Monetary Policy in Korea 1945-1960*

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Since the birth of the Republic of Korea, inflation has been a persistent ailment of the Korean economy. The annual average of the index of the money supply rose 1,848 times from the end of 1948 to the end of 1960, while the index of the average denomination of currency[1] and the index of Seoul wholesale prices rose 2,177 and 1,216 times respectively. Since persistent inflation is not possible without a continuous increase in the money supply, the role of the Bank of Korea, the central bank, has been important. The purpose of this study is to investigate the problem of inflation with particular emphasis on the role of the Bank of Korea from 1945 to 1960. To be specific, this study purports to inquire whether or not the Bank of Korea succeeded in stopping inflation.

This inquiry is important because the Bank of Korea was established in 1950 in an environment in which stopping inflation was the utmost goal of the national policy. The problem of inflation has, indeed, attracted a great deal of attention in Korea and Washington. From one regime to another, however, policies failed to remedy the situation until the recent military Revolution of 1961.

In order to evaluate the performance of the Bank of Korea, an estimate of the optimum increase in the money supply for the last fifteen years has been made. In estimating the optimum increase in money supply, Professor Martin Bronfenbrenner's work[2] has been invaluable. The optimum increase in money supply, as it is used here, means essentially the *safe* rate of increase of the money supply which would not contribute to inflation.

The data for the money supply published by the Bank of Korea are used in this study. The money supply consists of demand deposits and currency outstanding outside the banking system, plus some time deposits, which are used by many businessmen to replenish their checking accounts at the close of each day.

With the exception of the Seoul Wholesale Price Index, there is no price index which covers the period from 1945 to 1960. Consequently, the Seoul index has been heavily relied upon for economic analysis and policy description in Korea. However, the accuracy of Seoul index is questionable. Therefore, the index of average denomination of currency is used along with the Seoul Wholesale Price Index in this study.

In a situation like this, dis-aggregate analysis with particular emphasis on institutional and structural problems and the mode of operation of market and price systems is

* The author is greatly indebted to Professors John Hunter, Abba P. Lerner, Borie Pesek and Victor Smith, as their ideas and comments proved invaluable in the preparation of this paper.

1) The index of the average denomination of currency, computed by the author, is used as an index of price changes following the precedent of John J. Klein. See: John J. Klein. *German Money and Price* in *Studies in the Quantity Theory of Money*, ed. Milton Friedmen Chicag. University of Chicago Press, 1956), pp. 3-21, and *Price Level and Money Denomination Movements Journal of Political Economy*, LXVIII, No.4 (August, 1960), pp. 369 378.

2) Martin Bronfenbrenner, *Statistical Tests for Rival Monetary Rules*, in *Journal of Political Economy* (February. 1961), pp. 1-7.

necessary. Such an analysis, however, is beyond the scope of this study. Because of this reason, the tentative nature of this study should be noted at the beginning. Tentative though it may be, the findings of this study are conclusive enough to support the hypothesis presented in this study.

I. The Goals of Monetary Policy

In an evaluation of this sort, it seems necessary to delineate the goals of monetary policy in relation to economic development. In the literature on the subject of the economic development of underdeveloped countries, the relationship between stability and growth has been controversial. The study of prices and money in the last fifteen years in Korea also reveals sharp conflicts concerning this matter. Some argued that price stability should precede growth, while others insisted upon growth before price stability.

For the purpose of this study, monetary policy is considered to perform two functions: one is to accommodate credit, which is necessary to meet the increase in real output; that is the increase in the money supply should be precisely equal to the increase in real output.[1] An additional function is to increase the money supply slightly more than the rate of real output in order to induce economic growth. The first function of the money is based on the argument of traditional price stability. This point is evident in Professor Ellis' argument : *Monetary policy makes its maximum contribution to enonomic growth and to the balance of that growth if it succeeds in keeping price reasonably constant.*[2]

Recently, this sole function of money is not considered to be adequate, especially in the context of economic development. The traditional stability argument has been counter-dydlical in constant, based on a deep-seated belief that an appropriate monetary policy should climinate the fluctuation in economic activities.[3] That is, the stability argument is to promote economic growth as a by-product, money being only a non-committal spirit in the whole process of economic development. Furthermore, an empirical study of other countries suggests that there is no systematic relationship between price changes and the rate of economic growth.[4]

Because of the reasons above, due consideration should be given to the additional function of money. That is, the money supply should be increased slightly more than the rate of real output in order to induce economic growth. For an economy to grow, an additional investment to generate new output and an increasing marginal rate of saving are required, so that a larger proportion of the increased income may be devoted to further capital formation. In this connection, money can play a positive role in the context of economic development. For instance, an additional investment, to

1) proper consideration should be given to the fact that the demand for money for hoarding purposes, or the diversified demand for money, will increase as surplus units of the economy accumulate financial assets. A more important consideration in the case of Korea is the fact that the additional money supply becomes necessary as the money sector of the economy expands.

2) Howard Ellis, in a discussion with C. R. Wittlesey. *Relation of Money to Economic Growth, Amarican Economic Review, Papers and Proceedings,* May. 1956, p. 207.

3) J. W. Angell, *General Objectives of Monetary* in *The Lessons of Monetary Experience.* ed. Arthur D. Gayer (New York: Farrar & Rinehart. Inc., 1937), p. 53.

