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The decline of traditional banking and endogenous money

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DEPARTMENT OF ECONOMICS WORKING PAPER SERIES

The Decline of Traditional Banking and Endogenous Money

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Working Paper No: 2008-16

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1. Introduction

The central proposition behind Endogenous Supply of Money is the notion that the driving force of money creation process is the non-financial business sector's demand for credit. Though the theory lends itself to various different interpretations, the basic idea is straight forward: Loans banks extend to firms return to them in the form of new deposits, leading to an increase in bank reserves - in one way or another - and causing the money supply to expand. In this account of the money creation process, the emphasis is on firms' demand for commercial and industrial loans and thus on traditional banking. However, traditional banking has been on the wane ever since financial deregulation began in the early 1980s, if not earlier. As banks' lost many of their advantages in collecting funds they had to innovate drastically and move into new lines of business, transforming the credit mechanism along the way. Not only bank loans' importance in overall credit has decreased as a result, but also the share of commercial and industrial loans in banks' assets steadily declined.

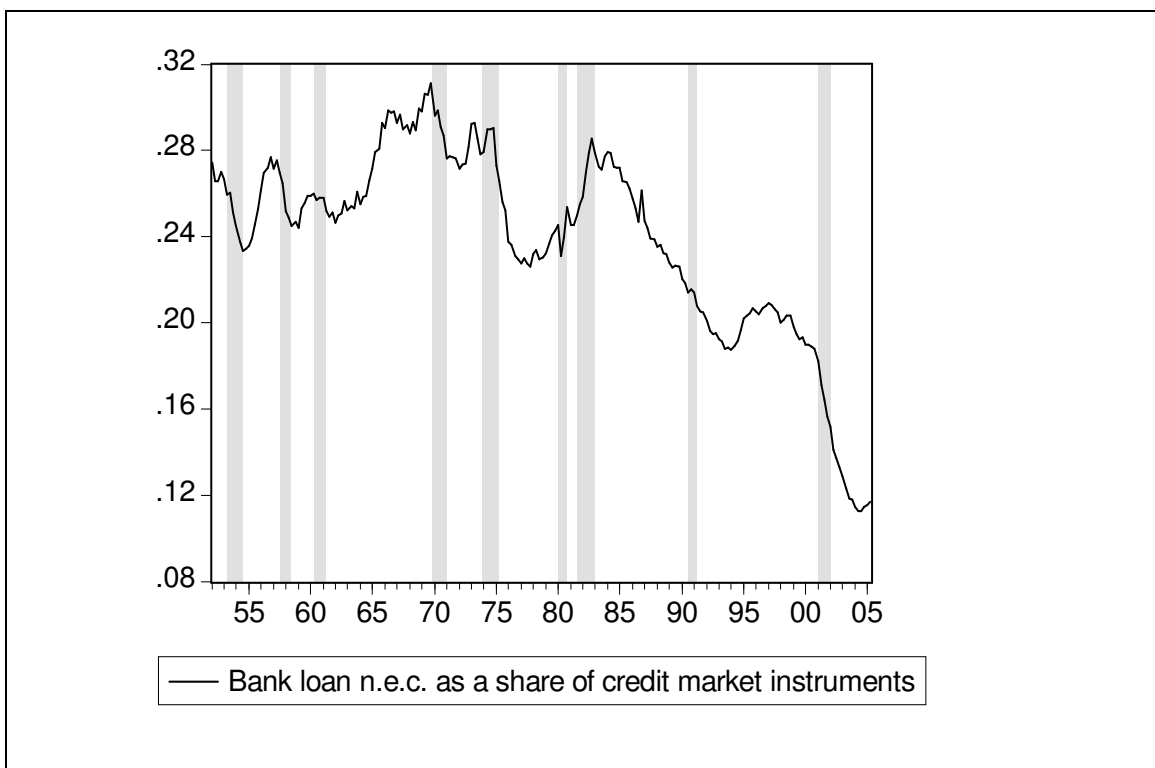
Yet, the growing importance of non-bank sources of credit attracted little attention within the endogenous money tradition and conceptualizations of the money supply process continued to rest on traditional banking. Much of the early work on endogenous money focused on the empirical relationship between commercial and industrial loans and the working capital needs of private businesses. Attention later began to shift onto the relationship between total demand for bank credit and the broad money supply as financial transactions and the credit needs of households in financing non-GDP transactions were also taken into account. But, debate within the endogenous money theory throughout the 1990s remained anchored stubbornly on two questions that had little direct bearing on the changing nature of financial intermediation: was it central bank accommodation or financial innovation that primarily enabled banks fulfill reserve requirements; and, whether interest rates were policy or market driven. One view emphasized central bank accommodation and policy driven interest rates, while the other held that it was financial innovation along with greater influence of market forces on rates that mattered (Pollin 1992).

