MONETARY POLICY IN LESS DEVELOPED COUNTRIES: MAIN ISSUES

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I. INTRODUCTION

ONETARY policy in the context of less developed countries has been variously interpreted over the last three decades. When attention began to focus on the economic growth of the less developed countries (LDCs) during the post–World War II period, Keynesian economics was the dominant framework for analyzing the role of money and monetary policy. Unemployment in the midst of economic depression was treated synonymously with underdevelopment of resources in LDCs. The suggestion followed naturally that aiming at an expanding money supply and lower interest rates might be a good policy. This view prevailed for quite some time until the inflationary pressures resulting from it became so serious as to retard growth in many LDCs.

The Keynesian preoccupation with demand stimulus and the accompanying collapse of the intellectual case for the conservative, highly disciplining rules that were the conventional wisdom of the decades that preceded the Keynesian revolution, quickly led to inflationary excesses in many of the LDCs that adopted Keynesian notions. Often the inflationary pressures that resulted when monetary discipline was abandoned were dealt with by recourse to interventionist policies of one type or another (artificially low interest rates, exchange and capital controls, etc.). The result was the repression of the financial sector and hence the underdevelopment of its potential contribution to the development process.

On the intellectual front, these developments triggered interest in the monetarist panacea to stabilize LDC economies, and subsequently in the Shaw-McKinnon thesis of the desirability of unwinding the degree of financial repression found in those countries [24] [26]. The thrust of each policy alternative was in a different direction. While the monetarist policy, directed mainly at regulating the quantity of money and ensuring free play of demand and supply forces, was primarily concerned with the stabilization aspect, and hence addressed the issue of economic development only in a very limited way, the Shaw-McKinnon framework aimed at liberalizing the repressed economies of the LDCs

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that had adopted "low interest rate" policies to speed up their long-term economic growth.

Simultaneously with the emergence of these two approaches, there was yet another, adapted from the flow-of-funds framework of Gurley-Shaw [14] and made operational by Goldsmith [9] [10] [11] [12] [13] through his extensive quantitative work. The underlying rationale of this framework differed from that of Shaw-McKinnon in that rather than addressing the presumed repression of the financial markets and the resulting factor and price distortions, its starting point was the underdevelopment of all aspects of LDC economies, and its main focus was on transforming surplus savings of one sector, where investment does not match savings, to sectors where the abundance of entrepreneurial talent is able to effectively utilize the surplus savings for its investment [7] [21]. While the emphasis of the Shaw-McKinnon framework differs somewhat from that of the flow-of-funds framework, they share in common a fundamental insight. Money's traditional functions as a medium of exchange and a store of value remain important in LDCs, but its function as a conduit of resources from savers to investors is more central to an understanding of its contribution to economic development.

The main purpose of this paper is to reflect on these two roles of money and monetary policy, i.e., stabilization and growth, in light of the lessons gained by the experience of the past several decades. No claim is made about either novelty of ideas or policy prescriptions. The paper draws on the existing literature insofar as its main concepts are concerned, though naturally it is not entirely free from the authors' biases. At this stage, it is necessary to emphasize that the discussion of monetary policy in this paper generally assumes a closed economy. Such an assumption is obviously unrealistic, because many LDCs, possessing open economies, have to face influences emanating from abroad, or the consequences of their own policies on their exchange rates and external accounts. However these issues have been omitted partly for reasons of space, but also to bring into sharper focus the development imperatives of the LDCs.[1]

The rest of the paper is divided as follows. Section II sets out the characteristics of the stereotypical LDC. Section III explores the main elements of stabilizing monetary policies in LDCs. Section IV elaborates at some length the Shaw-McKinnon and flow-of-funds approaches to characterizing money's contribution to the growth process, and analyzes the policy prescriptions emanating from each.

II. THE "TYPICAL" LDC

Before proceeding with the relevance and usefulness of monetary policy in LDCs it is essential to understand the main characteristics of a typical LDC economy. In general, such an economy has a very low per capita income and capital

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[1] For a clear and comprehensive survey of monetary policy in open developing countries, the readers are referred to Hacche [17].

stock, but on the other hand it has surplus labor. There is a concentration of production in the primary sector, which implies that neither domestic output nor exports are likely to be sensitive to demand fluctuations. The manufacturing sector is rudimentary and contributes little to national income. Exports consist largely of primary commodities, the demand for which is determined by world markets. Imports are of manufactured and capital goods.

In subsistence economies, savers and investors tend to be identical. In the absence of financial markets, private investment depends heavily on prior self-saving. Accelerating the pace of development requires breaking out of the internal finance constraint. Fiscal policies to capture private savings and heavy reliance on government investment have typified efforts to overcome the inefficiencies of self-finance in LDCs.

The financial markets are in an inchoate stage and are dominated mainly by the commercial banking system. The main financial assets are bank deposits and currency, and the only other available assets, such as bonds and shares, are held mainly by the financial institutions rather than by the saving public. The main alternative to money as an investment asset is goods. As a consequence, there is no free market activity in domestic securities and the holding of government debt by the nonbank private sector is generally negligible. Because of this, interest rates are not determined freely by market forces but by the government.

A final characteristic of most LDCs of interest in assessing money's role in the development process is the limited sources of government finance and the relatively large role the government plays in the economy of most LDCs. As a result there is often a large budget deficit which is wholly financed by borrowing from either the central bank, the commercial banks, or from abroad, since there is no well developed market in financial assets. In the first and third cases, base money will be raised, leading to a multiple expansion of deposits. In the case of government borrowing from the commercial banks, the monetary base will not be affected, but the money supply may expand if the banks possess excess reserves to start with [6]. For all these reasons the distinction between fiscal and monetary policies in LDCs is almost nonexistent.

