UNIVERSITY OF WESTMINSTER

UNIVERSITY OF WESTMINSTER LAW SCHOOL

Money Market Funds:
An Introduction to the Literature

Viktoria Baklanova,* CFA, PRM

PhD Candidate

January 2010

* Viktoria Baklanova is currently employed as an analyst by Fitch Ratings. The views and opinions expressed in this article are those of Ms. Baklanova and are not intended to, and do not represent, the opinions, views or policies of Fitch Ratings or the Fitch Group.

Electronic copy available at: http://ssrn.com/abstract=1542983

Abstract

This article provides an overview of the literature on various aspects of the money market fund industry. It also serves as an introduction to a much larger research project on comparative regulation in the context of the global money market and cash management. The study of a relationship between MMFs and an efficient global financial market is in its early stages. Here we provide just a glimpse of the major driving forces behind the MMFs popularity.

The article examines studies related to funds' investment management practices, but also explores a number of issues raised by the emerging money market fund industry under the securities and banking laws in the U.S. and Europe. An open question is whether the MMFs will continue to play an important role as one of the major cash management vehicles and a source of financing given certain structural deficiencies and unresolved regulatory issues. We hope that our further research will help to better understand the role of money market funds in more efficient functioning of the global financial markets and capital formation.

Introduction

Prior to the events of the financial crisis unfolding since July 2007, there was surprisingly little systematic research on money market funds ("MMF"). No established schools or research traditions existed on the subject. Instead, there were a relatively small number of unrelated empirical studies conducted by finance scholars and professionals with an almost exclusive focus on the U.S. market. The main objective of these studies was to test market efficiency and the rational expectations hypothesis as it applied to money markets. In addition, there were several descriptive articles on legislative debates and money market regulations produced by practicing attorney and ex-regulators. All this does not amount to any established legal theory or hypotheses that would have been tested by different methods and in different markets.

However, the financial market crisis of 2007 – 2009 exposed MMFs as one of the major factors of global systemic risk and prompted various regulators to focus on the subject of MMF

Electronic copy available at: http://ssrn.com/abstract=1542983

regulation.[1] Today analysis of money market funds and policy recommendations are among the most commented subjects of legal research in financial market regulation. In our quest for a better understanding of the driving force behind an explosive growth of money market funds over the last forty years, we turned to historical essays written by those who evidenced the birth of the money market funds industry. In addition, we studied works of market practitioners to establish whether the correlation exists between the strength of money funds regulations and market efficiency.

While money market funds are predominantly the U.S. phenomenon,[2] we observed an increase in a number of recent studies on money market funds operating in the financial markets outside of the U.S.[3] Literature on the non-U.S.-domiciled funds is reviewed in the last section of

---

[1] On June 16, 2009, President Obama announced a comprehensive regulatory reform plan to modernize and protect the integrity of the U.S. financial system. The white paper titled "Financial Regulatory Reform – A New Foundation: Building Financial Supervision and Regulation," contained recommendations for the SEC to

> "… move forward with its plans to strengthen the regulatory framework around MMFs to reduce the credit and liquidity risk profile of individual MMFs and to make the MMF industry as a whole less susceptible to runs. The President's Working Group on Financial Markets should prepare a report assessing whether more fundamental changes are necessary to further reduce the MMF industry's susceptibility to runs…"

Available at http://www.financialstability.gov/docs/regs/FinalReport_web.pdf accessed on November 2, 2009.

[2] According to "Worldwide Mutual Fund Assets and Flow" quarterly report by the Investment Company Institute (ICI), the national association of U.S. mutual funds and other investment companies, at the end of the first quarter of 2009, the assets under management of money market funds globally were $5.8 trillion including assets under management of the U.S.-registered money market funds, which accounted for $3.9 trillion, or 67%. Available at the ICI web-site: http://www.ici.org/research/stats/worldwide/ww_03_09 accessed on October 31, 2009.

[3] *See, e.g.,* STEPHAN JANK, MICHAEL WEDOW, *Sturm und Drang in Money Market Funds: When Money Market Funds Cease to be Narrow*, Deutsche Bundesbank: Discussion Paper Series 2: Banking and Financial Studies, (2008). (study of German money market funds), KAUKO KARLO, *The Demand for Money Market Mutual Funds*, 14 Bank of Finland Research Discussion Papers, (2005). (study of Finnish money market funds), MAGNUS DAHLQUIST, STEFAN ENGSTROM, PAUL SODERLIND, *Performance and Characteristics of Swedish Mutual Funds*, 35(3) Journal of Financial and Quantitative Analysis (2000).

Electronic copy available at: http://ssrn.com/abstract=1542983

this article. Though the studies on MMFs are constantly growing, the amount of research explaining the growth phenomenon and the risks associated with such growth are still inadequate. The goal of our subsequent studies is to fill this gap.

MMFs as a subject of financial research

Earlier literature on MMFs was mainly produced by financial scholars concerned with various aspects of portfolio management and corporate governance.[4] Kane et al. (1983) studied relationship between the interest rate forecasting ability of a portfolio management team and the economic success of money market funds. The authors used a sample of thirty four funds and found no strong correlation. Similarly, Domian (1992) concluded that MMF's duration is merely a reflection of past changes in the level of interest rate rather than 'a window to the future.'[5] Finally, DeGennaro et al. (1996) inferred that the benefits of active MMF portfolio management are not detectable in the fund return data. The authors concluded that MMF managers in general are unable to add value by adjusting the duration of a fund portfolio in order to capitalize on anticipated changes in interest rates.

