A CRITICAL ANALYSIS OF THE CREDIT CREATION, FRACTIONAL RESERVE, AND FINANCIAL INTERMEDIATION THEORIES OF BANKING

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ABSTRACT

According to the financial intermediation theory of banking, banks are mere intermediaries like other non-bank financial institutions that collect deposits which are then lent out. According to the fractional reserve theory of banking, individual banks are merely financial intermediaries who cannot create money, but collectively create money through systemic interaction. A third theory asserts that each individual bank has the power to create money "out of thin air" and does so when it extends credit (credit creation theory of banking). The question of which theory is correct has far-reaching implications for research and policy. This paper carries a critical analysis of the three popular theories by referring to select pieces of literature. The analysis leads us to the conclusion that the literature review has identified a gradual evolution of views from the theory of credit formation through the theory of fractional reserves to the current ubiquitous theory of financial intermediation. Development was not entirely smooth; several influential writers either changed their views (occasionally several times) or shifted between theories.

***Keywords**: Banking theories, Credit Creation, Fractional Reserve, Financial Intermediation*

Introduction

From around the 1930s to the late 1960s, the prevailing view was that the banking system was "unique" because banks, unlike other financial intermediaries, could collectively create money based on a fractional reserve or "money multiplier" model of banking. However, despite their collective power, each individual bank is seen in this concept as a mere financial intermediary, collecting deposits and lending them without the ability to create money. This view should be called the fractional reserve theory of banking. There is a third theory about the functioning of the banking sector, which prevailed in the first two decades of the 20th century. Contrary to the theory of financial intermediation and in line with the theory of fractional reserves, he argues that the banking system creates new money. However, it goes further than the latter and differs from it in many ways. They argue that each individual bank is not a financial intermediary that transfers deposits or reserves from the central bank when lending, but instead creates the entire loan amount out of thin air. This view should be called the credit theory of banking. The three theories are based on different accounts of how money and banking work and differ in their policy implications. Interestingly, the dispute over which theory is correct has never been resolved.

It depends on which of the three theories is correct - not only for the correct understanding and modeling of the role of banks in the economy, but also for the design of appropriate banking regulation that aims at sustainable economic growth without crises. The modern approach to banking regulation, as implemented at least since Basel I (1988), is based on the understanding that the theory of financial intermediation is correct. Banking regulation based on capital adequacy, even of the countercyclical type, is less likely to ensure financial stability if one of the other two banking hypotheses is correct. The capital adequacy approach to banking regulation adopted by the BCBS, as seen in Basel I and II, has so far not been successful in preventing major banking crises. If the theory of financial intermediation is not an accurate description of reality, it would call into question the appropriateness of Basel III and similar national approaches to banking regulation, such as that of the UK.

This paper carries a critical analysis of the three popular theories by referring to select pieces of literature.

Literature review

a. **Credit creation theory:** Influential early authors who argue that non-issuing banks have the power to individually create money and credit out of nothing wrote

mostly in English or German, namely Wicksell, (1898), Wicksell, (1907), Withers (1909), Schumpeter (1912), Moeller (1925) and Hahn (1920). A review of the proponents of the credit creation theory must begin with Henry Dunning Macleod of Trinity College, Cambridge, and barrister of the Inner Temple. Macleod produced an influential opus on banking entitled The Theory and Practice of Banking in two volumes. It was published in many editions until the 20th century. Regarding the creation of credit by individual banks, Macleod argued unequivocally that individual banks create credit and money out of thin air whenever they do what is called "lending":

In modern times, private bankers stopped issuing notes and only created credits in favor of their customers, which were drawn by cheques. These credits are referred to as deposits in banking parlance. Now, many people who see a physical bill that is only a right recorded on paper are willing to admit that the bill is cash. But for lack of a little forethought, they experience difficulty with what they see as deposits. They admit that a note is an "issue" and a "currency," but they do not understand that a bank loan is exactly the same, as are "issue," "currency," and "circulation."

