EROTOKRITOS VARELAS

A MONETARY MODEL FOR GREECE (1960-1982)

PLAN

ABSTRACT

The principal purpose of this model has been to formulate *a monetary* model for Greece that allows output, prices, the overall balance of payments, the fiscal budged and money to be determined simultaneously. The model proposed here, stresses the crucial role played by the demand for money and monetary disequilibrium in the behavior of such major macroeconomic variables.

1. INTRODUCTION

Most developing countries have at one time or another faced the twin problems of a high domestic rate of inflation and a deficit in the balance of payments. The cause of these problems can often be traced to a situation of government fiscal deficits that result in excessive monetary expansion and feed domestic demand.

Most economists would probably accept the general position that monetary expansion will not only create inflationary pressures and cause the balance of payments to deteriorate but also, particularly when it is unanticipated, increase real income (Barro J. (1978), Keller P. M. (1981), Varelas E. and Sarantides S. (1985)).

The purpose of this paper is to propose a formal framework for examining the interrelations between prices, the balance of payments and output in Greece. The hope is that this model can serve as a foundation on which more detailed structures can be built. Section (3) of this paper describes the structure of the model. The results from estimating the model and certain of its empirical characteristics are discussed in section (4), and a conclusion of this findings of the study is presented in section (5).

2. THE MONETARY THEORY OF THE BALANCE OF PAYMENTS

The monetary theory of the balance of payments emerged with the re-introduction of the neoclassical assumptions into balance-of-payments theory during the late 1960's and early 1970's (see, for example, Mundell (1971), Johnson (1972)). It was based on the idea that demand for money is fundamentally a stock demand, characteristic of asset markets, rather that a flow demand appropriate to commodity markets. In the long run, the requirement of stock equilibrium imposes a budget constraint on a given (small) country. This constraint has been largely ignored by the Keynesian model of income determination in the open economy by its concentration on the short run. Furthermore, international flows are the means to attain stock equilibrium. They are "the windows to the outside world" through which excess demands are cleared. Therefore, the adjustment of the actual to the derived stock of money determines the balance of payments, defined for this purpose as the change in international reserves held by the country under consideration. Of course, this is true only under fixed exchange rates. Under flexible rates, the balance of payments is identically equal to zero and the exchange rate becomes the endogenous variable. As a consequence, balance of payments analysis is organized around the *money market*. But a necessary condition for the validity of such an approach is the

stability of the demand for money; it must be a stable behavioral function of a small number of variables during the period of interest. If it is subject to considerable random fluctuations and, in the extreme, entirely passive, the balance of payments would be fully determined by non-monetary factors.

Besides this basic condition, a number of supplementary assumptions have been put forward in individual papers in order to arrive at unambiguous results. The realism of these assumptions has been challenged and the analytical importance of them is not always fully understood. Moreover, the assumptions made in the separate papers are not consistently the same in all. Nevertheless, considering the most extreme monetarist model of the balance of payments provides us with a useful starting point. In such a model it is assumed that:

1. There is perfect commodity arbitrage, i.e. the "law of one price" holds in integrated world commodity markets where goods and services are close substitutes for one another.
2. All prices, including wages, are flexible. This is justified by the differential rates of change of prices of different goods and services.
3. Perfect capital markets ensure the equalization of interest rates across countries.
4. As a consequence of (2), output is at its full employment level. The frictionless and full information framework of the neoclassical analysis provides the necessary justification.

In the context of this basic model it has been established that a change in the demand for money that is not accommodated by domestic credit creation must be eventually met by foreign exchange flows. Similarly, changes in domestic credit with an unchanged demand for money will lead to equal and opposite changes in foreign exchange reserves held by the monetary authorities. Monetary policy cannot lastingly affect the domestic economy and the same is true exchange rate policy. Therefore, a return to the tradition of the price-specie-flow mechanism of David Hume was established.