III. STABILIZING MONETARY POLICY

Admittedly, the principal preoccupation of the LDCs is to attain rapid economic growth from a very low level of income and employment. This implies an emphasis on real factors such as the aggregate level of production, composition of output, investment and saving processes, relative prices of goods and services, and realignment of factors of production. But the concern for growth of output and change in its composition are not always independent of the concern for price stability and balance in the external position of the LDC. Inflationary pressures can and do emerge during the process of development, and if these are ignored the development activity is impeded.

TABLE I

DISTRIBUTION OF LDCs ACCORDING TO THE RATE
OF INFLATION

Annual Percentage Rates of Inflation	1960–70	1970–79
Below 5	62	3
5–10	9	25
10–20	5	38
20 and over	2	11
Total	78	77

Source: [27].

Though changes in the general price level emanating from changes in the quantity of money need not affect the real variables in the economy (if fully anticipated at zero resource cost and thereby leaving relative prices constant), more generally inflation produces inefficiencies in production activity because inflationary forces render economic calculation over time difficult due to "money illusion." Closely related to the control of inflation is the need to maintain a stable balance of payments position. If there is a faster rate of inflation in one country than in another with whose currency it maintains a fixed exchange rate and with which it has trading relations, that country loses its competitiveness in regard to its exportables with the result that its balance of payments tends to worsen.

It is clear thus that the objectives of stable prices and the balance of payments position, and that of economic development are intertwined. So long as there is harmony between these sets of objectives, the policy instruments used do not pose any serious difficulties in their implementation. However, more often than not, conflicts do arise between the objectives of price stability and balance of payments equilibrium on the one hand, and the objective of faster economic growth on the other.

The question naturally is which of the objectives should claim the greater attention of the policymakers. As shown in Table I, experience since the 1960s suggests that inflation has tended to become as serious a problem for the LDCs as the imperative of economic growth.

The traditional stabilization role of monetary policy tends to focus more on maintaining international balance of payments in LDCs than on demand management per se, as that term is understood in the developed market economies. In an important sense, independent control of exchange rates and the money stock are mutually exclusive alternatives. The price relationships that must exist between any economy and the rest of the world, and which are thus an important policy objective, can be achieved with any exchange rate by making appropriate adjustments in the domestic price level (i.e., money stock), or with any price level by making appropriate adjustments in exchange rates.

The former, fixed exchange rate, case was the pervasive one in earlier decades.

It prescribed the "monetary rule" by which domestic monetary policy was to be guided in the long run, namely that the domestic money stock and resulting price level must be such as to conform to world prices and conditions. The longer-run monetary policy objective of these countries was the defence of their foreign reserve holdings, hence their ability to maintain their exchange rates. This determined the operational limit on short-run departures from the imperatives of these considerations. The currency boards of a still earlier era operated under rules that generally prevented or sharply limited even short-run departures from the requirements of international balance. With fixed exchange rates, actions by the monetary authorities to alter the nominal money stock relative to the public's demand for it at prevailing, internationally determined prices ultimately lead to self-defeating balance of payments surpluses or deficits [1].

Even with market-determined exchange rates the scope for demand management in LDCs is limited for several reasons: (a) The non-policy economic disturbances to which monetary policy must respond invariably originate on the supply side or abroad so that policy efforts to change domestic demand are of little consequence for output and employment. Meaningful employment in LDCs is more closely related to the pace and nature of economic development than to the state of aggregate demand. (b) Coordinating supply and demand (equating savings and investment, etc.) is the central task of markets. The more sophisticated and complex an economy becomes (i.e., the more indirect are the economic relationships between members of the society), the more difficult this coordinating task is, and the more sensitive these relationships are to disturbances. As the economies of LDCs are by their very nature relatively uncomplex in this sense, often with a high degree of barter where the coordination of supply and demand is without meaning, "fine tuning" types of demand management by the authorities are of little avail, and are increasingly being abandoned even in the developed market economies.

While many will disagree with this negative assessment of the prospects for *active* stabilization policies to do very much good, their potential to do great harm are more familiar and better documented. It is difficult to over-stress the importance for economic growth of a broadly stable environment, to which monetary policy can best contribute in the seemingly negative fashion of not contributing to its disruption. Even this seemingly passive stabilization role has proved difficult to achieve. The critical role of this more fundamental notion of stability is addressed in its broadest context by Jensen and Meckling:

> Uncertainty in the structure of rights or in the "rules of the game" substantially changes both peoples' behavior and the use of resources. In particular, it significantly reduces private investment in the kind of long-term projects which have played such an important role in determining our standard of living. It is very difficult to observe these effects because they primarily involve actions not taken, that is projects not undertaken, buildings not built, etc., and are not the stuff of which newspaper headlines are made. Nevertheless, we believe their impact is substantial. The low standard of living in South America and other underdeveloped

countries is due, we believe, in large part to the uncertainties in contract and
property rights induced by the tremendous instabilities of the political system.....
[19]

The advent of central banking in most LDCs, generally replacing currency
boards or other rigidly constrained monetary arrangements, has not generally
been accompanied by improved price stability or more rapid economic develop-
ment. By and large, central banking has made possible domestic monetary
behavior that no longer reflects balance of payments developments. This, in
turn, has precipitated more frequent foreign exchange crises, devaluations, trade
and exchange controls, and inflation [18]. More than anything else it has eased
the access of finance ministries to the printing presses of their central banks and
fostered previously unknown rates of inflation [2] [3]. Where the moral aversion
to such monetization of government debts is lost, monetary and price stability
will not be easily reestablished. This political problem raises grave doubts about
the wisdom of monetary discretion in the first place [5].

