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## Investigating the Relationship between Governance Indicators and Shadow Economy in Iran

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### Abstract

The shadow economy (SE) is a pathological normalcy, not only in developing countries but also in developed ones, causing disagreeable distortions in the real economy. The causes of the shadow economy can be traced back to actors who operate outside the formal sector to reap the benefits. The way these actors work can both affect the quality of governance and affect it. The right to comment and accountability, political stability and non-violence, government efficiency, the quality of governance laws, the rule of law and the control of corruption are indicators of governance evaluation in this regard. Therefore, in this study, using Hishao causality method, the causal relationship between these indicators with the shadow economy in Iran during the years 1995 to 2017 has been investigated. Findings show that government efficiency, rule of law and control of corruption have a two-way relationship with the shadow economy and the indicators of the right to comment and accountability, political stability and non-violence and the quality of governance laws have a one-way relationship with it.

**Keywords:** Shadow Economy, Governance, Corruption Control, Government Efficiency, Iran

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### Introduction

The shadow economy (SE) is a common parasitic feature of all the world's economies, causing significant distortions in both the economy and society. Numerous definitions

of shadow economy (informal, covert, underground, unregistered, unreported, illegal, underground, parallel) have been proposed in the sources, all of which have

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attempted to be controversial in nature. The most widespread and common definition, which focuses only on legal activities, is: "... those groups of economic activities and the proceeds of which circumvent or in some way circumvent laws, the tax system or government oversight" (Dell'Ano and Schneider, 2003 and Schneider & Enst, 2000). The size of the shadow economy affects the usefulness of macroeconomic policies, tax revenues, the quantity and quality of public goods and services, international competitiveness, the cost of government debt, the unemployment rate, the banking system, economic growth and productivity. For example, with the development of the shadow economy, tax sources are reduced, which in turn increases tax rates and reduces the quality and quantity of public goods and services (such as roads and health services). An increase in self-tax rates is an additional incentive to move further from the formal to the informal sector. In this way, a vicious circle is created and the shadow economy expands (Nelson, 2016; Schneider & Williams, 2013).

The causes of the shadow economy can be traced to the benefits that actors outside the formal sector enjoy. The first explanation, which is also one of the most common causes, the causes of the shadow economy can be traced to the benefits that actors outside the formal sector enjoy. The first explanation, which is one of the most common causes, is related to tax evasion. Research has addressed the importance of the overall quality of governance. Among various scholars, Johnson, Kaufman, and Zoido-Lobaton (1998) and Friedman, Johnson, Kaufman, and Zoido-Lobaton (2000) argue that weak rule of law exacerbates corruption in the formal economy. Other researchers

have suggested that restrictions on, for example, bureaucracy, labor, commercial law, or the quality of the institution or the pursuit of social interests are motivating for the shadow economy.

The quality of governance affects the shadow economy in three different ways (and vice versa). First, the low quality of governance (bureaucracy, freedom of law, weak rule of law, and dysfunctional legal system) is a major cause of corruption, and corruption in turn promotes the shadow economy. Johnson et al. (1998), Hendrix, Moto, & Kane (1999), and Friedman et al. (2000) provided empirical evidence that corruption and the shadow economy are complementary. Second, good governance keeps laws and taxes light. In contrast, when governance is weak, tax rates are usually high and the quality of public goods is low. High tax rates cause economic actors to be pulled out of the formal economy. Finally, the quality of governance and the shadow economy seem to be positively correlated. The quality of governance can be assessed with the concept of good governance. Good governance grew with the thought and theorizing of economists such as Douglas North, Ronald Coase, and most of all, Joseph Stiglitz, who can be placed in the institutionalism school (Meydori, 2006). According to UNESCO, good governance means the mechanisms, processes, and institutions through which citizens, groups, and civic institutions pursue their own interests, exercise their legal rights, and fulfill their obligations. They fulfill. Therefore, good governance is defined as "the process of decision-making and implementation of decisions with a focus on formal and informal actors" (Gholipour, 2005). The main characteristics of governance are the right to comment and accountability, political stability and non-

violence, government efficiency, quality of governance laws, rule of law and control of corruption (Mansouri Bidkani and Khosravi, 2021).

