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**Documentation Sheet**

*Title:*  
**Heterodox Macroeconomics and the Design of Monetary Institutions**

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*WP. No.:* UDE 26/4/2008  
*Date of Issue:* May 2008

*Contents:* 18 p, -- T, 2 F, 21 R  
*No. of Copies:* 100

*Abstract*

We enter meeting ground between two agendas of the heterodox economics programme; the stock-flow consistent models pioneered by Wynne Godley, and the monetary circuit approach researched in France and Italy. The objective is to present a coherent account of two innovations in payments mechanisms: deposit-creating institutions and conditional cash transfers.

*Keywords:* deposit creating institutions, conditional cash transfers

*JEL Code(s):* E10, E42, E63

## Heterodox Macroeconomics and the Design of Monetary Institutions

### 1. Introduction

The common core of all non-neoclassical approaches to monetary macroeconomics is a sense of the structure of the capitalist economy as a whole. The modern economy is viewed as a network of interconnected circuits. Lest this be seen as a description of general equilibrium macroeconomics, it must be emphasized that real and monetary-financial subsystems interlock with no sphere accorded price of place. As an illustration, the varieties of capitalism (VOE) models are concerned with the differentia specifica brought about by different financial-real couplings (Carney, 2007). There are at least three traits that distinguish capitalist systems: asset specificity, government intervention in banking, and the size of the agrarian sector. The dynamics of the economies is written by the agents backing land, labour, and capital. For example, farmers have played an important role in determining the structure of the world's largest institutional investors, pension funds. They favour public pension systems and governments in such societies would be careful not to invest in risky assets. Farmers and owners of small firms tend to be alike in their financing preferences. They would seek long-term arrangements for contending with, say, uncertain crop yields. Local banks would emerge to finance local capital. Both would encourage government intervention to divert resources from sectors where the returns are relatively higher. Only large farmers would be interested in arms-length relationships typified by securities markets. For their part, workers are averse to short-term indicators of corporate performance that accompany the diffusion of ownership. Their utility lies in self-financing, bank loans, long-term bond sales and a centralized financial system which permits governments to provide financing during downturns.

Two full-fledged hubs of research activity stand out for their accounting purity and constructive appeal. Stock-flow consistent modeling was invented, in a sense, by Wynne Godley and is developed, among other places, at the Jerome Levy Institute, New York. The practitioners introduce the discipline of double-entry bookkeeping to National Income identities. Rows and columns in Godley matrices must sum correctly, a positive item here must be backed by an item of identical magnitude but opposite sign there. Of the same methodological fraternity, a monetary circuit approach to macroeconomics is energetically being studied in France (see Gnos, 2006, for a survey) and Italy (see Realfonzo, 2006, for a survey). One inspiration is the input-output economics of Quesnay, joined by the real-financial coupling, later, of Schumpeter. The basic principle is similar to the Anglo-Saxon, a circuit must be opened and closed, a number in the first instance must be backed by the same figure in the second. Specifically, the circuit originates with the creation of a deposit-loan by a bank and is closed when the loan is repaid.

Research workers in both camps have been working industriously, but independently. We exploit (what we perceive to be) an identical logic in both strategies to give coherence and closure to two novel institutional devices under active consideration elsewhere. The universal impetus is well known: financial instability continues to wrack nations, the credibility and reputation of Central Banks in stemming these crises is low and, consequently, the device of fiat money is in question. Bank failures have been at the root of contemporary meltdowns and we need to recall that banking, in its familiar form, is defined by an (in)stability condition: the maturity mismatch between both sides of the balance sheets. While, on the one hand, banks might be locked into indivisible arrangements on the assets front, they are obliged to deliver cash (almost) on call as per their liability contracts. Thus, the recommendation of narrow banking is simple: sever the

