Financial Innovation and Monetary Control in Italy *

I. Changes in the Financial System in the Last Decade

1. *Some characteristics of the Italian monetary system in the mid seventies*

The Italian economic system is characterized by a very substantial separation between the formation and the use of savings. From midway through the seventies, most of the pressure leading to the growth of financial assets has come from the public sector, whose borrowing requirement is now around 70 per cent of total domestic credit. At the end of 1983, the Treasury debt was equal to about 78 per cent of GDP. At the same time, the amount of domestic credit to the private sector as a proportion of GDP showed a downward trend up to 1981 (Graph 1).[1]

The small number of financial instruments available, the inefficiency of the capital market and the adjustment, though slow and partial, of bank deposit rates to those on securities helped to keep households' liquidity preference very high (Table 1).

In the first half of the seventies the proportion of firms' investments covered by self-financing declined sharply. In the same period, direct financing, especially by the provision of equity capital, assumed negligible proportions. As a result, the financing of capital accumulation called for a marked intervention on the part of financial intermediaries in channelling funds from surplus sectors to those with net financial deficits (Table 3).

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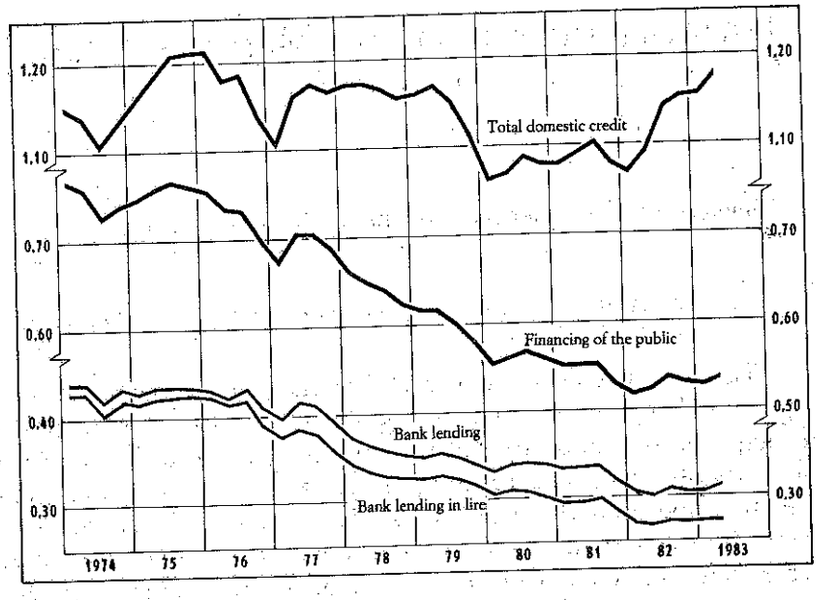
[1] This downward trend is less marked if account is taken of the funds received from the state sector and of direct recourse to foreign markets.

GRAPH 1

LOANS TO THE PUBLIC AND TOTAL DOMESTIC CREDIT

(average holdings as a proportion of GDP)



GRAPH 2

PUBLIC'S FINANCIAL ASSETS

(average holdings as a proportion of GDP)

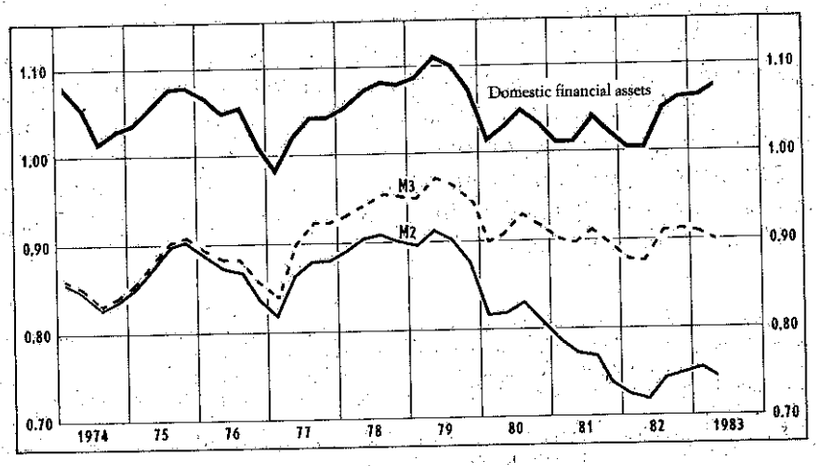


TABLE 1

HOUSEHOLDS' FINANCIAL ASSETS

(percentage composition)

Credit instrument / Year	M2	Treasury bills	M3	Bank acceptances	CD (SCIs)	Medium and long-term securities	Shares	Other financial assets[1]	Loans to non-residents	TOTAL
Holdings at end of:										
1973	56.7	—	56.7	—	3.2	17.6	7.1	7.4	8.0	100.0
1977	68.9	2.9	71.8	—	2.2	9.6	5.2	6.8	4.4	100.0
1982	59.1	12.8	71.9	0.3	3.1	8.9	6.8	6.7	2.3	100.0
Average flows:										
1966-1970	53.6	—	53.6	—	3.2	17.5	1.7	8.3	15.7	100.0
1971-1975	76.2	0.5	76.7	—	3.2	8.2	1.3	6.3	4.3	100.0
1976-1980	62.3	21.7	84.0	0.6	1.6	5.1	1.2	6.9	0.6	100.0
1981-1982	50.4	23.4	73.8	0.2	6.0	11.6	1.1	7.0	0.3	100.0
Flows:										
1980	57.7	29.3	87.0	2.1	1.1	− 3.1	1.4	9.4	2.1	100.0
1981	42.9	35.5	78.4	0.9	2.3	8.4	1.6	7.5	0.9	100.0
1982	56.2	13.8	70.0	−0.5	9.1	14.1	0.8	6.6	−0.1	100.0

[1] Including, from 1980, an estimate of atypical securities.

TABLE 2

HOUSEHOLDS' FINANCIAL ASSETS

(percentage composition)

Debtor Sectors / Year	Claims on financial intermediaries						Other claims on				
	M2			Special credit institutions (SCIs) (bonds and CD)	Insurance Companies	TOTAL	Public sector		Firms[1]	Foreign sector	TOTAL
	Bank of Italy (currency)	Banks	Post Offices					including Post Office savings			
Holdings at end of:											
1973	8.0	40.1	8.7	13.8	3.7	74.3	7.6	16.3	10.1	8.0	25.7
1977	6.5	53.8	8.6	6.5	2.9	78.4	10.0	18.4	7.3	4.4	21.6
1982	5.3	46.8	6.9	5.1	2.7	66.8	22.6	29.5	8.3	2.3	33.2
Average flows:											
1966-1970	6.9	41.6	4.9	12.9	3.2	69.5	10.3	15.2	4.5	15.7	30.5
1971-1975	7.2	59.9	9.1	8.5	2.9	87.6	5.3	14.4	2.8	4.3	12.4
1976-1980	5.3	54.4	9.2	−0.2	2.9	71.6	26.3	35.5	1.5	0.6	28.4
1981-1982	4.4	42.5	3.4	7.8	2.9	61.0	35.9	39.3	2.8	0.3	39.0
Flows:											
1980	5.8	44.2	7.7	−0.7	4.6	61.6	32.4	40.1	3.9	2.1	38.4
1981	5.6	34.3	3.0	3.4	3.6	49.9	45.7	48.7	3.5	0.9	50.1
1982	3.5	49.0	3.7	11.3	2.4	69.9	28.0	31.7	2.2	−0.1	30.1

[1] Including shares issued by banks and special credit institutions taken up by households.

TABLE 3

FINANCING OF THE ECONOMY

(percentage composition)

PERIOD	Banks	Special Credit Institutions[1]	Capital-market financing				TOTAL (in billions of lire)
	Total lending[2]		Bonds		Acceptances[3]	Atypical securities	
				Issues taken up by banks			
Holdings:							
1969	55.1	31.3	13.6	6.5	—	—	39,204.4
1973	54.5	34.5	11.0	4.8	—	—	68,776.6
1975	55.1	34.8	10.1	4.1	—	—	91,957.6
1978	58.7	32.3	9.0	2.7	—	—	142,959.0
1980	61.7	30.0	7.1	1.8	0.7	0.5	194,806.9
1982	58.3	32.7	7.5	2.2	0.7	0.8	253,166.6
Flows:							
1970-1975	62.3	32.0	5.7	1.7	—	—	62,473.2
1976-1978	63.5	29.5	7.0	0.5	—	—	48,863.1
1979-1980	78.7	18.2	1.4	−0.9	1.7	—	67,380.6
1981-1982	38.4	49.6	9.8	3.5	0.5	1.7	52,392.7

[1] Includes loans made with funds raised by placing securities with the banks.
[2] Excluding bad and doubtful debts.
[3] Acquired by non-bank investors.

