

Uncertainty and Private Investment: Evidence from Iran

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Abstract: This study investigates the effect of uncertainty of government's current expenditures and development expenditures on Private sector investment in Iran during 1959 to 2008. Inflation rate and GDP are considered as explanatory variables in this study. Co-integration and vector error-correction models are used to obtain the estimates of the co-integrating relations and the long-run dynamics, respectively. The uncertainty measure generated from generalized autoregressive conditional heteroscedastic (GARCH) process. The results show that both uncertainty of government's current expenditures and development expenditures have significant negative effect on private investment in the long run while in the short run, uncertainty of current government expenditures has no significant effect on private sector investment but uncertainty of development government expenditures causes private investment to increase. The effect of inflation and GDP are negative and positive respectively both in the long run and in the short run.

Key words: Uncertainty, Government spending, private investment, GARCH model, Vector error correction (VECM).

INTRODUCTION

After consumption, investment constitutes one of the most important and yet unstable part of total demand in every country, which is considered as one of the causes of cyclical fluctuations. Most of the relevant theories point to the instability of this variable on the one hand, and on the other hand, they emphasize the undeniable impact of this parameter on economic growth. The aim of government policies in Iran is the increase of private investment, and this plan has been continually supported and pursued by the government through enacted laws and policies. However, the interfering policies of the government as well as the government's sources of revenue and the sensitivity of these revenues, which rely mostly on oil sale, and also the existence of a budget deficit all have caused the actually allocated amounts of funds to fall short of the approved budget, especially for development expenditures, and this has created doubt and uncertainty among the investors in the private sector. Therefore, in addition to the direct effect of the government's economic policies, the uncertainty resulting from these policies is also a matter of concern for private investors. In this article, in addition to reviewing the balancing relationship between the main variables of the uncertainty model related to the government's current and development expenditures and private investment, the relationship between the model's other explanatory variables (inflation rate and gross domestic product) and the dependent variable (private investment) will also be evaluated. In section 2, the theoretical principles of investment are explained. Literature review is introduced in section 3. Section 4 deals with the uncertainty measure. In section 5, the specification of the econometric model and the method of estimation and finding analysis have been presented and discussed; and finally section 6, concludes the final results of the paper.

2. Theoretical Principles:

2.1 Uncertainty of Government Expenditures:

One of the most important macroeconomic topics is the government sector and the expenditures associated with it. Generally, government expenses in Iran exist in two forms of current and development expenditures which, in the new classification of expenditures, have been designated as 'expenditure credits' and 'ownership of capital assets'. In Iran, a major portion of government revenues comes from oil sales; therefore, oil is a source that provides the funds for government spending. But since in Iran, the price of oil is a variable which is not in complete control of the government and which is determined outside the economy and imposed on the country, the fluctuations and uncertainties that exist for the price of oil and consequently for oil revenues are one of the factors that affect government expenditures and create the uncertainty of this parameter. In general, every government has a source of revenue. In Iran, the development projects are funded by oil revenues, and the current expenditures are provided by both the tax and oil revenues. So, when the government has to deal with a fluctuating and uncertain price