While the notion that countercyclical monetary policy can successfully fine
tune aggregate demand and economic activity has more often than not turned
loose damaging inflationary forces, even in the developed countries, there is
an additional question of whether short-term stabilizing monetary policy is rele-
vant in the context of LDCs. If long-term growth and development is the
objective, monetary policy should be directed toward eradication of obstacles
endemic in the institutional and economic situations existing in LDCs. In that
case, the role of money must be perceived differently. Stabilizing monetary
policy, assumes that money's major function is as a means of payment, the
regulation of which is required to moderate the fluctuations in aggregate ex-
penditure. In developing countries the role of money is more predominantly
that of a conduit through which unused savings of one sector of the economy
are transmitted to another sector where they are put to more efficient use. Thus
the role of money, which may also be described as developmental, has been
stressed by Khatkhate [21], McKinnon [24], Shaw [26], and Thirlwall [28].

IV. DEVELOPMENTAL MONETARY POLICY

A. Shaw-McKinnon Framework

More rapid economic growth requires more, and/or more efficient investment.
This, in turn, requires more, and/or more efficient utilization of savings. Less
is saved than might be if the return is unattractive, as it is more likely to be
if the only *known* use for saving is self-investment or lending in the very limited
"neighborhood market." Financial assets will be scarce and illiquid in this
environment. On the other hand, many potentially high-yielding investments
are never made for lack of funds which flow instead into less productive but
more familiar and secure hands. The earlier analytical focus on aggregate savings
and investment obscured these problems of efficiently utilizing what is saved.

Those individual economic units endowed with entrepreneurial talents and drive are not generally the same units with surplus resources to invest. What matters crucially from the point of view of the development process is the existence of channels through which the resources of surplus units are transmitted to those in greatest need of those resources [14] [15] [16]. In the absence of such channels economic growth fails to reach feasible rates as savings either remain sterile or are misallocated. It is in establishing such a channel, and in improving its efficiency, that developmental monetary policy comes into its own.

A convincingly logical basis for developmental monetary policy has been provided by the Shaw-McKinnon theoretical framework, which was devised following dissatisfaction with the stabilizing emphasis of traditional (Keynesian and monetarist) monetary policy. They start with the premise that the fragmentation of money and capital markets in LDCs, and consequent dispersal of rates of return in these economies, inhibit the growth process. Therefore, priority should be assigned to the development of money and capital markets, thereby unifying them and ensuring a common denominator for an economy-wide rate of return on the investment. "Low interest rate" policies, intended to project investment and growth in fact have tended to retard the development of financial instruments and markets and to impede the efficiency with which resources were allocated. The policy prescription following from the Shaw-McKinnon approach implies raising the *real* rates of return on money and other financial assets found in the "organized" sectors of an economy to the marginal return on investment. Their emphasis was on liberalizing repressed financial markets.

The Shaw-McKinnon schema crucially depends on the assumption that money and capital are complementary to each other rather than competing as in neoclassical monetary growth models. The neoclassical world is a far cry from the world of developing countries. The substitution between real money balances and real capital accumulation in neoclassical growth models is the logical result of a certain set of assumptions in neoclassical monetary theory. For one thing, it is assumed that real money balances consist only of "outside" money, which means that they are assets of the public without there being any counterparts on the liabilities side. Second, the saving rate (i.e., the ratio of saving to disposable income) is assumed to be constant. Third, the productivity of money is ignored. None of these assumptions is necessarily valid. Money consists of both "outside" and "inside" money, but even more important than this is money's role as a producer good, particularly when LDCs are passing through a process of monetization [28, p. 85]. An increase in the holdings of real money balances releases real resources for increasing investment and output, out of which new saving takes place. A constant saving rate is also inconsistent with existing intertemporal utility maximizing models, which indicate no substitutability between money and capital even of the "outside" type [4]. The role of money balances as a producer good incidentally falsifies the assumption of a constant savings rate.

McKinnon has proposed a more appropriate model for LDCs which con-

templates a complementary relationship between real money balances and capital formation. Though general and a lot more applicable to LDCs, it suffers from the highly stylized set of assumptions of its own, such as reliance of the producing units on self-financing without any recourse to borrowing; indivisibilities of investment and the abstinence of government from any saving-investment activity [24, p. 56]. The assumption of self-financing may hold good only for very primitive economies but a large majority of LDCs is past that stage and recourse to borrowing from either the financial system or other lending units is a common feature. The assumption of indivisibilities of investment also does not apply to all investments. Indeed, the history of industrialization is one of development from small-sized investments, which are financed initially with producers' own funds, to large-sized investments. As for saving and investment by the government sector, it is a matter of common observation that the government investment program and its intervention in the mobilization of savings constitute important planks of the economic policies in LDCs.

However, none of the assumptions restricting the application of McKinnon's mode of analysis to LDCs is really essential for retaining complementarity between real money balances and capital accumulation, provided it is recognized that money is a vehicle through which real resources are made available for investment by those who are well equipped to do so. When the public holds more money, it gives up its immediate command over capital and labor which can be put to use somewhere else in the economy, thereby ensuring simultaneous growth of both. Furthermore, since in LDCs monetary assets form a larger proportion of community savings, the resources so released are transmitted to investment primarily via the financial intermediaries. In the latter case the higher the accumulation of liabilities by the intermediaries the greater is the amount of investment. This is the "inside" component of the money supply to which the neoclassical models' money-capital substitutability argument does not apply in any event; and it is precisely this component (deposit money) that would grow in response to raising the real rate of return on deposits. Thus it seems evident that in LDCs money balances and capital formation continue to be complementary to each other, which, in turn, suggests that adjusting upward the rate of return on money balances would not impinge on the real investment so long as it was lower than the rate of return to the most productive addition to capital.