Over the years, a small army of finance scholars was engaged in finding a Holy Grail of excess return in mutual funds. Domian et al. (1997) found that a MMFs' return is highly correlated with the fund's expense ratio. From 1990 to 1994 the authors studied various factors affecting the cross section of net returns on MMFs and the persistence of the funds' relative returns. The study concluded that the funds produced similar gross returns and that the

---

(study of Swedish mutual funds performance persistency including characteristics driving performance of money market funds).

[4] *See e.g.,* ANDREW B. LYON, *Money Market Funds and Shareholder Dilution*, 39 Journal of Finance 1011, 1020, (1984). (Analyzed the effects of amortized cost valuation on institutional MMFs and found the possibility of arbitrage between securities priced at market value and amortized cost, which resulted in dilution of value for MMFs' investors).

[5] DALE L. DOMIAN, *Money Market Mutual Fund Maturity and Interest Rates* 24 (4) Journal of Money, Credit and Banking, (1992). at 526.

differences in net returns were largely driven by differences in expenses[6] and the funds' policy regarding investments in commercial paper (CP).[7] In other words, an ability to invest in CP serves as a proxy for an ability of a fund to invest in risky securities, *i.e*. CPs are issued by corporations that are subject to credit risk. The authors divided MMFs in two broad groups: those investing exclusively in government securities and those investing in commercial paper and other assets.[8] MMF professionals labeled the first group accordingly as "government funds" and the second "prime funds." Within both groups MMFs had a limited ability to differentiate themselves amongst their peers, leading to commoditization of the product. Over time, the inability to differentiate led to a high degree of concentration of the MMF industry.[9]

Christoffersen et al. (2002) examined whether funds with different levels of expense ratios can co-exist in the competitive market. The authors found that MMFs portfolios normally consist of a number of share classes,[10] each carrying a different expense ratio. Trying to explain

---

[6] Operations of a mutual fund incur certain costs. These are regular fund operating costs, such as investment advisory fees, marketing and distribution expenses, brokerage, custodial, transfer agency, legal, and accountants' fees. In addition, costs might be incurred in connection with particular investor transactions, such as investor purchases, exchanges, and redemptions. Total sum of those costs paid by a fund investor is refereed as "fund's expenses" or "fund's expense ratio." Explanation of mutual fund expenses is available at the SEC web-site at http://www.sec.gov/answers/mffees.htm#management.

[7] The glossary of statistical terms maintained by the Organization for Economic Cooperation and Development (OECD) contains the following definition of CP: CP is an unsecured promise to pay a certain amount on a stated maturity date, issued in bearer form. CP enables corporations to raise short-term funds directly from end investors through their own in-house CP sales team or via arranged placing through bank dealers. Available at http://stats.oecd.org/glossary/detail.asp?ID=6054 accessed on November 1, 2009.

[8] DALE L. DOMIAN, WILLIAM REICHENSTEIN *Returns From Investing in Money Market Funds, 1990 to 1994*, 6 Financial Services Review, (1997). at 169.

[9] According to the Investment Company Institute (ICI), as of September 30, 2009 U.S.-registered money market mutual funds had $3.4 billion in total assets under management. CraneData's "Money Fund Intelligence" reported in its October 2009 issue that approximately 95% of those assets was managed by only 25 mutual fund advisors.

[10] The SEC web-site contains the following explanation of mutual fund share classes:

> "Known as "multi-class funds," some mutual funds offer investors different types of shares, known as "classes." Each class will invest in the same "pool" (or investment portfolio) of securities and will have the

why investors do not sell MMFs shares carrying a larger expense ratio in favor of lower expense ratio shares, they argued that some investors are less sensitive to fund's expenses. Therefore, fund managers are able to charge higher expense ratios without losing all existing investors. This allows certain money market funds to have higher expense ratios and yet, retain their shareholder base.

Christoffersen (2001) noted that about half of "money fund managers voluntarily waive fees they have a contractual right to claim." She found that the variation in fee waivers is significant and relates to differences in relative performance. Fund managers use fee waivers to strategically adjust net performance, which promotes cash inflow and facilitates growth of assets under management.

To summarize, finance scholars' research largely found out that the funds' performance and related asset growth was not a function of a portfolio manager's ability to add investment value through active portfolio management.

How a rapid growth of MMF's assets under management is explained?

Rosen et al (1983) explained the rapid growth of assets under management of MMFs by the rational consumer response to the inability of regulated financial institutions to offer the market rate of return on retail deposits.[11] The authors showed that a piecemeal deregulation of financial institutions in the U.S. in the 1980s contributed to investors' awareness of MMFs through both consumer education and advertising of comparable products offered by financial institutions, such as money market certificates.[12] Using the rational consumer preferences model, the authors predicted that 'full deregulation of financial institutions will, in all likelihood, in turn,

---

same investment objectives and policies. But each class will have different shareholder services and/or distribution arrangements with different fees and expenses and, therefore, different performance results."

Available at: http://www.sec.gov/answers/mfclass.htm.

[11] KENNETH T. ROSEN, LARRY KATZ, *Money Market Mutual Funds: An Experiment in Ad Hoc Deregulation: A Note*, 38 (6) Journal of Finance, (1983). at 1015.

