

# Examining the Reasons for the Lack of Control of Iran's Central Bank on the Monetary Base and Volume of Money (Case Study of First and Second Development Plans)

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## Abstract

This paper presents effects of inappropriate monetary policy and the reasons that led to such policies. In Iran after the Islamic Revolution the Bankruptcy Banking Act was passed.

As explained in this paper, the law does not provide the necessary tools for applying monetary policy to the central bank. due to the lack of control of the Central Bank of the Islamic Republic of Iran in the foreign exchange and budget developments of the country, its role in controlling the volume of money in Iran is very limited. Therefore, the government sector (with full authority over foreign currency decisions, oil exports rate and the country's budget) is only the competent authority to control the volume of money in Iran, which means that the government can make reasonable growth and balanced Monetary Base and as a result, the volume of money in the economy by choosing appropriate currency and budget policies.

**Keywords:** monetary base, money multiplier, volume of money

**JEL:** E52, E43

## Introduction

In Iran, many studies have been done on inflation, its causes and effects, as well as appropriate monetary and fiscal policies to contain this phenomenon. Most of these studies confirm the fact that inflation in Iran is a monetary phenomenon, and other factors, including those related to the supply or cost pressure, have had less effect on the increase of the general level of prices. As the research shows, a large percentage of changes in the general level of prices in the long run are due to an increase in liquidity. In other words, these surveys confirm the monetary nature intensity of the inflation phenomenon in Iran, and the only way to control prices is to control the volume of liquidity.

**Monetary Policy and Interest Rates and Controlling Prices:** It is also noted that the Monetary Transmission Mechanism, which describes how monetary variables and the volume of liquidity affect the real sector of the economy, were almost ineffective in Iran, and the increase in liquidity has not been able to stimulate investment and consequently production due to the structural problems of the economy reducing the bank's interest rate. In other words, the volume of liquidity only effects on the demand increasing prices, so it can be claimed that the liquidity decrease will not reduce the production (Monetary and Bank Research Insti-

tute of Iran, 1995, p.116). Consequently, the most important goal of monetary policy in recent years was controlling prices, especially through the control of liquidity volume. Therefore, the pursuit of this goal, as well as the inability to use all necessary tools in this type of policy makings, has undermined the credibility of monetary policy, while the fundamental constraints imposed on monetary policy makers - whether in the form of policy making tools or legal and institutional forms –are the obstacle to the correct implementation of these policies.

Because considered monetary policies can provide a basis for economic stability or eliminate the economic turmoil that originates from other sources, so clarifying the factors that have led to the ineffectiveness of these policies during the first and second development programs, can pave the path of economic goals such as controlling the inflation, increasing the creditworthiness of monetary policy makings by the central bank, and so on.

So, given the importance of the subject, any effort that will be made to identify the above factors will be helpful.

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## Methods

### **Mathematical and Quantitative Methods: Factors Effecting on the Volume of Money Monetary Base (B)**

Monetary base can be simply defined the Central Bank's debt to private sectors and banks. In other words, the Monetary Base is comprised of total monetary debts of the central bank, which includes banknotes in circulation (C) and reserves of banks (R) consisting the legal reserves (RR) and additional reserves (ER).

$$R = C + R$$

$$R = RR + ER$$

By definition, it can be seen that the change in the initial reserves of commercial banks is the most important factor effecting on the supply of money; this change in primary reserves is referred to as a change in the Monetary Base or high-Powered money, since each Rial increase in the Monetary Base Leads to further increase in the volume of money.

Definition of the Monetary Base through sources

The assets of the Central Bank's balance sheet include:

1- Foreign Assets - Foreign currency debts (net foreign assets),

2- Public sector debt - Public sector deposits (net debt of the public sector),

3- Debt of banks (net), and

4. Other capital assets and other (net) debts.

Definition of Monetary Base through expenditures

Therefore, the monetary base through resources and expenditures can be defined as follows:

1- Issued Bills and banknotes held by individuals,

2 - Reserves of banks, including free and legal deposits of banks held by central banks, plus bank notes and bills (Table 1).

