



Investigating the Asymmetric Effects of Government Spending on Economic Growth

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Abstract

In the asymmetric effects of government spending literature, only a few studies have analyzed the relationships among the components of asymmetric effects of government spending. This study provides further insight into the role of asymmetric effects of government spending in economic growth performance. In this order, auto regressive distributed lag (ardl) method has been used for measuring the asymmetric effects of government spending performance of the economic growth. This study uses annual time series data (1979-2006) and unit root test and analyze them using auto regressive distributed lag (ardl) model by pesaran et al. (2001). Findings from the empirical analysis indicate that the relationships between the performance of asymmetric effects of government spending and economic growth are informative.

Keywords: Government spending, asymmetric, auto regressive distributed lag (ARDL).

Introduction

The size of government in Iran's economy in terms of definitions of various is very different. Central government and local government offers, different definitions of the role and place in the Iranian economy. In Iran the size of public administration that in addition to central government institutions, consists of councils, social security organizations and insurance, because of the disability income and the cost of the provinces, centralization policies that for years has run in country and problems reporting and statistically weak, hasn't little difference with The size of central government. Index the size of government namely government spending relative to GDP, over the past three decades suggests that reduce substantially of it's in the years after the revolution. The ratio that in the years oil revenues boom (1978-1973) reduced to 27.3 percent. With the war's end costs imposed resulting from it also decreased terms and conditions was prepared for growth of GDP. Thus in the years, program first five years development, ratio government spending to GDP decreased to 17.4%. GDP growth in the years the first development plan has been 6.9 percent that despite the 6.2 percent annual growth in government spending, has led to reduce the size of government during the first plan. GDP growth in the second development plan decreased to 2.9 percent that despite slower growth in government spending over the years, the size of the central government is higher toward first and second development and also revolution period and War. In the years Five Year Plan the second and third development, ratio the size of government respectively has been 22.1 and 20.6 percent. The size of the state in 1384 toward 1383 has been larger about 5 percent. This increase has been due to faster growth in government spending, and due to weaker GDP growth in the 2005. Ratio current

expenditure to GDP and construction costs to GDP also shows a similar trend. Except in the five-year period third development plan, ratio current expenditure to GDP from 15.4 percent in the year's second program has increased to 15.5 percent.

Due to mass projects remaining half of all construction, the years the second five-year plan can be expected to be reducing ratio construction costs to GDP during the period third five year plan resulting from limited budget resources after allocation high proportion of current spending. Due to the expected construction spending in 2005 will have of the very high growth approximately 48 percent, which was a cause increase 1.9 percent ratio expense to GDP, Nevertheless ratio current expenditure to construction almost in the all the years after the revolution (except 1993 and 1996) is greater than 2. In the economic theory, relationship between government spending and economic growth is not clear well. However it is expected that government by creating infrastructure necessary and provide optimum and efficient basic services helps to economic growth. Evidence is available of the operation in recent decades some developed and developing economies that shows go beyond of the size government, of the limit need, to provide basic services, leads to reduce economic growth. However, in the cases of market failure (negative external effects and providing public goods) it cannot to be ignore government major tasks as creation institutional infrastructure and legal of income and wealth distribution and provide public goods. The main three reasons, is expressed for negative influence, enlargement more than size government on economic growth: i. Increase taxes and borrowing more government, for security financial greater government spending, is cause reduce financial resources and reduce incentive private sector for investment, acceptable risk and activities with lower productivity. ii.

Diminishing returns in activities government larger causes' non-optimal allocation and loss part of the resources in the economy. iii. Respond slower the public sector toward private sector for offset errors, adapt to changing operational environment, receive new information and use of innovation, is followed reduce economic growth.

The level of real interest rates is critical for standard evaluations of government debt sustainability¹. Ball, Elmendorf and Mankiw² suggest the emergence of a virtuous cycle in which low real rates and rapid growth reduce fiscal debt burden. If the return on government debt is sufficiently below the output growth rate for a sufficiently long period, the government can roll over the debt and accumulated interest without raising taxes because output will likely grow faster than the debt will accumulate. Shifts in real rates can be associated with shifts in productivity or in time preferences³. They can also be caused by structural events, such as changes in the monetary regime or deregulation of interest rates. Canzoneri and Dellas⁴ show that operating target procedures affect real rates in a stochastic general equilibrium model: interest rate targeting results in higher real rates than does monetary aggregate targeting.