[12] *Id*. at 1016.

lead to the end of the money market mutual fund experiment in ad hoc deregulation.'[13] This view that the sole purpose of MMFs is to bridge the yield gap between comparable financial products offered by regulated financial institutions and MMFs has proven to be wrong. The explanation of drivers behind MMF success[14] is found in research related to the history of investment management industry regulation.

A money market fund is a mutual fund,[15] or a mechanism for pooling money of multiple investors with the goal of investing in a diversified portfolio of securities. As such, MMFs domiciled in the U.S. are subject to registration with the Securities and Exchange Commission (SEC) under the provisions of the Investment Company Act of 1940.[16] The emergence and earlier years of MMF history is well documented by industry insiders and finance journalists.[17]

---

[13] *Id*. at 1017 (portfolio theory model leads to a conclusion that the household's allocation of net worth is based on risk-return considerations, subject to a wealth constraint, *i.e.*, consumer flows will leave low-yielding bank deposits for comparably low risk MMF shares).

[14] The success of the U.S.-domiciled MMFs after the ceiling on deposits' interest rates was finally removed in 1986 is illustrated by the growth in assets under management of MMFs from $292 billion at the end of 1986 to the all-times high of $3.8 billion at the end of 2009, according to the ICI data. This constitutes approximately 12.5% annual asset growth rate over the 23-year period.

[15] The SEC web-site contains the following definition of a mutual fund:

> "A mutual fund is a company that pools money from many investors and invests the money in stocks, bonds, short-term money-market instruments, other securities or assets, or some combination of these investments. The combined holdings the mutual fund owns are known as its portfolio. Each share represents an investor's proportionate ownership of the fund's holdings and the income those holdings generate."

Available at http://www.sec.gov/investor/pubs/inwsmf.htm.

[16] The Investment Company Act of 1940 was passed by Congress on August 22, 1940 and is codified at 15 U.S.C. § 80a-1 through § 80a-64. Activities of money market mutual funds are governed by Rule 2a-7 promulgated under this Act.

[17] *See, e.g.,* Joseph Nocera, A Piece of the Action: How the Middle Class Joined the Money Class (Simon & Schuster. 1994). at 74 (Describes fundamental market conditions leading to emergence of MMFs such as a sharp increase in the Consumer Price Index (CPI) in late 1960s and early 1970s and interest rate ceiling restrictions placed on banks' savings account knows as Regulation Q); Matthew P. Fink, The Rise of Mutual Funds: An Insider's View (Oxford University Press. 2008). at 80 (points out among other things that higher-yielding financial instruments such as Treasury bills and jumbo certificates of deposit in excess of $100,000 were largely unavailable to an average

The MMF industry was born in February 1972, when the prospectus of the first money market fund, called the Reserve Primary Fund, was approved by the SEC. The history provides an understanding of what brought MMFs into existence and promoted their growth into more than a $5.8 trillion[18] global industry in less than forty years.

Nocera (1994) attributed the emergence of MMFs and their early popularity to the existence of Regulation Q,[19] which limited, among other requirements, interest that U.S. banks were allowed to pay on savings accounts.[20] By the time the restrictions of Regulation Q were fully phased out in 1986,[21] MMFs gained momentum[22] offering both the yield and the convenience of a checking account to retail investors.

American. MMFs pooled assets of small investors to offer them a higher rate of return that was previously only available to institutional investors).

[18] According to the ICI, assets under management of the U.S.-domiciled money market funds reached an all-time high of $3.9 trillion in the week of January 14, 2009. In Europe, assets under management amounted to $1.3 trillion, according to BIS Quarterly Review, March 2009. The rest of the world accounted for approximately $0.6 billion of assets under management of MMFs.

[19] Section 11 of the Banking Act of 1933 (12 U.S.C. 371a), which is implemented by Regulation Q (12 CFR part 217), regulates interest paid to bank depositors. The ceilings on savings accounts were for the most part lifted by the Depository Institutions Deregulation and Monetary Control Act of 1980 (12 U.S.C. 226 note).

[20] *See, e.g.,* JOHN F. MCDONALD, DANIEL P. MCMILLEN, Urban Economics and Real Estate: Theory and Policy (Blackwell Publishing. 2007). at 255 (notes that when nominal interest rates in the U.S. drove up in the mid-1960s, the U.S. Congress had responded by enacting the Interest Rate Control Act of 1966, which gave the authority to the Federal Reserve Board under the Regulation Q to impose an interest rate ceiling on deposit accounts held at savings and loan associations, or thrifts and banks); Jerry W. Markham, A Financial History of the United States. Volume III: From the Age of Derivatives into the New Millenium (1970 - 2001) (M.E. Sharpe, Inc. 2002). at 4 (notes that the passage of the Interest Rate Control Act of 1966 was aimed to curb the competition among thrifts for the same deposit dollars).

[21] Title 11 of the Depository Institutions Deregulation Act of 1980 provided for an orderly phase-out and ultimate elimination of interest rate in 6 years. The title expired on March 31, 1986.

[22] According to the ICI, at the end of 1986 money market funds had $292 billion in assets under management compared to $4 billion at the end of 1976. This constitutes an average annual growth rate of 53.6%.