4) Rattan J. Bhatia, *Inflation, Deflation and Economic Development*, in *Staff Papers of I. M. F.* (November, 1960), p. 102.

be carried out by innovators in the Schumpeterian system, is associated with bank credit.[1] The amount of investment that can be undertaken by an entreprenuer in Kaldor's model[2] depends upon the possibility of earning profit, which in turn depends upon the deficiency or sufficiency of money available in an economy. Professor Bronfenbrenner,[3] in fact, suggests an *optimum* rate of inflation and a *money illusion* argument, and indicates the usefulness of slight inflation at an early stage of economic development.

How slight should inflation be? The answer to this question depends upon the elasticity of aggregate supply and institutional circumstances. Unfortunately, however, this is an issue about which no affirmative statement can be made on empirical grounds. For this reason, a pragmatic approach is inevitable in the matter of policy. That is to say, the Bank of Korea will increase the money supply in such a way that the price level change within a reasonable range. To achieve this end, the Bank will perhaps have to set the maintenance of price stability as the goal of monetary policy, with some allowance for an additional increase of money supply depending upon business conditions. This is the reason why the optimum increase in money supply is used as a criterion for the evaluation of the performance of the Bank of Korea in this study.

II. Theory of the Optimum Increase in Money Supply

Though the argument of *what should have been* has important historical meaning, the estimation in this study is necessarily crude and may signify only an explorative value. Specifically, the optimal increase in money supply is estimated on the basis of the actual or *expost* behavior of velocity. The actual behavior of velocity would change in the absence of inflation. In order to estimate the optimum pattern of money supply, we must konw the behavior of velocity in the absence of inflation. Because velocity is unknown in periods without inflation, the difference between the increase in the actual money supply and the optimal increase in money supply is only an indication of the departure of the *actual policy* from the *ideal policy*, on the assumption that the difference in policy would have no effect on the current velocity of circulation.

The primary concern of the central bank policy is to control the money supply. Therefore, a legitimate question seems to be *to what extent do the changes in money supply affect the behavior of velocity*? It seems that there is no evidence of a dependent relationship between money supply and the secular behavior of velocity.[4] This means that there is no evidence that a difference in the central bank policy would affect the behavior of velocity.

Since the evidence is tentative, some allowance for a dependent relationship between the money supply and velocity should be made in order to put the interpretation of

1) Joseph A. Schumpeter, *The Theory of Economic Development*, translated by Redverse Opie(New York: Oxford University Press ,1961), pp. 95 127.

2) Nicholas Kaldor, *Economic Growth and the Problem of Inflatin* in *Economica* (August, 1953). p. 210

3) Martin Bronfenbrenner. *The High Cost of Economic Development*, in *Land Economics* (August, 1953) p. 210.

4) Data for velocity of the total money supply are not available in Korea. Demand deposit velocity. The turn over rate of demand deposit, is used here as an indication of the behavior of total money supply. A correlation coefficient between quarterly data of deposit velocity and the quarterly data of money supply is-.0022. and between the changes in deposit velocity and money supply is .0035. Both data are seasonally adjusted and cover the period from 1952 to 1960

the optimal increase in money supply on a safer side. *

A theoretical ground for the estimation of the safe rate of money supply can be best explained by referring to the Fisherian equation of the quantity theory, with some modifications, which is expressed as:

$$MV=PT \tag{1}$$

P.....Index of Average Denomination
T.....Measure of Real National Income
M.....Total Money Supply
V.....Income Velocity of Money

The equation can be expressed in a differential form as:

$$\frac{dM}{M}=\frac{dV}{V}=\frac{dP}{P}+\frac{dT}{T}$$

When Keynes says, *the sum of the elasticities of price and output in response, to changes in effective demand is equal to unity.*[1] he seems to refer to the contention of the above equation. The effective demand in part affects both output and price.

In an ideal situation in which the price level is stable, dP becomes zero. With a given rate of change in the money supply and constant velocity, the change in prices will be zero when the real output increases by the same rate. When real output increases more than the rate of money supply, the price level will decline, or remain constant when the change in velocity affects the difference between the rate of change in the money supply and that of real output. Thus, it is possible to define the optimum pattern of money supply, $(dM/M)o$ as follows:

$$\left(\frac{dM}{M}\right)_o=\frac{dT}{T}-\frac{dV}{V} \tag{2}$$

This means that the safe rate of increase in money supply is equal to the rate of change of real output minus the rate of change in velocity. When dP is not zero, the actual rate of change in the money supply would be

$$\frac{dM}{M}=\frac{dT}{T}-\frac{dV}{V}+\frac{dP}{P} \tag{3}$$

From equations (2) and (3) the optimum pattern of money supply can be derived as:

$$\left(\frac{dM}{M}\right)_o=\frac{dM}{M}-\frac{dP}{P} \tag{4}$$

The verbal interpretation of equation (4) suggests that any increase in money supply beyond the optimum rate will be reflected in the general price level. Therefore, the elimination of this amount of money from the actual increase in money supply will give us the optimum increase in money supply.

