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Evaluation of the Increased Share of Tax Revenues from Government Revenues Using the Approach of Oil Dependency Reduction

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Abstract

This quantitative research was conducted with a positivist paradigm to evaluate the methods that could increase tax revenues from government revenues using oil dependency reduction. The researcher used the annual data of Iran during 1978-2019 to analyze the research model. In addition, a generalized torque technique was applied in the EViews software to estimate the model. According to the results, the variable of oil revenues had the most significant effect on the government revenues, followed by the revenue of sales and consumption tax and value-added tax (VAT), indicating that the government could easily reduce oil revenues by efficient policies and replace this source of income with the revenue from sales and consumption tax and VAT. On the other hand, the revenue from wealth tax had the least significant impact on the government revenues, which was possibly caused by the inefficiency of reception methods or the inability to be identified. Further assessment in this regard could help governments identify extremely more appropriate revenue resources to extract less oil and control social inequity. An important issue observed in this study was the reverse coefficient of the revenue from corporate tax. Most of these companies may be manufacturing and industrial units, and given the pressure of economic and political issues and inflation on the country, they have mostly reacted to enormous taxes, had tax evasion, or reduced their production level, which has, in turn, increased the rate of unemployment and decreased the national gross domestic product, thereby reducing the government revenues.

Keywords: Income tax, Consumption, Value-added tax, Wealth tax, Oil revenues, Generalized torque.

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1. Introduction

Given the growing need for the development of health, education, and related infrastructures in developing countries instead of developed countries, it seems essential to achieve higher levels of tax revenues in these areas. Value-added tax (VAT) could undoubtedly be turned into the main source of income for governments as it has fewer adverse economic consequences (i.e., price and distributive effects) compared to other indirect taxes and effects high income due to its wide base (Mohajeri, Taleblu, and Setarei, 2020). One of the main priorities of countries is to increase the satisfaction and welfare of the community members and create security for the society, which naturally relies on the government's revenue generation; tax revenues are the foremost example in this regard.

Tax payment and transferring part of the purchasing power and savings of the community and income owners to the government are extremely important for activities in the domains of health, education, security, and other public services. However, taxes play the role of financial policies since appropriate tax policies direct many of society's economic and financial activities and lay the necessary foundation for sustainable development. Taxes are a pivotal economic approach in every country. Reflecting on the management techniques of advanced countries, numerous economic experts believe that we cannot constantly rely on oil revenues, and multiple public services must be funded by those using these services. As one of the main priorities of community planners and authorities, the evaluation and identification of the issues in the tax system based on the current status are essential to expedite matters in this regard. As a result, changes could be made in the country's tax system through timely reviews and effective methodologies.

With this background, the present study aimed to determine the increased share of tax revenues from the government revenue using oil dependency reduction in the Iranian economy.

2. Literature Review and Hypotheses Development

2.1. Taxes

Despite the recent efforts to develop the tax system in Iran, this system still faces several challenges and has not fulfilled its role optimally in financing the government budget due to high oil revenues. Studies have shown that oil and tax revenues constituted 55% and 31% of the overall government revenues during 1973-2016. In addition, the tax share of public budget resources is identified as an indicator of the role of taxation in financing the government budget in Iran, and studies show that despite the extensive efforts to empower the tax system during 2011-2018, the tax share increased from approximately 31% in 2011 to 42% in 2018. These rates demonstrate that the structure of the Iranian economy and the composition of government budget resources largely depend on non-tax revenues. A considerable part of government budget resources is supplied from oil sales. Meanwhile, some selected countries' tax-to-gross domestic product (GDP) ratio was more than 64% in different years.

Not only do the high share of oil sale revenues and low share of tax revenues have adverse effects (e.g., the dependence of the national income on the export of goods), but they also deprive the country's economy of using fiscal policy tools (Totonchi Maleki, Musavi Jahromi and Mehrara, 2020). Taxes could be received directly or indirectly; direct taxes are received from people or companies based on the related laws and are distinct from the taxes levied on indirect goods and services. Direct taxes include the taxes on the income of natural persons, income taxes, and wealth taxes. On the other hand, indirect taxes refer to the import duty and goods/services tax. Direct taxpayers cannot transfer their taxes to others; in other words, natural or legal persons must pay their taxes, if imposed, based on their income or wealth, which reduces social class gaps. Indirect taxes do not significantly affect income distribution since they are considered a heavier burden on low-income

social classes.

