THE EFFECT OF GOVERNMENT SIZE ON ECONOMIC FREEDOM AND ECONOMIC GROWTH IN IRAN

Hosein Malek
PHD student of Azerbaijan National Academy of Sciences

Abstract
This paper investigates the effect of government consumption spending as a share of GDP on economic freedom in Iran. The impact of size of government on economic freedom is similar to a Armey curve which can be used to determine the optimum government size (see Barro, 1990; and Armey, 1995). This paper examines the relationship between economic freedom and size of government. Using GMM approach, the unemployment and productivity is influence on the economic freedom and according to the results growth of investment and non-oil export is positive effect on economic freedom and unemployment is negative effect on economic freedom.

JEL classification: C33; H50; O40; F41

Keywords: Economic growth; Government consumption expenditures; economic freedom

1. Introduction
The absence of economic growth implies the continued existence of poverty and hardship. The International Monetary Fund (IMF 2001) and others now perceive the prospects for global economic growth to be relatively weak.

“Economic freedom” means the degree to which a market economy is in place, where the central components are voluntary exchange, free competition, and protection of persons and property (Gwartney and Lawson 2002, 5). The goal is to characterize the institutional structure and central parts of economic policy. Economic freedom may constitute an explanatory factor for growth and the distribution of income. In econometric analysis, economic freedom is thus an independent variable. However, economic freedom may also be affected by other variables and thereby constitute a dependent variable, possibly influenced by factors such as political freedom, wealth, or democracy. The most ambitious attempt to quantify economic freedom is the Economic Freedom Index (EFI) reported annually in Economic Freedom of the World (Gwartney and Lawson 2002). That economic freedom is an important factor accounting for economic growth is probable on purely theoretical grounds. The incentives that economic actors (entrepreneurs, innovators, financiers, industrialists, and others) face are determined in large part by the institutions in place, which, as Douglass C. North (1990) points out, can be inefficient or efficient. To the extent that the
institutions stimulate actions that contribute to the production of more valuable output, they contribute to economic growth. (Berggren, 2003)

Institutions that guarantee economic freedom plausibly have the capacity to provide the growth-enhancing kind of incentives, for several reasons: they promote a high return on productive efforts through low taxation, an independent legal system, and the protection of private property; they enable talent to be allocated to where it generates the highest value (as argued in Murphy, Schleifer, and Vishny 1991); they foster a dynamic, experimentally organized economy in which a large amount of business trial and error can take place (Johanson, 2001) and in which competition between different actors occurs because regulations and government enterprises are few; they facilitate predictable and rational decision making through a low and stable inflation rate; and they promote the flow of trade and capital investment to where preference satisfaction and returns are the highest.

Although certain types of institutional change can be expected to have distinctly positive growth effects by introducing the kind of incentives just mentioned, institutions per se, in place over time, can exert an influence not only on the level of wealth but also on growth rates, all else being equal. In any given period, established institutions set the economic incentives and influence what economic actors do. Very high and stable economic freedom, we presume, allows a dynamic economy to function and grow, even though an increase in economic freedom from a low level might exert a much more distinct influence on the growth rate for a certain period. Furthermore, sustained high growth rates imply ultimately great wealth, and so in the long term the economic freedom that increases growth can also be expected to increase accumulated wealth. (Berggren, 2003)

In Section 2, theoretical and empirical studies of the impact of government size on economic growth and economic freedom are discussed briefly. Section 3 describes method that the government size has relationship with economic freedom. Section 4 presents empirical findings. Policy implications are discussed in section 5 and finally conclusion is presented in Section 6.

2. Theory and empirical studies

Government size has negative and positive impacts on economic growth. On one hand, enlargement of government results in a boost in economic growth rate through establishing protections of property rights, standardization, ruling law and providing infrastructures and public goods. On the other hand, it leads to deceleration of economic growth through disincentive effects of taxation and borrowing and increased inefficiencies. Thus, the final impact of government size on economic growth depends on the weight of negative and positive effects.