The limitation of this formula in deriving the optimum pattern of money supply is the fact that it is based on a differential formula. That is the usage of the differential

* In literature, there is much controversy about this issue. However, is seems that there is no evidence of direct relationship between the money supply and the velocity. For example, Selden states *The evidence presented so far in this study suggests that cost of money substitutes has been a more important determinant of* Dm *(demand for money) in the United States during the period* 1919 1951 *than either cost of holding money or real income per capita.* The cost of the money substitute, in Selden's definition, is the difference of yields between long term bond and shortbill. See: Richard T. Selden, *Monetary Velocity in the United States.* in *Studies in the Quantity Theory of Money.* (Chicago: University of Chicago Press. 1956), p.214.

1) J. M. Keynes, *General Theory of Employment, Interest and Money* (New York: Harcourt, Brace Col, 1956) p. 285.

formula is valid only when changes in variables are small. However, both the money supply and prices in Korea have changed greatly and discontinuously. In order to eliminate the impact of the discontinuous changes, therefore, the following formula is used for computation:

$$\left(\frac{\triangle M}{M}\right)_0=\left\{\frac{1+\frac{\triangle M}{M}}{1+\frac{\triangle P}{P}}+1\right\}$$ [1)]

III. Actual and Optimum Pattern of Money Supply

Column 3 of Table I shows the optimal increase in money supply, which is based on the index of average denomination of currency. Column 6 shows the optimal increase in money supply based on the Seoul wholesale Price Index. Both columns indicate that the actual increase in the money supply is greater than the ideal patterns. This leads to the hypothesis that the Bank of Korea increased the money supply excessively over the last fifteen years.

As mentioned in the previous section, the optimum pattern of money supply is estimated on the basis of the actual behavior of velocity. Therefore, an adjustment is necessary of make a correct interpretaton of the optimum pattern of money supply. Assume that velocity changes as the money supply increases, as indicated in columns 3 and 6. The velocity may go either up or down as the money supply changes. If velocity rises, the estimated optimum money supply, indicated in Columns 3 and 6, would be too large for the ideal pattern. An increase in velocity would argument the difference between the actual money supply and the ideal patterns of money supply beyond the figures shown in Columns 3 and 6. Therefore, an increase in velocity strengthens the preceding hypothesis.

If velocity were to decline, the figures presented in Columns 3 and 6 would be lower than the ideal pattern. For this reason, Columns 3' and 6' are eatimated on the assumption that velocity declines 20 percent. Let us call these columns the modified-optimum patterns of money supply. Column 3' indicates that the actual increase in the money supply is greater than the modified-optimum pattern of money supply with the exception of 1958. Column 6' indicates that the actual increase in the money supply is greater than the modified-optimum pattern with the exception of 1957, 1958, 1959 and 1960. With the exception of a few years, then, the modified-optimum patterns of money supply also indicate that the Bank of Korea failed to maintain the optimum pattern of money supply. The Bank increased the money supply excessively.

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1) The Fisherian equation can be expressed in (1) as follows;

$(M+\triangle M)\ (V+\triangle V)=(P+\triangle P)(T+\triangle T)$ ……(a)

$(M+\triangle M)_0\ (V+\triangle V)=(P)\ (T+\triangle T)$ ……(b)

$(M+\triangle M)$ ……the actual money supply

$(M+\triangle M)_0$ ……the optimal money supply

From equations (a) and (b)

$$\frac{(M+\triangle M)}{P+\triangle P}=\frac{(M+\triangle M)_0}{P} \quad \cdots\cdots(c)$$

$$\frac{P}{P+\triangle P}\left(1+\frac{\triangle M}{M}\right)=\left(1+\frac{\triangle M}{M}\right)_0$$

$$\left(1+\frac{\triangle M}{M}\right)_0=\frac{1+\frac{\triangle M}{M}}{1+\frac{\triangle P}{P}} \qquad \therefore\left(\frac{\triangle M}{M}\right)_0=\left\{\frac{1+\frac{\triangle M}{M}}{1+\frac{\triangle P}{P}}-1\right\}$$

The years 1957, 1958, 1959, and 1960, are the exceptions to the above conclusion. In other words, the Bank might not have increased the money supply excessively. This is true only with the assumption of a 20 percent decline in velocity, which would be accompanied by the increase in money supply as indicated by Columns 3 and 6.

Table 1# Year to Year Percentage Changes in Prices, Money, Optimum Rates of Money Supply at Constant Velocity and Excessive Rate of Money Supply

	1 Ma	2 Pn	3 (Mno)	(3′)	5 Pw	6 (Mno)	(6′)
1946	64.38	27.11	29.32	49.32	476.52	−71.49	−51.49
1947	104.17	67.26	22.05	42.05	59.92	27.67	47.67
1948	65.56	39.83	18.40	38.40	59.62	3.72	23.72
1949	59.49	17.28	36.10	56.10	36.32	16.99	36.99
1950	71.37	88.78	−9.23	10.77	113.35	−21.52	−1.52
1951	231.76	268.69	−10.02	9.98	316.06	−20.27	−.27
1952	89.90	44.19	31.70	51.70	141.72	−21.44	−1.44
**1953	105.19	389.67	−58.63	—	21.50	68.83	—
**1954	117.05	5.14	106.43	—	29.98	67.98	—
1955	53.52	115.24	−28.68	−8.68	79.88	−14.66	5.34
1956	41.64	20.88	17.17	27.17	35.39	4.61	24.61
1957	23.12	26.89	−2.98	17.02	12.05	9.09	*29.09
1958	28.39	4.14	23.28	*43.28	−5.67	36.10	*56.10
1959	26.96	25.01	1.55	21.55	12.77	12.58	*32.58
1960	.01	44.20	−30.65	−10.65	10.58	−9.56	*10.44

Ma.....% change in actual money supply

Pn.....% change in the index of average denomination

(Mno) ...% change in the optimum money supply computed on the basis of index of average denomination.