Taxes are a vital part of government policies regarding income distribution improvement. In other words, all taxes have an income effect and influence income distribution. However, each tax has a different effect on income distribution depending on the tax type, tax bases, and tax rates. Regressive, proportional, and progressive taxes have an improper impact, no impact, and favorable effects on income distribution. The comparison of direct and indirect taxes shows that the former (especially wealth taxes), a sub-indicator of direct taxes, positively influences the reduction of inequality through progressive payment systems. On the other hand, indirect taxes are mostly regressive and impose a greater burden on low-income social classes (Ghaffari Fard, Heidari and Human, 2020).

Government and taxes are the inherent elements of every economic and social system. Taxes have been one of the pillars of government formation since the establishment of social frameworks and governments. If the existence of governments and social systems are considered necessary, multiple costs are involved in performing the related tasks, which should be supplied by establishing appropriate methods. In this respect, taxes are regarded as the optimal approach to the provision of government expenditure in normal economic conditions. In addition, taxes are the best tool for governments to meet three funding goals, the optimal allocation of economic resources and the redistribution of income and wealth.

While oil sales revenues have accounted for a large portion of government revenues over the past few decades, taxes also cover part of government expenditure. The amount of this contribution is debatable as an important economic issue. The inadequate composition of government expenditure refers to the strong dependence of the economy and government revenues on crude oil exports and the country's lack of a comprehensive and efficient tax system. Therefore, proper steps must be taken toward increasing tax revenues by recognizing the causes of low tax incomes and identifying the influential factors in this regard (Rostamzadeh and Goudarzi Farahani, 2017).

2.2. Oil Revenues Replacing Tax Revenues

Today, oil and petroleum products are among the most important products in the global economy and are used as fuel in most industries across the world. Transportation in its current form would not be possible without oil. Oil and its products are the basic indicators and foundations of today's world. Natural resources (especially oil) and their revenues substantially affect the society and the economic system of every country through various mechanisms. In addition, the impact of the revenues of natural resources on the community and economy of every country determines the positive and negative effects of these resources in general. In other words, these resources may accelerate or decelerate the development process (Bagheri Bonjar and Zarei, 2018). Less than two decades after the rise in oil prices, all the developing oil-exporting countries (except Indonesia) and small Arab countries with a small population have experienced severe disruption in the state administrative system and unrest in their political regime and social system.

The oil industry is one of the most effective and largest industries in the world (especially in Iran), which has made a major contribution to social welfare and development as the most important source of government funding. The oil industry's role could be assessed from the positive and developmental role perspectives and the negative role. According to the resource curse theory, oil revenues weaken industries and production and strengthen non-productive sectors by creating the Dutch disease. Given the paramount importance of natural resources (especially oil) in the development of the economy and welfare of people, the improper use of resources leads to their destruction and environmental pollution and the deprivation of future generations of these God-given blessings (Sheikhzadeh, 2019).

Increased oil revenues result in higher current costs. On the other hand, the government cannot

immediately reduce its running costs to reduce oil revenues. Initially, the government could partially offset the effects of declining oil revenues by reducing construction costs. However, a budget deficit occurs in medium-term prospects, thereby leading to borrowing from the banking system, which has multiple negative consequences, such as liquidity growth and inflation. Oil revenues have wide-ranging effects, especially on the economies of the countries that rely on such revenues. These revenues provide most of the country's foreign exchange resources and constitute a significant portion of government revenues. Given the dominant role of the government in the economy of these countries, such revenues affect macroeconomic variables such as economic growth, consumption, national savings, investment, exchange rate, and inflation (Asgharpoor and Baradaran, 2019).