To implement this policy the "real" yield on deposits can be raised by lowering the rate of inflation or by raising deposit rates. It has been argued that there are .advantages in raising deposit rates first and only then gradually lowering the rate of inflation [20]. Kapur constructs a model in which output varies directly with real money balances as a result of the assumptions (a) that the services of capital are utilized in proportion to working capital, which, in turn, is closely linked to the real value of the money stock; and (b) that there is unutilized capital (or what would normally be called an excess supply of capital). As a result of adaptively formed inflationary expectations, his model generates an initial and permanent increase in real balances when the authorities raise deposit rates first and only subsequently reduce the rate of growth of the money

supply. On the other hand, if they were to reduce money growth and inflation first, real money balances would decline. As output is determined directly by the behavior of real money balances, Kapur's stabilization prescription follows directly.

This conclusion is unconvincing for several reasons. Conclusions that rest on the presence of unutilized capital seem particularly inappropriate for LDCs. Indeed, there is little merit in Kapur's claim to have explicitly specified "a logically self-contained set of analytical relationships consistent with McKinnon's analysis of stabilization experience in financially repressed economies." The main thrust of McKinnon's analysis, which is better captured by Galbis [8], is not that capital is more intensively utilized when real balances are higher but that the rate of accumulation of capital is greater, and that the efficiency of the allocation of what is saved (i.e., the productivity of the capital stock itself) is enhanced *through time* when real money balances are higher, as a result of the channeling of a larger fraction of society's saved resources through financial markets.

Furthermore, while economic analysis in general assigns very different roles to the long- and short-run relationships between nominal monetary growth and real output, there is no solid understanding of the short-run division of changes in the rate of monetary growth between prices and output. However, it is generally presumed that in the short-run any excess demand for money (resulting either from an increase in demand or decrease in supply) which leads to a fall in aggregate demand will be reflected, to some extent at least, in a fall in real output rather than wholly in the rate of inflation. This can be avoided only if the expected rate of inflation falls immediately with a drop in nominal money's growth rate (or increase in deposit rates) by an amount sufficient to avoid any excess demand for money. With adaptively formed inflationary expectations, an excess demand for money emerges whether nominal deposit interest rates are raised or the rate of monetary growth reduced, which is in sharp contrast with Kapur's analysis.

As a practical matter, the short-run choice between raising deposit rates and lowering the rate of inflation must also concern itself with the consequences of that choice for bank profits. A sharp increase in deposit rates could be troublesome because of the short-term nature of bank liabilities relative to their assets. An increase in deposit rates would raise the cost of banks of a major part of their funds almost immediately, while the resulting, spread-preserving increase in loan rates would increase the return on their assets only gradually as new loans at the higher rates replaced maturing older loans at lower rates.[2]

Though maintenance of a positive real yield on financial assets constitutes

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[2] This aspect is analyzed by Mathieson [23]. Unfortunately, his conclusion (that the optimal policy is the initial increase in deposit rates suggested by Kapur accompanied by temporarily much higher than equilibrium loan rates) not only suffers from the same deficiencies as Kapur's analysis but also ignores the loan rate's effect on the demand for loans. In fact, the level of borrowing assumed would not take place at substantially above equilibrium loan rates.

the main plank of the policy package following McKinnon's theoretical frame, its main thrust is toward complete liberalization of those LDC economies highly repressed by pervasive government intervention. Complete liberalization is not easily achieved, nor without cost to society, especially when a fiscal deficit financed by borrowing from the central bank continues to be the glaring feature of the LDCs' financial systems. A scheme of carefully phased implementation of financial liberalization seems called for. However, such an approach also presupposes a high level of technical sophistication and political discipline. Both assumptions are likely to be naive, and much more analytical work needs to be done in this area.

B. *Flow-of-Funds Approach to Developmental Monetary Policy*

Not all LDCs have repressed financial sectors. Some are simply under-developed like their economies in general. While the general insights of Shaw-McKinnon remain applicable, a somewhat broader, more general, outlook is needed. The role of developmental monetary policy is brought into sharper focus if an LDC economy is viewed in disaggregated form. Thus, if the economy is visualized as dividing itself into surplus-spending units, that is units whose total expenditure (consumption plus investment) is less than their own receipts, and deficit-spending units, whose total expenditure, similarly defined, exceeds their income, it sharpens the focus on the need to bring about a flow of savings from the surplus sectors to the deficit sectors if aggregate investment is to be maximized.

Broadly, there are three primary sectors in an economy. The first is the household sector, which comprises individuals, private trusts, and small business enterprises. The second is the modern corporate business sector, and the third is represented by the government sector, which embraces all layers of government and public enterprises. It has been found generally that in less developed countries the household sector is predominantly a surplus sector, that is, its savings exceed its own investment. The corporate and government sectors are deficit sectors, drawing for funds on the household sector and the foreign sector.[3]

From the monetary-fiscal point of view, what is important is the mechanism by which such an intersectoral flow of funds occurs. It is at this point that the institutionalization of savings-investment, pioneered by Gurley and Shaw, has considerable relevance for the rapid growth of investment and savings, and therefore the rate of growth of the economy.

If development of the economy is to be accelerated, it is essential that the

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[3] Usually, in flow-of-funds analysis five sectors are envisaged—the household, government, corporate, foreign, and financial sectors. However, from the point of view of use of savings, only the first four sectors are of primary importance in our analysis. While the foreign sector is not considered in this paper, in view of the assumption of a closed economy, the financial sector is left out as it is merely a temporary abode for funds. The excess savings are transferred to that sector only to be retransferred to the ultimate users of funds.

resources saved by surplus sectors be put to the most productive use, and that the amount of such surpluses be increased. Since both of these require provision of more attractive financial assets for surplus units as a repository of transferable savings, policies should be such as to supply those financial assets which are demanded by the surplus sectors.

On the savings side, the objective is not simply to increase aggregate savings so much as to enlarge the amount of *transferable* savings. In fact the case for a "high" interest rate does not depend in any way on whether the higher rate increases aggregate savings. An increase in transferable saving can be achieved by altering the structure of savings of the surplus-spending units which are, by and large, the household sectors in LDCs. A large part of the savings of units in the household sector is generally invested in physical assets such as goods or gold which contribute little or nothing to economic growth. Even much of the savings invested in business enterprises is "wasted" (i.e., yields a lower return than it could) as fragmented or nonexistent financial markets force savers to invest excessively in their own activities. There is a compelling need for the ratio of financial assets to total savings of the household sector to grow as fast as possible.