The World Bank, in a 1992 report entitled "Governance and Development," defines good governance as "the way in which power is spent managing a country's economic and social resources for development." (Wood, 2005). The term good governance refers to accountability in policy-making and policy-making. Relationships are focused and the promotion of governance in all dimensions has been considered a necessary condition for development (Dadgar and Nazari, 2017). The emergence of good governance in the late 1990s is a kind of dialogue with good government in the economy. It was even accepted by the International Monetary Fund and the United Nations, which opposed the idea. In line with good government, in the 1990s, several other types of government were introduced, which are: Efficient government is a government that has the characteristics of 1- Provides legal and adequate services to citizens with low time and cost 2- Its function It is consistent with the goals of the budget. 3- It seeks a balance between the receipts and payments of the budget, the government is account table. 1- It seeks to achieve economic stability. 3. Provides for its actions in line with consumer satisfaction. 4. Follows policies, strategies and programs in which it promotes a culture of productivity; Decisions are sufficiently transparent and provide regular and accurate reports on financial performance and emphasize the effectiveness of the budget in the public and private sectors (Dadgar, 1397). The causes of the shadow economy can be traced to the benefits that actors outside the formal sector enjoy. The first explana-

tion, which is one of the most common causes, is related to tax evasion. Research has addressed the importance of the overall quality of governance. Among various scholars, Johnson, Kaufman, and Zoido-Lobaton (1998) and Friedman, Johnson, Kaufman, and Zoido-Lobaton (2000) argue that weak rule of law exacerbates corruption in the formal economy. Other researchers argue that constraints such as bureaucracy, labor, business law, or the quality of the institution or the pursuit of social interests motivate the shadow economy. The quality of governance affects the shadow economy in three different ways (and vice versa). First, the poor quality of governance (bureaucracy, freedom of law, weak rule of law, and dysfunctional legal system) is a major cause of corruption, and corruption in turn promotes the shadow economy. Empirical evidence suggests that corruption and the shadow economy are complementary. Finally, the quality of governance and the shadow economy seem to be positively related. (Psychius et al., 2019) It can be stated that the term governance in economic literature is in the position of development literature and its purpose is to achieve sustainable human development and with-it poverty reduction, sustainable employment and welfare, protection and revitalization. The environment is growth and development (Sharifzadeh and Gholipour, 2003). Therefore, in this study, the causal relationship between governance indicators and the shadow economy in Iran during the years 1995 to 2018 is investigated.

## **Psychology**

### ***Granger causality test***

In order to test the causality between macroeconomic variables, Granger causality test is used. This test indicates that if the past values of the time series variable can significantly predict

the values of  $X_{t+1}$ , then we say  $y$  is the cause of  $X$ -ray and vice versa. In other words, the test is a kind of two-variable vector self-regression test as follows:

$$X_t = \alpha_0 + \sum_{i=1}^m \alpha_i X_{t-i} + \sum_{j=1}^m \beta_j y_{t-j} + u_t \quad (1)$$

$$y_t = \sigma_0 + \sum_{i=1}^m \sigma_i X_{t-i} + \sum_{j=1}^m \beta_j y_{t-j} + v_t \quad (2)$$

So, if  $x_t$  and  $y_t$  are time series variables and  $u_t$  and  $v_t$  are two regression perturbations,  $t$  also represent time and  $i$  and  $j$  are interrupt numbers. In this test, our hypotheses are as follows:

$$H_0 = \sum \beta_j = \sum \delta_j = 0 \quad (3)$$

$$H_1 = \sum \beta_j \neq 0, \sum \delta_j \neq 0 \quad (4)$$

In other words, hypothesis  $H_0$  is the absence of a causal relationship between the two variables  $x_t$  and  $y_t$  and the opposite hypothesis is the existence of at least one one-way causal relationship between  $x_t$  and  $y_t$ .