The present research explores from macro perspective an alternative way in which the asymmetric effects of government spending could be explored employing time series data. For that purpose, we use the bounds testing (or ARDL) approach to co-integration proposed by Pesaran et al.⁵ to test the asymmetric effects of government spending on economic growth using data over the period 1961–2007. The ARDL approach to co-integration has some econometric advantages which are outlined briefly in the following section. Finally, we apply it taking as a benchmark other researcher study in order to sort out whether the results reported there reflect a spurious correlation or a genuine relationship between asymmetric effects of government spending and the variables in question. This contributes to a new methodology in the asymmetric effects of government spending literature. Next section starts with discussing the model and the methodology. Then in next Section we describe the empirical results of unit root tests, the F test, ARDL co-integration analysis, diagnostic and stability tests and dynamic forecasts for dependent variable and next section summarizes the results and conclusions.

Material and Methods

Model: Here are paid to model introduced and pattern that with using it could be examined how to influence the size of Government asymmetries on the Iranian economy. The model which as the basis for this study considered is as follows:

$$Y=f(k_c, K_G, G_1, L) \quad (1)$$

This function is as a two-part function which encompasses public and private sectors and is defined as follows:

Y = Product or national income, k_c = Private sector investment, G_1 = Consumption and transfers expenditures, government sector, K_G = Capital government sector, L = Workforce employed in the private sector and governmental, Here the final performance of private capital is positive and $\frac{\partial y}{\partial k_c} > 0$ but

with lowering rate, namely $\frac{\partial^2 y}{\partial k_c^2} < 0$ and also for the final performance of public sector investment is $\frac{\partial y}{\partial k_G} > 0, \frac{\partial^2 y}{\partial k_G^2} < 0$ also, assume that private section investment provides of private savings, because change will provide in volume private section investment, because changes in private section capital investment, defined this section. So we can write the relationship as follows:

$$\begin{aligned} \Delta K_G &= G_2 = f(\gamma Y) = R_2 \\ \Delta K_C &= G_1 = f(tY) = R_1 \end{aligned} \quad (2)$$

Rate investment public sector can be demonstrated by changing in public section investment in the economy, it is a function of the level of production (income) and this function is a certain amount of r_2 . Condition of balance and equality in this model is as follows:

$$I_c + G_2 + G_1 = S + R_2 + R_1 \quad (3)$$

$$I_c = S \Rightarrow \frac{I_c}{S} = 1 \quad (4)$$

$$G_1 = TR_1 \quad \text{or} (R_1) \Rightarrow \frac{G_1}{R_1} = \alpha_1 = 1 \quad (5)$$

$$G_2 = TR_2 \quad \text{or} (R_2) \Rightarrow \frac{G_2}{R_2} = \alpha = 1 \quad (6)$$

$$G_1 + G_2 = R_1 + R_2 \Rightarrow G_1 - R_1 = R_2 - G_2 \quad (7)$$

Asymmetrical conditions: According to above relations symmetric condition it is, be established following relationship:

$$\frac{\frac{G_1}{R_1}}{\frac{G_2}{R_2}} = 1 \quad (8)$$

Where, R_1 = Government current income and R_2 = Income obtained from sale of assets is under authority the state. This relationship shows the classical equality. If we assume have a full employment the size of the private sector and governmental has been symmetric and symmetrical effects on growth, is sustainable and stable. With minor changes in above relationships will reach to, current income elasticity and private sector property. Symptoms of the symmetric can be created than ratio of equal to a high relationship and elasticity current income

and assets of public sector equal to one, because of this elasticity shows degree of sensitivity to a unit change in sale oil and gas to the construction costs. If the government budget is symmetric elasticity is equal to one. With the assumption that could be established relationship $G_1 = TR_1$ and $G_2 = TR_2$. The numbers show of their own contrary with an imbalance financing the budget from the source.

$$E_{GR} = \frac{\partial G_1}{\partial R_1} \cdot \frac{R_1}{G_1} = \alpha_1^1 = 1 \quad (9)$$

$$E_{GR_2} = \frac{\partial G_2}{\partial R_2} \cdot \frac{R_2}{G_2} = \alpha_2^1 = 1 \quad (10)$$