Suppose that there is an economy without government. In this situation, anarchy reigns and there would be no motivation for saving and investment; finally, economic growth would be low and, even in cases, negative. As Thomas Hobbes writes in 1651, life without any government is “nasty and brutish, and short” (Gwartney et al., 1998). The case becomes better at first with government intervention. Through legislation and property rights, the government decreases transaction costs and creates an environment conducive to investment. It also provides infrastructures necessary to public services such as healthcare and education, as a result of which economic growth raises significantly. Thus, it is expected that in initial stages, with enlarging government size, economic growth also increases. With more and more enlarging the government size, public sector gradually trespasses to domains where private sector would act successfully and could provide services at higher quality and lower costs. Therefore, the negative impact of the
government size on economic growth would escalate in intensity. Eventually, negative impact will dominate positive impact and their sum will be negative and with it, economic growth will decrease. Therefore, based on a certain government size, the economic growth will be in its maximum rate. These explanations are demonstrated using a hump-shaped curve or an inverted U-shaped curve as in Fig. 1.

By the late 1970s and for the first time, Arthur Laffer introduced a curve similar to the curve in Fig. 1 for expressing the relationship between tax revenues and tax rate. That curve was named as Laffer curve (Laffer, 2004). After that, Robert Barro (1990) reached such a curve regarding government size and economic growth using an endogenous growth model. The curve was known in the growth literature as “Barro curve”. In 1995, Richard Armey introduced this curve and its use for determining the optimal government size. The curve was named “Armey curve” consequently (Vedder and Gallaway, 1998). This paper used economic freedom index for illustrated this relationship. The Economic Freedom Index developed by the Fraser Institute, frequently used in economic research, consists of five dimensions: size of government; legal structure and security of property rights; access to sound money; freedom to exchange with foreigners; and regulation of credit, labor, and business. Using several indicators in each dimension, the five dimensions are weighted together to form a composite index, where 0 indicates the lowest and 10 the highest economic freedom.

The literature regarding government expenditure and economic growth includes studies that assume a linear as well as a nonlinear relationship between government expenditure and economic growth. Most of the studies are based on linear models, although Sheehey (1993), Armey (1995), Tanzi and Zee (1997), Vedder and Gallaway (1998), Giavazzi et al. (2000), among others, subscribe to forms of nonlinear relationships.


Growth theory has a central role in modern macroeconomics. However for a long time studies on growth have been based on SOLOW’s (1956) neoclassical approach, which focuses on the importance of two factors related to long-term growth, i.e. exogenous technological changes and convergence of per capita income. If one assumes that all the determinants of growth are exogenous, it is clear how economic policies are not susceptible of influencing the growth process unless temporarily during the transitional phase of an economy towards its stationary state. As a consequence, the role of Government in the growth process in this approach has been neglected.

In the growth literature, for the first time, Barro (1990) entered government sector in a simple endogenous growth model with constant returns and infinite horizons. This paper assumed that government revenues from proportional tax are spent for public services, in a way that all producers are benefited equally and there is not any cumulative effect. Thus, government spending is entered as a production factor in the production function. In this framework, Barro (1988) concluded that “The economy's growth rate and saving rate initially rise with the ratio of productive government expenditures to GNP, g/y, but each rate eventually reaches a peak and subsequently declines”. The curve corresponding to this relationship is known as “Barro curve” in growth literature and considered as a base for determining the optimal government spending.

Mourmouras and Lee (1999) extended Barro’s work by combining Barro’s production function and consumer with finite horizons (Blanchard, 1985) and reached the Barro curve. Considering the Barro’s endogenous growth model in a two-country world, with the presumption of perfect capital mobility and finite horizons, Ghosh and Mourmouras (2002) deduced that the effect of government expenditures share on economic growth and trade balance improvement is similar to the Barro curve.

