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Examining the consequences of government spending and tax levels on consumption and production

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Abstract

The purpose of this study is to investigate the consequences of government spending and tax levels on consumption and production. The structure of dynamic stochastic general equilibrium (DSGE) models is based on the optimization of economic units (households and firms). The data under study were extracted from the Central Bank and Excel and Eviews software were used to prepare the data. Model estimation, simulation, and inference from the model were also performed with Diner software. The results show that if the government's goal is to maintain the level of private sector consumption and avoid a decrease in the level of production, then increasing the capital tax rate will be a more appropriate option than the consumption tax rate and the wage tax rate. And if the goal is to maintain the process of capital formation and avoid a decrease in the stock of fixed capital, then the consumption tax rate is a more appropriate option for the fiscal policymaker. The results of the studies also show that the effect of all three tax rates on total consumption and production levels is approximately similar and there is no difference in this respect; however, increasing the capital tax rate compared to the other two rates causes a greater reduction in spending. In conclusion, it can be said that if the policymaker's goal is to achieve a long-term economic growth rate, then it is necessary to have a certain level of capital and therefore, regardless of the type of spending (current or development), it is better not to change the capital tax rate; otherwise, the capital tax rate can be a suitable option because it affects the level of production and private consumption less.

Keywords: spending, taxes, government, consumption, production.

JEL Classification: E62, E32, C68, H20.

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1. Introduction

Reducing government debt and controlling its growth rate have been among the most important policy challenges for countries in the last century. The importance of this issue is that fiscal policy is an influential factor in maintaining balance in the markets. In general, fiscal policy consists of two parts: the first part is government spending, which is allocated to various agencies, plans, and projects each year based on the budget document and is divided among them; the second part is government resources, which describes the revenue generation headings, the method, and the amount of revenue the government is expected to generate.

Private consumption, as the most important component of aggregate demand, can be affected by variables such as interest rates, taxes, and government spending, all of which are shaped by the government's macroeconomic policies. Governments possess various tools to achieve economic goals, which they deploy in the form of fiscal, monetary, income, and other policies, depending on their objectives, the economic environment, and institutional constraints. This interplay underscores the significance of fiscal policy as a central pillar of macroeconomic management..

Within this context, the Iranian economy, characterized by heavy reliance on oil revenues, persistent fiscal imbalances, and structural constraints, presents a fertile ground for analyzing the relationship between government spending, taxation, and macroeconomic outcomes. Despite extensive debates, the effectiveness of fiscal instruments in influencing consumption, investment, and growth remains contested. The research therefore aims to evaluate the macroeconomic consequences of government expenditure and taxation in Iran through a Dynamic Stochastic General Equilibrium (DSGE) model.

The motivation for this study stems from two related concerns. First, policymakers require precise knowledge of how different financing methods for government spending—whether through taxes, bonds, or oil revenues—affect economic variables. Second, the persistent fiscal pressures in Iran necessitate robust frameworks for assessing the consequences of fiscal policy on private sector behavior, production capacity, and price stability. By employing a DSGE model tailored to the Iranian context, this study contributes to both the theoretical literature and practical policymaking.

2. Theoretical Framework

Debates on fiscal policy oscillate between classical restraint and Keynesian activism, with later arguments on Ricardian equivalence suggesting deficits may be neutralized by household behavior. Keynesian and post-Keynesian approaches, by contrast, highlight the direct effects of fiscal measures on demand and growth.

DSGE models synthesize these views by modeling household and firm optimization under uncertainty. Government enters through budget equations

that capture taxes (on consumption, wages, capital) and spending categories. Distinguishing between current and developmental expenditures is central: financing current expenditures via distortionary taxes can dampen demand, while developmental expenditures may boost long-term growth if efficiently managed. This distinction frames the current research.

3. Methodology

The study applies a DSGE model calibrated to Iranian data (2004–2020). Data were processed in Excel and EViews; estimation, simulation, and inference were performed using Dynare.

Parameters were determined through:

Calibration of structural values (e.g., depreciation, steady-state ratios).

Bayesian estimation of behavioral and policy-sensitive parameters, combining priors with observed data through MCMC methods.

Three tax instruments—consumption, wage, and capital—were analyzed under two scenarios:

Financing current expenditures

Financing developmental expenditures

Stochastic shocks such as oil price volatility were incorporated to test robustness.

4. Discussion

The results yield nuanced insights into the effects of fiscal policy instruments:

Scenario 1: Financing Current Expenditures. If the government seeks to stabilize private consumption and production, raising the capital tax is preferable to wage or consumption taxes. But if preserving capital formation is the priority, consumption tax is more suitable.

Scenario 2: Financing Developmental Expenditures. The three taxes show broadly similar effects on consumption and output. However, capital taxation causes greater reductions in capital stock and investment, making it less desirable for growth.

Overall, results show trade-offs. Capital tax can stabilize short-term consumption but harms investment. Consumption tax protects capital accumulation but reduces household welfare. Wage tax has intermediate, less decisive effects. These findings highlight the importance of aligning tax choices with expenditure type and long-term goals.

5. Conclusion and Suggestions

The analysis indicates that fiscal outcomes in Iran depend strongly on how spending is financed. Key conclusions:

Capital tax stabilizes consumption in the short term but undermines investment.

Consumption tax supports capital accumulation but reduces private consumption.

Wage tax delivers moderate results with limited efficiency.

For sustainable growth, maintaining a stable capital tax rate is recommended regardless of expenditure type. Short-term fiscal adjustments may use capital taxation, but only with awareness of its investment costs.

Policy recommendations include explicitly distinguishing current from developmental spending in budget planning and diversifying revenue sources—such as Islamic bonds or non-oil revenues—to reduce reliance on distortionary taxation.

Ultimately, the study confirms that nuanced fiscal policy, sensitive to expenditure type and instrument choice, is essential for long-term stability and growth.