Cook et al. (1979) debated whether MMFs were merely a reaction to government regulation or a lasting financial innovation. The authors investigated two possible explanations for the explosive growth of money market funds in the mid-1970s. The first explanation was that funds were able to offer higher yield than the investors would have obtained by investing in banks' savings accounts.[23] The second explanation was that MMFs filled a niche in the financial system, which previously lacked an intermediary that specialized exclusively in short-term assets and liabilities. Authors concluded that the growth in MMFs represents a permanent change in the way many institutional and individual investors managed their liquid assets.[24]

Legal issues surrounding MMFs

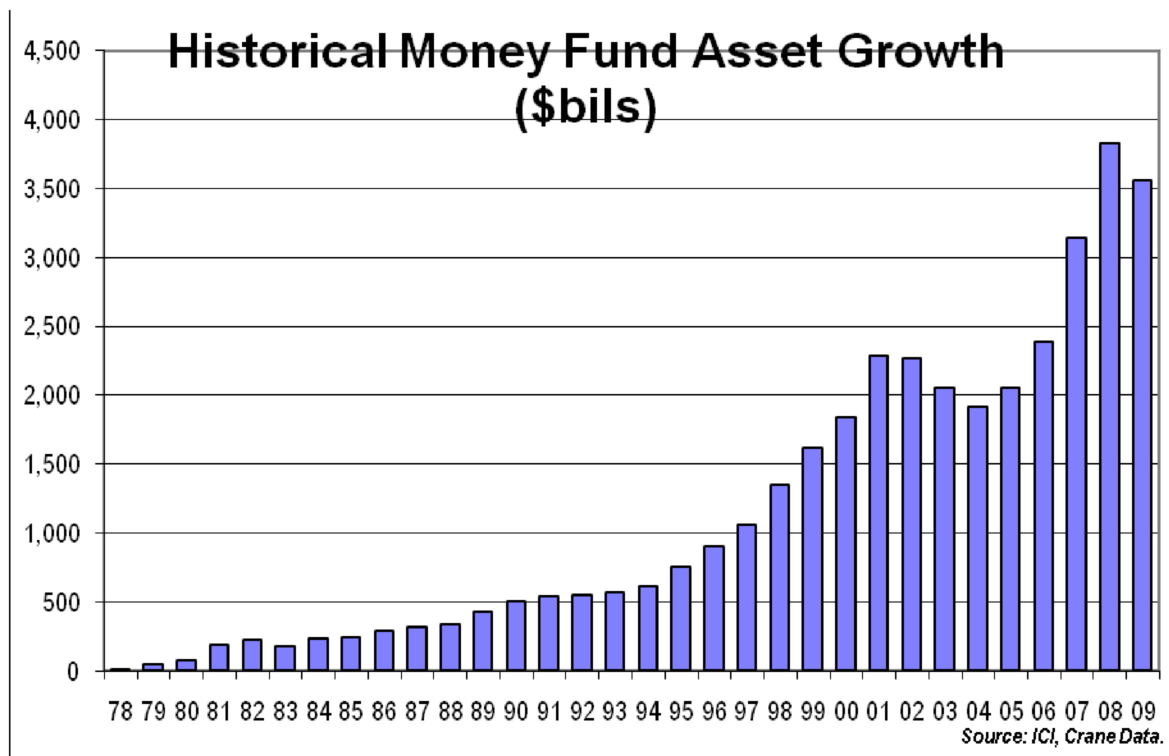
Being direct competitors to bank deposits and resembling bank accounts in terms of check writing capabilities, MMFs presented unique issues under banking laws leading to regulatory debates with banking authorities.[25] MMFs competed with banks for the same deposit dollars. Kalogeras (1981) observed the growth of assets under management in MMFs since the very first such a fund, The Reserve Fund, went public in 1972. By 1975, in a period of just three years, the value of its assets grew from $300,000 to $390 million. By early 1981, the assets of all money market mutual funds had grown to approximately $80 billion.

---

[23] *See* TIMOTHY Q. COOK, JEREMY G. DUFFIELD, *Money Market Mutual Funds: a Reaction to Government Regulations or a Lasting Financial Innovation?* , 65 Federal Reserve Bank of Richmond: Economic Review, (1979). at 17 (yield difference between interest rates paid on banks' savings accounts and banks' 3-month certificates of deposits offered in $100,000 denominations reached 5.5% in 1978).

[24] *Id*. at 18.

[25] On January 24, 1980 in his statement before the Subcommittee on Financial Institutions of the Committee on Banking, Housing, and Urban Affairs, J. Charles Partee, a member of the Board of Governors of the Federal Reserve System noted the substitutability of money market fund shares for transaction and savings balances at depositary institutions and questioned whether "reserve requirements need to be applied to money market funds in order to enhance monetary control." At that time, the absence of such reserve requirements did not appear to be a problem as, according to the same statement, "the transaction uses of balances in money market mutual funds are very limited."



Consumer preference for investing cash with MMFs instead of depositing it with banks during the periods of high interest rates has always been a subject of lobbying efforts by the banking industry. Greenberg (1983) provided an excellent account of bankers' and the Federal Reserve Board's views on MMFs alongside an insightful analysis of MMFs' risk-return tradeoff,[26] including advantages and disadvantages of investing in such funds.[27] By the early

[26] CHARLES M. GREENBERG, *Money Market Fund Industry: History and Related Developments*, 4 (1) Journal of Financial Planning, (1983). at 44 (Compared return of Capital Preservation Fund, Inc. invested exclusively in government securities with maturities of one year or less with return one would have received by investing in 3-month U.S. Treasury bills. Direct purchases of U.S. Treasury bills would outperform the fund's return in a period of rising interest rates and underperform in a period of falling interest rates).

