The tradeoff between growth and financial equality in financial decentralization policies (the case study of Iran)

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Abstract
Equality of income distribution and improvement the economic growth of a country is a concern for economic policy, therefore, assessment of the factors that is important, especially in the economy. Given that financial decentralization of important factors affecting the economic growth and the equal distribution of income, the aim of study was to investigate the effect of fiscal decentralization on improving the conditions for economic growth and equal distribution of income and the relationship between economic growth and income equality, by using the system of simultaneous equations and 3sls method, during the 2001-2012 for 28 provinces of Iran. The model estimation results suggest that fiscal decentralization has a significant negative impact on growth and equal distribution of income but income equality has no significant effect on economic growth and also economic growth has significant negative impact on income equality. The results are better than the current decentralization policy review decentralization policies for economic growth and better income distribution. Given the positive impact on economic growth as well as equality of income, the priority of the government should move to a more equal distribution of income through which economic growth increased.

Keywords: fiscal decentralization, equitable distribution of income, economic growth, given the way the system.
Introduction

Economic effects of fiscal decentralization, particularly its impact on economic growth, poverty reduction and income distribution are one of the most important economic issues in recent decades to reduce the central government's expenditure. This relationship have been studied by many development and public sector economists at the international level. Fiscal decentralization, which means the transfer of decision-making power over the composition of spending and revenue from the central government to local institutions considered, an important factor in the process of regional balances have defined. The theory of management decentralization for the creation and expansion of regional participation in the decision-making process for creation of regional endogenous and sustainable development in the local level has been growing and World Bank's guidelines as solutions of development and poverty reduction, especially for developing countries, naturally, prescribe the importance of the relationship between fiscal decentralization, economic growth and income distribution. In past decades the continuous tendency to focus on the economy and the increasing role of government in the economy is finding, however, after the revolution because of the war, more or less, this policy was followed, but in the post-war period in the second, third and fourth plan, decentralization as one of the basic tools proposed transition to market economy and as an important factor in economic growth and regional balance stated. At the beginning of the Third Development Plan, the cost of the province's income and balance regional development approach in the country was formed. And deciding whether provide some public goods and services they were transferred to the provinces. Given the importance and benefits of it, this article tries to influence the mechanism of fiscal decentralization on economic variables such as economic growth and income distribution in terms of theoretical and empirical literature survey as well as the beginning of this process in the third and fourth development program, its impact on economic growth and income distribution will be evaluated in different provinces (Sadeghi Shahedani et al., 2012).

The theoretical literature

Avats shows how decentralized government decreased social costs of goods and services compared to the provision of goods and services are concentrated. He points out that all public goods do not enjoy the same characteristics of the territory and geographical coverage. Some of them service to the society, and some are specific only to certain areas and areas typically disparate tastes than others, so, if the supply of public goods will lead to maximum prosperity of the region, needs to be customized, if the central government fails to provide region-specific changes to the taste of each region, non-optimized provision of public goods has been made and therefore fiscal decentralization can lead to efficient allocation. The obligation to local governments is to identify and take action as soon as the local tastes and preferences change. He suggests that by imposing fiscal decentralization by increasing the productivity and efficiency of production factors, production will also increase, so that from the economic literature viewpoint, fiscal decentralization is considered as an engine of economic growth and in the framework of growth models and representative agent model, the effects of fiscal decentralization on economic growth has been analyzed.

Some economic theorists Avats, Bahel and Lynn and Tanzi believed that decentralization is luxury goods. Decentralization is requested in the high level of per capita income and the level of development of countries in the implementation of decentralization plays an important role. In the case of high per capita income, the process of implementing
decentralization has advantages and rapid economic development can be expected. Avats, claimed that economic efficiency through fiscal decentralization has a dynamic relationship with economic growth; therefore, infrastructure and social costs provided by local governments improve the economic development more efficient and more effective compared to when it is done by the central government due to considering differences in local areas. It is possible that the central government is indifferent about the differences in the various regions, while the providing the infrastructure projects in the decentralization process, better adapted to the local conditions. He suggests that if all local governments have their efficiencies in the field of spending social cost (through better satisfying the needs and priorities of local people and adapting projects to local conditions); therefore, as a result, despite the static advantage, we can see the advantage of the dynamic relationship between local government spending and economic growth was carried out.