Pw.....% change in the index of Seoul wholesale prices

3' .....% change in the modified-optimum money supply on the basis of index of average denomination.

6' .....% changes in the modified-optimum money supply on the basis of Seoul wholesale prices.

(Mno) ...% change of the optimum money supply computed on the basis of the Seoul wholesale price index.

** The years of 1953 and 1954 are excluded because of the impact of the currency reform.

The computation is based on the annual average. Data of money supply for 1945-1950 are from *Monthly Statistical Review* (Seoul: Bank of Korea. March. 1951). P. 122; for 1951-1960, from the *Economic Annual*. 1955. 1956. 1957. 1959. 1961 (Bank of Korea) Data for Seoul wholesale prices are from *Outline of Prices* (Mulka Chongram), Bank of Korea, 1961), pp. 174-5 Data for the index of average denomination of currency are from Nae Hoon Chung, *The Role of the Central Bank and Inflation in Korea*. 1945-1960. (unpublished doctoral dissertation, Department of Economics. Michigan State University. 1962). pp. II-V.

Suppose that this assumption is not realistic in the light of economic conditions prevailing then. Then the argument that the Bank did not increase the excessive money supply becomes dubious.

To what extent, then, is the assumption of the 20 percent decline in velocity realistic? Table 2 presents several indices of velocity. Because the indices of velocity, except the deposit velocity, are the residual figures derived by arranging the available indices of real output, prices and money supply, Table 2 shows only an indication of behavior rather than the accurate behavior of velocity.

Starred figures in the table indicate the decline of velocity. V_1 indicates a 27 percent decline in velocity, while V_2 and V_3 indicate the sharp increase in velocity in 1960. In view of the economic and political situation that prevailed in 1960, especially the student revolution of April 1960, the decline of velocity is unrealistic. Therefore, the assumption of a 20 percent decline in velocity in 1960 does not seem realistic.

V_2 and V_3 indicate a slight decline of velocity, while V_1 indicates a contrary situation in 1957. At any rate, the decline of 20 percant in 1957 seems impossible.

V_1 and V_2 indicate a severe decline of velocity, while V_3 shows the slight decline in 1958. In this particular year, it seems that there is no evidence to disprove the assumption of the 20 percent decline in velocity.

Table 2. # **Indices of Velocities**

	V_1	% Change	V_2	% Change	V_3	% Change
1954	100	—	100	—	100	—
1955	116	—	132.3	—	114.8	—
1956	117	—	144.4	—	127.4	—
1957	117.2	+1.7	*142.2	−1.4	*125.7	−1.3
1958	*93.3	−20.4	*123.5	−13.3	*124.4	−1.0
1959	131.3	+40.7	131.2	+6.2	126.7	+1.8
1960	*95.8	−27	185.5	+41.4	158.9	+25.4

Source of data are the same as in the case of Table 1, except for the index of real output.

V_3 is the demand deposit velocity V_1 and V_2 are residual figures derived by arranging the indexes of real output, prices and morey supply into the equation of the Quantity Theory of Money. For V_1 the official index of GNP and for V_2 the index of real output computed by the auther are used.

The index of real output is constructed by estimating the quantity index of 4 sectors of economy: agriculture, mining, manufacturing and electricity. A total of 33 major commodities is utilized in this estimation: 2 major commodities from agriculture, 6 from mining, 24 from manufacturing and 1 from electricity. These indices are weighed by the average value accrued to respective sector in the GNP of 1953, 1954 and 1955. However the adjustment for these weights is made on the assumption that each sector shares total service products according to the importance of respective sector. For detailed discussion on this issue, see: Chung, op. cit., pp. XXI XXI.

Except for the year 1958, therefore, the assumption of the 20 percent decline in velocity seems unrealistic. Thus, the argument that the Bank of Korea might not have increased the money supply excessively in 1957, 1959 and 1960 does not seem true. Even a 30 percent decline in velocity would result in about the same situation mentioned above.

If real output were to increase with the increase in the money supply as indicated by the columns 3 and 6, the above contention is weakened. The possibility of an increase in real output with a smaller increase in the money supply is very slim. This, then, strengthens the above contention that the Bank of Korea increased the money supply excessively.

The comparison of the optimum patterns of money supply indicated in Columns 3, 3', 6 and 6', therefore, clearly suggest that the Bank of Korea increased the money supply excessively over the whole period of this study, except for 1958.

IV. Monetary Management Experienced in Korea

In the argument presented above, it was shown that the Bank of Korea supplied the money in excess of the optimum pattern throughout the period of this study except for 1958. Attention will be focused on which sector of the economy is mainly responsible for that excessive increase in money supply. This will enable us to pin down specifically a few important problems of monetary management.

Table 3 presents the optimum change in the annual money supply, the actual change of money supply and the annual change of money supply attributed to the public sector, private sector and foreign sector. The public sector includes a wide range of important economic activities. The annual change in money supply attributed to the public sector is derived by subtracting government deposits and the counterpart fund deposits at the Bank of Korea from the sum of government overdrafts, advances to the United Nation military authorities, national bonds, industrial debentures held at the Bank of Korea and loans made by the banking system to government agencies and local governments.