The rapid increase until the mid seventies of subsidized credit granted by the special credit institutions (SCIs)[2] accentuated the growing importance of these intermediaries in the financing of the private sector. However, at the beginning of the seventies, the SCIs' ability to attract households' savings became weaker (Table 2). Specialization in fund-raising, which reserves short-term deposits for the banks, and the rise in inflation, which led to a fall in the public's demand for fixed-interest securities, created difficulties for SCIs in fund-raising. As a result, there was a marked increase in the share of loans to firms by banks. When banks were required to purchase securities issued by the SCIs, a situation was created in which nearly all corporate financing came — directly or indirectly via "double intermediation"[3] — from the banks, which therefore expanded their maturity transformation. In these circumstances, a restriction on bank credit was very effective in limiting the implementation of corporate programmes of expenditure.

The gradual adjustment of the cost of total fund-raising by banks to changes in interest rates on the financial market allowed banks to pursue policies of growth in their size and to attract an increasing proportion of the public's financial assets. When bank lending was limited by administrative controls, the surplus of deposits over loans was invested in securities (Table 4).

2. *Causes of main changes in the financial system*

2.1. The most important change in the structure of the financial system was triggered by the issue of short-term Treasury bills.

The drive of the monetary authorities, from the mid-seventies on, to create a broad market for short-term Treasury securities and the favourable reaction by operators to these financial instruments were due to the increasing size of public sector borrowing requirements[4] and to the increase in inflation.

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[2] The stock of subsidized credit rose to about 50 per cent of lending industrial credit institutions from 20 per cent of credit in 1960.

[3] Cf. BANK OF ITALY, *Relazione annuale sul 1982*, Table 3; between 1972 and 1981 the supply of funds by banks formed about 70 per cent of the resources of the special credit institutions.

[4] The state sector's indebtedness (Table 7) in the seventies was also increased more rapidly both because of the concentration in the hands of the Treasury of all receipts and hence of the responsibility for covering by its own transfers the needs of all the other public sector bodies, and because the state sector took over the debt accumulated by social security and local authorities.

TABLE 4

SECURITIES MARKET
(percentage composition of end-of-period stocks)

	1973	1975	1978	1979	1980	1981	1982
Bonds and Government securities	**85.1**	**75.2**	**75.0**	**73.2**	**65.6**	**59.4**	**56.9**
Public sector securities							
– at fixed interest rates	37.6	40.6	41.7	37.0	32.9	32.5	24.9
– at variable interest rates	—	—	11.3	17.0	18.2	18.2	28.5
– Special Credit Institutions	47.0	46.1	37.1	36.7	39.7	40.5	37.3
– Other issues	15.4	13.3	9.9	9.3	9.2	8.8	9.3
Held by:							
– *Bank of Italy-UIC (Italian exchange authorities)*	*16.4*	*19.5*	*23.3*	*18.8*	*18.6*	*17.6*	*14.1*
– *Banks*	*45.1*	*51.0*	*54.7*	*57.1*	*57.4*	*54.7*	*54.6*
– *Other financial institutions*	*5.7*	*5.2*	*3.5*	*4.5*	*5.4*	*7.1*	*7.9*
– *Economy and foreign sector*	*32.8*	*24.3*	*18.5*	*19.6*	*18.6*	*20.6*	*23.4*
Treasury bills	**10.1**	**20.6**	**21.4**	**23.6**	**31.2**	**37.3**	**38.2**
Held by:							
– *Bank of Italy-UIC*	*23.9*	*58.7*	*10.4*	*7.6*	*3.6*	*7.5*	*8.6*
– *Banks*	*74.1*	*36.6*	*58.2*	*49.6*	*45.5*	*34.2*	*36.5*
– *Other investors*	*2.0*	*4.7*	*31.4*	*42.8*	*50.9*	*58.3*	*54.9*
Certificates of deposit	**4.8**	**4.2**	**3.6**	**3.2**	**3.2**	**3.3**	**4.9**
Total (in billions of lire)	**60,829**	**96,438**	**179,471**	**204,891**	**235,933**	**288,202**	**366,769**
As a percentage of GDP	67.8	76.9	80.0	75.8	69.6	71.8	78.1
Shares (market value in billions of lire)	26,355	35,576	52,019	77,591	203,193	214,274	212,660
Atypical securities[1] (in billions of lire)	—	—	—	580	1,000	1,550	1,950

[1] Estimates.

Recourse to the market only through long-term fixed-interest securities (apart from postal savings, whose importance gradually declined) and the Treasury's access to financing by the central bank were two factors making for the risk of excessive monetary creation. The intensification of inflation and the increasing uncertainty as regards the future evolution of prices and interest rates did in fact lead to a sharp decrease in the demand for medium and long-term securities.

It was possible to reduce the risk of an excessive creation of monetary base by extending the range of financial instruments. A first option was the offer of securities with shorter maturities, which are less vulnerable to changes in quotations.[5]

In the second half of the seventies, huge quantities of Treasury bills were placed with banks, which corrected the composition of their balance-sheets by reducing both their liquidity in monetary base and their longer-term fixed-interest government securities. Later, banks only slightly increased their own Treasury bill portfolio and strengthened their intermediation in securities; there has been a switch towards the public in the placement of Treasury bills.

This switch to short-term securities, with a negatively inclined interest rate structure, may be only a first line of approach since the growth of the stock of short-term securities beyond certain limits leads to an excessive supply of liquid assets. As a result, in 1977 the monetary authorities initiated a gradual consolidation of the public sector debt by the issue of a medium-term Treasury security at a variable interest rate (Treasury Certificates of Credit, i.e. CCT), linked to the Treasury bill yield and hence suited to a period of high and uncertain inflation. In particular, this type of security could easily be included in banks' portfolios without leading to the rigidity caused by the holdings of long-term fixed-interest securities. The variable rate on Treasury Certificates of Credit has increased the ability of the banks to adjust to changes in rates, while allowing the monetary authorities to reduce banks' short-term securities. After the refinements effected at the beginning of 1981, and in particular after the grant of a spread in relation to the six-month Treasury bills, there was a marked improvement in the placements of CCT, first with the banks, and then with the public (Table 5). When rates and inflation are falling, if the spread is kept constant, the substitution of CCT for

[5] P. BAFFI: "Savings in Italy today", in this *Review*, June 1974.

TABLE 5

INDEBTEDNESS OF THE STATE SECTOR

(percentage composition)

ITEM	1973	1975	1977	1979	1980	1981	1982	1983 sept.
Treasury bills	11.1	12.2	23.9	26.4	34.5	38.5	38.8	35.5
Medium and long-term securities	26.7	21.8	22.5	29.6	23.2	20.7	23.5	33.0
Postal savings	24.3	19.8	18.4	18.3	16.1	13.7	11.8	10.0
Financing by Bank of Italy (including securities)	28.8	40.7	32.7	22.8	22.9	23.2	21.0	18.1
Other debts	9.1	5.5	2.5	2.9	3.3	3.9	4.9	3.4
TOTAL (in billions of lire)	42,219	67,451	104,485	169,062	205,971	258,637	330,223	392,950
Borrowing requirement of state sector/GDP	8.9	13.1	11.8	11.2	10.9	13.2	15.5	16.8[1]
Debt of state sector/GDP	47.0	53.8	55.0	62.6	60.8	64.5	70.3	78.5[1]

[1] Estimated data.

Treasury bills may become more rapid. In 1983, the maturity of CCT was steadily lengthened, and the spread was gradually reduced.

Financing by CCT does not make it possible to attenuate the marked increases in the Treasury's financial burden when interest rates rise, but it attenuates the potential instability of the markets caused by the need to make frequent renewals of huge amounts of the national debt, as when there are gross monthly issues of Treasury bills equal to 5-6 per cent of GDP.

2.2. The growth of the Treasury bill and CCT markets has had extensive effects on the financial system owing to the characteristics of the deposits market in Italy and to the structure of the public's financial wealth.

In postwar years, the Central Bank preferred not to avail itself of its power to impose ceilings on rates on deposits, but there were

forms of self-regulation of rates on funds raised by the banks, attempts which were given up in the first half of the seventies. The banks have always paid interest on deposits, even on those on sight and on current account, and have altered the interest rates on funds raised in line with the changes in those on other financial instruments. The difference between the interest rates offered on current accounts and those on savings deposits, as well as the difference between the yields on sight and on time deposits, was insufficient to make up for the higher liquidity of sight deposits and the services provided by current accounts; the result was a steady loss of importance for savings deposits. The possibility for customers to obtain the reimbursement of a time deposit before it matures by paying a previously agreed penalty has helped to reduce the banks' interest in these forms of funds, especially in periods of high fluctuations in rates.[6]

Competition between banks to increase the size of the funds raised has led to the failure to respect the agreements on maximum rates and, as has already been observed, to a tendency for the share of banks' intermediation to increase. As long as the public's financial assets were mainly composed of deposits and of long-term fixed-interest securities, the banking system increased its share of intermediation even during periods of rising inflation when real rates of interest on long-term securities became negative (Graph 3), triggering expectations of a fall in the quotations of securities.[7] "Confronted with two risks — one of a loss of purchasing power in their assets (at unchanged quotations) and the other of losses in quotations, savers (when they do not prefer investments in real assets or abroad) tend to prefer bank deposits which protect them from the second danger; in this, they are encouraged by the banks' active competition for the acquisition of funds".[8] The positive correlation between the share of bank deposits in financial assets