(1) Definition of Monetary Base through Resources = Foreign Assets (Net) + Debt of the Public Sector (Net) + Bank debts (Gross) + Other Assets (Net).

(2) Definition of Monetary Base through expenditures = issued banknotes and bills held by individuals + banks' reserves (including free and legal deposits of banks held by the central bank, plus bank notes and bills).

Given the equalization of the assets and liabilities col-

**Table 1. Resources and Expenditures of Monetary Base**

Years	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Resources	10310.6	10711.7	12317.9	14466.7	18007.4	23935.2	34401.2	47343.2	52513.5	61964.6	71877.1
Central bank's foreign assets	774.1	1350.0	1373.6	1651.0	9051.7	10377.8	15035.5	19629.6	12065.6	9313.6	12796.8
Central bank's claims from public sector	12864.8	13928.0	15388.4	16511.5	27391.1	34550.7	45360.8	51906.6	59044.8	72907.7	75863.9
Central bank's claims from banks	322.6	384.3	1316.6	2332.0	1296.7	4914.7	10420.0	10190.0	14929.8	13399.8	24328.7
Public sector deposits held by central bank	1879.0	2617.4	3126.2	3741.7	5407.7	7231.5	9857.9	12567.0	14041.0	18865.2	21862.8
Foreign debts of central bank	75.0	124.7	237.2	191.5	4740.9	4250.1	4084.0	4369.2	6123.7	6848.2	8594.5
Other debts and central bank capital account	1696.9	2209.0	2397.3	2094.6	9583.5	14436.4	22473.2	17446.8	13362.0	7943.1	10655.0
Expenditures	10310.6	10711.7	12317.9	14466.7	18007.4	23935.2	34401.2	47343.2	52513.5	61964.6	71877.1
Bills and banknotes in circulation	3922.9	4464.5	4963.9	5840.0	7459.4	9685.3	11761.7	14228.9	16793.0	20171.1	23913.7
Banks' deposits held by central bank	6387.7	6247.2	7354.0	8626.7	10548.0	14249.9	22639.5	33114.3	35720.5	41793.5	47963.4

Source: Economic Bureau of the Central Bank of the Islamic Republic of Iran

um in the Central Bank's balance sheet, the increase or decrease of each component of the assets leads to an increase or decrease in the debt, and due to this equality, the central bank can control the Monetary Base and consequently, the volume of money in the community controlling the monetary base resources (column of balance sheet assets) (Faraji, 2000, p.66).

### Money Multiplier (M)

One of the factors influencing the changes in the volume of

money is the increasing monetary multiplier  $(\frac{1+c}{r+c+c+r't})$ .

If we consider that  $\Delta M_1 = m.\Delta B$ , then the volume of money ( $M_1$ ) is influenced by two factors: Monetary base ( $\Delta B$ ) and Money multiplier ( $m$ ), and it has a direct relationship with both. Regarding the factors contributing to the Money multiplier, it can be said that the money multiplier has reverse relationship with the legal reserve rate of current deposits ( $r$ ), the legal reserve rate for long-term deposits ( $r'$ ), the ratio of non-sight deposits to current deposits ( $t$ ), and the ratio of excess reserves to banks Current deposit ( $c$ ), but since  $c$  is the ratio of cash and note bank in circulation to the current deposits in the money multiplier in the nominator and denominator, then its relation with the Money multiplier is unclear.

3. The relative importance of the Monetary Base and Money multiplier in the evolution of the volume of money

It has previously been seen that the volume of money in each economy can be expressed in terms of multiplying the monetary base ( $B$ ) and Money multiplier ( $m$ ) by that economy. In the other words,  $M = m.B$ . The relationship with the

slightest variation can be written as  $\frac{\Delta M}{M} = \frac{\Delta m}{m} + \frac{\Delta B}{B}$  in which

$= \frac{\Delta B}{B}$  is the change percent in the volume of money,  $= \frac{\Delta m}{m}$

the change percent in the Money multiplier,  $= \frac{\Delta B}{B}$  is the

change percent of Monetary Base.