of oil which results in an uncertain and fluctuating source of revenue, it would be difficult to plan and budget the intended projects and consequently to allocate the predicted oil revenues to the current and development expenditures. This can lead to the emergence of uncertainty in these areas. Of course, other factors can also cause uncertainty in government expenditures. Doessel, D. P. and Valadkhani (2003) investigated the subject of government spending in Fiji Islands, which is a country with medium level of income. In this country, political instability is the leading cause of economic uncertainties. Moreover, a vast range of issues such as commercial and political cycles and also major variables like inflation, unemployment, pressures by factions, financial misconceptions and exogenous shocks such as oil embargo, etc. are some of the factors that strongly affect government expenditures. For example, Wagner (2005) has concluded that the structure of the government sector varies with economic changes and with the rise in revenues; and according to the views of Peacock and Wiseman (1967), government expenditures can also be affected by factors such as war. Castells, Sesteller and Vilalta (2002) have examined the behavior of government expenditures parameter in response to tax shocks in Spain, and have taken into consideration, both the variables of revenues and expenses. They have stated that in the case of a shock, the usual expectation is the reduction of development expenditures rather than current expenditures. In Iran, the objective of government policies has been the increase of private investment; and by passing the needed laws and directives, the government has continually pursued this goal. However, the interfering policies of the government as well as the government's sources of revenue and the sensitivity of these revenues, and also the existence of a budget deficit have caused the actually allocated amounts of funds to be different from the approved budget, especially for development expenditures, and this has created doubt and uncertainty among the private investors. In the following subsections, each of the factors that cause uncertainty in government expenditures will be examined in more details.

A) Government's Interfering Policies:

One of the influential tools affecting a country's economy is the government's monetary policies, and since the use of these policies indicates government's interference in economy, it creates an atmosphere of uncertainty for the economic agents (especially the private sector). And in situations where government policies undergo repeated changes, besides the direct effect of the government's economic policies, the uncertainty resulting from these frequent policy changes can become a grave point of concern for private investors. The uncertainty arising from government interference can express in more exact terms, the impact of government on economic growth. It takes some time to know the feasibility and profitability of certain types of economic activities, and the potential investors have to take many risks in order to invest in these activities. In these cases, the government interferes in the economy by bearing the costs of construction, startup and operation of these units. So, the government interference in economic activities in recent times are justified with regards to the shortages, deficiencies and the mentioned phenomena that exist in the economy; and the governments have entered these economic activities with the presumption that by removing the deficiencies of market mechanism, establishing the economic facilities and infrastructures and by optimally allocating the needed resources, they can provide the maximum level of prosperity and take care of the society's basic needs. Thus, in most countries, especially in the third world countries, many government units and institutions were rapidly established, and they allocated to themselves, a considerable amount of gross domestic product and fixed capital. It can be generally stated that governments participate in economic activities for economic, social and political reasons; however, it should also be pointed out that extensive intervention of a government in economic affairs is accompanied by a series of adverse outcomes including the undesirable and unlawful use of monopoly, establishment of widespread bureaucracy, lack of work motivation and political meddling in economic decisions, which are considered as cases of government failure and which create a kind of uncertainty for private investment. Political instability is another factor that can be mentioned as a cause of uncertainty. The constant change of governments, political fights, sociopolitical upheavals that emerge as revolutions in extreme cases and political assassinations are all examples of political instability. In a political system in which the government is chosen through elections, all the above cases can be associated with the probability of government change; in other words, how much the current government is sure of being reelected. The less confident the current government is of the election results and the weaker its chances are of staying in power, the larger the time preference rate of the government and the shorter the time horizon of financial policies will be. The shortsightedness of financial policymakers definitely affects a government's combined expenditures. Governments that have a short time horizon and see their stay in power as short-lived don't have such a high incentive for investment. It should be mentioned that in Iran's economy, the governments in charge have always tried to implement some kind of economic privatization; but on the one hand, the development budgets have brought some kind of ownership to the government, and on the other hand,

various laws have tried to restrict government ownership; this has led to the emergence of uncertainty in government policies. Moreover, although in Iran's political system, there has been no competition between parties in the classical and conventional sense, the potential factionalism that occasionally emerges in the form of unorganized, nonpartisan and vaguely-defined coalitions, and also the dissimilar distribution of political, religious, social and military components of political power have caused the governments to continually be on the verge of losing their position of authority, and they have felt that they lack adequate decision making and policymaking power in many conventional domains in which the governments exercise their authority. So, the probability of losing political power and plunging into instability has always loomed over different administrations. Therefore it can be said that the factors that shorten the time horizon of the financial policymakers and put the government in an unsecure position, and also the instability in government size and wholeness, which itself can lead to economic instability, are parameters that cause uncertainty in government expenditures; and this results in the reduction of investment by the private sector.

