MONEY MARKET FUNDS IN THE EU AND THE US

Regulation and Practice

Edited by

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1

INTRODUCTION

Viktoria Baklanova, Joseph Tanega, and Edmond Curtin

The importance of money market funds as global financial intermediaries of short-term liquid capital is apparent from the size of the industry. Assets under management for these funds reached an all-time high of $5.8 trillion in the first quarter of 2009, exceeding the gross domestic product of Japan for the same year.[1] By introducing millions of individuals to financial markets and investments, money market funds have had a profound impact on the contemporary financial landscape. Money market funds facilitate household savings, serve as a source of funding for corporations and financial institutions worldwide, and arguably have come to redefine the very notion of cash. Accordingly, money market funds perform an important economic function: they provide an expansive choice of funding opportunities for various borrowers. Money market funds improve market efficiency by channelling cash flows directly from cash-rich lenders to cash-poor **1.01**

[1] For the assets under the management of money market funds the source is the European Fund and Asset Management Association at <http://www.efama.org>; for the gross domestic product by country the source is the International Monetary Fund at <http://www.imf.com>.

borrowers (bypassing traditional financial intermediaries such as banks). However, there is the correlative risk that if money market funds cease to function due to unexpectedly accelerated cash withdrawals by investors, then borrowers may be left without sources of funding.

1.02 Money market funds raised the hackles of regulators during the Great Financial Crisis[2] because of their apparent role in transforming and transmitting risk in the financial system. This book follows a pivotal moment in the history of money market funds. Money market funds—once praised as a successful financial innovation meeting retail and institutional demands for safety, liquidity, and convenience—in turn have been indicted by association with the financial alchemy that presaged the Great Financial Crisis. These contrasting factors form the backdrop to this book.

1.03 Until 2010 these funds had remained a quiet, under-researched corner of the capital markets.[3] To close gaps in knowledge, this edited volume contains profiles of money market funds in different countries and reviews of relevant regulations. It amalgamates decades of professional experience of its contributing authors and provides the reader with an opportunity to learn about money market funds from asset managers, practicing attorneys, US and European regulators, rating agency analysts, and academics.

1.04 This chapter sets the stage by presenting various formal definitions of money market funds adopted in the EU and the US. It introduces the architecture of money market funds in the EU and the US with which investors, regulators, and issuers concern themselves daily. It also elucidates the finer details and legal distinctions associated with money market funds, which may be obscured by the ongoing lively debate between regulators and those whom they regulate. It considers why money market funds continue to be popular with retail and institutional investors. Is this popularity the happy result of appropriate regulation providing sufficient protection and transparency for investors? Or does it merely reflect regulatory arbitrage? Why should money market funds continue to exist and grow in spite of a purported market failure? Did money market funds in the US experience a market failure or do the existing views of recent money market fund history need to be corrected and clarified?

[2] See eg The US Department of the Treasury, 'Financial Regulatory Reform. A New Foundation—Rebuilding Financial Supervision and Regulation' (2009). The blueprint for financial regulatory reform mandates the US Securities and Exchange Commission to 'move forward with its plans to strengthen the regulatory framework around money market funds to reduce the credit and liquidity risk profile of individual money market funds and to make the money market fund industry as a whole less susceptible to runs'. P Tucker, 'Shadow Banking, Financing Markets and Financial Stability', Remarks of the Deputy Governor for Financial Stability at the Bank of England at Bernie Gerald Cantor Partners Seminar, London (21 January 2010) pp 2–3, expressing the view that money market funds operating like banks should be regulated like banks.

[3] V Baklanova, 'Money Market Funds: An Introduction to the Literature' (26 January 2010), available at <http://dx.doi.org/10.2139/ssrn.1542983> (accessed 12 June 2013).

Functionally, a money market fund is a financial intermediary that pools available financial resources from cash-rich economic actors and advances the same to cash-poor entities (ranging from state governments to municipalities and corporations). The consequent categorization question at the heart of money market fund regulation is whether a money market fund should be treated as the functional equivalent of a bank, with the consequent requirements for regulatory capital and a public safety net. Even within this book, the various authors coming from diverse jurisdictions and disciplines have different views on this question. **1.05**

Of course, a bank usually has the traditional capital structure of a corporation: equity at the bottom and debt at the top (with these two elements of the capital structure sandwiching, perhaps, capital in the form of equity with some debt characteristics or capital in the form of debt with some equity characteristics). At some abstract level, a corporation and a fund find themselves in the same category—defined by the characteristics of mutualization, or association and risk-sharing. However, it is the want of this traditional capital structure that allows us to use the signifier 'fund' to indicate something meaningfully distinct from the traditional corporation. **1.06**

Capital in the form of debt and capital in the form of equity are both obligations of the entity to whom the capital is advanced. Nonetheless, they are distinct forms of capital and this distinction between debt and equity has implications for the ongoing development of money market fund regulation internationally. To adopt the language of structured finance, the essence of the distinction is that equity (in contrast to debt) represents the 'first loss' piece in the capital structure of the issuing entity. The distinction manifests itself acutely if the entity becomes subject to a formal liquidation regime. In the case of debt capital, the holder's right to repayment is thereby transformed into the privilege to petition in that liquidation. In the case of equity capital, in contrast, the holder's formal right to participate *pari passu* in the residual bankruptcy estate of the entity is realized. Furthermore, it is characteristic of equity that the holder does not have an unconditional legal right to receive any repayment of her capital on a scheduled date, no matter what economists may say. **1.07**

In its most austere form, the related proposition is as follows: in investing in a money market fund one advances equity capital not debt capital. The second proposition (which goes to the heart of understanding the risk transformation that a money market fund effects) is that a money market fund is subject to the duty to invest its shareholder capital in low risk debt instruments only. The implication of these two propositions is that a money market fund simply transforms a steady debt-like stream of payments (from the asset side of its balance sheet) into equity risk (on the liability side of its balance sheet). The controversy regarding money market fund regulation has manifested itself in the fierce debate between bank regulators—requiring the same mechanisms that justify the existence of the public **1.08**

safety net for banks, and capital markets—demanding efficiency and a freedom of contract. These two sides may never agree regarding the exceptional non-legal characteristics and features of money market funds.

US and European Definitions of Money Market Funds

1.09 Despite the increased publicity that these funds have received since 2008, a common definition of a money market fund remains elusive. Within this book numerous types of money market funds, from just as many jurisdictions, will be presented. Nevertheless, one may define a money market fund simply as a pass-through vehicle channelling cash from investors to borrowers without the use of leverage.[4] Figure 1.1 illustrates the general structure of a money market fund.