links between the two sides of bank balance sheets. A narrow bank becomes “failure-proof” as its liabilities are backed by cash or near-cash. The lending and investing function can be carried out by a separate division of, say, a holding company. The motive force of the first radical proposal comes from Africa. Since countries in the continent are caught in near-zero levels of economic activity, conditional cash transfer programmes have been worked out and implemented under the aegis of the International Poverty Centre of the UN. Secondly, we examine a bold variant and application of monetary circuit theory to the travails of these economies by Biagio Bossone. The unique feature is the creation of Deposit Creating Institutions (DCIs) that would be independent of the loan disbursement function of non DCIs. The innovation is distinct from narrow banking since the job description of that mechanism is deposit acceptance. Yet, since the purpose of DCIs is to maintain the integrity of the mint and consists of constructing a firewall between the familiar functions of the commercial banks, we claim that the proposal bear a family resemblance to the institution of narrow banking. Our critique of both is, consequently, common. The wage- or consumption- or employment-generating process originates with a gift of cash which wends its way through the economic process. However, closure seems absent in that there is no account of the backup of the giver, of the magnitude and rationale for a particular sum of dollars, or Euros, to start the experiment. The absence of reflux seems particularly surprising in the model of Bossone who is an illustrious exponent of circuit theory. Our contribution lies in proposing a model of fully-backed central bank money. The backing is provided by the fiscal authorities who, in the spirit of narrow banking, are separated from the monetary authorities by a “firewall”.

## **2. The first moment and the emission of money**

The method of circuit theory is to reason in terms of moments. The first moment consists of money creation in the form of a bank advancing a loan to a businessman for the production of consumer goods. The amount of the loan is the wage bill which, correspondingly, accrues as income to workers. The analytical framework is sufficient to appraise the institution of cash disbursements in Africa. Cash transfers have been proposed, as well as disposed of, as an innovation to smooth the consumption of goods and services through the market system (Farrington and Slater, 2006). The measure consists in putting cash, not in-kind transfers nor vouchers, in the hands of individuals, not communities or governments. The exchange might be cash for work, but in any case, is independent of interventions like monetisation by the State with the provision of microfinance, insurance, and budgetary support. We insist, however, that cash must be given not just for work but meaningful work. The employment hostility of industrial growth has contributed to not just the slackening but the reversal of the Lewis transition (Khan, 2007). The salient feature of successful growth transitions must be the reduction in absolute employment in agriculture. Advocates claim that the device, while driven by a consumption objective, often has multiplier effects on production through the increased demand for food. In this connection, mainstream labour market analysis is regarded as unhelpful and has been supplanted by advocates of Integrated Economic Analysis (IEA) (Lundström & Ronnås, 2007). The former is less than useful in poor economies where most of the labour force is self-employed. There is no supply and demand for labour, no employer and employee. The IEA deals with the problem by working out the demand side in the form of creation of jobs and employment. In a similar vein already referred to, is the schemata of Bossone and Sarr (2005) who have modified the first step of the circuit. The French-Italian first moment begins with a bank loan to a firm which is received as wages

by workers who spend their incomes which return to firms who repay the bank. Here, the first moment begins with a cash transfer to workers. The proposal is to construct a firewall between the lending and the deposit-creating functions of banks. DCIs would collect non-interest-bearing deposits and would distribute money on a non-lending basis, that is with no condition to restitution. Their liabilities would be backed by Central Bank money. Every deposit balance would be augmented by a proportion of the depositor's own holdings calculated over a reference period. DCIs would not extend credit but would earn revenue from fees charged for payments services. They would not be permitted to distribute their liquidity to capitalists or non DCI intermediaries. The latter would fund their assets exclusively with non debt instruments. The deposits distributed would naturally be the coin of the realm as, in that case, liabilities and assets would be perfectly matched, delivering a risk-free bank. Furthermore, the money would be disbursed to workers. The demand for food, clothing, and housing would rise. Production and production finance for these goods would be stimulated. Higher output would mean greater capital accumulation and so on in second- and higher-order effects. The money distributed to workers would allow firms to capture liquidity as revenues. Capitalists would use non DCIs to purchase inputs and start production. The Central Bank would issue reserves and ensure that the reserves stock is consistent with its projection of the noninflationary production of basics and its objectives with regard to the production of non basics and their prices. Reserve injections and withdrawals would be effected through open market operations with non DCI intermediaries.

