The Effect of Inflation Targeting on Indirect Tax Performance in Selected Countries Using Propensity Score Matching Model

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Abstract:
Inflation targeting framework has become a predominant monetary approach across the globe. Williams (2015) believes that in a very real sense, almost all economies are inflation targeters -either explicit or implicit- now.(1) Due to the increasing spread of this policy, it is necessary to consider the way it affects macroeconomic variables. using prevalent economic models for evaluating the effectiveness of inflation targeting causes bias selection which for solving this problem, it is proposed propensity score matching model. the goal of this paper is to evaluate the effect of the adoption of Inflation Targeting policy on indirect taxes and its components in two selected groups of oil exporter and oil importer countries during 1990-2016 by using propensity score matching model. our results have shown that inflation targeting adoption in average has a positive and significant effect on indirect tax revenues in oil importer countries group but its effect on indirect tax revenues in oil exporter countries is insignificant.

1. Introduction

An increasing number of countries have implemented inflation targeting monetary policy framework since its adoption by New Zealand in 1990. Up to now, about 40 countries, including many emerging economies, most Latin American countries, and Central and Eastern European countries, have adopted this monetary policy strategy. Amato and Gerlach (2002) believes that this evolution of monetary policy was the most important change in the monetary policy framework since the collapse of the Bretton Woods system.(2)

Specifically, two reasons can be noted for the popularity of inflation targeting policy. First, adopting an inflation targeting policy is a practical response to problems the central banks face to perform their monetary policies to stabilize the exchange rate or monetary aggregates as an intermediate goal. Second, many

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empirical studies have confirmed the positive effects of this monetary policy framework on the economic performance of economies that adopted the inflation targeting policy. For example, Lin and Ye (2009) found some evidence for many developing and emerging countries, indicating that inflation targeting has enhanced economic performance in terms of inflation level and its variability.(3)

Inflation targeting is a framework for monetary policy characterized by public announcement of official quantitative targets and based on the rule that low and stable inflation is the fundamental long-run goal of the monetary policy.(4) More precisely, Mishkin (2000) referred to five components for the inflation targeting framework. The components include 1- public announcement of an official quantitative target for the medium-run inflation target, 2- commitment to price stability as the main goal of monetary policy, 3- an information-inclusive strategy to regulate monetary policy tools, 4- a high level of transparency for the implementation of monetary policy, and 5- accountability of central bank for achieving inflation objectives.(5) Therefore, inflation targeting requires much more than a public announcement of quantitative targets for inflation. The main advantage of the inflation targeting framework is increased discipline, transparency, and coherence of monetary policy.(6) Moreover, inflation targeting presents a "constrained discretion" framework in which the official target specifies the constraint, and the discretion refers to the scope for monetary authorities to consider short-run output instabilities or financial stability. (4) This flexibility in the implementation of monetary policy is especially important for small economies that are often affected by external shocks.(7)

The success and sustainability of inflation targeting in the medium-run necessitate the accomplishment of various economic and institutional conditions. Several prerequisites have been referred to in the literature to be met before the inflation targeting. These preconditions include an independent, responsible, and transparent central bank explicitly committing to price stability, a perfect fiscal policy, a well-developed financial market, a flexible exchange rate system, a low inflation rate, and statistical and econometric models that are well developed to understand the mechanisms of monetary policy transmission and inflation forecast.(8, 9) Nevertheless, the experience of most countries in which the inflation is targeted demonstrates that refraining from the implementation of the preconditions is not in itself a barrier for adopting and continuing this monetary policy framework successfully. Especially, this emphasized that implementing the inflation targeting policy is a gradual process with economic and institutional reforms after and before the official adoption of this monetary policy framework. In fact, in some countries, the adoption of inflation targeting policy has been followed by fast advancements in institutional and technical structures.(10)