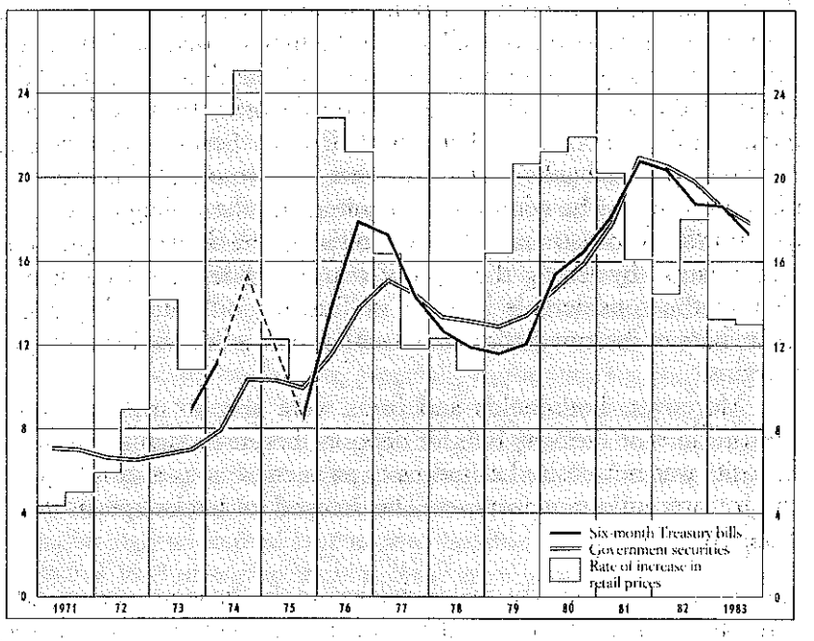
[6] The percentage share of time bank deposits in total funds fell from 41 to 11 per cent between 1960 and 1982; it was only in 1983 that this trend was inverted.

[7] In these circumstances, to have maintained non-negative "real" rates on long-term fixed rate securities would have required a sharp increase in long-term nominal yields. One difficulty lies in the fact that the monetary authorities' medium-term inflationary expectations may differ from those of the public; if, in order to place government securities, the authorities took account of the public's inflationary expectations and of the risk premium demanded, there would be negative effects on inflationary expectations. If these expectations were not realized, borrowers' real burden would be extremely high.

[8] P. BAFFI, *Il risparmio in Italia, oggi, op.cit.*

GRAPH 3

INTEREST RATES AND INFLATION[1]



[1] The rate of interest on six-month Treasury bills is the rate at which they are sold at the auction at the end of the month before the six-month period of reference. It therefore covers the same period as the rate of growth in prices shown in the Graph.

and the course of inflation was interrupted during the inflationary period which began in 1976, and to a more significant extent from 1979 on. In these episodes, too, there was an increase in liquidity preference, but the switch from long-term securities took place towards Treasury bills, which are a short or very short-term asset and whose yield can take full account of inflation expectations.[9]

[9] The dispersion of expectations of inflation in the short term is normally much less large than that for the medium or long term. In addition, by issuing short-term securities, the debtor can accept nominal rates of interest ensuring real negative yields, even in periods of marked inflation.

From the comparison between nominal rates and inflation (Graph 3), it emerges that, from 1981, real interest rates have become positive, unlike in other periods of restriction (such as 1974 and 1976), when the peak nominal interest rates were below the rise in prices; while, in the two earlier phases, the acceleration of prices was partly "unexpected", the persistence of inflation and the consolidation of inflationary expectations have resulted in the last few years in the increase in prices having to be incorporated in interest rates. The inversion of the yield curve was very marked in 1974 and in 1976-7; it was much less so in 1980, and during 1981 the yield structure flattened owing to the more rapid rise in the yields of medium and long-term assets. However, this evolution cannot be compared with that of the earlier phases of monetary restrictive policy, since the

The banking system was more exposed to competition from Treasury bills, since it had made an excessive reduction in the differentiation between transaction and investment deposits; the competition to increase the overall size of the funds raised, without making significant changes as regards the nature of the deposit, increased the range of the whole level of the rates on deposits, thus weakening the banks' ability to react by changing their rates. Severe limits were also imposed on the banks' ability to react as a result of the constraints placed on them (the compulsory requirement, the ceiling on loans and the portfolio constraint). While, initially, the banks fought disintermediation by letting their profit margins slide, at a later stage, in view of the considerable increase in Treasury bill rates, they allowed their share of intermediation to fall with a view to improving their profit margins.

Moreover, households and firms were able to make large-scale substitutions of Treasury bills for deposits, because a significant share of deposits was not desired as means of payment, but as a store of wealth and for precautionary purposes. The demand for bank deposits became more unstable.

2.3. A second important set of changes in the financial system, which was partly made possible by the growth of the Treasury bill market, is mainly due to changes in the administrative regulation of bank credit, the persistence of inflation and the keener competition on the part of non-banking intermediaries.

The administrative regulation of bank credit (and especially the continued application of the ceiling on loans in lire) has gradually led to the creation or the reinforcement of other channels of financing than bank loans.

In the two years 1981-2, when the constraints on the expansion of bank loans were most stringent, the supply of variable rate loans made it possible for the specialized credit institutions to increase their medium and long-term lending. In addition, there was a very marked increase in short-term lending of the industrial credit institutions, which can be mainly accounted for by the substitution of loans which the banks were not able to grant; these institutions also financed the activity of banking-related companies (for example, leasing companies), which in their turn

financial market has undergone considerable changes; in particular the percentage share of variable coupon securities has increased substantially.

also registered a sharp growth in response to the needs of new financial services requested by firms.

The banks have partly made up for the compression of lending in lire by the substantial expansion of lending in foreign exchange and by the rapid growth in bank acceptances. Nevertheless, in 1981, for the first time, the banking system suffered a significant loss in its market shares in corporate financing (Table 3).

The persistence of high and variable inflation, interacting with the evolution of the various forms of regulation, stimulated profound changes in the fund-raising instruments of the SCIs. Inflation led to problems in fund-raising for these institutions, because the specialization envisaged by credit regulation in Italy limits their operations to the medium and long term. The SCIs have reacted by extending fund-raising through certificates of deposit, especially those with a maturity of between 18 and 24 months. They have also reduced the maturity of bonds. The shortening of the maturity of the funds raised has been matched by that in the loans granted by the specialized credit institutions. Another important innovation in the institutions' medium-term fund-raising was the increasingly widespread recourse to variable rate bonds, which, in the first half of 1983, made up about half the gross issues (Table 6).

More generally speaking, there has been an expansion in the range of credit instruments offered by the different issuers (specialized credit institutions, firms and the Treasury) with a view to attracting a larger share of saving in financial assets. The supply of financial instruments with different characteristics makes it possible for investors to diversify their portfolio, and hence strengthens the demand for financial assets for a given level of interest rates.[10]

[10] The financial indexation formulae used have been very varied: while the yield of the Treasury Certificates of Credit (CCT) is linked to that of the six-month Treasury bills, almost all the other baskets are composed of short and long-term rates; the mechanism often provides for a minimum coupon, and in some cases a variable reimbursement premium.

Indexation to the ECU, as practised by the Treasury and by certain special credit institutions lends itself to protection against the risk of an external loss of purchasing power of the lira and of its repercussions on the domestic plane; given the limited amount of the issues effected, this instrument has not yet passed the learning stage for subscribers.

The issue of securities with a capital which can be revalued by a price index has for some years been practised by institutions specialized in building credit, but has so far been by no means widespread because of the scanty knowledge of the instrument and the existence of tax discrimination. The Treasury has recently issued a limited amount of ten-year securities indexed by the GDP deflator at factor cost; a large corporation has offered securities with coupons indexed to the cost of living.

Special credit institutions have experimented, through fairly modest offers, with innovative financial formulae partly designed to encourage a return by the investor to fixed rate securities.

TABLE 6

GROSS ISSUES AT FIXED AND VARIABLE INTEREST RATES
(total percentage composition in billions of lire)

PERIOD	Public sector	Specialized credit institutions	Others	TOTAL
1980				
at fixed rates	—	84.2	33.1	35.8
at variable rates	100	15.8	66.9	64.2
TOTAL	12,951	9,614	1,196	23,761
1982				
at fixed rates	9.6	43.7	6.6	18.6
at variable rates	90.4	56.3	93.4	81.4
TOTAL	52,272	14,111	5,430	71,813
1983 (first 6 months)				
at fixed rates	12.3	50.5	—	16.3
at variable rates	87.7	49.5	100	83.7
TOTAL	32,500	4,733	1,922	39,155

The rapid growth of certificates of deposit has been encouraged by the shortening of their maturity and by the entry of new issuers under the new set of rules introduced in 1981. Last, but not least, of the incentives, it must be remembered that these certificates have a considerable advantage over time deposits owing to the more favourable fiscal treatment and the exemption from reserve requirements which weigh heavily on bank deposits, even though the two financial instruments overlap at maturities of around 18 months.