[27] *Id*. at 43:

> "Some of the advantages of investing in a money market mutual fund as opposed to a savings account are: (1) higher yields than those offered at banks and other financial institutions, (2) professional and full-time fund portfolio management, (3) the opportunity to invest in a diversified portfolio of large denomination short-term investments, and (4) checkwriting privileges. The major disadvantage associated with money market mutual funds is that they are not insured against loss, unlike savings accounts that are insured by the Federal Deposit Insurance Corporation [up to a certain amount]."

1980s, MMF benefits to consumers were so well publicized that the Fed had to take the side of the mutual funds industry, which allowed for small investors to share the benefits of a higher yield available to institutional investors and larger business through mutual fund investing. In his statements to Congress, J. Charles Partee, a member of the Board of Governors of the Federal Reserve System, noted that

> "to limit yields on money market funds not only would be anticonsumer--and inconsistent with the nation's need to encourage saving--but would also fail to recognize the inherent distinctions between deposits and money market fund shares. "[28]

However, despite the above statement, the Fed did impose a 15% non-interest-bearing reserves requirement for assets flowing into money funds after March 14, 1980. The imposition of reserves on growing assets under management of MMFs had little to do with a banking lobby, but was rather one of the measures taken by the Fed to implement President Carter's plan to curb the inflation.[29] Scheft (1990) gave a detailed account of credit rationing measures taken by the Fed to implement the plan.[30] These measures slowed the growth of assets under management of MMFs, but only temporarily. Greenberg (1983) further noted that the reserve requirements were reduced to 7.5% by the summer of 1980 and were finally lifted in late summer of 1980.[31] The author attributed the MMF victory over the Fed to the tremendous amount of support from the investing public to retain the funds in their current form.[32]

---

[28] Statements to Congress, Federal Reserve Bulletin, Feb. 1980, pp. 130-132. (Partee implied that the major distinction between banks' deposits and shares of MMFs is the lack of federal insurance for investments in the MMFs).

[29] Jonathan Williams wrote in his article "Money Market Funds Start Clones" in Pittsburg Post-Gazzette on March 19, 1980:

> "When the Federal Reserve Board acted last Friday night to comply with President Carter's design to curb inflation, it threw the managers of money market funds into turmoil. Fed Chairman Paul Volcker's announcements would require that 15 percent of all new moneys into the funds be set aside as non-interest bearing reserves."

[30] *See* STACEY L. SCHREFT, *Credit Controls: 1980*, Federal Reserve Bank of Richmond: Economic Reviews, (1990). at 35.

[31] *Supra* note 26 at 46.

[32] *Id*. at 46.

Despite the initial failure, the idea of leveling the playing field for banks and MMFs by imposing reserve requirements on the funds was resurrected a number of times over the following three decades. On June 25, 1981, Paul Volcker, who was at the time the Chairman of the Board of Governors of the Federal Reserve System, voiced a concern that the existing interest rate restrictions on deposits and the absence of reserve requirements on MMFs placed depositary institutions in a noncompetitive position and advocated an extension of reserve requirements for those funds offering "checking-type accounts".[33] Almost thirty years have passed, and in January 2009, the Group of Thirty (G30),[34] under the leadership of a Steering Committee chaired by Paul Volcker, issued recommendations to address the gaps and weaknesses in prudential regulation and supervision of all systemically significant financial institutions, regardless of type.[35] The recommendations covered, among other systemically important entities, MMFs and sought to reorganize such funds into "special-purpose banks, with appropriate prudential regulation and supervision, government insurance, and access to central bank lender-of-last-resort facilities."[36] Alternatively, the recommendations suggested, MMFs should not be allowed to offer stable value shares resembling a deposit account, but should only operate in a floating share price mode.[37]

Dwyer et al. (2009) investigated the issue of MMFs' monetary liabilities. MMFs were not required by law to redeem their liabilities at the initial value of investments. However, U.S. regulators and money market funds made substantial efforts to avoid fund share price deviations

---

[33] Federal Reserve Bulletin, July 1981, pp. 548-555.

[34] The Group of Thirty, established in 1978, is a private, nonprofit, international body composed of very senior representatives of the private and public sectors and academia. It aims to deepen the understanding of international economic and financial issues, to explore the international repercussions of decisions taken in the public and private sectors, and to examine the choices available to market practitioners and policymakers (from G30 web-site http://www.group30.org/about.htm accessed on October 29, 2009).

[35] THE GROUP OF THIRTY, Financial Reform: A Framework for Financial Stability (Jan 15, 2009). The project was led by Paul Volcker, Chairman, and Tommaso Padoa-Schioppa and Arminio Fraga Neto, Vice Chairmen.

[36] *Id*. at 9.

[37] *Id*.

from its par value of a dollar.[38] Hence, a widespread belief, supported by a strong historical track record, that one was highly unlikely to lose money in a MMF.[39] The authors concluded that MMFs became one of the medium of exchanges characterized by promised redemption at par value on demand. The assumption made shares of MMFs look equal to the banks' demand deposits in the minds of investors and, once again, brought the question of imposing capital reserve requirements on such funds.