Thus an equal term with the classical symmetry is that:

$$\alpha_1 = \alpha_1^1 = 1 \quad (11)$$

$$\alpha_2 = \alpha_2^1 = 1 \quad (12)$$

In terms of constant returns toward scale sustainable growth always occurs associated with symmetric as converged and dynamic. Some of these variables have a direct impact on real output growth and are the main variables In model and usually some of the variables are influence as indirect and help to prove the hypothesis, and remove them causes low and variance differences. So for fitted the model we must be use indirect of the variables and effective. G1 is Population growth rate in the first decade after the revolution increased to 3.9 percent and in second decade increased to 1.9 percent and now population increased with a rate of about 1.4 percent. Population is cause current increase government spending, this variable as current Government expenditure growth rate placed in the model.

NG1 is this variable is as variable asymmetrical current size of government is defined as following:

$$NG_1 = \frac{G_1}{R_1} - 1 = \alpha_1 \quad (13)$$

Where, $\frac{G_1}{TR_1}$ Shows amount of the symmetrical or

asymmetrical. If this size becomes equal to one, will be symmetrical and if it is larger than 1, we subtracts of number one and is obtained amount of its asymmetric.

NG2 is this variable is defined as asymmetries size of capital (construction) Government a following:

$$NG_2 = \frac{G_2}{R_2} - 1 = \alpha_2 \quad (14)$$

In Iran since a large portion of government revenue sources is derived from the sale of oil and gas assets and on the other hand, With the difference that has public investment and government spending the minimum expectation is that if the government will modify its current size of the asymmetries namely

$\alpha_1 = \alpha_1 = 1$ will be amended asymmetric size of capital (construction) government. Then has a positive effect growth and creates more stability on the economy. To obtain asymmetries of government capital, rate size of the civil government, we subtract it from number one, which at the case is obtained rate asymmetries.

\dot{Y} is variable is Government effect on GDP growth symmetrical or asymmetrical effect on this variable shows size (current and capital) government. Deviations of the symmetry (balance) the size of Government, will led the budget deficit because the resources resulting of the budget deficit more financing are current expenditures. On the other hand the budget deficit will increase remains debt the public sector.

\dot{T} has been used for equality Ricardo the relationship between government spending and taxes variable rate of growth of government tax revenue and the relationship between these two can to test, equality Ricardo in the Iranian economy. This variable also has been of many mutations and with one overall view of the beginning and end of study period can be said to have been relatively consistent.

\dot{P} is Changes in prices of consumer goods and services which is known inflation can have different reasons. Growth of current government budget towards construction budget and budget deficit towards construction budget and government the budget deficit is among the important factors in the rise of inflation. Review process of swelling has had the lowest, during 1985 and 1990.

\dot{R}_1 is one dynamic economy, measure relationship between private sector with government describes mode of drift in private sector by the government sector. Growth rate of real investment private sector (r_2) measured is, succession between the government and the private sector and shows that the government processes, has effective interventionism in the economy or Gary annoying interference?

\dot{D} is the variable is estimated as growth rate government sector debt in model estimates. Measurement the variable is necessary to asymmetrical current and capital government size, inflation and other variables. Because of inflation has not been only the government's fiscal policy but is mutual influence of inflation in other variables and other variables in inflation. The variable not benefited of a particular process so that has had its maximum value in 2002.

Thus the model reviewed after taking the logarithm as:

$$LY = C_0 + LG_1 + LNG_1 + LNG_2 + LT + LP + LR_1 + LD$$

Methodology: There are advantages of using autoregressive distributed lag (ARDL) approach instead of the conventional Johansen⁶ and Johansen and Juselius⁷. While the conventional co-integration method estimates the long run relationship within a context of a system of equations, the ARDL method employs only a single reduced form equation⁸. Recent advances in econometric literature dictate that the long run relation in equation (15) should incorporate the short-run dynamic adjustment process. It is possible to achieve this aim by expressing equation (15) in an error correction model as suggested by Engle and Granger⁹. Then, the equation becomes as follows:

Where Δ represents change, m_i is the number of lags, γ is the speed of adjustment parameter and ε_{t-1} is the one period lagged error correction term, which is estimated from the residuals of equation (15). This approach is also known as Auto Regressive Distributed Lag (ARDL) that combines Engle and Granger (1987) two steps into one by replacing ε_{t-1} in equation (16) with its equivalent from equation (15). ε_{t-1} is substituted by linear combination of the lagged variables as in equation (17).