One of the issues emphasized in the text of Iran Vision 2025 is the discontinuation of the reliance of the current government spending on oil and providing the required expenditure from the tax revenues and allocating revenues from oil exports to the expansion of investment for economic development based on efficiency and return. Therefore, the statute of the National Development Fund was approved by the Islamic Consultative Assembly in the first year of the fifth plan, and it was decided to deposit 20% of the resources from the export of oil and gas and oil products in the government fund annually (Izadkhasti, 2018).

Oil revenues and the reliance of oil-rich societies on these revenues, along with the sharp fluctuation of oil prices, have numerous detrimental economic effects, including single-product economy, inattention to other revenue sources (e.g., agriculture and industry), inflation, a higher general level of prices and incomes, reduced currency value, and expansion of the public sector and destruction of the private sectors. On the other hand, the influence of other governments' political decisions on oil prices and its impact on the domestic economy of exporting countries have also persuaded oil-rich countries to seek alternative revenue sources and use oil incomes for infrastructure affairs, the strengthening of industrial and production affairs, and the benefit of future generations from the proceeds of appropriate investments rather than consumption expenses. In Iran, this measure is expected to reduce the depreciation trend of the Rial against the USD.

Since a large portion of Iran's expenditure is supplied from the conversion of oil revenues to the local currency, unplanned supply and sharp USD depreciation against the domestic currency will lead to a budget deficit. In case of an increase in oil prices, parallel budgets are formed due to the consumption nature of the economy and lack of transparency in the management of oil dollars, which further increases the budget deficit. Another reason is the effect of unstable oil prices on the financial expenses of the government, which leads to the deviation of financial and budgetary performance and causes a budget deficit. About the long-term effects of oil on-budget deficit, the most efficient solution would be to increase tax revenues. On the other hand, increased government spending intensifies budget deficits, and the ratio of government spending to the budget deficit would become positive. The increased price index of the previous period will lead to inflation expectations, thereby increasing the budget deficit. This is mainly because government revenues are based on approved rates and change hardly or delayed; therefore, government revenues do not change noticeably. However, government spending increases due to inflation expectations, increasing budget deficit (Ranjbar, Sameti, and Malian, 2016). The next section of the paper evaluates the studies performed in Iran and other countries in this regard.

Keshavarz Hadad, Abounoori, and Jahani (2020) evaluated oil revenue uncertainty, sanctions, and the volatility of macroeconomic variables, reporting that a shock in oil revenues or the sanction index affects the activities of the three sectors of production, foreign exchange market, and the stock market. In addition, Alizadeh and Fathollahi (2018) assessed the correlation between tax revenues and government expenditure in Iran using the new approach of bound testing and the Toda-Yamamoto causality test, and the obtained results showed the presence of a unilateral causal

correlation between the total government expenditure and tax revenues.

In another study, Rostamzadeh and Goudarzi Farahani (2017) evaluated the issue of tax substitution for oil revenues by designing a dynamic stochastic general equilibrium (DSGE). According to the obtained results, a short-term tax shock could adversely affect macroeconomic variables such as economic growth and consumption. Furthermore, Ranjbar, Sameti, and Malian (2016) assessed the possibility of replacing oil revenues with tax revenues in a case study of Iran, reporting that the effects of the initial instability affected by such a shock were eliminated model, taking over 8-10 periods. Therefore, it is possible to replace oil revenues with tax revenues without unfavorable effects on the long-term condition of the studied variables. On the other hand, Abbasian and Fashi (2015) evaluated fiscal capacity as an alternative to the oil revenues of Iran, and the results of a short-term model estimate demonstrated that the optimal financial capacity based on the financial ratios of the country was higher than the current amount. The aforementioned studies infer that given such a vast source of income, oil revenues should not be the only source of revenues in a country.