Kadria and Aissa (2014) investigated the relationship between inflation targeting and budget deficit in emerging countries. They found that the adoption of inflation targeting policy significantly affects the reduction of the budget

deficit.(11) Díaz Roldán et al. (2019) studied the financial performance of Brazil since the implementation of inflation targeting policy in 1994 and the impact of fiscal rules that were adopted to achieve fiscal discipline. They found that if the inflation targeting policy is accompanied by appropriate fiscal rules, it leads to reasonable attempts for financial stability by providing a suitable environment for improving economic performance.(12)

Besides these institutional and technical changes, the adoption of inflation targeting policy can also affect the design of fiscal policy and, more specifically, the design of tax policy. Indeed, by boosting the independence of the central bank and clear commitment of monetary authorities to low inflation, the inflation targeting regime deprives the government of seigniorage revenue, which is an important resource of public revenue in developing and emerging countries. As a result, we can expect that the government will make an effort to increase tax revenue collection to compensate for the loss of inflation tax revenue.

This research aims to investigate the impact of the adoption of an inflation targeting policy on indirect tax revenues empirically for oil-exporting and oil-importing groups of countries, during the period 1990-2016. For this purpose, the remainder of the article is organized as follows. Section 2 provides a literature review. Then, data are described in Section 3. The research methodology is discussed in Section 4. Section 5 presents the results. Finally, Section 6 represents a conclusion and recommendations.

2. Literature review

The way inflation targeting affects the change of tax revenue and tax policy, especially in developing countries, is associated with seigniorage revenues. Governments may tend to increase employment and output levels, at least in the short term, by creating inflation. However, due to the short life of the governments, they ignore the long-run effects of these policies on inflation. Moreover, when the government is authorized to control the monetary instrument, it uses inflation tax and seigniorage revenues as financing methods due to the motive for making financial resources. In contrast, when the central bank is independent, it is motivated to retain money value and control inflation. The government and central bank have different motivation and goals in applying the monetary policy.(13)

The interaction between the monetary and fiscal policy and the government's financing resources depends on the relation between the government and the central bank. If a government can adopt a long-term budget plan, it compels the authorities of the central bank to create money, bear the extra inflation, and create public debt. In other words, in this case, the monetary policy is constrained by fiscal policy. Conversely, sometimes, monetary policy may affect fiscal policy. If an independent central bank is authorized to control monetary policy, it may

deprive the government of the seigniorage revenues and inflation taxes by implementing the price stability policy and controlling inflation and, consequently, cause the government to move toward more fiscal discipline and attempt to increase tax revenues to compensate for the seigniorage revenues lost. Assuming that an independent central bank as the monetary authority is always dominant to the government as the fiscal authority, Burdekin and Laney (1988) concluded that the independence of the central bank prevents the future budget deficit, and, consequently, it prevents the present budget deficit by the government.(14)

Several studies, examined how the independence of the central bank can affect the fiscal policy.(15, 16) In many developing countries, seigniorage revenues are one of the main resources for government financing. If the monetary authorities are independent and committed to the inflation control and retaining the domestic money value, the government's share of seigniorage revenues will be limited, and the government will be compelled to enhance its fiscal discipline to compensate for this reduction. Gerlach (1999) believed that inflation targeting through creating a clear framework could be an appropriate alternative to the independence of the central bank. Inflation targeting limits the seigniorage by a completely transparent rule and induces the government to conduct a more disciplined fiscal policy.(17)

The government can take two approaches to increase the fiscal discipline and decrease budget deficit: raise its revenues, or reduce and control its spending. In terms of revenues, through making some changes in its financial resources, most importantly tax revenues, the government can improve tax administration by increasing the tax bases and enhancing the tax collection efficiently. Consequently, at a specific level of economic activity, the government can gain higher tax revenues and can compensate for the seigniorage revenues lost due to inflation targeting constraints. Accordingly, Minea and Villieu (2009) demonstrated theoretically that a rigorous monetary policy could persuade the government to move toward the improvement of institutional quality of tax structures to restrict the erosion of tax revenues. They found that using a low inflation target with an appropriate institutional quality motivates the government to improve the performance of tax collection systems.(18) Therefore, it is expected that the adoption of inflation targeting policy affects tax collection positively.