The annual change of the money supply attributed to the private secter is derived by subtracting the time and saving deposits from the sum of loans made by the banking system to the private sector. The foreign sector change is simply the difference between the purchases of foreign exchange and the deposits of foreign organizations by the Bank of Korea. The *other* sector which is not shown in Table 3 is comprised chiefly of the inter-bank accounts of individual banking institutions and uncleared checks and drafts.

Over the whole period of this study, the annual expansion of money supply attributed to the public sector alone has been in excess of the optimum annual change of money supply. An obvious inference of this fact is that the government sector has been primarily responsible for the persistent expansion of money supply and, thus, for the continuous inflation during the period of study. The slowdown in the pace of inflation from 1956 until 1959 was largely due to the strengthened government budgetary position and also to the enforcement of the overall Financial Stabilization Program set up in 1957. The rapid increase in the price level in 1960 seems largely due to the increase in velocity caused by political disturbance.

Despite the huge increase in bank credit underlying the expansion of money supply, attempt at credit control have been ineffective. Clearly, the Bank of Korea was not in a position to restrict overdrafts by the government. Also, the Bank was not in a position to restrict loans to the government agencies and local governments, since such loans were predominantly for the purpose of government-sponsored undertakings.[1)]

1) The Act of Establishing the Bank of Korea provided that there is no limitation on the amount of advances that the Bank makes to the government or to the length of time that such advances will be outstanding. See: *The Act*. Article 63. No formal limitations were placed upon the amounts that the Bank can loan to the government agencies, although the length of time of loan outstanding was somewhat restricted. See: *ibid*. Article 36, 87, and 38. The General Banking Act provided the same requirement on loans to government agencies by banking institutions. See: *The General Banking Act*. Article 23.

The answer to the price stability problem, however, should be found. An obvious solution lies in the restriction of government spending within the limits of the optimum pattern of money supply, assuming no alternative means of finance. When the

Table 3.# Annual Changes in Money Supply Optimum Money Supply, and Money Supply Attributed to Public & Private Sectors

(in million hwan)

	Changes in Money Supply	(*d*Mno*)	(*d*Mno**)	Public Secter	Private Sector	Foreign Sector
1946	71.91	32.74	−79.84	39.1	23.0	—
1947	159.25	40.48	50.79	97.5	64.1	—
1948	245.76	68.97	13.94	147.5	117.1	—
1949	369.21	224.04	105.44	277.1	75.1	—
1950	706.48	−64.27	−213.01	266.2	277.6	—
1951	3,931.46	−563.90	−343.84	3,532.0	290.5	−102.0
1952	5,059.56	3,387.86	−1,206.59	2,275.0	2,788.7	237.7
1953	11,232.50	—	—	5,826.8	5,823.0	391.1
1954	23,669.25	—	—	18,665.0	5,942.0	294.5
1955	25,479.25	−13,651.50	−6,695.28	23,195.0	12,182.0	−6,253.3
1956	30,434.50	12,547.54	3,368.91	6,495.0	19,793.0	4,354.0
1957	23,927.25	−3,084.68	9,409.31	3,486.0	25,909.0	−2,219.0
1958	36,192.75	29,668.03	46,005.84	−22,135.0	36,234.0	19,460.5
1959	44,124.10	2,536.41	20,585.10	−952.0	25,194.0	43,329.0
1960	1,324.50	−63,677.40	−19,861.55	−3,536.0	17,930.0	−28,073.5

Annual Average
* Optimum amount of changes is money supply based on the index of average denomination.
** Optimum amount of changes in money supply based on the wholesale prices.
Source: Same as indicated in Table I.

government expands credit beyond the limits of such an optimum of money supply, the Bank of Korea should attempt not only to sterilize the subsequent increase of commercial banks' reserves by requiring 100 percent reserve requirements on the subsequent increase in the deposits at the commercial bank, but also to contract the equivalent amount of credit in the private sector. This requirement is imperative not only for maintaining price stability, but also for achieving the diversion of resources from the private sector to the government sector. In Korea, inflationary pressure has been emanated from and accentuated by attempts of the government sector to secure a large share of the total output. When the private sector reacts such attempts, a failure of the planned diversion of resources results. This failure requires a much bigger attempt of diversion by the government in the next round, creating a further spiral of inflation.

Clearly, then, the Bank of Korea should have reduced the equivalent amount of credits in the private sector in order to achieve the goal of monetary policy. Assuming that the foreign and other sectors of the economy remain neutral in the expansion of the money supply, a look at the column of the private sector clearly indicates that the changes in money supply attributed to the private sector has not contracted

throughout the period of this study. The persistent increase of bank credit in the private sector clearly reinforces the argument that the Bank of Korea incressed the money supply excessively.

Policies for Credit Control.....In this connection, some of the credit policies experienced in Korea should be mentioned. A major form of credit control before 1950 was the requirement of prior approval by the government for all loans both to the private and the public sector in excess of certain specified amounts. As professor Arthur Bloomfield states, however, *relatively few loans in excess of the limit were rejected by the authorities. Under the administration of the Republic of Korea, mereover, it appeared that political rather than economic considerations dictated the rejection of such loans as were not approved*[1].