The increasing ability of medium-term credit institutions to collect funds on the market, with variable rate securities and with certificates of deposit, has enabled them to keep up with the rapid growth of their lending, stimulated, at least in part, by the compression of bank loans.

The improved adjustment of medium-term institutions to high and variable inflation has altered their position with respect to the banks. In the seventies, these institutions had been forced by the fall in the public's demand for bonds to place fixed-interest securities in banks'

There have been issues of zero coupon bonds with a completely capitalized income and a life of up to 10 years, of drop-lock bonds and of variable-rate securities with a fixed interest bond option.

The Post Office, too, has recently tried to improve the trend in fund-raising by issuing a kind of interest-bearing certificate with a shorter maturity than that of those outstanding. The new certificates are renewable on sight, doubling the capital after five years and tripling it after eight.

portfolios, and the "portfolio constraint" imposed on banks had institutionalized this connection. The creation of new instruments for fund-raising was also stimulated by the substantial easing of the portfolio constraint.

In addition to the effect of the increasing independence of the special credit institutions as regards fund-raising, double intermediation has also been declining from the second half of the seventies because of the attenuation of credit specialization. Initially, the greater willingness of banks to grant medium-term financing at variable interest rates increased their share in this field. Subsequently, the administrative compression of bank loans sustained the marked growth in lending by the special credit institutions, especially in the short-term sector, thus further weakening the specialization of the two categories of intermediary. It is probable that the abolition of the ceilings (in June 1983) will only partly reabsorb these changes in the financing channels.

In the financial market, the more and more extensive recourse to variable interest rate securities (see Tables 4 and 6) has made it possible to keep open, even when rates were rising, medium and long-term credit channels which tended to be blocked whenever monetary policy was tightened, or, more generally, there were expectations of increases in nominal interest rates. This has attenuated the risk of an increase in the restrictiveness of monetary policy being concentrated on fixed investments in the absence of administrative controls on bank credit.

3. *Interaction between changes in the financial structure and monetary policy instruments*

Halfway through the seventies, the banking system was intermediating almost the whole of financial flows. This pattern helps to explain the importance attributed to the control of bank credit, and in particular the introduction of administrative controls designed to regulate the composition of bank assets.

After the substantial attenuation of the portfolio constraint in 1978, medium and long-term rates gradually incorporated "anticipated" inflation. The marked uncertainty as regards the evolution of inflation over the whole period of the life of long-term fixed-interest securities called for a high risk premium on these securities. The yield curve reverted to a positive slope after a period of several years in which it had

been mainly falling. The SCIs' greater flexibility in fund-raising — owing to the characteristics of the new instruments available — has helped to overcome the reluctance of the monetary authorities to allow interest rates to rise rapidly beyond the short-term segment of the yield curve.

The prolonged recourse to the administrative control of bank loans not only weakened competition within the banking system, but helped to create a substantial extension of alternative financing, which, together with changes in the technical forms of bank loans, led to the gradual undermining of the administrative instrument, despite the reduction in the exemptions aiming at selectivity and the gradually increasing severity of the ceiling.[11] The rates on Treasury securities also gradually approached those which would have permitted market equilibrium in the absence of direct controls.

The declining effectiveness of direct controls and the costs in terms of the reduced allocative efficiency of the financial system, on the one hand, and, on the other, the changes noted above in the financial structure induced the monetary authorities to take steps to extend the scope of monetary policy by controlling monetary base, thus implying acceptance of wider variations in interest rates, especially in the shorter term.[12]

In 1981, with a view to weakening the links between the creation of monetary base and the size of the Treasury's borrowing requirements, it was decided to cancel the agreement under which the Bank of Italy undertook to purchase the Treasury bills unsold at auctions. This implies that money market rates react more rapidly to significant divergences of the money and credit aggregates from the anticipated paths and to the evolution of the other more important variables.

As a further move to step up the role of the control of monetary base creation the monetary authorities, in December 1982, extended the compulsory reserve in monetary base to every form of funds raised by all banks and increased the coefficient in order to exercise closer control over the growth of deposits. In particular, the yield of the compulsory reserve was raised relatively to the certificates of deposit issued by the

[11] This experience recalls the more general teaching of J. Tobin on the advisability of a greater uniformity of controls for the different financial intermediaries.

[12] The decision not to renew the ceiling for the second half of 1983 (accompanied by the temporary adoption of a flexible system of monitoring) does not necessarily imply that the monetary authorities will no longer have recourse to this instrument, despite the tendency to give greater scope to market forces. The experience from 1976 to 1983 has in any case confirmed that the effectiveness of the ceiling is linked to the temporary nature of its application.

banks, in order to encourage a more precise differentiation between deposits constituting means of payment and those representing a more stable form of savings.[13] The lack of a significant distinction within bank funds has led to the slow spread to the whole mass of funds of changes in interest rates. The imperfect competition on the deposit market has been the main cause of the delay with which rates on bank deposits usually adjust to the market rates. The combination of these two factors has gradually propelled the rates applied to the whole of deposits upwards, and this has led to situations in which the average rate on bank funds has tended to increase still further despite the fact that the money market rates had already been falling significantly for one or two quarters (as in 1982), thus hampering the adjustment of the cost of credit. On the other hand, the negative effects on the extent and predictability of changes in interest rates would have been much greater if the changes had been promptly reflected on all the funds collected by banks.

The efficient functioning of the money, deposit and credit markets is one of the conditions for the rapid transmission of open market interventions and for the avoidance of excessive fluctuations in interest rates. In particular, delays in the reaction of operators mean that credit control by interventions in the money markets may be too slow and hence ineffective in the short term. If, in order to make up for delays, changes in interest rates on Treasury securities were made larger, the control via rates would become more costly in terms of market stability. In addition, there would be repercussions on the Treasury's financial burden, both because of the huge size of the debt and because the debt is largely a short-term one and in securities at variable rates.

Certificates of deposit ought to help to make competition on the deposits market less imperfect and at the same time, by encouraging a more precise differentiation between bank liabilities, they ought to prevent liability management from having repercussions on the interest rates on all deposits. By acting through the yield of certificates of deposit, the money market rates of interest ought to have a quicker impact on the cost of credit, especially after the suppression of the ceiling on loans. But such an impact seems to call for a greater easing of the burdens on this form of fund-raising, i.e. for greater incentives, and, at the same time, a significant stepping up of the minimum denomi-

[13] The incentive as regards certificates of deposit is granted if the maturity of the certificates is not less than six months, they are not reimbursable by the issuer before maturity and they can be negotiated at current yield on the money market.

nation especially for the shortest-term certificates. In particular, the certificates will become an important instrument in the banks' liability management when the banks have reduced the stock of short-term Treasury securities in their portfolio.

Until the present time, the growth of efficient markets has been mainly in those for Treasury securities. There has been less pressure on banking intermediaries to increase their efficiency, partly owing to the administrative controls. The central bank has aimed at increasing competition by authorizing the opening of new branches; and more recently it has abolished the ceiling. For their part, the banks, in order to reduce the stickiness of the rate on loans, have initiated a more flexible procedure for fixing the prime rate.

Greater efficiency in the capital market can be obtained by the operation of investment funds whose establishment has only recently been approved. In particular, these new intermediaries and the merchant banks, which ought to be set up in the near future, will be able to perform an essential function in increasing the demand for, and the supply of, risk capital. In addition, these new intermediaries will be able to compete with banks and SCIs in attracting households' savings. These institutions are likely to show great interest in investment funds and in merchant banks. On the one hand, these new instruments will enable the banks to manage a larger share of the public's funds and, on the other, to improve the quality of bank credit by encouraging firms to issue equity capital.

II. Some Implications for Monetary Policy

1. *Effects on demand for money and problems of defining monetary aggregates*

1.1 Financial innovations have influenced the demand for money (M2) in Italy: the ratio of the stock of money to GDP shifted markedly downwards between 1979 and the first half of 1982 (Graph 2). After an acceleration mainly caused by disturbances in the financial markets, in 1983 the growth in bank deposits came back into line, by and large, with the growth of income, and was much lower than that in overall financial assets, thus permitting the continuation of the gradual recomposition of

financial wealth. While, in a first phase, bank disintermediation took place in favour of short-term Treasury securities, there has more recently been a sharp rise in the demand for medium-term securities, although at variable rates; from 1981, there has been a stepping up in competition to bank fund-raising by other operators, mainly SCIs.

In 1980-81, there was also a rapid expansion in the bank acceptances owned by the public, but there was subsequently a fall in their holdings of these instruments, and the decline was still more rapid after the ceiling was removed. In 1982, there was a rapid growth in repurchase agreement operations by the banks with their customers. After these operations were made subject to the compulsory reserve, with the same coefficient as that for other deposits, there was a marked drop in their size.

The percentage share of bank deposits of the private sector (households and firms) in total financial assets, which had been rising from the beginning of the fifties and reached 54 per cent in 1977, inverted this tendency, and it can be estimated that, at the end of 1983, it will come down to below 40 per cent (Table 7).