In the meantime, financial intermediation was rapidly shifting out of banks with an explosive increase in non-bank lending (Barber and Ghilarducci 1993, and D'Arista 2002). In retrospect, Dow and Dow (1989: 159) were prescient in an early article as they linked rising asset prices to demand for loans "whether or not real production has increased." Later, Howells and Hussein (1999) were again on target when they emphasized that loans to finance non-GDP goods were equally important in the endogenous money creation process. Others, including Palley (1995), were examining the impact of non-GDP transactions in the housing and financial markets on the transactions demand for money. But, notwithstanding these important exceptions, the diminishing importance of traditional banking and its implications for the money supply process have not figured prominently in discussions within the endogenous money tradition.

2. Decline of Traditional Banking

The share of bank loans¹ in overall borrowing of nonfarm nonfinancial corporate sector shows a clear cyclical pattern, but also a declining trend is unmistakable since the early 1980s (Figure 1). During this period, bank loans are increasingly replaced by nonbank short-term borrowing and long term mortgages, and with firms increasingly utilizing a variety of other debt instruments, they cease to be the biggest source of funds for nonfarm nonfinancial corporations (Wheelock, 2004).

Figure 1: Bank Loans n.e.c. as a Share of Credit Market Instruments of Nonfarm Nonfinancial Corporate Sector



Notes: Shaded areas reflect economic recessions.

Source: Estimated from Table L.102, Flow of Funds Accounts.

The decline in traditional banking is quite evident when looked at from the point of view of lenders as well. With deregulation depository institutions have lost many of their advantages in collecting funds as competition from new financial instruments

¹ Unless otherwise specified ‘bank loans’ refer to “bank loans not elsewhere classified” from flow of funds accounts.

deepened. As Table 1 shows, the relative size of depository institutions in terms of asset size in the financial sector declined continuously since 1960. High inflation during the 1960s and the 1970s on the one hand, and upper limits on the deposit interest rate on the other, have both contributed to the decline of their relative size (Edwards and Mishkin, 1995; Samolyk, 2004). In addition, funding requirements for pension funds, stipulated by the Employee Retirement Income Security Act (ERISA) of 1974, reinforced this trend by having the effect of shifting household savings from commercial banks toward pension funds and mutual funds. The overall effect was an “asymmetrical increase in borrowing through capital markets” (D’Arista 2002: 3). For demand for credit market instruments increased significantly as bonds and commercial paper became the assets of choice for institutional investors like pension funds. Subsequently, direct finance in corporate borrowing through credit market instruments started to increase its share at the expense of bank borrowing as well.

