



Shahid Chamran  
University of Ahvaz

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## Effect of Military Expenses on Shadow Economy in Iran

Mansour Sazvar\*, Zahra Nasrollahi \*\*

\* *Master of Economics, Department of Economics, Faculty of Economics, Management and Accounting, Yazd University, Yazd, Iran (Corresponding Author)*

*Email: msazvar2304@gmail.com*

\*\* *Associate Professor of Economics, Department of Economics, Faculty of Economics, Management and Accounting, Yazd University, Yazd, Iran*

*Email: znasr621@gmail.com*

 [0000-0002-4852-3260](https://orcid.org/0000-0002-4852-3260)

*Postal address: Hormozgan province- Bandar Abbas city- Imam Hossein boulevard- Nabout town- Hijrat alley 2- Yas complex.*

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## EXTENDED ABSTRACT

### INTRODUCTION

shadow economy is an integral part of the economic structure of any country, which is always more common in countries with lower levels of development than in developed ones. A relatively large size of shadow economy will have many negative effects on the economy as a whole because it absorbs resources and labor from the formal economy, limits public resources and the effectiveness of policies, and distorts official statistics, as well as competition. It will increase unfair competition against official companies that follow the rules. Therefore, in order to prevent, identify and deal with this phenomenon, the government must bear the costs. Considering that increasing military expenditures with the security it creates inside each country causes the injection of domestic and foreign capital into official sectors of the economy and increases employment and GDP, as a result of the security caused by increased costs in the military sector social order, economic prosperity, peace of society, increasing creativity and innovation, progress and development of society, access to modern and advanced facilities and equipment, and finally reducing economic crime and underground and shadow activities in the country will happen.

During the period under review, shadow economy as a percentage of GDP in Iran has an upward trend with relatively low ups and downs and during this 35-year period has an average of 19.31 percent and the variable of military spending as Percentage of GDP has a negative and significant effect on the shadow economy in the period under study, ie for each unit of increase in military spending shadow economy decreases by 0.134 percent.

## METHODOLOGY

In this research, the structural equation modeling approach based on partial least squares and multiple index pattern - multiple causes and SMART PLS software has been used to investigate the effect of military spending on shadow economy in Iran during the period 1981 to 2015.

Multiple Index Pattern - Multiple causes, which include observed model variables and latent shadow economy variable, take the form of two equations. In the first equation, the relational relationship of shadow economy and its causes are explained and in the second equation, how the indicators are affected by the volume of shadow economy is specified. Therefore, the multiple index model - multiple causes has two parts: structural model and measurement model. The mathematical formulation of the template is as follows:

$$(1) \quad \eta = \gamma X + v$$

$$(2) \quad Y = \lambda \eta + \varepsilon$$

$\eta$  : hidden variable (shadow economy);  $X$ : vector ( $q \times 1$ ) causes in the structural model;  $Y$ : Vector ( $p \times 1$ ) of indicators in the measurement model;  $\lambda$  : ( $p \times 1$ ) coefficient matrix in the measurement model;  $\gamma$  : ( $q \times 1$ ) The cause coefficient matrix in the structural equation  $v$ : error in the structural model and  $\varepsilon$ : a vector ( $p \times 1$ ) measurement error in  $Y$

The regression form of the structural equation is:

$$(3) \quad \eta = ([\gamma_1, \gamma_2, \gamma_3, \gamma_4, \gamma_5, \gamma_6, \gamma_7] \times [me, unracmi, racmi, etax, gov, oilindex, open]) + V$$

The regression form of the measurement equation is as follows:

$$(4) \quad [employ, dmoney, energy] = ([\lambda_1, \lambda_2, \lambda_3] \times \eta) + [\varepsilon_1, \varepsilon_2, \varepsilon_3]$$

As can be seen in the structural equation and the measurement equation, the variables of military expenditure (me), effective tax rate (etax), formal market exchange rate (racmi), black market exchange rate (unracmi), economy openness (open), Revenues from natural resources (oilindex) and government size (gov) as the reasons for measuring the shadow economy as well as the variables energy consumption (energy), money demand (dmoney) and

employment (employ) as the effects of the shadow economy have been selected to estimate the model.

## **FINDINGS**

According to the results of this study, the signs of coefficients of exchange rate variables in the formal market, government size, effective tax rate, income from natural resources, military expenditures and the openness index of the economy in the study model are statistically significant and coefficient signs are consistent with theoretical predictions. Also, the estimated values of parameters in the studied model show that among the indicators reflecting the effects of shadow economy, the effect of shadow economy on energy consumption and money demand is positive and is as expected.

## **CONCLUSION**

The results of the analysis showed that increasing military spending to create the necessary infrastructure for the production of military equipment in the country instead of buying it from abroad, while reducing the country's military dependence on the world military powers, creates employment and economic prosperity, increases national income and reduces unconventional and shady activities. Of course, it should be noted that although military power is a factor in ensuring internal security and reducing external threats, due to budget constraints, unconventional increase in military spending and replacing it with other public sectors spending such as education, health, etc. is an obstacle. For optimal allocation of income to economic and social investments, which will have adverse consequences. In addition, official exchange rate, income from natural resources, economy openness index, black market exchange rate, government volume and effective tax rate are among the factors affecting shadow economy in Iran, among which the variable of income from natural resources has the most effect on the expansion of shadow economy. shadow economy has also affected energy consumption, money demand and employment, which have a greater impact on employment as a whole than on the other two variables. Therefore it is suggested:

- 1- Organizing a business environment with the aim of directing activities in the field of informal economy to the formal sector of the economy and increasing economic transparency
- 2- Explaining the effect of military spending on security and life of citizens to motivate tax payments and prevent the spread of shadow economy.
- 3- More control on the budget, especially the military budget to prevent possible abuses.
- 4- Based on results, increasing

liquidity results in inflation which itself brings forth shadow economy. Implementing appropriate monetary policies as well as financial order can prevent inflation and its detrimental consequences.

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