy of each province in the country
• The ratio of the proportion of the capital costs of government in each province compared to the capital expenses of the government in the country over the reverse proportion of the life expectancy of each province in the country
The average of these six indices is the index of the criteria for the budget appropriation among the provinces on the basis of needs.
Based on what was said, the index of the criteria for budget appropriation among the provinces has been measured and the results are shown in the following two tables. The amounts less than one indicate a relative appropriation of budget more than the province's capacity or relative needs. The amounts above one represent a relative appropriation of budget more than the province's capacity or relative needs.

Analysis of the budget appropriation among the provinces

Based on what was said, the index of the criteria for budget appropriation among the provinces during 2000 to 2010 has been measured and the results are shown in the following tables and figures.

Based on these measurements, it can be seen that some of the indices are in a better status in some provinces and some are in a worse status. This is because the provinces are not homogeneous in terms of economic, population and natural capacities. On this basis, none of these sub-indices can be alone used as a criteria to show the capacity. To improve the analytical power of indicator on the basis of capacity, the mean of these indices has been used. Provinces are divided into three categories based on these indices: one-third of the provinces (10 provinces) that have the highest index are considered as provinces that have been allocated budget more than the relative capacity. One-third of the provinces (10 provinces) that have the lowest index are considered as provinces that have been allocated budget less than the relative capacity. One-third of the provinces (10 provinces) that have the mean index are considered as provinces that have been allocated budget according to the relative capacity.

The size of the sub-indices and the index of the criteria of budget appropriation among provinces on the basis of their needs shows a different results. Based on the aforementioned points, provinces are divided into three categories. The provinces that have been allocated less than their needs are Ardabil, Chaharmahal and Bakhtiari, Zanjan, Qom, Qazvin, West Azerbaijan, Golestan, Hamedan, Lorestan and Kurdistan. The provinces that have been allocated more than their needs are Khuzestan, Bushehr, Kerman, Fars, Semnan, Isfahan, Yazd and Mazandaran and East Azerbaijan.

If we look at two indicators, the Bushehr on the basis of both indexes more than its share of the budget is allocated. The plant has a very high share in the allocation of funds. Besides that, based on both criteria, for the provinces of West Azerbaijan, Ardebil and less than their share of the budget is allocated. For other provinces in each of these two criteria alone has allocated less funding has been allocated more funds in the index. And this reflects been allocated to them by other criteria.

If we look at two indices, Bushehr has been allocated more budget based on both indices. However, plant has had a very important role in the budget appropriation. Besides that, based on both criteria, less budget has been appropriated to the provinces of West Azerbaijan and Ardebil. For other provinces that have been allocated less budget in terms of each of these two criteria, have not been allocated more budget in the other criterion; and this reflects budget appropriation based on other criteria.

To show the composition of these two indices, the average of the two has been taken into account. The mean shows that the provinces that have been allocated the least budget on the basis of these criteria are KhorasanRazavi, Ardabil, Isfahan, West Azarbaijan, and Qom, Markazi, South Khorasan, Qazvin, East Azarbaijan and Golestan provinces, respectively. Province with the highest allocation of budget more than their capacity and needs are Khuzestan, Bushehr, North Khorasan, Gilan, Kohgiluyeh and Boyer-Ahmad, Kermanshah, Semnan, Kerman, Kurdistan and Ilam, respectively.

To wrap it up, it is worth mentioning that some other factors should be considered as the criteria here. Such factors are that some provinces have special status. For example, border cities should be appropriated more budget according to the security and other needs. Similar to these factors, other factors can be also taken into account and the result of other conditions can be achieved.

However, budget appropriation among the provinces needs to be revised to shape a better balance in the allocation of facilities among the provinces. The criteria of the need for empowerment such as education, health and employment (unemployment) are the best criteria based of the new definitions of justice and theories of development that should be the main criteria in the budget appropriation among the provinces. The economic criteria of production capacity, resource capacity and human capacity are also the most important criteria of provinces' capacity that can well affect the growth and development of the provinces. To better represent differences of the two criteria, a few figures are shown below.