Maganya (2020) evaluated tax revenues and economic growth in a developing country, reporting a positive correlation between taxes on goods and services and GDP growth (1% significance). Moreover, Gurdal, Aydin, and Inal (2020) assessed the correlations between tax revenues, government expenditure, and economic growth in G7 countries. Evidence suggested a short-term and long-term bilateral causality between economic growth and tax revenues, as well as a long-term causality between economic growth and government spending. McNabb (2018) also investigated tax structures and economic growth based on the new evidence obtained from the government revenue dataset, observing that an overall increase in income tax revenues was accompanied by long-term GDP growth. In another study, Spios (2016) evaluated optimal taxation practically and theoretically in OECD countries. According to the obtained results, using new tax policies could enhance economic growth by 43%. A fluctuation-free tax system has also been reported to increase the rate of economic growth in countries. In a study in this regard, Hamdi and Sbia (2013) assessed the dynamic correlations between oil revenues, government spending, and economic growth in an oil-dependent economy. According to the obtained results, oil revenues were the main source of growth and government expenditure in the studied country. Considering the above-mentioned issues, the research hypotheses are presented as follow:

H1: Wealth tax has the least impact on government revenues to reduce dependence on oil revenues.

H2: The share of taxes in government revenues is increasing with reducing dependence on oil revenues.

3. Research Methodology

The researchers defined the methodology of the present study to show a path through which they could formulate the problem, objective, and current data obtained in the research (Jilcha Sileyew, 2019). Our study had a quantitative approach and a positivist and transcendental paradigm, and the objective was to assess a previously discovered and discussed issue. We aimed to evaluate the increased tax revenue share of government revenues using oil dependency reduction. The research model was analyzed using the annual data of 1978-2019, and the regression variables were extracted from the recent studies listed on a theoretical basis. In addition, the model was estimated using the generalized torque method in the EViews software.

$$\ln pre_t = \alpha_0 + \alpha_1 \ln tco_t + \alpha_2 \ln tre_t + \alpha_3 \ln ts_t + \alpha_4 \ln tm_t \\ + \alpha_5 \ln tc_t + \alpha_6 \ln roil_t + \varepsilon_t$$

The symbols used in the regression included Ln at the outset of each variable to show the logarithmization of the variable. The process was also carried out to describe the coefficient of each variable in the tension form, with the variables including t (time), pre (government revenues), tco (revenue from corporate taxes), tre (revenue from income taxes), ts (revenue from wealth taxes), tm (revenue from import taxes), tc (revenue from sales and consumption taxes and VAT), and roil (government revenues from oil sales).

4. Findings

In the present study, the researcher initially illustrated the descriptive statistics table of the research data (Table 1).

Table 1. Descriptive Statistics of Variables

Variable	LNPRE	LNROIL	LNTC	LNTCO	LNTM	LNTRE	LNTS
Mean	11.008	10.296	9.316	9.944	8.538	8.081	6.744
Median	11.237	10.623	9.762	10.315	8.552	8.430	6.901
Max.	14.896	13.916	13.652	14.050	12.331	12.152	10.540
Min.	7.190	6.075	4.563	5.830	4.614	4.067	2.398
Standard Deviation	2.658	2.557	2.872	2.755	2.602	2.704	2.622
Skewness	-0.079	-0.185	0.002	-0.012	-0.045	-0.064	-0.129
Kurtosis	1.525	1.557	1.577	1.540	1.473	1.582	1.641
Jarque-Bera	0.146	0.144	0.170	0.155	0.129	0.170	0.187

All the observations are shown in Table 1 in the logarithmic form. An important issue in this regard was the skewness value of the research variables, which was close to zero, and the kurtosis value of the variables, which was less than three. Therefore, the normal research variables and Jarque-Bera measurement error (>0.05) confirmed the research variables' normality. The unit root test was also carried out to determine the reliability of the research variables, and the results are presented in Table 2.

Not all variables of the present study were at a stable level, and the researcher differentiated all the variables once. At this point, the measurement error of the Dickey-Fuller statistic was estimated at 0.05 with one differentiation. Therefore, the hypothesis of the presence of a single root in the series was not rejected, and all the variables were considered stable with one differentiation. In other words, the researcher had to enter all the variables with one differentiation into the model to calculate the model and estimate the mentioned regression, as shown in Table 3.

