MONEY CREATION: MISCONCEPTIONS:
IT BEGINS WITH A NEW DEPOSIT

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ABSTRACT

Founded on the money multiplier, the imminent demise of which is not overstated, there exists a profound misconception: that money creation begins with a new deposit. In many cases the source of the new deposit is not specified, and somehow the recipient bank acquires reserves. In other cases the source is specified: cash (ie bank notes and/or coins), which does provide reserves, but the subsequent process is mistreated. The worst offence is to base one of the most significant issues in economics on a supply of bank notes and coins (which is limited because it is a non-interest-bearing asset, and which makes up 2-5% of M3). The analyses presented are partly correct: that new bank loans concurrently create new deposits (money), but the starting point is disingenuous. They also obscure the significant reserves-accommodating role of the central bank as well as the role of its policy interest rate in monetary policy, the essence of which is influencing the demand for bank loans through bank lending rates.

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INTRODUCTION

Why is this issue worth addressing? It is because much of the undergraduate literature on money creation misrepresents this critical economic issue.

This text is not about the futile Friedmanian Monetarist School / Post-Keynesian School debate or about opinions on the demise of the money multiplier, as this is covered elsewhere in some detail (Faure, 2012a, and Faure, 2012b). This literature is taken as read, as is the fact that money creation is the concurrent outcome of a new bank loan (assuming demand, and a bank satisfies it). The effect of a new bank deposit (BD) on required reserves (RR; RR ratio denoted as r) is a delayed affair, and the central bank has no option but to accommodate it (ΔRR) by providing borrowed reserves (ΔBR) to the required extent (ΔBR = ΔRR = r x ΔBD). Thus, the ΔRR is a derived quantity and not the driver as specified in money multiplier (m) lore: $m = 1 / r.$

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This article is also not about the detail of monetary policy, but we need to present a synopsis. The literature referred to above states that there are essentially two models of monetary policy:

- *Money multiplier-focused monetary policy.*
- *Interest rate-focused monetary policy.*

The former, whilst flirted with in the past, is now a theoretical model (the interest rate consequences were profound), while the latter (with variations on the theme) is the norm today. In essence, this model (which is largely obscured in countries presently following quantitative easing policies) relies on a liquidity shortage (LS) (or close proximity to a LS), which makes the key (or policy) interest rate (KIR) of the central bank effective, leading, via the interbank and deposit rates, to "control" of the banks' lending rates, which impacts on the demand for bank loans (from which new deposits originate concurrently if satisfied by the banks).

With this as the backdrop, we set out to strongly refute the literature which professes that money creation begins with a new bank deposit, including when the new deposit is made in bank notes and/or coins (N&C). The following are the sections:

- The literature: bank deposits from nowhere.
- Reality verification 1.
- The literature: bank deposits of bank notes.
- Reality verification 2.
- Closing remarks.

THE LITERATURE: BANK DEPOSITS FROM NOWHERE

Much of the literature on money creation is founded on the money multiplier. In most cases it is explained that the process starts with a bank receiving a new deposit, without stating where the deposit originates from. It then correctly describes that money creation thereafter is the outcome of new bank loans. Examples follow:

University of Nebraska (2012):

> "Each time a bank receives a deposit, it sets aside some of it to meet reserve requirements and may lend an amount equal to the remaining excess reserves. These loans take the form of new checking accounts for the borrower which increases the checkbook portion of the money supply. When the borrower spends the loan, he or she writes a check on the new checking account ..."

McEchearn (2009:657):

> "Each time a bank gets a fresh deposit, 10 percent goes to required reserves. The rest becomes excess reserves, which fuel new loans ... The borrower writes a check, which the recipient deposits in a checking account, thereby generating excess reserves to support still more new loans."

Dwivedi (2010:205):

"In the process of their financial transactions, banks receive deposits from the public. The money deposited with the banks are called primary deposits ... The process of 'deposit creation' ... begins with banks lending money out of primary deposits create. In fact, banks cannot loan out the entire primary deposits as they are required to maintain a certain proportion of primary deposits in the form of cash reserves."