Fazio et al. (2018) conducted an empirical study using the data of 66 countries for the period 1998-2014 and found that there is an inverted U-shaped relationship between inflation targeting and financial stability as a function of institutional quality. While inflation targeting does not significantly affect the improvement of stability in the countries with high institutional quality, countries with medium institutional quality level more benefit from it. Moreover, in countries with a low level of institutional quality, both inflation targeting and

financial stability are associated with the fact that governments should attract the trust of their citizens to implement economic policies effectively.(19)

Galvis Ciro and Ferreira de Mendonça (2018) analyzed the performance of Colombia's economy, an inflation targeting economy, for the period 2004-2014 and found that as the credit of the central bank is increased, inflation targeting can cause tax effort to increase.(20)

Ardakani et al. (2018) investigated the effect of inflation targeting on macroeconomic variables for 98 countries over the period 1990-2013. Using a semiparametric propensity score matching method, they found that there was no significant difference in inflation rate and inflation volatility between inflation targeting non-inflation targeting countries. Further, inflation targeting decreased the sacrifice ratio and interest rate volatility in the developed countries and helped to improve the fiscal discipline in both developed and developing countries.(21)

Considering 59 emerging countries, Lucotte (2012) concluded that the implementation of the inflation targeting policy increased the efforts to collect tax revenues by fortifying the independence of the central bank and holding the inflation at a low level.(22)

Erfani et al. (2016) empirically investigated the effect of inflation targeting on tax revenues using the generalized method of moments for a sample of 50 developing countries over the period 1995-2012. Their results indicated that the adoption of inflation targeting could increase tax revenues in these countries.(13) Due to their high dependence on oil revenues, most oil-exporting economies involved in adverse consequences of these revenues, and they often experience a severe lack of fiscal discipline and budget deficit. Oil-exporting countries are mostly developing countries. Therefore, their institutional quality generally is not in an appropriate state, and their fiscal discipline and tax system efficiency is not desirable.

Dependence on oil revenues leads to Dutch disease, causing the economy to be highly sensitive to oil shocks and dependent on foreign economies and may yield destroying and irreparable effects on the economy. Volatility and instability are among the main characteristics of markets supplying raw material such as oil and gas. The intense price volatility of natural resources may be due to the low elasticity of these resources. The main consequence of these volatilities is uncertainty about the definite revenues from oil export. As a result, the government's revenue and, consequently, governments' expenditure becomes unpredictable. This uncertainty causes serious problems in policy-making.

Several preconditions have been mentioned in the literature for the successful and effective implementation of inflation targeting policy. Developed countries, having appropriate financial development and institutional quality, usually get desirable results from this monetary policy framework. Nevertheless, this policy

is not specific to developed countries. Indeed, a perfect evaluation of inflation targeting effectiveness entails further evidence from the developing countries.

Moreover, in the literature, attention has not been paid to countries severely depending on natural resource revenues, and whether Dutch disease can affect the effectiveness of inflation targeting policy has not been considered. In other words, does the implementation of an inflation targeting policy lead to similar results in oil-exporting and oil-importing countries? Does Iran, an oil-exporting country, gain similar benefits from the adoption of this policy?

3. Data

In this research, the components of indirect tax revenues (as percentages of GDP) are considered as the exogenous variable, including the tax on goods and services, general tax on goods and services, value-added tax, excise tax, and tax on imports.

Inflation targeting, which is a binary variable, is considered as the independent variable that takes one for the countries in which inflation targeting is implemented in year t and takes zero, otherwise. Here, the information of the countries with and without inflation targeting has been taken from Schmidt-Hebbel and Carrasco (2016).(23) According to this categorization, the target sample consists of 35 countries with inflation targeting and 33 countries without inflation targeting. Table 1 represents the sample countries divided into the categories of oil-importing and oil-exporting countries.