In the above relations, if the coefficients  $\delta_j$ ,  $\beta_j$  are significantly opposite to zero, then there is a two-way causal relationship between  $x_t$  and  $y_t$ . If  $H_0 = \sum \beta_j = \sum \delta_j = 0$  (statistically), then there is no causal relationship between the two variables, and if  $\beta_j$  is significantly opposite to zero and  $\sum \delta_j$  is equal to zero. In this case, there is a one-way causal relationship from  $y$  to  $x$ , and finally, if statistically  $\sum \beta_j = 0$  and  $\sum \delta_j \neq 0$ , then there is a causal relationship from  $x$  to  $y$ . (Gujarati, 2014).

### ***The Hsiao causality test***

The Hsiao causality test is in fact a modified or modified Granger causality test. It should be noted that the Granger causality test is very sensitive to the selection of the optimal

interval length. If in this test, the selected interrupt length is less than the optimal (real) interrupt length, the results will be biased, and if the selected interrupt length is more than the interrupt length. Is appropriate (real), in which case the estimated parameters will be inefficient? However, in this test, failure to select the appropriate and correct interrupt length will cause irreversible problems in the model. For this reason, using this test to determine causal relationships will be unreliable. To solve this problem, in 1981, Xiao proposed a systematic self-regression method for selecting the optimal interval length for each of the variables of a regression equation. This method is actually a combination of the two methods of Granger causality and Akaike final prediction error (AFPE), which is called the average squares of prediction error. With this account, the shortcomings of Granger causality test will be eliminated and can be cited for valid causal tests (Mehregan, 2006).

The method or technique of corrected Granger causality test (Hsiao) is two-step. In the first step, the self-regression models of the dependent variable are estimated, so that first the dependent variable is regressed on the same variable with an interval. The regression is then fitted using two dependent variable intervals and so on.

In fact, in this step,  $M$  regression is estimated as follows:

$$d(x_t) = \alpha + \sum_{i=1}^m \beta_i d(X_{t-i}) + \varepsilon_{it} \quad (5)$$

Where  $i$  is from 1 to  $m$  and represents the length of the interval. The choice of interval length depends on the sample size as well as the variable economic structure. To determine the optimal  $m$ , it is best to first select the interval length and then proportionally after each esti-

mate ( $i = 1, 2, \dots, m$ )  $m$  Calculate the FPE value for each of the regressions as follows:

$$FPE(m) = \frac{T + m + 1}{T - m - 1} ESS(m)/T \quad (6)$$

Where  $T$  represents the number of samples and FPE and ESS are the final prediction error and the sum of the error squares, respectively.

The optimal value of  $m$  ( $m^*$ ) is the interval length that generates the least FPE. Therefore, in the first step, we determine  $m^*$  and in the second step, using the selected  $m^*$ , the corresponding regression is estimated. But this time another variable is added and the process of repeating the estimation will be performed by considering the constant  $m^*$  and repeating the interval ( $n$ ) for the new variable.

In other words, selecting the optimal interrupt length for the new variable will be repeated as in the first step process. Therefore, the repetitive regressions will be as follows:

$$d(x_t) = \alpha + \sum_{i=1}^{m^*} \beta_i d(X_{t-i}) + \sum_{j=1}^n \delta_j d(y_{t-j}) + \varepsilon_{2t} \quad (7)$$

The iteration takes place until  $j$  changes from 1 to  $n$ , where  $n$  represents the interval length for the variable  $y_t$ . Therefore, the optimal interrupt length  $n$  ( $n^*$ ) is where the following FPE is minimized:

$$FPE(m^*.n) = \frac{T + m^* + 1}{T - m^* - 1} ESS(m^*.n)/T \quad (8)$$

Thus, in the above relation,  $m^*$  is the optimal interval length for the variable  $x_t$  and  $n$  is the interrupt length of the variable  $y_t$ .  $T$  is also the number of samples. As explained,

the optimal interval length  $n$  ( $n^*$ ) will be determined so that the numerical value of Equation (9) is minimized. By determining the optimal interval length  $n$  ( $n^*$ ), the following regression will finally be fitted.