1.10 Figure 1.1 depicts a flow of investments into the money market fund in exchange for shares and related rights, including dividends. The money market fund, in turn, invests the proceeds from the issue of its shares in debt obligations issued by

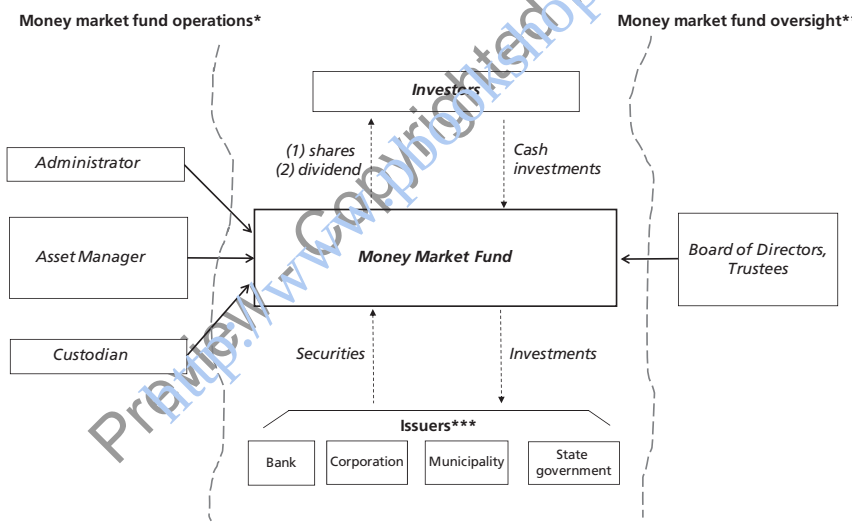

Figure 1.1 Structure of a money market fund

* Operational support could be structured differently depending on local legal arrangements.
** Oversight could be provided in a different form depending on local legal arrangements.
*** Issuers of securities purchased by money market funds are not necessarily entities located in the same country, but could be organized/registered in different countries.

[4] Report of the President's Working Group on Financial Markets 'Money Market Fund Reform Options' (2010), defining money market funds as 'intermediaries between shareholders who desire liquid investments, often for cash management, and borrowers who seek term funding'. See also US Securities and Exchange Commission, 'Investor Bulletin: Focus on Money Market Funds' (2011), available at <http://www.sec.gov/investor/alerts/mmf-investoralert.htm> (accessed 31 May 2013), explaining the function of money market funds as cash storage.

various entities such as banks, corporations, and municipal and state governments that could be located in any country. When an investor asks for her cash back, the process reverses. To raise cash, the money market fund may rely on due proceeds from self-liquidating obligations or sell part of its portfolio in the secondary market. Because the money market fund invests only in high quality obligations[5] with short maturities (generally less than one year), it is expected that a money market fund would be able to sell assets without incurring material losses.[6] Therefore, investors in the money market fund, in turn, expect to redeem their shares with no loss of capital.

1.11 The investment management activities of money market fund managers in the EU and the US are tightly regulated. A substantial part of this book is devoted to an analysis of various money market fund regulations adopted on either side of the Atlantic. Specifically, the US Securities and Exchange Commission (SEC) regulates US money market funds under federal securities laws, which include limitations on investment risks and specific operational and accounting practices as well as unique disclosure requirements.[7] The definition of a money market fund in the EU is formalized under the 'CESR's Guidelines on a common definition of European money market funds' (hereinafter the 'ESMA Guidelines'), which came into effect in July 2011[8] and is currently administered by the European Securities and Markets Authority (ESMA).[9] The ESMA Guidelines outline a two-tier money market fund industry structure comprising European *short-term*

[5] Investment restrictions applicable to money market funds are discussed in detail in Ch 3 (for European money market funds) and Ch 5 (for US money market funds).

[6] For a discussion of what could be considered a 'material loss' of value of an individual debt security, see JE Fisch and ED Roiter, 'A Floating NAV for Money Market Funds: Fix or Fantasy?', University of Pennsylvania, Institute for Law & Economic Research, Paper No 11-30 (2011) p 12, explaining that a materiality threshold could be as little as 0.1%. However, for a money market fund portfolio as a whole, a deviation of its per-share price of 0.5% from the fund's stable value is generally considered material enough for the fund's board of directors to consider actions with respect to such a deviation. See 17 CFR § 270.2a-7 Money market funds (c)(8)(ii)(b). For an in-depth analysis of Rule 2a-7, see Ch 5.

[7] See Ch 5 for detailed analysis. The principal characteristics of the US money market funds are codified in 17 CFR § 270.2a-7. In this book, the laws are stated as at 31 May 2013. On 5 June 2013, the US Securities and Exchange Commission proposed rules that would reform the way that money market funds operate. See SEC Proposing Release IC-30551 (5 June 2013) (hereinafter 2013 Proposing Release), available at <http://www.sec.gov/rules/proposed/2013/33-9408.pdf> (accessed 7 June 2013). However, no new rules have been adopted at the time of writing.

[8] 1 July 2011 is the transposition date for Directive (EC) 2009/65 of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS). This directive relates to, *inter alia*, 'money market instruments'. The Guidelines become 'effective' on that transposition date.

[9] ESMA, 'CESR's Guidelines on a common definition of European money market funds' (19 May 2010) (hereinafter the 'ESMA Guidelines'). For a detailed analysis of a common definition of European money market funds, see Ch 3. It should be noted that the territorial applicability of the ESMA Guidelines is not completely clear; while the title of the document refers to 'European money market funds', it is unlikely that European money market funds outside the EU would be subject to the rules. To be more specific, the discussion in Ch 3 focuses on those European money market funds operating in the EU.

money market funds and European *money market funds*, with funds in each tier having different investment characteristics, as discussed in Chapters 2 and 3 of this volume.

1.12 The linguistic ambiguity of the ESMA Guidelines with respect to the use of the term 'a money market fund' should be noted. On the one hand, the Guidelines use the term 'a money market fund' in a generic sense to encompass those collective investment schemes subject to the said ESMA Guidelines. On the other hand, the Guidelines refer to *money market funds* as a special type of 'money market funds' that are managed according to a broader risk profile. Understandably, some investors perceive this definition as cumbersome and unduly confusing.[10] Nonetheless, many European market constituents applauded the intentional broadness of the Guidelines that supported the existing structure of local markets in Continental Europe.[11]

1.13 An unbiased observer could argue that the two-tier definition promulgated under the ESMA Guidelines was simply driven by a desire to protect the European fund management industry rather than ensuring international best practice. Another aim of the Guidelines, allowing purchases of relatively risky assets by money market funds, could be seen as providing support to those sovereign issuers whose credit quality declined as a result of the European sovereign debt crisis at the expense of portfolio credit quality and fund investors. Given these observations, further divergence of European and US money market fund regulation can be expected. This trend has become especially evident in the light of the latest proposal of the SEC to improve money market funds further by requiring additional price transparency, better liquidity management tools, stronger diversification requirements, and more timely and comprehensive disclosure.[12]

Benefits of Money Market Funds

1.14 The importance of money market funds became apparent during the Great Financial Crisis that started in August 2007 and continued through to the end of 2009. During this period the ability of these funds to transmit funding risk

[10] See eg the response to CESR Consultation Paper 09-850 by JP Morgan Asset Management, 'A common definition of European money market funds' (31 December 2009) p 2, stating that it would be desirable to see 'a single definition that is closer in nature to the "short term" money market funds'. The letter further stated that other longer-term money market funds should not be allowed to operate as money market funds and belong in the short-term fixed income universe, as opposed to the 'cash' asset class.

[11] See eg EFAMA, 'Fund industry associations united behind a European definition of money market funds' (9 July 2009), available at <http://www.efama.org/Pages/Fund-industry-associations-united-behind-European-definition-of-Money-Market-Funds.aspx> (accessed 7 June 2013).

[12] US Securities and Exchange Commission, 'SEC Proposes Money Market Fund Reforms' (5 June 2013), available at <http://www.sec.gov/news/press/2013/2013-101.htm> (accessed 7 June 2013).

captured the attention of regulators and academic researchers.[13] The ability of global banks to source funding from the US money market funds during the European sovereign debt crisis in 2010 and 2011 further exacerbated the regulatory concerns related to systemic stability. Lost in the heated debate was the positive role that money market funds play as providers of capital and liquidity to various economic actors. To recover this lost information and to present a fairer picture of the role and function of money market funds, both the positive and negative aspects of their activities are examined, taking into account the social, political, legal, and economic dimensions across the EU and the US.