Following the Barro, Davoodi, Zhang, and Zhu, Davoodi, X and Zoe and Akai and Sakata said, long-term growth rate of per capita income is a function of fiscal decentralization. Divesting themselves how to spend the resources makes a serious competition between local governments in the provision of better goods and services and maintaining the tax base and attract new taxpayers to be achieved. Determine the tax rate and tax effort for taxation, requires different decisions taken by local governments and substantial competition between them in how to identify and implement public finance policies thus, moving towards a decentralized system of financing, designing and implementing public finance policies will substantially change and the distribution of income among individuals in the country and the region will be affected.

Displacement of households and the factors of production, the composition of public spending and the indirect taxes, examples of the direct effects of fiscal decentralization on poverty and income distribution, but the implementation process of fiscal decentralization policies, changes the macroeconomic and social variables and these changes affect the distribution of income and fiscal decentralization as a mechanism for the income transfer has indirect effects on poverty and income distribution. Economic growth, the size of government, macroeconomic stability and the development of political and civil institutions are examples of indirect effects. What are the potential effects of decentralization on poverty and income distribution, the debate about the role of local governments in income distribution and poverty reduction is concerned.

In the public sector the traditional literature suggests that local governments have no role in the process of income distribution in the region. Brown and Musgrave, suggest that the role of local government as a catalyst in the process of income distribution and poverty reduction, provide supportive policies considered preliminary. Their argument is based on the performance of policies. To achieve a standard of living for the poor with other conditions constant, local government should increase the tax burden on the rich, lead to the issue of immigration to other areas, which is a major supplier of these local government revenues. The result of this policy, the cost of distributed and supportive applications when the tax base is declining, increases, and finally, distribution and support policies will be ineffective. When the displacement, costly and inefficient, local governments in the implementation of distributive policies as an actor to play their roles effectively. Such a situation exists in developing countries and local governments will have a great capacity to combat poverty. Therefore, the importance of the mobility of only the efficiency and effectiveness of local
governments is not restricted distribution policy, but these shifts between regions will have a significant effect on poverty and income distribution. Households and individuals are moved to increase their income between regions and tax rates will be different baskets of services and naturally will affect income distribution and poverty.

Fiscal decentralization through a mix of public spending, poverty and income distribution changed.

Part of the public resources allocated to distributive and supportive programs for poor people, directly increase their disposable income. Its obvious example, health and education program that implicitly affect poor and low-income areas, these programs in the short and long terms support the distribution of income between those areas. (Sadeghi Shahedani and others 2012)

Davoodi, Zhang and Zhu believe that long-term growth rate of per capita GDP, is a function of fiscal decentralization. They direct relevance fiscal decentralization and economic growth achieved in a theoretical model. They claim there is an optimal fiscal decentralization available that maximizes economic growth. The optimum level depends on the relative efficiency of each layer of government (Farzin Vash and Ghaffari Fard 2006). The question is whether decentralization increases the equitable distribution of public resources?

Pradhvm believes that unconditional fiscal decentralization probably worse horizontal fiscal disparities and the balance of resources because unconditional fiscal decentralization worse financial balances between local governments but it's also possible that a centralized system would create unfair distribution of public resources and the public resources allocated to the regions and territories that are more important politically but other areas where have more needs but are politically less important to be ignored.

One of the views that fiscal decentralization is faced that the fiscal decentralization could exacerbate political tensions between regions and this situation is worsen when significant horizontal fiscal inequalities exist.