Hawkins and Torr (2012:64-65):

"Suppose that customers deposit R100 000 in New Bank ... By law it has to keep 20 percent of its demand deposits in reserve in the form of required reserve deposits at the central bank ... it [now] has R80 000 in excess reserves ... which can be lent out to suitably screened clients ... If [r] = 0.2, the total [of new deposits] is R100 000 / 0.2 = R500 000. Apart from the original injection of R100 000, R400 000 worth of new deposits have been created."

Dilts: Indiana-Purdue University-Fort Wayne (2006:159):

"Money is created by a bank receiving a deposit, and then loaning that non-required reserve portion of the deposit (excess reserve), which, in turn, is deposited in another checking account, and loans are subsequently made against those deposits, after the required reserve is deducted and placed in the bank's vault or deposited with the FED. For example, if the RRR is .10, then a bank must retain 10% of each deposit as its required reserve and it can loan the 90% (excess reserves) of the deposit."

Food and Agricultural Organisation (2012):

We assume that an initial deposit of $1,000 is made on a checking account. The bank keeps a certain percentage (we assume 10%) of the deposited amount as cash reserve and uses the rest for new loans or investments (e.g. in treasury bonds). The process of money creation starts as soon as payments resulting from the additional loans or investments (in our case: $900) are credited to checking accounts with other banks …"

Parkin (2010:553-555) (paraphrased):

"Musheera buys a DVD from a DVD store using a credit card. When the card sales slip is presented to the bank the store is paid R200 by the bank and Musheera has a loan from the bank. Thus, a loan has created a deposit (money). The bank is able to place required reserves (7.5% of deposits = R15) with the central bank, and lend out the balance (R85); when R85 is lent, R85 of deposits is created, of which 7.5% is placed with the central bank to satisfy the reserve requirement. And the process continues …"

As can be seen in the latter example, Parkin gets the first part of the money creation process correct (the new loan creates the new deposit), but then makes a critical error, as do all the other examples: that satisfaction of the increased RR springs from

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the new deposit. As we will show below, no bank is just able to place funds with the central bank, assassinating the process upfront.

REALITY VERIFICATION 1

BOX 1: BANKS (LCC BILLIONS)			
Assets		**Liabilities**	
Foreign assets (FA)	300		
Loans to government (LG)[2]	900		
Loans to private sector (LPS)[3]	2 000	Deposits: Private sector	4 000
Central bank money (CBM):		Loans from central bank	
Notes & coins (N&C)	600	(ie borrowed reserves, BR)	200
Reserves (total reserves, TR)	400		
(Excess reserves, ER = 0)			
(Required reserves, RR = 400)			
Total	**4 200**	**Total**	**4 200**

BOX 2: CENTRAL BANK (LCC BILLIONS)			
Assets		**Liabilities**	
		Notes & coins (N&C)	1 200
		Deposits:	
Foreign assets (FA)	1 600	Government sector	800
Loans to government (LG)[4]	1 000	Banks (TR)	400
Loans to banks (BR)	200	(ER = 0)	
		(RR = 400)	
		Loans: Foreign sector	400
Total	**2 800**	**Total**	**2 800**

As an introduction, we present simplified balance sheets[5] of the private banking sector and the central bank in Boxes 1 - 2. In Box 3 we present the consolidated[6] balance sheet of the monetary banking institutions (MBIs), that is, the banks and the central bank. [The following should be noted (LCC billion): total bank deposits = LCC 4 000; RR = LCC 400; r = 10%; BR = LCC 200; N&C do not ranks as reserves (for simplicity; this is the case in some countries).]