$$d(x_t) = \alpha + \sum_{i=1}^{m^*} \beta_i d(X_{t-i}) + \sum_{j=1}^{n^*} \delta_j d(y_{t-j}) + \varepsilon_{2t} \quad (9)$$

Finally, to test the causality of the object between  $x_t$  and  $y_t$ , the causal result will be determined by deleting one of the variables and comparing it with the FPE corresponding to  $m^*$  and  $n^*$ , which also contains the deleted variable. Suppose we delete the variable  $y$  and obtain the FPE corresponding to the regression proportional to  $m^*$  and then regress the regression (9) and compare the corresponding FPE ( $n^*, m^*$ ) with the previous one. We can specify the causal direction between the variable  $x_t$  and  $y_t$ . The criterion for determining the direction of causality is as follows:

If we remove  $y_t$  from model (9) and get FPE ( $m^*$ ) and then compare it with the corresponding FPE of  $n^*$  and  $m^*$ , which also contains the variable  $y_t$ . The results will be as follows:

$$FPE(m^*) < FPE(m^*.n^*) \Rightarrow X \quad (10)$$

$$FPE(m^*) > FPE(m^*.n^*) \Rightarrow X \quad (11)$$

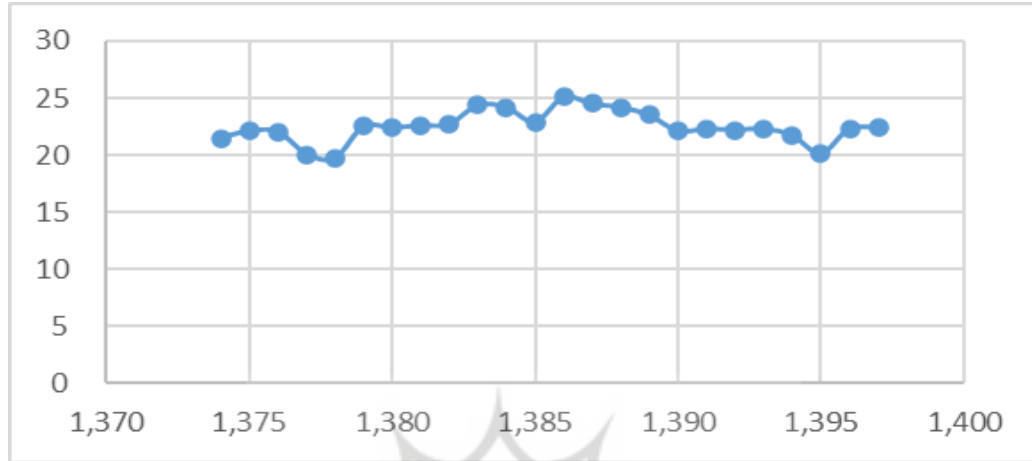
In other words, in the case of Equation (10),  $x$  is not the cause of  $y$  and cannot cause its changes, but in the case of Equation (10),  $x$  can be the cause of  $y$  and justify its changes. In Granger Xiao causality test, all variables need to be stable, and in case of instability, variables must first be differentiated to be stable, and then use their stable difference to perform the test (Hsiao, 1981).

## Results and discussion

### Estimation of the shadow economy

In this study, to use the volume of shadow economy, the results of the study of Qasem

Nejad et al. (2020) have been used. In this study, the volume of shadow economy is calculated using STATA software and MIMIC method as shown in the following diagram.



**Figure 1: The volume of shadow economy in Iran**

Source: Qasem Nejad et al. (2020)

### Check the stationary test

To examine the stationary of inflation, the Phillips-Prone test was used, which based

on the test result, this variable has a single root and is stationary.