Table 1: Percent Share of Assets by Financial Sector^A, (%)

	1960	1970	1980	1985	1990	1995	2000	2005: 2
Depository Institutions ¹	54.65	54.41	51.96	44.18	36.08	27.78	22.83	24.22
Insurance Companies ²	22.38	17.38	14.34	12.77	13.94	13.39	11.23	11.64
Private Pensions	6.44	8.56	11.38	14.30	12.03	13.79	12.23	9.38
Public Pensions ³	5.32	6.07	6.06	6.69	7.92	8.92	8.68	7.62
Mutual Funds ⁴	3.68	3.66	3.24	5.79	8.54	13.04	17.95	16.42
GSEs & Agency- and GSE-backed Mortgage Pools	1.86	3.55	6.86	8.07	11.08	11.79	12.52	13.59
Nonbank Lenders ⁵ Security	4.58	4.89	4.73	4.24	4.41	3.37	3.29	3.12
Brokers&Dealers	1.05	1.12	1.01	1.82	1.94	2.71	3.43	4.37
Others ⁶	0.03	0.37	0.43	2.13	4.05	5.21	7.84	9.63

^A All numbers are year-end results except 2005 which is 2nd quarter.

¹ Includes commercial banks, saving institutions, and credit unions.

² Includes life insurance companies and other insurance companies.

³ Includes state and local government employee retirement funds, and federal government retirement funds.

⁴ Includes money market mutual funds, mutual funds, and closed-end and exchange-traded funds.

⁵ Includes finance companies and mortgage companies.

⁶ Includes asset-backed securities issuers, real estate investment trusts and funding corporations.

Source: Estimated from Tables L.109 through L.131 of Flow of Funds Accounts.

Depository institutions could never recover their ground, though they tried introducing new types of deposits to do so to no avail. Table 1 gives an idea about how much market share they lost during this period. The spread of loan securitization in mortgages, auto and consumer loans enhanced this trend; and government-sponsored enterprises, mortgage pools, and asset-backed security issuers increased their share in

financial markets (D'Arista, 2002: 3). In the face of rising competition, commercial banks tried to maintain their profitability by taking on more risk - shifting their activities onto real estate loans, off-balance sheet activities, and lending for corporate take-overs and leveraged buyouts (Table 2). Rising share of “loan loss provisions” in commercial banks’ assets has been one telltale sign of this repositioning, while the increasing share of noninterest income in their revenue (Figure 2) was the other (Edwards and Miskin 1995: 33-34).

Table 2: Percent Share of Selected Assets in Bank Credit, (%)

	Treasury securities	Agency- and GSE-backed securities	Municipal securities	Corporate and foreign bonds	Open market paper	Bank loans n.e.c.	Mortgages	Consumer credit
1952	45.85	1.23	7.11	1.87	0.41	23.11	11.02	7.57
1960	29.11	0.85	9.07	0.80	0.43	29.36	15.01	13.00
1970	12.52	2.51	14.52	0.44	0.87	34.75	17.04	15.02
1980	8.19	4.55	11.60	0.83	1.07	35.50	21.21	15.61
1985	10.81	4.41	9.53	1.30	0.51	34.80	21.90	15.01
1990	6.71	9.43	4.88	3.22	0.36	30.09	29.71	13.98
1995	9.07	12.78	2.81	2.97	0.13	25.54	30.45	13.54
2000	4.47	14.68	2.29	4.16	0.03	28.86	31.66	10.40
2005	1.80	16.01	2.08	8.98	0.00	19.25	38.42	9.86

Source: Estimated from Table L.109, Flow of Funds Accounts.

The negative impact 1988 Basel Capital Accord had on traditional banking can also be mentioned in passing (Basset and Zakrajsek, 2003). In an attempt to reduce banks’ exposure to risk, Basil I stipulated minimum capital requirements for banks, which varied by type of lending assessed by its assigned level of risk. For example, the risk of a mortgage weighed by half of that of a commercial and industrial loan (Emmons, Lskavyan, and Yeager, 2005: 13). Similarly, retail lending such as credit card debt also had a lower risk weight than commercial and industrial loans. Thus, given their level of assets and all else being the same, commercial banks could meet their capital requirements by simply varying the composition of their lending – by reducing the share of commercial and industrial loans in favor of other types of lending.²

² Another issue with the Basel Accord was, all commercial loans –regardless of their borrowers- also have the same level of riskiness. As quoted in Cornford, this led to a situation in which “ ‘...a loan to General Electric and the overdraft run up by the newsagent on the corner have identical capital charges.’ ” (Matten, 2000: 90; quoted in Cornford, 2005: 5.) Thus, a from a banks point of view, it may be more profitable to make a loan to a riskier borrower if all commercial borrowers have the same risk requirements.