The flow of funds between various economic units creates assets and liabilities in the process, but the structure of these assets and liabilities is not the same in every phase of economic development. Empirical evidence suggests that the income elasticity of demand for money, however defined, is inversely related to the stage of development of money and capital markets. This means that in the early stages of development, when the economy is poorly equipped with a financial system, money is sought after as a repository of wealth. As credit markets become better organized, the range of assets in which to hold savings is widened to include bonds, shares, etc. Desire for a variegated pattern of financial assets is motivated by such factors as risk aversion of savers (lenders) in addition to their transaction and liquidity needs. Hence, at later stages of development financial assets other than money need to be created if savings are to be fully mobilized to finance investment.

Economic growth means increased productive capability. This requires more and/or better tools and equipment and a more skilled labor force. This does not happen without resources being made available for these purposes. On the other hand, all the resources in the world will contribute nothing to economic growth if not used productively. The growth impact of given resources (saving) will reflect the efficiency with which they are utilized. The allocative role in interest rates stands at the very center of this process.

The stabilization objectives of monetary policy are reasonably agreed, namely to maintain the value of the domestic money (or, as a second best, the predictability of its value) so that economic calculations and decisions can be made on a sound basis. Achievement of this objective can in itself contribute significantly to the development process. The implications of the above discussion of the objectives of a "development" monetary policy are that maximum growth

requires the highest possible return on financial assets without pushing borrowing costs to the point of choking off investment below the level of savings, to encourage the development of a wider range of financial assets (or contribute to an environment conducive to such development) and to foster maximum efficiency in the production of financial services so as, in part, to minimize the spread between return to savers on financial instrument and cost to borrowers.[4]

As money as a store of wealth competes primarily with goods in many LDCs, its characteristics, including yield, should compare favorably with those of goods as they relate to this motivation. In particular, the nominal yield on money should, as a minimum, exceed the explicit return from holding goods, which is the increase in their purchasing power. For goods in general, this return is measured by the rate of inflation. Stated more conventionally, the rate of return on money adjusted for the rate of inflation, i.e., the real rate of return or the real interest rate should at least be positive. In fact, it should be higher depending on the marginal productivity of investment.

It is not easy to assess just what the real rate of interest is, much less the behaviorally more relevant perceived or expected real rate of return. In calculating an "empirical real interest rate" (for a comprehensive discussion of this problem, see Khatkhate [22]) there is the question of *which* of the available price indices to use for estimating the expected real interest rate. This is crucial because in the absence of developed financial markets the estimated rate is calculated and stipulated by the authorities and therefore it acquires some aura of authenticity and the force of a sanction. It has a more personal element than that which emerges in the market-oriented economies.

There is a considerable divergence of opinion about using a consumer price index for deflating the nominal interest rate to arrive at a real expected interest rate. McKinnon [24] has been a very strong opponent of using the consumer price index (CPI) on the ground that it gives greater weight to the service component, which he does not consider an alternative to holding money. His assumption is that income earners save by holding either commodities, the rate of return on which is given by the change in their prices, or financial assets, the rate of return on which is denoted by the nominal interest rate paid. It follows, therefore, that prices relevant for the decisions of individuals with regard to the manner in which to save are of necessity those of commodities and not services. In economies where per capita productivity growth as well as real wages are rising, the prices of services could tend to rise in relation to the prices of commodities due to sluggish technical change in the output of services. Thus the CPI would misrepresent the price behavior of commodities. McKinnon therefore suggests employment of a wholesale price index (WPI) to calculate the expected real interest rate.

This confuses the issue somewhat. One must distinguish determination of

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[4] It goes without saying that a successful development policy requires many other things as well, but the focus here is only on the potential contribution of money and the financial sector to the development process.

the real rate of return on an asset from the relative rates of return on different assets. The former is a measure of the increase in the claim to goods *and services* over time (the pure reward for waiting) while the latter compares the yields at a point in time of saving in alternative ways. The real rate of return for any asset is always measured (in the aggregate) as the difference between the nominal (instantaneous) yield of the asset and the (instantaneous) increase in an index of the prices of all goods *and services* purchased.[5] For any particular individual the appropriate measure of inflation is that which reflects the price behavior of the goods and services actually purchased by that individual. However, if our interest is in the relative yields of alternative forms of wealth; for example, if we wish to compare the return from holding financial assets (e.g., money) to the return from holding nonfinancial assets (real estate, durable goods, etc.) we get the same answer whether we compare the nominal yields of each (which for a particular good—or group of goods—is the rate of appreciation in its—or their—prices) or the real yields of each. As a practical matter a wholesale price index will come closer to measuring the yield from hoarding goods than will a consumer price index for the reasons given by McKinnon.

In this sense it is a bit misleading to refer to the desirability of a positive real rate of interest in order to channel savings into financial assets. What is really meant is that the return from holding financial assets should be greater than the return from holding goods. In order to assess the latter the wholesale price index is preferable to the consumer price index or the GNP or other broad based deflator. Nonetheless, because of its widespread use we will continue to use the former more widely used terminology (positive real yield) to refer to the latter relationship (relative yields of financial and non-financial assets).

The choice between these indices, the CPI, WPI, and GNPD is not merely a Hobson's choice. This becomes dramatically clear from the changes in both price indices for a sample of developed and developing countries (Tables II and III). The divergences in the rates of change in these indices are, if seen as changes from year to year, so glaring, both in magnitude and in direction, that estimates of real expected interest rates derived from each of these price indices will totally confound the policymakers (Table IV).

