# Italy's Financial Policies in the 'Sixties

## Introduction

Modern economists and policy makers operate on two different levels of abstraction. The former use highly complicated models and emphasize the interdependence of economic phenomena; the latter rely on a number of cause-and-effect reflationships and generally are forced to assume, explicit or implicity, that when in an economy something is changed, the effect is felt by one single variable, everything else remaining the same (larger investments lead to higher income, more taxes to less consumption, more liquidity to higher prices, and so on).

Needless to say, economists must be content with their efforts to " overcome the frustrating sterility of the cliché that everything depends on everything else " (1) but all they can do is to simulate reality, always after greatly simplifying it. Even though the models they produce are often impenetrable to the most sophisticated practitioners of the art of policy-making (or their advisors), they are none the less " apple pie worlds ", or artificial constructions, only bearing a vague resemblance to our exceedingly complex reality.

Nevertheless, the effort of modern economists to produce something of help to policy-makers ought to be much appreciated. In this respect, the recent tendency to search for models in which the once distinct worlds of *monetary* (money supply, prices, credit, velocity, etc.) and *real* phenomena (investment, consumption, aggregate demand, balance of payments, exports, imports) are drawn closer together, is one instance of the new attitude of the profession.

Policy-makers still cling for obvious practical reasons to their old ways. Even if they had the patience to work through the daunting number of simultaneous equations produced by econometricians,

aided by powerful computers, they would still face the problem of explaining the whole thing to large policy-making bodies — a by no means easy feat. Hence, the lingering preference for rough rules of thumb or for the so-called one-unknown-one-equation models, such, for example, as the simplified version of the quantity theory of money, the multiplier relationship between investment and income and so on.

The gap between theory and practice is perhaps narrowed somewhat by the more simple models based on definitional or accounting equations, supplemented by rough indications of the underlying interrelationships. These models at least offer a unifying framework for financial and monetary policies, leave to the policy-maker the necessary degree of freedom, and do not encumber him with unnecessary complications. Clearly, there are cases in which such models should be preferred by the policy-maker. They are particularly helpful in countries where economic decisions are centralized, or where there is an entity (central bank, Minister of Finance or policy committee) responsible for the coordination of economic policies or for the elaboration of financial policy programs (2). The advantage of the models in question is that all decisions in the various policy making sectors (ministers, central banks, policy committies, etc.) would still be arrived at without a prior attempt to calculate the effects of interdependence while they do not pre-judge the case at issue in any certain direction.

The purpose of this article is to suggest one such model and to give an exemplificatory application to the Italian case during the 'sixties. Actually, it is an attempt to show the usefulness of an agreed financial program, quantitatively expressed and providing for the coordination of financial policies (chiefly, monetary, fiscal and wage policies).

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(1) See W. C. BRAINARD and JAMES TOBIN, *Pitfalls in Financial Model Building*, AER, Proceedings of the 80th Meeting, May 1968.

(2) Planning of short-term policies is to become a practice in Italy. According to " Project '80 ", a document of the Italian Budget Ministry setting forth the overall guidelines of planning for the 1971-80 decade, the aim of short-term policies is that of keeping the economy's operating rates at the highest possible level compatible with price stability and balance of payments equilibrium. The Government is to plan out a proper policy-mix for the year ahead and to revise it according to circumstances. Hence, the Government will announce at the end of each year the contours of a program for the following year which will be spelt out in the document called " Relazione Previsionale e Programmatica ".

## 1. Integration of Financial and Monetary Policies

Financial policies are here understood as something intermediate and as falling between monetary policies — aiming at goals placed on a lower level in the hierarchy of targets — and development or growth policies — standing at the highest level. They have certain aims and rely on certain instruments.

The *aims* of financial policy are usually those of *stabilizing* an economy disrupted by inflation or of maintaining *full-employment with stability* during growth. It is clear that the financial objectives must dovetail with those of the Plan of economic development, if any exists. Often, full-employment, price stability and balance of payments equilibrium are goals pursued simultaneously. As there may be a conflict between the different aims, and, hence, between the policies that lead to them, a " compromise " must be found, which is what is *usually meant by a policy-mix*.

The financial model here suggested proposes the use of only four *target variables* for a time period (usually one year), viz.: 1) the level of the trade balance; 2) the level of the capital account balance; 3) the increase of G.N.P. in real terms; and 4) the level of the Government cash balance. The *policy variables*, also four in number, are: 1) taxation; 2) Government spending; 3) credit; and 4) wages. A minimum number of other variables (i.e. private consumption, private investment, Government investment and Government consumption) is, of course, also added, since it is through them that policy decisions work out their effect and yield certain results in terms of targets. The functional relationships linking these variables together are sketched in Appendix 1.

No mention is made of the price level, for the model applies to a wide-open economy. In such a situation, inflationary pressures are more likely to affect the balance of payments and other variables than the overall price level. More will be said on this point in another section.