It will be evident that the money stock (we assume M3 for the sake of simplicity), and its counterparts can be extracted from the consolidated balance sheet (LCC[7] billion)[8]:

$$M3 \quad = A + B2 \quad = 600 + 4\ 000 \quad = \underline{4\ 600}$$

$$= \textit{counterparts:}$$

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[2] Marketable and non-marketable.
[3] Marketable and non-marketable.
[4] Marketable (Treasury bills and bonds) and non-marketable (for example: loans to local authorities), but usually marketable paper only, for purposes of open market operations (OMO).
[5] Excluding capital and reserves and other assets and liabilities.
[6] This means that the interbank claims are netted out: N&C, BR, RR, ER
[7] Currency code for fictitious currency, the "corona", of fictitious country "Local Country".
[8] Note that such an analysis is executed by most central banks on a monthly basis.

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\begin{array}{lll}
= D - C & = 1\,900 - 400 & = 1\,500 \text{ (net foreign assets, NFA)} \\
+ E - B1 & = 1\,900 - 800 & = 1\,100 \text{ (net loans to govt, NLG)} \\
+ F & & = \underline{2\,000} \text{ (loans to private sector, LPS)} \\
\text{TOTAL} & & = \underline{4\,600}
\end{array}
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BOX 3: CONSOLIDATED BALANCE SHEET OF MBIs (LCC BILLIONS)			
Assets		**Liabilities**	
D. Foreign assets (FA)	1 900	A. Notes & coin	600
E. Loans to government (LG)	1 900	B. Deposits:	
F. Loans to private sector (LPS)	2 000	1. Government	800
		2. Private sector	4 000
		C. Loans: foreign sector	400
Total	**5 800**	Total	**5 800**

This *monetary analysis* also enables central banks to determine, from a date to a date (in practice month-end to month-end), the change (Δ) in M3 the balance sheet sources of changes (BSSoC) in M3 as follows:

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\Delta M3 = \Delta NFA + \Delta NLG + \Delta LPS.
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The actual sources of changes (ASoC) are of course the economic decisions and activities underlying the BSSoC, particularly the demand for bank loans (NFA is a small contributor). The details in this regard are elucidated in Faure (2012a and 2012b).

With this introduction, we may proceed. A reminder of the misconception: money creation begins with a bank receiving a deposit. If Bank A receives a new deposit of LCC 100 million, it is obliged to place LCC 10 million ($r = 10\%$) with the central bank (ΔRR). Once this is executed it can lend out LCC 90 million (LPS) (see Balance Sheets 4 - 5).

BALANCE SHEET 4: BANK A (LCC MILLIONS)			
Assets		Liabilities	
Reserves with CB (TR)	+10		
(RR = +10)		Deposits	+100
Loans	+90		
Total	+100	Total	+100

BALANCE SHEET 5: CENTRAL BANK (LCC MILLIONS)			
Assets		Liabilities	
		Bank reserves (TR)	+10
		(RR = +10)	
Total	0	Total	+10

When the new loan of LCC 90 million is made, this amount ends up as a deposit with the bank (we assume there is one bank[9]). The bank places 10% (= LCC 9 million)

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[9] If there is another bank, the interbank market will make the market balance. We do not introduce this detail here in the interests of only revealing principles.

with the central bank and lends out the rest (= LCC 81 million) (see Balance Sheets 6 – 7; continuations of Balance Sheets 4 - 5).

BALANCE SHEET 6: BANK A (LCC MILLIONS)			
Assets		Liabilities	
Reserves with CB (TR) (RR = +10 & +9) Loans Loans	+19 +90 +81	Deposits Deposits	+100 +90
Total	+190	Total	+190

BALANCE SHEET 7: CENTRAL BANK (LCC MILLIONS)			
Assets		Liabilities	
		Bank reserves (TR) (RR = +10 & +9)	+19
Total	0	Total	+19

This process continues until the full original deposit amount of LCC 100 million is "used up", ie becomes the RR amount, which may be expressed as (LCC million):

Total deposits: = new deposit x (1 / r)
                    = 100 x (1 / r)
                    = 100 x (1 / 0.10)
                    = 100 x 10
                    = 1 000.

