

A F - M Test on a Definition of Money for Nepal

Prithvi Raj Ligal*

Introduction

There seems to be strong controversy among the economists as to the "correct" or "true" definition of money. Some economists argue for an a priori definition of money, where as some others prefer to have an empirical definition of money. Milton Friedman and Anna J. Swartz [1] argue that "the definition of money is to be sought for not on grounds of principle, but on grounds of usefulness in organizing our knowledge of economic relationships. "Money" is that to which we choose to assign a number by specified operations; it is not something in existence to be invented like 'length' or 'temperature' or 'force' in physics". Though in recent years several attempts have been made to develop an empirical definition of money, all the studies seem to have been done in the context of developed countries. This paper tries to test the Friedman-Mieselman (F-M) criteria in the context of Nepal from 1964/65 to 1974/75 with a theoretical discussion on the definition of money.

The first section of the paper discusses some theoretical issues in the definition of money. The second section discusses the F-M double criterion with empirical studies. The third section analyses the result and the last section summary and conclusions.

* Mr. Prithvi Raj Ligal is a member of Economics Instruction Committee, Kirtipur.

I. Theoretical Issues

The most widely used conventional definition of money (M) (narrow definition) consists of currency—paper money and coins—in the hands of the nonbank public plus demand deposits—checking account (or current A/C) balances in commercial banks. These particular liquid assets have two characteristics in common that separate them from other liquid assets, viz;

- (i) They are the generally accepted means of exchange in the economy; and
- (ii) They earn no interest.

Thus the conventional measure of 'money' — currency plus demand deposits implicitly treats these two assets as if they were close substitutes. However, Friedman and Swartz argue that currency and demand deposits are actually complements in terms of demand but perfect substitutes in supply [1]. David Laidler in his paper points out that "the conventional theory of the demand for money (seems to be) is a theory of the demand for an asset that is generally acceptable means of exchange and also happens to be a store of value" [2]. But (it assumes), unlike demand deposits, time deposits and savings deposits cannot be easily transferable, therefore are not means of exchange, hence they are not money.¹ Pesek and Saving [3] on the other hand claim that "only currency, demand deposits, and travellers checks are used as medium of exchange and can be called "money." They argue that if banks paid interest on deposits, deposits would be held as income yielding assets, and their use as medium of exchange would cease.

But Meltzer [4] concludes that Pesek and Saving's argument does not establish a unique definition of money. Payment of interest does not prevent the public from using deposits as "medium of exchange," so payment of interest cannot be used to exclude some types of deposits from money.

Meltzer's analysis seems to be true in the case of Nepal (or any other developing country) if one analyses the nature of time deposits held in banks.

Laidler [5] even concludes that ".....the stability of the demand function for money is improved by including time deposits in the definition of money". While Brunner and Meltzer [6] strongly argue that ".....currency plus demand deposits is the more appropriate definition."

1. This type of reasoning goes at least as far back as the monetary debates of the Napoleonic wars in which one of the principle issues was whether or not any other assets other than coin and bank notes were money [2].

Thus it seems that the current debate has narrowed down to the question of whether to include commercial bank time deposits as part of the money supply, that is whether to accept the broader definition of money (M_2) currency plus demand deposits or to accept the conventional definition as it is.

“..... Whatever the historical reason for its existing as an issue, it is not unreasonable to give the question of the inclusion of time deposits in the definition of money some sort of priority in the present context because the arguments that would lead to the inclusion of saving and loan association shares and the like in the definition of money all point to currency plus demand deposits being an inadequate concept.”²

II. F-M Double Criteria

Milton Friedman and David Meiselman (F-M), in their study for the commission on Money and Credit used double criteria in determining the set of assets to be included in the definition of money supply.

- 1 The first criterion is that the assets should have the highest correlation with income; and
- 2 The second criterion is that the sum of the assets should have a higher correlation with income than any of the components taken separately. “The second criterion is intended to ensure that an increase in correlation is attributed to the inclusion of a component in the money supply concept and not to the association between income and the particular component alone.”³

F-M apply the dual criteria to three alternative definitions of money and conclude that a proper empirical definition of money is the sum of currency, demand deposits and time deposits at commercial banks. However, Timberlake and Fortson [7] using the same dual criteria argue that time deposits have insignificant explanatory power in predicting income. Kaufman [8] on the other hand using the same dual criteria argues that the definition of money changes depending upon whether financial assets are related to income in preceding, current or succeeding periods. While Koot [9] finds the criteria quite satisfactory.

III. Results of F-M Criteria in the Nepalese Context

The set of financial assets to be analysed in this paper consist of five variables. They are;

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2. Laidler, David, ‘The definition of money’ Reprinted in Nibson and Kaufman (ed) Readings [2].
 3. Kaufman, George G., “More on an Empirical Definition of Money” AER, March 1969 [8]

- i) Currency (C) ;
- ii) Demand Deposits (D) ;
- iii) Time Deposits (T) ;
- iv) Currency plus Demand Deposits plus time Deposits (C+D+T) ; and
- v) Currency plus Demand Deposits (C+D)

Besides these variables, GDP figures from 1964/65 to 1974/75 are used in the analysis (GNP figures are not yet available). Similarly quarterly GDP figures are also not available, therefore the analysis is done on the basis of annual GDP figures from 1964/65 to 1974/75. But, however results are also presented from 1964/65 to 1969/70 and from 1970/71 to 1974/75 to check the previous results.

All data used in the analysis are from different issues of the Quarterly Economic Bulletin published by Nepal Rastra Bank, Kathmandu and the GDP figures from materials published by National Planning Commission.

The table below presents the correlations between the first differences of variables defining the money supply and differences of GDP.

Table 1
Correlations of Various Definitions of Money and GDP

Variable	Period		
	1964/65-1974/75	1964/65-1969/70	1970/71-1974/75
C	0.9840939 (16.6079)	0.94405 (5.7241)	0.98003 (8.5409)
D	0.9680543 (11.5797)	0.90341 (4.2133)*	0.95780 (5.7723)*
T	0.9706519 (12.1121)	0.9382 (5.2040)	0.98621 (10.3194)
C+D+T	0.9867232 (13.2186)	0.95174 (6.2019)	0.99348 (15.0920)
C+D	0.9699838 (11.9699)	0.93591 (5.3135)	0.97718 (7.9698)

Figures in the parenthesis represent t-value.

* Significant at .05 level.

All other values are significant at .01 and .05 level.

t-values are calculated by the formula $t = r \sqrt{\frac{n-2}{1-r^2}}$

When we take the broader definition of money (M_2) which includes time deposits, the above table clearly approves the F-M dual criterion. For, the correlation between C+D+T and GDP is the highest in the period from 1964/65 to 1974/75 as well as from 1964/65 to 1969/70 and 1970/71 to 1974/75, that is the sum of the assets C+D+T have the highest correlation with income. And also it satisfies the second criteria viz., the sum of the assets C+D+T have the highest correlation with GDP than any of the components (C or D or T) taken separately in all the three periods.

IV Summary and Conclusion

The F-M dual criterion seems to be quite satisfactory in the case of Nepal. The results above indicate the empirical definition of money for Nepal as currency, demand deposits plus time deposits. The conventional definition of money (i.e. currency plus demand deposits) as in practice in Nepal seems to be insufficient. However, before devising an exact empirical definition of money for Nepal, it would be wise to explore further.

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