The model relating instruments to targets (see Appendix 1) is not meant to be much more than a rough description of the postulated relationships — no pretense is made of calculating coefficients or parameters or of testing the assumptions. It is merely one of the many possible interpretations of a particular economic situation which, in the case dealt with, is the Italian one, though with a few

adjustments it might fit other economies just as well. The virtues claimed for this model are those of presenting a simple interpretation of the *combined* effect of financial policies for the guidance of the policy-maker; not the more ambitious one of discovering fixed or immutable relationships between variables.

Once the credit target has been selected that leads to certain desired results, the financial programmer can proceed to determine the change in liquidity (3) during a certain time period — usually one year (see Appendix 1) — consistent with the desired amount of credit expansion. This can be done on the basis of a " financial accounts " equality (obtained from a consolidated balance-sheet of banks), relating the total change in liquidity during a certain period to the balance of payments results, the Government cash deficit (or surplus) and bank credit expansion. Thereafter, the programmer can determine, through a credit multiplier relationship, the volume of high-powered money to be issued by the central bank to allow for the required credit expansion, and proceed to set the central bank's own targets, or the most important guidelines for the management of typical central bank monetary tools (rediscounts, open market operations, and so on).

A direct link is thus provided between central bank action and the overall policy-mix selected beforehand. The model can be used for purposes of analysis and programming, since it effects an " integration ", so to speak, of monetary policies with the preselected overall policy-mix.

## 2. A Novel Statistical Approach

As already noted, the financial model here discussed focuses on a few relationships and is intended to pave the way for the achievement of a coordination of financial policies in the sectors of taxation, Government spending, wages and credit, policies which interact on each other through their impact on private consumption, investment, the external capital account and the trade balance (4).

The main direct relationships are as follows: *credit expansion* is assumed to influence more than anything else (positively) private

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(3) Currency and deposits in the hands of the public.
(4) Goods and services balance, according to the national income accounts definition.

investment and (negatively) the capital account of the balance of payments; *wage* movements affect principally private consumption and investment (both positively); *taxation* is assumed to have primarily a negative effect on both investment and consumption. Finally, *economic growth* (i.e. real increase in the level of GNP) is assumed (in accord with the acceleration principle) to be mainly a function of total investment and therefore of the combined effect of credit and taxation. A national accounts identity is then used to relate the trade balance with the other variables of the system (see Appendix 1).

The statistical data (on Italy) are presented in a form designed to facilitate this type of analysis and to give a fair and synthetic representation of the complex relationships mutually linking together the above-mentioned variables (see Appendix 1).

The rather unusual statistical approach selected focuses on annual changes in the structure of GNP, i.e. on changes in the GNP share of each single variable. Thus, *credit expansion* (changes from the previous year) is measured by the variation (in percentage points) during one year of the relation of total credit outstanding (all banks and special credit institutions) to GNP; similarly, *wage movements* are portrayed by annual changes in the share of the total wage bill of dependent labor (including social security charges) to GNP; *taxation*, by annual changes in the percentage relationship of Government (5) revenues, net of current transfers, to GNP; *Government spending*, by changes in the share of total Government consumption and investment expenditures to GNP.

GNP shares (note that GNP becomes a standard measure) are used to represent the target variables, too, i.e. the *trade balance* (national accounts definition), the *capital balance* (all balance of payment items except goods and services and monetary movements), the *balance between Government revenues* (as defined) and *Government total spending, private consumption* and *private investment*. *Economic growth* is represented by the annual percentage change in GNP in real terms.

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(5) All levels of Government.

## 3. The Italian Policy-Mix: 1962-68

A rough appraisal of the degree of coordination, or lack thereof, of the *policies* carried out in Italy during 1962-68 becomes possible on the basis of data shown in Table 1 below, and of the assumptions of our model.

TABLE 1

THE POLICY-MIX IN THE 'SIXTIES

(Instrument variables: Figures express changes in GNP shares )

| Years | Taxation (T) | Credit (Ec) | Wages (W) | Total Government spending (G) | Tital Impact |
|---|---|---|---|---|---|
| 1962 . . . . | − 0.20 (d) | 5.45 (i) | 1.44 (i) | 0.26 (i) | 6.95 (i) |
| 1963 . . . . | − 0.26 (d) | 2.80 (i) | 2.72 (i) | 0.74 (i) | 6.00 (i) |
| 1964 . . . . | − 0.53 (d) | − 1.32 (d) | 0.94 (i) | 0.46 (i) | − 0.45 (i) |
| 1965 . . . . | 2.26 (i) | 0.43 (i) | − 0.92 (d) | 0.26 (i) | 2.03 (i) |
| 1966 . . . . | 0.52 (i) | 2.79 (i) | − 0.87 (d) | − 0.28 (i) | 2.16 (i) |
| 1967 . . . . | − 1.17 (d) | 3.79 (i) | − 0.19 (i) | − 0.93 (d) | 1.50 (i) |
| 1968 . . . . | 0.42 (i) | 3.74 (i) | 0.13 (i) | 0.57 (i) | 4.86 (i) |

*Note:* (i) stands for inflationary pressures (expansion, except in the case of taxation); (d) or (−) for deflationary pressures (declines, except for taxation).