Figure 2: Noninterest Income to Gross Income Ratio of Commercial Banks



Source: Estimated from the data appendices of *Federal Reserve Bulletins*, years 1996 through 2004.

3. Decline of Traditional Banking and the Money Supply Process

Endogenous view of money involves an argument about the direction of causation between total bank credit and broad money aggregates, and it is predicated on the notion that any increase in credit on the asset side of depository institutions' balance sheet is balanced by a corresponding increase on the liability side as well (Figure 3). Loans come back to banks in the form of deposits. The decline of traditional banking brings into question this very premise as neither leg of the relation in Figure 3 can be taken for granted any longer. A cursory look at bank credit, M3 and total deposits of depository institutions - all normalized by GDP - shows that they all move together up until 1995, but began to diverge afterwards, especially - but not exclusively - during 1995 to 2000 (Figure 4). Elsewhere (Ozgur & Erturk 2008), we present detailed econometric evidence that shows that the relation between bank credit and broad money has ceased to be statistically significant after 1995, where the expansion of bank credit did not result in a commensurate increase of bank deposits and that total deposits of depository institutions fell short of broad money.

Here, we provide a more detailed discussion of how the money creation process has been transformed, giving rise to such a discrepancy. We don't think that this is a technical problem emanating from the difficulty of coming up with the right measure of broad money under the changing circumstances, but instead a reflection of the

transformation of the credit creation mechanism involving a fundamental change in bank behavior. Though the current financial crisis brings to question if it will be long-lasting, the active role banks have come to play in credit creation stands out in this new environment in stark contrast with the idea that they respond relatively passively to credit demand driven by the “state of trade.” That this has become so is in fact an outcome of the fact that banks have not only acquired almost total independence from both required reserves and core deposits, but also the kind of asset maneuverability securitization made it possible helped them circumvent the constraint posed by their capital base.