At the second step of the ARDL co-integration procedure, it is also possible to obtain the ARDL representation of the Error Correction Model (ECM). To estimate the speed with which the dependent variable adjusts to independent variables within the bounds testing approach, following Pesaran et al.⁵ the lagged level variables in equation (17) are replaced by EC_{t-1} as in equation (18):

A negative and statistically significant estimation of λ not only represents the speed of adjustment but also provides an alternative means of supporting co-integration between the variables.

$$\begin{aligned} \Delta LY_{t,j} = & b_0 + \sum_{i=1}^{m1} b_{1i,j} \Delta LY_{t-i,j} + \sum_{i=0}^{m2} b_{2i,j} \Delta LG1_{t-i,j} + \sum_{i=0}^{m3} b_{3i,j} \Delta LNG1_{t-i,j} + \sum_{i=0}^{m4} b_{4i,j} \Delta LNG2_{t-i,j} \\ & + \sum_{i=0}^{m5} b_{5i,j} \Delta LT_{t-i,j} + \sum_{i=0}^{m6} b_{6i,j} LP_{t-i,j} + \sum_{i=0}^{m7} b_{7i,j} LRL_{t-i,j} + \sum_{i=0}^{m8} LD_{t-i,j} + \gamma \varepsilon_{t-1,j} + \mu_t \end{aligned} \quad (16)$$

$$\begin{aligned} \Delta LY_{t,j} = & C_0 + \sum_{i=1}^{n1} c_{1i,j} \Delta LY_{t-i,j} + \sum_{i=0}^{n2} c_{2i,j} \Delta LG1_{t-i,j} + \sum_{i=0}^{n3} c_{3i,j} \Delta LNG1_{t-i,j} + \sum_{i=0}^{n4} c_{4i,j} \Delta LNG2_{t-i,j} \\ & + \sum_{i=0}^{n5} c_{5i,j} \Delta LT_{t-i,j} + \sum_{i=0}^{n6} c_{6i,j} \Delta LP_{t-i,j} + \sum_{i=0}^{n7} c_{7i,j} \Delta LRL_{t-i,j} + \sum_{i=0}^{n8} c_{8i,j} \Delta LD_{t-i,j} + c_9 LY_{t-1,j} + c_{10} LG1_{t-1,j} \\ & + c_{11} LNG1_{t-1,j} + c_{12} LNG2_{t-1,j} + c_{13} LT_{t-1,j} + c_{14} LP_{t-1,j} + c_{15} LRL_{t-1,j} + c_{16} LD_{t-1,j} + v_t \end{aligned} \quad (17)$$

$$\begin{aligned} \Delta LY_{t,j} = & \alpha_0 + \sum_{i=1}^{k1} \alpha_{1i,j} \Delta LY_{t-i,j} + \sum_{i=0}^{k2} \alpha_{2i,j} \Delta LG1_{t-i,j} + \sum_{i=0}^{k3} \alpha_{3i,j} \Delta LNG1_{t-i,j} + \sum_{i=0}^{k4} \alpha_{4i,j} \Delta LNG2_{t-i,j} \\ & + \sum_{i=0}^{k5} \alpha_{5i,j} \Delta LT_{t-i,j} + \sum_{i=0}^{k6} \alpha_{6i,j} \Delta LP_{t-i,j} + \sum_{i=0}^{k7} \alpha_{7i,j} \Delta LRL_{t-i,j} + \sum_{i=0}^{k8} \alpha_{8i,j} \Delta LD_{t-i,j} + \lambda EC_{t-1,j} + \mu_t \end{aligned} \quad (18)$$

Results and Discussion

Estimate asymmetrical current size: Asymmetries the current size of government is obtained through income elasticity for the years 1979-2006. Estimate expenditure elasticity separated to two tensions: Income elasticity current expenditure and finance income elasticity of capital expenditure. If both tension be equal unit shows that in conditions classical equality, economy has performed $G = T$ or $G-T = 0$ and because symmetrical make a positive impact in economy should be certainly equal unit income elasticity current expenditure and to its proportion, finance income elasticity of capital expenditure. If the income elasticity of government spending not be equal to unit, path movement government asymmetrical and is in conditions lack of employment. The results obtained (table 1) Shows that government path the asymmetric from 1979 up to now and this asymmetry has a positive or negative effect on growth pattern of ARDL must be paid to test this effect.

Thus the to measure the amount asymmetries of the ratio of $\frac{G}{R}$ can be used an index measuring level of deviation Government of balance and also from the $\frac{K_G}{R_2}, \frac{G_1}{R_1}$ as indicators of the structural asymmetries size of government on economy, and coefficient of deviation alignment equal to current expenditure and government capital.

Unit Root Tests in the presence of Structural Break: The ARDL approach does not involve pre-testing variables, which means that the test on the existence relationship between variables in levels is applicable irrespective of whether the underlying are purely $I(0)$, purely $I(1)$ or mixture of both.

Table -1
The findings of Asymmetries the current size of government

year	Asymmetries the size of Government public	asymmetric income elasticity government spending	Asymmetries size of government current	asymmetric elasticity income current consumption expenditures government	Asymmetries the size of government capital	Asymmetric elasticity Finance income, government capital expenditure
1979	0.26	-	2.16	-	-0.48	-
1980	0.75	-20.2	3.22	-65.9	-0.36	37.7
1981	0.49	46.4	1.79	20.9	-0.36	99.1
1982	0.27	48.5	1.71	83.1	-0.41	76.9
1983	0.57	339.2	2.15	188.6	-0.30	484.6
1984	0.24	1.06	0.82	-61.3	-0.32	119.6
1985	0.2	1.6	0.70	28.9	-0.32	99.5
1986	0.85	13.6	0.85	40.1	0.85	6.1
1987	0.61	49.8	0.92	128.6	0.018	2.7
1988	1.36	-80.7	2.36	-50.9	0.13	380.7
1989	0.34	-0.07	1.007	-0.25	-0.38	1.62
1990	0.07	52.6	0.89	76.1	-0.47	0.14
1991	0.16	145.9	0.64	0.046	-0.28	833.8
1992	0.08	76.9	0.65	276.1	-0.43	36.6
1993	0.03	88.8	1.45	414.2	-0.51	52.9
1994	-0.01	86.6	1.56	112.7	-0.57	54.9
1995	-0.06	90.2	0.73	32.1	-0.51	186.5
1996	-0.02	114.8	0.49	65.8	-0.42	200.6
1997	0.045	189.3	0.72	369.6	-0.43	0.046
1998	0.32	-63.3	0.73	103.5	-0.3	40.9
1999	0.01	43.1	0.42	4.8	-0.43	454.7
2000	0.05	129.8	0.85	333.1	-0.62	-29.5
2001	0.026	88.6	0.89	119.1	-0.66	0.02
2002	0.23	179.6	1.38	274.8	-0.5	2914.8
2003	0.21	94.3	1.26	76.4	-0.43	138.5
2004	0.19	90.7	1.24	95.4	-0.52	-11.6
2005	0.16	104.1	0.65	48.1	-0.37	264.1
2006	0.28	156.3	0.45	58.4	-0.49	74.2

Table -2
Results of Unit Root/ Stationary Test to determine structural break by Perron¹¹

Variable	Model		T _b	λ	Critical value in level				t _{β}	Result
	Constant	Trend			1%	2.5%	5%	10%		
LY	*	-	1997	0.85	-4.27	-3.97	-3.69	-3.28	-3.64	stationary
LG1	*	*	1999	0.46	-4.9	-4.53	-4.24	-3.96	-4.28	stationary
LNG1	-	*	1988	0.36	-4.55	-4.20	-3.94	-3.66	-1.26	Non stationary
LNG2	-	*	2001	0.59	-4.57	-4.20	-3.95	-3.66	-3.88	stationary
LLT	*	*	1980	0.46	-4.9	-4.53	-4.24	-3.96	-4.53	Stationary
LP	*	-	1976	0.36	-4.55	-4.20	-3.94	-3.66	-2.54	Non stationary
LR1	*	*	1980	0.85	-4.27	-3.97	-3.69	-3.28	-2.16	Non stationary
LD	-	*	1988	0.46	-4.9	-4.53	-4.24	-3.96	-3.09	Non stationary

Note: (*) denotes that the model contains an intercept or a trend and (-) denotes that the model don't contain an intercept or a trend

This feature alone, given the characteristics of the cyclical components of the data, makes the standard of co-integration technique unsuitable and even the existing unit root tests to identify the order of integration are still highly questionable. During the last three decades, the methods of estimation of economic relationships and modeling fluctuations in economic activity have been subjected to fundamental changes. If t-statistic for β is bigger than the critical value tabulated by Perron¹⁰, zero hypotheses for the existence of unit root (non stationary) will be rejected. Results are given in table 2.

The empirical results in table 2 show quite the opposite result after the first differentiating of the data where variables of the LNG1, LP, LR1, LD become stationary and this means that half of these variables are I(1) in log level and I(0) after the first differencing.

Long run, short run and Error Correction Model (ECM) in ARDL Model: Considering the fact that we have fixed and non fixed variables in the model, using ARDL cointegration approach is the best solution. Besides, by repeating ARDL in the presence of several structural breaks we conclude that ARDL approach is meaningful at the structural break of progress in share of Asymmetries the current size of government, so we entered a dummy variable. Table 3 reports the long term coefficient estimates and Table 4 reports also the ECM coefficient estimates obtained from the version of the ARDL model.

Dynamic forecasts LY as dependent variable: Figure 1 represents the forecasting errors and the plots of the graphs of the actual and forecast values for model. These graphs show that dynamic forecast values for the level of LY as well as the change in the level of LY are very close to the actual data for both

Table -3
Estimated long-run coefficients

The long-run coefficients results ARDL (1,0,0,0,0,0,0)		
Regressor	Coefficient	T-Ratio (prob)
LG1	0.25	4.75 [001]
LNG1	0.15	6.18[000]
LNG2	-0.023	-2.92[005]
LLT	-0.12	-1.65 [087]
LP	0.13	1.83 [061]
LR1	-0.11	-2.45[007]
LD	0.02	5.79[000]
Intercept	7.35	3.59 [004]
DU1997	0.09	2.6 [007]
DU1980	0.08	3.02[005]

Table -4
Estimated error correction model (ECM)

Regressor	Coefficient	T-Ratio (prob)
DLG1	0.22	5.22[001]
DLNG1	0.11	6.38[000]
DLNG2	-0.019	-3.67[004]
DLLT	-0.11	-2.23[007]
DLP	0.12	2.73[006]
DLR1	-0.1	-3.14[005]
DLD	0.01	6.43[000]
DC	4.23	5.04[001]
DDU1997	0.08	3.24[005]
DDU1980	0.07	3.79[004]
ECM(-1)	-0.22	-6.56[000]
R ² = 0.98	F = 0.2239.2[000]	D.W=2.01

Diagnostic and Stability Tests: The CUSUM and CUSUMSQ should be regarded as data analytic techniques; i.e., the value of the plots lies in the information to be gained simply by inspecting them. The plots contain more information than can be summarized in a single test statistic. The significance lines constructed are, to paraphrase the authors, best regarded as yardstick against which to assess the observed plots rather than as formal tests of significance. See Brown et. al.¹² for various examples. Note that the CUSUM and CUSUMSQ are quite general tests for structural change in that they do not require a prior determination of where the structural break takes place. If this is known, the Chow-test will be more powerful. But, if this break is not known, the CUSUM and CUSUMSQ are more appropriate. If the diagram presented be within the boundaries, zero hypotheses are accepted which is based on lack of structural break and if the diagram goes out of the boundaries (it means that if dealt to them), zero hypothesis is rejected which is based on lack of structural break and the presence of structural break is accepted¹⁵. CUSUM statistics is useful to find systematic changes in long term coefficients of regression and CUSUMSQ statistics is helpful when deviation from regression coefficients stability is randomized and occasional (short term).

Conclusion

Government according to several reasons cannot eliminate of intervention in economy. But it can be determined its size, so that have be effective intervention. In a dynamic economy where all economic sectors to act active and convergent in growth Path, if the public sector does not adjust their size to fit your optimal income creates asymmetrical. Asymmetry at national level or in local level puts different economic effects. In this paper by estimating the current size of the asymmetries and ARDL model was shown that how much capital government has been influenced asymmetries of the current asymmetric and has had negative effect on growth. Results show that error adjustment of the shock in the current government lower rate (22 percent) appears to stability and sustainability due to government influence of structural nature. Thus the what makes government revised its asymmetrical, less shock transferred from government to other sectors, and Iran's economy spends positive dynamic growth path and more reliable. Thus the recommended that any change in size of the current government of development and they determine commensurate with the income, also should revenues from oil sales will be used for civil affairs.

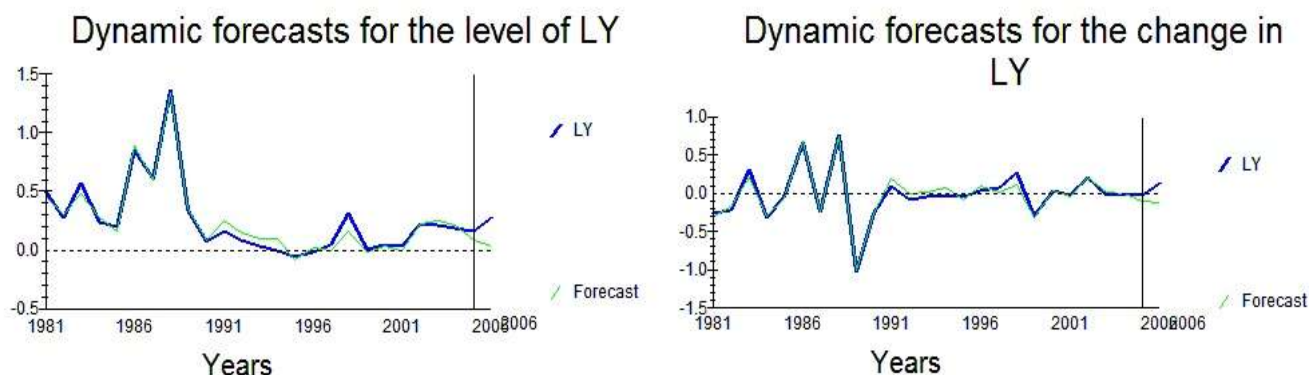


Figure -1
Plots of the actual and forecasted values for the level of LY and change in LY

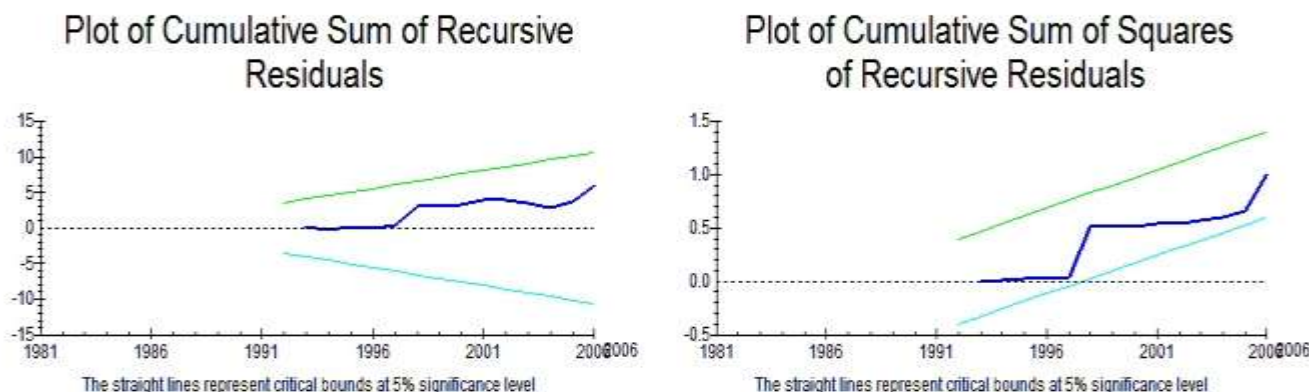


Figure -2
Plots of CUSUM and CUSUMQ statistics for coefficients stability tests

If government uses of oil revenues for the current expenditures should the measured and calculated rate debt, due converting assets to income with market interest rates and be determined as government liabilities to present and future generations and changes in relation to public accounting (sources – consumers).

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