B) Dependence of Budget on Fluctuating Oil Revenues:

In countries whose economy depends on oil revenues, this source of income can have various impacts. These revenues provide a major source of foreign currency for the country and a significant portion of the government's income; and due to the dominant role the government plays in the economy of these countries, oil revenues determine the amount of economic growth, national reserves, investment, exchange rate, inflation rate, etc., and thus the fluctuations of oil revenues lead to socioeconomic ups and downs in these countries. In other words, the economic and political crises in the world market are rapidly transferred to oil producing countries through the fluctuations in the price of oil. Similar to the above cases, Iran's economy is mostly dependent on revenues generated from the export of oil, and the fluctuations of the oil price and the production level set by the OPEC organization have always made the oil revenues a risky source of income for the government. This dependence drastically influences economic growth, so that under the conditions of reduced oil revenues, its recessionary effect on vast areas of economic activities can be observed. In severe fluctuations of oil revenues, the dependence of budget on these revenues can upset the management of major economic and financial schemes in the country; in particular, at the time of oil revenue decline, since the government's current expenditures show less flexibility against reduction, the development expenditures are reduced; and the reason for this is the higher stickiness of current expenditures relative to development expenditures. Development expenditures are totally funded by oil revenues; but part of the current expenses is provided by tax revenues. However, since tax revenues are not sufficient to cover the current expenditures, oil revenues fill the gap. The government's severe dependence on oil revenues materializes either through the import of consumer and intermediary goods or by providing for the current expenditures; and here, when the government faces reduced oil prices, it runs into the difficulty of paying for the current expenditures and has to either borrow or reduce the development expenses, both of which bring about numerous problems. Based on the rules and regulations, the fulfilling of the current expenditures has been guaranteed by the government, and under different economic conditions, the government's public obligations cannot be overlooked and the government has to spend annually to discharge these obligations (e.g., paying the salaries of its employees). In fact, when the government doesn't receive its planned revenues and there is a budget deficit, it has to allocate a smaller amount of funds than the approved budget, and since the government's current expenditures cannot be disregarded, the development expenditures are sacrificed in favor of the current expenditures. In other words, the allocated amount for current expenditures is close to the approved amount, and it is the development expenditures budget that deviates from the approved figure. The uncertainty that in fact results from this lack of fulfillment of the government's development expenditures is a factor which adversely affects private investment and economic growth.

3. Literature Review:

Few studies have been carried out on the relationship between uncertainty and investment in Iran's economy. In the last two decades, the subject of the connection between uncertainty and investment has been pursued in the studies of industrial economies. It can be said that, in Iran's economy, private investment is mostly influenced by six groups of variables. The first group constitutes variables that express the aggregated demand level on the one hand and the ability to save assets on the other hand; different variables such as gross national product, gross domestic product, rate of growth of gross and domestic national products, national income and its growth rate, and per capita income and its growth rate. The second group of variables indicates the cost of using capital or the cost of investing in machinery and facilities. In this category, variables such as the interest rate, rate of return on investment (especially in the commercial and service businesses), and the inflation rate can be mentioned. The third group consists of variables that show the impact of government expenses associated with the