*Source:* See Tables of Statistical Appendix.

The Italian policy-mix was revised frequently: in 1964 and in 1965, and again, though a little less conspicuously, in 1967 and 1968.

Prior to 1964, wages, credit and Government spending were all used in an inflationary direction for a total impact of more than 6 per cent of GNP, on average, though a slight offset was afforded by tax policies, as indicated by the increase in the tax-burden during those years. In 1964, inflationary pressures were curbed effectively by a cut in credit and a sizeable increase in taxation; wages and Government spending continued to rise. The total expansionary impact dropped to nihil from more than 6 per cent of GNP in the previous two years.

In 1965 and 1966, the policy-mix again changed. The overall expansionary impact was kept at a much lower level than in 1962-63, the year of overheating, and amounted to 2.03 and 2.16 respectively in the two years. The two most important factors were credit expan-

sion and tax cuts: the former was more important in 1966, the latter in 1965. Wages and Government spending were the major offsets cushioning the impact of the above-mentioned factors. In 1967, fiscal policies again became more restrictive, while wages continued stable and credit expansion remained quite pronounced (3.8): the overall impact was maintained at about the same moderate level as in 1966 (1.5). In 1968, the general tendency towards some inflation was again manifest with a total overall impact of 4.9 — only two points below the 1962 peak. All factors became inflationary, though, all, except for credit expansion, had only a moderate impact.

## 4. Behavior of the Target Variables

The effect of these policies on our target variables is depicted in Table 2. In appraising the results, which are expressed as changes from an initial position, one must bear in mind that the base year (1961) was characterized by the existence of a rough external equilibrium (a small surplus on goods and services account and a moderate net inflow of capital), an exceptionally high rate of growth (7.8 per cent) and a surplus in the Government cash position of about 1 per cent of GNP.

The 1962-63 inflationary policies — relying on credit expansion, generous wage increases and rising Government consumption expenditures — had, as a whole, the effects postulated by the relationships of the model. The *trade balance* deteriorated sharply (0.6 in 1962 and 2.0 in 1963) owing to the increase, stimulated by these policies, and 2.0 in 1963) owing to the increase, stimulated by these policies, in private consumption (especially in 1963) and — though to a much lesser extent — in private investment. The external capital account balance was also deeply affected by credit expansion and shifted gradually from surplus into deficit. The drop in the rate of growth during 1962-63 might seem to contradict the assumed relationship, which postulates growth as a positive function of investment and, therefore, of credit expansion and Government spending. This objection can however easily be explained away by remembering that the data in Table 2 stand for changes in the rate of growth, that the latter was at a peak level in the base year (7.8 per cent), and that it remained quite high in 1962 and 1963, at 6.2 and 5.5 per cent, respectively, quite in accord with the full employment conditions of the time. The investment rate (share of gross investment

to GNP) also reached very high levels during those years; in fact, of the three factors assumed in this model to influence investment, i.e. credit, wages and taxation, only the last was unfavorable.

TABLE 2

BEHAVIOR OF TARGET VARIABLES

(Annual changes in GNP shares)

| Years | Target variables | | | | Other variables | | | |
|---|---|---|---|---|---|---|---|---|
| | External Position | | Economic Growth | Net Government cash position | Government Consumption | Government Investment | Private Consumption | Private gross Investment |
| | Goods and services | Capital | | | | | | |
| 1962 | −0.60 | −1.06 | −1.59 | −0.06 | 0.42 | −0.16 | 0.02 | 0.30 |
| 1963 | −2.00 | 0.40 | −0.71 | −0.48 | 0.84 | −0.10 | 1.19 | 0.12 |
| 1964 | 2.79 | 1.17 | −2.72 | 0.07 | 0.34 | 0.12 | −0.79 | −2.49 |
| 1965 | 2.63 | −1.33 | 0.87 | −2.52 | 0.60 | −0.34 | −0.29 | −2.42 |
| 1966 | −0.50 | −1.15 | 2.08 | −0.24 | −0.34 | 0.06 | −0.25 | 0.09 |
| 1967 | −0.93 | 0.31 | 0.68 | 2.10 | −0.59 | −0.34 | 0.61 | 1.24 |
| 1968 | 1.35 | −0.97 | −0.67 | −0.99 | 0.24 | 0.33 | −1.16 | −0.74 |

*Source*: See Appendix Tables.

The policy-mix of this early period was definitely inflationary. Retrospectively, it seems that it should have been possible to avoid the unfavourable repercussions of this inflationary policy on the trade and capital balance (without curtailing the investment rate) by a better dosage of the four policy instruments, i.e. by relying less on credit expansion and wages and more on taxation and Government spending. One should have aimed at the "combined" effect of the application of all four policy instruments, rather than dealing with each one of them in isolation. Under any circumstances, however, a total impact of more than 6 per cent of GNP definitely seems too strong.