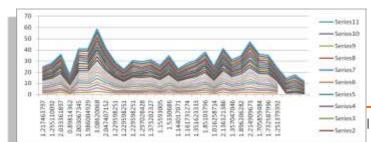**Table 1**: The criteria of budget appropriation among provinces in 2010

No.		Province	The mean of need indices	The mean of capacity indices	The composite index
1		KhorasanRazavi	1.046048	0.899295	0.97
2	Provinces that have	Ardabil	0.580823	1.396854	0.99
		Isfahan	1.286724	0.775917	1.04

4	**been appropriated less budget based on the composition of criteria**	West Azarbaijan	0.804591	1.293309	1.05
5		Qom	0.764233	1.456979	1.06
6		South Khorasan	#DIV/0!	1.377691	1.07
7		Markazi	0.955064	1.179099	1.07
8		East Azarbaijan	1.102563	1.203542	1.15
9		Qazvin	0.773767	1.517486	1.15
10		Golestan	0.826543	1.555059	1.19
11		Zanjan	0.724051	1.490664	1.21
12		Chaharmahal and Bakhtiari	0.692967	1.758701	1.23
13		Hamedan	0.839929	1.630121	1.24
14		Yazd	1.259869	1.209053	1.24
15	**Medial Provinces**	Lorestan	0.853686	1.650398	1.25
16		Sistan and Baluchistan	0.882522	1.639072	1.26
17		Fars	1.405772	1.137933	1.27
18		Hormozgan	1.152893	1.40645	1.28
19		Mazandaran	1.07757	1.527744	1.30
20		Ilam	0.892321	1.777373	1.34
		Kurdistan	0.859916	1.901169	1.39
22		Semnan	1.313218	1.515863	1.41
23		Kerman	1.572875	1.250623	1.41
24	**Provinces that have been appropriated more budget based on the composition of criteria**	Kermanshah	0.982607	1.917331	1.45
25		Kohgiluyeh and Boyer-Ahmad	0.996869	1.531941	1.46
26		Gilan	0.945666	2.15278	1.55
27		North Khorasan	#DIV/0!	1.399631	1.82
28		Bushehr*	1.610947	2.069733	1.84
		Khuzestan*	2.331258	1.519928	1.90
30		Tehran*	1.79907	2.545134	2.17

* Tehran, Khuzestan, and Bushehr are special provinces for which the reason of greater budget appropriation is something else. Most national and staff budgets are appropriated to Tehran, but they are spent for the country or other provinces. Khuzestan is a war zone and has its own specific problems. Bushehr is the investment priority because of its plants and special situation of Assaluyeh.

Fig. 1: comparison of 30 provinces in terms of the index for the criteria of budget appropriation based on capacity in 11 years (2000-2010)
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Series are from year 2000 to 2010, respectively

Fig. 2: the criteria of budget appropriation among provinces based on 6 sub-indices of capacity in 30 provinces in 2000
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M1: The ratio of the proportion of the current costs of government in each province compared to the current expenses of the government in the country over the proportion of the population of each province in the country
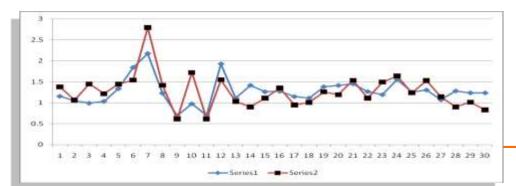
M2: The ratio of the proportion of the capital costs of government in each province compared to the capital expenses of the government in the country over the proportion of the population of each province in the country

M3: The ratio of the proportion of the current costs of government in each province compared to the current expenses of the government in the country over the proportion of the breadth of each province in the country
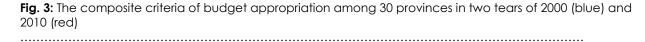
M4: The ratio of the proportion of the capital costs of government in each province compared to the capital expenses of the government in the country over the proportion of the breadth of each province in the country

