

RATIONAL EXPECTATIONS, CAUSALITY AND INTEGRATIVE  
FISCAL - MONETARY POLICY IN THE CARIBBEAN

By

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Economic methodology in the USA went through another systemic reordering with the failure of economic policies to reduce inflation during the 1970's. Macroeconomic policies were far off target relative to the stated goals and objectives. In keeping with the changing nature of change in economics, some economists turned their attention to a reevaluation of the underlying principles of macroeconomics. Out of that reconsideration/reevaluation a new perspective was developed. The new perspective centered on expectations and credibility that decision-makers, consumers and others could link to the impact of macroeconomic policies. The concept is called the rational expectations approach to macroeconomics, sometimes called the rational expectations model.

In recent times the advocates of this rational expectations model have been Robert Lucas of the University of Chicago, Thomas Sargent and Neil Wallace of the University of Minnesota. Their works have been varied and various. A sample includes: Sargent, (1973; 1976); Sargent and Wallace (1973, 1976); Lucas, (1975 and 1981). Lucas, Sargent, and Wallace are the three economists basking in the rational expectations limelight, but the "father of rational expectations" is John Muth (1961) who first

applied the concept to the theory of price movements.

The 1980's have witnessed a host of other macroeconomists who have accepted the concept of rational expectations, who have blistered the notion and who have modified the view to satisfy their own objective. Those who accepted the view include economists such as McCallum (1971; 1978; 1980), McCallum and Whitaker (1979); Parkin (1978) and Barro (1976). Kareken (1978) has an extreme view of rational expectations and questions the lack of policy effectiveness of the approach. Some of the modifications and amplifications of the approach have run the gamut from the types of rational expectations (Dornbusch and Fisher 1984); relative wages and wage contracts (Taylor, 1979) and Begg (1983); credibility and disinflation (Fellner, 1976); policy making and measures (Okun, 1980); economic modelling (Swamy, Barth and Tinsley, 1980); monetary policy (Woglom, 1979); monetary policy and tax structure (Fackler, 1982), and "a fundamental challenge to other academic models" (Klamer, 1984).

Even though the subject has been extensively discussed, there is room for more discussion particularly in the context of monetary and fiscal policy and specifically within the ambit of the open economic system. This is where we wish to make our contribution. Primarily, we are interested in assessing rational expectations as it highlights links in a causal manner between money and the

economy. And, carrying the scenario further we want to offer an alternative approach that has greater relevance to the Caribbean-type economies. That approach is an integrated fiscal-monetary approach as developed in Jones-Hendrickson (1979).

The paper is structured as follows: in section one we outline and present criticisms of the rational expectations model (REM) with emphasis on the issue of the transmission process by which a change in the money supply causes a change in the level of income. Section two expands on this transmission process within the framework of causality along the lines of Granger and Newbold (1979) and specifically in the context of Sheehan (1983) and Shah (1983). In our discussions we cite, where appropriate, the arguments on the leading edge of this causality issue in the Caribbean literature. Finally, we conclude with a presentation of an integrative fiscal-monetary policy model that we believe has more relevance than REM in Caribbean-type economies.

#### The Rational Expectations Model

Fundamentally, there are two branches to the rational expectations model. One branch may be termed the theory of expectations, and the second branch may be termed the theory of market clearing. From the expectations branch, it is assumed that under the REM individuals utilize information efficiently, and presumably effectively, and that they do not incur any systematic errors in their ✓

expectations. In terms of the market clearing branch, it is assumed that markets are consistently in equilibrium. This market-clearing process permits economic actors to establish wages and prices, based on their received information, and to maximize their profit and utility functions accordingly. In essence, these two branches of the rational expectations model suggest that consumers and firms establish their expectations behavior pattern of future economic aggregates, such as GNP, price level and personal disposable income, based on received information. This means that their expected behavior will be affected by the future fiscal and monetary policies of government. Since it is assumed that the actors in this expectations scenario are rational, they will be cognizant of the impact that economic aggregates will have on their behavior. This rational expectations approach is different from the adaptive expectations model where the expected size of the economic aggregates is a weighted average of past and present variables.