Table 1: List of inflation targeter and non-inflation targeted countries

Oil Importing Countries			
inflation targeted		**Non-inflation targeted**	
Armenia (2006)	New Zeeland (1990)	Austria	Jamaica
Australia (1993)	Paraguay (2013)	Bangladesh	Jordan
Chile (1991)	Peru (2002)	Belarus	Lithuania
Czech (1997)	Philippines (2002)	Belgium	Morocco
Dominican (2011)	Poland (1999)	Bulgaria	Netherlands
Georgia (2009)	Romania (2005)	China	Pakistan
Guatemala (2005)	Serbia (2006)	Croatia	Portugal
Hungary (2001)	South Africa (2000)	Finland	Spain
Iceland (2001)	Sweden (1995)	France	Sri Lanka
India (2011)	Thailand (2000)	Germany	Switzerland
Indonesia (2005)	Turkey (2006)	Greece	Trinidad
Japan (2013)	Uganda (2012)	Ireland	Ukraine
Korea (1998)	United Kingdom (1992)	Italy	Uruguay
Moldova (2010)			
Oil Exporting Countries			
inflation targeted		**Non-inflation targeted**	
Albania (2009)	Ghana (2007)	Algeria	Kazakhstan
Brazil (1999)	Mexico (2001)	Azerbaijan	Vietnam
Canada (1991)	Norway (2001)	Congo	Equatorial Guinea
Colombia (1999)	Russia (2014)	IR Iran	

Note: inflation targeting adoption year for inflation targeter countries has reported in parentheses.

Other variables are those that determine the probability of adoption of the inflation targeting policy by each country. Following the relevant empirical literature, five variables were selected, including the inflation rate, the central bank governors turnover rate, the GDP per capita growth, the domestic credit to private sector to GDP, and the trade openness.

Sixty-eight countries, including 15 oil-exporting and 53 oil-importing countries, are considered over the period 1990-2016. Data have been collected from various resources, especially the World Bank and the International Monetary Fund.

4. Research methodology

The main issue of the econometric analysis in this research is the binary nature of the independent variable. Assessing the impact of the adoption of inflation targeting on tax revenues is a difficult task because we cannot observe what would have been this revenue if an inflation targeter country has made the choice to not adopt this monetary policy framework. Conversely, it is impossible to observe what would have been tax revenue if a non-inflation targeter country has switched to inflation targeting.

A simple approach to evaluate this causal effect is the comparison of average tax revenue for the two groups, i.e., inflation targeter and non-inflation targeters countries. This model, proposed by Rubin (1974), assumes that the two groups of countries are similar so that the countries have similar tax revenues, regardless of whether or not they have adopted inflation targeting. However, in reality, the countries under study constitute a relatively non-homogeneous group. Therefore, this statistical method leads to the selection bias in the sense that it can cause the effect of inflation targeting adoption on tax revenues to be overestimated.

To resolve the problem of selection bias, Rosenbaum and Rubin (1983) introduced the propensity score matching method. This model is a non-experimental approach that matches the treatment group observations with control group observations based on observed characteristics that are not affected by the treatment.(24)

The key factor for evaluating a good treatment is a successful estimation of counterfactual value, i.e., what would have taken place to the countries in the treatment group if they had not participated in the treatment. Since, at a given time, we cannot observe a treatment group country in the state of non-participation in the treatment, we should use the data of the control group to get the counterfactual value. Therefore, it is important to have suitable information on treatment and control groups (inflation targeters and non-inflation targeters) to fix any difference in specified characteristics. For this purpose, to estimate the relations and conduct the analysis, we use the propensity score matching approach. The matching method is a statistical method used to assess the effect of

a treatment or policy by comparing the units of treatment group and control group.(24-26)

The goal of the matching method is to find one or more countries in the control group for each treatment group country with observable characteristics. When the matching is done, one can calculate the average treatment effect for units participated in the treatment (Average Treatment Effect on Treated (ATT)). Analysis of counterfactual value enables assessors to identify the causality and impact intensity between the treatment and the outcomes.