There are two more issues closely linked with the use of these price indices. First, admittedly the goods and services of concern to borrowers and lenders

5 For low rates of inflation this is approximately the nominal rate of interest less the rate of inflation as measured by the rate of change in the appropriate deflator. In principle, the rate of inflation should be measured by an index of the trade-weighted prices of all transactions (i.e., for old and intermediate as well as new final goods and services) actually undertaken. Such an index is not available. But just as some income measure must generally be used as a proxy for total transactions, so is its deflator must be used as a proxy for the ideal price index. Under these circumstances, the most appropriate measure of transactions and its associated deflator is what we call GSA (goods and services available). This can be constructed by subtracting exports and adding imports to gross domestic product (GDP) valued at market prices (GDP is GNP plus net factor payments abroad).

TABLE II

INFLATION RATE FOR SELECTED COUNTRIES BASED ON CONSUMER PRICES,
WHOLESALE PRICES, AND GDP OR GNP DEFLATOR

(%)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Average
Brazil:											
CPI	20.2	16.5	12.7	27.6	28.9	42.0	43.7	38.7	52.7	82.8	36.6
WPI	20.0	18.6	16.8	29.2	27.2	43.3	42.5	37.6	55.9	106.5	39.8
GDPD	18.8	18.6	21.2	32.9	34.5	45.6	42.4	40.7	57.2	94.7	40.7
India:											
CPI	3.2	5.2	17.8	27.7	5.6	−7.8	8.4	2.5	6.4	11.4	8.0
WPI	5.1	8.9	16.4	28.6	3.6	−1.9	7.5	−0.2	11.4	20.3	10.0
GDPD	5.2	11.2	18.9	17.9	−3.0	6.7	3.7	1.8	14.4	11.1	8.8
Korea:											
CPI	13.4	11.7	3.2	24.3	25.3	15.3	10.2	14.5	18.3	28.7	16.5
WPI	8.6	13.8	6.9	42.1	26.6	12.1	9.0	11.6	18.8	38.9	18.8
GDPD	12.1	15.5	13.1	29.5	24.4	17.9	16.5	20.8	19.0	25.0	19.4
Pakistan:											
CPI	10.1	5.2	23.1	26.7	20.9	7.2	10.1	6.7	9.4	11.7	13.1
WPI	5.5	10.4	27.2	22.4	22.8	8.0	9.3	5.2	9.3	10.4	13.1
GDPD	−33.8	6.6	15.7	23.0	25.2	12.4	9.2	7.8	9.3	9.7	8.5
U.S.A.:											
CPI	4.3	3.3	6.2	11.0	9.1	5.8	6.5	7.6	11.3	13.5	7.9
WPI	3.3	4.5	13.1	18.9	9.2	4.6	6.1	7.8	12.6	14.0	9.4
GNPD	5.0	4.2	5.7	8.8	9.3	5.2	5.8	7.4	8.7	9.3	6.9
U.K.:											
CPI	9.4	7.1	9.1	16.0	24.2	16.5	15.8	8.3	13.4	18.0	13.8
WPI	9.1	5.3	7.4	22.6	22.2	17.3	19.8	9.1	12.2	16.3	14.1
GDPD	9.3	8.6	7.0	15.0	26.9	14.7	14.0	10.9	15.0	19.2	14.1
Japan:											
CPI	6.1	4.5	11.7	24.4	11.8	9.3	8.0	3.8	3.6	8.0	9.1
WPI	−0.8	0.8	15.7	31.6	3.0	5.0	1.9	−2.6	7.3	17.8	8.0
GNPD	5.2	5.2	11.9	20.6	7.8	6.4	5.7	4.6	2.6	2.8	7.5
Denmark:											
CPI	5.8	6.6	9.4	15.2	9.6	9.0	11.1	10.1	9.6	12.3	9.9
WPI	3.6	5.2	14.8	22.1	5.8	8.0	7.4	4.3	9.9	17.3	9.8
GDPD	7.9	9.0	10.5	12.8	12.8	9.0	8.7	9.5	6.6	9.0	9.6

Source: International Monetary Fund, *International Financial Statistics*, various issues.
Note: CPI=consumer price index; WPI=wholesale price index; GDPD=gross domestic product deflator; GNPD=gross national product deflator.

of funds in the capital and money markets are not identical. Lenders, who are by and large depositors in LDCs, consider the holding of financial assets as an alternative to only certain types of goods, while prices of other goods are of relevance to borrowers. This means the *same* price index, be it the CPI, WPI, or GDPD, cannot ideally be applied to estimating the expected real interest rate for both groups. Moreover, even if measurement problems are sorted out