M5: The ratio of the proportion of the current costs of government in each province compared to the current expenses of the government in the country over the proportion of the value added of each province from the total of value added in the country

M6: The ratio of the proportion of the capital costs of government in each province compared to the capital expenses of the government in the country over the proportion of the value added of each province from the total of value added in the country
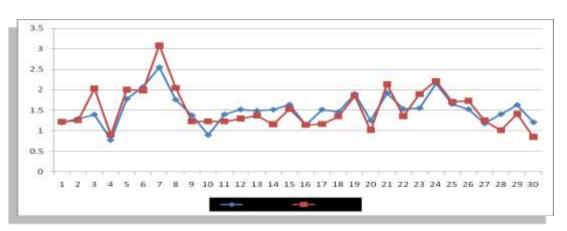
Fig. 3: The composite criteria of budget appropriation among 30 provinces in two tears of 2000 (blue) and 2010 (red)
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Fig. 4: The criteria of budget appropriation among provinces based on capacity in 30 provinces in two years of 2000 (blue) and 2010 (red)
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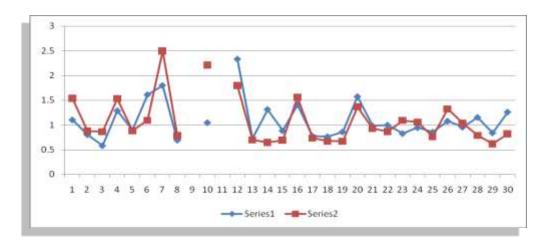

Fig. 5: The criteria of budget appropriation among provinces based on needs in 30 provinces in two years of 2000 (blue) and 2010 (red)
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Research models and its variables

The model used in this study to investigate the effect of the criteria of budget appropriation among economic provinces on economic growth is based on endogenous economic growth models. Based on the overall growth model, the framework of this model is a function of the two main variables of capital and labor, which is emphasized in all growth theories. The difference is that in the present model, the variable added to the two variables of capital and labor is an endogenous variable including several sections. Here, the variable indicating the size of the indices of criteria for budget appropriation among provinces includes 12 section. The indices of the criteria of budget appropriation among provinces is entered into the model as a variable and then, each of the indices of the criteria of budget appropriation based on capacity and based on needs are entered into the model and analyzed together.

Similar to many studies conducted in economic growth and factors affecting it, the relationship

$$y = c + \alpha K_{ti} + \lambda L_{ti} + \beta M_{ti}$$

Where, y is the value of gross domestic production, M is the index of the criteria of budget appropriation among provinces, L is labor, and K is the capital stock of the province. To show GDP growth in the model, the logarithm of (y) is entered into the model. The variables of the model and the how of their measurement is described here.

The variable of the value of GDP

In this study, the variable of the value of GDP is obtained from data base of the Statistical Center of Iran.

The variable of the criteria for budget appropriation among provinces

Two indices were created for the criteria of budget appropriation among provinces based on needs and capacity and they were explained earlier.

The variable of capital

In our model, the variable k represents capital. Capital stock is not measured and estimated in the statistics of the statistical Centre and the Central Bank of Iran, as the country's official statics centers; therefore, we should estimate provincial capital stock. In this study, capital stock is measured through the following process:

1. The value of the development budget in each province is available from 1986 to 2010. The values in the years 1991 to 2000 are added up to obtain governmental capital accumulation in each province by the year 2000. Then the proportion of each province is measured. The value of development budget of other years is similarly measured for each province's proportion. Since the statistics related to private investment in provinces are not available, it is assumed that the proportion of private investment follows governmental investments each year.

2. The proportion of each province in 2000 is multiplied by the capital stock of the country in 2000 in order to obtain the total capital stock of each province in this year.

3. For 2001-2010, the increase of country's capital stock is measured for each year to obtain the increase of capital stock for the whole country.

4. The proportion of each province from the capital stock of the government for the years 2001-2010 (obtained in step 1) is multiplied by the increase in the capital stock of the whole country for the years 2001-2010 in order to obtain the increase of capital stock of each province in these years.