Both the institutional mechanisms under scrutiny have been less than rigorous in working through the role of the government in their taxonomy. We suggest that if history is to be given credence, Central Banks are integral to the working of the both narrow

banks as well as DCIs. Furthermore, the government ensures that fiat money is generalized purchasing power by only accepting it in taxes. Therefore, as long as there are taxes, doomsday scenarios about the demise of Central Bank money are premature. Government money, like any other money, must reflux back to the issuer. Still, government money is special because it is redeemable by the mechanism of taxation. Indeed, it is convenient to think of Central Bank money as the pinnacle of a hierarchy of clearing-house measures in society. All payments systems require a clearing house. Thus, tax liabilities are cleared with the Central Bank performing that service for private banks and the treasury. It is imperative to recapture the commercial bank origins of modern Central Banks (Goodhart & Tsomocos, 2007). Their original mandate was to act as watchdog over the quality of the commercial bills in money markets since these bills would need to be rediscounted in the event of a crisis. The real bills doctrine was founded here. The precept provided both a handle on systemic stability as well a basis for macroeconomic policy. If the self-liquidating characteristics of commercial bills was above board, being grounded in trade and commerce, whereby the final sales of goods and services was adequate to repay the debt, then both the quality and the volume of such debt was sustainable. Both Keynes and Schumpeter were one in recording both the continuity and change of regime brought about by the institution of fiat money (Bertocco, 2007). For Keynes, a distinction had to be made between a real exchange economy and a monetary economy with a Central Bank. In the former, money is no more than a device that reduces the costs of exchange. Keynes' typology was matched by Schumpeter's more expansive divide between a pure exchange economy and the capitalist economy. His definition of capitalism included not just the private ownership of the material means of production and the generation of private profits, but also the

means of payment by private banks that is sustained by a consensus of all stakeholders in a private enterprise economy. In both cases, it was inadequate to adapt the classical theory founded on a barter economy. At the same time, both acknowledged the essential social nature of the banking system. The essential macroeconomic role of the banking system could be theorized on lines no different from the planning authority in a socialist economy. In other words, the issue of money  $M$  is instrumental if it simultaneously is the wage bill of workers  $L$  and their wherewithal for consumption  $C$  which returns to firms an revenues. The income generated is denoted by  $Y^1$ . The superscript 1 is used to denote the first moment of the circuit. In sum,

$$Y^1 = M = L = C$$

With the introduction of taxes, government expenditure cannot lag behind. The evidence is that the role of governments in originating virtuous financial-real circuits in the developing world was instrumental. Even Adam Smith appreciated that the security of property rights was insufficient (Andrianova, Demetriades, & Xu, 2008). Instead, governments created large trade monopolies which became the leading joint-stock companies which were responsible for the financial innovations including the emergence of trade in shares. For instance, in Hong Kong with a bank-based system, large banking monopolies modeled on the lines of the Bank of England were created with intimate links with the State. The latter was a banking monopoly for fifty years closely linked to the government. London emerged as a premier financial market due to the monopoly rights granted by the public sector to all leading joint-stock companies. The latter provided long-term loans to the former in exchange for their privileged position. Thus, the emergence of London's stock market went hand in glove with the improvement in public finance. State provisioning of public goods and services includes private consumption goods like education and health that can be provided by the private sector. Let us denote these by  $C_g$ . While they meet the criteria of excludability, positive supply curves, and no external effects, they also possess the trait that benefits can accrue to one citizen at the expense of another (Papadimitriou, 2006). Other arguments sustaining their importance in the macroeconomic fabric include 1. market failure, 2. basic needs considerations, and 3. distributional objectives. In general, neither are benefits nor costs from the delivery of public goods and services equitably distributed. Governments must impose