In spite of the inflationary impact imparted by wages and Government spending, the restrictive monetary policies of 1964 took hold immediately, even dramatically: the trade balance shifted from a deficit of $1.1 billion (685 billion lire) in 1963 into a surplus of $0.3 billion in 1964 (and improvement of $1.4 billion), the capital balance from an outflow of $156 million into an inflow of $466 mil-

lion (an improvement of $622 million). Simultaneously, the rate of growth sagged from 5.5 to 2.8 per cent. The policy-mix used (credit restrictions, while allowing for a further expansion of wages) seems to have been quite effective (in view of the policy-goals pursued) in redressing the balance of payments. Yet, a more pronounced increase of taxation and a less drastic credit contraction might have struck an even better balance between desired cuts in consumption and investment. As a result of the reliance on the credit instrument, the decline of private investment expenditures (2.5 per cent of GNP, followed by a further drop of 2.4 per cent of GNP in 1965) seems too sharp; the impact on private consumer expenditures, i.e. a variable responsive to variations in taxes and wages (rather than credit) was, instead, unimpressive.

During 1965 and 1966, as already noted, an effort was made to reflate the economy by easing the incidence of taxation, expanding credit and — even though to a more limited extent — stepping up Government spending, at least for the two-years period as a whole. A deflationary factor, in part offsetting, was the reduction of wage-payments, relatively to GNP, which seems to have reached rather high proportions. The reflationary policies impact attained a peak in 1966, when credit expansion became quite pronounced. In fact, the rate of growth of credit by banks and specialized institutions soared to 14 per cent from 8.5 per cent the previous year. These policies in 1965 and 1966 failed to have a reequilibrating effect in terms of our target variables. The trade surplus, for instance, continued to rise in spite of the effort to curb it; at the same time private investment remained sluggish, while the aim had been a more lively expansion of it. Simultaneously, large amounts of capital continued to flow out of the country in search of liquid forms of investment abroad. The Government cash position deteriorated sharply especially in 1965. Credit expansion failed to affect private investment to the required extent, while feeding the capital outflow.

The stability of wages (as a share of GNP they declined during those two years) had a depressive impact on private consumer expenditures. Too much reliance on the credit instrument was, perhaps, a point of weakness. An alternative policy-mix perhaps to be preferred in the light of subsequent experience would have placed greater reliance on the tax instrument (i.e. a greater reduction in taxation) to obtain the desired adjustments of consumption and

investment, though the problem would still have remained of devising a delicately balanced pattern of de-taxation measures.

The outstanding characteristic of the 1967 policy-mix was the fact that taxation and Government spending policies became contractionary and added to the depressive impact of the near-stability (relative to GNP) of wage payments. The continued expansion of credit — more pronounced than in the previous year — restored the balance, and the overall impact remained almost unchanged at its 1966 level.

As a result, the external position improved both on current (reduction of the surplus) and capital account (reduction of the deficit), while private investment expanded, together with private consumption. The net Government cash position improved substantially. Perhaps too much reliance on credit expansion — rather than on the other instrument variables — created a situation which became even more apparent in 1968 (when the same policies were continued) — foreshadowing a slight shift towards more reflation, which is acquiring greater importance in the current year.

The behaviour of our target variables in 1968 clearly shows the result of using a single policy instrument, viz. credit. The balance of payments disequilibrium deteriorated sharply in both its current and its capital account sections — an increase in the current surplus and in the net capital outflow; private consumption and investment declined. The rate of economic growth — though still high at 5.7 per cent — dropped below its 1967 level.

The policy-mix seems to be again undergoing a change during the current year. Care ought to be taken, however, to avoid a repetition of the 1962-63 experience when almost all instruments were used in an expansionary manner, thus transmitting impulses to the economy which were definitely too strong.

## 5. A Short Digression

This interpretation of economic trends in Italy in the 'sixties differs from an explanation advanced some time ago in this Review (6) — quite commendable for its deep insight into the Italian situation — simply because in our case the stress is placed on the

(6) F. MODIGLIANI and O. LA MALFA, " Inflation, Balance of Payments Deficit and their cure through Monetary Policy: the Italian example ", this Review, No. 80, March 1967.

combined effect of a variety of policies, viz. on a policy-mix, rather than on a single force acting through an interdependent system.

In their interesting study of the 1962-63 inflation, Franco Modigliani and Giorgio La Malfa present a macro-economic interpretation of the functioning of the Italian economy and suggest it as an alternative to the model that the Bank of Italy seems to have been using in past years. Their approach " concurs with the analysis of the Bank of Italy in some respects, but differs crucially in several others ".

The authors assign a most important role to price movements; it is the change in prices which regulates the apportionment of aggregate demand between domestic production, imports and exports, and which, in the end, controls the balance of payments position on goods and services account. Later they add, on the basis of another simplifying assumption, that it is primarily wage movements which control price trends, because, as they put it, " the internal price level can be taken as proportional to the money wage ". In this way the interrelationships of the system are generally set in motion (as they were in the years under review) by the behaviour of wages. Fiscal and/or monetary policies are mere reactions, serving to counteract the depressive effects on employment of wage pressure working through the deterioration of the trade balance and the substitution of imports for home-production. The Bank of Italy indicated that expansionary monetary policies were used up to 1963 in order to allow for an increase in the domestic price level, thus avoiding a profit squeeze and a consequent cut in capital spending.