The fluctuations in the money supply (M2) have been more extensive than those in the public's liquid assets (M3) (Graph 2); some banks have begun to issue certificates of deposit in order to reduce the instability of their intermediation.

1.2 Financial innovations in Italy have raised problems as regards the definition of wider monetary aggregates, since the boundaries between the different assets with a high degree of liquidity have become more blurred.

Even before the innovations and the changes in the financial systems witnessed in recent years, the characteristics of the deposits market in Italy made it impossible to effect a meaningful distinction between M1 and M2; the difficulty still persists. This is also because yields on chequable deposits change with market rates, and hence these deposits are not only used for current transactions, but, like savings deposits, are held as a liquid component in the stock of wealth.[14] The result is that, in Italy, it is practically impossible — except in the case of currency — to identify a monetary aggregate that serves only as a means of payment for current transactions. In addition, the small share of time

[14] F. COTULA, "La domanda di moneta" in Part II of the *Rivista di politica economica*, June 1971.

TABLE 7

TOTAL FINANCIAL ASSETS OF THE ECONOMY
(percentage composition)

ITEMS	1960	1970	1977	1982
Liquid assets	39.7	55.0	68.3	59.7
– notes and currency	6.4	6.8	5.9	4.3
– bank deposits	27.3	41.9	54.0	42.2
– postal deposits	6.0	6.3	6.1	3.9
– Treasury bills	—	—	2.3	9.3
Bank acceptances	—	—	—	0.2
Other deposits	0.7	1.7	1.5	1.9
Medium and long-term securities	9.6	12.3	7.0	6.3
Other financial assets	4.2	6.1	5.3	3.9
Shares and participations	44.0	14.6	9.9	22.9
Atypical securities	—	—	—	0.3
Claims on foreign sector	1.8	10.3	8.1	4.8
TOTAL	100.0	100.0	100.0	100.0

deposits implies that almost all saving deposits can be rapidly transferred with moderate transaction costs to chequable accounts. These characteristics help to explain why the financial innovations carried out in Italy, unlike those in other countries, have not so far affected the payments system to a significant extent.

The introduction of Treasury bills has led to the definition of a larger aggregate (M3), which differs from M2 in that it includes assets with a high degree of liquidity but a market value that is not certain before maturity.

The more recent introduction of bank certificates of deposit ought to lead to the definition of a new aggregate between M2 and M3. The definition of M3 is the nearest one to a measurement of the economy's liquid assets; the definition of M2, on the contrary, is relatively more appropriate as an indicator of monetary policy. The prices of bank certificates of deposit, like those of Treasury bills, are affected by market conditions, but these certificates form part of bank funds and are subject to the compulsory requirement.

Repurchase agreement operations of banks with their customers ought to be included in the money supply (M1 and M2). Moreover, there may be grounds why M3 should include the bank acceptances purchased by the public, with a maturity shorter than the average one of Treasury bills and for which a secondary market had begun to develop. However, these are problems which, empirically, are still unimportant, given the modest amount of these financial instruments.

The degree of liquidity of the Treasury Credit Certificates (CCT) is certainly lower than that of Treasury bills owing to their longer maturity. If there is an excess supply of CCT, the price of these securities on the secondary market suffers a fall which can be reabsorbed only if their yield is brought back to the equilibrium level at the time when the coupon is revised. Until then, the sale of these securities involves a loss on capital account. With the increase of the coupon, there is no longer any incentive to convert the securities into cash; but the increase in the yield of new issues of CCT can be achieved through adjusting the spread as well as the rate at which the coupon is indexed.

The shifts in the demand function connected with financial innovations have certainly increased the difficulties in using monetary aggregates as a guide to monetary action.

In the transitional phase necessary for operators to learn the characteristics of the new instruments and for the readjustment of the stock of financial wealth, the demand for money is certainly less stable and predictable than in the previous situation. The changes in the financial structure, the disturbances on the money markets (changes in mood, news which creates alarm etc) can lead to fairly wide shifts of funds between the different components of liquid assets. This evolution makes it more necessary to assess the extent of the shifts in the demand for money in order to use monetary aggregates as a guide to the control of monetary base. However, difficulties may arise, at least in the very short period, in identifying the size of the shifts in the demand for bank deposits or the short-term divergences from long-term demand which must be tolerated in the pursuit of a stabilization policy. For the same reason, the central bank's action must be flexible and refer to other indicators such as corporation liquidity, M3, total financial assets, real interest rates, the rate of exchange of the lira, the composition of the channels for the creation of monetary base, and the expansion of credit.

1.3 The creation of new instruments may also give rise to problems of measurement and regulation as regards the flows of credit to the non-state sector.[15]

At the end of 1982, about 60 percent of outstanding credit to the private sector (excluding foreign indebtedness) consisted of bank loans, and 33 per cent of SCI loans. The flow of credit, however, reflects a certain weakening of the dominating role of the banking system and of the SCIs (Table 3), especially if account is taken of the increase in the raising of equity capital and of direct recourse to foreign markets. The share of financing intermediated by the vast range of operators who have come into the market more recently (real estate funds, financial managements etc), though relatively modest if seen against the size of the stock of other financing, has achieved significant levels in terms of flows; these non-banking intermediaries, who can engage in door-to-door sales systems, have considerable advantages over those intermediaries who are subject to more severe controls. In order to control the overall financial flows, the Bank of Italy has power to limit the maximum amount of each issue of "atypical" securities.[16]

These changes in the financial structure have increased the degree of substitutability between the different credit channels, and hence have weakened the effectiveness of the administrative measures designed to regulate particular segments of the credit market. The shifts between the different forms of financing, on the contrary, do not detract from the effectiveness of monetary policy if the action of the monetary authorities is based essentially on market interventions, which operate by means of the rates of interest, and is aimed at controlling total credit to the private sector.[17]

The attenuation of the specialization of the two main categories of intermediary has also reduced the scope for regulating the composition of credit with a view to influencing short-term credit and investment financing in different ways. However, in this connection, it has been pointed out that the changes in the financial market make it possible to dispense with the forms of selective control aiming at offsetting the

[15] In the formulation and pursuit of a target confined to credit to the non-state sector, considerable problems arise owing to the difficulty of quantifying and forecasting the intricate pattern of the flow of funds between the public sector and firms.

[16] For these new instruments,the other crucial problem is that of maintaining the transparency of their conditions and avoiding the circumvention of the safeguards for savings in order to preserve orderly conditions in the markets.

[17] In the longer run, however, innovations increase the demand for financial assets, for a given level of interest rates, and hence tend to expand the supply of credit.

undesired consequences of credit restrictions on the availabilities of medium and long-term capital.

2. *The effectiveness of the control of monetary and credit aggregates and the variability of interest rates*

2.1 The adjustment of interest rates on bank deposits to rates on securities had already attenuated the impact on the demand for money of changes in the rates on Treasury securities which constitute the essential vehicle of monetary control.

At the limit, if the rate on deposits were at once fully adjusted to yields in the money market, an open-market operation would absorb monetary base and would increase the rate on short-term Treasury securities, but would not influence the amount of money demanded.[18]

As a result of this sensitiveness of the rate on deposits to the rate on Treasury securities, the achievement by the central bank of a specific monetary target calls for a change in interest rates which would be all the greater, the more complete or rapid the adjustment of the yield of total bank deposits to changes in the rate on Treasury securities. The relation between rates of interest and monetary aggregates becomes *more uncertain* because it depends on a set of reactions by the public and the banks.

In an initial phase, the introduction of Treasury bills, which have a high degree of substitutability with deposits, increased the tendency of rates on bank deposits to react to market rates because of attempts by the banks to defend their share of intermediation despite the shifts in the demand for money. The stronger reaction of rates on bank deposits to market rates was also encouraged by the increase in the Treasury bill component in the banks' assets. The race between rates on deposits and those on the other financial assets was stepped up, and there was an increase in the uncertainty of the relations between the instruments of monetary policy, the monetary aggregates and the level of interest rates. Subsequently, as noted above, banks accepted a reduction in the share of intermediation in order to restore their profit margins.

[18] "Efforts to keep the growth of such a money variable within narrow limits could foster wider short-run fluctuations in interest rates. Eventually, of course, increases in interest may slow income growth and thereby moderate the demand for M2. In effect, such a process amounts to slowing the economy to slow money growth, a sequence the reverse of that contemplated in the use of a financial variable for monetary targeting". L.E. GRAMLEY, "Financial Innovation and Monetary Policy", *Federal Reserve Bulletin*, Vol. 68, no. 7, July 1982, p. 397.

2.2 Financial innovations have increased the *elasticity of the demand for money to the rates of interest* on alternative financial assets, and they have made available financial assets which, owing to their degree of liquidity, are a better substitute for bank deposits than long-term fixed-interest securities. Up to the mid seventies, these securities offered the only alternative to deposits.

