Charter House Essays in Political Economy

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A New Real Theory of Money

NRTM

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Introduction

On observing the output of a decision analysis model using the algorithm of the RTM (Real Theory of Money), see the paper in this series "*A Real Theory of Money*", the output was not as expected suggesting the model was wrong.

On further analysis the original Cambridge equation, upon which the RTM was based, it also appears to be an inexact representation of what in fact is happening when some issued money ends up in savings.

This paper describes suggested adjustments to the RTM to create an improved model to be nominated New Real Theory of Money (NRTM).

Background

The quantity theory of money (QTM) is not a determinant model because it provides no functional components to represent the means whereby money volumes influence inflation. This is a logical consequence of inflation having no direct relationship to the volume of money.

The causes of inflation have been described in the 1981 paper in this series[1] which was a reprint of the original. released in Rio de Janeiro, in 1976.

The current formula for the QTM does not account for non-circulating money in the form of savings or asset holdings. This error has been exemplified in the results of quantitative easing.

The common QTM equation was developed by Irving Fisher and others as:

$$M.V = P.T \quad .... \text{(i)}$$

Where:

M is money supply;
V is velocity of circulation;
P is average price level;
T is volume of transactions of goods and services.

The Cambridge equation

In the development of a more realistic substitute for the QTM to reflect the actual outcomes of changes in money volumes, the Cambridge equation based on contributions from Marshall, Pigou[2] and Keynes, was a modification of the QTM where an additional determinant "k" was included to account for savings as a non-circulating asset.

$$M = k. P. Y \quad .... \text{(ii)}$$

On further examination this equation makes k a component of M but its functional relationship is not explicit. It appears as a multiplication whereas it should be an additional component alongside (P.Y) so it should be added to (P.Y) to create a sum equal to M.

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[1] McNeill, H. W., "*What causes inflation?*", Charter House Essays in Political Economy, HPC, Portsmouth, 1981, ISBN: 978-0-907833-17-8.
[2] Pigou, A. C., "*The Value of Money*", The Quarterly Journal of Economics, 1917.

Therefore, from the standpoint of a decision analysis model, to be able to simulate and project the impact on real incomes, the appropriate format is of the form:

$$M = (P.Y) + k \; .... \; (iii)$$

This is because k reduces the "active" or "transactional funds" in the economy which are to be found in (P.Y).

In order to isolate and quantify the resulting real incomes element, the savings component needs to be transferred to the left hand side as an amount that reduces M.

$$M – k = (P.Y) \; .... \; (iv)$$

Below this Modified Cambridge Equation is referred to as MCE.

Quantitative easing and real incomes

Because of the inability of the QTM and the Cambridge equation to account for the outcomes of quantitative easing (QE) the MCE equation has been extended to include an additional determinate, "a" for assets, to expand the money categories within non-circulating assets.

Although the Cambridge equation had restricted the non-circulating category of money to savings it had, at least, pointed out that a proportion of the money volume does not enter into transactions. This was an important observation because without this consideration the QTM was inoperable as a determinant decision analysis model.

Experience with quantitative easing (QE) demonstrates the flow of money into assets has been a notable feature under this policy. This has been associated with lower investment and depressed real incomes and stagnating prices.

The essential objective of any rational economic policy is to stabilise or increase growth through a rise in real purchasing power or real incomes. The QTM does not provide any such clarity on this score. Therefore, to be able to evaluate the real income outcomes of changes in money volumes it is proposed that a New Real Theory of Money (NRTM) is used to substitute the MCE and the QTM.

This takes the forms, repeating the transitions in equations (iii) and (iv):

$$M = (P.Y) + (a + k) \; .... \; (v)$$

or

$$M – (a + k) = P. \; Y \; .... \; (vi)$$

Where:

M is the quantity of money;
P is the price level;
Y real income (substituting T in the Irving equation);
a is assets;
k is savings.

As can be observed, by moving "a" and "k" to the left side, as a deduction from M, the very obvious depressive impact of rising asset holdings on the availability of money can be seen to reduce P.Y.

This has been the experience of countries who have applied QE, including the early introduction in Japan in the late 1980s. The universal impact has been depressed transactions and real incomes Y. This explains how the exogenous[3] funds, that were not generated by the supply side[4] (bank loans), were diverted in such a manner as to be inaccessible by the supply side for use as investment or transactions. With low interest rates savings become less significant and assets become more significant. As a result, rather than see economic growth, in spite of close to zero interest rates, this has resulted in lower real incomes, lower substantive investment and deficient growth in productivity.

As is self-evident, the rise in exogenous money did not have any practical impact on "aggregate demand".