**Monetary Base and Central Bank and Controlling the Volume of Money:** Monetary base changes in the economy for each period are always equal to the sum of the net changes in the foreign and domestic assets of the central bank for the same period. On the other hand, net changes in foreign assets of the central bank can be considered as a direct reflection of developments in the balance of foreign payments of the economy, so that any surplus or deficit in the balance of foreign payments will increase or decrease the amount of net foreign assets of the central bank (assuming that the central bank supports the national currency rate). In this case, it is clear that the Monetary Base changes in the economy are positively correlated with

the balance of payments. Similarly, net changes in central bank's claims from the public sector should be sought in connection with the budget developments of this sector. It means that any deficit or surplus in the public sector budget would have the same effect (Increase or decrease) on net claims of the central bank from this sector (assuming that the central bank supports the government bonds). In other words, the Monetary Base has a direct relationship with the changes in the government deficit. On the other hand, changes in the Central Bank's claims from banks are a function of the financial situation of the banking network, and any deficit or surplus on the net financial resources of the banks will increase or decrease in the central bank's claims to the same extent. The important point is that the Monetary Base changes can only be associated with changes in the balance of payments, the state budget and the banks' financial resources, if the central bank is required to support the cost of the types of securities in the economy, which means that if the central bank does not support securities, the price of such securities fluctuates in the financial markets. In other words, the central bank should choose either monitoring the changes in the Monetary Base or assessing the price of securities in the economy or both. In many Western industrialized countries, banking authorities have chosen monitoring the Monetary Base directly, thereby the changes in exchange and interest rates are to a large extent relied on the performance of financial markets, while many developing countries such as Iran which rarely have integral monetary and currency markets, have been forced to accept that monitoring the exchange rates and interest rates directly, and, consequently, monetary base changes is effected by economic events and financial markets.

Thus, changes in the country's volume of money can be largely a function of changes of two basic variables (monetary base and money multiplier). In this case, in order to investigate the effects of various factors on the volume of money in Iran, first of all it is necessary to study the effects of these factors on two basic variables. In other words, monetary base and Money multiplier are the channels through which various factors influence the supply of money. For example, the effects of currency developments and government budget on the country's money volume should be examined mainly through changes in the Monetary Base. Similarly, Money Multiplier can be used as an appropriate framework for examining the effects of changes in the behavior of various sectors of the economy on the volume of money. To this end, it is enough to assess the sensitivity of the Money Multiplier to the variations of its various parameters (Majedi & Golriz, 1996, p.127).

### **Why Has the Central Bank of Iran not Controlled the Monetary Base and, Consequently, the Volume of Money?**

The fundamental difference between the Iranian economy and the economies of the developed countries is on how to determine the Monetary Base supply, which means that in many developed countries, the Monetary Base supply is directly controlled by the central bank. so that the central bank can trigger desirable monetary policies making suitable changes in the supply of the Monetary Base (through the sale and purchase of government bonds), while Monetary Base supply in Iran is out of control of the central bank and it is usually determined in relation to considerations of supply and demand in various markets. The explanation is that the Central Bank of the Islamic Republic of Iran deter-

mines the cost of credit documents in the economy such as the currency according to certain criteria, and then equals the supply and demand for these documents by interfering and trading in various financial markets. As a result of these interventions, the central bank has been forced to buy large amounts of currency every year (mainly from the export of oil and government bonds due to state budget deficit) given the above and also the central bank's inaction in decisions for government's revenue and expenditure (including decisions on the amount of oil exports), it is clear that the developments in the supply of Monetary Base in Iran should be largely dependent on factors that are outside the control of the Central Bank of the Islamic Republic of Iran.