In the context of our paper we are interested in the implications of the market clearing branch of the REM. There are three implications (Dornbusch and Fisher, 1984:566-568). The first is that there is no involuntary unemployment. We are not interested in this. We are interested in the second and third implications. The second implications is that output level, call it Y, cannot be impacted by changes in monetary-policy "unless the changes are not perceived

by individuals in the economy," (Dornbusch and Fisher, 1984:567).

A scenario can be developed as follows: Assume consumers and businesses are informed that the money supply has <sup>increased</sup> changed. Ceteris paribus, they will know the level of prices will be higher. Hence they will shift their wage and price parameters such that they will have immediate full employment - because there is no involuntary unemployment. If there are gaps in the information flow, lags or spurious leads in the stock of money, consumers may shift their price parameters in accordance with their expectations. Two possibilities could arise. If the stock of money is lower than was expected, aggregate demand will be lower; and output will fall. The assumption here is that workers will work fewer hours with the view that their real wage is below the level it really is.

On the other hand, if the stock of money is higher than was expected, there will be a rise in aggregate demand above what was anticipated. Output will increase since workers will work harder on the erroneous assumption that their real purchasing power is above the current wage. Fundamentally, therefore, the idea that is deduced from this approach to the rational expectations model is the view that "with regard to monetary policy, only unexpected changes in the stock of money affect the level of output." (Dornbusch and Fisher, 1984:567).

If this view is accepted that the stock of money can impact on output only if it is unanticipated, then this suggests that monetary policy can only affect the output level by surprises. The third implication is, therefore, "there appears to be no role for monetary policy (to) systematically affect output or unemployment." If there are any such systematic policies, consumers will anticipate and adjust accordingly in a rational manner. Barro (1978) is substantial proponent of this view.

Criticisms of Surprise Effect and REM in General:

Mishkin (1982) and Gordon (1982) have serious reservations about Barro's findings. Barro himself may be changing his views on this issue. Mishkin's and Gordon's results seem to indicate that unexpected and expected changes in the stock of money impact on output. Others have extended the discussion and pointed out more difficulties with the view of no impact from money into output except via surprises. They have also taken on the broader question of the link between money and output.

Fair (1974; 1978) criticizes the rational expectations literature and concludes that even if the REM is viewed in a long-run static equilibrium, real variables are not affected by systematic stabilization policies. Gertler (1979) also challenges the market clearing approach of the REM. He contends that monetary variables impact on real variables in the short run. He concludes, however,

that all markets clear in the long run and hence money is neutral in the steady system (Shah, 1983:462). Swamy, Barth and Tinsley (1980) took this issue further and noted that monetary policy which is anticipated may shape or bias the expectations of the public's view and, in turn, may affect the economy. They agreed, therefore, that money (M) has some impact on (Y) and it is not by surprise.

Fackler (1982) takes a decidedly harsh view of REM and this notion of surprises. Essentially it may be deduced from his work that rational expectations is nothing more than an old theorem in new lemmas. Fackler used a rational expectations model of the macroeconomy to illustrate that the "deterministic part of the money supply rule can influence the level of output..." (Fackler, 1982: 106). Rational expectations contend that both the level and total probability distribution of output are "independent of the deterministic parameters of monetary policy" (Fackler, 1982:101). But, notes Fackler (1982:101) during inflationary periods there is an interaction between monetary policy and the tax structure and the supply sector such that, in the end, the fundamentals of the neutrality of money are quite questionable.

There are many other criticisms of the REM or aspect of the REM both in the closed economy and the open economy. Craine and Havenner (1981) contend that the rational expectations formulation



is irrelevant in terms of an analysis of variance in output and price. Gray (1982) is also very critical of the whole system of REM. Pole (1970) raises some questions about REM in its optimal choice of monetary policy instruments within the ambit of a simple stochastic macroeconomics model. Bhandari and Tracy (1983) focus on rational expectations and the solutions for the exchange rate and domestic price level. They centered their discussion on a stochastic general equilibrium model of the open economy. Mussa (1978), Bilson (1978), Barro (1978) and Cox (1980) also advanced questions about REM within the open economy such as Caribbean-type economies.