Kosempel (2004) extended the Mourmouras and Lee’s model (1999). He assumed a situation in which the government spends its expenditures in two ways: first, Government spends a portion of its tax incomes for providing free services to consumers (e.g. parks, museums, art galleries and healthcare). These services are directly entered in consumer’s utility function. Second, Government spends a portion of its revenue to provide free services to producers. Services provided via constructing roads, airports, railroads, research and development institutes and programs for improving the skills of labor force are examples of this kind of services. Therefore, as in Barro (1988) and Mourmouras and Lee (1999), these expenditures are entered in the production function. Based on the results, Barro curve is approved for the second-type expenditures, but not for the first-type expenditures. Although increasing the share of first-type expenditures leads to increased utility of households, it always causes decline in economic growth. Magazzino (2009; 2010a; 2010b) pointed out how, in the framework of 13 OECD countries examined, a country with a ratio between public expenditure and GDP higher than 10% registers, on average, a reduction of its own GDP growth equal to 0.74%. Moreover, an increase in the variation of public expenditure equal to one percentage point corresponds approximately to a
reduction in the acceleration rate of economic activity equal to 0.31%. These results are particularly relevant in countries with a strong presence of the State in their economy, such as, in Europe, Belgium, Denmark, Finland, France, Greece, Hungary, Italy, the Netherlands, Portugal, Sweden and the United Kingdom, taking into account that the average share of public expenditure on GDP in 2008, and that the main international institutes – given the current severe economic and financial crisis and the consequent interventions launched by the various governments to support real economy – expect that in 2009 both groups of countries will exceed 50%. Others researchers focused on fiscal policies and the relationship between public revenue and expenditure.

Benson and Johnson (1986) observed the impact of taxation on the future formation of capital in various countries. They came to the conclusion that upward movements of relative tax shares bring about a reduction in the relative amount of investments; i.e., high taxation would trigger a low formation of capital. For this reason, as classical thought had already envisaged, excessive taxation can negatively influence economic activity, depressing demand. When investigating the effects of regional differences in the United States taxation, BESCI (1996) came to the conclusion that marginal rates of taxation show a statistically relevant negative relationship with economic growth.

3. Estimation method
The cornerstones of economic freedom are (1) personal choice, (2) voluntary exchange coordinated by markets, (3) freedom to enter and compete in markets, and (4) protection of persons and their property from aggression by others. Economic freedom is present when individuals are permitted to choose for themselves and engage in voluntary transactions as long as they do not harm the person or property of others. While individuals have a right to their own time, talents, and resources, they do not have a right to those of others. Thus, individuals do not have a right to take things from others or demand that others provide things for them. The use of violence, theft, fraud, and physical invasions are not permissible in an economically free society, but otherwise, individuals are free to choose, trade, and cooperate with others, and compete as they see fit. (gawretney, et al, 2010)

To a large degree, the EFW measure is an effort to identify how closely the institutions and policies of a country correspond with the ideal of a limited government, where the government protects property rights and arranges for the provision of a limited set of “public goods” such as national defense and access to money of sound value, but little beyond these core functions. In order to receive a high EFW rating, a country must provide secure protection of privately owned property, even-handed enforcement of contracts, and a stable monetary environment. It also must keep taxes low, refrain from creating barriers to both domestic and international trade, and rely more fully on markets rather than government spending and regulation to allocate goods and resources. In many ways, a country’s EFW summary rating is a measure of how closely its institutions and policies compare with the idealized structure implied by standard textbook analysis of microeconomics. Since 1996, data updated yearly have been published, and the data now cover the years 1970, 1975, 1980, 1985, 1990, 1995, and 2000. These data have begun to be used in scholarly research, which has contributed to increasing our knowledge of the importance of economic freedom. Another such index is published by the Heritage Foundation in cooperation with the Wall Street Journal (O’Driscoll, Holmes, and O’Grady 2002). This index and the EFI are similar in their overall implications, but because the EFI has been used more extensively in
The positive coefficient of the linear government size term is related to the constructive effects of government spending on output, and the expected negative coefficient of the squared government size term is related to the negative effects of increased government size. This regression equation includes both the linear term and the squared term of government size in the estimation equation, and therefore is a quadratic function or, in other words, a second-degree polynomial function. Since the second-degree polynomial function is linear in the parameters, i.e., \( \beta_s \), it does not present any special estimation problems and can be estimated using the Generalized Method of Moments estimation technique. The GMM approach estimates parameters directly from moment conditions imposed by the model. To enable identification the number of moment conditions should be at least as large as the number of unknown parameters. Moreover, the mechanics of the GMM approach relates to a standard instrumental variable estimator and also to issues such as instrumental validity and in formativeness.