While Withers was a financial journalist, his writings were widely circulated and probably contributed to the spread of credit creation theory in the form proposed by Macleod (1855–1856). This view also caught on in Germany with the publication of Schumpeter's (1912, English 1934) influential book The Theory of Economic Development, in which he unequivocally expressed his opinion that each individual bank had the power to create money out of thin air.

There really is such a thing as a confirmation of future production or the granting of purchasing power based on the promises of an entrepreneur. This is a service that the banker performs for the entrepreneur, and the entrepreneur turns to the banker to obtain it. The banker would not be an intermediary, but a producer of credit, i.e. he would create the purchasing power himself, which he lends to the entrepreneur. It could be said, without committing a great sin, that the banker creates money.

In addition to Schumpeter, a number of other German-written authors also argued that banks create money and credit individually through the lending process.16

Very influential in academic discourse and public debate was Dr. Albert L. Hahn (1920), scion of the Frankfurt banking dynasty (like Thornton, who was a banker) and from 1919 director of the important family Effecten- und Wechsel-Bank in Frankfurt. Like Macleod, a trained lawyer, he became an honorary professor at the Goethe University in Frankfurt in 1928. Hahn was clearly aware not only of the works of Macleod he cites, but was probably also aware of actual banking practice from his family business truly "create money out of thin air". Every loan that is granted in the economy creates a deposit and thus the means to finance it. The conclusion from the described process can be expressed in the opposite way that every deposit that exists somewhere and somehow in the economy was created by the previous provision of credit.

It can be said that support for the theory of credit creation seems to be quite widespread in English and German academic publications in the late 19th and early 20th centuries. By 1920, the theory of credit creation had become so widespread that later critics called it the "contemporary view", the "traditional theory", or the "time-worn theory of bank credit".

Credit creation theory remained influential into the early post-war years. The linkages of credit creation to macroeconomic and financial variables were later formalized in the quantitative theory of credit (Werner, 1992, Werner, 1997, Werner, 2005, Werner, 2012), which argues that credit for (a) productive use in the form of investment in the production of goods and services are sustainable and non-inflationary as well as less likely to become non-performing loans, (b) non-productive use in the form of consumption leads to rising consumer prices and (c) non-

productive use in the form of asset transactions leads to asset inflation and, is-if large enough, to banking crises. However, since the 1920s, serious doubts about the veracity of the theory of credit creation in banking have spread. These doubts were initially voiced by economists who supported the theory in principle but downplayed its importance. It was this group of authors that served as a springboard for the formulation of the modern theory of fractional reserves, which, however, in its most widespread (and later) version claims that loans cannot be created by individual banks, but only by the banking system as a whole.

b. **Fractional Reserve theory:** Phillips (1920) argued that it is important to distinguish between the theoretical ability of an individual bank to "make money" by lending out surplus money and reserves on the one hand, and the ability of the banking system as a whole to do this on the other. He argued that the "old theory" (credit creation theory) was based on the proposition that a bank would be able to make loans to the extent of several times the amount of additional cash newly acquired and held at the time the loans were made, while the representative bank in the system is actually normally able to lend an amount only roughly equal to such cash.

According to Phillips (1920), individual banks cannot create credit or money, but collectively the banking system does because the new reserve is broken up into small fragments and dispersed among the banks of the system. Through the process of dispersion, it becomes the basis of the multilateral expansion of credit. Each bank is considered primarily as a financial intermediary: the banker deals primarily with the financial resources of others. Phillips argued that since banks target specific cash-to-deposit and reserve-to-deposit ratios (as indicated by the money multiplier) that they wish to maintain, each bank effectively acts as an intermediary, lending as much as it can muster cash. Through a process of dispersion and repetition, the financial intermediation function of individual banks, without the ability to create credit, adds to the overall expansion of the money supply.

Keynes (1930) also supported a key component of fractional reserve theory, namely that banks collect deposits and deposit part of them with the central bank, or alternatively they can withdraw funds from their reserves with the central bank to lend to the non-banking sector of the economy. When a bank has a balance with the Bank of England beyond its usual requirements, it can make an additional loan to the commercial and manufacturing world, and this additional loan creates an additional deposit (in favor of the borrower or in favor of the credit) those to which he may decide to transfer) on the other side of the balance sheet of this or that bank.