Figure 3. The Relationship Between Total Bank Credit and Broad Money Supply

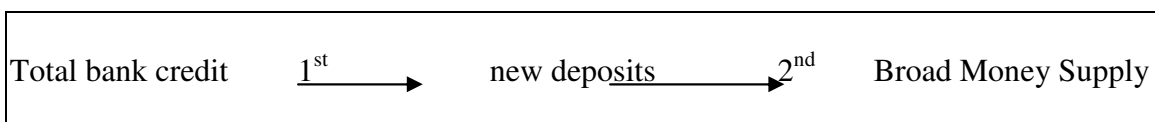
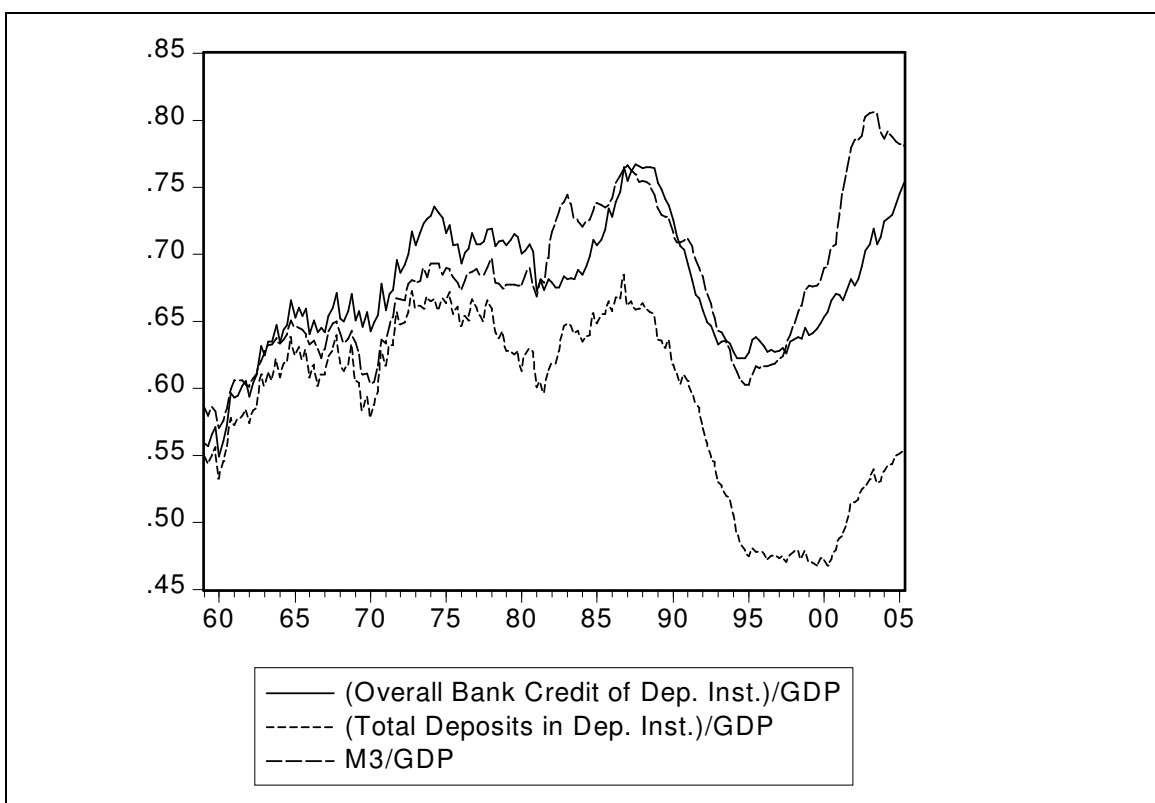


Figure 4: Bank Credit, Deposits, and M3



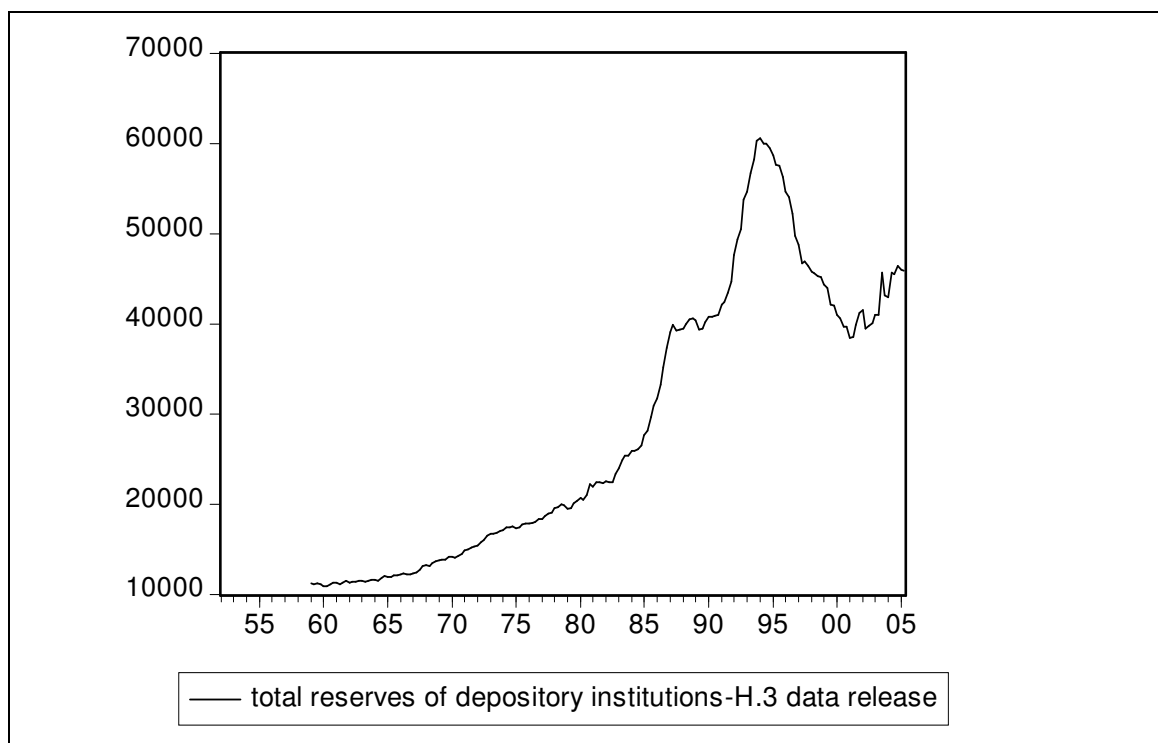
Source: U.S. Federal Reserve System H.8 Release and L.109, L.114 and L.115 tables of Flow of Funds Accounts.