T is a binary variable, where $T_i=1$ is assumed for countries that adopt the treatment (inflation targeters), and $T_i=0$ is assumed for control group countries (non-inflation targeters). Y also represents the potential outcomes. For example, Y_i^1 is the outcome value for a country implementing the treatment, and Y_i^0 represents the outcome value for a country not implementing the treatment. Average treatment effect in treatment group countries is calculated as follows:

$$\Delta_{ATT}^{PSM} = E[Y_{it}^1|T_{it} = 1] - E[Y_{it}^0|T_{it} = 1] \qquad (1)$$

Since a given country either implements or does not implement the treatment, the value of $E[Y_{it}^0|T_{it} = 1]$ is not observable and can be replaced by $E[Y_{it}^0|T_{it} = 1]$. This is because the first expression is not observable. However, this replacement can only be done when we assume that a country that implements the treatment is the same as one that does not implement the treatment. This is the case only when the units in the treatment group possess similar characteristics with those in the control group. For this purpose, two pre-conditions are required: common support condition, and conditional independence assumption (CIA).

Common support condition needs an overlap between the observations of the treatment group and the control group. Conditional independent assumption also considers a vector of characteristics of countries (inflation rate, central bank governors turnover rate, GDP per capita growth, domestic credit to private sector, and trade openness), that describes the country without regarding the participation or non-participation in the treatment. Accordingly, if X is a vector of characteristics of a country, the conditional independence assumption is as follows:

$$E[Y_{it}^0|T_{it} = 1] = E[Y_{it}^0|T_{it} = 0] \qquad (2)$$

Then, the existing information of the control group individuals is used to derive a counterfactual value for each treatment group. The counterfactual value shows how a country that has participated in the treatment would have been if it had not been influenced by the treatment.

Therefore, conditional on X, a vector of countries' characteristics, the counterfactual value for unobservable expression $E[Y_{it}^0|T_{it} = 1]$ is estimated by the expression $E[Y_{it}^0|T_{it} = 0]$. This estimation requires a strict selection of the variables in vector X. On the one hand, a more strict X (a larger X) provides us a better matching process. Nevertheless, a larger X vector means that finding a

similar unit of the control group (with the same set of characteristics) for each unit of the treatment group is more difficult.

Rosenbaum and Rubin (1983) proposed the matching of the units to be carried out using the propensity score derived based on X vector. The propensity score, P(X), is the probability that a country belongs to the treatment group based on the characteristics in X vector. As Rosenbaum and Rubin (1983) noted, we have $p(X_{it}) = P(T_{it} = 1|X_{it})$. Therefore, the conditional independence assumption in terms of vector X holds for P(X) too. This probability is estimated for the entire sample (treatment and control group units) using the probit or logit model. In this estimation, the dependent variable is the participation or non-participation in the treatment (inflation targeting), and vector X stands for the vector of explanatory variables. The estimated coefficients calculate the propensity score for each country.

According to the common support assumption, the matching process requires that each treatment unit be matched with a control unit. Regarding the above discussion, the average treatment effect on the treated group (ATT) is obtained as follows:

$$\Delta_{ATT}^{PSM} = E[Y_{it}^1 | T_{it} = 1. p(X_{it})] - E[Y_{it}^0 | T_{it} = 0. p(X_{it})] \qquad (3)$$

5. Model estimation and results

In this section, the results of propensity score matching are analyzed to investigate the effect of inflation targeting adoption on the performance of indirect taxes in oil-exporting and oil-importing countries. Based on this approach, we can evaluate the reaction of the government's tax performance to the inflation targeting policy.

Table 2 presents the results of the probit model that shows the probability of adopting the inflation targeting policy (propensity score) for each observation. The matching of the units between the two groups is done using the scores. Note that the dependent variable in the probit estimation is inflation targeting.