5. In 2001, the capital stock of 2000 (which was obtained in step 2) is added to the increase of capital stock in 2001 (which was obtained in Step 4) for each province in order to obtain the capital stock of each province in 2001.

6. For other years, the capital stock of the previous year is added to the increase of capital stock of the year for each province so as to obtain the capital stock of the year for each province.

The variable of labor

The number of workers is not specified for all years of the period under study. A document entitled a survey of employment and unemployment features was carried out during 2003 and 2000 and a document entitled a survey of the labor force was carried out during 2006-2007. Since these surveys have been done on different samples across the country, they are not consistent and the results can't

be used. Accordingly, the results of national census on household characteristics in 1996 and 2006 have been used to determine the number of work force in each province and then the number of work force for other years has been calculated accordingly. To determine the size of the labor force of each province during the period under study, the following steps have been taken:

1. First, the difference between these two numbers of the labor force for each province in 1996 and 2006 is divided by 10 to calculate the increase in the labor force every year.

2. The number of workers in 1996 is added to the amount increase of each province in order to obtain the number of labor force in the province in 1997.

3. In order to obtain the number of work force for the next year, the number of work force in the previous year is added to the amount of increase in the number of work force.

Model estimation

First, the preliminary tests of data is mentioned and then, the model estimation and their results are analyzed.

Because our data are cross-sectional time series (2001-2007) and the time series is only for seven years, there is no need to check whether data is stationary or non-stationary[1].

Hausman test is used to see whether the model should be estimated using fixed effect method or random effect method. Based on the test results, the estimated alpha is between .65 and .89, which means that the random effect method is unacceptable and fixed effect method is accepted to estimate the models.

In order to investigate the effect of the index of the criteria of budget appropriation among provinces on economic growth, the overall economic growth model is estimated using the two factors of labor and capital and then the two indices of the criteria of budget appropriation among provinces based on capacity and need are separately entered into the model and the model is estimated to see how much they have added the explanation of the model. Such estimations, associated with capital and labor, can show the effect of the indices of the criteria of budget appropriation among provinces on economic growth. In other words, if a comprehensive model is indicative of the effect of labor and capital, entering the indices of the criteria of budget appropriation can show the effect of the criteria of budget appropriation among provinces through the improvements or disorders in human capital and social capital as well as economic stability.

If based on the economic growth theories, we consider capital and labor as two main factors of production and enter other factors such as indices and variables of the criteria of budget appropriation among provinces as the affecting factors, the estimated effect can be analyzed separately. For comparative analysis of these variables, the growth model was first estimated based on two variables of capital stock and labor. The results are listed as zero pattern in the second column of [Table 2]. The results show that these two variables explain 71% of growth changes. Each indices of the criteria of budget appropriation among provinces based on capacity and need were separately entered into the model and estimated to see which of these two variables has a greater or less effect. The results of estimations are presented in [Table 3] under the columns of patterns two to four. The results show that the explanatory power of models is very close to each other and there would be no priority among them. When the two indices of the criteria of budget appropriation among provinces based on capacity and need are simultaneously entered into the model and the model is estimated, the results show that the coefficient of the variable of the criteria of budget appropriation among provinces based on capacity is not so significant (pattern two). In order to have a more detailed analysis, these two indices were separately entered into the two models and then, estimation is done. Given the significance level of estimated coefficients of these indices, it can be said that the separate effect of both of these indices is accepted although the effect of the index of the criteria of budget appropriation among provinces based on needs is more significant.

The analysis of the results of the estimations shows that in all estimations, the variables of capital stock and labor are in a good significance level. As can be seen in the results of the estimations, they have a positive effect on GDP growth. In order to have a more detailed analysis, the effect of changes in appropriation on changes in production, i.e. growth variable was entered into the model and the results are given in [Table 2]. With the same above mentioned assumptions, the two indices of the criteria of budget appropriation based on capacity and needs are separately entered into the model as two

different variables and then, estimation was done to see which has a greater or less effect. The results of estimations are presented in [Table 3] under the columns of patterns two to four. The results show that the explanatory power of models is very close to each other and there would be no priority among them.