development and investment matters on private investment; this effect can be positive or negative. The fourth group includes variables that demonstrate the access of the private sector to financial and credit resources; variables such as the total amount of credit extended to the private sector, credits granted to the industries section and the term of the granted loans indicate the effect of these factors on private investment. Fifth is the variable of access to foreign currency sources and the existing facilities in this area. Private sector has limited access to foreign capital market, and the implementation of any investment plan requires the import of intermediary and capital goods and spare parts and such, which itself necessitates sufficient supply of foreign currency; otherwise, investment activities will be drastically limited. And finally, the sixth group comprise the qualitative variables which, although are not shown quantitatively, they exert tremendous influence on private investment matters. Examples of these variables include the cultural issues, political stability, government control on economic affairs in matters such as issuing permits for certain activities, issuing agreements in principle, and the ownership and labor laws, etc. Understanding the effects of uncertainty on the decision variable has preoccupied the economists for a long time. The factor of risk and incomplete markets probably cause a negative relationship between investment and uncertainty. Hartman (1972) and Abel (1985) realized that when the function of interest versus price has a convex shape, the increase in price uncertainty leads to the increase of investment by competitive companies. They believe that if the ultimate accumulation of capital is an increasing function of price, the uncertainty of price will increase the level of investment. Furthermore, recent literature by Pindyck (1988) regarding investment irreversibility has shown that the increase in uncertainty lowers the investment level, which is indicative of complete markets. Caballero (1991), Abel and Eberly (1994), and Dixit and Pindyck (1994) have investigated how uncertainty affects private investment and how it influences economic growth in this way. In an article titled "Macroeconomic uncertainty and private investment in LCD countries: an empirical review", Serven (1998) uses a wide range of information for developing countries to present a complete estimation of the effect of uncertainty on private investment. He estimates the uncertainty of five key macroeconomic variables (inflation, price of capital commodities, production growth (by measuring GDP), trade periods, and the real exchange rate) and evaluates their relationship with private investment. The results of his model emphasize the strong connection between investment and uncertainty. The first three variables are associated with total investment profitability. Inflation is mostly considered as a general criterion of economy, and its unpredictable instability can be seen as a sign of macroeconomic uncertainty. The price of capital commodities is associated with the cost of utilized capital in a limited way, and its instability can be seen as a negative sign of uncertainty in total investment profitability. Lensink, Hong and Sterken (2000), in an article titled "Does uncertainty affect economic growth? An empirical analysis", examine this influence. They consider measures of export uncertainty, government policy uncertainty and price uncertainty for the evaluation of a growth model. The statistical society of this study comprises 138 developing and developed economies in the period 1970-1995. The results of this study indicate that uncertainty has an adverse effect on economic growth, and the authors emphasize the importance of the stability of export and economic policies.

4. Uncertainty Measures:

It is necessary to separate sample variation from what we want to measure, the real uncertainty that influences the investment decisions. The first measure can overestimate the second by including not only the unpredictable changes in the variables, but possibly also the changes predictable from the variable's recent history. Lensink, (2002) argued that the principal directions in the evaluating uncertainty are: (i) standard deviation of the variables, (ii) dispersion of the unpredictable part of a stochastic process, (iii) generalized autoregressive conditional heteroskedasticity model of volatility (GARCH). The volatility of government's current expenditures and development expenditure were considered as source of uncertainty. The uncertainty measure is constructed as the conditional standard deviation of the innovation to each of the variables considered resulting from a GARCH model with no other regressors than lags of the dependent variable. Therefore, the uncertainty could be considered as the variance of the unpredictable part of a GARCH process. A GARCH (1, 1) model can be described by the following equations:

$$Y_t = X_t\theta + \xi_t \tag{1}$$

$$\sigma_t^2 = \omega + \alpha\xi_{t-1}^2 + \beta\sigma_{t-1}^2 \tag{2}$$

where: Y_t represents the variable whose volatility we want to evaluate and σ_t^2 is its conditional variance at moment t obtained on the basis of past information, a function of the constant term ω ; news about volatility from the previous period, the ARCH term given by the volatility from previous period

measured as the lag of the square residual from equation (1), ξ_{t-1}^2 and The term GARCH, last period's forecast variance, σ_{t-1}^2 . The GARCH (1, 1) model could have some problems:

- (i) Equation (1) could present serial correlation for residuals;
- (ii) Some supplementary ARCH effect could be present.

