

Rochon's Five Propositions on Bank Credit Creation

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Introduction

Ever since obtaining the [Encyclopedia of Central Banking](#) the idea was dawning on me that, besides the researchers in the field of monetary history and theory familiar to us in the monetary reform movement, there is a whole other research programme which looked into bank credit creation and that is the Post-Keynesian one and its theory of endogenous money, i.e. the idea that money is generated from within the economic system by commercial banks, and is not coming from an outside source (exogenous) like a central bank or other kind of monetary authority, as many economists, bankers and educated laypersons actually believe is the case.

The central document addressed in this article by Canadian economist, Louis-Philippe Rochon, is clear evidence how much Post-Keynesians were ahead in their thinking about bank credit money. This Post-Keynesian angle is very important, because the Monetary Reform Community is behind the bend somewhat in processing its theoretical contributions. Starkly put, we overlooked it.

As the compiler of an [on-line bibliography](#) dedicated to monetary history, theory and reform, I did find many Post-Keynesian papers and books addressing the bank credit creation theory and put them therefore in the bibliography. But only recently I started getting a sense of its history and its important researchers.[2]

Rochon's 2001 Paper

[Louis-Philippe Rochon](#) is a macroeconomist at the Laurentian University, Ontario, Canada. He has an incredible output and works closely with the Swiss economist Prof. Sergio Rossi, who was interviewed by AMI last year for its yearly conference. Together they edited the aforementioned *Encyclopedia of Central Banking*.

In this 2001 paper Dr. Rochon addresses the idea that, besides some American economists like Nicholas Kaldor and Hyman Minsky, there were some economists in the UK, at Cambridge University, like Joan Robinson and Richard Kahn, who also had done breakthrough work on endogenous money. Rochon's article is very useful because he distills the theory of endogenous money into five propositions, which I like to share in the next section.

Rochon's propositions were picked up by Malaysian economist Prof. Sabri Nayal et al in a 2013 paper, adding some formulas to the propositions to make clear how much these were outright inversions of mainstream economic thinking, but also, and more importantly, to test the hypothesis of endogenous money. This paper was authored by four Malaysians all working at the same Faculty of Business and Management at the Universiti Teknologi MARA in the state of Perlis.

Endogenous Money in Five Propositions

Below are, according to Rochon (2001: 294), the five propositions of the theory of endogenous money, followed by their formalizations according to Naya et al (2013: 49). I added some comments for clarification.

Proposition 1. Money & Income

The causality between money and income in the Quantity Theory is reversed. Specifically, causality runs from the expected (or desired) income of firms, to the demand for credit, and then to money and effective income. (Rochon)

$PE \rightarrow DC \rightarrow MC \rightarrow ED$ (Nayal)

So, the causal chain goes from first Expected Profit (PE) by a firm based on economic projections. This leads to a Demand for Credit (DC) from a bank in order to fund necessary investments. When the bank evaluates the loan application as feasible, then Money Creation (MC) takes into effect by booking the loan amount and the corresponding bank deposit of the payee. This triggers a chain of Effective Demand (ED) of purchasing capital goods, half-finished products, raw materials and labor.

This sequence can also be applied to consumer credit, which starts with 1) an assessment of one's consumption desires and one's income, to 2) application for a loan, to 3) possible approval resulting in a credit *ex nihilo* in one's account, to 4) purchasing one's desired goods.

Proposition 2. Reserves, Deposits & Loans

The causality between reserves, deposits and loans is reversed. Reserves are endogenous and have no causal influence on loans. This implies that the money multiplier model must also be rejected. (Rochon)

$L \rightarrow D \rightarrow R$ (Nayal)

Loans (L) create deposits (D) when credit is extended *ex nihilo* by a commercial bank and deposited in the borrower's account. Then the loans have to be backed up by a fractional reserve (R), which is almost automatically obtained from (or accommodated by) other banks or one's central bank.

The mainstream understanding seems to be that a bank first obtains reserves, after which it can make loans and subsequent deposit. The equation for that would look like:

$R \rightarrow L \rightarrow D$

The money multiplier theory, which Rochon rejects, is based on the idea that, when a loan is made based on passing on a large fraction of a bank's deposits, this loan will be deposited eventually in the account of a merchant, and that a large fraction of this deposit itself then can be used to create another loan. For example, a bank under the requirement of holding a 10% reserve, can loan out \$9,000 after it receives a \$10,000 deposit. Of the \$9,000 deposited in the next bank 90% can again be loaned out, i.e. \$8,100. And so on and on.

Proposition 3. Savings & Investments

The causality between savings and investment is reversed. Firms must finance production before any saving is generated. (Rochon)

$$I \rightarrow S$$

This formula was not provided by Naya, but is the obvious reversal of the mainstream understanding that savings have to be made first before they can be passed on to borrowers as investments:

$$S \rightarrow I$$

Proposition 4. Interest Rate

The rate of interest is exogenous; it is not determined by any market mechanism where demand and supply schedules interact. (Rochon)

Staying with the theme of catching some of these propositions and their erroneous counterparts in formula, the interest rate (i), as a function of central bank decisions (CB) can be formalized as follows:

$$i = f(\text{CB})$$

Both mainstream and folk economics assume that a price finding mechanism is in effect which determines the price of money expressed in an interest rate. This price, assumedly like any other market mechanism, would be the equilibrium result of, on one side, the demand for credit by consumers and producers (C_d) and, on the other side, its supply by savers and investors (C_s). This can be formalized as:

$$i = f(C_d; C_s)$$

This apparently is not the case.