Descriptive literature by MMF practitioners

Stigum et al. (2007) gave perhaps the most in-depth review of MMFs and financial instruments eligible for MMF investments. The monograph described the creation of the money market fund industry, and dwelt upon the development of short-term financial instruments to meet the funds' growing demand. Most importantly, Stigum et al. (2007) observed that "demand

---

[38] The SEC gives following description of money market funds:

> "Money market funds typically invest in government securities, certificates of deposit, commercial paper of companies, or other highly liquid and low-risk securities. They attempt to keep their net asset value (NAV) at a constant $1.00 per share – only the yield goes up and down. But a money market's per share NAV may fall below $1.00 if the investments perform poorly. While investor losses in money markets have been rare, they are possible."

Available at the SEC's web-site www.sec.gov accessed on October 18, 2009.

[39] In the history of U.S. MMFs, there were two cases of such funds not being able to hold their share price at $1.00. In September 1994, the Community Bankers US Government Fund sustained principal losses due to a large exposure to government adjustable rate securities. As interest rates increased, these floating rate securities lost value. The fund was liquidated paying investors 96 cents per share. This was the first failure in the then 23 year history of money funds and there were no further failures for 14 years.

On September 16, 2008 The Reserve Primary Fund, which was at the time the third largest U.S. MMF with roughly $63 billion in assets under management, found itself holding defaulted Lehman Brothers' commercial paper in total amount of $785 million. The Reserve's Board of Directors made a decision to write the value of these holdings down to zero, which caused the fund's net assets value ("NAV") to decline below $1.00 to $0.97. The event of the fund's NAV decline below $1.00 is known in the industry as "breaking the buck." *See also* 74 FR 32688 Money Market Fund Reform; Proposed Rule (July 8, 2009). at nn.30, 44, 45, and accompanying text.

creates its own supply"[40] in establishing the short-term municipal securities market specifically to provide investment opportunities for MMFs investing in municipal obligations. The authors made two important points relevant to the developing discussion on regulation and market discipline as it applied the MMF industry: (1) MMFs were a fairly safe alternative to bank deposits, despite the absence of deposit insurance due to the requirements of Rule 2a-7 that limited MMF investments to high quality, short duration assets;[41] (2) MMFs were normally able to deliver a higher yield relative to bank deposits by holding no reserves and only keeping a few basis points of management fees.[42]

Ohlbaum Swirsky (2006) contributed significantly to interpretation of MMF regulation. Her work contained an exhaustive review of MMFs regulation, including Rule 2a-7,[43] other applicable sections of the Investment Company Act of 1940[44] and relevant rulings of the Internal Revenue Service.[45] Rule 2a-7 is a complex array of investment, operational and legal requirements, which were not free from ambiguities and were open to contradictory interpretations. The author not only discussed such issues, but provided an additional SEC guidance, cited interpretive letters and gave examples of MMFs' compliance systems. We should

---

[40] MARCIA STIGUM, ANTHONY CRESCENZI, Stigum's Money Market (McGraw-Hills 4 ed. 2007). at 1111. The phrase is attributed to a French economist Jean-Baptiste Say (5 January 1767 – 15 November 1832) and known as Say's Law.

[41] *Id*. at 1101.

[42] *Id*.

[43] 17 CFR § 270.2a-7 Money market funds.

[44] *See, e.g.,* 17 CFR § 270.5b-3 Acquisition of repurchase agreement or refunded security treated as acquisition of underlying security.

[45] Section 851(b)(3) of the Internal Revenue Code (classification of investments in repurchase agreements for diversification test). The Revenue Act of 1936 (49 Stat. 1731) exempts mutual fund from tax. Fund shareholders are taxed distributions they receive from the funds as if they would have held securities directly.

note, however, that on June 24, 2009 the SEC put forward a proposal to amend Rule 2a-7[46] subject to a comment period. The amended Rule 2a-7 was adopted on January 27, 2010.[47]

Fink (2008) gave a historical perspective of mutual fund regulation, including a chapter devoted entirely to MMFs.[48] He attributed the emergence and the early popularity of money market mutual funds to a prolonged period of stagflation in the U.S. in 1970s.[49] The raise of MMFs brought up unique issues under the securities laws, the investment company laws, and the banking laws.[50] Fink reviewed a number of state legislative proposals of the early 1980s introduced by the banking lobby and targeted to outlaw, or severely limit, the sale of MMF shares in respective states.[51] Fink concluded that the banking industry battle against MMFs eventually led to removal of the interest rate ceiling on bank and thrift deposit, but did not outlaw the funds.[52]

MMF research focused on the foreign markets

An additional function of MMFs to serve as a "safe haven" for risk-averse investors, was studied by Kaul et al. (2008), who focused on the "flight to quality" phenomena in application to the Canadian capital markets and examined assets allocation decisions of mutual fund investors.

---

[46]74 FR 32688 Money Market Fund Reform; Proposed Rule

[47] Speech by SEC Chairman Mary Schapiro: Statement on Money Market Funds Before the Open Commission Meeting (Jan 27, 2010). Available at http://www.sec.gov/news/speech/2010/spch012710mls-mmf.htm accessed on February 3, 2010.

[48] FINK. at 77-94.

[49] *Id*. at 78.