In all of these criticisms and extension of the rational expectations model, particularly as they relate to the market clearing branch of the REM, there is one overriding theme: fiscal policy can have impact on real variables only if the policy is random such as the autonomous component of the demand for money. Put another way, while the rational expectations model may be an improvement over the Monetarists - Keynesian debates about the importance of money, the rational expectations model still suggests that they are close to the monetarists in the money-income causal relationship. This debate has its adherents in the Caribbean, even though I will hesitate to designate the persons involved monetarists or rational expectations advocates.

Money-Income Causality:

The international literature on money-income causality is wide as it is deep. In 1972 Sims suggested that U.S. money had some causal effect on U.S. income, but not vice versa. This idea gave support to the monetarist view that, in a manner, money is exogenous in the nexus between money and income. After Sims there have been a rash of studies using data from other countries. A small sample includes Barth and Bennet (1974) with Canadian data; Williams, Goodhart and Gowland (1976) with United Kingdom data; Putnam and Wilford (1978) with USA and U.K. data. Sarlo (1979) again with Canadian data; Mixon, Pratt and Wallace (1979; 1980; 1980a) on a cross country analysis, data from the United Kingdom and data from Canada; Atesoglu and Tillman (1980) with Korean data and Sheehan (1984) with data from Australia, Canada, Germany, Italy, Japan, and United Kingdom.

William, Goodhart and Gowland (1976) contend that money and income in the United Kingdom are ~~simultaneously~~ determined. ✓

Putnam and Wilford used a fixed-exchange model keyed to the monetary approach to the balance of payments and concluded that, in their model, causality goes from money to income in the reserve currency country. In non-reserve currency countries, money is endogenously determined hence causality may go from income to money. Implicitly, from Putnam and Wilford the implication is

that "a reserve currency's money may cause a nonreserve currency country's income." (Sheehan, 1984:474).

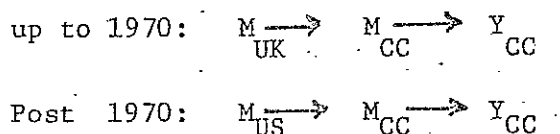
The Caribbean Setting:

In the Caribbean, Thomas (1972); Bourne (1974; 1976; 1981); Howard (1979; 1981); Joeffield-Napier (1980); McClean (1981; 1982) and Worrel (1982) have all generated some interesting arguments about the causality of money and income. We will now focus on three steps. First we will cast the Putnam and Wilford (1978) analysis in a Caribbean framework. Second we will illustrate the works of the Caribbean "monetarists" above and third we will develop the concept of causality in the Granger (1969), Sims (1972) and Sheehan (1983) framework taking into account the conclusion of the market-clearing approach of the rational expectations model.

First let us argue that the Commonwealth Caribbean Central Banks are keepers of nonreserve currencies. They will undergo changes in their international reserve positions as they maintain fixed exchange rates. Such changes in the Central Banks' decision matrix will impact on the monetary base and money supply. Following Sheehan (1984) and Putnam and Wilford (1978) we argue that the changes in the money supply may then impact on the nominal income in a Mundell (1978) type of conventional monetary model.

Joeffield-Napier (1980) pointed out, in great detail, that his findings were supportive of Thomas' (1972) hypothesis "that the

U.K money market acted as a financial intermediary in the transmission of funds to and from the Caribbean up to the early 1970's..." (Joefield -Napier, 1980:48). Given the monetary links between the Commonwealth Caribbean and the USA, we may extend Joefield-Napier's and Thomas' argument to the USA. In this respect we can show a causal relationship as follows:



where  $M_{\text{UK}}$  and  $M_{\text{US}}$  refer to the money stock in the United Kingdom and the United States of America, respectively.  $M_{\text{CC}}$  and  $Y_{\text{CC}}$  refer to the money stock and income in the Commonwealth Caribbean.

The fundamental distinction between Post-Keynesians and Monetarists rests on the characterization of the money stock. Monetarists believe that the stock is exogeneous. Post-Keynesians specify the stock of money as basically endogeneous as Moore (1979: 120-138) deftly demonstrates. Eichner (1979:15) contends that in the Post-Keynesian schema, money matters but it matters as an endogeneous variable which impacts on the level of current business trends as well as on the "secular growth of real output."