TABLE III

EXPECTED INFLATION RATE FOR SELECTED COUNTRIES BASED ON CONSUMER
PRICES, WHOLESALE PRICES, AND GDP OR GNP DEFLATOR

(%)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Average
Brazil:											
CPI	18.6	15.6	12.3	23.2	25.2	34.1	36.0	33.0	41.4	58.4	29.8
WPI	18.4	17.2	15.7	24.6	24.1	34.8	35.3	32.3	43.2	69.6	31.5
GDPD	17.2	17.0	19.0	27.5	29.5	36.8	35.5	34.3	44.2	64.4	32.5
India:											
CPI	3.3	4.9	15.3	23.6	7.3	−6.6	6.6	2.9	5.9	10.3	7.4
WPI	4.8	8.1	14.4	24.1	5.9	−1.2	6.4	0.4	9.8	17.6	9.0
GDPD	4.5	8.2	13.6	15.3	4.3	5.6	4.4	2.8	9.2	10.0	7.8
Korea:											
CPI	13.9	13.0	10.1	13.6	16.3	15.7	13.9	13.8	14.7	17.8	14.3
WPI	13.4	13.3	12.0	16.6	18.0	16.7	15.1	14.3	14.9	18.5	15.3
GDPD	16.2	15.8	15.1	17.3	18.2	17.8	17.3	17.6	17.6	18.5	17.1
Pakistan:											
CPI	4.4	4.4	6.1	7.8	8.9	8.7	8.8	8.6	8.6	8.9	7.5
WPI	2.9	3.6	5.7	7.1	8.5	8.4	8.4	8.1	8.2	8.3	6.9
GDPD	1.9	2.4	3.6	5.3	7.0	7.5	7.6	7.6	7.7	7.9	5.9
U.S.A.:											
CPI	2.7	2.6	3.1	3.8	4.3	4.5	4.6	4.9	5.5	6.2	4.2
WPI	1.0	1.1	1.7	2.5	2.8	2.9	3.0	3.2	3.7	4.1	2.6
GNPD	2.3	2.4	2.5	2.8	3.1	3.2	3.3	3.5	3.8	4.0	3.1
U.K.:											
CPI	4.4	4.7	5.1	6.1	7.6	8.4	9.0	8.9	9.3	10.0	7.4
WPI	4.1	4.2	4.5	6.1	7.5	8.3	9.3	9.3	9.5	10.0	7.3
GDPD	4.7	5.0	5.2	6.1	7.8	8.4	8.9	9.0	9.5	10.3	7.5
Japan:											
CPI	4.3	4.3	4.6	5.5	5.8	5.9	6.0	5.9	5.8	5.9	5.4
WPI	0.8	0.8	1.5	2.8	2.8	2.9	2.9	2.6	2.8	3.5	2.3
GNPD	4.6	4.6	4.9	5.6	5.7	5.7	5.7	5.7	5.5	5.4	5.3
Denmark:											
CPI	4.7	4.9	5.3	6.2	6.5	6.7	7.1	7.3	7.5	7.9	6.4
WPI	2.8	3.0	4.0	5.4	5.4	5.6	5.8	5.6	6.0	6.9	5.1
GDPD	5.9	6.1	6.5	7.1	7.6	7.7	7.7	7.9	7.7	7.8	7.2

Source: International Monetary Fund, *International Financial Statistics*, various issues.
Note: The method of calculation is given in the Appendix.

and some surrogate for expected real interest rates is obtained, a doubt would still persist if the real interest rate reflects an equilibrium rate.

Another issue, which relates to the translation of nominal interest rates into expected real interest rates by application of whichever price index is available, is a practical one insofar as the LDCs are concerned. Apart from the usual statistical hazards involved in the construction of a price index, there are certain others in LDCs, which stem from their interventionist policies. As is well known,

TABLE IV

REAL RATES OF INTEREST FOR SELECTED COUNTRIES

(%)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Average
Brazil:											
I	7.0	6.4	7.1	15.5	16.8	0.8	1.0	6.6	—	—	7.7
II	7.2	4.8	3.7	14.1	17.9	0.1	1.7	7.3	—	—	7.1
III	8.4	5.0	0.4	11.2	12.5	−1.9	1.5	5.3	—	—	5.3
India:											
I	4.0	2.4	−8.1	−16.4	−0.1	13.9	3.4	6.1	4.1	−0.3	0.9
II	2.5	−0.9	−7.2	−16.9	1.4	8.5	3.6	8.6	0.2	−7.6	−0.8
III	2.8	−1.0	−6.4	−8.1	3.0	1.7	5.6	6.2	0.8	0.0	0.5
Korea:											
I	6.5	−1.0	1.9	1.4	−1.3	0.5	0.5	4.8	3.9	6.2	2.3
II	7.0	−1.3	0.0	−1.6	−3.0	−0.5	−0.7	4.3	3.7	5.5	1.3
III	4.2	−3.8	−3.1	−2.1	−3.2	−1.6	−2.9	1.0	1.0	5.5	−0.5
Pakistan:											
I	1.7	1.8	0.4	−0.8	0.2	0.9	1.0	1.1	1.2	0.9	0.8
II	3.2	2.6	0.8	−0.1	0.6	1.2	1.4	1.6	1.6	1.5	1.4
III	4.2	3.8	2.9	1.7	2.1	2.1	2.2	2.1	2.1	1.9	2.5
U.S.A.:											
I	3.4	3.4	4.0	4.3	3.9	3.4	3.1	3.6	3.8	5.2	3.8
II	5.1	4.9	5.4	5.6	5.4	5.0	4.7	5.3	5.6	7.3	5.4
III	3.8	3.6	4.6	5.3	5.1	4.7	4.4	5.0	5.5	7.4	4.9
U.K.:											
I	4.5	4.3	5.7	8.7	6.8	6.0	3.7	3.6	3.7	4.0	5.1
II	4.8	4.8	6.3	8.7	6.9	6.0	3.4	3.2	3.5	4.0	5.2
III	4.2	4.0	5.6	8.7	6.6	6.0	3.8	3.5	3.5	3.7	5.0
Japan:											
I	3.0	2.4	2.7	3.8	3.4	2.8	1.3	0.2	3.4	2.8	2.6
II	6.5	5.9	5.8	6.5	6.4	5.8	4.4	3.5	6.4	5.2	5.6
III	2.7	2.1	2.4	3.7	6.5	3.0	1.6	0.4	3.7	3.3	2.6
Denmark:											
I	6.0	5.5	5.8	8.4	6.6	6.5	6.3	7.2	8.3	9.8	7.0
II	6.8	5.5	−1.8	−4.8	6.1	5.6	6.2	10.0	6.3	2.4	4.2
III	4.8	4.3	4.6	7.5	5.5	5.5	5.7	6.6	8.1	9.9	6.3

Sources: Tables II and III; Morgan Guaranty Trust Company of New York, *World Financial Markets,* various issues; Commerce Research Bureau, Bombay, *Basic Statistics on Indian Economy,* various issues; Bank of Korea, *Economic Statistics Yearbook,* various issues; State Bank of Pakistan, *Bulletin,* various issues.