The above simple model has been further extended in the theoretical level. Extensions include the following:

1. The spectrum of financial assets considered was broadened so as to include bonds or other types of interest bearing securities, thus re-introducing portfolio balance considerations in the open economy.
2. The spectrum of economic sectors considered was also broadened by relaxing the assumption of perfect commodity arbitrage and introducing a non-traded goods sector, thus allowing for the possibility of shifts in relative prices.
3. The neoclassical full employment environment has been replaced by a fixed -price Keynesian world.
4. Growth in real variables has been explicitly introduced (Rogoft K. 1985).

The above refinements showed that first, the conclusions of the monetary approach were no more unambiguous and second, and perhaps more impor-

tant, hinted at the importance of the adjustment process. In these models the initial effect of various exogenous disturbances and the characteristics of the dynamic adjustment path are dependent upon the assumptions, about the way in which expectations are formed, which markets clear instantaneously and which gradually, whether prices or quantities perform the clearing role and the nature of the adjustment mechanism in markets that do not clear instantaneously. Then it can be easily seen how important is the dynamic adjustment process, and of course its length, for such a "long-run" theory as the monetary approach.

3. SPECIFICATION OF THE MODEL[1]

The model contains eight equations, of which six are behavioral. Such simplicity was dictated mainly by a desire to focus on the general aspects of the issues considered here. Essentially, this model describes an economy that is small relative to the rest of the world. It is open to international trade and financial flows, and maintains a pegged exchange rate. This does not mean that the exchange rate cannot be altered, but only that it is policy determined. The drachma has been actually pegged to the dollar until 1975; therefore, it followed its two devaluations in 1971 and 1973. In 1975 a new policy of flexible intervention in the exchange market was established, aiming at approximate stability of the average external value of the currency. Since then a committee fixes the drachma parities every day. What has actually happened is that after an initial jump the exchange rate exhibited only minor fluctuations, following in fact a very stable path. Therefore, exchange rates are treated as fixed during the whole period under consideration (1960-1982). It is assumed that the domestic financial sector is relatively underdeveloped. This specifically implies that the number of financial assets that could substitute for money holding is very limited, and/or that the authoritis control the interest rates on those assets that are available.

The stochastic equations of the model explain inflation, the overall balance of payments, the fiscal budget (i.e. government expenditure and revenues), output and money demand. Identities for the supply of money and its domestic component (domestic credit) are used to close the system. Essentially, the model attempts to capture only short-term deviations of real income from its long-run trend, which is here assumed to be exogenously, determined. Furthermore, in countries that lack a developed capital market, the growth of domestic credit

[1] For the structure of this model see, Knight M. and Mathiesan (1982), Robertson D., Symous J. (1992), Teal F. and Giwa Y. (1985), Giavazzi F. and Giovannini A. (1989), Rogoff K. (1985).

may be closely linked to the government's borrowing requirement to its fiscal policy.

a) Money demand

We follow here the standard literature in relating desired real demand for money to real money to real income (y) and the expected rate of inflation (π)

$$\log m_t^d = b_1 + b_2 \log y_t - b_3 \pi_t \tag{1}$$

In the framework of this model, the stock of real money balances is assumed to adjust proportionately to the difference between the demand for real money balances and the actual stock in the previous period

$$\Delta \log m_t = \lambda_1 (\log m_t^d - \log m_{t-1}) \tag{2}$$

Substituting for $\log m^d(t)$ from (1) and solving for the level of real money balances, one obtains

$$\log m_t = \lambda_1 (b_1 + b_2 \log y_t - b_3 \pi_t) + (1 - \lambda_1) \log m_{t-1} \tag{3}$$

Expectations of inflation (π), are assumed to be generated by the adaptive-expectations model of Cagan.

$$\Delta \pi_t = \gamma_1 (\Delta \log P_t - \pi_{t-1}) \tag{4}$$

This expectations mechanism has certain theoretical problems and does not fit easily into the currently popular rational expectations framework developed by Sargent and Walace (1973) and Barro (1977, 1978) among others; but it is still the most commonly used because of its inherent simplicity, a property that is of considerable importance given the limited availability of data for developing countries.