Here, Keynes argues that new deposits based on new loans are dependent on and linked to bank reserve balances held at the central bank. This view is sometimes supported by current central bankers, for example in the proposal by Paul Tucker or the ECB to introduce negative interest rates on bank reserves at the central bank as an incentive to "move" their money out of the central bank and increase credit. However, part of Keynes (1930) and much of his most influential work, his General Theory (Keynes, 1936), appear more in line with the theory of financial intermediation.

A representative example of fractional reserve theory, which at the same time was beginning to point in the direction of financial intermediation theory, is the work of Lutz (1939), who published in Economica, a forum for some of these debates at the time. The expansion of the economic system leads to an increase in the volume of deposits to a number that far exceeds the amount of additional cash in use, simply because the same cash is deposited in the banking system over and over again. So the fact that banking statistics show the sum of deposits well above the volume of cash in the banking system is not in itself an indication that the banks must have made up the whole difference. Of course, this conclusion is also somehow implicit in the "multiple expansion" theory of bank deposit creation

(of the Phillips or Crick variety). This theory explains the creation of deposits by the fact that the same cash (in decreasing amounts) is gradually paid into different banks. However, he sees this movement of cash as more of a technical matter between banks that would disappear if the individual banks merged into one. In such a case, the deposits would be believed to have been formed by direct creation. In our example, we assume only one bank, and yet deposits grow from the public returning the same cash over and over again. The force that really creates expansion is the trade credit that producers give each other. The bank plays the role of a mere intermediary.

What Samuelson calls the "expansion of multiple deposits" is described in the same way and with remarkable similarity in the fifteenth edition of his book (Samuelson & Nordhaus, 1995) half a century later, only the reserve requirement given as an example has been reduced to 10%: All banks they can do what one cannot do alone. There are subtle, though important, differences. The total space devoted to this topic is much smaller in 1995 than in 1948. A modern textbook says that the reserves created by the central bank are used by banks "as input" and then "transformed" "into a much larger volume of banks money”. There are far fewer attempts to deal with the theory of credit creation. Instead, each bank is clearly represented as a pure financial intermediary that collects deposits and lends that money (minus minimum reserve requirements). Fractional reserve theory has become mainstream. Any small bank has a limited ability to expand its loans and investments. It cannot lend or invest more than it has received from depositors.

Meanwhile, bank deposit money is "supplied" through the "financial system" in an abstract process over which each individual bank has little control. Thus, it seems that the unequivocal theory of fractional reserves arose in the years after the 1950s.

c. **Financial intermediaton theory:** While the fractional reserve theory of banking was influential from the 1930s to the 1960s, Keynes may have planted important seeds of doubt. Keynes (1930) already uses inverted commas in his 'Treatise' to suggestively refer to the 'Creation' of Bank Money' (section title). This rhetorical device, used by an expert already hailed as the world's leading economist, implied disapproval, as well as mockery, of the notion that banks could create money out of thin air. The device was copied by many other writers after Keynes, who also emphasized the role of banks as "financial intermediaries". The banker owns resources to lend or invest, equal to a large part (almost 90%) of the deposits accruing to his depositors. If his deposits are Savings deposits, he acts only as an intermediary for the transfer of loan capital. In the case of cash deposits, it acts both as a provider of money for its depositors and as a provider of resources for its lending customers. Thus, the modern banker performs two distinct sets of services. It provides a substitute for government money by acting as a clearing house and transferring current payments back and forth between its various customers through credit and debit entries. However, it also acts as an intermediary in relation to a certain type of loans, accepting deposits from the public, which it uses in the purchase of securities, or in the provision of loans to industry and commerce, mainly to meet the demand for working capital. This duality of function is the key to many difficulties in the modern theory of money and credit, and the source of some serious confusion of thought.

Schumpeter (1954) commented on this shift in Keynes's view. "Deposit-forming bank credit and its role in financing investments without prior saving of the amounts borrowed in this way have practically disappeared in the analytical scheme of the General Theory, where the saving public is once again on the scene. In fact, orthodox Keynesianism has reverted to the old view. Whether this represents progress or retrogression is up to each economist to decide for himself.