In other words, the money creation process continues until a total of LCC 1 000 million deposits have been created (including the original deposit), and this was possible because the original deposit of LCC 100 million could be used as RR, that is, used to comply with the reserve requirement. Balance Sheets 8 – 9 illustrate this.

BALANCE SHEET 8: BANK A (LCC MILLIONS)			
Assets		Liabilities	
Reserves with CB (TR) (RR = +100) Loans	+100 +900	Deposits	+1 000
Total	+1 000	Total	+1 000

BALANCE SHEET 9: CENTRAL BANK (LCC MILLIONS)			
Assets		Liabilities	
		Bank reserves (TR) (RR = +100)	+100
Total	0	Total	+100

This reflects the money multiplier (m), expressed as the reciprocal of r:

m = 1 / r
       = 1 / 0.10
       = 10.

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It says that if the banking system is "given" LCC 100 million in ER, they are able expand the money "supply" (we say "stock") by ER x *m*.

There are major problems with this analysis, which is based on the literature-extracts presented above:

1. The central bank's balance sheet does not balance. There is no counterbalancing entry.
2. It is not possible for banks to place funds with the central bank (discussed again later).
3. It will have been noted that the analysis assumes that the amount of the deposit left over after the placement of the RR (= BD x *r*) with the central bank, that is, BD x (1 − *r*), is loaned out. What is it? Where is it?

Some of the literature-extracts do hint that it could be with the central bank as excess reserves (ER), and that it is somehow available to the bank. If it is with the central bank, the balance sheets appear as in Balance Sheets 10 - 11. Note that the central bank's balance sheet still does not balance.

BALANCE SHEET 10: BANK A (LCC MILLIONS)

Assets		Liabilities	
Reserves with CB (TR) (ER = +90) (RR = +10)	+100	Deposits	+100
Total	+100	Total	+100

BALANCE SHEET 11: CENTRAL BANK (LCC MILLIONS)

Assets		Liabilities	
		Bank reserves (TR) (ER = +90) (RR = +10)	+100
Total	0	Total	+100

If the bank is able to lend out the ER of LCC 90 million, Balance Sheet 12 applies. According to the literature the LCC 90 million arrives back as a deposit. However, the balance sheet is now seriously unbalanced.

BALANCE SHEET 12: BANK A (LCC MILLIONS)

Assets		Liabilities	
Reserves with CB (TR) (ER = +90; -90) (RR = +10)	+10	Deposits (+100; + 90)	+190
Loans	+90		
Total	+100	Total	+190

This analysis of the process of money creation is *unadulterated nonsense* and it is so for the following reasons:

- Where does the original deposit come from? One cannot just suck a deposit out of the air. The balance sheet of the depositor of LCC 100 million would

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have changed in the direction of deposits +LCC 100 million, but what is the other balance sheet item that compensates for this?

- No bank can create CBM, that is, it is not possible for a bank to place any amount with the central bank.
- As indicated above, because of the flawed starting point in the "explanation", the balance sheet of the central bank *does not balance* (see Balance Sheets 5 and 7).
- The major flaw is that the central bank did not buy an asset or reduce a liability in order to create reserves (CBM) for the bank.

It is quite evident that the new deposit can only originate from a new bank loan, as we expounded above. The ΔRR is satisfied by the central bank as indicated in Balance Sheets 13 – 14.

BALANCE SHEET 13: BANK A (LCC MILLIONS)			
Assets		Liabilities	
Reserves with CB (TR) (ER = 0) (RR = +10) Loans	+10 +100	Deposits Loans from CB (BR)	+100 +10
Total	+110	Total	+110

BALANCE SHEET 14: CENTRAL BANK (LCC MILLIONS)			
Assets		Liabilities	
Loans to banks (BR)	+10	Bank reserves (TR) (ER = 0) (RR = +10)	+10
Total	+10	Total	+10

We now move on to the literature that is plausible, but only to a degree: the new deposit is in cash (N&C).