4. Estimation results
The main aim of this study is to investigate the effect of government size on economic freedom in Iran. First, unit root test was carried out for all variables and the results show that all variables are stationary (Table 1).
Table 1: The result of stationary of variable

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF – Fisher Chi- square</th>
<th>stationary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic freedom</td>
<td>5.46</td>
<td>I(0)</td>
</tr>
<tr>
<td>Non-oil export</td>
<td>-6.75</td>
<td>I(1)</td>
</tr>
<tr>
<td>Growth of investment</td>
<td>-5.65</td>
<td>I(1)</td>
</tr>
<tr>
<td>Openness of economy</td>
<td>-5.73</td>
<td>I(1)</td>
</tr>
<tr>
<td>Consumption GovExp.</td>
<td>-5.68</td>
<td>I(0)</td>
</tr>
<tr>
<td>Investmentgov Exp.</td>
<td>-5.68</td>
<td>I(1)</td>
</tr>
<tr>
<td>Total government Exp.</td>
<td>-5.82</td>
<td>I(0)</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-5.68</td>
<td>I(1)</td>
</tr>
<tr>
<td>Productivity</td>
<td>-4.35</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

According to table 1, all of variable that used in model is stationary.

Table 2: the estimation of models

<table>
<thead>
<tr>
<th>variables</th>
<th>Model(1)</th>
<th>Model(2)</th>
<th>Model(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-oil export</td>
<td>0.00611 (12.09)</td>
<td>0.03 (11.17)</td>
<td>0.0313 (14.022)</td>
</tr>
<tr>
<td>Growth of investment</td>
<td>0.012 (17.2)</td>
<td>0.0059 (14.7)</td>
<td>0.0093 (11.66)</td>
</tr>
<tr>
<td>Openness of economy</td>
<td>0.0094 (2.76)</td>
<td>0.0033 (6.665)</td>
<td>0.0378 (5.98)</td>
</tr>
<tr>
<td>Squared ConsumptionGovExp.</td>
<td>-0.00239 (-2.79)</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>ConsumptionGovernment Exp.</td>
<td>0.00125 (2.76)</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Squared Investment gov Exp.</td>
<td>---</td>
<td>-0.036 (-2.24)</td>
<td>---</td>
</tr>
<tr>
<td>Investment government Exp.</td>
<td>---</td>
<td>0.3179 (3.35)</td>
<td>---</td>
</tr>
<tr>
<td>Squared Total gov Exp.</td>
<td>---</td>
<td>---</td>
<td>-0.0025 (-6.192)</td>
</tr>
<tr>
<td>Total government Exp.</td>
<td>---</td>
<td>---</td>
<td>0.0799 (4.26)</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-0.078 (-5.65)</td>
<td>-0.066 (-3.35)</td>
<td>-0.098 (-6.45)</td>
</tr>
<tr>
<td>Productivity</td>
<td>0.92 (3.36)</td>
<td>1.22 (7.45)</td>
<td>1.05 (9.68)</td>
</tr>
<tr>
<td>AR(1)</td>
<td>0.23 (12.22)</td>
<td>0.47 (11.73)</td>
<td>0.53 (8.45)</td>
</tr>
<tr>
<td>AR(2)</td>
<td>0.39 (7.98)</td>
<td>0.53 (12.99)</td>
<td>0.78 (4.35)</td>
</tr>
</tbody>
</table>
Based on the results above, it is obvious that negative and positive effects of the government size on economic freedom shown that verifying their relationship as a U-shaped curve. This paper used Consumption Government Expenditure and Investment government Expenditure and Total government Expenditure and separately models estimated. The results show in the following table.

