IMF Working Paper

September 26, 2001

Subject: **The *Two* Monetary Approaches to the Balance of Payments: Keynesian and Johnsonian**

CORRIGENDUM

The following correction has been made in WP/01/100 (August 2001):

Page 5, line 1: for "question'" read "'the standard question'"

A corrected page is attached.

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"the standard question" (Mussa 1976*, p. 187) on which the Chicago School would demonstrate its version of the monetary approach to the balance of payments.[1] That specific objective allowed an approach that disregarded shocks originating in the balance of payments, an essential ingredient in the Polak model. At the same time, the view that in the postwar context—in contrast to the 1930s—devaluation should be analyzed on the assumption of full employment of domestic factors of production was shared by economists in the Fund who wrote on that subject. (See Polak (1948) and Alexander (1952). Johnson's 1958 review paper took the latter paper, which had introduced the "absorption approach" to the analysis of devaluation, as his starting point.)

After the comparison of the two approaches, the paper presents a critical review of the attempts made by their proponents to provide empirical support for their theoretical findings. A final section summarizes the main conclusions.

I. THE EVOLUTIONARY VERSION OF THE MONETARY APPROACH

The 1957 Polak model, in its simplest form, is shown in Box 1. Our interest here is not primarily in that model itself, but rather in its development from Kahn's 1931 multiplier model through a process of "monetization." Three steps can be recognized in this process of monetization: (a) in the definition of the multiplicand—the autonomous expenditure stimulus that sets off a cumulative process of economic expansion, (b) in the determination of the magnitude of the marginal propensity to spend, and (c) in the determination of the time lag between two successive rounds of spending.

A. The Multiplicand

Kahn's presentation of the multiplier process runs in terms of an initial stimulus provided by additional government expenditure on roads. But he makes it clear, first, that the mechanism he analyzes is not confined to expenditure by the government or on any particular asset and, second, that it does assume monetary financing. The necessary funds are not supposed to be raised by taxation but by borrowing, and "the intelligent cooperation of the banking system" is taken for granted so that the money supply will be allowed to expand as needed (p. 174). In the Cambridge approach, "investment" as the autonomous domestic demand factor came to be understood as the sum of private investment and the government deficit, with the latter ennobled as "honorary investment" by Dennis Robertson (cited by Machlup 1943, p. 9).

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[1] Johnson's posthumous paper on the subject still describes his "new approach to balance-of-payments theory" in terms of "alternative approaches to devaluation theory" (Johnson 1977, pp. 251–52)

Box 1. The Fund Model in Its Simplest Form

The model consists of two behavior equations and two definitional equations:

$$MO = kY \tag{1}$$
$$M = mY \tag{2}$$
$$\Delta MO = \Delta R + \Delta D \tag{3}$$
$$\Delta R = X - M + K, \tag{4}$$

where
MO = money supply
Y = GNP;
M = imports:
R = reserves:
D = domestic credit of the banking system:
X = exports;
K = net capital inflow of the nonbanking sector:
k = the inverse of the velocity of circulation[5]; and
m = the marginal propensity to import.

No explicit lags are shown in the behavior equations, but the model acquires its dynamic character from the fact that while the flow variables in it (Y, M, X and K) are measured as totals over the unit period selected; the stock variables (MO, R and D) are measured as amounts outstanding at the end of the period. Thus, combining the four equations shown above:

$$\Delta Y = 1/k[\Delta D + X + K - mY], \tag{5}$$

where the time series for the three exogenous variables ΔD, X and K determine the development of Y, MO and M over time.

As pointed out by Machlup (1943, p. 14) any statements about income-creating disbursements can also be expressed in terms of the monetary mechanisms involved, that is in terms of credit creation and dishoarding. But Machlup sticks to his multiplicand in non-monetary terms. The Polak model, however, introduced the acquisition of domestic assets by the banking system (ΔD in equation (3) below) as the domestic component of the

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[5] If the period selected is one year (as in Holtrop 1959), k equals the inverse of the *annual* velocity of circulation; if the unit period is taken as the income period of circulation (as in Polak, 1957), $k = 1$. Note that the results of the model are not invariant to changes in the length of the unit period, combined with the corresponding change in k. If the period is one year, the adjustment of MO to an autonomous change in D (or in X or K) is much slower then with a period of, say, three months, and the real effects of the change will be correspondingly greater—as we shall see when we discuss Prais's improvement of the model below.