THE LITERATURE: BANK DEPOSITS OF BANK NOTES

Much of the literature uses the example of the new deposit being made in the form of "cash" (ie N&C, or one or the other). We provide three examples:

University of Rhode Island (2012):

> "... Mary walks into ACM [Bank] with $100,000 in cash ... The bank will take Mary's $100,000 and add it to its assets, but it will send Mary away with an extra $100,000 in her checking account. Because the checking deposits have risen by $100,000, the bank will be required to hold 20 percent of this amount as additional reserves ... so the bank now has $80,000 in excess reserves - assets it will be making no money on. This sets the stage for the next stage when the bank undertakes policies to rid itself of the excess reserves. You can see double-entry accounting has resulted in an increase of $100,000 on both sides of the balance sheet."

Rittenberg and Tregarthen (2009:section 9.2):

"... suppose one of Acme Bank's customers deposits $1,000 in cash in a checking account. The money goes into the bank's vault and thus adds to reserves. The customer now has an additional $1,000 in his or her account ... Acme's balance sheet ... reserves and checkable deposits rise by $1,000 ... Reserves now equal $2,000 and checkable deposits equal $11,000. With checkable deposits of $11,000 and a 10% reserve requirement, Acme is required to hold reserves of $1,100. With reserves equaling $2,000, Acme has $900 in excess reserves ... Suppose Acme lends the $900 to one of its customers. It will make the loan by crediting the customer's checking account with $900. Acme's outstanding loans and checkable deposits rise by $900. The $900 in checkable deposits is new money; Acme created it when it issued the $900 loan. Now you know where money comes from—it is created when a bank issues a loan."

Doepke, Lehnert and Sellgren (2001:186):

"Assume for simplicity that each household simply deposits the cash. Assume also that there is only one common bank. Now since the reserve requirement is 10%, the bank places $10 of its new deposits on reserve at the local Federal Reserve System member bank. The remaining $90 it lends out again to some other household, household 1, so $H_1 = 90$. This household spends or deposits the money, as before, so a further $90 of deposits appear in the bank. Now the bank sends $9 to the Federal Reserve, and lends out $81 to household 2, so $H_2 = 81$. This process continues until the bank is lending out, to household i an amount H_i: $H_i = \$100(1 - 0:10)^i$. The amount of *new money* created is just the sum of all loans made to households as a result of the original $100 transfer, plus that $100."

These are interesting elucidations, and they are *largely* feasible. We say *largely*, because there are aspects to the above examples which render them misleading: (1) that the banking system is able to lend out excess reserves: *one bank can, but the system cannot*; (2) N&C make up 2-5% of M3. Therefore, to base a critical economic issue on new N&C deposits with banks (taken from under a pillow), is just not cricket.

REALITY VERIFICATION 2

As we have said, the only condition under which a new bank deposit can lead to the addition of bank reserves is if the deposit is made in N&C as in all three examples given in the previous section. Let us explore this.

If high net-worth Mrs A deposits LCC 100 million in N&C (which she had in a large tin box under her bed) at the bank her balance sheet will change as indicated in Balance Sheet 15.

BALANCE SHEET 15: MRS A (LCC MILLIONS)			
Assets		Liabilities	
N&C	-100		
Deposit at bank	+100		
Total	0	Total	0

The bank's balance sheet (see Balance Sheet 16) shows Mrs A's deposit and an asset in the form of N&C. The bank now has a deposit on which it is paying interest and an asset which does not earn interest.

BALANCE SHEET 16: BANK A (LCC MILLIONS)			
Assets		Liabilities	
N&C	+100	Deposit of Mrs A	+100
Total	+100	Total	+100

According the above three examples, because N&C rank as reserves (we assume that there is no BR, that is, they are ER), the bank is able to make new loans to the private sector (LPS), which creates a new deposit. Assuming a demand for a new loan exists (LCC 100 million), which is satisfied by Bank A, its balance sheet with change as indicated in Balance Sheet 17 ($r = 10\%$).