Proposition 5. Money Creation & Destruction

The money supply is “demand-determined and credit-driven.” Money is created *ex nihilo*; it is not a result of portfolio decisions. In this sense, money exists in a continuous circular flow and is a result of the demand for credit that allows firms to fulfill their expenditure plans. The supply of credit is endogenous, based on the decisions of commercial banks. Money is primarily a flow, created by credit, and it is extinguished through the repayment of loans. (Rochon)

This feature of ‘money creation & destruction’ in the money circuit is for most people the most counter-intuitive aspect and needs to be hammered home. Rochon’s Proposition 1. already referred to money creation (MC), but it has to be explicated in more detail. It is really now widely accepted that commercial banks, when you take out a loan, merely book the borrowed amount in your account and receive the loan contract as an asset (McLeay et al, 2014; Werner, 2014; Titus, 2019). This operation is represented below in figure 1 of a bank’s balance before and after extending a loan.

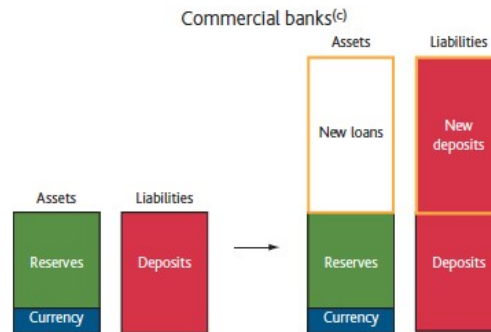


Figure 1. Bank balance before and after extending a loan (McLeay et al, 2014: 3)

In this figure, generated by the research department of the Bank of England, it is clear that the bank's balance sheet has increased by the amount of the loan and that a new deposit was created for the borrower *ex nihilo*, which increased the money supply by the same amount. When a loan is paid off the process goes in reverse. The bank's balance sheet shrinks by the amount paid off and the money supply shrinks by the same amount. Though there is empirical evidence for the specific procedures and accounting steps taken when originating a loan (Werner, 2014), the reverse process of money destruction has not been accorded a similar detailed investigation. Meanwhile, the interest on the loan is booked as income for and by the bank. That is their compensation, disproportionate according to many, for evaluating the borrower, originating the loan, monitoring its pay-back, and taking a certain risk in doing so.

So, even if we are relatively ignorant about the procedural and accounting specifics of money destruction within a commercial bank when it receives a paid-off principle, we do have a few sets of verification for the credit creation and destruction theory. The most convincing set consists of research and admissions coming from the banking sector itself, including central banks. The second set consists of the series of papers and books in the last thirty years by the German economist Richard Werner. The third set are the macroeconomists working within the Post-Keynesian framework doing empirical work. The fourth set is comprised of all the modelers who incorporated the credit creation theory and produced interesting results. And fifth, all the non-economist social scientists and independent researchers who picked up the theory and worked it out within their own field of specialization, especially historians and sociologists.

The Nayan Paper

I will be short about this possibly important paper. Even though it initially got me on the trail of Rochon's paper, I liked it also for adding some formulas, to which I tried to add some more. It presented some calculations based on 'System GMM' I cannot follow, but can be appreciative of, if correctly represented in the abstract. It is a short, powerful paper, the abstract of which reads:

Post Keynesian economics is actually macroeconomics in a world of uncertainty and endogenous money. Post Keynesians posit that money supply in a market oriented production economy is endogenous or endogenously determined (rather than exogenous as claimed by Monetarists). Money supply is said to be endogenous if it is determined within the economic system itself. The present paper investigates this theory using a panel dataset of 177 countries

from year 1970-2011 utilising dynamic panel data analysis and has found that money supply is endogenous as proposed by Post Keynesian theorists.

And if you look at the [list of publications citing this paper](#) on Google Scholar you will find many studies geared towards testing the theory in single countries (like Chai et al, 2018).

The paper poses also a good question in the form of an observation: “It is curious why the seemingly erroneous conception implied by the money multiplier model prevailed so long among academic economists”(Nayan: 218). The more so because the credit creation theory was already formulated a hundred years ago (Werner, 2016). More importantly it concludes that it is “legitimate to assert that endogeneity of the money supply is a universal phenomenon in the modern economy”(Nayan: 236).

Conclusion

Rochon’s paper, presenting five propositions regarding the credit creation theory of banking as seen from a Post-Keynesian framework, is a welcome contribution to our evolving understanding of the current monetary system, because it brings into play many other economic variables we have to keep in mind like savings, investments and the dynamics of the demand and supply of credit. It overall confirms what the monetary reform movement knew to be the case, i.e. banks create almost the whole of the nation’s supply of money, which comes with the awesome power of credit allocation, which is far from prudently handled, creating inequality and destructive financial crises. On this last point we have to see if the Post-Keynesians agree and, if so, if they would also agree if sovereign monetary reform is the wise policy to promote to redirect the system towards the economic well-being of society in general and not a small elite. We know some of them do agree. Maybe it is time to find more.

Sources

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Footnotes

[1]. I did write about some of these researchers in a small unposted article criticizing Stephen Zarlenga for adhering to the deposit multiplier theory and only belatedly catching on to the credit creation theory with the 2014 Bank of England paper.

[2]. The Quantity Theory of Money is the monetarist formula to express their understanding of the correlation between the money supply, money velocity, production and prices. It is formalized as: $MV = PT$. The money supply times yearly velocity equals the average prices times the total amount of goods produced.