Table 2: Probit estimates of propensity scores

	all countries	oil importing countries	oil exporting countries
trade openness	-0.0039154** (0.0016874)	0.001552 (0.001876)	-0.043447*** (0.007518)
domestic credit to private sector	0.0081953*** (0.0012595)	0.006605*** (0.001484)	0.033140*** (0.005851)
Inflation	-0.0747742*** (0.0117238)	-0.070769*** (0.013939)	-0.142416*** (0.027420)
GDP per capita growth	0.0005579 (0.0133433)	0.030933* (0.017892)	-0.068729* (0.037674)
central bank governors turnover	3.3522492*** (0.5780724)	3.687105*** (0.692145)	0.044308 (1.293885)
Constant	-1.4672596*** (0.2549928)	-2.027040*** (0.299604)	1.887127** (0.763409)

Note: standard errors are reported in parentheses. *, **, *** refer to statistical significance at the 10%, 5% and 1% respectively.

Table 3 also reports the results from estimating the propensity score matching model for components of indirect taxes.

Table 3: Matching estimates of treatment effect on the level of direct tax revenue components

Average Treatment on Treated (ATT)	all countries	oil importing countries	oil exporting countries
tax on goods and services	0.872*** (0.24011)	1.2467*** (0.27698)	1.0493 (1.4517)
general tax on goods and services	0.79119*** (0.20205)	1.0368*** (0.23073)	0.77398 (1.1635)
value-added tax	0.58457*** (0.17938)	0.98178*** (0.22484)	1.0348 (0.96069)
excise tax	-0.11199 (0.092824)	0.17294* (0.095014)	-1.1525* (0.63245)
tax on imports	-0.30961*** (0.071481)	-0.3655*** (0.083674)	-0.69623 (0.66026)

Note: standard errors are reported in parentheses. *, **, *** refer to statistical significance at the 10%, 5% and 1% respectively.

As seen in Table 3, for the group of all countries, the average treatment effect is positive and significant for the variables the tax on goods and services, general tax on goods and services and value-added tax, and for tax on imports is negative and significant, while this effect is negative and statistically insignificant for excise tax.

For the oil-importing countries, the average treatment effect is positive and significant for the tax on goods and services, general tax on goods and services,

and value-added tax. The coefficient of tax on imports is negative and significant, while for excise tax, the coefficient is positive and significant at the 10% significance level.

Finally, in the group of oil-exporting countries, all the coefficients of the treatment effect are insignificant. The coefficients related to the tax on goods and services, general tax on goods and services, and value-added tax are positive, and for excise tax and tax on imports, the coefficients are negative.

Inflation tax and institutional quality can be considered as alternative ways to the government's finance, because the higher institutional quality is, the more the tax collection performance is. Accordingly, policies such as inflation targeting that maintain inflation at a low level encourage the government to improve the tax system and increase tax resources by restricting the revenues from seigniorage.

Price stability and holding the inflation at a low level can compel the government to increase its tax efforts and reform tax system. According to the empirical observations, countries that implement the inflation targeting policy, on average, possess more efficient tax systems, compared with other countries.

In the oil-exporting countries, abundant oil revenues cause that the government's budget is severely dependent on these revenues, and governments do not undertake themselves revise and enhance the tax system. Consequently, the use of a rigorous policy such as inflation targeting does not lead to significant improvement and change in the tax system of these economies. Therefore, as stated in the economic literature, along with and parallel to adopting the inflation targeting policy, these countries should revise the dependence of their financial system on oil revenues and take a more rigorous policy to regard fiscal discipline.

Structural problems and the low level of institutional quality, which are due to defective economic structure, are large barriers to the improvement of their fiscal discipline state and tax performance efficiency. Conducting fundamental reforms in the tax system is a difficult and long process. Most oil-exporting countries are developing countries, usually having an inefficient tax system and poor fiscal discipline. Improving the institutional quality gradually by adopting and implementing the inflation targeting policy is a long-lasting process.

6. Conclusion and recommendations

This study investigated the effect of inflation targeting policy on indirect taxes for two groups of countries, oil-importing, and oil-exporting countries, using the propensity score matching over the period 1990-2016.