We look at the problem from another standpoint, even though the simulated system of interrelationships is not too different. We focus on policies in four sectors (taxation, Government spending, money and wages), independently conceived, not coordinated, often adopted as a reaction to particular problems and historical conditions: the effect on the four targets (external position on current and capital account, rate of growth and Government financial position) depends on the combined policy-mix and not, therefore, on a single variable. Ex-ante coordination of policies (i.e. the choice of a suitable policy-mix) is the objective stressed in this article instead of the choice of policies — or the timing thereof — to meet the impact of changes in an exogenous variable, such as a sharp increase in wages.

The role of the price level, which is crucial according to the Modigliani-La Malfa model, is ignored in this approach, a choice

explained by the openness of the Italian economy, not only because of the high share of national income represented by foreign trade, but also because of the existence of the EEC free trade area. This does not mean that there will be no changes in the price level in Italy as a result of easy monetary policies, but signifies that the international harmony of price movements would not be greatly disturbed, at least for traded commodities. In fact, the consequence of the adoption of certain monetary or wage policies is felt directly through the reaction of consumers and investors, and not " indirectly " after prices have started to move.

Inflationary pressures exercise their impact directly on aggregate demand, thus leading to a widening of the gap between needed resources (for consumption and investment) and available output of goods and services. There is no need to assume changes in domestic prices relatively to international prices; it is enough to concentrate on the changing pressure on resources.

Apart from this major divergency in the assessment of the price role in the adjustment mechanism, the instrument variables used do not differ substantially, except for wages, which are considered an exogenous variable by Modigliani-La Malfa and an instrument variable in our case. Another difference results from the considerable simplification inherent in our treatment of prices, which cuts by almost half the number of variables because there is no need to express them first in real and then in monetary terms.

Though " wages " is the most important exogenous variable of the Modigliani-La Malfa model, other instrument variables are listed such as taxation, Government spending policies and money supply. In this discussion credit expansion has been preferred as a variable to money supply or liquidity, because in the context of the Italian economy it has much greater importance as a determinant of economic behaviour.

Finally, the different policy-variables are here assumed to have a varying impact on the four different target variables, while the Modigliani-La Malfa model deals exclusively with aggregate demand.

## 6. Further Development of the Model

In programming monetary policies we are faced with the need of " re-writing " credit targets (i.e. the proper expansion of credit to be allowed during one year) in the form of " monetary policy

targets ", i.e. we have to calculate the maximum expansion of the *monetary base* (7) which is consistent with the " wanted " increase in credit.

The model suggested in Appendix 1 is based on: (a) the accounting equality between the two sides of a consolidated balance-sheet of the banking system, and (b) the credit multiplier coefficient, which relates changes in the "monetary base" or in "high-powered money" to changes in overall liquidity (cash in circulation and deposits with banks). Other data (such as the balance of payments surplus and the Government's cash deficit) are obtained from the financial policy model, as they are the target variables of the already selected policy-mix.

In other words, if the assumed, or desired, expansion of credit is added algebraically to the surplus in the balance of payments and to the overall deficit of the Government sector, we obtain the liquidity expansion. If this amount is then divided by the credit-multiplier coefficient (after making proper adjustments for changes in the preference for cash of the public and of banks), we find the change in the *monetary base* for the selected time-period consistent with the desired credit expansion.

Once the target concerning the expansion of high-powered money is set, it is easy to determine, by difference, the volume of rediscounts and open-market operations consistent with it (this assumes that the other items in a condensed balance-sheet of the Central Bank are known: in fact they are the target variables of the financial model, viz. the external position and the Government's resort to the central bank).

There are, however, some " caveats " to be borne in mind concerning " feed-backs " and " multipliers " existing in the banking mechanism. Through these mechanisms an increase (or decline) in central bank credit (more rediscounts or purchases of securities) may not lead to an equivalent increase in the monetary base, since it gets re-absorbed, totally or in part, by the action of other variables set in motion by it and having an opposite effect on liquidity.

Charts 1 and 2 below depict two of the most important mechanisms of this type believed to be operating, especially recently, in the Italian institutional setting.

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(7) Usually defined to include currency issue and monetary liabilities of the central bank. See also my article " On the Implementation of Monetary Programs: The Italian Case ". This Review No. 69, June 1964.