If decentralization will lead to greater horizontal fiscal inequalities, political tensions between areas are worsen. The situation for developing and in transition countries that this inequality is growing more difficult. As previously mentioned transferring financial authority to the regions theory is developed in situation that local institutions has the right to correct the tax base and provincial tax capacity in the province is good, while in many developing countries and those in transition such institutions are weak and backward and low tax capacity. We must understand that the potential equalization is concentrated in the public sector. The potential for equalization in centralized public sector is greater and central governments have more resources to distribute and thus higher capacity for equalization. Although these governments have a higher equalization capacity but this does not mean that in more concentrated countries the distribution of local resources is more equal. Fiscal decentralization may have a significant effect on justice between people and this effect is established through taxes and public spending and transfers between segments of government (Farzin Vash et al, 2009)

In some articles, the impact of fiscal decentralization on regional income inequality has been studied. The main research in this field has been provided by Prudhomme in 1995. From a
theoretical point of view, he said that the central government must share control of tax and spending plans for public participation would help to reduce regional inequality, although this is not enough, but it is effective.

More factors were involved in increasing income inequality in China. According Dollar in 2007, rising income inequality has been growing rapidly as a result of pressure to the market system and due to some political practices and policies, the situation is worsening. Among these policies, household registration system Hukou played important role in reducing migration of rural - urban and increase income inequality. Hukou system having limited opportunities between the rural poor populations so that migrations to cities is creating inequality. Another factor that income inequality at the national level is difference, depends on the education system in rural and urban communities and undermines the quality of schools in rural areas of China. This assumes that fiscal policy should have an important role in reducing income inequality. Dollars in the 2007 discusses fiscal decentralization at the state and local government have more autonomy and power in public revenues and public expenditures, exacerbated income inequality. According to him, the increasing decentralization of the financial system and the local government collect taxes for creating and providing services such as basic education and health care and health. Economic differences between the basic structures and principles and revenue base between states, with respect to the fiscal decentralization prevents distribution of resources and equalization of them at central government level. Song also expressed in another part of that debate that the decentralization lead to disparities will be reduced in local and regional. (Song, 2013)

Empirical Literature

In the studies of Sadeghi Shahedani et al (2012), the impact of fiscal decentralization is defined by two indexes (decentralization of the national development budget and decentralization of development funds allocated to the provinces). The growth and distribution of income in different regions of Iran using augmented Solow model discussed and by applying the static test panel data, long-term relationship between the variables in the model using Kao and Pedroni cointegration test was accepted and the model estimated using generalized least squares (GLS), during the years 2007 to 2000 to achieve the following results:

- Fiscal decentralization is defined by two indexes had a positive effect on economic growth and income distribution in provinces, so that one percent increase in fiscal decentralization, lead to up to 0.04 percent increasing in economic growth rate.

- Increased decentralization of national expenditure had significant impact on the improvement of income distribution in the provinces during the study period so that a one percent increase in provincial funding share of total national budget, had reduced 0.03 percent inequality and annually some of the resources expended by national and provincial organizations in the provinces. How to recognize that each province needs, priorities and preferences of the people involved can have a significant impact on improving people's living standards so that one per cent increase of total funds allocated in the state budget, increased equality of distribution of income by 0.04%. So, with the improving the provincial institutions in the provision of public goods and services in the province, we can accelerate the process of improving people's living standards.
Increased decentralization of national expenditure and decentralization of provincial development expenditures have a significant impact on economic growth at provinces level (during the study), so that a one percent increase in provincial funding share of total national credit (national expenditure decentralization index) and provincial allocations share of total credit costs of planning and development in the province (index of the provincial expenditure decentralization) in the long run increased economic growth in respectively 0.04 and 0.03%. Also increase the labor productivity, improve income distribution in the country, improve the tax revenue share of GDP, improving the human resources capabilities and the promotion of knowledge and experience in financial decentralization can be combined with policies to accelerate economic growth.

