

Evaluating the Most Important Factors Effecting Direct Taxes in the Iranian Economy Using TVP-DMA and TVP-FAVAR Models Approach

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Abstract

The importance of taxes in financing the state budget and exploiting it in the implementation of fiscal policies aimed at redistribution of wealth and income as well as optimal allocation of economic resources to different sectors demonstrates the need for identifying the key factors affecting the tax revenues and examining how they affect. In the present study, while investigating the factors affecting the direct taxes and their related theoretical basis in the Iranian economy, the important variables affecting the direct taxes of Iranian economy during the period 1972-2018 were selected using dynamic TVP-DMA models. After selecting the important variables affecting the direct taxes through the estimations made by the model, the instantaneous reaction functions or reactions resulting from the changes of these variables and their effects on the growth of direct taxes in the aforementioned time periods were also investigated using TVP-FAVAR models. The results of the study based on the outputs of TVP-DMA and TVP-DMS models showed that in the Iranian economy, the variables of “openness degree of economy”, “growth of development budget”, “inflation”, “average tax rate”, and “real income growth” are, respectively, the most important variables affecting the growth of direct taxes. Examining the effects of these variables on the development of the direct taxes during the study period shows that the openness degree of economy, growth of development budget, average tax rate in the direct taxes, and real income growth have had a positive effect on the growth of direct taxes over many years. The impact of inflation on the growth of the direct taxes in the Iranian economy has been changing over the period; it has been positive for some years and negative for other periods. Therefore, based on the results of the model, the question of whether the impact of inflation on the growth of direct taxes is positive or negative in the Iranian economy cannot be answered, because the simultaneousness of inflation and other economic (growth and unemployment rates, etc.) and tax developments (tax breaks, rate changes, etc.) is the main determining factor in how this variable affects the growth of direct taxes.

Keywords: Direct taxes, Iranian economy, TVP-DMA, TVP-FAVAR.

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1. Purpose of the study

Given the importance of taxes in financing government budgets¹ and the use of tax policies in the implementation of various programs aimed at redistributing wealth and income and optimal allocation of economic resources; it has become important for economic policymakers to identify important and influential factors in tax revenues and to examine how they affect taxes. This importance is becoming more apparent in the economy of Iran as the vulnerability of the economic system to the high dependence of budget revenues on oil and gas export resources, as well as the imposition of international sanctions on oil sales and the use of its financial resources to advance macroeconomic goals have become growingly obvious.

The nature of taxes is such that this variable is influenced by a wide range of economic, social, cultural, and structural variables and they reciprocally affect these variables. Therefore, on the one hand, it is not easy to study and evaluate the procedure, model and size of the impact of the factors affecting tax revenues, and on the other hand, it is important and vital for economic planners to understand the importance of this issue because without knowing the factors affecting taxes and also the procedure and size of the impact of these factors on tax revenues, policymaking and regulation of budgetary relations, as well as other policy objectives resulting from the functioning of the tax system will be difficult. Accordingly, the purpose of this article is to identify the factors affecting direct tax revenues as an important and significant part of tax revenues in the economy of Iran and to examine their impact on changes in tax revenues at different times. To this end, the dynamic moving average models of TVP-DMA² and TVP-FAVAR³ were used. In addition to determining the most important variables affecting tax revenues, these models are able to estimate the effects of shocks of selected variables affecting direct taxes and the changes made to this type of tax at different time periods.

Although various studies have been conducted to investigate the factors affecting tax revenues in various domestic and foreign studies for different economies and the economy of Iran, the main difference between this study and previous studies is the technical capabilities of the used models in the present study. More details on the technical capabilities of the used models in this study are given below.