**Table 1:**

Result	P-value	Test statistics	Process	Width Of origin	Variable
$H_0$ Rejection of the hypothesis	0/04	2/14	+	+	Shadow economy
$H_0$ Accepting the hypothesis	0/96	-0/66	+	+	responsiveness
$H_0$ Rejection of the hypothesis	0/00	-7/22	+	+	Responsiveness (-1)
$H_0$ Accepting the hypothesis	0/6	-1/93	+	+	Political stability
$H_0$ Rejection of the hypothesis	0/00	-12/7	+	+	Political stability (-1)
$H_0$ Accepting the hypothesis	0/32	-2/5	+	+	Government efficiency
$H_0$ Rejection of the hypothesis	0/00	-9/16	+	+	Government efficiency (1)
$H_0$ Rejection of the hypothesis	0/02	-3/96	+	+	Quality rules
$H_0$ Accepting the hypothesis	0/63	-1/86	+	+	Rule of Law
$H_0$ Rejection of the hypothesis	0/02	-0/42	+	+	Rule of Law (-1)
$H_0$ Accepting the hypothesis	0/63	-1/93	+	+	Corruption control
$H_0$ Rejection of the hypothesis	0/00	-4/98	+	+	Corruption control (-1)

As can be seen in the table above, the variables of shadow economy, accountability and quality of laws remained at the level of permanence, and the variables of accountability, political stability, government efficiency, rule of law and control of corruption remained constant

Conclusions are now drawn about the relationship between governance indicators and the shadow economy. The main issue is the direction of causality between the variables by which variable; That is, in pairwise studies of these variables, which of the two variables in question causes other changes. Causality test is used to investigate this issue.

According to the time period used in this research, the number of test intervals in both directions is 5. The results of the Hsiao causality test for causality between the indicators of governance (right to comment and accountability, political stability and non-violence, government efficiency, quality of governance, rule of law and control of corruption) and shadow economy are given in the following tables.

4-5 The causal relationship between the right to comment and accountability and the shadow economy.

The right to comment and respond to the shadow economy is given in Table 2.

**Table 2: Hsiao causality test results the right to comment and respond to the shadow economy**

5	4	3	2	1	Number of interruptions
1/07	1/26	1/44	1/39	1/28	$FPE(i)$
1/21	1/1	1/06	1/2	1/16	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of FPE (i) in interval 5 was obtained with the value of 1.07 and the lowest value of FPE (i ^ \*. J) was obtained in interval 3 with the value of 1.06. A comparison of these two optimal values shows that;  $FPE(i^*.j) < FPE(i^*.j)$

and consequently the index of the right to comment and accountability is the cause of Iran's shadow economy

The results of Hsiao causality test from shadow economy to the right to comment and respond are given in Table 3.

**Table 3: Hsiao causality test results from shadow economy to the right to comment and respond**

5	4	3	2	1	Number of interruptions
0/004847	0/00483	0/00495	0/00503	0/0061	$FPE(i)$
0/005625	0/006282	0/006466	0/005858	0/005433	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of FPE (i) in interval 4 was obtained with the value of 0.00483 and the lowest value of FPE (i ^ \*. J) was obtained in interval 1 with the value of 0.00543. A comparison of these two optimal values shows that  $FPE(i^*.j) > FPE(i^*.j)$  and therefore the shadow econ-

omy is not the cause of the right to comment index.

4-4 The relationship between the causality of political stability and non-violence and the shadow economy

The index of political stability and non-violence to the shadow economy is given in Table 4.

**Table 4: Results of the Xiao causality test of political stability and non-violence to the shadow economy**

5	4	3	2	1	Number of interruptions
1/07	1/26	1/44	1/39	1/28	$FPE(i)$
1/23	1/09	1/06	1/2	1/17	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of  $FPE(i)$  in interval 5 was obtained with the value of 1.07 and the lowest value of  $FPE(i^*.j)$  was obtained in interval 3 with the value of 1.06. A comparison of these two optimal values shows that

$FPE(i^*.j) < FPE(i^*)$  and as a result the index of political stability and non-violence is the cause of Iran's shadow economy.