It is probable that the positive effect on the elasticity of demand for money of the new financial instruments has so far been greater than the negative one linked to the switch towards securities of investors with a higher elasticity to rates of interest. This means that a given change in the differentials between rates of interest tends to give rise to wider shifts than in the past between the different liquid or semi-liquid assets, and these shifts can take place rapidly. On the other hand, this makes possible the absorption of a given amount of monetary base with smaller changes in rates than in the periods in which there was a smaller elasticity to the rates for the demand for money.

This conclusion is strengthened if account is taken of the tendency for the burdens on banks caused by the compulsory reserve to increase, both through the raising of the coefficient and the rise in market rates.[19]

There has also been a tendency for the taxation of bank deposit interest to be increased, so that taxation is now much heavier than on other financial assets. These increasing burdens weaken the ability of banks to react to increases in market rates by raising their rates on deposits.

2.3 From midway through the seventies, there was a significant increase in the extent of the fluctuations in interest rates. This development was mainly the consequence of the greater variability of inflation and of the gradual disappearance of "money illusion". The greater variability of the rates also flows from the increased volatility of international market conditions and from the marked and erratic expansion of public-sector deficits which was coped with by a more severe control of bank reserves.

Financial innovations and the substantial attenuation of administrative controls on credit, by increasing competition, encouraged a *more rapid* adjustment of interest rates to market conditions and, to a

[19] The greater flexibility of the securities portfolio, obtained as a result of the gradual extinction of fixed-interest long-term securities and the increase in variable interest securities, has acted in the opposite direction.

certain extent, greater interaction between rates in the different markets. This development, however, does not necessarily imply that financial innovations cause *wider* fluctuations in rates; for example, if the transmission of the effects of open-market interventions on bank rates on loans becomes more rapid, the initial impact on Treasury bill interest rates will be smaller for a given objective in terms of the amount of credit. In addition, as already noted, the increase in the elasticity of the demand for money and monetary base makes it possible to achieve a given absorption of money and monetary base, other factors being equal, with smaller changes in rates.

2.4 The changes in the financial structure have also affected the monetary multiplier. First of all, Treasury bills in the seventies substituted substantially for the banks' liquidity in monetary base. In addition, in the second half of the seventies, there was a marked decline in the demand for currency, probably because of the changes in how wages and salaries are paid and greater recourse to bank money, a trend stimulated by higher rates of interest on deposits, the increase in bank offices and the spread of credit and cheque cards. These trends have led to a sharp increase in the money multiplier. The effects of these changes may be offset by appropriate changes in the creation of monetary base, although with some difficulty, because it is less easy to forecast the demand for monetary base.

However, a higher multiplier of monetary base reduces the efficacy of the control of money and credit aggregates, because it amplifies the effects of marked accelerations of the Treasury requirements, which, in the short term, can also be reflected in the evolution of monetary base.

In order to stabilize the growth of deposits, by reducing the multiplier of monetary base, the monetary authorities significantly increased the compulsory reserve coefficient. This measure obviously reduces the competitiveness of the banking system *vis-à-vis* other financial intermediaries which are not subject to the same constraints, since the rate of interest on the compulsory reserve is at present well below market rates.[20] On the other hand, the correlation of this differential with the rates on Treasury securities increases the effectiveness of monetary action (cf. section 2.1).[21]

[20] In the event of a gradual attenuation of exchange control, the substitutability of liquid assets in lire for those in foreign exchange would increase. The heavier burdens on Italian banks will possibly reduce their competitiveness with foreign banks as well.

[21] M. SARCINELLI, "Gli strumenti della politica monetaria come fattori di disintermediazione bancaria: quali prospettive per il futuro?", in *Economia italiana*, no. 2, June 1982, p. 191.

2.5 With reference to the IS - LM model, the increase in the elasticity of the demand for money ought to have attenuated the slope of LM. If we suppose that the slope of IS is unchanged, the disturbances of a monetary nature in the new situation will have smaller effects on rates, and hence, for a given elasticity of aggregate demand, will cause smaller short-term fluctuations in economic activity.[22]

A greater ability of the system to absorb monetary shocks will not necessarily reduce the effectiveness of monetary policy.[23] It may only mean — if the relation between monetary instruments and final objectives does not become more uncertain (see sections 2.1 and 2.4) — that the monetary authorities will have to carry out more extensive interventions in order to produce a given change in the rates of interest, on the hypothesis that these variables are the crucial link in the chain of the transmission of monetary policy. In particular, if monetary and financial markets become deeper and more efficient, an increase in the size of the central banks' interventions will not intensify the markets' instability, which might put obstacles in the way of monetary action.

A broader analysis is needed to take account of the implications of the strengthening of competition and the gradual increase in the efficiency of financial markets and intermediaries which seem to be under way in Italy. This evolution should lead to a more balanced structure in the external financing of corporations and to a reduction in its cost.

The evolution of the structure of the financial system may also influence the stability of corporations, and hence that of financial intermediaries. In Italy, the weight of corporate indebtedness in total financing (both internal and external) has been reduced since the mid seventies; at the same time, the composition of indebtedness has shifted towards short and medium-term variable rate debt. In addition, the level of nominal and real rates has risen sharply above that in the seventies. The factors in the financial fragility of corporations and in the financial system have thus changed, but they have not been eliminated;

[22] In the transitional phase of the spread of the new financial instruments, it has been observed, however, that the demand for money is more unstable, and hence the shifts in LM may be greater and such as to prevail over the influence of a higher elasticity.

On the same hypotheses, the disturbances from the "real" sector, such as an unexpected change in the public sector deficit or an alteration in the propensity to consume tend, on the contrary, to have wider effects on the level of economic activity, because the system is more elastic and manages to damp down the repercussions on interest rates. The effect on the level of activity would be weaker if the slope of IS were also less steep.

[23] In the sense indicated by W. BRAINARD, "Uncertainty and the Effectiveness of Policy", *American Economic Review*, May 1967.

the wider changes in interest rates, owing to the more serious repercussions on the cash flows, increase the potential instability of corporations, at least of those with a less well balanced liability structure.

On the other hand, in a phase of declining inflation, a considerable share of medium and long-term fixed-interest indebtedness obtained at high nominal rates would be extremely risky for firms. Hence, when inflation and interest rates are high and volatile and production is rising only slowly, firms' liability structures must minimize the risk of cash flow crises while also avoiding excessive real interest burdens. If the corporate financial structures were better balanced and able to adjust to different situations, the costs of a restrictive monetary policy would be less; it is often precisely the undesired effects on the productive system which limit the persistence and the severity of a monetary restriction.

3. Changes in the channels of transmission of monetary policy

For firms as a whole, the weight of indebtedness in total financing has declined since midway through the seventies. The fiscal discrimination which hampered the collection of equity capital has been largely eliminated. The recent creation of investment funds ought to sustain the demand for shares. The dominating position of the banks has been eroded, and there has been a marked drop in double intermediation (Table 3 and 10). There has been an increase in the competition between financial intermediaries and in the substitutability between the different channels of financing. There has been a reduction in the degree of concentration within the banking system. As a result, the control of bank credit is no longer sufficient to regulate total financing to the private sector, and in particular the administrative controls on bank credit have become less effective and more costly to run.

In addition, the public sector's requirement has increased very fast, and there has been an expansion in its share of the total domestic credit. This trend has stepped up the need to stimulate the demand for financial assets by means of adequate rates of interest in order to contain the expansionary effects of public deficits. Financial innovations have expanded the range of credit instruments; there has been a reduction in the share of money in total financial assets, and this has been especially marked in the new flows. Efficient markets have developed for short-term and variable rate longer-term securities. There has been an expansion in the range of instruments issued by financial intermediaries.

The interest rate elasticities of the demand for money and securities have increased. It follows that there has been a marked reinforcement in the possibility of readjusting the portfolio of the public's financial assets through changes in interest rates without producing the serious repercussions on the medium and long-term capital market which were characteristic of the financial structure of the first half of the seventies.

The pursuit of a closer control of bank reserves has effectively helped to increase the variability of interest rates. The effects of the cost of credit have become more important than those connected with the availability of credit. The reduced impact of the administrative control of credit does not undermine the effectiveness or the importance of the monetary authorities action via the credit market.[24]

The elasticity to interest rates of the individual components of the demand for credit has certainly been increased (section 1.3). The prolonged period during which real and nominal interest rates have remained at a very high level has probably also raised the elasticity of firms' total demand for credit. Particular importance has been assumed by the changes in the nominal rates on the cash flow. Other factors which have helped make the demand for credit more elastic have been the fall in the share of subsidized credit in total financing, and, more recently, the increase in the importance of corporate liquidity management.

In the opposite direction, the spread of long-term variable rate financing has probably decreased the sensitiveness to the current rate of expenditure on fixed investments because of the reduced uncertainty as regards the real rate and of the disappearance of the speculative reasons which, in the past, led, when rates were high, to the postponement of investments. In addition, the increase in the share of credit absorbed by the public sector, which is inelastic to market conditions, has tended to make the overall demand for credit more rigid. If it is not possible to draw definite conclusions as to the direction in which elasticity to the rate of *total credit* has moved, it is extremely probable that there has been an increase in the elasticity of credit to the non-state sector. As already mentioned, there has also probably been an increase in the interest rate elasticity of the demand for financial assets, and correspondingly of the expenditure on durable goods and the desired composition of wealth.