3.1. *Changes in reserve requirements*

The first wave of financial deregulation goes back to Depository Institutions Deregulation and Monetary Control Act (1980) which abolished interest rate ceilings for most of the deposit accounts and introduced negotiable orders of withdrawal (NOWs) accounts (Teles and Zhou, 1995: 50). Later, Garn-St. Germain Depository Institutions Act (1982) introduced money market deposit accounts (MMDAs) so that depository institutions could better compete with money market mutual funds (Teles and Zhou 1995: 50). The second wave of deregulation started in the early 1990s. In 1990, the Fed abolished reserve requirements for time deposit accounts and reduced them for checkable deposits in 1992. More importantly, the introduction of retail sweep accounts in 1994 reduced depository institutions' need for reserve requirements significantly, enabling them to meet their reserve requirements with their vault cash (Bennet and Peristani 2002: 2).

Retail sweep accounts were different from the former business-oriented sweep accounts. The latter involved business transaction deposits that were turned into overnight repurchase agreements or money market mutual funds where profits had to be shared with customers (Anderson, 2002), making them relatively costly and thus limiting their scope. But, in the former, transaction accounts could be moved into money market deposit accounts under saving accounts which had no reserve requirements without having to engage in money market transactions on behalf of customers. The result was an explosive increase in retail sweep accounts and in M1 (Federal Reserve Bank of St. Louis) as depository institutions could now reduce their reserve requirements drastically by shifting funds back and forth between transaction deposits and saving accounts during a business day (Figure 5). Thus, the introduction of retail sweep accounts has led to a situation where reserves were no longer "...a binding constraint on banks' holdings of assets that qualify as reserves" (Bennett and Peristiani, 2002: 1-2).