When the two indices of the criteria of budget appropriation among provinces based on capacity and needs are simultaneously entered into the two simple and logarithmic models and models are estimated, the results show that the coefficient of the variable of the criteria of budget appropriation among provinces based on capacity is negative. According to the definition provided for this coefficient, it can be said that appropriation of budget more than the capacity of the province means that the proportion of the appropriated budget to the province is more than the proportion of its capacity compared to the economic capacity of the country. The negative sign of this index means that the budget appropriated to the province is less than the economic capacity of the province compared to the whole economic capacity of the country. The negative sign of this index means that the amount of budget that is appropriated more than the capacity of the province does not increase the production and growth of the province, rather it increases deficiencies and decreases production and growth since the capacity of the province is less than the appropriated budget and the inability for absorption, i.e. reduction of returns compared to the scale and other human and social effects. In contrast, the index of the criteria of budget appropriation among provinces based on needs is positive and it means that if needs are satisfied, there would be a positive effect on production. It can also mean that the indices of budget appropriation based on needs shows greater human capital deficiencies and appropriation of such budgets can meet the needs and increase the capital. In addition, increase in the budget appropriation can be considered as a tool for people's empowerment, which in turn, increases human and social capital. It can also be implied that one of the barriers of growth in provinces is the shortcomings entered into the model in the framework of needs.

Table 2: The results of estimating models for the effect of the index of the criteria of appropriation on GDP

Variable	Pattern 1	Pattern 2	Pattern 3	Pattern 4
	GDP	GDP	GDP	GDP
Intercept	-34243660 (-4.665619)	-4.14E+08 (-17.43773)	-4.29E+08 (-19.92788)	-3.70E+08 (-15.50985)
Labor (L)	120079.4 (18.76675)	536053.3 (29.49221)	536513.3 (29.42843)	507899.2 (27.31945)
Provincial capital (K)	306.5101 (2.257)	680.0438 (2.338440)	666.8064 (2.286656)	815.2857 (2.669065)
The index of budget appropriation based on capacity		-19948942 (-1.580605)		23116077 (2.088480)
The index of budget appropriation based on needs		9115211 (6.000246)	77728000 (6.151670)	
R^2	0.7147	0.962215	0.961815	0.956404
F-statistics	61.95	150.2460	153.0667	129.4881
D-W statistics	0.093	0.607622	0.594747	0.493208

Table 3: The results of estimating models for the percentage of growth changes per percentage of changes in the index of appropriation criteria

Variable	Pattern 2	Pattern 3	Pattern 4
	Log(GDP)	Log(GDP)	Log(GDP)
Intercept	-9.202842 -12.68802	-9.831921 -13.66345	-9.438611 -13.25558
Log of labor (L)	0.829162 3.548674	0.866710 3.628945	1.069818 4.555984
Log of provincial capital (K)	2.024179 13.59890	2.035586 13.36838	1.896138 12.71180
Log of the index of budget appropriation based on capacity	-0.709257 -3.543223		-0.297704 -1.938562

Log of the index of budget appropriation based on needs	0.497290 2.965941	0.104005 0.808851	
R²	0.953435	0.951049	0.949640
F-statistics	161.8226	159.3153	147.9107
D-W statistics	0.540809	0.463591	0.580903

CONCLUSION

Findings

One of the government's tools to achieve better development of areas is the state budget. There are two basic views regarding the development policies. The first is traditional view, which believes that capital should be appropriated where has more economic capacity. In contrast, there is a newer view that states that if human being are empowered, better development occurs. Therefore, funds should be used to empower people to make better and faster development. In this study, it was tried to design and develop an index for the criteria of budget appropriation among provinces and then estimate its effect on the economic growth of provinces during an 11-year period from 2001 to 2011.