2. Method

Given the nature of tax revenues and the various factors that affect the performance of these types of revenues, and also changing the outcome of the

1. The tax share of the total general budget resources of the government in the economy of Iran (as one of the indicators related to the role of taxes in financing the budget), indicates that in the years between 1390 to 1397, the tax share has increased from about 31 percent in 1390 to about 42 percent in The year 1397 (Statistics of the treasury of the whole

2. Dynamic Model Average Time- Varying Parameter

3. Factor-augmented Time- Varying Parameter

forces affecting taxes at different intervals, it is necessary to use models with special capabilities in forecasting and estimating taxes. For this reason, in the current study, first, dynamic moving average models (TVP-DMA) were used to select the most important variables that affect direct taxes in the Iranian economy in the intended period (1350 to 1397). Then, after selecting the most important variables affecting direct taxes using the capabilities of the mentioned technique, TVP-FAVAR models and instant response functions were used to investigate the effects of the selected variables on direct taxes. The most important features of the used models in this study, which distinguish between this study and similar studies, are as follows;

- (1) One of the advantages of TVP-DMA models is their capability to assess and estimate models with a large number of variables, while other econometric models do not have this capability. Accordingly, these types of models have a good ability to estimate economic variables with a high level of impact from other economic and social variables.
- (2) As the number of variables in econometric models increases, a condition may arise in which the behavior and performance of some of the specified variables in the model differ under conditions of economic boom or stagnation. In this situation, researchers should use models that can change the input variables to the model of overtime. Therefore, the TVP-DMA models presented in this article allow changing of the input variables to the model of overtime. Another advantage of this capability is the interpretation of how the considered variables affect the amount of direct taxes in the studied years.
- (3) The advantage of TVP-FAVAR models in comparison with other models is the possibility of combining the estimation method of Bayesian and TVP coefficients. In other words, in this study, using Bayesian models combined with Kalman filter and estimating the TVP-FAVAR model, and simultaneously by providing the possibility of changing the estimate coefficients over time, the important cost-saving feature of Bayesian models in estimating coefficients was also used. This feature makes it possible to check the effect of the shock of selected variables in the studied time period on the amount of direct taxes at any time using the mentioned models and then present the results.

4. Findings

Twelve economic and social variables were selected out of the dozens of variables derived from the taxation theoretical foundations in public economics and selected variables based on the results of other studies were used in the present study. The most important consideration in selecting the mentioned variables was the existence of quantitative information about those variables in the specified period of time (1350 to 1396) in the economy of Iran. After assessments and estimations made by TVP-DMA models, out of the 12 mentioned variables, 5 variables including (1) economy's degree of openness, (2)

development budget growth, (3) inflation, (4) average tax rate of direct taxes section and (5) the value-added ratio of the industrial sector to GDP, were selected as the most important and most effective economic and social variables affecting direct tax revenues in the economy of Iran in the period of 1350 to 1396 based on the results of estimations resulted from TVP-DMA models. This means that these mentioned variables have the largest number of presence in the estimation models to explain direct tax changes over the mentioned period. After selecting the most important variables affecting direct tax revenues, in the next step, the instant reaction functions of direct taxes to changes in each of the selected variables were examined using TVP-FAVAR models. Studying the effect of the mentioned variables shock on the growth of direct taxes in different years indicated the different effects of shock due to the changes of these variables on the growth of direct taxes over time. The effect of the shock of the degree of openness of the economy variable on the growth of direct taxes was positive for the entire studied period; the effect of the shock of the development budget growth variable on the growth of direct taxes was non-linear, positive in some periods, and negative in others; the effect of the inflation shock variable on the growth of direct taxes was nonlinear and positive in some periods and negative in others; the effect of the shock of the average direct tax rate variable was positive for the entire studied period and, finally, the effect of the shock of the value-added ratio of industry to GDP variable on the growth of direct taxes for the entire studied period was positive.

5. Conclusion

Based on the findings, the following suggestions are presented:

- Limiting and rationalizing the level and scope of tax exemptions and returning to the logic of the public economics to provide exemptions, tax preferences or abatements to various activities or areas, as well as reviewing the exemptions and tax incentives provided to different sectors based on fair and efficient tax principles with the purpose of reducing the tax burden of the certificated sector of the economy;
- Controlling the inflation rate at the optimal level and in proportion to other economic parameters, especially economic growth, with the aim of facilitating taxation affairs in the economy of Iran;
- Following the policy of tax rate adjustment and avoiding raising tax rates in the direct tax sector and pursuing the implementation of reforms to increase the executive guarantees of tax laws in order to reduce fraudulent incentives such as tax evasion, concealment and avoidance;
- Trying to fully allocate approved development budgets.

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