This exogeneous-endogeneous argument is at the heart of the income-money causality. Bourne (1974:437) notes that with a narrow defini-

tion of money, "income elasticity tends to decline" as the adjustment process is completed. He found that over the range of the elasticities, there is "a relatively income-sensitive demand for money" at the lower end of the range and "an income-sensitive reminiscent of Friedman's well known 'luxury good'" at the upper end of the range. In Bourne (1976:384) he concludes that his work demonstrated that the orthodox money multiplier model in its Friedman-Schwartz construction is an efficient short-run predictive mechanism.

From these two articles McClean (1981:137-143) alleges that Bourne commits the "cardinal error" in assuming that the money supply is exogeneous in a country such as Jamaica. He argues that in "... a small open economy, the monetary base is an endogeneous variable." (McClean, 1981:141); and, furthermore, "... in the (specific) Barbadian case, the high degree of openness of the economy, suggests that the nominal stock of money is an endogeneous variable... (McClean, 1982:157).

In a blistering reply, Bourne (1981:144-148) concludes that he recognizes and acknowledges that the monetary base is partially endogeneous. In this respect, he noted, McClean may have missed the thrust of Bourne's argument. Bourne, in my view, made the income-money causality point in his 1974 article when he concluded that his model is suggestive of "... an important role for income

in the analysis of the demand for money in the Caribbean" (Bourne, 1974:442). In essence it appears to me that even though Bourne recognized the tractability of the Friedman - Schwartz model, and the exogeneity postulate, his results were indicative of endogeneity of the money stock. Furthermore, he saw the causality as going from  $Y \rightarrow M$ .

The other debate over the causality of money and income was between Howard and Worrel. Howard (1979; 1982) contends that "... in the open economy the direction of causation is from nominal income to nominal money." Furthermore, his "position rests on the view that in the open economy the nominal money stock as well as the monetary base are endogeneous variables (Howard, 1982:80). This was an agreement with the explicit views of McClean. However, Worrel (1982:77-78) came to the rescue of Friedman and his merry band of monetarists and argued that the money stock is exogeneous, unlike what Howard stated. For him the causation is from  $M \rightarrow Y$ .

This is a lively debate in the Caribbean. Without their acknowledging the thrust of their debate, these "monetarists" have introduced the notion of rational expectations and causality in the money-income Caribbean literature. With this in mind, let us now turn to the theoretical underpinnings of causality after which we will present the Caribbean discussions in a causality sphere. And in the final section we introduce our integrative fiscal-mone-

tary policy model based on the idea that rational expectations and the implications of causality are not as practical as our approach.

Theoretical Underpinnings of Causality:

Following Granger and Newbold (1977:224-226) we can cast causality in the our example along the following lines. Suppose M (Money) and Y (Income) are the only two random variables in a universe and we know that M cannot cause Y. Suppose, further, that we question the possibility of Y causing M, it follows that, ceteris paribus, a significant correlation between M and Y could be interpreted as causal. By our assuming that M does not cause Y we will have enough information to give texture to the view of causality. To give texture to such a view of causality, we will follow two rules:

- (a) the future cannot cause the past. In other words pure causality can only take place with the past causing the present or the future.
- (b) causality is only meaningful in the context of a group of stochastic processes. Causality in deterministic processes is not detectable.

With these two rules, we may follow Granger and Newbold (1977:225)

and define causality as follows: Denote the conditional distribu-

tion function of A given B as  $P(A/B)$ . Let  $\phi_t$  stand for everything we know at time  $t$ . Then, let us ask if the series  $Y_t$  cause the series  $M_t$ ? If

$$P(M_{t+1} | \phi_t) = P(M_{t+1} | \phi_t - Y_t) \quad (1.0)$$

where  $\phi_t$  is everything we know outside of  $Y$  then we can say that  $Y_t$  does not cause  $M_t$ . If equation (1.0) breaks down, then we can say that  $Y_t$  causes  $M_t$ . We note, here, the Zellner (1979), Granger and Newbold (1977) and Sheehan (1983) caveat that causality in this case is a strong word. Following convention and simplicity we use causality.