For the group of all countries and the oil-importing group, on average, the implementation of inflation targeting policy has increased the revenues from indirect tax collection. By maintaining the inflation rate at a low level and

restricting the seigniorage revenues, the inflation targeting policy compels the government to increase its efforts to collect taxes.

According to these empirical results, inappropriate fiscal policies should not prevent the countries from adopting the inflation targeting policy because this monetary policy framework can help some countries to have a disciplined fiscal policy due to their economic structure. The problem that whether or not the inflation targeting policy would be successful in the medium run depends on the ability of the authorities in designing and implementing the institutional reforms, such as making the tax system more efficient, along with the inflation targeting policy.

According to the results, for the oil-exporting countries, the adoption of this monetary policy framework has had no significant effect on the indirect taxes of these countries. This result is due to the severe dependence of these economies on oil revenues. Due to their intrinsic characteristics, oil-exporting countries are generally developing countries and possess a low-level institutional quality.

Many developing countries avoid implementing the inflation targeting policy due to the lack of independence of the central banks. This is because, in these countries, high dependence on seigniorage revenues and low level of financial development cause the central bank to face problems in implementing an independent monetary policy.

Structural characteristics of the developing and oil-exporting countries, such as unsustainable revenue resources and inefficient tax systems, result in many problems in implementing a reform policy and fundamental economic reforms and cause the reform process to be long-lasting and costly. In these countries, governments do not tend to move toward fiscal discipline and rigorous policies such as inflation targeting. Because inflation targeting prerequisites do not exist in the developing and oil-exporting countries, complementary policies should be adopted to manage and control the fiscal discipline strictly along with the implementation of inflation targeting. In this way, these countries can benefit from inflation targeting by reducing the dependency of their economy on oil revenues.

As an oil-exporting country, Iran is highly dependent on oil revenues and possesses a lower level of institutional quality and financial development, compared with the developed countries. Therefore, this country should meet the prerequisites of the inflation targeting policy, especially the independence of the central bank, and implement rigorous policies related to the fiscal discipline along with the inflation targeting policy.

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اثر هدف‌گذاری تورم بر عملکرد مالیات‌های غیرمستقیم در کشورهای منتخب: کاربرد الگوی تطبیق امتیاز تمایل

چکیده

چارچوب سیاست پولی هدف‌گذاری تورم، رویکرد پولی غالب در سراسر جهان شده است. ویلیامز (۲۰۱۵) معتقد است به یک مفهوم بسیار واقعی، اکنون تقریبا همه اقتصادها– به صورت آشکار یا ضمنی– هدف‌گذار تورم هستند. با توجه به گسترش روزافزون این سیاست، توجه به نحوه تأثیرگذاری آن بر متغیرهای کلان اقتصادی اهمیت یافته است. استفاده از الگوهای رایج اقتصادسنجی در ارزیابی اثربخشی هدف‌گذاری تورم باعث تورش انتخاب می‌گردد که جهت حل این مشکل از الگوی تطبیق امتیاز تمایل(Propensity Score Matching) استفاده می‌شود. هدف پژوهش حاضر ارزیابی تأثیر اتخاذ سیاست هدف‌گذاری تورم بر مالیاتهای غیرمستقیم و اجزای آن در مجموعه‌ای منتخب از دو گروه کشورهای واردکننده و صادرکننده نفت با استفاده از روش تطبیق امتیاز تمایل طی دوره زمانی ۱۹۹۰ تا ۲۰۱۶ می‌باشد. نتایج حاصل از پژوهش بیانگر آن است که اتخاذ سیاست هدف‌گذاری تورم به‌طور متوسط اثر مثبت و معنی‌داری بر درآمدهای مالیات غیرمستقیم در گروه کشورهای واردکننده نفت دارد. اما اثر آن بر درآمد مالیات غیرمستقیم در گروه کشورهای صادرکننده نفت از نظر آماری معنی‌دار نیست.

کلمات کلیدی: مالیات غیرمستقیم، هدف‌گذاری تورم، سیاست پولی، ارزیابی سیاست، تطبیق امتیاز تمایل.