Under a New Real Incomes Policy

Without QE, incentives applied to the logistics elements of accessibility to products, information and of unit prices, can facilitate a real incomes policy based on price performance policy[5] and making use of the price performance ratio and price performance levy to guide investment towards higher productivity and based on the endogenous supply side money cash flow to achieve real growth in real consumption. Savings as endogenous money supply could have been invested to gain productivity receiving price performance levy bonuses without the interest rate overheads associated with bank loans and the risks associated with the provision of collateral for loans.

Savings

As things stand under QE with rising debt and low interest rates, this policy has effectively removed incentives for the generation of savings and has therefore destroyed sources of endogenous[6] money arising from savings. The stagnant turnovers and slow inflation linked to the externalities of asset holdings (see next section) has also affected margins and disposable income options reducing the ability to save.

Inflation

Inflation under QE has occurred. The types of assets that have been accumulated under QE have been land, real estate, precious metals, selected commodities and stocks and shares. The high volumes of money entering these asset markets have created inflation because, for example, the anticipation of rises in the value of asset holdings based on speculation. This

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[3] Exogenous funds are funds that are generated from outside the transactional cash flows within the supply side. Fractional reserve banking is also exogenous because it is based on savings from the supply side which are not part of the supply side transactional cash flows of the supply side.

[4] With fractional reserve banking a small proportion of loans reflects supply side generation of funds (savings)

[5] McNeill, H. W., "*Price Performance Policy - The Business Case*", Charter House Essays in Political Economy, HPC, Portsmouth, 1981, ISBN: 978-0-907833-09-3.

[6] Endogenous funds are generated from within the transactional cash flows of and separated as savings and accumulated until sufficient to invest in a defined action.

speculative asset price rise has created an externality affecting the supply side as a result of the prices of houses, land, precious metals, stocks and shares to have become increasingly inaccessible to the majority of the population, exacerbating the status of real incomes or purchasing power.

Under a price performance policy[7] speculative gains driven by manipulation are not possible as a result of the PPR and PPL impacts on net income following the sale of assets.

A New Real Theory of Money

The conventional Quantity Theory of Money (QTM) equation does not represent a determinant model able to trace the impact of increased money volumes under QE. This could be an explanation as to why policy failed and depressed the productive economy in terms of investment, productivity and levels of wage payments. However, Japanese experience with similar policies should have been sufficient to encourage precaution.

With the Japanese experience it is notable that the QTM was never brought into question given that it continues to provide no transparency or functional components to explain the theory that higher money volumes cause inflation in the supply side transactional economy. The proposed modified equation is a more realistic representation as a New Real Theory of Money (NRTM) which provides a clearer distinction between the asset and real economies.

As in the case of the QTM, the NRTM, does not contain any functional relationship to trace the impact of money volumes on inflation. This is because inflation is not related to money volumes but rather to price setting and the price performance ratios of economic units as established in 1976 and published in this monograph series in 1981 under the title, "What causes inflation?"

Caution

The new model as set out in equation (vi) is a determinant model which can be used to create an algorithm or computer program to simulate scenarios associated with different combinations of savings and assets. However, this does not mean this model is correct in the sense of explaining fully the impact of savings or assets. For this to be tested there is a need for more detailed datasets of recorded outcomes in order to test the model for its precision. At the moment this model is "good enough" as a baseline test bed upon which to build future refinements. It is certainly adequate to provide some indication of the sorts of effects that have been observed in the form of the rapid expansion in asset holdings.

Further steps

There is a need to be able to break down savings and assets into their many types in order to trace any cash flow associations with transactions e.g. interest and fees on savings in banks as opposed to savings held as cash, commissions on real estate sales and stocks and shares and any other types of holdings. In the case of sale of shares following high rates of rises in nominal values where do these proceeds go? This marks out some future territories for investigation.

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[7] McNeill, H. W., "*Price Performance Policy - The Business Case*", Charter House Essays in Political Economy, HPC, Portsmouth, 1981, ISBN: 978-0-907833-09-3.

Time and productivity

To establish a more robust and realistic model that explains the impacts of money volumes, all of the models reviewed need to be replaced by one that can account for time lapses to trace the changes that occur between money infusion and any results. In this context, the impact of productivity and the generation of indigenous gains in the value of money through increased productivity need to be accounted for, rather than relying on nominal sums. The models discussed all assume real time, instantaneous responses which are not how things evolve.

Current status

Considering the cautions mentioned, and the additional work required to end up with a precise deterministic model on money theory, the current status of the NRTM is that, given the state of available statistics, it is a reasonable basis against which to advance our understanding and it is "good enough" to explain why QE was not a sound policy choice given the impact of assets on the outcome for those in the real economy

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