Table 2. Unit Root Test by Dickey-Fuller Test

Variable	Measurement Error	Dickey-Fuller Statistic	Result
pre	0.001	-5.07	Stable with one differencing
roil	0.00	-6.29	Stable with one differencing
tc	0.00	-6.84	Stable with one differencing
tco	0.001	-4.94	Stable with one differencing
tm	0.019	-3.94	Stable with one differencing
tre	0.016	-4.01	Stable with one differencing
ts	0.00	-7.32	Stable with one differencing

Table 3. Estimation of Research Model by Generalized Torque Method

Variables	Coefficients	Standard Deviation	T Statistic	Measurement Error
C	0.018	0.003	5.798	0.000
D(LNPRE(-1))	-0.066	0.010	-6.695	0.000
D(LNROIL)	0.490	0.005	98.942	0.000
D(LNRTC)	0.469	0.044	10.678	0.000
D(LNTRCO)	-0.305	0.074	-4.100	0.000
D(LNTRM)	0.147	0.015	9.847	0.000
D(LNTRRE)	0.230	0.013	17.404	0.000
D(LNTRS)	0.096	0.011	8.953	0.000
Coefficient of Determination	0.896	Sargan Statistic		8.995
Durbin-Watson	1.918	Sargan Statistic Measurement Error		0.989

Since the findings indicated that the value obtained by the Durbin-Watson method was close to two ($=1.9$), no autocorrelation was observed between the model disruption sentences. In addition, the measurement error of the Sargan statistic of the model was above 0.05, which demonstrated the correct selection of the instrumental variables for the estimation of the generalized torque model. The coefficient of determination also indicated a percentage of change in the dependent variable, which was explained by the model's independent variables. In this regard, the coefficient of determination was estimated at 89%, showing that the model's independent variables could explain 89% of the changes in the dependent variable (i.e., government revenues), which was appropriate and considerable.

5. Conclusion

According to the results, the variable of government revenues from oil sales (Inroil) was completely significant. Its measurement error and coefficient were estimated at <0.05 and 0.49, respectively, which showed that the overall government revenue (Inpre) would increase by 0.49% in case of a 1% increase in the revenues from oil sales. In addition, the variable of revenues from sales and consumption taxes, and VAT (Intc) was completely significant, and its measurement error and coefficient were <0.05 and 0.46, respectively. Therefore, it could be concluded that the overall government revenues (Inpre) would increase by 0.46% in case of a 1% increase in the revenues from sales and consumption taxes and VAT. Moreover, the variable of corporate tax revenue (Intco) was completely significant, and its measurement error and coefficient were <0.05 and -0.30, respectively, demonstrating that the overall government revenues (Inpre) would increase by 0.30% in case of a 1% increase in corporate taxes. The variable of revenues from import taxes (Intm) was also completely significant, and its measurement error and coefficient were estimated at <0.05 and 0.14, respectively, showing that the overall government revenues (Inpre) would increase by 0.14% in case of a 1% increase in the revenues from import taxes.

Our findings indicated that the variable of revenues from income taxes (Intre) was completely significant, and its measurement error and coefficient were <0.05 and 0.23, respectively, demonstrating that the overall government revenues (Inpre) would increase by 0.23% in case of a 1% increase in the revenues from income taxes. Ultimately, the variable of revenue from wealth tax (Ints) was completely significant, and its measurement error and coefficient were determined to be 0.05 and 0.09, respectively, indicating that the overall government revenues (Inpre) would increase by 0.09% in case of a 1% increase in the revenues from wealth taxes.

According to the obtained results, the oil revenue variable had the most significant impact on the

government revenues, followed by the revenues from sales and consumption taxes and VAT. Therefore, it was inferred that the government could easily reduce oil revenues by adopting efficient policies and replacing this source of income with the revenues from sales and consumption taxes and VAT. On the other hand, the revenues from wealth taxes had the least significant impact on the government revenues, mainly caused by the inefficiency of reception methods or the inability to be identified. Undoubtedly, the further assessment of this issue could result in the identification of a highly appropriate source of income so that less oil would be extracted and social inequity would be controlled. However, an important finding of this study was the reverse coefficient of the revenues from corporate taxes. It is possible that most of these companies were manufacturing and industrial units, and given the pressure of economic and political issues and inflation on the country, they have mostly reacted to enormous taxes, had tax evasion, or reduced their production level, which has, in turn, increased the rate of unemployment and decreased the national GDP, thereby reducing the government revenues.

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