A series of directives which stipulated the restriction of undesirable loans, loan renewal and loan collections were also issued from time to time. The authorities also raised the maximum rates of interest that could be charged on the various categories of bank loans. However, such credit policies, as a whole, were far to weak to curb the rapidly increasing credit expansion. Practically all the banking institutions were owned and controlled by the government after the liberation. Thus, monetary institutions were completely devoted to financing government expenditures. In this circumstance, the banking reform was sought as an urgent and essential measure for maintaining the stability of the Korean economy. The banking reform was initiated by the establishment of the Bank of Korea in June, 1950.

The conventional tools of monetary control are unworkable or ineffective when used in Korea, as in many other underdeveloped countries.[2] Because of this banking reform of Korea equipped the Bank of Korea with all the available tools of monetary control, allowing great power of discretion. The tools that the Bank of Korea has heavily relied upon have been quantitatively and qualitatively selective in nature. The most important one has been the loan ceiling policy. Consequently, the management of credit control in Korea can be judged by whether or not the loan ceiling policy has been effective in the past.

The Loan Ceiling Policy[3].....It must be mentioned that the loan ceiling policy, applies here only to a small portion of total funds available in the economy. Of the total loans made by the Korean Reconstruction Bank, the Agricultural Bank and commercial banks, loans made by the commercial banks declined from 63 percent in 1953 to 30 percent in 1960. Most of the loans made by banks other than the commercial banks are outside the control of the Bank of Korea. Furthermore, the loan ceiling policy was not applied to specific categories of transactions which were defined by the Monetary Board, including among others, loans for importing materials for productions and national defence.

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1) A. I. Bloomfield and J.P. Jensen. *Banking Reform in Korea*, (New York: Federal Reserve Bank of New York, 1951). pp. 40-41.

2) Numerous references are available for this issue. See: especially S.N. Sen, *Central Banking in Underdeveloped Money Markets*, (Calcutta: Booland Private Ltd., 1952 and Arthur Bloomfield, *Monetary Policies in Underdeveloped Countries, Public Policy.* (A Yearbook of the Graduate School of Public Administration, Harvard University) Harvard University Press. 1951.

3) The loan ceiling policy was first used in May, 1950, before the establishment of the Bank of Korea, through the suggestion of Professor Bloomfield. The Ministry of Finance placed a ceiling on the expansion of loans by commercial banks to private borrowers in each quarter.

During the Korean War, there was no need for control over commercial banks. All banks exhausted the resources of bank operations after the *run* on deposits from the banking system. With the establishment of more settled economic conditions and the restoration of banking facilities late in 1951, however, strong measures of credit control were initiated. Those strong measures were necessary because a sharp increase in bank loans to the private sector and government agencies was observed during 1951.

An allegedly stronger ceiling policy was implemented in 1951 along with various measures of vigorous credit control. The Monetary Board imposed an overall ceiling on the expansion of commercial banks as follows:[1]

2nd quarter, 1951	17.7 billion won#
3rd quarter, 1951	32.2 billion won
4th quarter, 1951	57.2 billion won
1st quarter, 1952	16.0 billion won
	123.1 billion won

The result of this loan ceiling policy was sadly disappointing. The expansion of bank credits during this period was much greater than planned, 193 billion won. An obvious reason for the failure of the loan ceiling policy is the fact that the ceiling of bank credit for each following quarter was set too high. It should be noted that the expansion of bank credit so the public sector alone exceeded the safe rate of increase in money supply during this period. In view of this fact, the original plan for the loan ceiling was not an appropriate one.

Technically, the loan ceiling policy was poorly managed. First, the high ceiling was fixed on the basis of expected growth of deposits, as Bloomfield clearly pointed out.[2] The ceiling fixed on the basis of expected growth of deposits certainly evaded the very purpose of the ceiling policy because the ceiling policy should aim at the restriction of secondary expansion of credit which results from the primary expansion of bank credit. Secondly, the Bank of Korea made loans to commercial banks totaling more than 71 billion won during 1951. The fact that the Bank of Korea made loans to commercial banks defeated the very purpose of imposing the ceiling on not exportion of bank credit.

Credit control measures, including loan ceiling policy, were very tight in 1952. However, bank credit was greatly expanded both in public and private sectors. By the middle of 1952, it was clearly recognized that monetary management was a failure. The currency reform of 1953[3] was then designed to overhaul the currency and credit condition.

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1) A. I. Bloomfield. *Report and Recommendations in Banking in South Korea*,(Seoul: Bank of Korea, 1952),p. 13.
100 won=1 hwan

2) Bloomfield. *ibid.*, pp. 13-15.

3) The impact of inflation was great before the currency reform due to the over issue of notes during the Korean war. The vast amount of funds were reported to channel into non-investment activities. The funds concentrated in such a way raised the interest rates in the curb market, thus creating undesirable pressures upon investment activities. Therefore, the government planned to absorb about 3,000 million hwan in order to divert these funds into productive investment. The currency reform of February 1953 allowed each person to exchange 100 won of old currency to 1 hwan of new currency up to 500 hwan. The reform also stipulated certain types of deposits accounts to be blocked and provided a series of rates by which the old currency could be exchanged for the new.