taxes and spend the resulting proceeds to achieve a more equitable distribution of income. The wealthier bear a disproportionately large share of the tax burden, while the poorer bear a proportionately smaller share. It is necessary, then, to examine the claims of advocates of the privatization of public utilities carefully. The experience in Africa has been anything but positive (McKinley, 2007B). Despite all the incentives being in place, few private investors have taken any interest in water and electricity firms and those that have, have done a shoddy job. At the same time, the case for improving performing performance in State-owned firms is overestimated. In the utilities referred to, systematic efforts were made to reduce losses for years before the privatization push. The results were modest. The problem is that publicly-owned and managed enterprises operate at less than cost-recovery tariffs, have provided inadequate and low-quality services, and delivered mainly to the better-off segments of society. Besides, the investment required hugely exceeds any realistic prognosis of internal and external funds. In other words, government expenditure cannot be exempt from the dictates of optimality and efficiency. Distinguishing consumption of private consumption goods by the subscript  $p$ , we recall the familiar macroeconomic relationships

$$Y^1 = C_p + C_g + I \text{ and } I = S$$

Now, saving is a proportion  $s$  of wage income and the fiscal authorities tax that income at a rate  $t^1$ . The balanced budget condition, where  $T^1$  is total tax revenue, is given by

$$C_g = T^1$$

$$\therefore Y^1 - C_p - S = t^1 L$$

$$\therefore Y^1 - C_p - s Y^1 = t^1 Y^1$$

In sum, we have the familiar multiplier relationship

$$Y^1(1 - s - t^1) = C_p$$

The structuralist interpretation is as follows: In a developing economy, the first moment is equivalent to the production of agricultural output and employment. Then, assuming a regime of excess capacity, output and wage-goods consumption of workers must be increased. It is safe to assume, of those at a subsistence level, that the propensity to save is arbitrarily low. The efficient and egalitarian recommendation to the fiscal authorities is that taxation of basics, if at all, must be negligible.

### 3. The second moment and financial instability

Income not consumed is saved and available for investment in capital goods. Here again we distinguish between private  $\Delta Kp$  and public sector  $\Delta Kg$  capital accumulation. In other words,

$$Y^1 - (Cp + Cg) = S = I = \Delta Kp + \Delta Kg$$

Now denote  $p\Delta Kp + p\Delta Kg$  by  $Y^2$ . The superscript 2 is for the second moment.

Investment plans might be financed by banks as might savings be parked in those institutions. In order to avoid algebraic clutter, as well as following the Bossone-Sarr scheme, we assume that the investment plans of private firms are financed by the issue of equities  $\Delta epe$  where  $pe$  is the price of equities and public sector investment outlays are financed by the sale of bonds  $\Delta Bpb$  where  $pb$  is the price of bonds. In order to derive balance sheet variables, an adjustment must be made for capital gains. That is to say,

$$\Delta(epe) = \Delta epe + \Delta pee_{.1}$$

$$\Delta(Bpb) = \Delta Bpb + \Delta pbB_{.1}$$

(The notations are taken from the numerous Working Papers on the subject of the Jerome Levy Institute). Suppose, furthermore, that private investment  $\Delta Kp$  is a proportion  $k$  of aggregate investment. In the case of the second moment, the income equals capital expenditure condition of the fisc is given by

$$\Delta Kg = T^2$$

On the assumption that the authorities tax capital gains,

$$\therefore Y^2 - kY^2 = t^2 \Delta Y^2$$

Rewriting,

$$\Delta Y^2 = (1 - k)/t^2 Y^2$$

We refer to a distinction made by Stephen Turnovsky between the above ‘intrinsic dynamics’ of systems arising out of logical relationships that constrain an economy, particularly those connecting stocks and flows, and ‘lag dynamics’ involving the passage of time (Godley & Lavoie, 2007). Stability is ensured when

$$1 - k < t^2$$

The condition meets both egalitarian objectives referred to and, as a stability condition, is reminiscent of the Tobin tax in the case of international capital movements. Both aspects are part of the international finance dimension of the class conflict underlying taxation of capital incomes (Palley, 2006). The combination of international capital mobility and free trade has strengthened the ability of the capitalist class to block such measures. Countries attempting to right income wrongs will be penalized by international investors. The latter will dismantle a system of progressive taxation by pitting governments against each other in order to secure investments.