Chart 1
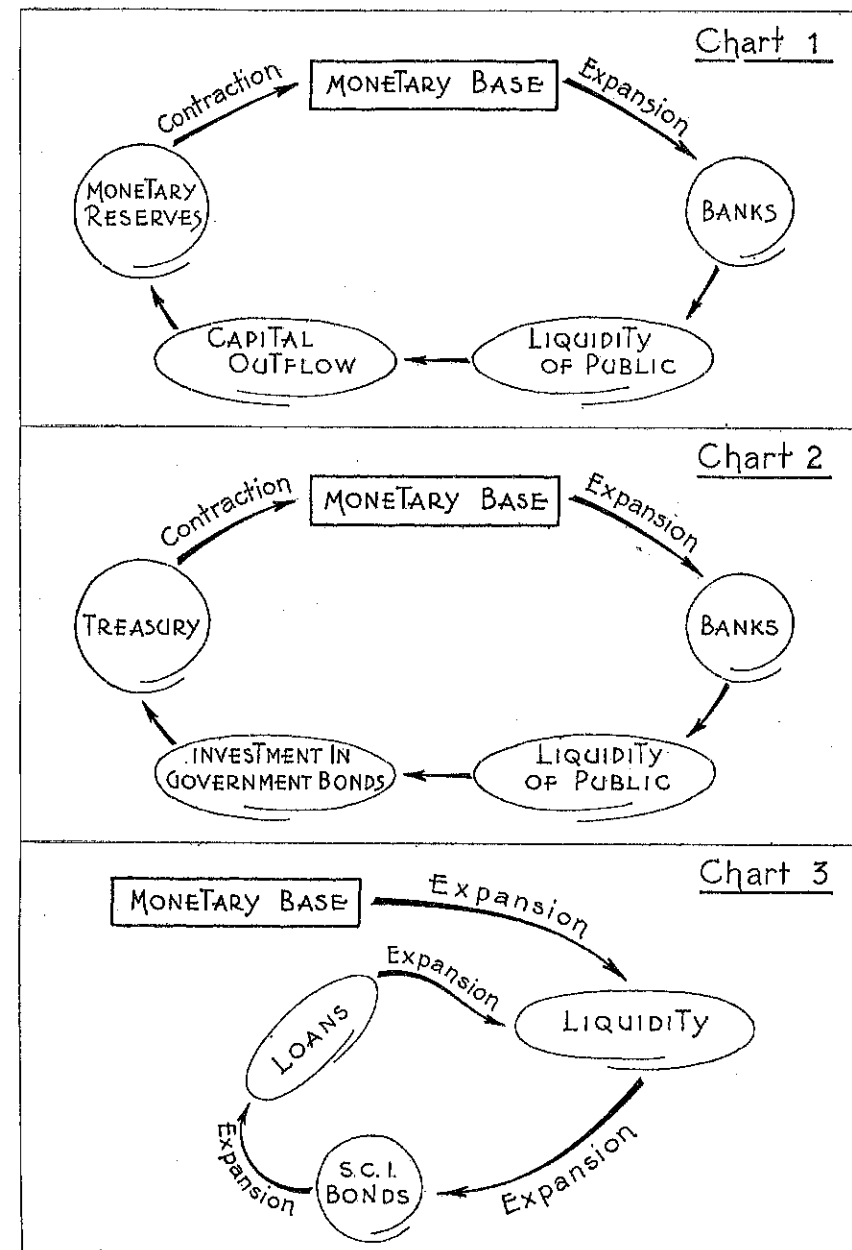
Chart 2

Chart 3

In Chart 1 an expansion of credit by the Central Bank has, at first, a direct impact on the monetary base and liquidity, but, later on, the outflow of capital that it generates, drains off liquidity and brings back the *monetary base* to its previous level.

A similar case is portrayed in Chart 2: an expansion in central bank credit is absorbed by greater purchases by the public of Government bonds leading to a reduction of the indebtedness of the Government with the central bank and, consequently, of the monetary base.

Chart 3 instead depicts a multiplier mechanism: an expansion of liquidity results in greater purchases by the public of bonds issued by the special credit institutes (their most important form of financing) and then to larger credits and, consequently, more plentiful liquidity.

## Final Comments

The above discussion has attempted to interpret monetary policy as an element of an overall financial policy plan. It has tried to show that it may be feasible to construct a bridge linking the " monetary base " to the expansion of credit, thereby fitting monetary policies into a pre-selected policy-mix.

Recognizedly, the whole construction is simplistic (cannot that be said of all models?) though a little less so than the unspecified and largely intuitive frame of reference that commonly forms the basis of most decisions.

Naturally, the task of the policy-maker is much more difficult owing to the constantly changing economic situation (which is especially true for an open economy) and also because of the rather fuzzy knowledge we have of it. But even so, model-building is useful: policy-goals acquire a distinct flavor when expressed in a quantitative form and our policies become more specific when related to selected targets.