Figure 5: Total Reserves of Depository Institutions



Source: H.3 Data Release of the Federal Reserve

3.2. Liability management and nondeposit liabilities

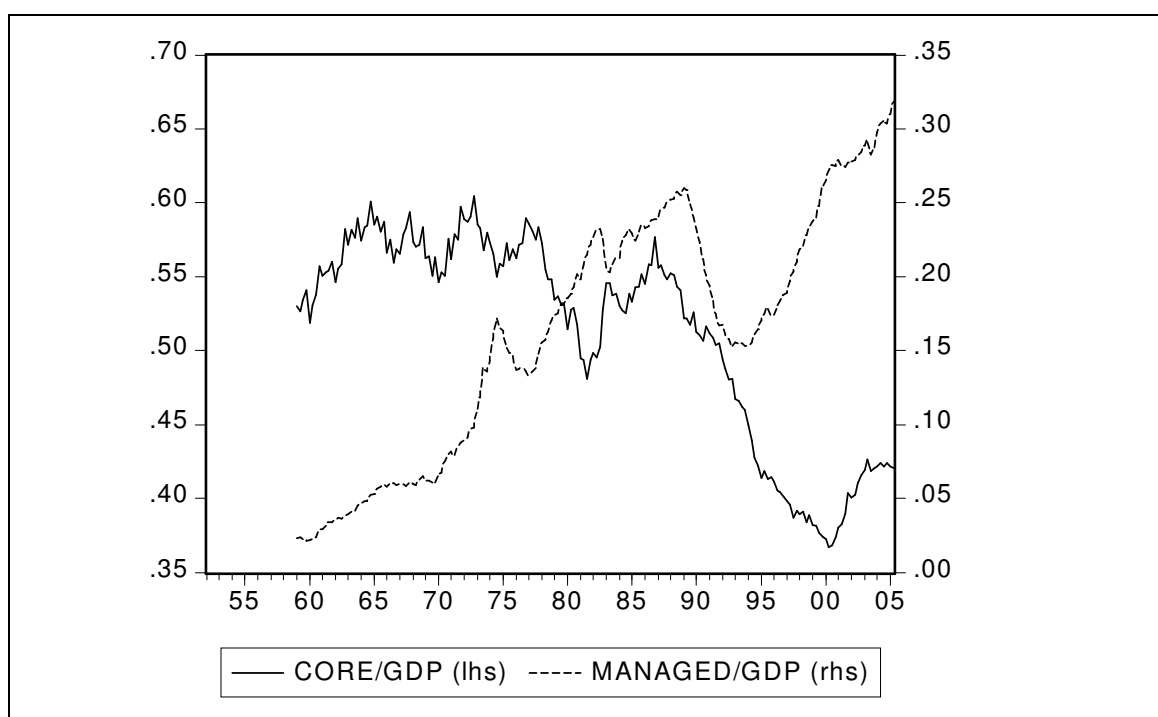
Until the 1960s, the liabilities of depository institutions remained quite simple, consisting of mainly checking deposits, saving accounts, and time deposits, and thus liability management was limited. The emergence of certificates of deposits however changed all this. Commercial banks could now attract funds for a limited time period whenever a profit opportunity or a maturity (time) mismatch between their assets and liabilities emerged. The federal funds markets and repurchases, and credit market instruments such as bonds and commercial papers were also increasingly used for similar purposes, enabling depository institutions to control the maturity of their liabilities similar to their assets.

Because of competition from money market mutual funds and mutual funds, the share of core deposits in depository institutions liabilities declined significantly (Nelson and Owen, 1997: 469-470), forcing banks to engage in liability management, relying increasingly on managed liabilities. Moreover, core deposits were increasingly interest-insensitive. This alone required that, especially, the largest banks rely on managed liabilities during periods of rapid asset growth. "Thus, even though core deposits on average are less expensive than managed liabilities, the latter may still be the more

profitable means for banks to finance rapid growth in assets, with reliance on those liabilities declining when asset growth is weak” (English and Nelson: 1998: 397).

Since their emergence in 1960s, managed liabilities as a trend have increased much faster than core liabilities (Figure 6). Relatively stable until then, core liabilities fell steeply in the 1990s and managed liabilities increased more rapidly than ever in the latter part of the decade following an initial short-lived dip. Initially the biggest source of funds, total deposits held in depository institutions lagged behind the expansion of lending by far during the rapid asset growth of the late 1990s, suggesting that they became alternatives to each other during this period.

Figure 6: Core Deposits and Managed Liabilities of Depository Institutions



Source: L.109, L.114 and L.115 tables of Flow of Funds Accounts.