The results of the Xiao causality test from shadow economy to political stability and non-violence are given in Table 5.

**Table 5:**

5	4	3	2	1	Number of interruptions
0/0479	0/0483	0/0478	0/0444	0/0448	$FPE(i)$
0/063	0/058	0/0567	0/0568	0/056	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of  $FPE(i)$  was obtained in interval 2 with the value of 0.0444 and the lowest value of  $FPE(i^*.j)$  was obtained in the interval 1 with the value of 0.056. A comparison of these two optimal values shows that  $FPE(i^*.j) > FPE(i^*)$  and therefore the shadow economy is not the

cause of the index of political stability and non-violence.

4-5 The causal relationship between government efficiency and the shadow economy.

From the government efficiency index to the shadow economy is given in Table 6.

Table (6).

**Table 6: Results of Hsiao causality test of government efficiency to shadow economy**

5	4	3	2	1	Number of interruptions
1/07	1/26	1/44	1/39	1/28	$FPE(i)$
0/84	0/82	1/02	0/93	0/85	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of  $FPE(i)$  in interval 5 was obtained with the value of 1.07 and the lowest value of  $FPE(i^*.j)$  was obtained in interval 4 with the value of 0.82. A comparison of these two optimal values shows that

$FPE(i^*.j) < FPE(i^*)$  and consequently the government efficiency index is the cause of Iran's shadow economy

The results of Hsiao causality test from shadow economy to government efficiency are shown in Table 7.

**Table 7: Xiao causality test results from shadow economy to government efficiency**

5	4	3	2	1	Number of interruptions
0/0087	0/009	0/010	0/0101	0/011	$FPE(i)$
0/0084	0/016	0/014	0/013	0/012	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of  $FPE(i)$  in interval 5 was

obtained with the value of 0.0087 and the lowest value of  $FPE(i^*.j)$  was obtained



in interval 5 with the value of 0.0087. A comparison of these two optimal values shows that  $FPE(i^*.j) < FPE(i^*)$  and consequently the shadow economy is the cause of the government efficiency index.

4-6 The causal relationship between the quality of governance laws and the shadow economy.

The quality index of governance laws to the shadow economy is shown in Table 8.

**Table 8: Results of the causal test of the quality of governance laws into the shadow economy**

5	4	3	2	1	Number of interruptions
1/07	1/26	1/44	1/39	1/28	$FPE(i)$
1/13	1/05	1/02	0/96	1/14	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of  $FPE(i)$  in interval 5 was obtained with the value of 1.07 and the lowest value of  $FPE(i^*.j)$  was obtained in interval 2 with the value of 0.96. A comparison of these two optimal values shows that

$FPE(i^*.j) < FPE(i^*)$  and consequently the quality index of governance laws is the cause of Iran's shadow economy

The results of Hsiao causality test from shadow economy to the quality of governance laws are given in Table 9.

**Table 9:**

5	4	3	2	1	Number of interruptions
0/195	0/205	0/213	0/218	0/201	$FPE(i)$
0/36	0/324	0/308	0/283	0/281	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of  $FPE(i)$  was obtained in interval 5, with a value of 0.195 and the lowest value of  $FPE(i^*.j)$  in interval 1 with a value of 0.281. Come.

and therefore the shadow economy is not the cause of the quality index of governance laws.

4-7The causal relationship between the rule of law and the shadow economy

A comparison of these two optimal values shows that  $FPE(i^*.j) > FPE(i^*)$

The rule of law index to the shadow economy is given in Table 10.

**Table 10: Results of the causal test of the rule of law to the shadow economy**

5	4	3	2	1	Number of interruptions
1/07	1/26	1/44	1/39	1/28	$FPE(i)$
0/76	0/86	0/92	0/84	1/28	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of  $FPE(i)$  in interval 5 was obtained with the value of 1.07 and the lowest value of  $FPE(i^*.j)$  was obtained in interval 4 with the value of 0.76 A comparison of these two optimal values shows that

$FPE(i^*.j) < FPE(i^*)$  and consequently the rule of law is the cause of Iran's shadow economy.