**Data Analysis:** Looking at the monetary Base resources (Table 1), it is observed that the net foreign assets of the central bank are mainly influenced by foreign exchange earnings and, in this regard, the central bank has not had very much effect on it. Government's net debt to the central bank was also largely affected by the government deficit, which was largely funded by central bank resources by the legislature. And the third factor, the bank's debt to the central bank, is also less important than the first two factors. The Studies show that the main contributor to the increase in liquidity growth in Iran was the increase in government expenditures (Rahimi Boroujerdi, 2000, p.93) (Tables 3 and 4). In other words, the volume of the monetary base is significantly affected by the amount of deficit and its continuity, as well as the ways to finance the deficit. and since government expenditure is also variable outside the scope of monetary policy, the control of the central bank on the Monetary Base is limited as one of the operational objectives (Table 2), and in such a situation, there is no possibility of implementing the accurate and efficient monetary policy, while adopting the Law of Interest-free banking in September 1983, tools such as free market operations and discount policies (which were considered important monetary policy instruments in controlling and changing the Monetary Base) are practically in their current form eliminated from the scene of the Monetary policy instruments.

The lack of control of the Central Bank of IRI regarding the supply of the Monetary Base of the country causes many problems in applying monetary policy and monitoring

the flow of money in the economy. Most of these problems are seen on the central bank's efforts to control the money multiplier, which means that since the central bank has little control over the supply of the Monetary Base, all its efforts are focused on exercising control over the money multiplier. Therefore the central bank has used a series of monetary instruments such as legal ratios and interest rates. As already mentioned, legal ratios directly and interest rates indirectly can trigger changes in the Money Multiplier. However, despite the significant increase in legal ratios and interest rates in the research period, the Money Multiplier in this period generally has a constant trend, and the relative stability of the Money Multiplier in turn has led to changes in the volume of money mainly influenced by changes in the Monetary Base of the country.

## Results

Given the above considerations, it should be noted that changes in the supply of money in Iran should ultimately be attributed to the determinants of the country's monetary base (currency and state budget developments). From the above, it is also concluded that due to the lack of control of the Central Bank of the Islamic Republic of Iran in the foreign exchange and budget developments of the country, its role in controlling the volume of money in Iran is very limited. Therefore, the government sector (with full authority over foreign currency decisions, oil exports rate and the country's budget) is only the competent authority to control the volume of money in Iran, which means that the government can make reasonable growth and balanced Monetary Base and as a result, the volume of money in the economy by choosing appropriate currency and budget policies. Failure to pay attention to this principle leads to an uneven growth of money in relation to the country's productive capacity, which in turn causes multiple bottlenecks, and ultimately creates inflationary pressures on the economy (Hajian, 1989, p.165).

**Table 2. Monetary Base Table**

year	Net foreign assets of central bank	percent	Net debt of state to central bank	percent	Net debt of other banks to the central bank	percent	Total monetary base
1989	699.1	6.8	10985.8	106.6	-1374.3	-13.4	10310.6
1990	1225.8	11.5	11310.6	105.6	-1824.7	-17.1	10711.7
1991	1136.4	9.3	12262.2	99.6	-1080.7	-8.9	22317.9
1992	1459.5	10.1	12769.8	88.3	237.4	1.7	14466.7
1993	4310.8	24	21983.4	122.1	-8286.8	-46.1	18007.4
1994	6127.7	25.6	27319.2	114.2	-9511.7	-39.8	23935.2
1995	10951.5	31.9	35502.9	103.2	-12053.2	-35.1	34401.2
1996	15260.4	32.3	39339.6	83.1	-7256.8	15.4	47343.2
1997	5941.9	11.4	45003.6	85.6	1567.8	3	52513.5
1998	2465.4	4	54042.5	87.3	5456.7	8.7	61964.6
1999	4202.3	5.8	54001.0	75.1	13673.7	19.1	71877.1

Source: Central Bank of the Islamic Republic of Iran / extracted from other tables