The first problem could be solved by adding more autoregressive terms for Y in (1) if the p-value of the Ljung-Box Q-statistic is below 0.05. Also, from the Lagrange multiplier test LM; if some supplementary ARCH effects exist the equation (2) will be changed to:

$$\sigma_t^2 = \omega + \sum_{i=1}^p \alpha_i \xi_{t-i}^2 + \sum_{j=1}^q \beta_j \sigma_{t-j}^2 \quad (3)$$

Where: q represent the order of the moving average ARCH terms. Thus, we extend the model to GARCH (q, p).

5. Model Estimation:

To investigate the relationship between uncertainty of government's current expenditures and development expenditures and private investment, the statistics and data of Iran's central bank (www.cbi.ir) have been used. These are annual data, and the time interval used for model estimation is from the year 1951 to 2010. Also, the Vector Error Correction Model (VECM) has been employed for the analysis of time series. In this article, in addition to uncertainty of government's current expenditures and development expenditures, the macroeconomic variables such as gross domestic product and inflation rate have also been considered. Of different criteria for the calculation of uncertainty, Generalized Auto Regressive Conditional Heteroskedasticity (GARCH) model has been used to measure the uncertainty of government's current expenditures and development expenditures; and these variables have been employed as two of the existing independent variables of the model. The regression function corresponding to private investment include the dependent variable (private investment variable (PI)), uncertainty of government's current expenditures and development expenditure (CEGFV, IEGFV), gross domestic product (GDP), inflation rate (P), which are used as explanatory variables. The model used in this article is defined as follows:

$$\text{Log}(PI_t) = C + \alpha_1 \text{Log}(CEGFV_t) + \alpha_2 \text{Log}(IEGFV_t) + \alpha_3 \text{Log}(Y_t) + \alpha_4 \text{Log}(P_t)$$

5.1 Empirical Results:

To evaluate how stationary the variables are, the generalized Dickey-Fuller test has been used. By comparing the Dickey-Fuller statistics with the Mackinnon critical values, all the variables are at the non-stationary level; so, the first order differences of the variables have also been subjected to the stationary test. The results of this test show that the first order difference of all the variables is stationary at the 95% level. Therefore, the conclusion is that, all the model variables are integrated of the first order or I (1). The preferred private investment functions would have to pass a number of diagnostic tests. These tests include the test the no serial correlation by Godfrey (1981), ARCH-LM (Auto-Regressive Conditional Heteroskedasticity Lagrange Multiplier) test of heteroskedasticity and *Jarque-Bera* test of normality. To test the specification of the estimated function we applied RESET test proposed by Ramsey (1969, 1970). In this investigation, following the performed evaluations, the best estimated model for the uncertainty in the lag of (0 and 1) has been obtained from the GARCH model. The hypothesis of unit root and the order of integration of each series with ADF test were investigated. All data series are transformed into log form. Error term is free from the problem serial correlation. The ADF is applied on the log form with an intercept and a linear trend term included in the ADF test equation of these variables. To test the null hypothesis, t-values are compared with the tabulated value given in Mackinnon (1991). The results are presented in table 1. The results show that all variables are integrated of order one I (1). Therefore these series require first differencing to remove the stochastic trends from the data. The ADF test is also applied on the first difference of the series. The results provide ground for co integration analysis and indicate the variables (i.e., LPI_t , LP_t , LY_t , $LCEGFV$ and $LIEGFV$) to be included in the co integration analysis.

Table 1: Testing Order of Integration by Augmented Dickey-Fuller Test

Variables Level	ADF-stats	critical values (Level 5%)	Variables First Difference	ADF-stats	critical values(Level 5%)	Result
LPI _t	-1.23	-2.92	Δ LPI _t	-5.87	-2.98	I(1)
LY _t	-2.45	-3.28	Δ LY _t	-3.05	-2.45	I(1)
LCEGFV _t	-1.23	-1.84	Δ LCEGF _t	-10.23	-1.64	I(1)
LIEGFV _t	-0.35	-1.92	Δ LIEGFV _t	-5.17	-1.14	I(1)
LP _t	0.78	-2.12	Δ LP _t	-2.59	-1.30	I(1)