[24] In the short term, the elimination of the administrative control of loans can reduce the rapidity of the impact of monetary policy, but this impact of direct controls is gradually reduced the longer they last. In addition, financial innovations tend to increase the rapidity of the transmission of the effects of open-market operations to the cost of credit.

The changes described seem therefore to imply that the objectives of monetary policy can be effectively pursued, but essentially via interest rates regulated by the control of the composition of financial assets and of the creation of monetary base. The changes over the last few years in the relative importance of the *instruments* of financial policy are in line with the altered importance of the different channels of transmission of policy and with the evolution of the structure of the financial system.

4. Effects on the choice of points of reference for monetary action

4.1 A guide to monetary action is often offered by intermediate variables lying between instruments and final objectives to which a numerical value is sometimes assigned. This becomes a target for the central bank (intermediate objective).

Two different reasons justify the recourse to intermediate objectives. The first is based on the technical problems arising in the implementation of monetary policy, and especially a) on the long and variable lags with which monetary action influences the final objectives, and b) on the uncertain situation in which the central bank is operating.[25] A second reason bases recourse to intermediate objectives mainly on the effectiveness of the announcement of a monetary target in influencing expectations of inflation, and hence on a more rapid change in operators' behaviour.

A reply to the problems posed by the uncertainty in the relations between instruments and final objectives and by the long lags is provided by a gradual use of the instruments: the instability in the use of the instruments can be avoided by effecting only a partial adjustment of the instrument to the value necessary for the complete attainment of the final objective.[26] The gradual approach to the use of the instruments, however, is necessarily accompanied by the acceptance of a greater variability in final objectives. This approach dispenses with the determination of intermediate objectives in the narrow sense, and is

[25] The elements of uncertainty include the relations between monetary instruments and final objectives; possible divergences of exogenous variables from the values assumed; the relations between exogenous variables and final objectives; and the nature of the disturbances, due in part to delays in obtaining information.

[26] W. BRAINARD (1976), *op. cit.*, p. 415, and R. HOLBROOK, "Optimal Economic Policy and the Problem of Instrument Instability", *American Economic Review*, March 1972, p. 64.

based on the use of variables which contain information especially on the future effects of the monetary action already carried out.[27]

A reply to the problems created by the uncertainty as regards the origin of the disturbances in order to minimize the divergences of the final objective from the values assigned is that given by W. Poole.[28] In this case, an *intermediate target* is singled out to which the central bank must adhere. This target may be in terms of rates of interest or quantity of money, depending on the nature of the disturbances.

4.2 The Bank of Italy's action has usually been guided by the evolution of the variables representing the final objectives of monetary policy and by a set of intermediate variables expressing credit and monetary aggregates and rates of interest.

In the second half of the sixties, preference was given to stabilizing the long-term rate of interest. In the seventies, the main point of reference, on the contrary, consisted essentially of the variables expressing the expansion of domestic credit. This switch in emphasis from interest rates to the amount of credit is explainable by the different final objectives in the two periods and the different conditions as regards the stability of the economy; in the sixties, the financing of the growth of the economy constituted the main objective; from the mid-seventies, the problems of inflation and the balance of payments were the dominating issues. In addition, the strong and by no means transitional inflationary pressures, of both domestic and foreign origin, made it more difficult to assess the degree of restriction implicit in nominal rates of interest. Disequilibria in the balance of payments led to credit aggregates being given priority over monetary ones.[29]

[27] A different reply to the problem of long and variable delays has been given by the approach that identifies an *intermediate objective* in terms of the quantity of money to which the central bank must adhere.

[28] W. POOLE, "Optimal Choice of Monetary Policy Instruments in a Simple Stochastic Macro Model" in *Quarterly Journal of Economics*, no. 2, 1970.

[29] As is well known, when there is a disequilibrium in the balance of payments, an intermediate objective for the amount of credit automatically triggers the adjustment of domestic demand via the liquidity effects produced by the evolution on foreign account and makes it possible to keep down pressures on the rate of exchange. On the contrary, if the monetary authorities wished, in these circumstances, to adhere to an intermediate target for the amount of money, they would sterilize the impulses to the adjustment of the economy flowing from the balance of payments, and the disequilibrium on foreign account would tend to have repercussions on the rate of exchange. The crucial role of foreign trade and the high degree of indexation characteristic of the Italian economy reduce the effectiveness of the depreciation of the exchange rate in absorbing the foreign-account disequilibria and increase the cost in terms of inflation.

The greater emphasis placed on the expansion of credit than on other monetary variables is also due to certain characteristics of the Italian financial system, particularly those affecting the

In recent years, although the most important point of reference has remained the expansion of credit, greater attention has been paid to the control of the composition of the stock of financial assets. This variable is one of the fundamental determinants of interest rates which are the crucial factor stimulating the demand for financial assets and keeping down the demand for credit.

We can try to make a rapid reconnaissance of the possible role of the different "intermediate variables" as a guide to monetary action after the changes which have taken place in the financial system and in the weight of the different channels of transmission of monetary policy.

4.3 In particular, brief reference should be made to the role of the "total domestic credit" aggregate, which is defined as the sum of total domestic credit to the private sector and the domestic borrowing requirement of the public sector. The breadth of the definition makes possible a fair degree of correlation between the stock of this aggregate and GDP, at least in the medium term,[30] although the effects of credit on the level of economic activity are not independent of its distribution between corporations and the public sector and of the composition of financial assets which are created in the process of financing public requirements and those of the private sector (see Graph 1).

The *ex ante* comparison between the demand for financial assets and the expansion of total domestic credit makes it possible, for a given capital movement, to check the consistency between the forecast of the uses and formation of national saving and the objective in terms of current foreign account. The balance between the supply and demand of financial assets is in fact only a different way of representing the equilibrium between the demand and supply of real goods.[31]

In other words, the comparison of the expansion of total domestic credit with the public's savings channelled into financial assets is a check on the compatibility of the level of economic activity with the public sector deficits and the external constraint. For this reason, total

sources of corporate financing, the characteristics of the market for bank deposits, and the completely dominant role of banks within the Italian financial system; in the preceding sections, we have examined certain aspects of the changes already effected in the financial system and of the evolution under way.

[30] It will be remembered that the algebraic sum of the stock of TDCs and of official reserves less the net foreign borrowing of the banks is identically equal to the stock of the public's total domestic financial assets.

[31] F. COTULA, "Finanziamento dell'economia, disavanzi del settore pubblico e politica monetaria", *Bancaria*, 1975.

domestic credit may be an important variable in the coordination of budget and monetary policies and may be a focal point for overall economic policy action.

Precisely because this aggregate is composed of a fundamental measure of budget policy (public sector borrowing requirement) and of an important intermediate variable for monetary policy (domestic credit to the private sector), it cannot, except in some emergency phases, form the intermediate objective of short-term monetary action.[32]

The marked expansion in public sector borrowing requirement which is at present about 70 per cent of total domestic credit and the huge divergences noted in certain years, such as 1982, between the observed requirement and the one set as an objective have proved that total domestic credit cannot be the intermediate objective of monetary policy alone.[33]

A variable which is more effectively controlled by the central bank is that part of TDC formed by credit to the non-state sector.

The expansion of credit to the private sector is already an important point of reference in the yearly period in programming and in the implementation of monetary policy in Italy. Even the use of this credit aggregate, however, is not free from problems. There is a difference, for example, between the implications of a divergence of credit expansion from the programmed evolution depending on whether the underlying causes are a fall in productivity because of a decline in production or a speculative increase in stocks.[34]

The correlation of TDC with GDP may, on the contrary, make this aggregate useful as an element in medium-term anti-inflationary strategy in which the government authority fixes its targets in terms of GDP, prices, borrowing requirement of the public sector, and in particular public expenditure. [35] For the TDC to help effect coordination

[32] F. COTULA, "Gli obiettivi intermedi della politica monetaria", Chapter XXV, in *La politica monetaria in Italia*, edited by F. Cotula and P. de' Stefani, Il Mulino, 1978; G. VACIAGO, "Politica monetaria e credito totale interno" in *La programmazione dei flussi finanziari*, edited by G. Vaciago, Il Mulino, 1983.

[33] R.S. MASERA, "Politica monetaria e politica di bilancio: intreccio o dicotomia?" in *Rivista di Politica Economica*, February 1983.

[34] Moreover, the expansion of credit is influenced by changes in the composition of the branches of economic activity which are growing and the change in the proportion of indebtedness used in order to buy financial assets. In addition, the expansion of credit to the private sector may indicate the effects of monetary action later than other variables.

[35] Cf. for example *Piano Triennale 1979-81 — una proposta per lo sviluppo, una scelta per l'Europa*, a document prepared by the Ministry of the Treasury, August 1978, *Il Sole - 24 Ore*, 1 September, 1978.

between monetary and budget policy, without that simply meaning that the residual magnitude is corporate financing, the public sector requirement and TDC must be identified simultaneously for given final objectives.