From the two rules above, the notion of "instantaneous causality" is not possible; there has to be a lag between cause and effect. But, given some data, instantaneous causality may be highly possible. For instance, if the real delay between cause and effect occurs over a day and the stochastic processes are observed over a month, then instantaneous causality could occur. In this case, instantaneous causality between  $Y_t$  and  $M_t$  may be definable if (1.1) holds:

$$P(M_{t+1} | \phi_{t+1} - M_{t+1}) \neq P(M_{t+1} | \phi_{t+1} - M_{t+1} - Y_{t+1}) \quad (1.1)$$

If (1.1) holds we can say that there is instantaneous causality between  $Y_{t+1}$  and  $M_{t+1}$ .



In addition to pure causality between  $Y_t$  and  $M_t$ , there could also be "feedback" between  $M_t$  and  $Y_t$ . In these stochastic processes, however, instantaneous causality in forward and backward directions are not easily detectable. This suggests that the definition of causality is not easily testable, as many theorists would have us believe. A testable definition could be derived if some strong and, sometimes severe, conditions are imposed on the definition. In this respect the definition of causality may lose its tractability and may really be far removed from the causality Garden of Eden. Since causality from regression analyses is conditioned by the specific data set, the nature of the economic system and our biases, we should use causality with caution. We cannot be dogmatic in causality.

In summary, following Granger (1969), Suppes (1970), Sims (1972), Haugh (1972), Pierce (1974) Pierce and Haugh (1975) and Nelson (1980) we may state that like Sheehan (1983:474) that "a time series  $M$  causes a time series  $Y$  if the present value of  $Y$  can be better predicted using past values of  $M$  in addition to other relevant information." The Caribbean discussions of causality seem to revolve around simple OLS techniques. But there are a variety of other techniques which give more powerful and robust insights into the question of causality. In addition to the Granger causality method, there is the Geweke (1978) complete dynamic simul-

aneous equal model. In this simultaneous equation case, Geweke tested the Granger causality along the lines of the Zellner-Aitken or full-information maximum - likelihood estimator (FIML). Charles Nelson (1979) also gives a useful test for Granger/Wiener causality through a Monte Carlo technique.

The upshot of all of this issue of causality therefore is the fact that with a system of  $m$  equations we could have  $2^{m(m-1)}$  possible causal orderings. In the two dimensional case we have four possibilities:  $M \rightarrow Y$  (Monetarist)  $Y \rightarrow M$  (Post-Keynesians)  $M \leftrightarrow Y$  (a two-way effect; the approach to which we subscribe) and there could also be independence. With three variables there will be sixty-four possibilities; with four variables there will be  $2^{12}$  possible causal orderings. Once again, therefore, restrictions have to be placed on the models of causality. But this is what we call the "paradox of the Prisoner of Zenda." Given the rigid methodology of causality, and given what has to be tested to establish a semblance of causality, what is tested may look like causality, may operate like causality but may not be causality in reality.

#### An Integrative Fiscal-Monetary Policy:

The orientation of this section is normative. But it is based on the two-way causality of income impacting on money and money impacting on income, that is  $M \leftrightarrow Y$ . We have designated it

an integrative fiscal-monetary policy, but it could easily be an integrated-monetary fiscal policy. Following my (1979:36; 56-59) work, the integrative fiscal monetary policy refers to a coordination of fiscal and monetary policies in the individual Caribbean countries and at the Caribbean Nation State, broadly defined. The effective operations of fiscal policies requires that monetary policy be an integral part of the economic policies and policy options emanating from a comprehensive public sector planning. If monetary policy is used as the initial causal agent or catalyst of economic transformation, its use should be in concert with the specific parameters arising out of the planning processes of fiscal policy.

The objective of fiscal and monetary policy however, must give recognition to income-money causality. With this in mind, let us now turn to the theoretical formulation of the integrative model of fiscal/monetary policy.

The Integrative Model:

The objective of fiscal and monetary policy is assumed to be economic transformation. Economic transformation is defined as total changes in all of the social, political and economic systems of a given country such that the changes are beneficial to all strata in the country at the same time. Fiscal policy is that policy which facilitates structural transformation of an economy.