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## APPENDIX I

## THE MODEL

### (A) FINANCIAL POLICIES

1. *Target Variables* (changes in GNP shares)

| Symbols | Variables |
|---|---|
| $B_t$ | $=$ *Trade Balance* (National Income Accounts Concept) |
| Y | $=$ *Economic Growth* (increase in GNP in real terms) |
| $B_c$ | $=$ *Balance of Payments. Capital Account* (including unilateral transfers) |
| D | $=$ *Net Government cash position* (total Government revenue less Government consumption and investment) |

2. *Policy Variables* (changes in GNP shares)

| | |
|---|---|
| T | $=$ *Taxation* (total Government revenue less net transfers) |
| G | $=$ *Total Government consumption expenditure* |
| W | $=$ *Total Wages* of dependent labor, including social security charges |
| $E_c$ | $=$ *Credit Expansion* (increase in outstanding credit of banks and special credit institutes) |

3. *Other Variables* (changes in GNP shares)

| | |
|---|---|
| $C_{(P)}$ | $=$ Private Consumer Expenditures |
| $I_{(P)}$ | $=$ Private Investment Expenditure |
| $G_i$ | $=$ Government Direct Investment |

4. *Functional Relationships*

1) $I_p = f(E_c, W, T)$
2) $C_p = f(W, T)$
3) $Y = f(I_p, G_i)$
4) $B_c = f(E_c)$
5) $D = G + G_i - T$
6) $B_t = I_p + C_p + G + G_i - Y$

(B) CREDIT POLICIES

    1. *Main Variables* (absolute changes in one year)

L   = Total liquidity of the Public (cash and all bank deposits)
$E_e$   = (See above)
D   = (See above)
$B_t$   = (See above)
$B_c$   = (See above)

    2. *Main Accounting Identity*

$$E_c + B_t + B_c + D = L$$

(C) MONETARY POLICIES

    1. *Main Variables* (absolute changes in one year)

CBM   = *Central Bank money* (monetary issue and monetary liabilities of the Central Bank)
$\Delta c$ and $\Delta r$ = Adjustment for changes in the preference for cash of the public (c) and of banks (r)
K   = The credit multiplier
L   = See above
SF   = Sensitive factors

    2. *Main Relationships*

$$L = (CBM + \Delta c + \Delta r) K$$

$$CBM = \frac{L}{K} - \Delta c - \Delta r$$

$$SF = CBM - B_t - B_c - D$$

# STATISTICAL APPENDIX

TABLE 1

## TAXATION

| Years | GNP | Total Revenues | Current Transfers | Net Tax Burden | Total Revenues | Current Transfers | Net Tax Burden | Annual Changes in GNP shares |
|---|---|---|---|---|---|---|---|---|
| | | In billions of lire | | | In per cent of GNP | | | |
| 1961 | 23,925 (*) | 6,911 | 3,094 | 3,817 | 28.89 | 12.93 | 15.95 | |
| 1962 | 26,964 *) | 8,039 | 3,683 | 4,356 | 29.81 | 13.66 | 16.15 | 0.20 |
| 1963 | 30,919 (*) | 9,397 | 4,322 | 5,075 | 30.39 | 13.98 | 16.41 | 0.26 |
| 1964 | 33,871 (*) | 10,574 | 4,836 | 5,738 | 31.22 | 14.28 | 16.94 | 0.53 |
| 1965 | 36,499 (*) | 11,271 | 5,912 | 5,359 | 30.88 | 16.20 | 14.68 | −2.26 |
| 1966 | 39,829 | 12,154 | 6,515 | 5,639 | 30.52 | 16.36 | 14.16 | −0.52 |
| 1967 | 43,553 | 13,933 | 7,256 | 6,677 | 31.99 | 16.66 | 15.33 | 1.17 |
| 1968 | 46,741 | 15,165 | 8,196 | 6,969 | 32.44 | 17.53 | 14.91 | −0.42 |

(*) Old series, adjusted.
    *Source*: Elaborated from data appearing in the Annual Reports of the Ministry of the Budget.

TABLE 2

## WAGES AND GOVERNMENT CONSUMPTION

| Year | Dependent Labor Wages | | | Government Consumption | | |
|---|---|---|---|---|---|---|
| | In billions of lire | In % of GNP | Changes in GNP shares | In billions of lire | In % of GNP | Changes in GNP shares |
| 1961 . . . . | 10,101 (*) | 42.22 | — | 2,872 (*) | 12.00 | — |
| 1962 . . . . | 11,773 (*) | 43.66 | 1.44 | 3,349 (*) | 12.42 | 0.42 |
| 1963 . . . . | 14,340 (*) | 46.38 | 2.72 | 4,101 (*) | 13.26 | 0.84 |
| 1964 . . . . | 16,028 (*) | 47.32 | 0.94 | 4,608 (*) | 13.60 | 0.34 |
| 1965 . . . . | 16,936 (*) | 46.40 | −0.92 | 5,183 (*) | 14.20 | 0.60 |
| 1966 . . . . | 18,134 | 45.53 | −0.87 | 5,521 | 13.86 | −0.34 |
| 1967 . . . . | 19,911 | 45.72 | 0.19 | 5,780 | 13.27 | −0.59 |
| 1968 . . . . | 21,429 | 45.85 | 0.13 | 6,313 | 13.51 | 0.24 |

(*) Old series, adjusted.