Ciao et al. (2007) in his study discussed the exchange between economic growth and income equality to investigate the potential relationship between economic growth and regional equity in the design of fiscal decentralization policies in China. Theoretical models suggest that economic growth and income equality in the fiscal decentralization policies are the objectives pursued by the central government. Model using panel data of 1985-1998 has been estimated and found that in the fiscal decentralization policy in China, the economic slowdown has led to a significant increase in regional income inequality. According to their findings fiscal decentralization has a significant impact on economic growth and increase the level of decentralization increases the level of economic growth, but the relationship between them is predicted to be nonlinear. At the same time decentralization policies in China increased inequality in the geographical distribution of financial resources is the first step. In the second stage using the funds to invest in additional funds reduce the transparency and lead to imbalance in the distribution of financial resources. The amount of taxes affect economic growth non-linearly.

Song (2013) in his article titled increase regional income inequality in China: The Role of fiscal decentralization had found the following conclusion: fiscal decentralization in spending costs has led to increasing and significant income inequality in China in the last three decades. Revenue section in the financial system since the mid-80s until 1994 more has decentralized mode but in 1994 the system again has been centralized. Analysis of econometric models show that the increase of the share of local government revenue in the mid-80s to 1994, in fact, increased regional disparities, while the centralization of this revenue in 1994, only had relatively little impact in reducing regional disparities. The impact of fiscal decentralization on local and regional disparities will vary from area to area. Cost decentralization increased income inequality but revenue decentralization followed by increasing the powers of local government and reducing inequality at local and regional levels. Fiscal decentralization significantly affects the local and regional inequalities.

The financial decentralization in Iran

Decentralization of the construction functions of central government, relating the provincial capital asset acquisition (construction) to each province revenue and the determination of investment priorities in different sectors in provinces by provincial institutions are the three major approaches that were planned in the Third Plan, Chapter VIII in the form of articles, as reflected in cost and revenue system. According to articles 70 to 82 of the Third Development Plan key institutions was formed in order to guide the development and reform of the administrative region. Decision-making body (council planning and development of the province), the decision-maker (expert committee under the Council), the headquarters of
Income and Resource Mobilization, Provincial Auxiliary Treasury, including key institutions are essential. Thus, for the first time of planning levels from the bottom up fully formed in our country. Council planning and development of programs, short-term and long-term development had developed provinces and the total credits of each state based on perceptions of provincial income coefficients were generally available to the Council to be based on the priorities of each province to invest. Although the formation of the income - cost in the provinces was accompanied by many problems but so effective step towards decentralization was taken in Iran.

Drafting the National Archives of the province, the establishment of their standard budgeting, decentralization of government functions, development, relating capital assets credits to provincial revenue in each province and the authority to determine investment priorities in different sectors to the provincial institutions, five major approaches in the planning and budgeting process of the country and the development plan as part of the legal sixth chapter, as land use planning and regional balance in line with strengthening the system of income – costs Province, manifested.

On the basis of Articles 79 of the Third Development Plan and 82 of the Fourth Development Plan specified the province's revenue titles to the full implementation of the system of income-cost provinces, the provinces received provincial revenues in order to tough General Treasury paid to Provincial Auxiliary Treasury to expend for current and construction tasks of the provincial development. The regulations of Article 78 of the Third Development Plan and 79 of the Fourth Development Plan, specifies the responsibilities of the provinces and on the basis of its development mandate, the provincial investment priorities within the framework of an action plan are determined. (Ghaffari Fard and Sadeghi Shaheani, 2012).