Benefits to investors: creation of wealth and capital formation

1.15 Money market funds are uniquely positioned as suppliers of credit and liquidity to the financial system. Given the high level of penetration of these funds into household finances and corporate cash management, the benefits of money market fund activities accrue not only to industry participants, but also to nearly all social strata of the community. The most tangible and observable benefit is that accrued to fund shareholders in the form of excess return earned by money market funds versus other comparable investment options, such as interest-bearing bank accounts. For example, an investment of $1,000 in the average money market fund at the beginning of 1999 would have earned excess income of $200 over the average bank account by the end of 2008.[14] Even though the absolute amount looks inconsequential in the context of the ten-year time frame, it translates into a 20 per cent relative investment benefit. Over the last 25 years, due to the yield differential between bank deposits and US money market funds, fund investors have increased their returns by over $450 billion.[15]

1.16 Second, money market funds have earned a reputation for safety. In the 40-year history of US money market funds, only two funds have failed to return the full principal value.[16] This is an exceptionally strong track record, which encourages investor participation, especially in times of stress.[17] The US Treasury's Temporary Guarantee, which was established in September 2008 to support the US money

[13] Funding risk, also referred to as funding liquidity risk, is defined as the possibility that over a specific horizon the bank, or any other entity, will become unable to settle its obligations with immediacy. See eg M Drehmann and K Nikolaou, 'Funding Liquidity Risk: Definition and Measurement', BIS Working Papers, No 316 (July 2010) p 1.

[14] Federated Investors, 'Proposed Money Fund Reform: Meetings with the Securities and Exchange Commission' (January 2010), available at <http://www.sec.gov/comments/s7-11-09/s71109-169.pdf> (accessed 7 June 2013).

[15] Federated Investors, 'Proposed Money Fund Reform', p 6 (n 14).

[16] See eg Investment Company Institute, 'Report of the Money Market Working Group Submitted to the Board of Governors of the Investment Company Institute' (17 March 2009) App G, pp 175–80.

[17] ME Bullard, Testimony before the Subcommittee on Capital Markets and Government Sponsored Enterprises Committee on Financial Services United States House of Representatives on 'Oversight of the Mutual Fund Industry: Ensuring Market Stability and Investor Confidence'

market fund industry, was terminated in 2009 resulting in $1.2 billion in revenue for the federal government. No money market fund drew on this programme.[18] European money market funds likewise serve as a safe investment alternative to equity and longer-dated fixed income investments, especially during episodes of high market volatility.

1.17 On the other side of the equation are the borrowers—governments, corporation, and even consumers, albeit indirectly—relying on money market funds for funding options. An access to deep and liquid public markets provides significant cost benefits for borrowers and sound diversification of their funding options.[19]

Benefits to the capital markets: diversification of funding and cost saving

1.18 Money market funds provide a valuable funding diversification option for debt issuers. A deep and liquid public market offers a choice to tap either long-term or short-term funding options while considering the optimal capital structure. While it is often preferable to issue longer duration securities to reduce the mismatch of the duration of assets and liabilities and avoid uncertainty related to the need for frequent refinancing, borrowers recognise that access to the money market is beneficial in terms of lowering their costs of funding. Depending on their types of business and capital structures, they may choose from commercial paper, discount notes, variable or floating rate notes, certificates of deposit, repurchase agreements, and others.[20]

Benefits to non-financial corporations: access to capital markets and funding flexibility

1.19 Non-financial corporations refer to bricks and mortar businesses and other producers of goods and services in contrast to financial entities. These corporations

(26 June 2011) p 6, available at <http://financialservices.house.gov/UploadedFiles/062411bullard.pdf> (accessed 7 June 2013), arguing that two instances of money market fund failures over the course of 40 years fall under 'any reasonable definition of *safe*'.

[18] See eg Testimony of Scott C Goebel Senior Vice President and General Counsel Fidelity Management & Research Company Before the Financial Services Subcommittee on 'Capital Markets and Government Sponsored Entities' (24 June 2011) p 7, available at <http://financialservices.house.gov/UploadedFiles/062411goebel.pdf> (accessed 7 June 2013).

[19] PS Stevens, Testimony before the Subcommittee on Capital Markets and Government Sponsored Enterprises Committee on Financial Services United States House of Representatives on 'Oversight of the Mutual Fund Industry: Ensuring Market Stability and Investor Confidence' (24 June 2011) p 18, fn 8, available at <http://financialservices.house.gov/UploadedFiles/062411stevens.pdf> (accessed 7 June 2013), noting that under the post-crisis bank regulation known as Basel III, the cost of bank credit lines may increase even further.

[20] See M Stigum and A Crescenzi, *Stigum's Money Market* (4th edn, McGraw-Hill, 2007), providing an excellent overview of funding options available to short-term market participants.

typically access the money market to meet short-term liquidity needs, such as timing mismatches between payroll payments and the collection of revenues. Corporations also use the money market as a source of bridge financing for mergers or acquisitions or to borrow against forthcoming bond proceeds until they can arrange or complete longer-term funding.[21]

1.20 High quality non-financial corporations normally access the money markets by issuing commercial paper or medium-term notes.[22] Commercial paper is issued to fund day-to-day operations at interest rates that are typically less than those applied to bank loans.[23] Funding in the commercial paper market is also more flexible. If corporate funding needs decrease, commercial paper quickly matures and is not re-issued, as opposed to a bank loan facility for which a borrower would have to pay an additional non-usage fee.

1.21 Interest rate data for seasoned industrial corporate bonds and commercial paper, available from the website of the Federal Reserve Board of Governors, demonstrate that the cost saving of commercial paper issuance is significant.[24] The annual yield differential between commercial paper and corporate bonds over the last five years averages 4.3 per cent, ie a corporation borrowing $100 million in commercial paper would, on average, save $4.3 million a year in interest payments.[25] Furthermore, the diversification of corporate funding sources presents a non-tangible benefit of the use of the commercial paper market by various types of short-term institutional investors, including money market funds.

Benefits to banks: funding in foreign currencies and reduction of trade imbalance

1.22 Notwithstanding the fierce competition for investors between banks and money market funds, money market funds serve as an important source of funding for banks and finance companies. Banks borrow in the money markets to finance

[21] Investment Company Institute, 'Report of the Money Market Working Group' pp 13–14 (n 16).

[22] Commercial paper, which is an unsecured promissory note, is typically issued with maturities ranging from 1 to 270 days; medium-term notes may have maturities from one to three years and bear fixed or variable rates of interest. To be eligible for money market fund investments, these securities must be of high quality and generally be rated within the two highest short-term rating categories by credit rating agencies.

[23] See eg 'Submission by the Investment Company Institute Working Group on Money Market Fund Reform Standing Committee on Investment Management International Organization of Securities Commissions' (7 February 2012) p 5, fn 15 and accompanying text, available at <http://www.ici.org/pdf/25877.pdf> (accessed 7 June 2013).

[24] Federal Reserve, available at <http://www.federalreserve.gov/releases/h15/data.htm> (accessed 7 June 2013).