The using these equation for the expected rate of inflation, which, for $\gamma_1 = 1$ implies that $\pi = \Delta \log P_t$ one can write the estimating form as:

$$\log m_t = \lambda_1 b_1 + \lambda_1 b_2 \log y_t - \lambda_1 b_3 \Delta \log P_t + (1 - \lambda_1) \log m_{t-1} \tag{5}$$

This assumption was done mainly on grounds of simplicity, since allowing it to vary would have greatly complicated the estimation model. It would have made the model nonlinear in parameters.

b) The inflation

The specification for price changes is an extension of the monetary disequilibrium model of Golman (1972) to an open economy. The domestic rate of inflation, is assumed to be positively restated to the excess supply of real money balances and a negative function of the deviation of domestic prices from their equilibrium (purchasing power parity) level. Formally, the specification is written as follows:

$$\Delta \log P_t = b_4 + b_5 (\log m_{t-1} - \log m_t^d) - b_6(\log P_{t-1} - \log (\varepsilon_{t-1} \cdot Pf_{t-1})) \qquad (6)$$

where P=domestic price level; ε=exchange rate, in units of domestic currency per unit of foreign currency; Pf-foreign price level; m=stock of real money balances.

First, any expansion of the money stock that results in an excess supply of real money balances will (in the next period) create inflationary pressures that tend to eliminate the disequilibrium in the money market. Second, if domestic prices are pushed away from their equilibrium level, for whatever reason, the domestic price setters will move in the direction that restores the relationship (Knight and Mathieson 1982). In a sense, this second term represents a type of catch-up effect to any erosion that may occur in a country's international competitiveness.

c) The balance of payments

The overall balance of payments, as represented by the proportionate change in the stock of international reserves (in terms of domestic currency), is specified as a positive fucntion of the excess demand for nominal money balances and a negative function of the deviation of the domestic price level from its purchasing power parity equilibrium.

$$\Delta \log R_t = b_7 + b_8 (\log M_t^d - \log M_{t-1}) - b_9 (\log P_{t-1} - \log (\varepsilon_{t-1} \cdot Pf_{t-1})) \qquad (7)$$

where R = net stock of international reserves in real prices (1970).

The equation that is specified here for international reserves is consistent with the broad framework of the monetary approach and following that literature, it does not distinguish between the current capital accounts of the balance of payments. Most empirical applications of the monetary approach to the balance of payments assume that the change in a country's international reserves is exactly equal to the difference between the flow demand for money and the flow supply of domestically created money (Meese R., Rogoff K. 1983). So the difference between the flow demand and supply for money have a positive ef-

fect on the changes in the balance of payments. The second term say that the balance of payments will deteriorate when the deviation of the domestic price level from its purchasing power parity equilibrium rise. The balance of payments equation has the virtue of simplicity as well as generality.

d) The government sector

Fiscal policy and the government's budgetary position are modeled explicitly because of the crucial role that they play in the money supply process. In most cases, excess demand in the economy can be traced back to the deficits of the public sector, and consequently stabilization programs often contain requirements to reduce or eliminate fiscal deficits.

The model of the government sector that we utilize is taken from Agherli and Khan (1978) and Tanzi (1978) where it is argued that nominal government expenditure adjusts proportionally to the difference between the authorities' target spending and the actual level of expenditure in the previous period.

$$\Delta \log G_t = \lambda_2 (\log G_t^* - \log G_{t-1}) \tag{8}$$

where G and G^* are the actual and desired levels of nominal government expenditure respectively, and λ_2 is the coefficient of adjustment.