The results of Hsiao causality test from shadow economy to rule of law are given in Table 11.

**Table 11: Hsiao causality test results from shadow economy to rule of law**

5	4	3	2	1	Number of interruptions
0/0048	0/0062	0/0078	0/009	0/0109	$FPE(i)$
0/0031	0/0032	0/0041	0/007	0/0064	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of FPE (i) in interval 5 was obtained with the value of 0.0048 and the lowest value of FPE ( $i \wedge *. J$ ) was obtained in interval 5 with the value of 0.0031. A comparison of these two optimal values shows that  $FPE(i \wedge *. J) < FPE(i \wedge *)$

and consequently the shadow economy is the cause of the rule of law index.

The causal relationship between corruption control and the shadow economy 4-8.

From the Corruption Control Index to the shadow economy is given in Table 12.

**Table 12: Results of the causal test of corruption control to the shadow economy.**

5	4	3	2	1	Number of interruptions
1/07	1/26	1/44	1/39	1/28	$FPE(i)$
0/91	0/85	0/8	0/017	1/19	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of FPE (i) in interval 5 was obtained with the value of 1.07 and the lowest value of FPE ( $i \wedge *. J$ ) was obtained in interval 3 with the value of 0.8. A comparison of these two optimal values shows that

$FPE(i \wedge *. J) < FPE(i \wedge *)$  and consequently corruption control is the cause of Iran's shadow economy.

The results of Hsiao causality test from shadow economy to corruption control are given in Table 13.

**Table 13: Hsiao causality test results from shadow economy to corruption control**

5	4	3	2	1	Number of interruptions
0/0061	0/0062	0/0069	0/0067	0/0094	$FPE(i)$
0/0057	0/0058	0/0054	0/0078	0/0095	$FPE(i^*.j)$

As can be seen in the table above, the lowest value of FPE (i) in interval 5 was obtained with the value of 0.0061 and the lowest value of FPE ( $i \wedge *. J$ ) was obtained in interval 3 with the value of 0.0054. A comparison of these two optimal values shows that  $FPE(i \wedge *. J) < FPE(i \wedge *)$  and consequently the shadow economy is the cause of the corruption control index.

### Conclusions and suggestions

The findings of this research can be expressed in two parts. First, the indicators of governance that have a two-way causal relationship with the shadow economy, and second, the indica-

tors that have a one-way causal relationship with the shadow economy. Based on these findings, the efficiency of government, rule of law and control of corruption have a two-way causal relationship and the indicators of the right to comment and accountability, political stability and non-violence and the quality of governance laws have a one-way relationship. The efficiency of the government is such that its low-level leads to an increase in the size of the shadow economy, and on the other hand, an increase in the size of the shadow economy affects the efficiency of the government and leads to a decrease. This shows that the declining quality

of governance affects it as much as it affects the shadow economy. Strengthening the efficiency of the government through agility, transparency of information and empowerment of the government in its various pillars can be effective in this regard. The interaction of the rule of law and the shadow economy also doubles the need for full implementation of the law in the country. A large part of the problems, such as the shadow economy, is the incomplete implementation of the laws, which is also affected by the shadow economy. Lack of control affects corruption as much as it affects the shadow economy. This two-way causal relationship shows that if corruption is not controlled, the shadow economy will be strengthened and the strengthening of the shadow economy itself will lead to the impossibility of controlling corruption. Therefore, strengthening anti-corruption government and popular institutions and increasing sensitivities to corrupt events in the country can be very effective in reducing the size of the shadow economy. Political stability and non-violence as well as improving the quality of governance laws can be very effective in reducing corruption. Therefore, maintaining political stability and lasting security in the country along with improving the quality of laws can be important in reducing the shadow economy.

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