[25] The authors' calculations based on 'H.15 Selected Interest Rates' downloaded from the Federal Reserve website (see n 24). The differential is calculated on the basis of the five-year time period from January 2008 to December 2012, annualized monthly rates for Moody's Aaa seasoned corporate bonds and three-month Aa non financial commercial paper.

their short-term assets, including credit card receivables, auto loans, or other consumer loans.[26] In addition, prior to the European sovereign debt crisis, US dollar denominated money market funds served as major sources of dollar funding for non-US banks and European banks.[27] International trade imbalances have caused asymmetric transatlantic funding in which the US dollar denominated assets of European banks eclipsed the assets of US banks denominated in various European currencies by ten times.[28] The US dollar denominated assets of European banks have grown rapidly over the past decade from approximately $2 trillion in 1999 to more than $8 trillion in 2008.[29] This dynamic has presented a major challenge for non-US banks in financing their US dollar denominated assets and their US dollar operations.

1.23 Commercial banks traditionally finance themselves by attracting retail deposits.[30] While retail deposits are the most desirable and stable type of funding for banks, many banks have to turn to wholesale funding to meet their funding in other currencies. US dollar denominated money market funds have long been natural providers of short-term dollar financing for non-US banks in the wholesale funding market.[31] US dollar denominated money market funds invest a large part of their assets in certificates of deposit, time deposits, and commercial paper issued by non-US banks. Non-US banks also have an option to enter into repurchase transactions with money market funds and obtain short-term—normally overnight—US dollar funding in exchange for collateral consisting of banks' assets.[32] The funding relationship between money market funds and non-US banks is far from trivial, resulting in non-US banks dwarfing US banks

[26] Stevens, Testimony before the Subcommittee on Capital Markets, p 21 (n 19), stating that as of February 2011 the US money market funds held 24% of large certificates of deposit and 7% of eurodollar deposits. See also PricewaterhouseCoopers, 'The contribution of IMMFA funds to the Money Markets' (2012), reporting on European money market funds' holdings of certificates of deposit.

[27] ES Rosengren, 'Defining Financial Stability, and Some Policy Implications of Applying the Definition', Keynote Remarks at the Stanford Finance Forum Graduate School of Business Stanford University (3 June 2011) p 10, available at <http://www.bostonfed.org/news/speeches/rosengren/2011/060311> (accessed 7 June 2013).

[28] N Baba et al, 'US Dollar Money Market Funds and Non-US Banks' (March 2009) BIS Quarterly Review 2, Graph 1.

[29] Baba et al, 'US Dollar Money Market Funds and Non-US Banks', p 2 (n 28).

[30] Stigum and Crescenzi, *Stigum's Money Market*, pp 57–61 (n 20).

[31] See eg Moody's Investors Service, 'Moody's Survey of the Portfolio Management Activities of Large Prime Institutional Money Market Funds' (March 2004) p 10, Fig 12, available at <http://v3.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_81749> (accessed 7 June 2013), illustrating that since 2000, US certificates of deposit have not exceeded 3% of the US prime money market funds' assets, while foreign banks' certificates of deposit accounted for 12 to 25% during the same period.

[32] Stigum and Crescenzi, *Stigum's Money Market*, ch 13 (n 20), explaining that repurchase agreements, or repos, are transactions involving the sale of an asset and a simultaneous purchase of that asset at an agreed upon price on an agreed day. Repos are economically identical to secured loans, although the legal underpinning of repo transactions differs from that of secured loans.

as counterparties to money market funds.[33] Money market funds, especially those operating in the US, are viewed as the providers of US dollar wholesale funding for banks internationally.

Benefits to securities firms: inventory funding and market liquidity

1.24 Money market funds are even more critical for the securities firms, such as broker/dealers, as investors in commercial paper, short-term notes, and repurchase agreements.[34] For example, in the tri-party repo market, which is used by securities firms to finance their inventories and is estimated to have been worth approximately $1.7 trillion in the first quarter 2010, US money market funds are responsible for nearly a quarter of all transactions.[35]

1.25 A high level of money market fund participation in the repo market can be explained by regulatory requirements. For example, under US regulation, money market funds have to allocate at least 10 per cent of their assets to daily liquid securities.[36] Repo transactions fit the US regulatory definition of a daily liquid asset, making them a desirable investment option for these money market funds. Hence there is a symbiotic relationship between securities firms and money market funds in which securities firms seek inexpensive and flexible ways of financing their trading books and money market funds seek liquid investments.

Benefits to local government and municipalities: lowered borrowing cost

1.26 Money market funds are major investors in securities issued by local governments and municipalities in the US. Public issuers turn to the money market to bridge the timing gap between expenditures and tax receipts by issuing short-term notes.[37] Municipalities and other entities performing essential public services also come to the market to fund their projects, such as building and maintaining roads, bridges, airports, water and sewage treatment facilities, hospitals, and low-income housing. The appetite for municipal securities from retail investors, in particular, is quite significant due to the tax-exempt nature of the US municipal debt. Because public issuers, such as schools and hospitals, normally borrow smaller amounts relative

[33] S Collins and C Plantier, 'Do U.S. Banks Rely Heavily on Money Market Funds? No', Investment Company Institute (14 November 2012), available at <http://www.ici.org/viewpoints/view_12_mmfs_funding_banks> (accessed 12 June 2013), estimating that money market funds represent less than 3% of total US bank funding.

[34] Stigum and Crescenzi, *Stigum's Money Market*, p 534 (n 20), explaining that the repo market is inexpensive and convenient for Wall Street firms wishing to borrow daily, depending on daily funding needs.

[35] Federal Reserve Bank of New York, 'Task Force on Tri-Party Repo Infrastructure Report' (17 May 2010).

[36] This requirement is examined in greater detail in Ch 6.

[37] Investment Company Institute, 'Report of the Money Market Working Group', p 13 (n 16).

to banks or large corporations, the municipal market is more fragmented, less transparent, and generally illiquid. Thus, the intermediating role of money market funds in this market is particularly important.[38]

1.27 Historically, public issuers have issued long-term bonds maturing in 10 to 30 years to match the bond payment schedule associated with the long life of public projects.[39] With the emergence of money market funds as a source of short-term funding, municipalities have accrued significant savings in interest payments. To meet money market fund demand for short-term securities, the long-term debt of municipalities is shortened by including a tender option. The tender option enables the investor to sell back the long-dated municipal bond on short notice, typically seven days.[40] Such 'shortened' municipal securities are called *variable rate demand obligations*. Variable rate demand obligations enable local governments and public entities to borrow long term, yet paying lower interest rates.[41] The market for variable rate demand obligations had started to develop in the 1980s, and by 2010, money market funds had grown to hold over 56 per cent of all outstanding short-term US municipal debt.[42]

Benefits to state governments: a major source of funding

1.28 Securities issued by state governments, their agencies, and supranational organizations account for a substantial part of money market fund portfolios. As is shown in Chapter 6, government money market funds are obliged by the terms of their offering documents to invest substantially all their assets in government securities. These assets under the management of US government money market funds spiked from $900 billion in August 2008 to almost $1.5 trillion in December 2008, after the default of Lehman Brothers, when investors sought the safety of US government securities. US money market funds currently hold close to 37 per cent of all outstanding short-term debt of the US government agencies, including two major US housing agencies, the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation, often referred to as Fannie Mae and Freddie Mac.[43] Money market funds hold 12 per cent of all outstanding US Treasury securities.[44]

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[38] Stigum and Crescenzi, *Stigum's Money Market*, pp 1111–13 (n 20).