3.3. The securitization and the sale of assets

Asset securitization was eased by the shift of bank lending towards loans collateralized by real estate which was in part spurred by Basil I. Banks made mortgages only to offload them onto off-balance sheet entities, often called, “securitized investment vehicles” (VICs), generating their income not from holding assets with an interest rate spread but originating and moving them for a fee just like a broker would. The vehicle, in turn, issued liabilities and used the proceeds to buy the assets (mostly mortgages) the banks did not want to keep on their balance sheets. Using these as collateral to issue more liabilities of its own, it grouped these assets into different batches, called tranches, to

generate some desired earning stream and risk combination. The liabilities issued against the “senior” tranche received the lion’s share of income at lowest risk and were given the investment grade by the rating agencies on account of being “overcollateralized,” making them palatable to institutional investors. Whatever income was left over from the senior tranche went to the residual tranche which received a lower grade. The liabilities issued against them were sold to those with lower levels of risk aversion such as the hedge funds. Over time, residual tranches would themselves be re-grouped to generate their own “overcollateralized” senior tranche, and be insured - either implicitly by the sponsoring banks by means of some buyback guarantee or explicitly by some credit default swap written by the monolines or some other financial institution - to increase their attractiveness to investors (Engdahl 2008, Kregel 2007). Thus, with asset securitization banks could sidestep the only remaining constraint posed by their capital base as well. When they lacked enough capital to put loans on their balance sheet, they could now create off balance sheet vehicles to carry them anyway. A legal fig leaf obscured the connection between the VICs and the banks that set them up (Kregel 2007).³

The organizing principle, that any credit risk of the assets in the structure could be compensated by overcollateralization of the collateralized obligation itself, soon began to work like a Ponzi scheme - seemingly palatable CDOs could be issued *ad infinitum* from increasingly riskier assets as long as a larger pool of even riskier assets could be found. As a result new layers of intermediation emerged, expanded and multiplied, where self-fulfilling asset price expectations were the key. As long as home prices kept rising, capital gain expectations made it easier for banks to sell mortgages to increasingly higher risk households and the credit increase that resulted from it fueled demand and thus the increase in home prices. The ongoing financial crisis erupted when investors began to pull back, causing these assets to return to banks’ balance sheets *en masse* which threatened the very integrity of the banking system.

4. Discussion.

During roughly the ten years, from 1995 until the onset of the subprime crisis, much of the deposit creation mechanism has been replaced with debt instrument creation by other financial institutions, causing an explosive increase in the nondepository component of M3, money market mutual fund shares. But, at the same time, much of the increase in bank credit has been matched by nondeposit liabilities that are mainly not included in M3. With the sole exception of RPs, domestic bank lending had no direct bearing on these nondeposit liabilities. All this meant that the link between bank credit and broad money ceased to resemble anything like what is depicted in Figure 3. Bank loans were neither primarily driven by non-financial businesses demand for commercial credit, nor did they return to the banking system in the form of deposits, and broad money no longer moved with total deposits.

³ The Gramm-Leach-Bliley Bank Reform Act, enacted in 1999, expanded the scope of capital market activities allowed for commercial banks, permitting them to own subsidiaries that could engage in the type of financial activities they could not.

Banks had few constraints in their credit decisions. Required reserves were no longer binding and likewise increased reliance on nondeposit liabilities made core deposits next to irrelevant in banks' credit supply. Banks initiated and processed borrowing instruments such as mortgages, but many of these assets no longer stay in their balance sheets, but passed on to other institutions through asset securitization. Nondepository institutions in turn issued new debt instruments against these assets, leading to an eventual increase in the relative magnitude of nonbank deposits within M3. But, the opaque and circuitous layers hid an increasingly complex relationship between a set of financial instruments issued by a series of nondepository financial institutions. In light of the ongoing financial crisis, one can only wonder if this proves an historical aberration. While no one knows what shape financial intermediation will take in the post crisis period, a return to 'business as usual' looks increasingly unviable.

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