*Significant coefficients have a 95% confidence level

In view of the optimum lags determination test results in the (VAR) model and based on the Akaiake criterion, two lags were selected as suitable lags for the model (table2), and then, the existence of a long-term relationship between the variables and the (VECM) model was investigated. This test should be performed based on the Johansen method, trace statistics and the maximum Eigen value; and if this statistics is larger than the critical values at the considered significant levels, the null hypothesis which states that there is no long-term relationship between variables can be rejected, and following that, hypotheses stressing the existence of at most one or two long-term relationships between variables can be contemplated. According to the results of this test in table3, both the trace statistics and maximum Eigen value confirm the existence of long-term relationship between model variables at 95% confidence level.

Table 2: Optimum lags determination test results in the (VAR) model.

Lag	HQC	SBC	AIC	FPE	LR
0	12.55	11.57	11.57	0.16	-
1	2.39	2.54	2.34	1.33	362.87
2	3.81*	2.75*	3.65*	7.70*	55.82
3	3.32	2.21	2.61	1.09	24.94

Table 3: Co-integration level determination test results in model.

Null Hypothesis	Alternative Hypothesis	Eigen value	Critical value (5%)	trace statistic
R=0	R >0	0.41	77.97	94.20
R=1	R >1	0.45	57.06	59.54
R=2	R >2	0.37	34.18	32.68
R=3	R >3	0.12	27.20	17.09
Null Hypothesis	Alternative Hypothesis	Eigen value	Critical value (5%)	Max-Eigen
R=0	R >0	0.51	30.90	38.05
R=1	R >1	0.67	24.78	27.96
R=2	R >2	0.25	21.27	15.89
R=3	R >3	0.27	13.89	7.99

Considering the results of Johansen test, which emphasizes the existence of at least one long-term relationship between model variables, it would be necessary to estimate this relationship on the basis of the vector error correction model. Since the number of lags of the (VECM) model in difference of variables is associated with the number of lags of variable levels in the (VAR) model, knowing the quantity of lags in this model, the quantity of lags of variable differences in the (VECM) model can be obtained. In light of the fact that the optimum number of lags in the (VAR) model is 2, the lags of the difference of variables in the (VECM) model will be one (1). In fact, the vector error correction model corresponding to private investment is obtained by considering the existence of a long-term relationship, a lag of one (1) in the difference of variables, and by considering the ordinate from the point of intercept in the short-term and long-term relationships. In the obtained log-term relationships, the vector error correction model separately evaluates the pure effects of each explanatory variable on dependent variables; in a sense, the collinear relationship between variables in long-term relationships is counteracted by the estimated model. So, the ultimate model of long-term and short term private investment is presented as follows respectively:

Log(P_t) = -11.16605-0.030234 Log(CEGFV_t) -0.103401 Log(IEGFV_t) +1.09589Log(Y_t) -0.18146 Log(P_t)			
(0.01572)	(0.01916)	(0.09137)	(0.02894)
[3.19888]	[9.50986]	[-18.9824]	[3.92093]

* Significant coefficients have a 95% confidence level.

dLog(P_t)=0.1096-0.00234dLog(CEGFV_t)+0.0527dLog(IEGFV_t)+1.397dLog(Y_t)-1.00348dLog (P_t)				
(0.07744)	(0.01680)	(0.01745)	(0.5893)	(0.56906)
[1.37601]	[-0.52505]	[2.89375]	[2.4098]	[-1.8768]

* Significant coefficients have a 95% confidence level.