[39] Stigum and Crescenzi, *Stigum's Money Market*, pp 1111–13 (n 20). The longer tenor provides timing flexibility in arranging sources of repayment for which an issuer has to pay with the higher cost of borrowing.

[40] See eg Standard & Poor's, 'Variable Rate Demand Obligations—A Primer' (1 November 2009), available at <http://www2.standardandpoors.com/spf/pdf/index/VRDO_Primer.pdf> (accessed 7 June 2013).

[41] Standard & Poor's, 'Variable Rate Demand Obligations', p 4 (n 40), explaining that yield on variable rate demand notes closely follows yield on one-month US Treasury bills.

[42] SEC Rel No IC-28807 at B and accompanying notes.

[43] Stevens, Testimony before the Subcommittee on Capital Markets, p 21 (n 19).

[44] Stevens, Testimony before the Subcommittee on Capital Markets, p 21 (n 19).

To summarize, this section has highlighted the socio-economic gains and multiple benefits of money market funds to a variety of stakeholders, investors, and issuers in the global capital markets. The size and structure of the money market affects the availability of credit and the diversification of funding sources for many other economic actors. All these benefits provide an obvious rationale as to why money market funds should be protected by appropriate (and protected from inappropriate) market regulation. Notwithstanding these benefits, the next section turns to the negative side of money market funds, namely their ability to withdraw funding quickly and, therefore, to transmit liquidity shocks from one market participant to another, and from country to country. This process, which is often associated with systemic risk, is also analysed in the concluding Chapter 10. **1.29**

'Shadow Banks' and Money Market Funds

Since the mid-1980s, the financial system has been through extensive changes in credit intermediation. Traditional banking is no longer the only way for business and households to obtain credit. New types of financial intermediaries—of which money market funds are a part—emerged, contributing to the availability and affordability of credit by converting risky, less liquid assets into seemingly less risky and shorter-term liabilities.[45] The inability of financial regulators to exercise adequate control over the idiosyncratic[46] and systemic risks[47] of these intermediating activities was at the core of the recent crisis and triggered a wholesale review of the regulatory canon, particularly in the US and the EU.[48] **1.30**

Faith in the self-correcting nature of the free market and in the ability of financial institutions to police themselves has been effectively challenged amidst calls for tighter, more stringent government supervision of financial entities and their employees.[49] One of the most notable lawmaking initiatives in response to the **1.31**

[45] Financial entities operating outside the traditional banking system are often referred to as 'shadow banks'. See eg Z Pozsar et al, 'Shadow Banking', Federal Reserve Bank of New York Staff Report No 458 (July 2010). That said, it is useful to point out that other definitions of a shadow banking system have been developed. See also P Mehrling et al, 'Bagehot was a Shadow Banker: Shadow Banking, Central Banking, and the Future of Global Finance' (22 February 2013), available at <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2232016> (accessed 7 June 2013), characterizing shadow banking as 'money market funding of capital market lending'.

[46] Morningstar, 'Morningstar Investing Glossary: Idiosyncratic Risk' (2012), available at <http://www.morningstar.com/InvGlossary/idiosyncratic_risk_definition_what_is.aspx> (accessed 7 June 2013), defining idiosyncratic risk as the risk of incurring volatility or permanent loss of capital based on the unique circumstances of a security, rather than general market movements.

[47] For an extensive discussion of systemic risk in connection with money market funds, see Ch 10.

[48] FCIC, 'The Financial Crisis Inquiry Report' (January 2011) xviii (hereinafter FCIC Report), concluding that the causes of the financial and economic crisis in the US included 'widespread failures in financial regulation and supervision', which 'proved devastating to the stability of the nation's financial markets'.

[49] See eg The Group of Thirty, 'Financial Reform: A Framework for Financial Stability' (15 January 2009) pp 12–14.

financial abuses of the era of credit expansion in the late 1990s through to the early 2000s is the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, enacted on 21 July 2010. The Dodd-Frank Act emphasizes accountability and market transparency, and intends to improve consumer protection from abusive practices in financial services.[50] Similarly, in Europe, Basel III—a comprehensive set of guidance documents developed by the Basel Committee on Banking Supervision—aims to improve the banking sector's financial profile, risk management, and governance.[51]

1.32 Money market funds still remain an open regulatory issue. Financial regulators on both sides of the Atlantic point out the vulnerability of money market funds to investor runs and call for policy steps to mitigate the associated risks.[52] With the specific aim of improving regulation and oversight of the market-based financial system, the Financial Stability Board has developed a series of concrete proposals that include, among other items, steps to reduce key vulnerabilities of money market funds.[53]

1.33 The massive run on prime institutional money market funds in the US in the wake of the Reserve Primary Fund 'breaking the buck' in September 2008 has been widely cited as an example of an event leading to financial system failure.[54] A previously quiet corner of the financial markets has attracted significant public scrutiny from the standpoint of financial stability. As a result of just this one episode, all money market funds were indiscriminately identified as potentially destabilizing.[55] Another very recent example of a systemic shock, reviewed in Chapter 10, concerns the US prime money market fund investments in European banks, which rely on these funds for their US dollar funding.[56] An increased integration and interdependence of the global capital markets contributed to a

[50] The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Pub L 111-203, HR 4173). The Act is to promote the financial stability of the US by improving accountability and transparency in the financial system, to end 'too big to fail', to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes.

[51] Basel Committee on Banking Supervision, 'Basel III: A global regulatory framework for more resilient banks and banking systems' and 'Basel III: International framework for liquidity risk measurement, standards and monitoring' (2010).

[52] Financial Stability Board, 'Consultative Document Strengthening Oversight and Regulation of Shadow Banking An Integrated Overview of Policy Recommendations' (18 November 2012) pp 7–8, available at <http://www.financialstabilityboard.org/publications/r_121118.pdf> (accessed 7 June 2013). See also 2013 Proposing Release (n 7).

[53] Financial Stability Board, 'Consultative Document', pp 7–8 (n 52).

[54] For a description of the experience of different types of US money market fund during the financial crisis, see Ch 6.

[55] See eg RM Stulz, Testimony before the Subcommittee on Capital Markets and Government Sponsored Enterprises United States House of Representatives on 'Oversight of the Mutual Fund Industry: Ensuring Market Stability and Investor Confidence' (24 June 2011) p 4, available at <http://financialservices.house.gov/UploadedFiles/062411stulz.pdf> (accessed 7 June 2013).

[56] Baba et al, 'US Dollar Money Market Funds and Non-US Banks' (n 28).

greater focus on money market funds from many regulatory quarters around the world. For example, the International Monetary Fund includes a review of developments in money markets and money market fund activities in its Global Financial Stability Report.[57]

1.34 The character of money market funds as powerful investors and their ability to act in a coordinated manner can exacerbate the instability of fragile markets. This section examines the risk conveyed by money market funds, as highlighted by the Great Financial Crisis and the European sovereign debt crisis. The cascade of events that presaged the Great Financial Crisis includes the failures of a few asset-backed commercial paper programmes in August 2007.[58] The reliance by IKB Deutsche Industriebank AG on sub-prime mortgage-backed securities in structuring asset-backed commercial paper programmes caused one such programme to fail to roll maturing securities on 7 August 2007.[59] However, the event was largely overlooked by both the market and the regulators.[60] In October 2007, when this obscure market had started to freeze, the Dow Jones Industrial Average, the stock market index whose movements are associated with investors' confidence and the level of economic activities, was still making new highs.[61]

1.35 In fact, some even welcomed the 'creative destruction' of Wall Street under the assumption that capitalism works the best when it ruins 'the foolish levered momentum player, sending him to the poor house while his assets are sold at a deep discount to the less-levered (or even unlevered) player'.[62] Indeed, the initial stages of turmoil in the asset-backed commercial paper market exposed to sub-prime mortgages did not affect the non-financial sector. However, the cost of the funding of corporate receivables for banks increased when prime money market funds ceased their investments in asset-backed commercial paper.[63] An instantaneous

[57] IMF, 'Global Financial Stability Report. Old Risks, New Challenges' (April 2013) p 100, available at <http://www.imf.org/External/Pubs/FT/GFSR/2013/01/pdf/text.pdf> (accessed 7 June 2013).