The desired level of expenditure is simply related to the level of nominal income.

$$\log G_t^* = b_{10} + b_{11} (\log GDP_t + \log P_t) \tag{9}$$

Substituting (10) into (9) and solving for the level of the government expenditure, one obtains

$$\log G_t = b_{10} \lambda_2 + b_{11} \lambda_2 (\log GDP_t + \log P_t) + (1 - \lambda_2) \log G_{t-1} \tag{10}$$

As with expenditure, government revenues (T) adjust to the difference between planned revenues (T^*) and the actual revenues obtained in the previous period

$$\Delta \log T_t^* = \lambda_3 (\log T_t^* - \log T_{t-1}) \tag{11}$$

Desired nominal revenus are specified as a function of nominal income

$$\log T_t^* = b_{12} + b_{13} (\log GDP_t + \log P_t) \tag{12}$$

Subsituting from this equation for (T*) in (12) gives:

$$\log T_t = b_{12}\lambda_3 + b_{13}\lambda_3 (\log GDP_t + \log P_t) + (1-\lambda_3) \log T_{t-1} \quad (13)$$

If the government expenditure and revenues both grow at the same rate as nominal income in the long run, then it would imply that $b_{14} = b_{12} = 1$. In the short run, however, one could observe a divergence between expenditure and revenues that would result from differences in the values of the adjustment parameters.

e) The real income

Reflecting the short-term perspective of a stabilization program, this model focuses on determining the deviations of actual output from its full capacity level, rather than on capacity output itself. Keller (1980) examines theoretically the relationship between monetary factors and the supply side of the economy in developing countries.

Basically, it is argued that the rate of growth of output is positively related to the excess stock of real money balances, and to the so-called output gap, represented here by the difference between normal capacity output and actual output of the previous period.

$$\Delta \log GDP_t = b_{14} + b_{15} (\log m_{t-1} - \log m_t^d) - b_{16} (\log GDP_t^* - \log GDP_{t-1}) \quad (14)$$

where Δlog GDP is the growth of real income and log GDP_t^* is the normal (or cyclical adjusted) level of output. This latter variable is simply proxied by the trend level of real income, that is,

$$GDP_t^* = GDP_{0^{egt}}^* \quad (15)$$

where GDP_0^* represents the base level, and g the trend growth rate of real income. This formulation states that any disequilibrium in the money market result in a temporary expansion of real income, and, course conversely, any tightening of monetary policy that results in a fall in real money balances will have output consequences through hoarding effects on the level of real expenditure.

f) Domestic credit and money supply

$$DC_t = \Delta CG_t = \Delta CP_t + DC_{t-1} \quad (16)$$

$$M_t = R_t + DC_t \quad (17)$$

In an open economy the domestic component of the money stock —namely the net level of domestic credit extended by the banking system— is taken to be the basic monetary tool. Changes in domestic credit ΔDG_t can taken place through changes in the banking system's claims on the government (ΔCG_t) and on private sector (ΔCP_t), that is identity (17). If all changes in claims on the government are a reflection of the fiscal deficit of the government, then equation (17) can be written as

$$DC_t = G_t - T_t + \Delta CP_t + DC_{t-1} \tag{18}$$

In this formulation, any expansion of the fiscal deficit results in an equivalent increase in the stock of domestic credit. This implicitly assumes that the government finances its deficit by borrowing abroad and converting the proceeds into domestic currency. Only if the government were able to borrow domestically from the nonbank sector would this identity break down.

The supply of money —broadly defined to include currency, demand deposits and time and savings deposits— is identically equal to the net stock of international reserves and the level of net domestic credit extended by the banking system (equation 18).

Generally speaking, in this model it is expected that a once and for all expansion in domestic credit will, through increasing the nominal supply, simultaneously raise the rate of inflation and real income and worsen the balance of payments. Both the increase in domestic prices and the leakage through the balance of payments will tend to lower the real stock of money, there by reversing the process. Because of the rise in real income, real demand for money will also rise and thus support the movement of the system toward equilibrium.