Monetary policy is that policy geared to increasing the availability of funds and/or reducing the costs of economic ventures through the provision of capital.

Economic transformation may be viewed as linked to or the result of two sets of policies. Monetary policy is assumed to be comprised of a series of individual components, for example changing of the interest rates, changing mortgage rates, and so on. Fiscal policy is also comprised of a series of components, such as changing a tax rate or tax base, introducing a new tax, and so forth.

Technically, economic transformation is the composition of the monetary policy and fiscal policy. The domain of economic transformation policies is all policies say X in the "domain" of monetary policy. Monetary policy related to the X policies are assumed to be in the domain of fiscal policy. The "domain" of the economic transformation, fiscal and monetary policies are as follows: Assume that we are given a process of economic transformation, and X is a policy in its "domain," we will argue that the policy is a definite policy. By a definite policy we mean that the policy X has exact limits and scope in its impact on the transformation process. If we see economic transformation as a set of policies, and we set a rule which assigns to each policy in the economic transformation some definite policy, we call that rule a development. The economic transformation process is called the domain

of that development.

When the transformation process is in operation, fiscal policy and monetary policy are no longer indentifiable as individual entities. They are, in earnest, transformation policies. The integrative nature of the two sets of policies results in the transformation process. This result is achieved because of our assumption that the integrative nature of the fiscal and monetary policies transforms the individual components of the policies over an income-base process.

This is a critical point. It is to be recalled that Keynes utilized the classical economics proposition which stipulated "the real wages bears an inverse correlation to the volume of employment - that it declines, for instance, when employment decreases," (Largentaye, 1979:7). But, as many scholars have indicated, Keynes was misled in this proposition. The Caribbean fiscal framework entertained this same Keynesian concept, even though there was no strong theoretical grounds for its acceptance.

Public policies in the Caribbean followed directives which, like Keynes, failed to take into account the competitive nature of employers. The General Theory assumed that there was imperfect competition among wage earners. But it failed to consider the imperfect competition among employers. In essence, by assuming that the real wage is determined by the marginal product of labour,

Keynes mislaid the scope of the problem. The real wage is determined by the imperfect department of the employer (Largentaye, 1979:8). This problem was implicit in the Keynesian policies of employment in the Caribbean.

Caribbean fiscal policy-makers were oriented to full employment goals, using Keynesian tools. But, fundamentally, they failed to recognize that Keynes' General Theory prescription "contains some internal contradiction which prevents achievement of the full employment goal," (Largentaye, 1979:12). The General Theory, from the monetary side, is concerned with "credit money." However, "there may be a limit to effectiveness of monetary policy expansion as a lever of employment," (Largentaye, 1979:12).

Given the weakness of fiscal policy and the limitations of monetary policy by themselves, we offer the integrative nature of monetary-fiscal policy which assumes transformation of the economy over income policies as opposed to over employment policies. Monetary expansion or control has not been able to effectively change interest rates in the Caribbean, and thereby impact on employment. This is so because of the nature of the interest rates which is tremendously affected by external rate regimes. The limitation of monetary policy has been a barrier to full employment. By the same token, the ineffectiveness of fiscal policy has also been a barrier to full employment.

The advantages of the integrative nature of the fiscal-monetary policy lie in the linkages and interaction that the two sets of policies are geared to achieve. Precisely, the integrative model could be seen as a function of a function, (composition of a function), or as two matrices which are multiplied to generate a third matrix. The danger inherent in the integrative fiscal-monetary policy model is the possible transference of weaknesses from one policy into weaknesses of the other and subsequently into the transformation process.

In the model, however, it is assumed that the individual policies are not internally independent. The integrative nature constrains the policies to an interdependent effect. All policies are geared to economic transformation. Independence of policies may mean that some policies may be outside of the transformation process. Prior to the transformation process, a policy could be designated a monetary policy, as a fiscal policy or a monetary/fiscal policy, dependent upon its sectoral origins. These will be classificatory devices, since all policies will eventually be transformed into economic transformation policies.