Notes: 1. Real rate of interest=nominal interest rate−expected rate of inflation.
2. I=expected inflation rate calculated by using consumer prices.
II=expected inflation rate calculated by using wholesale prices.
III=expected inflation rate calculated by using GDP or GNP deflator.
3. The following interest rates were used: Brazil: government bond yield rate; India: fixed deposit rate (over five years); Korea: fixed deposit rate (one-two years); Pakistan: fixed deposit rate (over three years); U.S.A.: long-term U.S. government bond yield rate (twenty years); U.K.: long-term British government securities (twenty years); Japan: long-term government bond yield rate (seven years); Denmark: long-term government bond yield rate (twenty years).

price controls of one type or another are pervasive in these countries. Hence, the price index would reflect much smaller changes in various prices than would have been the case in the absence of controls, so that the resulting expected real interest rates would be grossly overestimated.

On balance, therefore, the use of price indices to arrive at an estimate of real interest rates is fraught with difficulty. There is a very serious risk involved in taking these estimates either as precise targets for policymakers, or indicators for economic agents to adjust their behavior. However, the consequences for the LDC economies of prescribing the wrong level of real interest rates are obvious. But it is important to recognize the razor-edge nature of the choice of interest rates. If the estimation of the expected real interest rate should misfire—and there is more probability of this happening for the reason analyzed earlier in this paper—the entire complementary relationship between financial assets accumulation and capital formation may break down. As Roe [25] has demonstrated quite convincingly in the case of Sri Lanka in particular, and other LDCs in general, the real interest rate that might be prescribed as a target by the authorities on the basis of the CPI may more often than not react adversely on the rate of investment. Under administered interest rates regimes, "overshooting" may occur more regularly than is generally assumed.

To the extent authorities find it necessary or desirable to fix nominal interest rates (for example, on the government's own debt instruments) and must therefore rely on estimates of the real expected interest rate implied, caution should be exercised not to read too much into the estimated expected real interest rate series derived from the available price index, be it the CPI, WPI, or GDPD. A more practical approach may be to view the conventionally derived expected interest rates in a range, drawing, when possible, on evidence from the stock and commodity markets [22]. Unless, for example, the estimate of real interest rates is glaringly negative or strikingly positive, definitive assertions should be avoided as far as possible. After all, it is better to be vaguely right than precisely wrong.

The longer-run solution is to rely on competitive financial market forces to determine interest rates, and the nature and range of financial instruments most conducive to the channeling of savings to investors. The more difficult issue is how to get there from here. The tradition of administered rates in LDCs has often led to negative real rates and hence repressed financial markets. While financial liberalization in the underdeveloped context carries the danger of "excessive" profits in oligopolistic and primitive financial markets, which in themselves are not conducive to the most efficient utilization of resources, these short-run profits provide a strong inducement for the financial sector to grow by accelerating the pace with which competitors are attracted. This presumes that the intended oligopolistic interests are not protected from competition by the operations of law or the power of the state.

In this, as in many other areas, the LDCs at least have the advantage of travelling trails that have already been blazed by others in the developed world.

There may well be less risk from the "temporary" excesses of financial liberalization than from efforts by governments to impose their notion of the appropriate interest rate and financial structure. This is not to deny the potentially constructive role of a demonstration effect from government in pricing its own financial instruments. There may even be a case for government entry into financial markets, e.g., through a government bank, etc., as long as these institutions are used to prod and stimulate competition among private firms. Again, experience with this approach suggests that the power of the state has often been used to prevent private competition against state enterprises or financial needs. The result then is to repress the desired development of financial markets rather than to stimulate and encourage them.

V. CONCLUDING REMARKS

What emerges strikingly from a bird's-eye view of some of the main issues in the debate on the role of monetary policy in LDCs, is that the importance of money in the development process should by no means be underestimated, though how it functions may be differently perceived. Monetary policy of the stabilization type provides little guidance to the appropriate policy for maximizing the financial sector's contribution to economic growth in LDCs. The use of money should be seen as an efficiency mechanism in growing LDCs. Growth requires more than the accumulation of physical capital and labor skills; it requires the accumulation of the appropriate physical and human capital and their efficient utilization. This is likely only if the system is exposed to competitive forces. With such a shift in emphasis, money comes into the picture. The importance of money is enhanced because of its functioning as a producer good and its role in transferring resources from those sectors where they are in surplus to those where they are in greater demand for investment purposes. Thus, money becomes an instrument to raise efficiency through competitive adjustment in resource allocation in the entire economy.

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APPENDIX

CALCULATION OF THE EXPECTED RATE OF INFLATION

The series on the expected rate of inflation have been estimated using an equation of the following form:

$$\Pi = \beta \Delta \log P + (1 - \beta)\Pi_{t-1}, \tag{1}$$

where Π = expected rate of inflation and P = consumer price index. The actual and expected rates of inflation have been assumed to be equal in the initial period. An iterative procedure was used to determine the weights (β) attached to the actual inflation rate and its previous expectations. That is, given an initial value for β, equation (1) was first estimated. The values of Π_t thus generated were then used to estimate the following price equation using the ordinary least squares method.[a]

$$\log P_t = a_0 + a_1 \log Y_t + a_2 \Pi_t + a_3 \log(M/P)_{t-1} + a_4 \log M_t, \tag{2}$$

where Y_t = real GDP and M_t = actual money stock.

The procedure was repeated to determine the value of β that maximized the likelihood function of the estimated price equation. The values of Π_t reported in the text correspond to this value of β.

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[a] This is, in fact, an inverted demand for money equation of the type:
$$\log(M/P)_t = b_0 + b_1 \log Y_t + b_2 \Pi_t + b_3 \log(M/P)_{t-1}.$$