In another heterodox connection, we note that three pillars of modern Schumpeterian Economics are examined so far: the linkages between industry, finance, and the public sector (Hanusch & Pyka, 2007). The financial problematic is short-termism and the possible destabilizing consequences brought about by positive feedback in the financial sphere. In addition, a familiar theorem associated with Keynes is recalled. When the animal spirits of the private sector flag, public investment must step in to fill the full employment objective. Alternatively put, complementary government spending is called for to address the ‘Domar problem’ (Wray, 2007). While investment adds to aggregate demand, it also augments aggregate supply by adding plant and machinery that increases capacity. A fraction of gross investment is used to replace capital while net investment adds to existing capacity. An increase in investment is called for to increase aggregate demand through the working of the multiplier. However, a constant level of net investment will increase potential aggregate supply. Household and government spending will have to increase correspondingly to match the increased capacity. If government increases its spending in a recession to go into reverse when the expansion is underway, the jobs created vanish returning the economy to the initial state. A stable fiscal system is one in which government spending rises when investment is rising and still rises rapidly when investment flags. In other words, “ratchet” rather than countercyclical policy is called for. The precept of an overall balanced budget must be maintained. If one sector spends less than its income, some other sector must spend more. For the economy as a whole, total spending must be equal to total income. In our model, the dictum is met when the tax rate on non-basic consumption is correspondingly high.

#### **4. The third moment and closing of accounts**

The money that is created as debt in the first moment is extinguished when debts are repaid. Firms, both private and public sector, for whom banks accounts are created repay their loans when they earn profits generated by workers spending their incomes on basics. The special feature, in our framework, is to introduce the Central Bank as a member of the club of banks. As one organ of the government, it is logically necessary for its fiat money emissions to be backed by the efforts of the other organ of the government, the fiscal authorities. The intention, is must be clarified, is not an endorsement of the Chartalist position; that fiat money is endogenous because it emerges to finance government expenditure (Pastoret, 2006). At the same time, we endorse the two-fold distinction in government expenditure: government expenditure on goods and services and the State as

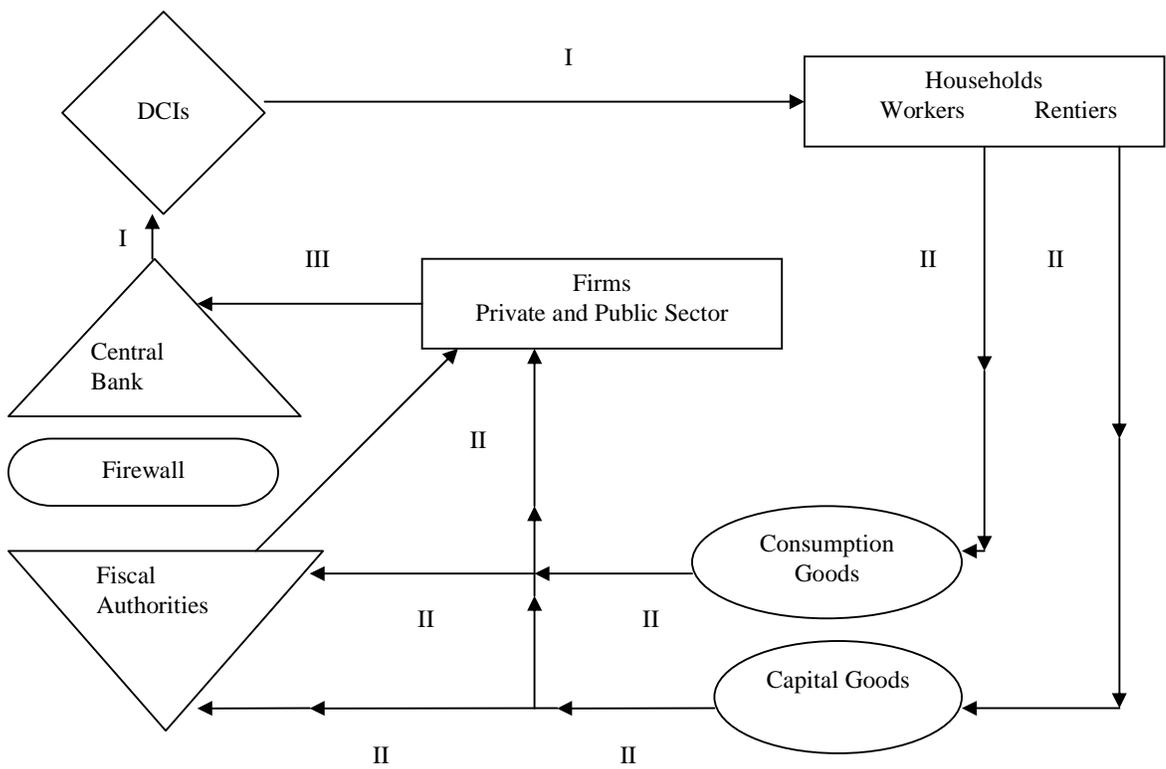
employer of last resort when the mint prints and distributes money as wages for the purposes of employment. Elsewhere, Post Keynesians have supported a disaggregation of the familiar macroeconomic aggregates. Thus, in one account, capital budgeting for the public sector (Moore, 2006) is driven by the following identities:

$$I = I_p + I_g, S = S_p + S_g, C = C_p + C_g, G = I_g + C_g$$

We are now in a position to display our results in the form of pictures. The first is a Godley accounts matrix where  $T_w$  and  $T_f$  stand for taxes paid by workers and firms respectively.

Transactions						
	Households	Private-sector Firms		DCIs	Central Bank	Government
		Current	Capital			
Personal Consumption	$-C_p$	$C_p$				
Government Consumption		$C_g$				$-C_g$
Private Consumption		$p\Delta K_p$	$-p\Delta K_p$			
Government Investment		$p\Delta K_g$				$-p\Delta K_g$
<b>Final Sales: <math>C + p\Delta K = C_p + C_g + p(\Delta K_p + \Delta K_g)</math></b>						
Balance Sheets						
Cash				$+\Delta M$	$-\Delta M$	
Deposits	$+\Delta M$			$-\Delta M$		
Loans	$-\Delta M$	$+\Delta M$				
Equity	$\Delta e_p$		$-\Delta e_p$			
Government Bonds	$\Delta B_{pb}$					$-\Delta B_{pb}$
Taxes	$-T_w$		$-T_f$			$T$

The special features are the replacement of banks by DCIs and, by virtue of the logic of circuit theory, the absence of separate notations for deposits, loans, and cash in balance sheets. A mirror of the balance sheet is a modified monetary circuit.



A modified Bossone Circuit

The three moments are indicated. The Bossone-Sarr diagram, or for that matter, a narrow bank chart, would have arrows shooting out of the DCI or narrow bank, but none piercing it. We have filled in this gap with the State. The short message is that the two arms of the government must work in tandem (McKinley, 2007A; Epstein, 2007). As Hyman Minsky would have put it, “big government” and the “big bank” must coordinate for stabilizing an unstable economy. In consultation with each other, they might specify an employment target. Working backwards, and armed with two behavioural coefficients,  $k$  and  $s$ , they can work out the numbers to fill in to accounting frameworks.

## **5. Conclusion**

The mechanisms of deposit creating institutions and conditional cash transfers, independently of each other, have been proposed as devices to ameliorate the problems of disintermediation and impoverishment respectively. The institutions are micro social arrangements and, consequently, have not been subjected to the discipline of aggregate budget constraints. We employ two consistent accounting frameworks, Stock-Flow Consistent matrices and the Monetary Circuit to close the loop that originates with a cash transfer. Secondly, we introduce the monetary and fiscal authorities, consistent with competitive principles, to derive the following conclusions: Particularly in poor countries, the monetary authorities must disburse cash through the mediation of banks to employment-generating sectors. The fiscal authorities must act in tandem spending on health and education and the like and in capital accumulation, particularly in situations when private investment is not forthcoming. The means to do this, ensure the stability of the economy, as well as address the problem of gross inequities in income and assets, is steep taxation of non-essentials.

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