After the currency reform, the credit condition in the private sector was very tight. The money supply available to the private sector was reduced by 3,878 million hwan, which was greater than what the government planned to absorb.[1] Because of the tight credit condition, the series of exchange rates for the blocked accounts were reduced by the Congress. Since then, the Congress has been blamed for the continuing inflation.[2]

One must not fall to observe, however, the rapid shift of monetary policy after the currency reform. The measures of credit control became all too lax. For example, reserve requirements and bank rate were lowered. Moreover, the specific loan ceiling which had been imposed upon each individual bank was removed after the reform. Consequently, money supply increased sharply from March onward, after the temporary slack in February. Table 4 indicates approximately 3 holds of loans outstanding made by commercial banking in 1953, compared to the previous year.

Note that 1954 was once again a year in which bank credit to the public sector increased sharply. From the latter half of 1953, in fact, the government fiscal policy appeared to wage the wholesale diversion of resources from the private to the public sector.[3] after the currency reform. In addition, the establishment of the Korean Reconstruction Bank added fuel to the inflationary pressures. Despite those enermous increases in bank credit, the loans made by commercial banks to the private sector continued to expand significantly.

Under those circumstances, the part of credit made by commercial banks to the private sector was undoubtedly attributed to the removal of the loan ceiling policy although the consequence of the removal can be assessed only on the basis of incomplete information. The commercial banks in 1954 received fewer loans from the Bank of Korea than in 1953, while loans outstanding increased approximately by 3 billion hwan. It is possible to argue, therefore, that the major portion of this not increase in outstanding loans was made on the basis of an increased reserve resulting from the primary expansion of the money supply. Certainly, the loan ceiling policy could have eliminated this secondary expansion if it were used wisely. The removal of ceiling, then, is a clear manifestation of the wrong monetary policy.

A similar made of operation of the credit policy continued without major revision until 1957, when the Financial Stabilization Program was formulated. As Table 4 indicates, both the commercial banks borrowing from the central bank and the loans outstanding made by the commercial banks continued to expand.

The Financial Stabilization Program of 1957 was based on a decision made by the Combined Economic Board that new loans made after 31 December, 1957, should not exceed the sum of resources acquired by the banking system from the following

1) At the end of February.after the currency reform, the total money supply was reduced from 15,799 million hwan to 14,900 million hwan, a reduction of approximately 5 percent. A careful study of statistics, however. shows that notes outstanding and the private deposits were reduced by 31.3 and 30 percent respectively. See: *The Economic Annual* 1955 (Bank of Korea, 1955).

2) Ahn Rim, *The Korean Economy after the War* (Dong Nam Hu Han Gook Kieng Je), (Seoul: Paik Yang Sa, 1954). pp. 137-185. Also See: *U.N. Economic Survey of Asia and the Far East.* 1954, (New York: I.N.F., 1954), p. 92.

3) Compared with the executed budget of 1952, the 1953 budget of the government was too large. About 170 percent increased over the previous year, defense and reconstruction expenditures being the major causes for the budget increase. It can be safely concluded that in 1953, after the Korean War, the government fiscal policy anticipated an anticipated money supply, rather than seeking to contract it.

sources[1]:

1. Private time deposits;
2. Repayment of loans outstanding as of 31 December, 1956;
3. Borrowing from the counterpart fund;
4. Borrowing from the government derived from the Grain Control Account and Vested Property Proceeds.

This program appeared to be tantamount to saying that no net credit expansion would result from banking activities during 1957. In comparison with credit control measures implemented previously, this program had a more systematic aspect and achieved some success of credit control. Nevertheless, it should be mentioned that the effectiveness of this program was offset by government action and the program itself contained an elusive aspect.

Table 3 indicates a sharp contraction in the bank credit expansion attributed to the public sector, while the credit sharply increased to the private sector. The fact was that the government was primarily responsible for the sharp increase of credit expansion in the private sector. In 1957 attempt were made to enforce the collections of previous loans, especially the loans made for agricultural activities. The attempts were successful and made the government financially liquid. The government, in turn, loaned the collected funds along with vested property proceeds and counterpart funds, to various banking institutions in order to facilitate lending operations of the banking institutions for productive activities. This was the major cause of a sharp increase in credit expansion attributed to the private sector in 1957.

The elusive aspect of the program was provision 1 which allowed banks to make loans on the basis of an increase in private time deposits. This provision prevailed prior to the establishment of the Financial Stabilization Program. In Table 4, time and saving deposits show a persistent stride of increase. A major cause for the increase of those deposits were due to a wide scale saving campaign. In particular, *Bond-saving Deposits* and *Special Bond-saving Deposits* were set up in order to increase the saving deposits. In a slightly different way, those deposits were set up in order to increase the basis upon which commercial banks could make loans. The time and saving deposits increased, so the loans made by the banking system increased. Those saving campaigns were nothing more than attempts to convert illiquid government bonds, which were hold by the public in a compulsory manner, into liquid forms of bank deposits.

The 1950 situation will be reviewed in support of this issue. In 1958 the money supply increased very sharply, by 33 percent. The general nature of credit policy in 1958 was about the same with the Financial Stabilization Program of 1957.