4.4 In the preceding sections, we have examined the effects of financial innovations on the demand for money.[36] We noted that these factors make it more difficult to use monetary aggregates as a guide to action in monetary policy, especially in the phase in which the effects of financial innovations are more intense and more uncertain.

On the other hand, in terms of Poole's analysis',[37] in a phase of important and widespread financial innovations, the disturbances of a purely financial nature may well be the ones which normally prevail in the very short term. It follows that the daily action of the central bank can be guided by the use of a point of reference, albeit a temporary and variable one, in terms of interest rates. The attenuation of purely erratic fluctuations in rates is a very different criterion from pegging.[38]

In addition, in Italy, the huge dimensions of the flows of expenditure and receipts of the state sector and the lag in the present system of compulsory reserves may contribute to give rise to temporary blow-ups or shortages of liquidity in monetary base. In these circumstances, if daily interventions on the markets were guided solely by information on gross bank liquidity, the erratic oscillations in interest rates would be greater; the higher risk to which intermediaries dealing in securities would be exposed would hamper the orderly working and the growth of the markets.

Moreover, membership of the EMS, which imposes the obligation to keep exchange rate fluctuations with respect to other currencies in the system within a pre-estabilished band, may make it necessary to effect a rapid adjustment in short-term rates.

4.5 If we lengthen the time horizon beyond the very short term, the appearance of disturbances of a real nature becomes more probable. In

[36] We have first of all dealt with the shifts in the function; then the change in the elasticity to the rate of interest was examined, a change flowing from the wider range of money market instruments and from the different capacity of the banks to increase rates on deposits in response to an increase in those on Treasury securities.

[37] W. POOLE (1970), *op. cit.*

[38] J. TOBIN, *Monetary Policy in an Uncertain World*, First International Conference held by The Institute for Monetary and Economic Studies of the Bank of Japan, Tokyo, June 1983.

addition, if the priority operating target beyond the very short period is defined in terms of interest rates, there are greater risks of destabilizing effects owing to the long delays in the transmission of monetary policy; this risk is increased if there is some degree of inertia in changing interest rates because of the costs of raising them or of the possible dangers in reducing them. Moreover it is very difficult to assess the level of interest rates needed to achieve the final objectives, particularly in a period of high and uncertain inflation.

We thus come back to the usefulness of intermediate objectives designed to increase the rapidity of the response of interest rates to market conditions, without accentuating their erratic movements. In order to deal with this type of problem, we are faced with the choice of using intermediate monetary or credit aggregates as leading indicators of the effects of the instruments of monetary policy on the other variables, whether financial or real, or as intermediate objectives in the strict sense of the term.

In Italy, the fundamental instrument in the central bank's action is the control of the bank reserves in monetary base.[39] In regulating the creation of monetary base, the central bank cannot but refer to the desired and actual evolution of the money supply (M2), formed essentially of bank deposits, which are subject to the compulsory reserve requirement in monetary base.

In addition, open-market operations are reflected in the amount of money earlier than in the other monetary and financial aggregates and the final variables.

A point of reference constituted by the amount of money may be particularly useful when (as in recent years) there are rapid and vast increases in the public sector deficit, increases which swell households' disposable income and their spending capacity. If the central bank sticks to the control of the money supply, and hence of the banks' reserves in monetary base, it tends to stimulate automatically, via the increase in interest rates, the demand for securities and other financial assets and hence to absorb the excess liquidity and domestic demand caused by the public sector.[40] The link between monetary base and

[39] The existence of a large stock of Treasury bills in the hands of the banks may make it more difficult to switch to a system founded solely on indirect controls. It is therefore important that the gradual consolidation of banks' securities portfolios achieved in 1983 should continue.

[40] If, however, the acceleration of the monetary aggregates reflected only a change in the composition of the financial assets desired by the public, an increase in the rates might step up fluctuations in economic activity. B. FRIEDMAN, "The Roles of Money and Credit in Macroeconomic Analysis", in J. Tobin (editor), *Macroeconomics, Prices and Quantities*, Basil Blackwell, Oxford (1983).

credit to the private sector, on the contrary, is more indirect and less stable. On the other hand, however, this aggregate, together with the cost of credit, provides information on the demand for credit which is correlated with the level of production, and on the degree of restriction on this market, which remains fundamental for the transmission of the effects of monetary policy.

Certain effects of financial innovations have strengthened the choice of a monetary aggregate as an important guide in an intermediate period as regards the very short-run and medium-term strategies. The increase in the elasticity to interest rates (on Treasury securities) of the demand for money implies a greater effectiveness of the control of monetary aggregates by means of open-market operations. This result is partly obtained by keeping the yield of the compulsory reserve constant when market interest rates increase. Recent rises and the greater uniformity of the reserve coefficient on all forms of bank deposits and for all banks tend to slow down the growth of deposits and to keep the multiplier of monetary base stable. If certificates of deposit were to consolidate their position and the sensitivity of the rates on sight deposits to those on other financial assets were to diminish, it would be possible to identify, to a more significant extent, a monetary aggregate mainly connected with current transactions.

In the opposite direction, there has been an accentuation of the risk of large and unpredictable shifts in liquidity preference, which can lead — if monetary targets were to be rigidly observed — to more intense restrictive (or expansionary) effects than planned.

The factors of instability in the velocity of the money are, moreover, more important in a transitional phase such as the present one, in which the effects of innovations and changes in the financial system are important and not easily predictable. As a consequence, in this phase, the elimination of divergences from the anticipated path of monetary growth ought to be effected very gradually.[41]

According to J. Tobin, the intermediate targets can form a point of reference for monetary action in a period of time of one to two quarters.[42] In Italy, given the characteristics of the monetary and financial markets and the actual present phase of uncertain stability in the demand for money, it would seem to be fairly prudent for a point of

[41] T.D. SIMPSON and P.M. PARKINSON, *Some Implications of Financial Innovations in the United States*, BRI, Autumn Meeting of Central Bank Economists, November 1983, p. 37.

[42] J. TOBIN, "Monetary Policy: Rules, Targets and Shocks", in *Journal of Money, Credit and Banking*, November 1983, p. 517.

reference in terms of a monetary aggregate to have a time horizon of not less than a quarter. This limit takes account of the possibility of disturbances which can be absorbed without significantly altering market conditions. The upper limit, which is relevant if the monetary aggregate is used not only as an indicator but also as an intermediate target, might be two or three quarters; within this period a check of the target would be useful in order to take account of the divergences of exogenous variables from the values assumed and of the shifts in the demand for money.

The use of a monetary aggregate as an important information variable can be reconciled with a flexible use of the money supply as an intermediate target in the strict sense of the word. In this case, the target should be expressed in average values in the period of reference, and a range of divergences should be allowed, as in most applications carried out in other countries. When the intermediate variable goes outside the target range, the decision on the return to the target trend becomes less uncertain. It may be a sound objective in itself in order to avoid excesses of bank intermediaton or too rapid a disintermediation.[43]

When the money supply is the basic point of reference, the main operating target should be expressed in terms of bank reserves, since the monetary base multiplier is stable in Italy at present.

Even now, the central bank, at the beginning of the year, in addition to announcing the maximum expansion of credit to the private sector on the basis of a set of hypotheses (cf. section 4.3), provides indications of the probable evolution of the main financial flows, including bank deposits and M2, during the year. Instead of laying greater stress, with a further announcement, on a particular aggregate within financial assets, the monetary authorities might, acting together,[44] determine in advance — without "announcing" it — the maximum extent of the divergences from the likely growth of money supply (M2), divergences which cannot be rejected *a priori* on the basis of the information available at the time when the interval is fixed, for given final objectives. An increase in the number of announcements would not necessarily make monetary policy more credible, and, to some

[43] Thus, the rate of interest on financial assets, too, might be subject to the double constraint of not assuming values which, on the one hand, weaken financial saving and, at the opposite extreme, cause the crowding out of the private sector, with an intensity and for a period such as to lead to the decline in the system's productivity and of its capacity for growth.

[44] Coordination in the phase when the objectives are being fixed helps to avoid the emergence of conflicts when the monetary policy is being implemented.

extent, it would attenuate the impact at present achieved by the announcement regarding credit to the private sector. The awareness of operators and of public opinion of a greater determination to pursue final objectives and the greater weight assigned to that end to a restricted number of monetary and credit objectives might strengthen the effectiveness of the procedures already operating.

To conclude, there has been an increase in the need for monetary policy action based on the effects via interest rates — set in motion by the control of monetary base and the composition of financial assets — and hence the complementarity of the control of money and credit has become more evident. There has, however, also been an increase in the factors making for instability in the financial sector which have led the central bank to refrain from announcing objectives as regards the money supply. The "announcement" of intermediate targets in terms of money supply, especially in the present stage, would involve substantial risks. Experiences in other countries also confirm that the central bank can always adhere to the intermediate target selected, but the imperfect knowledge and stability of relations between instruments, intermediate and final objectives may lead to a degree of restriction which is markedly different from the one desired. On the other hand, a revision of an "announced" target might create scepticism regarding the determination of the monetary authorities to pursue the final objectives of their programme.

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