The coefficient of Non-oil export in this model is positive. Then, the increasing of Non-oil export created more degree of economic freedom. Growth of investment and Openness of economy in Iran influence positive on economic freedom and more Growth of investment in several sections of economy established the more economic freedom. The coefficient of Unemployment is negative and significant. The coefficient of productivity is positive and significant. Squared Consumption Government Expenditure is negative and the Consumption Government Expenditure is positive coefficient then the relationship between economic freedom and Consumption Government Expenditure is nonlinear. This is true for other government expenditure such as investment expenditure and total expenditure.

In recent century and particularly, in recent few decades, the relationship between the government size and economic growth has attracted the attention of economists and policymakers. The reason behind this may be due to the importance of economic growth and development from the mid-twenties century to the present and the important role of the state in economic growth and development. The mechanisms of the impact of government on economic growth similar to economic freedom then:

(1) In the short run: it is a usual phenomenon that policymakers in developing countries target economic boom through Keynesian policies, but they should be warned if the share of government consumption expenditures is higher than the optimum level. (Chen and Lee, 2005; Loizides and Vamvoukas, 2005).

(2) In the medium and long run: an understanding of the role of government in economic growth and economic freedom can be favorable in setting strategies for the optimum growth. Policymakers in developing countries often interested in choosing the option of government intervention (policy of enlarged government) for a rapid economic growth. But it should be noted that such strategies may or may not impede growth. The mechanism of the impact of government on economic freedom is under the influence of both the share of government consumption expenditures and unique features of any country such as political system, efficiency of public sector and share of corruption and rent-seeking activities. The level of corruption in most of the countries under study is higher than that in industrial countries (Heritage, 2010). It is surprising that among countries under study, Tunisia enjoys better conditions, attaining a sustainable and favorable growth rate of 4.4 per cent through a relatively the fixed and optimum share of government consumption expenditures. Wu et al. (2010) stated that in developing countries government expenditures would not succeed in targeting development and eliminating poverty without improving quality of institutions and lowering the level of corruption. Although in recent years, the government size in most of the countries under study has been lower than the optimum level.
Based on the specific and structural problems which are mentioned above, it is highly recommended that developing countries (generally) and countries under study (particularly) avoid any increase in the share of government expenditures before adopting the reforms following reforms: gradual move to market economy and the least intervention of the state in economic activities, setting democratic political system, privatization of public properties, improving efficiency in public sectors such as education and health, improving the quality of institutions to curb rent-seeking activities and corruption. According to the results by Ram (1986), though, the favorable impact of the government size on economic freedom is higher in poor countries, only after the above reforms can one be certain that increasing the government size and investment by government in infrastructure and market failures would bring about higher economic freedom.

5. Conclusion

In this study, the effect of government size on economic freedom was investigated in Iran. The results show that the effect of government consumption spending as a share of GDP on economic freedom is not linear. Initially, economic freedom increases with rising government consumption spending as a share of GDP. Finally, with more increase in government consumption spending as a share of GDP, economic freedom declines. Therefore, approach (Hansen, 1999) the Barro curve (Barro, 1990) and the Armey curve (Armey, 1995) for the relationship between government consumption spending as a share of GDP and economic growth are approved. Based on this relationship, the optimal government consumption spending as a share of GDP was estimated for these countries. The coefficient of Non-oil export in this model is positive. Then, the increasing of Non-oil export created more degree of economic freedom. Growth of investment and Openness of economy in Iran influence positive on economic freedom and more Growth of investment in several sections of economy established the more economic freedom. The coefficient of Unemployment is negative and significant. The coefficient of productivity is positive and significant. Squared Consumption Government Expenditure is negative and the Consumption Government Expenditure is positive coefficient then the relationship between economic freedom and Consumption Government Expenditure is nonlinear. This is true for other government expenditure such as investment expenditure and total expenditure.

References