Estimation the models

In the context of economic growth, many studies has been done in the world and Iran economy. Reviewing the results of this study indicate that the factors such as savings, human resources, public, private and foreign investments, taxes, deficits, monetary policy, inflation, income distribution, exports, financial development, education and health costs, property rights and fiscal decentralization is the most important determinant of economic growth. Due to their economic structure and statistical provincial data, following model is used to investigate the factors affecting economic growth and income equality in provinces:

\[
\text{Growth}_{it} = \beta_1 \text{Decentralization}_{it} + \beta_2 \text{Decentralization}_{it}^2 + \beta_3 \text{Tax}_{it} + \beta_4 \text{Tax}_{it}^2 + \beta_5 \text{Equity}_{it} + \beta_6 \text{Labor}_{it} + \beta_7 \text{Capital}_{it} + \mu_i + V_{it}
\]

\[
\text{Equity}_{it} = \alpha_1 + \alpha_2 \text{Decentralization}_{it} + \alpha_3 \text{Growth}_{it} + \alpha_4 \text{Extra Budget}_{it} + \alpha_5 \text{Tax}_{it} + \alpha_6 \text{Tax}_{it}^2 + \mu_i + V_{it}
\]
In these models the “Growth” is dependent variable that show economic and also “Equityit” as other dependent variable indicaes is income equity.

Independent variables in model 1 are fiscal decentralization, square of fiscal decentralization, tax, square of tax, income equality, labor and capital.

Independent variables for model 2 of the study are fiscal decentralization, growth, tax, square of tax and extra budget.

In the above equations $\mu_i,\nu_{it}$ are residual terms. Index i, represent different provinces (i = 1,000,28) and t represents the period from 2001 to 2012. According to research literature this expected that fiscal decentralization promotes economic growth and reduces income inequality. To avoid spurious regression estimates, stationary of the model variables should be tested. Using the Levin, Lin and Chut (LLC) tested, Im, Pesaran and Shin (IPS), stationary of the variables were investigated.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Test</th>
<th>Levin, Lin &amp; Chut</th>
<th>Im, Pesaran and Shin W-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>One Time difference</td>
<td>Two Time difference</td>
</tr>
<tr>
<td>Growth</td>
<td>0000/0</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Decent</td>
<td>1982/0</td>
<td>0000/0</td>
<td>-------</td>
</tr>
<tr>
<td>Decent2</td>
<td>2058/0</td>
<td>0000/0</td>
<td>-------</td>
</tr>
<tr>
<td>Tax</td>
<td>0000/0</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Tax2</td>
<td>0000/0</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Equity</td>
<td>3974/0</td>
<td>0000/0</td>
<td>-------</td>
</tr>
<tr>
<td>K</td>
<td>0000/0</td>
<td>-------</td>
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</tr>
<tr>
<td>L</td>
<td>0002/0</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Bud</td>
<td>0000/0</td>
<td>-------</td>
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</tbody>
</table>

Source: research findings
Based on the stationary test results of the variables in Table 1, Growth and K, L variables are stationary at the level of variables and Tax, Tax2, Extra Budget, Equity, Decent, Decent2, are stationary at one difference. Since some of the model variables are non-stationary, it is necessary to test the convergence of the main variables. If convergence can be accepted, the estimated results can be trusted.

Kao test was used to investigating the presence or absence of convergence between variables. For both models, according to Kao Residual Cointegration Test, the null hypothesis of non-existing significant co-integration relationship between variables has rejected. Accordingly, there is a long-term relationship between variables.

Table 2 summarizes the Kao test results for first model.

Source: research findings

<table>
<thead>
<tr>
<th>Prob</th>
<th>t-statistic</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000/0</td>
<td>72859/10-</td>
<td>Kao Residual Cointegration Test</td>
</tr>
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</table>

Table 3 summarizes the Kao test results for the second model

<table>
<thead>
<tr>
<th>Test</th>
<th>t-statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kao Residual Cointegration Test</td>
<td>166725/5-</td>
<td>0000/0</td>
</tr>
</tbody>
</table>

The impact of fiscal decentralization on economic growth and provinces income equality has investigated. The following equations are estimated based on 3SLS estimation method.