## CREDIT EXPANSION

TABLE 3

| Years | Banks | Special Credit Inst. | Total | Banks | Special Credit Inst. | Total | Changes in GNP shares |
|---|---|---|---|---|---|---|---|
| | In billions of lire | | | In per cent of GNP | | | |
| 1961 . . . . | 8,741 | 4,271 | 13,012 | 36.54 | 17.85 | 54.39 | — |
| 1962 . . . . | 10,736 | 5,400 | 16,136 | 39.82 | 20.03 | 59.84 | 5.45 |
| 1963 . . . . | 13,005 | 6,363 | 19,368 | 42.06 | 20.58 | 62.64 | 2.80 |
| 1964 . . . . | 13,399 | 7,371 | 20,770 | 39.56 | 21.76 | 61.32 | -1.32 |
| 1965 . . . . | 14,346 | 8,193 | 22,539 | 39.31 | 22.45 | 61.75 | 0.43 |
| 1966 . . . . | 16,401 | 9,305 | 25,706 | 41.18 | 23.36 | 64.54 | 2.79 |
| 1967 . . . . | 18,951 | 10,810 | 29,761 | 43.51 | 24.82 | 68.33 | 3.79 |
| 1968 . . . . | 20,970 | 12,718 | 33,688 | 44.86 | 27.21 | 72.07 | 3.74 |

## EXTERNAL POSITION

TABLE 4

| Years | Goods and Services Account (1) | | | Capital Account (2) | | |
|---|---|---|---|---|---|---|
| | Absolute value (billions of lire) | % of GNP | Annual Changes in % of GNP | Absolute value (billions of lire) | % of GNP | Annual Changes in GNP shares |
| 1961 . . . . | + 88 | +0.38 | — | + 276 | +1.15 | — |
| 1962 . . . . | — 60 | —0.22 | —0.60 | + 24 | +0.09 | —1.06 |
| 1963 . . . . | — 685 | —2.22 | —2.00 | — 96 | —0.31 | —0.40 |
| 1964 . . . . | + 193 | +0.57 | +2.79 | + 291 | +0.86 | +1.17 |
| 1965 . . . . | +1,167 | +3.20 | +2.63 | — 171 | —0.47 | —1.33 |
| 1966 . . . . | +1,077 | +2.70 | —0.50 | — 645 | —1.62 | —1.15 |
| 1967 . . . . | + 772 | +1.77 | —0.93 | — 570 | —1.31 | +0.31 |
| 1968 . . . . | +1,458 | +3.12 | +1.35 | —1,066 | —2.28 | —0.97 |

(1) Surplus=(+); deficit=(—).
(2) Including unilateral transfers.

## ECONOMIC GROWTH

TABLE 5

| Years | GNP at 1963 prices | Annual rate of growth | Changes in the rate of growth |
|---|---|---|---|
| 1961 . . . . . . . . | 27,971 (*) | 7.80 | — |
| 1962 . . . . . . . . | 29,708 (*) | 6.21 | —1.59 |
| 1963 . . . . . . . . | 31,343 (*) | 5.50 | —0.71 |
| 1964 . . . . . . . . | 32,215 (*) | 2.78 | —2.72 |
| 1965 . . . . . . . . | 33,391 (*) | 3.65 | 0.87 |
| 1966 . . . . . . . . | 35,304 | 5.73 | 2.08 |
| 1967 . . . . . . . . | 37,568 | 6.41 | 0.68 |
| 1968 . . . . . . . . | 39,724 | 5.74 | —0.67 |

(*) Old series, adjusted.

## OTHER VARIABLES

TABLE 6

| Years | Private consumption | | | Private investment | | | Government investment | | |
|---|---|---|---|---|---|---|---|---|---|
| | billions of lire | % of GNP | Change in GNP shares | billions of lire | % of GNP | Change in GNP shares | billions of lire | % of GNP | Change in GNP shares |
| 1961 | 15,383 (*) | 64.30 | — | 5,050 (*) | 21.11 | — | 710 (*) | 2.97 | — |
| 1962 | 17,344 (*) | 64.32 | 0.02 | 5,774 (*) | 21.41 | 0.30 | 757 (*) | 2.81 | —0.16 |
| 1963 | 20,254 (*) | 65.51 | 1.19 | 6,658 (*) | 21.53 | 0.12 | 838 (*) | 2.71 | —0.10 |
| 1964 | 21,923 (*) | 64.72 | —0.79 | 6,449 (*) | 19.04 | —2.49 | 958 (*) | 2.83 | 0.12 |
| 1965 | 23,515 (*) | 64.43 | —0.29 | 6,065 (*) | 16.62 | —2.42 | 909 (*) | 2.49 | —0.34 |
| 1966 | 25,561 | 64.18 | —0.25 | 6,656 | 16.71 | 0.09 | 1,014 | 2.55 | 0.06 |
| 1967 | 29,740 | 64.79 | 0.61 | 7,820 | 17.95 | 1.24 | 963 | 2.21 | —0.34 |
| 1968 | 28,218 | 63.63 | —1.16 | 8,043 | 17.21 | —0.74 | 1.187 | 2.54 | 0.33 |

(*) Old series, adjusted.

B. B.