[50] *Id*. at 82-86 (Funds with similar portfolios calculated yield using different formulas; payment of the SEC registration fee based on net sales, but not on the amount of securities sold as required under the Securities Act of 1993; share pricing method using various accounting techniques to smooth capital gain and loss to arrive at a constant share price; lack of capital reserve requirements under the banking regulation).

[51] *Id*. at 87-93.

[52] *Id*. at 74.

The analysis revealed that asset re-allocation to MMFs from other riskier mutual funds, such as equity, bond and balanced mutual funds, during periods of market stresses served a useful purpose of reducing volatility of an investor's portfolio return.

Baba et al. (2009) researched the need for U.S. dollar funding of European banks in the period of financial instability in the Fall of 2008, and quantified the role of MMFs as dollar providers to the global financial markets.[53] Non-U.S. banks especially benefited from the ample liquidity offered by U.S. MMFs, but suffered, when one of those funds sustained principal losses due to investments in commercial paper issued by the Lehman Brothers Holdings, Inc.[54] The authors concluded that these funds were ill-designed to serve as global repositories of cash in times of extreme market strains, given a business model of stable net asset value while competing on yield.[55] Only policy actions were able to contain the run. To avoid a possibility of a run and a related systemic downfall in the future, the authors recommended backing up MMFs with a form of public funding.

The implications of the Lehman Brothers' bankruptcy for MMFs were further studied by Fender et al. (2008). The authors documented actions undertaken by twenty five investment advisors to financially support their funds in the aftermath of the Lehman bankruptcy.[56] These actions included both purchasing impaired securities out of an affected MMF at a price that was above the prevailing market price at the time of purchase and providing liquidity to MMFs

---

[53] NAOHIKO BABA, ROBERT N. MCCAULEY, SRICHANDER RAMASWAMY *US Dollar Money Market Funds and Non-US Banks* BIS Quarterly Review, March 2009. at 1.

[54] On September 15, 2008, the Reserve Primary Fund's share price fell below $1.00 to $0.97 when the fund wrote off approximately $785 million of commercial paper issued by the bankrupt Lehman Brothers. At the time, the Reserve Primary Fund was the world's third-largest money market fund with about $62.5 billion in assets under management. The Lehman Brothers holding represented about 1.2% of total fund's assets.

[55] *Supra* note 53 at 72.

[56] INGO FENDER, JACOB GYNTELBERG, *Overview: Global Financial Crisis Spurs Unprecedented Policy Actions* BIS Quarterly Review, December 2008. at 7.

during the time of extreme illiquidity.[57] The advisor to the third largest U.S. MMF, The Reserve Primary Fund, being a private, family held company, was unable to provide financial support to the fund holding $785 million in debt securities of Lehman Brothers Holdings.[58] As a result, on September 16, 2008, the day after the Lehman's bankruptcy filing, the fund's shares were valued at $0.97, three percent below share par value of $1.00.[59] Fender et al. (2008) explained that the loss of principal in just one MMF prompted massive redemptions across other funds investing in similar securities. Only policy actions were able to contain the run.[60]

Research in Swedish mutual fund industry by Dahlquist et al. (2000) confirmed high correlation of local MMFs performance with the expense ratios, even though the authors did not consider differences in either MMF portfolio composition or in secondary market liquidity.[61] Karlo (2005) documented the history of MMFs in the Finnish market, noting their spectacular growth in the period from 2000 to 2005, during which the assets under management increased at an annual rate of almost 50%.[62] Jank et al. (2008) concluded that performance of German MMFs was driven not only by the funds' expense ratios and investment policies, but also by the

---

[57] A detailed account of financial support provided to the U.S. money market funds and related SEC's no-action letters is available at the SEC web-site http://www.sec.gov/divisions/investment/im-noaction.shtml#affiliatedtrans_mm.

[58] THE Reserve, September 16, 2008 Press Release http://ther.com/pdfs/Press%20Release%202008_0916.pdf accessed October 30, 2009.

[59] *Id*.

[60] *Supra* note 56 at 7 (on September 19, 2008 the Treasury announced its Temporary Guarantee Program for Money Market Funds, which guaranteed to investors of eligible funds that they would receive $1.00 for each money market fund share held as of close of business on September 19, 2008. The Program's initial expiration date was December 18, 2008 extended twice, first to April 30, 2008 and later to September 18, 2009. On September 19, 2008, the Federal Reserve Board announced the creation of the Asset Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, which extends loans to banking organizations to purchase asset backed commercial paper from money market mutual funds).

[61] DAHLQUIST. at 13.

[62] KARLO.at 7.

liquidity available in the local German market.[63] The liquidity component was added after the authors observed a severe reduction in liquidity in the second half of 2007. German MMFs exerted a statistically significant performance premium investing in less liquid assets while offering daily liquidity to investors during the periods of abundant secondary market liquidity. The reversal of performance was observed during the period of low market liquidity.

The large scale of investment operations and the global reach of MMFs made them an important factor in the current regulatory debate and developing academic work devoted to the post-crisis securities regulation.[64] However, we are not aware of any published research on the subject of international coordination focused specifically on global regulation of MMFs.

Conclusion

The study of a relationship between MMFs and an efficient global financial market is in its early stages. This overview of financial studies, historical essays and legal/regulatory documents provides just a glimpse of the major driving forces behind the MMFs popularity. An open question is whether the MMFs will continue to play an important role as one of the major cash management vehicles and a source of financing given certain structural deficiencies and unresolved regulatory issues. We hope that our further research will help to better understand the role of money market funds in more efficient functioning of the global financial markets and capital formation.