5.2 Implication of the Findings:

In view of the correct statistical results of the vector error correction model, which conform to the existing theoretical principles, the following interpretations of model results are presented:

- The uncertainty of government's current expenditures and development expenditures have a negative effect on private investment, in the long term. As the results indicate, the uncertainty of the government's development expenditures has a higher impact on private investment than does the uncertainty of current expenditures. According to the rules and regulations, the fulfilling of current expenditures has been assured by the government, and the government's public obligations cannot be ignored during various economic upheavals. In fact, when the government doesn't receive its planned revenues and there is a budget deficit, it has to allocate a smaller amount of funds than the approved budget, and since the government's current expenditures cannot be disregarded, less amount of budget has to be allocated to development expenditures in order to provide for the current expenditures. In other words, the allocated amount for current expenditures is close to the approved amount, and it is the development expenditures budget that deviates from the approved figure. The uncertainty that in fact results from this lack of fulfillment of the government's development expenditures diminishes the level of investment in both the public and private sectors and adversely affects the economic growth of the country.

- The uncertainty of gross domestic product has a positive effect on private investment, in the long term, which confirms the theory of acceleration principle in Iran's economy. Also the uncertainty of inflation rate has a negative impact on private investment, in the long term. In this model, the coefficient of error correction term is -0.52, and the sign of this coefficient indicates the existence of a long-term relationship between the variables of the model. In addition, this value indicates that 0.52 imbalance is removed from the long-term relationship in a period. It should be noted that by simply relying on long-term results (the objective of this research), we cannot definitely conclude that the uncertainties of the government's current and development expenditures have a negative impact on private investment in the short term as well; because different factors may bring about different impacts of the uncertainty of current and development expenditures on private investment. The investors' expectations are one of these factors. It can be reasoned that the way expectations materialize in the short run and long run will be different from each other. In short-term periods, limited factors are involved in changing the expectations of individuals; however, during long-term periods, due to a vaster time span at the disposal of investors, the change and modification of expectations can be more easily implemented. It should be pointed out that the period of investment also seems to be important with respect to risk acceptance and risk aversion behaviors of private investors; therefore, if the private investors have a longer time period during which to invest, the factor of risk will play a more sensitive and important role in their investment habits. As the estimation results of the model indicate, in the short term, the uncertainty of current expenditures doesn't have a significant effect on private investment; however, the uncertainty of development expenditures increases the private investment. In fact, the uncertainty resulting from the lack of fulfillment of the government's development expenditures in the short term leads to the increase of private sector's share in the existing investment opportunities, and more investment chances are afforded to the private sector.

5. Conclusions and suggestions:

The main objective of this article is to investigate the effect of uncertainty of government's current expenditures and development expenditures on Private sector investment in Iran. The model of this research has been estimated based on the vector error correction (VECM) model. The time period investigated by this research has been the years of 1959 to 2008. Based on the empirical results of this study, the following strategies are recommended to improve sustained private investment:

Due to the large impact of oil price fluctuation on government expenditures, which constitutes one of reasons for the uncertainty of current and development expenditures, unless the oil price fluctuation can be controlled, more attention should be paid to the budgeting and prediction of government expenditures, and instead of considering just the oil price changes, the fluctuations of oil price should be focused on in the budgeting process; because, as was previously stated, development expenditures are more influenced by the fluctuation of oil price. Insufficient attention has always been given to the private sector in government regulations and decisions, which have prevented productive economic activities and hindered the improvement of productivity. Examples of the above cases include the government monopoly law, extensive government ownership of banks, labor law, and the existing laws and penalties or cumbersome regulations that hamper foreign investment, which widely lead to exclusive economic privileges and favoritism, corruption, monopoly and the slump of productivity. On the other hand, in Iran, private ownership is not considered an inalienable right of individuals, and the government feels free to change its boundaries wherever it sees fit. Economic growth and flourishing in Iran will only be possible in an appropriate framework of economic security, rule of law and by revising the laws contradictory to development. The government should limit its activities in areas where the activities of the private sector are more productive and efficient and should increase its activities in establishing the

kinds of institutions that are harmonious with the goals of development and in eliminating those institutions that are hurdles to the development process.

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Appendix:

