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AN INVESTIGATION INTO THE EFFICIENCY OF MONETARY AND FISCAL POLICIES IN IRAN CASE STUDY: THE 4th ECONOMIC DEVELOPMENT PLAN

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ABSTRACT

This study investigates the efficiency of the quantitative targets of monetary and fiscal policies of Iranian 4th economic development plan using dynamic simulation approach. An open macro economy model was designed and eleven behavioral equations were estimated for different economic sectors of Iran for the period of 1971-2004 using autoregressive distributed lag model (ARDL). When the accuracy of the model was determined, the quantitative targets of monetary and fiscal policies of the plan were implemented through a scenario and their effects on some of macroeconomic variables were anticipated for the period of 2005-2013. The comparison of anticipated, realized and targeted values suggests that a more contractionary monetary policy can be used to decline inflation. It should be noted, however, that this policy reduces production and causes depression. To minimize the negative effects of contractionary monetary policy on production sector, more concentration on improved productivity, cost efficiency and improved economic infrastructures are recommended. Judgment concerning the efficiency of fiscal policy targets requires deliberation. The large government size in Iranian economy raises incomes and increases government expenditure. Government income and expenditure should be set and allocated in a manner that it can prepare the prerequisite for minimizing government role in economy and developing the private sector activities. To determine the achievable quantitative targets for fiscal policies it is necessary to determine the optimal government size for Iranian economy, considering the lags of fiscal policies and a long-term planning with the least possible deviation during implementation.

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1. INTRODUCTION

Monetary and fiscal policies are of major policies of demand side and having an inevitable role in managing of economic stability policy. Relative effect of monetary and fiscal policies has roots in Keynesians and Monetarists discussions. After failure of the classic and neoclassic theories in distinguishing problems and presenting solutions for rescuing economy from the Great Depression of the 1930s, Keynes was successful in solving economic problems of this period and restoring economic demolitions after the Second World War by presenting some policy recommendations. Keynes' successes in this period led to general acceptance of his perspectives on the relative importance of fiscal policies. Critical perspectives of Keynesians were the most severe criticism of classics and neoclassic perspective during this period. Then reactions of quantity theorists, especially Milton Freidman in theoretical development of the quantity theory and occurrence of stagflation of 1970s included the factors effective in discussing monetary policies again. Friedman's monetary principles and increased independence of the central bank in 1980s increased importance of coordination of monetary and fiscal policies in this period. Indeed, Central bank independence does not mean that there is no coordination between monetary and fiscal policies. Even in recent decades the issue of coordination between monetary and fiscal policies has been more highlighted along with increase in discussions about independence of central bank. There is interaction between monetary and fiscal policies regardless of the dependence or independence of the two policies and this will result in externality and uncertainty in results of applied policies. The smaller impact of fiscal policy on inflation and the smaller impact of monetary policy on government budget the less externality of the applied policy (Wood Ford, 2001). Sundararajan *et al.* (1994) stated that the coordination of the policies depends to a large extent on the special economic condition of every country, financial markets depth, exchange rate regime and other institutional arrangements. Advanced financial markets are the main source for financing budget deficit. In the markets, financing cost inhibits the continuation or increment of government budget deficit. Sundararajan *et al.* (1997) divided the process of transition from a rudimentary financial system towards a completely developed one in four stages. In the first stage financial markets aren't developed, all government debts are financed by central bank and deficits go with money creation. In the second stage marketable securities are offered but there is no secondary market for these securities, and interest rates are inflexible. In transition stage or the third stage, a secondary market is formed for government debts, interest rates become more flexible, central bank becomes more active and liquidity management becomes more independent and eventually in the 4th stage, mid-term debt instruments are presented through auction, interest rates are completely flexible and central bank controls liquidity through indirect and market instruments. Two later stages require more effective coordination between government financial management and monetary policy

performance of central bank. An effective coordination between monetary and fiscal policies helps policy makers to achieve their predetermined targets and prevents uncertainty, higher interest rates, exchange rate pressures, rapid inflation and non-consistent effects on economic growth rate. According to Nordhaus (1994), lack of coordination between the two policies can create a suboptimal mix of policies.

In the debate of fiscal and monetary policy coordination, one should note that not only every policy should be put in a sustainable course in mid-term and long-term by itself but also the mix of policies should be so. If the mid-term or long-term courses of one or both policies are not stabilized, uncertainty and unsteadiness of economy will be increased even if both policy makers are well-coordinated. The policies operate in different lags. Lags for responding economic agent to monetary policy are shorter than those of fiscal policy. However, fiscal policy can be affected to a large extent by political and military considerations. Therefore, a number of economists like Laurens and Piedra (1998), Kuttner (2002) and Niemann and Hagon (2008) have stated that monetary policy bears a larger fraction of economic stabilization burden. According to Leeper (2010), fiscal policy is more complex than monetary policy. One of the main reasons is the number of fiscal policy's instruments compared with those of monetary policy. Different policy instruments behave in different manners in dynamic stabilization and affecting economy.

In Iran economy, long-term goals of macro policies are determined based on the targets of the perspective document which has been designed aimed at the promotion of production power and accelerated and continuous growth of Iran economy till 2025. This program has determined mid-term goals within 5-year development programs in order to achieve long-term goals. A brief view on macroeconomic variables time trend in Iran, especially inflation, liquidity, unemployment rate, economic growth, current account balance and budget deficit reveals little realization of the development programs' targets. Lack of monetary and fiscal discipline is likely the most important factor resulting in non-realization of targets. Accurate determination of monetary and fiscal policies targets and their well-coordination will improve economy performance. The latest development program which has been completely performed in Iran is the 4th development program which was for 2005-2009. The period of 2011-2016 relates to the 5th development plan. Its implementation period has not completed and its evaluation documents have not been issued yet. Moreover, the 5th development plan has not set quantitative targets for many sectors. 2010 lies inside the two aforementioned development plans. Therefore, this study uses the quantitative targets of the 4th development plan for the years of the 5th plan as well and evaluates the efficiency of the targets for the period of 2005-2013 using dynamic simulation.

2. REVIEW OF EMPIRICAL STUDIES

There are many empirical studies on the effects of monetary and fiscal policies on economic growth in developed and developing countries. Friedman and Mieselman (1963), Anderson and Jordan (1968), Chowdhury (1986), Batten and Haffer (1983), Olaloye and Ikhide (1995), Senbet (2011), Scott (2011), Okoro (2013), Rakic and Radenovic (2013) and Ali *et al*. (2008). Friedman

and Mieselman (1963), Anderson and Jordan (1968), Senbet (2011), Ali *et al.* (2008), Scott (2011), Okoro (2013) and Rakic and Radenovic (2013) concluded that monetary policy is more effective than fiscal policy while the results of Chowdhury (1986) and Olaloye and Ikhide (1995) showed that fiscal policies more affect economic activity. Batten and Haffer (1983) studied 6 developed countries i.e. Canada, France, Germany, Japan, England and U.S and concluded that in all mentioned countries, variation of money growth has a significant and sustainable influence on nominal income growth. They concluded, however, that the relationship between money and GDP remained stable even in the period of regime switching from fixed exchange rate to floating one.

The performed studies cannot lead us to a unique conclusion about the effects of monetary and fiscal policies on economic growth as the effects depend on period of study and the economic structure of the studied country. It is not wise to apply a political mix which was successful in a country to another country with different economic structure and anticipate satisfied consequences.

3. METHODOLOGY

Tinbergen (1954) and Cooper (1969) stated that if the interactions between monetary and fiscal policy are neglected, the pre-determined targets will not be realized and this will create instability, protracted imbalances and impose costs to the economy. However, most studies which have ever been carried out on the effect of monetary and fiscal policies on economic activity either have considered only the effect of employing one policy or concentrated on direct reaction between policies.

This study used an open macroeconomics model to study the direct and indirect effects of monetary and fiscal policies on all important sections of Iran economy. According to a general classification the model is classified into 4 categories: good market, labor market, money market and government budget. Good market is assessed from both demand and supply sides. In the demand side, consumption expenditure of the private sector, investment expenditure of the private sector, investment expenditure of public sector, non-oil exports and imports are estimated. In the supply side, however, non-oil GDP function is estimated. Some studies model the demand side of good market and use production identities relation to balance demand and supply sides. Since GDP affects consumption, investment, import and export expenditures, this study tries to separate demand fluctuations from supply fluctuations as much as possible and investigate both sides approximately independent. To this end, it estimates GDP from supply side as well. In the labor market, labor demand function and unemployment rate are used. However, money demand function is used in money market. Money market responds more quickly to monetary and fiscal policies than other markets. The targets of monetary policy, however, are implemented via the instruments of money market. Government tax income is modeled in government budget section.

This model has eleven behavioral and thirteen identity equations extracted in accordance with Iran economic specification. After the investigation of integration order for variables and confirming the existence of a long-term relation between the variables using Banerjee, Dolado, Mestre statistics, behavioral equations were estimated by ADRL method for 1971-2004 period. In

this study Vector error correction (VEC) equations were used to promote model's sustainability. Table 1 reports behavioral and identity equations[1].

Table-1. System of equations

1	D(LNCPI) = -0.001 - 0.605*D(LNGDPRNO) + 0.203*D(LNINTLN) + 0.420*D(LNM) - 0.325* ecm(-1)
2	D(LNCPR) = 0.001 + 0.108*D_{75} + 0.009*D($D_{83\text{-}85lncpr}$) + 0.077*D(LNM) + 0.170*D(LNYDR) -0.0007*D(P) - 0.242*ecm(-1)
3	D(LNINVPR) = -0.461 + 0.444*D_{83} - 0.017*D($D_{93\text{-}94lninvpr}$) - 0.328*D(LNINVGDPR) + 0.0003*D(INTLR) + 6.437*D(LNK) - 2.483*D(LNK(-1)) - 0.518*ecm(-1)
4	D(LNINVGR) = -0.085 + 0.002*T + 0.055*D_{78} - 0.035*D($D_{88\text{-}89lninvgr}$) + 0.250*D(LNOMRANI) - 0.047*D(LNERN) - 0.751*ecm(-1)
5	D(LNEXCG) = 7.662 - 7.692*$D_{81\text{-}86}$ + 0.032*D($D_{93\text{-}94lnexcg}$) + 0.884*D($D_{81\text{-}86lnexcg}$) + 0.2840*D(LNERR) + 1.5735*D(LNGDPR) - 1.0910*D(LNGDPR(-1)) + 0.6539*D(LNINVGR(-1)) + 0.0374*D(LNINVGR(-2)) - 0.642*ecm(-1)
6	D(LNIMPR) = -0.282 + 0.374*D_{83} + 0.299*$D_{89\text{-}91}$ + 0.121*D(LNIMPR(-1)) - 0.001*D(GTM) - 0.354*D(LNERN) + 1.042*D(LNGDPR) - 0.502*ecm(-1)
7	D(LNGDPRNO) = -.00003 + 0.0001*D($D_{86\text{-}88lnGDPRNO}$) - 1.164*D(LNK) - 0.338*D(LNK(-1)) - 0.810*D(LNK(-2)) + 1.082*D(LNEMP) + 0.002*D(TFP) - 0.003*D(TFP(-1)) + 0.311*D(LNINV) - 0.728*ecm(-1)
8	D(LNM) = 0.09 - 0.09*$D_{80\text{-}88}$ + 0.021*D(LNERN) + 0.066*D(LNFK) - 0.027*D(LNGDPR) - 0.159*D(LNGDPR(-1)) - 0.367*D(LNGDPR(-2)) - 0.218*ecm(-1)
9	D(LNTI) = -0.023 + 0.034*D($D_{7778lnti}$) - 0.115*D(LNERN) + 1.921*D(LNGDPR) + 0.026*D(LNY) - 0.816*ecm(-1)
10	D(LNGDPDEF) = 0.00005 + 0.041*D(LNCREDIT) - 0.444*D(LNCREDIT(-1)) - 0.139*D(LNGDPRNO) - 0.126*D(LNERN) + 0.114*D(LNINTLN) - 0.521*D(LNINTLN(-1)) - 0.321*D(LNINTLN(-2)) - 0.726*ecm(-1)
11	D(LNEMP) = 0.0007 + 0.139*D(LNGDPR) - 0.058*D(LNGDPR(-1)) - 0.077*D(LNGDPR(-2)) - 0.005*D(LNAGWR) - 0.001*D_{91} - 0.058*ecm(-1)
12	P=((CPI-CPI(-1))/CPI(-1))*100
13	GDPR=GDPRNO+OILPROD
14	INVGDPR=INVGR/GDPR
15	AGWR=(AGWN/CPI)*100
16	ERR=(ERN*CPUS)/CPI
17	INTLR=INTLN-P
18	INV=INVGR+INVPR
19	TIR=(TI/GDPDEF)*100
20	YDR=GDPR-TIR
21	Y=AGWN*EMP
22	TM=(TX/IMPN)*100
23	GTM=((TM-TM(-1))/TM(-1))*100
24	UN = LFORCE – EMP, UR = (UN/ LFORCE) * 100

Table (1) results show that the coefficients of all equations have the expected signs. In Equation (1), liquidity is an index for monetary policy, production is an index for the Keynesian inflationary gap, and interest rate is an index for cost inflation. Here, interest rate and liquidity have positive effects and production has a negative effect on consumer price index (CPI). In equation

[1]- In Table (4) introduces all variables.

(2), liquidity is a wealth indicator. In this equation, CPR increases with the liquidity and disposable income increasing. Inflation increase reduces CPR through reducing households' purchasing power. In Equation (3), INVGDPR shows the influence of share of government investment spending in economy on private sector investment spending. INTLR indicates cost to use investment and opportunity cost of private sector investment. In this equation, INTLR and K have positive impacts and INVGDPR has a negative impact on investment spending of private sector. The positive impact of INTLR shows the effect of increase in the real interest rate on providing further facilities for financing economic projects. The exchange rate in equation (4) indicates the impact of currency problems on spending of public sector investment. In this equation, OMRANI has a positive effect and exchange rate has a negative effect on INVGR. In equation (5), production indicates country's production capacity, exchange rate indicates the effect of price factors and INVGR shows the effect of government's investment spending on infrastructure. In this equation, ERR and GDPR have positive effects and INVGR has a negative effect on exporting non-oil goods and services. In equation (6), production indicates the effect of factors effective in demand. Here, production has a positive effect and tariff growth rate and free market exchange rate have negative effects on import of goods and services. In equation (7), capital stock, employment, productivity, and investment expenditures have positive effects on GDPRO in the long run. Exchange rate in equation (8) shows the opportunity cost of holding money and a substitute for inflation. Production is a criterion for transactions, economic activities, and a substitute for wealth variable. FK shows the effect of factors of supply side on money demand function. In this equation, ERN, FK, and GDPR have positive effects on money demand in the long run. In equation (9), GDPR and Y have positive effects and ERN has a negative effect on tax revenue. In equation (10), Credit, ERN, and INTLN have positive effects and GDPRO has a negative effect on GDP deflator. The positive effect of Credit indicates funds aren't absorbed by firms efficiently. Equation (11) shows the positive effect of production and negative effect of real wage on labor.

In next stage, Dynamic simulation was used to analyze the efficiency of monetary and fiscal policies over time. This method can evaluate the accurate specification of model, interaction of the policies and direct and indirect impacts of applying monetary and fiscal policies on different economic sections. First of all, the simulation was carried out for 1971-2004 period. Table (2) shows Inequality Coefficient or U-Static and Root Mean Square Percentage Error indicator (RMSPE) to measure the model's accuracy and validity.

Table-2. Values of U-Static and RMSPE

U	RMSPE	Variables	U	RMSPE	Variables
0.03	4.16	AGWR	0.051	6.14	CPI
0.11	14.39	EXCG	0.047	4.18	CPR
0.12	12.44	IMPR	0.08	9.08	INVPR
0.008	0.85	EMP	0.12	10.99	INVGR
0.02	3.10	GDPRNO	0.035	11.62	TI
0.02	2.53	GDPR	0.02	3.32	M
			0.079	6.95	UR

Based on the results of the table, U and RMSPE Statistics are at appropriate levels. Therefore simulation efficiency is confirmed and this model can be used to predict endogenous variables. To this end, the quantitative targets of monetary and fiscal policies of the 4th development program were implemented within a scenario and then the reaction of macroeconomic variables were investigated using dynamic simulation method. Eventually, simulation results were compared with target and realized values of macroeconomic variables. The considered time period for prediction was 2005 to 2013. Tax income and development expenditure of government are considered as fiscal policies targets while liquidity and long-term banking interest rate are considered as monetary policies targets. Table (3) shows simulation results.

Table-3. Results of simulation

Variables		2005	2006	2007	2008	2009	2010	2011	2012	2013
GDPRNO	Target values	8.3%	8.6%	9%	9.6%	10.6%	-	-	-	-
	Simulated values	8.18%	8.88%	8.18%	6.27%	5.26%	4.51%	6.51%	6.34%	6.25%
	Realized values	5.22%	6.53%	6.97%	0.86%	4.81%	6.30%	2.77%	-2.89%	-1.06%
GDPR	Target values	7.1%	7.4%	7.8%	8.4%	9.3%	-	-	-	-
	Simulated values	7.28%	8.31%	7.47%	5.47%	4.43%	4.30%	6.09%	3.23%	5.51%
	Realized values	4.65%	6.21%	6.36%	0.57%	3.95%	5.89%	2.64%	-5.6%	-
CPR	Target values	-	-	-	-	-	-	-	-	-
	Simulated values	2.69%	3.89%	4.18%	3.65%	3.85%	4.03%	3.94%	3.65%	4.14%
	Realized values	9.95%	6.06%	6.80%	-4.48%	-1.12%	1.87%	7.61%	-1.9%	-
INVPR	Target values	-	-	-	-	-	-	-	-	-
	Simulated values	1.37%	2.77%	2.69%	5.14%	2.05%	2.22%	2.56%	3.01%	4.26%
	Realized values	3.20%	1.39%	9.70%	6.04%	5.23%	8.08%	0.99%	-18.3%	-
INVGR	Target values	-	-	-	-	-	-	-	-	
	Simulated values	6.86%	8.53%	9.18%	9.36%	9.16%	8.99%	7.75%	4.69%	3.45%
	Realized values	21.16%	6.01%	0.74%	20.74%	-11.84%	4.37%	0.98%	-	-
EXCG	Target values	11.81%	11.84%	11.87%	11.90%	11.93%	-	-	-	-
	Simulated values	18.21%	21.52%	17.43%	13.34%	10.58%	10.18%	16.77%	10.29%	12.79%
	Realized values	14.81%	14.73%	-3.93%	-4.84%	29.84%	13.56%	6.04%	24.08%	-
IMPR	Target values	6.54%	6.54%	6.54%	6.54%	6.54%	-	-	-	-
	Simulated values	3%	9.95%	9.14%	8.37%	6.07%	3.86%	2.30%	2.95%	6.53%
	Realized values	2.21%	7.11%	3.11%	7.80%	-1.6%	8.22%	-5.29%	-23.5%	-
P	Target values	14.6%	11.5%	9.1%	7.9%	6.8%	-	-	-	-
	Simulated values	9.99%	8.11%	7.43%	11.91%	10.09%	9.8%	12.71%	11.8%	10.81%
	Realized values	10.4%	11.86%	18.38%	25.37%	10.74%	12.41%	21.47%	30.5%	34.69%
EMP	Target values	-	-	-	-	-	-	-	-	-
	Simulated values	3.89%	4.34%	4.32%	4.21%	4.32%	4.53%	4.92%	4.58%	4.81%
	Realized values	3.14%	5%	3%	-2.80%	2.44%	-1.63%	-0.53%	2.99%	-

4. DISCUSSION

Non-oil GDP growth rate have an increasing trend in the first two years, a decreasing trend from 2007 to 2010, an increasing trend in 2011 and then will decline with a slight slope. The evaluation of the trend of influential variables on non-oil GDP reveals that, as the most influential factor on non-oil GDP the growth rate of total factor productivity was high in the first two years of implementing the development plan and then have an almost decreasing trend.

As the second most important influential factor on non-oil GDP rate, simulated employing population has an increasing trend in the first two years, goes down with a slight slope from 2007 to 2008 and then has an almost increasing trend. In summary, it can be concluded that the decreased growth rate of productivity, the decreased number of simulated employing population, the decreased simulated investment expenditures during 2007 to 2010 and the increasing trend of exchange rate in 2013, started from 2011, are the most important factors affecting the decreasing trend of simulated non-oil GDP over the years.

The growth rate of the simulated values of consumption expenditures in the private sector is lower than that of realized values during 2005-2007 and 2011 but the former has a more sustainable trend than the latter over the whole period. Decreased liquidity growth rate, in accordance with the objectives of the 4th development plan, the decreased simulated values of inflation rate and the sustainable trend of simulated disposable income are of factors affecting the decline of consumption expenditures in early years and its sustainable trend over the period. The decreased fluctuations of consumption expenditures in private sector leads to the decreased fluctuations of total consumption rate and results in a more sustainable trend for society savings level. Domestic savings is an important factor determining the quantity of investment in economy.

The simulated trend for the growth rate of investment expenditures in private sector reveals that, except 2008, the growth rate of this variable had an almost smooth increasing trend. In 2008, the sudden increase in the simulated real interest rate resulted in the increase of the growth rate of investment of private sector in that year. Immediate increase and decrease of interest rate decisions made by the money and credit council on annual basis result in intensive fluctuations in the real interest rate and unsustainable investment trend in the private sector.

The trend of simulated non-oil export products and services suggest that the implementation of targeted monetary and fiscal policies can extend the growth rate of this variable beyond the rate determined in the plan. The growth rate of simulated values was lower than that of realized values in some years. The fluctuations of production and real exchange rate result in fluctuations in the growth rate of anticipated values but these fluctuations are lower than those of realized values for export.

Except 2010, the import rate of goods and services is higher than realized values in the whole period. The increased growth rate of GDP is the most important factor resulted in the increased growth rate of this variable. On the other side, the increased growth rate of tariff in 2009 as well as the increased exchange rate resulted in the decreased growth rate of good and service import.

The trend of simulated consumer price index (CPI) suggests that the implementation of monetary and fiscal policies decreases the fluctuations of anticipated values significantly but the targeted values will not be achieved. According to CPI equation, production growth is the most important factor affecting the decrease of inflation rate. Also, the fluctuations of interest rate during the period result in the fluctuation of inflation rate.

The investigation of employing population simulated rate suggest that by adopting monetary and fiscal policies a regular increasing trend can be obtained for the employing population. The growth of GDP rate is the most important factor resulted in increased labor demand rate during the studied period.

The conclusion of above discussion is that control of inflation require more contractive monetary and fiscal policies. However, necessary infrastructures should be provided to minimize government size. Also, the relationship of monetary and fiscal policies with production sector should be weakened in order to minimize the damage of production sector, especially private sector investment, resulting from the outcomes of contractive policies. More concentration should be applied to increased productivity of production factors, decreased economic risk, cost cut and improvement of structures in order to increase production. To this end, optimal resource allocation policy can be a beneficial tool for supporting production sector, private sector investment and labor sector against impacts of contractive monetary and fiscal policies. A brief look at table (1) shows that most of macroeconomic variables are under the influence of production. If production lies on an optimal path, it can help the improvement of other variables. However, short-term compensating policies, especially for monetary policy, should be designed to minimize the deviation of the realized values from the target values in the program in order to put the economy into the pre-determined path.

5. CONCLUSION

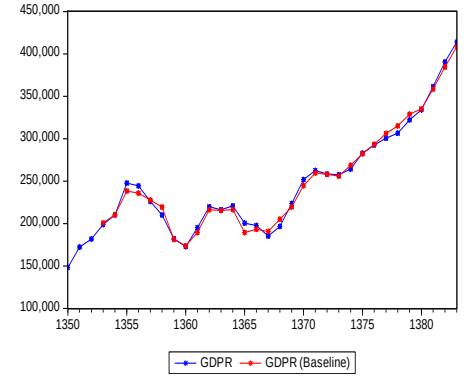
This study investigated the effect of qualitative targets of monetary and fiscal policies, determined in the 4th development program, on macroeconomic variables. To this end, a macroeconometrics model was designed. Equations were estimated for time period of 1971 to 2004 using vector error correction model. When the accuracy of the model was confirmed using U-Static and RMSPE indicator, the efficiency of program's targets for time period of 2005 to 2013 was predicted using dynamic simulation approach. According to simulation results, the application of targets reduced the fluctuations of production variables, consumer price index and labor demand but it could not put them in the predetermined path of the program. It is necessary to review the qualitative targets of monetary and fiscal policies of development programs in accordance with economy structure of Iran. In addition to long- and mid-term policies, short-term regulatory policy should be applied to ensure realization of the targeted values considered in the programs, especially for fiscal policies. In qualitative goal setting for fiscal policy, special attention should be paid to government size in Iranian economy. The larger the government size is in an economy, the greater its expenditures, especially the current expenditures, will be. With respect to the type of public

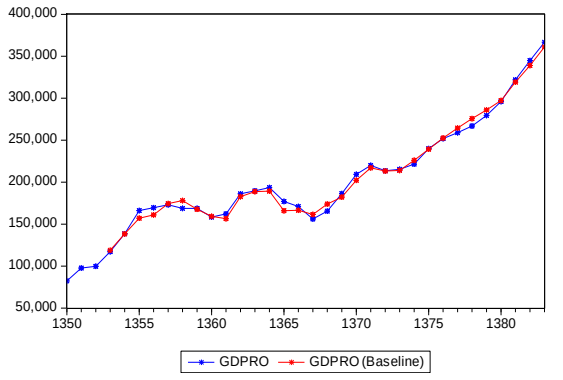
expenditure in Iranian economy and its more durable impact versus monetary policy, government's budget shrinking should be decided more realistically and attempts should be made to minimize budget fluctuations. Also the central bank should make short-term decisions on monetary policy more carefully. Monetary policy fluctuations with a short interval will cause an uncertainity in a society and they will have irreversible impacts on investment spending.

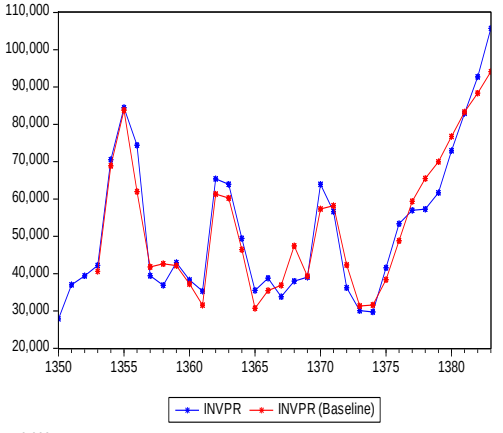
Table-4. List of variables

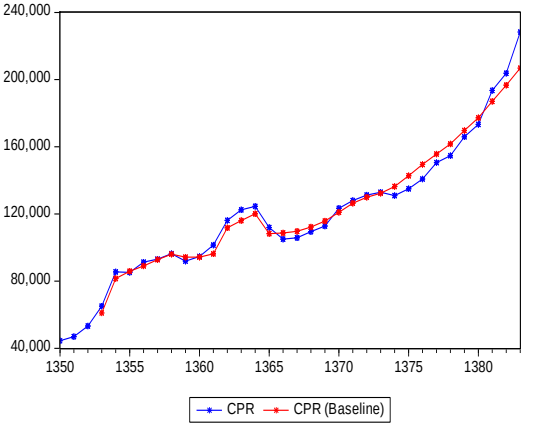
UN	**Unemployment Population**	**EMP**	**Employment Population**	**GDPRNO**	**Non-oil GDP at Constant 1997 prices**
INVPR	Private investment expenditures at constant 1997 prices	INVGR	Government investment expenditures at constant 1997 prices	INV	Total investment expenditure at constant 1997 prices
CPR	Private consumption expenditures at constant 1997 prices	EXCG	Non-oil exports of good and service at constant 1997 prices	TM	Average tariff rate on imports
IMPR	Imports of good and service at constant 1997 prices	IMPN	Nominal Imports of good and service	TX	Import tax
TI	Tax income	YDR	Disposable income at constant 1997 prices	GDPDEF	GDP deflator
GDPR	GDP at constant 1997 prices	INTLN	Nominal long-term banking interest rate	INTLR	Real long-term banking interest rate
FK	Central Bank Net Foreign Assets	CREDIT	outstanding Facilities by Banks and Credit Institutions to Non-Public Sector	OMRANI	Development expenditure
AGWN	Minimum nominal wage	AGWR	Minimum real wage	M	Money stock (liquidity)
ERN	Nominal exchange rate	ERR	Real exchange rate	CPUS	USA Consumer price index
UR	Unemployment rate	LFORCE	Labor force	CPI	Consumer price index at constant 1997 prices
P	Inflation	TFP	Total Factor Productivity		
D_{75}, $D_{83\text{-}85}$lncpr, D_{83}, $D_{93\text{-}94}$lninvpr, D_{78}, $D_{88\text{-}89}$lninvgr, $D_{81\text{-}86}$, $D_{93\text{-}94}$lnexcg, $D_{81\text{-}86}$lnexcg, D_{83}, $D_{89\text{-}91}$, $D_{86\text{-}88}$lnGDPRNO, $D_{80\text{-}88}$, $D_{98\text{-}99}$lnt					Dummy variables