A few references are available which give some brief discussions of the interlocking effect of fiscal and monetary policy, Pal (1956), Prakash (1956) and Scadding (1971) are some ready

references. Pal is concerned with the historical and institutional issues confronting developing countries in the monetary-fiscal sphere. Prakash offers a useful attempt at linking the two sets of policies, but his analysis is close to the traditional linkages of monetary and fiscal policy. Scadding considers the 'fiscal element in monetary policy.' All of these works are useful, but they did not go far enough in developing the integration of the two sets of policies for economic transformation policies.

#### Conclusion

In the final analysis, our view of rational expectations, causality and the integrative-fiscal monetary policy could best be assessed in the context of Feldstein (1983) who looks at the "fiscal framework of monetary policy." Feldstein (1983:11) notes that the "failure to deal explicitly with the fiscal framework of monetary policy is a serious shortcoming of modern monetary policy." This presupposes that the monetary framework is well organized. As far as we observe from the literature, this is not the case. Feldstein (1983:11) continues that he is "... not arguing that a full description of an economy's fiscal structure should be part of every study of monetary economies." Here we part company. It is our view that the fiscal structure should be part of every study of monetary economics and vice versa.



We are happy to observe that the Central Banks in the Caribbean have been practising some of these very ideas of ours, if we are to believe the information from the annual reports. Two examples suffice to make our point: According to Central Bank of Barbados Annual Report (1983:4) the Bank, in anticipation of the recovery in the world economy devised a "strategy for 1983 to create conditions for the resumption of sustainable growth in Barbados." Furthermore, the "conditions included restoration of balance of payments equilibrium, reduction of public sector deficit, and the provision of adequate and lower financing for the producing sectors." This could be interpreted as a case of causality from  $M \rightarrow Y$ . Furthermore, the report noted "Government's fiscal policy complemented the Bank's efforts to restrain credit. As a result of expenditure restraint, good revenue growth and the surpluses of the National Insurance Scheme, public sector borrowing from the banking system declined (Annual Report, 1983:4). Here the direction of causation seems to be  $Y \rightarrow M$ .

The second illustration is from the Central Bank of the Bahamas. In its Quarterly Review (March, 1984:23-26) the Central Bank Governor Allen states that he carries out the first duty of the Central Bank Act, namely "to promote and maintain monetary stability and credit and balance of payments conditions conducive

to the orderly development of the economy." For him, "orderly economic development" means a situation where "Money plays a key role in promoting growth in both output and income..." But Allen is cognizant of the fact that, as he notes, "... within limits, the system tends to be somewhat insensitive to interest charges unless they are pronounced." This is the Bourne 1974 conclusion. Given this and other issues, the Central Bank Governor says that they use a method of "Measured restraint" in their operations for they "have...recognized that (they) cannot stimulate economic growth in a period of recession by resorting to monetary expansion." Here, therefore, the Central Bank admits of both types of causality: explicitly  $M \rightarrow Y$  and weakly implicit  $Y \rightarrow M$ .

We are of the view that these two Banks capture the essence and intent of what all of the other Central Banks do over the course of their operations. There is, therefore, some degree of the two-way causality of monetary-fiscal policy and fiscal-monetary policy in the Caribbean. In our framework, this is the integrative fiscal-monetary policy. We cannot throw caution to the wind, however, and assume that causality is a simple phenomenon. By the same token we cannot accept, unequivocally, the rational expectations view that the Caribbean public is a sophisticated public to anticipate what macroeconomic policies will be and adjust their economic behavior, accordingly. Rational expect-

tations may be a fundamental challenge to the bipolar debates of monetary and fiscal policy. Money matters. Fiscal policy also matters. The causal links are not one of simple regression but one of simultaneous interaction. In this respect, our view of the integrative fiscal-monetary policy or the causality-feedback schema lends more credibility to economic transformation in open economic, nonreserve currency systems like the Caribbean countries, than does rational expectations.

Rational expectations tries to be a revolutionary approach to the elimination of inflation. It seeks to come to grips with income - money causality. But given the Caribbean where the level of economic sophistication and the E. Q. - Economic Quotient - are not as high among the masses, consumers and businesses as many people would like, the monetary and fiscal policy-makers ought to continue to play a key role in the economic development of the region. However, they cannot continue to play a game of individuality. They must work in unity for the total economic transformation of the region. There is some truth to the maxim that unity is strength.

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