BALANCE SHEET 17: BANK A (LCC MILLIONS)			
Assets		Liabilities	

LPS (new)
Reserves (TR)
    (ER = -10)
    (RR = +10)
	+100
	0
		Deposits of PS (new money)	+100

Total	+100	Total	+100

However, the new N&C held by Bank A will most likely be surplus to its "cash" requirements (in its tellers' tills and ATMs). Also relevant here is the fact that N&C do not rank as reserves in some countries (South Africa, Rwanda, etc). In both these cases, banks will deposit them immediately with the central bank. The balance sheets of Bank A and the central bank are shown in (continuous) Balance Sheets 18 - 19. (Note that here we assume that N&C are issued by the central bank; when issued by government, government deposits will be reduced.)

BALANCE SHEET 18: BANK A (LCC MILLIONS)			
Assets		Liabilities	

N&C (from Mrs A)
N&C (deposited at CB)
Reserves at CB (TR)
    (ER = +90)
    (RR = +10)
	+100
	-100
	+100
		Deposit of Mrs A	+100

Total	+100	Total	+100

BALANCE SHEET 19: CENTRAL BANK (LCC MILLIONS)			
Assets		Liabilities	

		N&C
		Bank reserves (TR)
		    (ER = +90)
		    (RR = +10)
			-100
			+100

Total	0	Total	0

Because bank deposits increased by LCC 100 million, LCC 10 million shift to RR, and the balance of LCC 90 million is ER. As in the case of holding LCC 100 million in non-interest-bearing N&C, the bank now also has an asset (ER) that also bears no interest (RR does not either – in most countries - but it is not a "free" asset). If this situation was sanctioned by the central bank (assuming there were no BR before this transaction), interest rates would fall sharply and the bank will feverishly make loans in order to *create a balance sheet that will produce an income*.

How can it do this? It can only be done by making loans, which *creates* bank deposits (= money); and this can take place *up to the point where all the ER are absorbed into RR*. This level is reached when total new bank deposits created (by new loans) are equal to (LCC million):

$$\text{Maximum deposit increase} = \text{ER} / r$$
$$= 90 / 0.10$$
$$= 900.$$

The start (deposit of N&C) and final outcomes are shown in Balance Sheets 20 - 23.

BALANCE SHEET 20: BANKS (LCC MILLIONS)			
Assets		Liabilities	
N&C	+100		
N&C	-100		
Reserves at CB (TR)	+100	Deposit of Mrs A	+100
(ER = 0)		Deposits of rest of PS	+900
(RR = +100)			
Loans to NBPS	+900		
Total	+1 000	Total	+1 000

BALANCE SHEET 21: CENTRAL BANK (LCC MILLIONS)			
Assets		Liabilities	
		N&C	-100
		Bank reserves (TR)	+100
		(ER = 0)	
		(RR = +100)	
Total	0	Total	0

BALANCE SHEET 22: MRS A (LCC MILLIONS)			
Assets		Liabilities	
N&C	-100		
Deposits at bank	+100		
Total	0	Total	0

BALANCE SHEET 23: REST OF PS (LCC MILLIONS)			
Assets		Liabilities	
Deposits at banks	+900	Loans from banks	+900
Total	+900	Total	+900

The above is a pleasant and neat exercise, and it is based on the money multiplier. In essence it says that banks are required to obtain ER before they are able to make

new loans (assuming a demand for loans exists). Thus, it is correct in the analysis of money creation: new loans create new deposits (money) concurrently. In terms of the *monetary analysis* presented earlier, the ER of +LCC 90 million in existence after the new deposit of N&C by Mrs A, led to the creation of LCC 900 million of new loans and deposits (LCC million):

$$\Delta M3 = \Delta NFA + \Delta NLG + \Delta LPS$$
$$+900 = +0 +0 +900$$
$$= +900.$$

However, there are major issues at stake here:

1. The banks did not lend out the ER of +LCC 90 million, as indicated in the three literature examples above.
2. The banking system can only "get rid of" ER in the manner shown, that is, they can only do so by changing the dividing line between ER and RR - by new lending and concurrent creation of deposits.
3. A critical assumption is that a demand for new bank loans exists.
4. Banks in real life do not wait for the deliverance of ER in order to make loans. They make new loans when demand occurs and they are satisfied with the client (the ability to service the loan), and seek the required reserves afterwards.
5. The required reserves are always supplied by the central bank. This is an essential element of its functions, and it provides the BR at the KIR.
6. Typically the banks are required to "top up" additional reserves required to be held in the latter part of the month following the relevant month – as a result of the delay in submission in bank returns.
7. The RR is one of the many factors that influence bank liquidity (see Balance Sheet 2), and the central bank manipulates its own balance sheet (in the form of OMO) in order to make the KIR effective.
8. Monetary policy in normal times is conducted in terms of the interest rate-focused MP model, a summary of which was presented above.
9. The most critical issue here is: the above literature-extracts are based on N&C, which makes up 2-5% of M3.

A CONCLUDING REMARK

We reject out of hand the notion that money creation begins with a new deposit (from nowhere). It is also profoundly incorrect to base the critical economic issue of money creation on the supply of N&C. As profit maximising institutions, banks economise on holdings of N&C. Also, N&C makes up 2-5% of M3.

It is long overdue that the literature accepts that new bank loans (marketable or non-marketable) create new deposits (money) concurrently, and that the ∆RR is supplied by the central bank at the KIR as part of an interest rate-focused monetary policy.

This is not new knowledge. An excavation of the older literature will reveal this (we have done so elsewhere). Somehow it became outmoded in the era of Friedmanian Monetarism to demonstrate how simple the process of money creation is.

REFERENCES

Dilts, DA, 2006. *Introduction to macroeconomics*. Fort Wayne: Indiana-Purdue University.

Doepke, M, Lehnert, A, Sellgren, AW, 2001. *Macroeconomics*. Los Angeles: UCLA.

Dwivedi, DN, 2010. *Macroeconomics: theory and policy*. Third edition. New Delhi: Tata McGraw Hill.

Faure, AP, 2011a. *A fine system: the story of money creation*. Unpublished manuscript (being reviewed for publication).

Faure, AP, 2011b. *Fundamentals of money creation*. Online course. Geneva: United Nations Institute for Training and Research. Can be seen at:
 http://www.unitar.org/event/fundamentals-money-creation.

Faure, AP, 2012a. "Money creation: reflections of an ex-central banker on exogenous / endogenous money." *Monetary Economics eJournal*. Vol 4, 27 June. SSRN Library. Can be accessed at: http://ssrn.com/author=1786379.

Faure, AP, 2012b. "Money creation: the sources." *Monetary Economics eJournal*. Vol 5, 31 July (schelduled). SSRN Library. Can be accessed at: http://ssrn.com/author=1786379.

Food and Agricultural Organisation, 2012. *Implications of economic policy for food security : a training manual*. Available at:
 http://www.fao.org/DOCREP/004/X3936E/X3936E13.htm. Accessed 14 July 2012.

Hawkins, P and Torr, C, 2012. "Banks". In van Wyk, K, Botha, Z and Goodspeed, I, 2012. *Understanding South African financial markets*. Pretoria: van Schaik Publishers.

McEachern, WA, 2009. *Economics: a contemporary introduction*. Eighth edition. Mason, USA: South-Western Cenage learning.

Parkin, M, 2010. *Economics*. Cape Town: Pearson Education South Africa (Pty) Limited.

Rittenberg, L and Tregarthen, T, 2009. Principles of Macroeconomics. Colorado: Flat World Knowledge.

University of Nebraska, 2012. "How banks create money". *Virtual Economics Resource Library*. Available at:
http://ecedweb.unomaha.edu/ve/library/hbcm.pdf. Accessed 14 July 2012.

University of Rhode Island, 2012. "Money supply: the Fed and the creation and control of money". Teaching notes. Available at:
 http://www.uri.edu/artsci/newecn/Classes/Art/INT1/Mac/1970s/Money.supply.html. Accessed 20 July 2012.