4. EMPIRICAL RESULTS

The model described in the previous section was estimated using OLS (Ordinary-Least-Squares) CORC 1, CORC 2 (Cochrane-Orcutt 1 and 2) and 2SLS, 2ASLS (Two States Least Squared and Autoregressive Two States Least Squares) for the period 1960-1982. The estimations is given by the Table 1.

All data used in this study are taken from the International Monetary Fund, International Financial Statistics (IFS) and are annual. The series of capacity output was calculated from the equation (16) where GDP_t^* is the 1960 value of real income and g is its trend growth rate over the period 1960-1982.

The monetary demand function appears to be reasonably well determined. The equilibrium income elasticity is significanlty greater than unity and close to the value that is generally obtained for developing countries. In develo-

ping countries the demand for money often rise more than proportionately to the growth in income, owing to the secular process of monetization and the absence of alternative liquid financial assets in which private savings may be held. In financially developed economies, one might expect to observe a roughly proportional relationship between real money balances and real income. The existence of a wide variety of close financial substitutes for money in those countries also allows for economies of scale in holding money, there by giving rise to the possibility that the income elasticity may be less than unity (Laidler 1977). The elasticity of real demand for money with respect to the inflation has the correct sign and is significantly different from zero an 1 per cent level.

As theoretically expected, the results in an increase in the rate of inflation. The parameter measuring this effect has a positive sign and is significantly different from zero at 1 per cent level. If the domestic price level is above its equilibrium relationship to foreign prices, pressures are built up that force the domestic rate of inflation down. This is capture by the parameter b_6 which turns out to be statistically significant at the 1 per cent level.

Most empirical applications of the monetary approach to the balance of payments assume that the change in a country's international reserves is exactly equal to the difference between the flow demand for money and the flow supply of domestically created money. This standard assumption does not seem very realistic in the context of developing countries, like Greece, because on excess demand of nominal money results in an unproportional increase in balance of payments. This possibly indicates an increased instability related to the structure of the Greek economy. Structure may include concepts like: a) that the existence of a significant underground economy, b) the large percentage of small scale industry and its difficulty to keep up at high technological level, c) the superfluous service sector.

The government expenditure and revenues functions appears to be reasonably well determined. The nominal income elasticities of both government expenditure and revenues are high significant. The specific long run value imply that in the steady, state one would expect that government expenditure would move relatively proportionally with inflation. On the other hand, it appears that revenues would tend to rise at a somewhat faster rate. The elasticity is significantly greater than unity, which would mean that government revenues rise secularly as a proportion of nominal income.

While the major determinant of changes in real income is the monetary disequilibrium, difference between capacity real income and actual level is a factor as well.

The elasticity measuring the impact of excess demand for real money balances on the growth rate, is significantly different from zero at one per cent level. This is one of the more important results, because of its important implications for stabilization programs. The results can be shown to be similar to that emerging from models of the rational expectation variety, where only unanticipated monetary changes affect output.