[58] FCIC Report, p 246 (n 48).

[59] FCIC Report, p 247 (n 48).

[60] K Carmichael and P Cook, 'Paulson Says Subprime Rout Doesn't Threaten Economy', Bloomberg (26 July 2007), available at <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=arhcov9ThQM8> (accessed 7 June 2013).

[61] The DJIA, introduced in 1896 by Charles H Dow, is the mostly widely followed measurement of the stock market. It comprises 30 stocks that represent leading companies in major industries, which are widely held by both individual and institutional investors. The DJIA reached a pre-crisis record intra-day high of 14,198.1 on 11 October 2007. See <http://www.djaverages.com/?go=industrial-index-data&report=performance>.

[62] P McCuley, 'Teton Reflections' (September 2007), available at <http://www.pimco.com/Pages/GCBF%20August-%20September%202007.aspx> (accessed 7 June 2013).

[63] FCIC Report, p 248 (n 48), noting that asset-backed commercial paper is held largely by money market funds, who are ultra-sensitive to any delay in payment. From its peak at $1.2 trillion in August 2007 it shrank threefold to $400 billion by the end of that year because asset-backed commercial paper's main investors—money market funds—withdrew from these assets in fear of potential exposures to mortgages. Frequent periodic credit risk re-assessments are at the core of money market funds' investment activities, due to low tolerance to asset price volatility and

shortage of investors for various programmes had a direct negative effect on the cost of capital for corporations.

1.36 The proactive actions of prime money market funds have been viewed as catalysts of looming funding problems and formed a view of money market funds as a leading indicator of credit risk.[64] This view has inspired a regulatory conundrum with respect to money market funds: on the one hand, money market funds are under a duty to avoid unwarranted risks; on the other hand, by ceasing to invest in a particular issuer, money market funds may, and often do, exacerbate emerging credit concerns. The authors rationalize money market funds as prudent investors, not entities susceptible to an arbitrary and unwarranted panic. The short-term nature of money market funding does not afford much time to cure problems. That said, the US Financial Crisis Inquiry Committee found that prime money market funds' termination of funding to banks and securities firms would cause them to fail shortly thereafter due to lack of market access.[65] This finding clearly demonstrates the need for issuers to understand the investment policies of their important investors and manage funding risk accordingly.

1.37 For example, Countrywide Bank, the largest US mortgage lender pre-crisis, not only relied heavily on the asset-backed commercial paper market, but also financed its mortgage portfolio in the repo market. After prime money market funds cut their investments in mortgage-backed programmes sponsored by the Countrywide Bank and, among other counterparties, ceased trading repos with the bank, liquidity pressures led to Countrywide's insolvency.[66] It has also been suggested that money market funds caused the failure of Bear Stearns, one of the largest and oldest US broker/dealers, by curtailing investments in securities issued by Bear Sterns and not lending to it in the repo market.[67]

1.38 Structured investment vehicles (known as SIVs), another asset class that caused significant damage to the global financial market, had been highly popular with prime money market funds prior to August 2007.[68] SIVs were highly leveraged entities that earned their profit from the interest rate arbitrage between their

high liquidity requirements. These credit risk reviews must be made in addition to any credit ratings assigned by credit rating agencies and based on factors other than those used by credit rating agencies.

[64] FCIC Report, pp 248–50 (n 48).

[65] FCIC Report, p 331 (n 48), illustrating that the withdrawal of a repo line provided by Fidelity, the largest fund complex, caused significant liquidity problems for Bear Stearns in March 2008.

[66] FCIC Report, pp 248–250 (n 48), documenting that in October 2007, the Bank of America purchased a 16% stake in the Countrywide Bank, thus enabling it to continue as a going concern. The Bank of America completed the acquisition of the Countrywide Bank in January 2008.

[67] See n 65.

[68] See eg Moody's Investors Service, '2004 Review: Portfolio Management Activities of Large Prime Institutional Money Market Funds' (March 2005) p 9, indicating that at the end of 2004 the US prime institutional money market funds invested approximately $16.9 billion, or 9.5% of their assets in notes issued by SIVs.

longer-dated assets and shorter-dated liabilities. SIV assets generally consisted of highly rated asset-backed and mortgage-backed securities, while their liabilities comprised commercial paper and medium-term notes with a duration much shorter than that of the assets. SIVs' commercial paper and notes were mainly purchased by prime money market funds and other short-term investors. A market for SIVs started in the early 1980s and functioned smoothly until August 2007, when prime money market funds had grown increasingly concerned with the exposure of SIVs to mortgages, even though SIVs generally invested in high quality mortgages and other assets.[69]

1.39 The proliferation of SIVs themselves may, in part, be attributed to the unintended consequences of regulation: the holding of AAA-rated securities issued by SIVs had an advantageous capital charge structure under Basel II, which explains an active involvement of European banks in the SIV market.[70] When in September 2007 money market funds stopped investing in SIVs, SIVs were unable to raise cash from new investors and had to liquidate their underlying portfolios in order to repay the maturing borrowings.[71] The market quickly became flooded with asset-backed and mortgage-backed securities up for the fire-sale liquidation. An excessive supply of securities triggered further price declines. Due to the domino effect—the lower the asset price, the more assets had to be sold—SIV losses grew substantially.[72] By 2010, practically all SIVs had either been restructured or liquidated.[73] However, even though a large number of prime money market funds incurred losses due to SIV investments, these losses were not transferred to the fund shareholders, but were largely absorbed by the funds' sponsors, due to reputational considerations.[74]

1.40 After the fall of the SIV market at the end of 2007, the financial crisis had continued to build up, affecting the mortgage insurance industry, US government housing agencies, UK building societies, and financial institutions in many countries. On 15 September 2008, the fourth largest US investment bank, Lehman Brothers Holdings Inc, declared bankruptcy in the largest US bankruptcy

[69] FCIC Report, p 252 (n 48), explaining that many SIVs had little, if any, sub-prime mortgage exposure.

[70] See eg P Van Roy, 'Credit Ratings and the Standardised Approach to Credit Risk in Basel II', European Central Bank Working Paper Series, Vol 507 (August 2005) p 37, explaining that assets carrying AAA and AA ratings from credit rating agencies receive the lowest charge for capital reserve purposes under the Basel II standards.

[71] See eg M Gilbert, 'Unsafe at Any Rating, CDO Speeds to CCC From AAA', Bloomberg, available at <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aSEguZCZ9ZpY> (accessed 7 June 2013).

[72] FCIC Report, p 253 (n 48), illustrating that losses on an individual SIV portfolio ranged from 45 to 95%.

[73] FCIC Report, p 253 (n 48). SIVs had $400 billion in assets under management at the peak of their volume in July 2007. See Fitch Ratings, 'Fitch: SIV Market Has Disposed of 95% of Assets Since July 2007', available at <http://www.fitchratings.com/creditdesk/press_releases/detail.cfm?pr_id=500156> (accessed 7 June 2013).