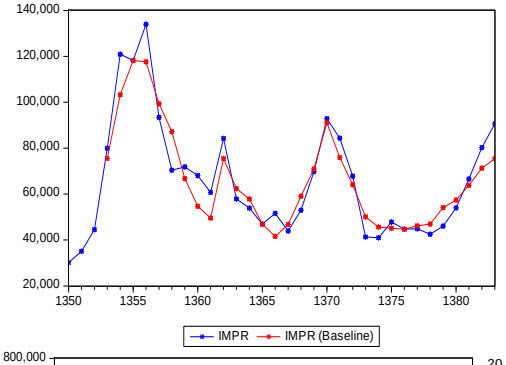
Simulation graphs

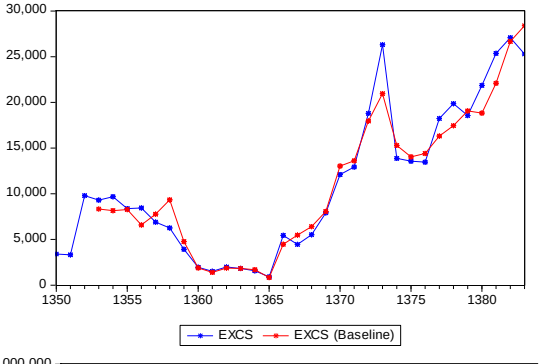


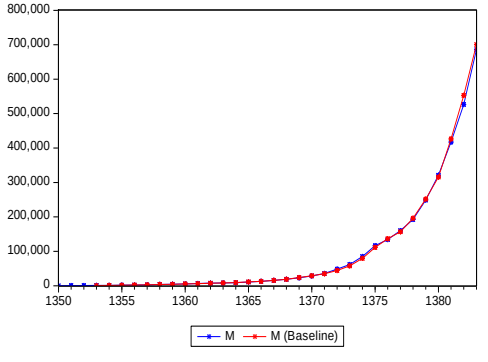


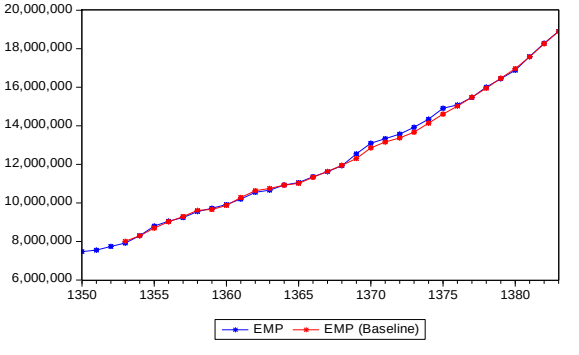


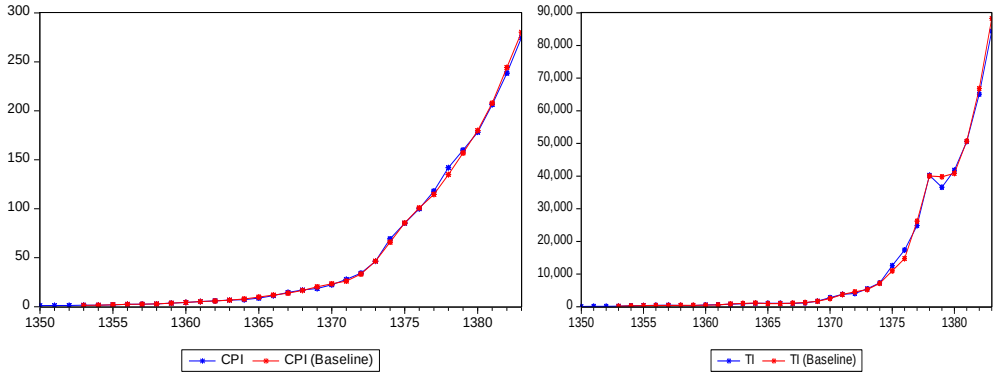












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