TABLE I

	Single Equation Estimation			*Two-States Estimation*			
Param.	*Corc*	*Corc2*	*R^2*	*Tsls-Corc**	*R^2*	*p_1*	*p_2*
λb_1		−1.321	0.99	−1.818	0.99	−0.3	0.08
		(−1.7)		(−1.8)		(−0.6)	(1.9)
λb_2		0.5879		0.6076		−0.03*	
		(2.30)		(2.60)		(−0.65)	
λb_3		−0.6046		−0.63			
		(−2.31)		(−2.37)			
$(1-\lambda)$		0.3742		0.4805			
		(2.19)		(2.54)			
b_4	0.1647		0.97	0.1635	0.93	0.84	
	(5.41)			(5.34)		(5.7)	
b_5	1.099			1.076		0.82*	
	(6.53)			(6.97)		(5.72)	
b_6	−0.9932			−0.9720			
	(−3.32)			(−2.82)			
b_7		1.084	0.90	1.036	0.90	−0.01	−0.15
		(1.21)		(0.28)		(−0.1)	(−2.4)
b_8		2.245		2.366		−0.07*	
		(2.76)		(1.83)		(−0.7)	
b_9		−0.844		−0.926			
		(−1.76)		(−1.95)			
$\lambda_2 b_{10}$		−4.354	0.99	−2.256	0.99	0.18	−0.48
		(−5.34)		(−4.84)		(0.48)	(−1.9)
$\lambda_2 b_{11}$		0.6995		0.6313		0.16*	
		(4.21)		(4.33)		(1.4)	
$(1-\lambda_2)$		0.4893		0.4736			
		(2.67)		(3.58)			
$\lambda_3 b_{12}$	−3.107		0.99	−2.159	0.99	0.458	
	(−3.95)			(−3.57)		(2.01)	
$\lambda_3 b_{13}$	0.7018			0.6238		0.3547*	
	(4.187)			(6.187)		(1.699)	
$(1-\lambda_3)$	0.5043			0.4855			
	(2.43)			(2.95)			
b_{14}		0.0438	0.90	0.024	0.91	−0.154	0.84
		(1.978)		(3.17)		(−4.35)	(1.45)
b_{15}		0.5948		0.6236		−0.163*	
		(6.09)		(6.18)		(−0.98)	
b_{16}		0.1679		0.1815			
		(2.4787)		(2.214)			

* Tsls autocor.coef.

R2*: Tsls Corc multp. Cor. Coef.

It also turns out that real income will not consistently tend towards its capacity level, with any discrepancy between capacity real income and actual real income of the previous period being eliminated fairly slowly. The equation (15) can be interpreted in a partial —adjustment framework where the rate of growth of real income responds proportionally to the difference between suppliers "desired" level of real output, as represented by the capacity level, and actual real output of the previous period. So the parameter b_{16} would present the coefficient of adjustment. Equation (15) also hypothesizes that when the actual level of real income is below its normal capacity level, current output will tend to expand. If it were argued that there is a one-for-one relationship between growth and this gap, that is, $b_{16}=1$, then equation (15) would simply say that current real income would deviate from capacity only when there was monetary disequilibrium. This constraint was not imposed on the structure, however, and the parameter was left to be freely determined. Finally, it should be noted that certain alternative specifications for real income, such as the introduction of relative prices into the equation, where fruitless.

TABLE II

	Eigenvalue		*Modulus*
	Real part	*Imaginary part*	
1	0.997		0.997
2	0.902		0.902
3	0.875		0.875
4	0.348		0.348
5	0.692		0.692
6	0.263	±0.012	0.275

Given that the model is dynamic and involves several feedbacks, it is also important to determine if the estimated parameters combine to yield a stable model. Even though the theoretical model can be considered linear in logarithms, the size of the matrix of endogenous variables makes it impossible to evaluate the stability of the model analytically. It is thus necessary to determine stability through numerical means. To determine whether the estimated system is stable, the eigenvalues of the model were calculated from the endogenous part of the estimated system. If a_j is the jth eigenvalue of the matrix of coefficients of the endogenous variables, then since the model is a set of difference equations, the necessary and sufficient condition for stability is that the values of all moduli be less than unity. If a_j is complex, that is, $a_j = a+bi$, then modulus of a_j is given by $\sqrt{a^2+b^2}$.

From table II we see that all the moduli are less than unity and therefore the estimated model can be considered dynamically stable. So we can here concluded, that is the long-run, domestic inflation will be equal to foreign inflation, and the level of real income will be determined by capacity output. In the short run, the process of adjustment play of course a certain role, as we have previous described.