[74] Investment Company Institute, 'Report of the Money Market Working Group' p 50 (n 16).

filing in history.[75] Three years later, government investigations into the Lehman Brothers' practices leading to bankruptcy revealed, among other reasons for its failure, excessive reliance on the money markets, including commercial paper and repo markets.[76] One of the lessons one can garner from the aftermath of the Lehman Brothers bankruptcy is that money market funds can be the media for market interconnectedness and risk transmission.

1.41 Lehman Brothers Holdings Inc had been a large issuer of commercial paper, which was held by prime money market funds. When one of these funds, the Reserve Primary Fund, failed due to losses caused by Lehman's commercial paper, investors withdrew from prime money market funds, even those without investments in Lehman. Prime money market funds ceased investing as they needed cash to meet redemptions; thus other high quality borrowers in the commercial paper market, such as General Electric, 'the mainstay of corporate America', found no investors.[77] This episode illustrates that money market funds represent a strong, but not always apparent and fully appreciated, link between the productive sectors of the economy and the financial sector.

1.42 Harvey Miller, the bankruptcy attorney for the Lehman Brothers' estate, noted: 'When the commercial paper market died, the biggest corporations in America thought they were finished.'[78] The cost of commercial paper borrowing had increased dramatically in the week following the Lehman's bankruptcy, making it prohibitively expensive even for the largest international corporations to finance their payroll and daily operational needs. The panic threatened to disrupt global payment systems.[79] A significant number of prime institutional money market funds were under unprecedented redemption pressures as investors, mainly large corporate investors themselves, rushed out of these funds holding commercial paper and into government money market funds.[80] Prime institutional money market funds en masse turned to the secondary market in attempts to sell their assets and raise cash to meet redemption. The secondary market was instantly flooded with securities for sale, but had only few buyers. Those funds unable to raise cash from sale of the securities had to seek a liquidity bridge from their sponsors.[81]

[75] Voluntary Petition (Chapter 11), Docket No 1, *Lehman Brothers Holdings Inc*, No 08-13555, (Bankr SDNY, 15 September 2008). At the time of bankruptcy filing, the firm had over $600 billion in assets.

[76] FCIC Report, p 326 (n 48), citing the chief concerns in the Lehman Brother's operations as its overvalued real estate-related investments and its reliance on short-term funding sources, including $7.8 billion of commercial paper and $197 billion of repos as at March 2008.

[77] FCIC Report, p 339 (n 48).

[78] FCIC Report, p 355 (n 48).

[79] FCIC Report, p 358 (n 48).

[80] For an explanation of the differences in the types of money market funds and a detailed description of this episode, see Ch 6.

[81] Moody's Investors Service, 'Sponsor Support Key to Money Market Funds' (August 2010), available at <http://v3.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_126231> (accessed 7 June 2013).

1.43 Government money market funds, on the other hand, were flooded with new money, which instantly created substantial demand for US government securities and forced lower yields on funds. The yield on four-week US Treasury securities fell to zero.[82] To stop the run on prime institutional money market funds, which was threatening the viability of the money markets, the US Treasury department introduced a guarantee programme for money market fund shareholders.[83] Even though participation in the Treasury guarantee programme was optional and entailed a fee, a majority of money market funds chose to participate.[84] This unprecedented step taken by the US Treasury to provide a guarantee to private investment vehicles proved to be extremely effective in containing the panic and quelling shareholder redemptions.[85] By January 2009, the assets under the management of US money market funds reached an all-time high of $3.9 trillion.[86]

1.44 The Treasury guarantee programme and other government actions aimed at restoring the viability of prime money market funds during the peak of the liquidity crisis highlighted their importance for the financial system as a liquidity vehicle. Over the last 40 years, money market funds have grown to represent a significant part of the funding markets. When the mortgage market collapsed and prime money market funds, together with other short-term investors, abandoned the commercial paper and repo lending markets to avoid risky exposure, a number of institutions depending on these markets failed or were rescued. Even healthy companies, unrelated to the financial sector, experienced an exceptional drop in market access and, soon thereafter, large spikes suddenly appeared in borrowing costs due to the lack of demand from investors and, specifically, from money market funds. During this turbulent period, prime money market funds served to propagate the turmoil in the financial sector to other economic sectors. Yet, these funds' functions as providers of credit and

[82] FCIC Report, p 357 (n 48).

[83] US Department of the Treasury, 'Frequently Asked Questions About Treasury's Temporary Guarantee Program for Money Market Funds' (29 September 2008), available at <http://www.treasury.gov/press-center/press-releases/Pages/hp1163.aspx> (accessed 7 June 2013), explaining that a guarantee covered those money market fund shareholders on record as at 19 September 2008 and in the amount invested on that day until 30 April 2009. The programme was subsequently extended until 19 September 2009 and terminated without a single fund drawing on the guarantee.

[84] US Department of the Treasury, 'Frequently Asked Questions' (n 83). Participating funds were charged a non-refundable fee of 10 to 15 basis points of their total assets as at 19 September 2008, depending on the level of their market-based net asset values measured on that day.

[85] See eg B Webel and M Labonte, 'Government Interventions in Response to Financial Turmoil', Congressional Research Service (1 February 2010) p 27, reporting that over the life of the programme, no guaranteed funds had failed, and $1.2 billion in fees had been collected. Over $3 trillion of deposits were guaranteed and, according to the Bank of International Settlements, 98% per cent of money market mutual funds were covered by the guarantee, with most exceptions being funds that invested only in Treasury securities.

[86] Investment Company Institute, 'Report of the Money Market Working Group', p 1 (n 16).

liquidity were compelling reasons for the US government to step in to restore market liquidity.[87]

1.45 The crisis not only had devastating consequences for the US economy, but also produced a profound tsunami effect on the rest of the world. The US Congress Financial Crisis Inquiry Commission, tasked with the crisis tally, found that 26 million Americans were without jobs, four million families lost their homes in foreclosures, and $11 trillion in retirement and life savings vanished.[88] A number of European economies suffered similar hardships once the crisis reached their shores. Iceland, one of the first and hardest hit countries, nationalized its banking system after seeing the collapse of its three major banks in 2008. Its currency, the Icelandic króna, had declined more than 35 per cent against the euro in the first nine months of 2008 and consumer price inflation was running at 14 per cent per annum.[89] The internal finance and banking systems of Greece, Ireland, Italy, Portugal, and Spain, collectively dubbed 'GIIPS', have been roiled by an unrelenting pressure since 2009 to find solutions to the European financial crisis, which continues at the time of the writing of this book.[90]

1.46 Austerity measures instituted by the governments of these countries intended to contain ballooning public debt, caused national unrest.[91] The unhealthy national finances of GIIPS contaminated the banking system of the 'core' European countries through holdings of GIIPS sovereign debt by the largest European banks. James Carville, former US President Bill Clinton's campaign strategist, was stunned at the power of the bond market over governments: 'I used to think if there was reincarnation, I wanted to come back as the President or the Pope or a 0.400 baseball hitter. But now I want to come back as the bond market. You can intimidate everyone.'[92] Mr Carville's famous quote captures the essence of our next inquiry into the rationale for money market fund regulation: because financial markets indirectly control our everyday life, market shocks may cause national

[87] Even though the European Community and national regulators did not provide any direct support to European money market funds, their actions aimed at restoring the overall market stability benefited money market funds, albeit indirectly. For more details, see Ch 10.