**Table 3.** *The Amount of Money and Liquidity during the First and Second Programs of Economic Development (1989-1999)*

description	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Money	8789.2	11195.2	13640.8	16368.6	22412.7	30431.8	40967.3	56271.8	63303.7	74784.4	86751.0
Bills and note banks held by people	3644.8	4119.3	4579.9	5359.3	6832.0	8700.6	10673.0	13216.0	15380.2	18773.1	22119.3
Sight-deposits of non-state sector	5342.4	7075.9	9060.9	11009.3	15580.7	21731.2	30294.3	43055.8	47923.5	56011.3	64631.7
Liquidity	18753.3	32969.5	28628.6	35866.0	48135.0	61843.9	85072.3	116552.5	134286.3	160401.5	192689.2
Debt of public sector to the banking system	14683.4	16096.2	17663.9	19918.6	32011.5	40860.9	55068.0	65916.0	80703.6	109976.1	117113.9
State	13527.6	14053.0	15053.9	15728.8	24735.6	31126.8	38661.6	42736.4	48202.0	66226.0	69211.9
Public institution and companies	1155.8	2043.2	2611.0	4189.8	7275.9	9734.1	16406.4	23179.6	32501.6	43640.0	47902.0

Source: *Economic Bureau of the Central Bank of the Islamic Republic of Iran*

**Table 4.** *Statistics of Receipts, Payments, Government Deficit, Inflation Rate and Issuance of Bonds during the First and Second Plans of Economic Development of Iran*

years	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Inflation rate)percent(1990=100)(	17.4	9.0	20.7	24.4	22.8	35.2	49.4	23.2	17.3	20.0	20.4
Earnings	3174.6	5632.5	6933.5	9884.5	20250.7	29244.5	41575.4	57275.6	62569.1	53761.7	92469.8
Payments	2316.7	6051.1	8090.8	10756.8	20886.9	28912.4	41330.9	56783.1	65438.0	70970.3	95210.7
Deficit (-) or surplus (+)	1142.1	-418.6	-	-872.3	-636.2	*332.1	*244.5	*492.5	-2868.9	-	-2740.9
Resources of deficit supply (-) or consumer surplus (+)	1142.1	418.6	1157.3	872.3	636.2	-332.1	-244.5	-492.5	2868.9	17208.6	2740.9
domestic loan	1137.8	557.3	96.5	907.0	241.0	0.0	0.0	0.0	0.0	6636.0	0.0
bonds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2174.0	2500.0	1884.3

Source: *Economic Bureau of the Central Bank of the Islamic Republic of Iran*

## Conclusion

Several factors have also contributed to the increase in net debt of the public sector to the central bank in the years after the revolution and during the period under review, which most notably can be summarized as follows:

In this table, the starred digits represent an imbalance due to the establishment of a reserve currency account during the above mentioned years.

**1) Nationalization of many private industries after the victory of the Islamic Revolution:** In these years, many private industries of before the revolution were directly and indirectly covered by the public sector, and high costs

were imposed on the state for their administration. More importantly, most of these industries had never earned profitability, but suffered losses, and they had been funded by the government.

**2) Declaring borrowing from abroad is illegal by the constitution of the Islamic Republic of Iran:** this principle means the disappearance of one of the sources of government financing, and it is obvious that it would make the government to rely more on domestic resources, including the central bank and the banking system of the country.

**3) The beginning of the imposed war and the emergence of its effects:** With the outbreak of the war and its effects on the economic structure of the country, the net debt of the public sector to the central bank increased.

The destruction of many production units and the decline in the country's productive capacity, the need of unaffected industries for Rial and currency budgets, and the need for government support of these industries, increased funding for military and strategic industries, increased government expenditures and the net debt to the central bank.

**4) Economic Sanctions against the country:**the loss of many exchange parties, because of sanctions imposed on the country, the increase of global inflation, along with the increase of the country's current inflation and the devaluation of the national currency, the change in the exchange relations to the detriment of the Third World countries, including Iran, and many other factors could be considered as reasons for increasing the net debt of the public sector to the central bank (which ultimately led to the lack of control of the central bank on the Monetary Base and the volume of money) (Komeijani, 1998, p.211).

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