5. CONCLUSION

The basic purpose of this model has been to formulate a model for Greece that allows output, prices, international reserves, money and government taxing and expenditure policies to be determined simultaneously. The estimates indicate both that the model is representative of the structural characteristics of Greek economy and that monetary disequilibrium does indeed have a significant effect on the behavior of prices, output and reserves. Policy makers have long recognized that the implementation of a stabilization program will have simultaneous effects on output, inflation and the balance of payments. While practitioners generally attempt to make allowances for these effects in qualitative terms, little is known about the precise quantitative nature of the relationships among these major economic aggregates. As we have see, a change in monetary policy, —on important macroeconomic variables— will not only create inflationary pressures and cause the balance of payments to deteriorate, but also, particularly increase real income, under the assumption that the monetary expansion is unanticipated. We believe that monetary (cum fiscal) policy is the relevant means by which the authorities seeh to achieve their objectives and it is the domestic component of the money stock, that is the instrument to be used to this end.

REFERENCES

Aghevli B. (1980), "Credit Policy and the Balance of Payments in Developing Countries", in *Money and Monetary Policy in Less Developed Countries,* ed. by Warren L. Coats Jr and Deena R. Khatkhate.

Barro R. (1978), "Unanticipated Money, Output and the Price Level in the U.S.", *Journal of Political Economy.*

Basmann R. L. (1962), "Letter to the Editor", *Econometrica,* Vol. 30.

Blejer M. I. and Roque B. F. (1980), "The Effects of Unanticipated Money Growth on Prices and on Output and its Composition in a Fixed Exchange Rate Open Economy", *Canadian Journal of Economics.*

Cagan P. (1956), "The Monetary Dynamics of Hyperinflation", in *Studies in the Quantity Theory of Money,* ed. by M. Friedman.

Clements K. W. (1980), "A General Equilibrium Econometric Model of the Open Economy", *International Economic Review.*

Frenkel J. and Johnson H. (1976), *The Monetary Approach to the Balance of Payments.*

von Furstenberg G. (1980), "The Effect of the Changing Size and Composition of Government Purchases on Potential Output", *Review of Economics and Statistics.*

Giavazzi F. and Giovannini A. (1989), "Limiting Exchange Rate Flexibility", *The European Monetary System,* MIT Press.

Goldman S. M. (1972), "Hyperinflation and the Rate of Growth of the Money Supply", *Journal of Economic Theory.*

Keller P. M. (1980), "Implications of Credit Policies for Output and the Balance of Payments", *Staff Papers.*

Khan M. (1980), "Monetary Shocks and the Dynamic of Inflation", *Staff Papers.*

Khan M. and Knight M. (1981), "Stabilization Programs in Developing Countries, A Formal Framework", *Staff Papers.*

Knight M. and Mathieson D. (1982), "Economic Change and Policy Response in Canada under Fixed and Flexible Exchange Rates", *The International Transmission of Economic Disturbances,* ed. Bhandari J. and others.

Laidler D. (1977), *The Demand for Money: Theories and Evidence.*

Magee S. (1976), "The Empirical Evidence on the Monetary Approach to the Balance of Payments and Exchange Rates", *American Economic Review.*

Mathieson D. J. (1979), "Interest Rates and Monetary Aggregates During a Finanzial Reform", *International Monetary Fund.*

Meese R. and Rogoff K. (1983), "Empirical Exchange Rak Models of the Seventies: Co they Fit out of Sample?", *Journal of International Economics.*

Rogoff K. (1985), "Can International Monetary Cooperation be Counterproductive?", *Journal of International Economics,* Vol. 18.

Sarantides S. and Varelas E. (1985), "Money Anticipations and the Demand for Money, The Case of Greece", *European Journal of Political Economy.*

Symons J. and Robertson D. (1992), "Output, Inflation and the ERM", *Oxford Economic Papers,* Vol. 44.

Tanzi V. (1978), "Inflation, Real Tax Reveniew and the Case for Inflationary Finance, Theory with an Application to Argentina", *Staff Papers.*

Teal F. and Giwa Y. M. (1985), "Domestic Credit and the Balance of Payments in Chana, A Coment", *The Journal of Development Studies.*