Based on what was said, the index of the criteria of budget appropriation among provinces was designed and then measured for years 2000 to 2011. The results were presented in section 2.
Sub-indices and composite index of the criteria of budget appropriation among provinces based on capacity shows that some provinces are in a better status in some indices and some are in a worse status in others. This is because the provinces are not homogeneous in terms of economic, population and natural capacities. On this basis, none of these sub-indices can be alone used as a criteria to show whether the province should be appropriated more or less than capacity or needs. To improve the analytical power of indicator on the basis of capacity, the mean of these indices has been used. Provinces are divided into three categories based on these indices: one-third of the provinces (10 provinces) that have the highest index are considered as provinces that have been allocated budget more than their relative capacity or needs. One-third of the provinces (10 provinces) that have the lowest index are considered as provinces that have been allocated budget less than their relative capacity or needs. One-third of the provinces (10 provinces) that have the mean index are considered as provinces that have been allocated budget according to their relative capacity or needs.

The data of the index of the criteria of budget appropriation among provinces based on capacity showed that budget appropriation to Isfahan, KhorasaneRazavi, Fars, Markazi, East Azarbaijan, Yazd, Kerman, West Azarbaijan, South Khorasan and Ardebil is less than their relative economic capacity and budget appropriation to Gilan, Bushehr, Kohkiloye and Boyer Ahmad, Kermanshah, Kurdistan, Ilam, Chaharmahal and Bakhtiari, Lorestan, Hamedan and Sistan-Baluchistan has been more than their relative capacity.

The data of the index of the criteria of budget appropriation among provinces based on needs shows different condition if provinces are divided to three aforementioned categories. The provinces that have been appropriated less budget just based on their needs are Ardebil, Chaharmahal and Bakhtiari, Zanjan, Qom, Qazvin, West Azarbaijan, Golestan, Hamedan, Lorestan and Kurdistan. The provinces that have been appropriated more budget just based on their relative needs are Khuzestan, Bushehr, Kerman, Fars, Semnan, Isfahan, Yazd, Mazandaran and East Azarbaijan.

It is again worth mentioning that some other factors such as the special position of the province should be considered as the criteria. Other factors can be also taken into account and the result of other conditions can be achieved. Investigation of the effect of such budget appropriation on economic growth shows that government's criteria for budget appropriation can affect the economic growth of provinces. Empirical estimations show that ignoring needs in the appropriation of provincial budget is of great importance for growth and needs should be satisfied to improve growth. One could even say if budget appropriation is more than needs, economic growth and production increase speeds up until equality of needs' satisfaction occurs. It can be implied that production growth of provinces is more sensitive to human needs rather than capacities. This is in line with the latest theories and findings of development that empowerment and need satisfaction are more important in achieving development. These views were first proposed with the theory of human development proposed by Jamal Al-Haq and meeting basic needs or human empowerment theory proposed by AmartyaSen and they have entered into the UN

human development index in recent years.

To improve the development of the provinces and also a better use of budgets, distribution of budgets among the provinces should be revised so as to have a better allocation of resources among the provinces. The criteria of the need for empowerment, such as education, health and employment (unemployment) are the best measures based on the new definition of development and justice that should be the main criteria in the budget appropriation among the provinces. Accordingly, in order to improve the growth in Iran, human needs should be the criteria of budget appropriation among provinces and then, capacities should be taken into account. In this way, budget appropriation is consistent with the justice associated with the growth asked in national aspirations and it is also in line with the latest theory of harmonious growth.

Suggestions

Based on the findings of this study, the distribution of budget among the provinces should be revised in order to improve economic growth of Iran and to better balance the allocation of resources among the provinces. The criteria of the need for empowerment, such as education, health and employment (unemployment) are the best measures based on the new definition of development and justice that should be the main criteria in the budget appropriation among the provinces. Accordingly, in order to improve the growth in Iran, human needs should be the criteria of budget appropriation among provinces and then, capacities should be taken into account.

CONFLICT OF INTEREST
There is no conflict of interest

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