The early post-war period saw the unprecedented influence of Keynes's

general theory, and the Keynesian school of thought, which managed to ignore Keynes's earlier writings on bank credit creation, became dominant in academia. Since the former leading proponent of both the credit creation and the fractional reserve theories of banking has shifted his position to a new theory of financial intermediation, it is not surprising that others will follow.

A very influential challenge to the fractional reserve theory of banking was presented by Gurley and Shaw (1955), Gurley and Shaw (1960). They rejected the view that banks are different in their ability to create loanable funds out of hand, while other intermediaries are instead occupied with the modest intermediary function of transferring loanable funds that are somehow created elsewhere (1955). Apart from the usual rhetorical devices to denigrate alternative theories, Gurley and Shaw's real argument was that banks should not be singled out as "special" because the financial intermediation function of banks is identical to that of other financial intermediaries. There are many similarities between the monetary system and non-monetary intermediaries, and the similarities are more important than the differences. Both types of financial institutions create financial claims; and both may engage in multiple creation of their particular liabilities in relation to any one class of assets they hold.

Banks only appear to be different because regulators mistakenly chose to single them out for special regulation. According to Tobin, commercial banks are different because they are controlled, not the other way around (Guttentag & Lindsay, 1968). Tobin and Brainard's (1963) portfolio model did not distinguish between banks and non-bank financial intermediaries, in fact it completely ignored the role of banks and contributed significantly to the modern mainstream view of non-bank economic models. Branson (1968) further developed Tobin's new approach, which was popular in leading journals.

Guttentag and Lindsay (1968) wrote in the Journal of Political Economy that despite Gurley and Shaw's (1955) challenge, the question of uniqueness on the other hand remains unresolved. They argued that banks differ in their role and impact from non-bank financial intermediaries because commercial banks have a greater ability to change the total volume of credit than other financial intermediaries. These points provide a rationale for special controls on commercial banks that go beyond the need to prevent financial panics. It is the justification that defenders of the traditional view that commercial banks are "unique" have been looking for ever since Gurley-Shaw challenged that view.

Tobin (1969) boldly repeats his view in an article presenting his portfolio balancing approach to financial markets, which argues that financial markets are complex networks of assets and prices, so that banks are one of many types of intermediaries without any special role. This was the first article in the first edition of the new Journal of Money, Credit and Banking. Although its name may suggest an openness to different theories of banking, in practice it only published articles that did not support the theory of credit creation and were mostly in line with the theory of financial intermediation. This also applies to most other journals classified as "leading journals" in economics (for example, using the 4 ranked journals from the British Association of Business Schools' list in economics). Henceforth, a portfolio balancing approach was to prevail, treating all financial institutions as mere portfolio managers. It helped the theory of financial intermediation to become the dominant creed among economists around the world.

Conclusion

Since the 1960s, it has become conventional wisdom not to view banks as unique and capable of creating money, but instead as mere financial intermediaries like other financial firms, in line with the financial intermediation theory of banking. Banks were thus omitted from economic models, and financial models did not indicate that bank actions would have significant macroeconomic effects. The questions of where money comes from and

how the money supply is created and allocated remained unresolved.

The literature review identified a gradual evolution of views from the theory of credit creation to the theory of fractional reserves to the current ubiquitous theory of financial intermediation. Development was not entirely smooth; several influential writers either changed their views (occasionally several times) or shifted between theories. Keynes, as an influential economist, did little to improve clarity in this debate, as he can be quoted in support of each of the three hypotheses he appears to have gone through in turn. Some institutions, such as the Bank of England, managed to issue statements supporting all three theories.

From the literature survey, we conclude that all three theories of banking were well represented during the 20th century by leading personalities of the time. Despite a century or so of theorizing about the matter, little progress has been made in unambiguously establishing the facts. So the conclusion of 1968 applies today, namely that the matter cannot be considered "settled". It is possible that the pendulum is about to swing away from the theory of financial intermediation to one of the other two.

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