\[ \text{Growth}_{it} = \beta_0 + \beta_1 \text{Decentralization}_{it} + \beta_2 \text{Decentralization}_{it}^r + \beta_3 \text{Tax}_{it} + \beta_4 \text{Tax}_{it}^2 + \beta_5 \text{Equity}_{it} + \beta_6 \text{Labor}_{it} + \beta_7 \text{Capital}_{it} + \mu_i + \nu_{it} \]

\[ \text{Equity}_{it} = \alpha_0 + \alpha_1 \text{Decentralization}_{it} + \alpha_2 \text{Growth}_{it} + \alpha_3 \text{Extra Budget}_{it} + \alpha_4 \text{Decentralization}_{it}^r + \mu_i + \nu_{it} \]

By applying 3SLS method for estimating the above simultaneous equations, coefficients will be as follows:

\[ \text{Growth} = 1.83 - 0.3/0.3 \text{decent} + 1.7/1.7 \text{decent}^2 + 4.5/1.5 \text{tax} - 0.3/1.3 \text{tax}^2 + \cdot \cdot \cdot \text{equity} - 1.7 \times 1.1 \times k + 1.7 \times 1.1 \times l \]

(0/01) (0/05) (0/1) (0/07) (0/0002) (0/01) (0/03) (0/10)
The values in parenthesis are significant level of variables so that all variables except L, Tax, Bud, decent2, equity are significant at the 10% level.

The first equation indicates the negative relation between economic growth and fiscal decentralization

So that an increase of fiscal decentralization in the average of the fiscal decentralization leads to reduced economic growth by 0.07 percent.

• An increase of tax at average of tax, leads to 1.92 percent reducing of economic growth.
• An increase in equity income leads to an increase in economic growth by 0.05 per cent.

An increase in capital leads to $10^6 \times 3.92\%$ increase of economic growth.

• An increase in the labor force, leading to $10^{-5} \times 4.04$ percent increase of economic growth.

In the second equation, fiscal decentralization has negative relation with income equality

So that one unit increase in fiscal decentralization leads to 7.87 percent reduction in income equality.

An increase in economic growth led to 9.56 percent decline in income equality.

• An increase in the extra budget led to 0.0001 percent reduction in income equality.

• An increase tax revenues at the average of tax revenues leads to 1.10 percent decline in income equity.

Conclusion

One of the main objectives of developing countries is achieving sustainable economic growth.

With regard to the role of government in the process of development of countries, factors affecting the efficiency of the public sector have raised important issues among economists.

In economic literature, the idea of decentralization in orders to increase government efficiency considered by Hori.

Oates (1993) showed that as public services provided by local authorities leads to increase in productivity, efficiency, transparency, accountability and management audit and social costs are minimized. In this view, decentralization as one of the most basic tools of transition introduces market-based economy. After the Islamic Revolution of Iran, especially after the war, decentralization of administrative, financial, technical was considered as a strategic
development policy in provinces and effective steps were taken towards decentralization in the country by the Council of Planning and Development. But the planners consider the economic impact of the policy of fiscal decentralization on economic growth in the final stage. Therefore, in this study the effects of fiscal decentralization on economic growth and equity are estimated.

Reviewing the literature, foreign and internal studies show that factors affecting the economic growth of areas including public investment, income distribution, human resources, tax revenue share of GDP, labor and fiscal decentralization were identified. The stationary of the variables in the model has done using the Levin, Lin and Chu (LLC), Im, Pesaran and Shin (IPS) and Beritong (BR) and using the Pedroni and Kao test, co-integration of a long-term relationship between variables were identified.

The method of three stage least squares has used to estimate simultaneous equations system to measure the effects of fiscal decentralization on economic growth and income equity at provinces level.

Results during the study period (2001-2012) for the 28 provinces are as follows:

- Fiscal decentralization policies has had significant negative impact on economic growth.
- Tax revenues has had significant negative impact on economic growth.
- Income equity has insignificant positive impact on economic growth.
- Labor force has had insignificant positive impact on economic growth.
- Capital has had significant negative impact on economic growth.
- Fiscal decentralization policies has had significant influence on income equity.
- Economic growth has had significant negative impact on income equity.
- Extra budget has had insignificant negative impact on income equality.
- Tax revenues has had significant negative impact on income equality.
References