The overall ceiling on the aggregate money supply seemed to have been set on the basis of the growth of time and saving deposits.[2] The quarterly loan programs and the ceilings an loans made by banks were also set on the growth of time and saving deposits. Expansion of net loans made by all commercial banks in 1958 over the

1) Byung Kuk Kim: *Central Banking in Korea* (Seoul: Bank of Korea, 1959), p. 53.

2) The Ministry of Reconstruction reports that there was no fixed ceiling on the aggregate money supply. See: *Economic Survey* (Ministry of Reconstruction, 1959), P 16. On the other hand, the Bank of Korea reports that the ceiling was above the actual money supply. See: The *Annual Report* (Bank of Korea, 1959), pp. 23-28.

previous year amounted to 17 million hwan despite the fact that bank borrowing from external sources, including advances from the Bank of Korea, declined by 3 billion hwan. (See: Table 4). Readless to say, the major source of loans in 1956 was time and saving deposits. This fact is especially noteworthy because 1958 is the year when the money supply increased greatly on account of public and foreign sectors.

Table 4.# Conditions of Commercial Banks

ASSETS (in million hwan)

	Cash and Checks	Deposits at Domestic Banks (Mainly at Bank of Korea)	Securities Including the Gov. Bonds	Loans	Others
1951	448	186	74	1,927	356
1952	1,155	1,005	164	5,784	1,394
1953	1,967	2,655	564	15,412	1,333
1954	4,509	3,830	1,059	18,831	3,881
1955	6,044	9,952	1,697	30,815	4,805
1956	15,013	12,996	3,338	54,559	6,071
1957	11,991	10,812	4,223	59,430	6,960
1958	20,525	13,815	6,547	76,292	13,963
1959	7,814	21,272	6,983	92,969	20,833
1960	37,660	17,558	10,149	114,726	26,236

LIABILITIES

	Total Assets Equal Liab.	Demand Deposits	Time and Saving Deposits	Borrowing From Bank of Korea	Borrowing From Counterpart Fund and Others	Others
1951	2,991	1,017	1,160	707	0	167
1952	9,440	2,101	2,976	3,269	59	1,035
1953	21,931	3,640	6,815	9,870	46	1,460
1954	32,110	9,257	11,877	8,303	385	2,288
1955	53,313	14,727	22,182	13,020	413	2,971
1956	91,977	18,619	38,912	26,932	476	7,038
1957	93,416	15,910	48,393	13,640	3,910	11,563
1958	131,142	23,165	70,756	10,512	3,676	23,033
1959	149,871	19,007	89,522	10,058	7,517	23,767
1960	206,329	32,583	108,426	26,668	9,518	29,132

At the end of each year

Source: *The Economic Annual* 1955 (Bank of Korea), pp. 325
The Economic and Statistical Annual 1961 (Bank of Korea). pp. 404-43

A study of the practice of the loan ceiling policy in Korea has been necessarily brief. However, it clearly points out that the loan ceiling policy was not used purposefully and effectively in Korea. In particular, it must be emphasized that the

understanding of the strategic meaning of loan ceiling policy as the most powerful and direct tool of credit policy is completely lacking in Korea, in a sense that loan ceiling policy was not used in eliminating the secondary expansion of credit. This should have been the minimum requirement for the effectiveness of the loan ceiling policy.

V. Conclusion

Evidences presented in this paper clearly suggests that the Bank of Korea failed in maintaining the goal of monetary policy. Specifically it has failed to stop inflation which has been of utmost importance to the national economy.

Optimal increase in the money supply, which is based on the Seoul Wholesale Price Index and the index of average denomination of currency respectively, indicates that the Bank of Korea increased the money supply in excess of the ideal pattern, except for the year of 1958.

When the increase of money supply is classified to various attributing sectors, the increase in money supply attributed to the public sector alone exceeded the ideal pattern. This, of course, indicates that the public sector has been mainly responsible for the persistent inflation during the period 1945-1960. This may reflect the disorganized state of the Korean economy since the end of the second world war and the ambitions movement for economic reconstruction since the end of the Korean War.

Whatever the courses of the increase in money supply, the experiences of Korea indicates that the relationship between the government and the monetary authority points out many difficulties in achieving effective monetary management, as it true in most underdeveloped countries.

It may have been possible, as it often argued in Korea, that the Bank of Korea could have done a better job of it were it not for the persistent interference or dominance of the government in the sphere of monetary management. Evidences, however, indicate that the Bank of Korea shares the responsibility for the failure of stopping inflation. It was noted clearly that the Bank failed to understand the strategic meaning of loan ceiling policy. When inflationary pressures emanated from the public sector, the Bank should have attempted not only to eliminate the secndary expansion of credit resulting from the primary expansion, but also to contract the equivalent amount of credit from the private sector. There was no evidence of such an attempt. Despite the fact that the money supply attributed to the public sector alone exceeded the ideal pattern of money supply, the credit to the private sector persistently expanded throughout the period of this study. This was done precisely because the Bank set up the loan ceiling on the basis of elusive reasons and because the Bank removed the ceiling when it should not have been done.

Since traditional tools of monetary control are unworkable or inaffective when used in Korea as in many other underdeveloped countries due to the lack of capital and money markets and other institutional problems, the Bank of Korea was equipped with a complex assortment of credit tools. This necessarily resulted in the diversified use of credit tools and, in turn, in complications and confusion in monetary management. The conflicting uses of a variety of tools, in particular, thus appeared to have nullified the potential effects of policies.