Bibliography

STEPHAN JANK, MICHAEL WEDOW, *Sturm und Drang in Money Market Funds: When Money Market Funds Cease to be Narrow*, Deutsche Bundesbank: Discussion Paper Series 2: Banking and Financial Studies, (2008).

---

[63] JANK. at 20.

[64] President Obama's Administration's white paper "Financial Regulatory Reform – A New Foundation: Building Financial Supervision and Regulation" notes the need for much higher level of national and international policy coordination in regulation of global financial markets.

KAUKO KARLO, *The Demand for Money Market Mutual Funds*, 14 Bank of Finland Research Discussion Papers, (2005).
MAGNUS DAHLQUIST, STEFAN ENGSTROM, PAUL SODERLIND, *Performance and Characteristics of Swedish Mutual Funds*, 35(3) Journal of Financial and Quantitative Analysis (2000).
ANDREW B. LYON, *Money Market Funds and Shareholder Dilution*, 39 Journal of Finance 1011, 1020, (1984).
ALEX KANE, YOUNGKI LEE *The Forecasting Ability of Money Market Fund Managers and its Economic Value* (1983) NBER Working Paper Series available at http://ssrn.com/abstract=321298.
DALE L. DOMIAN, *Money Market Mutual Fund Maturity and Interest Rates* 24 (4) Journal of Money, Credit and Banking, (1992).
RAMON P. DEGENNARO, DALE L. DOMIAN, *Market Efficiency and Money Market Fund Portfolio Managers: Beliefs Versus Reality*, 31 The Financial Review 453, 474, (1996).
DALE L. DOMIAN, WILLIAM REICHENSTEIN *Returns From Investing in Money Market Funds, 1990 to 1994*, 6 Financial Services Review, (1997).
SUSAN E.K. CHRISTOFFERSEN, DAVID K.MUSTO, *Demand Curves and the Pricing of Money Management*, 15 Review of Financial Studies 1499, 1524, (2002).
SUSAN E.K. CHRISTOFFERSEN, *Why Do Money Fund Managers Voluntarily Waive Their Fees?*, 56 The Journal of Finance 1117, 1140, (2001).
KENNETH T. ROSEN, LARRY KATZ, *Money Market Mutual Funds: An Experiment in Ad Hoc Deregulation: A Note*, 38 (6) Journal of Finance, (1983).
JOSEPH NOCERA, A Piece of the Action: How the Middle Class Joined the Money Class (Simon & Schuster. 1994).
MATTHEW P. FINK, The Rise of Mutual Funds: An Insider's View (Oxford University Press. 2008).
JOHN F. MCDONALD, DANIEL P. MCMILLEN, Urban Economics and Real Estate: Theory and Policy (Blackwell Publishing. 2007).
JERRY W. MARKHAM, A Financial History of the United States. Volume III: From the Age of Derivatives into the New Millenium (1970 - 2001) (M.E. Sharpe, Inc. 2002).
TIMOTHY Q. COOK, JEREMY G. DUFFIELD, *Money Market Mutual Funds: a Reaction to Government Regulations or a Lasting Financial Innovation?* , 65 Federal Reserve Bank of Richmond: Economic Review, (1979).
G. KALOGERAS, *Examining the Money Market Funds*, 164 Banker's Magazine, (1981).
CHARLES M. GREENBERG, *Money Market Fund Industry: History and Related Developments*, 4 (1) Journal of Financial Planning, (1983).
STACEY L. SCHREFT, *Credit Controls: 1980*, Federal Reserve Bank of Richmond: Economic Reviews, (1990).
THE GROUP OF THIRTY, Financial Reform: A Framework for Financial Stability (Jan 15, 2009).
GERALD P. DWYER, MARGARITA SAMARTIN, *Why Do Banks Promise to Pay Par on Demand?*, 5 Journal of Financial Stability 147-169, (2009).
74 FR 32688 Money Market Fund Reform; Proposed Rule (July 8, 2009).
MARCIA STIGUM, ANTHONY CRESCENZI, Stigum's Money Market (McGraw-Hills 4 ed. 2007).
JOAN OHLBAUM SWIRSKY, The Guide to Rule 2a-7: A Map Through the Maze for the Money Market Professional. (Stradley Ronon Stevens & Young, LLP 2006).

Speech by SEC Chairman Mary Schapiro: Statement on Money Market Funds Before the Open Commission Meeting (Jan 27, 2010).
ADITYA KAUL, BLAKE PHILLIPS, Economic Conditions, Flight to Quality and Mutual Fund Flows (21st Australasian Finance and Banking Conference, Sydney, Australia 2008).
NAOHIKO BABA, ROBERT N. MCCAULEY, SRICHANDER RAMASWAMY *US Dollar Money Market Funds and Non-US Banks* BIS Quarterly Review, March 2009.
INGO FENDER, JACOB GYNTELBERG, *Overview: Global Financial Crisis Spurs Unprecedented Policy Actions* BIS Quarterly Review, December 2008.
THE RESERVE, September 16, 2008 Press Release
http://ther.com/pdfs/Press%20Release%202008_0916.pdf accessed October 30, 2009.