[88] FCIC Report, p xv (n 48).

[89] See 'Iceland, Cracks in the crust', *The Economist*, 11 December 2008. Fitch Ratings, 'Credit Analysis: Iceland' (3 September 2009), estimating the direct fiscal costs of recapitalizing the Icelandic financial system at 40% of GDP, similar to some Asian countries during the Asian financial crises of the late 1990s.

[90] See eg European Commission, 'Moving Europe beyond the crisis: country-specific recommendations 2013' (29 May 2013), available at <http://europa.eu/rapid/press-release_IP-13-463_en.htm> (accessed 13 June 2013), recognizing that specific steps are still required to help Member States to move beyond the crisis, increase their competitiveness, and create jobs.

[91] A Brooks, 'Spain faces unrest as new austerity plan is announced', *The Independent*, 13 May 2010. A Faiola, 'In Greece, austerity kindles deep discontent', *The Washington Post*, 13 May 2011, reporting that in Greece, thousands of protesters have joined an 'I Won't Pay' movement, refusing to cover highway tolls, bus fares, even fees at public hospitals.

[92] *Wall Street Journal*, 25 February 1993, p A1.

uprisings or put governments out of power. The widespread market failures that began in the second part of 2007 in the asset-backed commercial paper sector and negatively affected virtually every economy in the developed world are currently threatening the viability of the EU.

1.47 As the European sovereign debt crisis developed in spring 2011, the threat of the financial contagion from cross-border capital flows became the focus of a public policy debate. The US Federal Reserve had grown increasingly concerned about the potentially disruptive effect of the European crisis on the US financial system via money market funds' exposure to European banks.[93] As discussed earlier in this chapter, money market funds, specifically those funds denominated in the US dollar, invest in the highest quality companies with extensive global business franchises, thus enabling non-US companies to finance their US operations.[94] This latest example of debates surrounding money market funds highlights the high level of interconnectedness of the contemporary financial system, vertically at many levels of participation and horizontally across national borders.

Why Money Market Funds Are Regulated

1.48 This section reviews traditional justifications for the regulation of financial markets and considers their relevance to money market funds. These theories are often insightful but cannot be taken uncritically at face value. The examination of the regulatory environment for money market funds presented in this chapter is based largely on the extensive debates on the goals and objectives of financial regulation and is part of the ongoing post-mortem (indeed, post-modern) narrative of the Great Financial Crisis. Together with the historical narrative provided in paragraphs 1.30 to 1.47, the concluding Chapter 10 illustrates how the uncontrolled risks of money market fund activities contributed to the crisis and how the risks were transmitted among seemingly unrelated economic agents as well as geographically remote markets.

1.49 Financial regulation is traditionally justified by reference to instances of market failure and their high social costs.[95] The financial crisis itself struck a severe blow to the theory of the self-correcting nature of capital markets—which was until

[93] Rosengren, 'Defining Financial Stability', p 10 (n 27).

[94] B Reid, 'Dispelling Misinformation on Money Market Funds', Investment Company Institute (July 2011), explaining that many European banks have substantial US operations. For example, eight of the 20 US primary dealers, on which the US Treasury and the Federal Reserve rely for the US Treasury auctions and open market operations, have their headquarters in Europe.

[95] Because the long-term social outcomes of regulatory intervention on different groups is difficult to foresee and almost impossible to account for, the cost-benefit analysis is normally conducted on the basis of cost of compliance and short-term changes to the business structure, ie loss of additional income due to prohibition on certain investments, cost of divestitures, and many other factors.

then widely accepted—and reinforced the central argument for financial market regulation, which aims to correct market failures.[96]

1.50 While money market funds did not cause the Great Financial Crisis, their ability to expose borrowers to funding shocks has been cited as one of the chief concerns related to systemic stability.[97] However, it was not until recently that the systemic stability argument was placed at the top of the regulatory agenda in connection with collective investment schemes, where investor protection and market integrity have traditionally been the main foci.[98]

1.51 With regard to the regulatory body, it is often assumed that the state is the chief engine promulgating regulation and maintaining enforcement mechanisms, although other regulatory schemes are conceivable.[99] Analysis of the causes of the Great Financial Crisis has challenged this assumption, pointing to a massive failure of state regulation. The findings of the Financial Crisis Inquiry Commission placed the blame on regulatory agencies that were unable or unwilling to employ tools they already had.[100] Thus, there could be a case for re-conceptualizing regulation as a function exercised primarily by the state but accompanied by a process of coordination among the industry actors, which process enables them to better organize themselves. The theory that a decentralized approach may be superior to that of state intervention is based on the assumption that 'government cannot know about the industry as the industry knows about itself'.[101] The advantages of this theory have been clearly demonstrated in the US in the prolonged debate regarding the structural reform of the money market fund industry, which led regulators to advance a reform proposal based, in large part, on suggestions offered

[96] See eg S Breyer, *Regulation and its Reform* (1982 edn, Harvard University Press, 1938). AI Ogus, *Regulation: Legal Form and Economic Theory* (Clarendon Press, 1994). R Baldwin and M Cave, *Understanding Regulation: Theory, Strategy, and Practice* (OUP, 2011).

[97] See eg European Systemic Risk Board, Annex European Systemic Risk Board Recommendations on US Dollar-denominated Funding of Union Credit Institutions (11 December 2011).

[98] See eg US Securities and Exchange Commission, 'The Laws That Govern the Securities Industry' (15 February 2012), available at <http://www.sec.gov/about/laws.shtml#invcoact1940> (accessed 7 June 2013). In the US, collective investment schemes, also referred to as investment companies, are regulated under the Investment Company Act of 1940, as amended. The law is designed to minimize conflicts of interest and requires disclosure of the financial condition and investment policies of these companies on a regular basis. The act generally does not permit the SEC to supervise the investment decisions of investment companies directly or to judge the merits of their investments. Rule 2a-7 governing activities of the US money market funds, provides an exception from this premise.

[99] R Baldwin et al, *A Reader on Regulation* (OUP, 1998) offers three definitions of regulation: (1) the promulgation of rules by the government supported by mechanisms for monitoring regulated entities and enforcement; (2) any form of direct state intervention in the economy; and (3) any mechanisms of social control affecting all aspects of behaviour from any source.

[100] FCIC Report, p xvii (n 48), concluding that widespread failures in financial regulation and supervision proved devastating to the stability of the US financial markets.

[101] J Black, 'Critical Reflections on Regulation' (2002) 27(1) Australian Journal of Legal Philosophy 3.

by various industry stakeholders. To further illustrate the effectiveness of this theory in application to money market funds, Chapter 8 provides an example of credit rating agencies as non-governmental actors developing quasi-regulatory standards and serving as sources of regulation for the money market industry in the US and the EU.

1.52 This review of the conventional considerations for financial regulation starts with a discussion of the law and economics movement, which has been one of the most influential schools of thought in American jurisprudence since 1961.[102] Indeed, securities law and regulation in the US are closely associated with the neoclassical economic theory.[103] This theory assumes that rational individuals and firms make their economic choices, or transact in the markets, on the basis of their utility or profit maximization.[104] Further, a significant underlying assumption of this theory is that in order for economic actors to transact there should be an appropriate level of information available to enable the actors' decisionmaking. If sufficient information is unavailable, then the market failure is inevitable.[105] Under this view, information symmetry, which is often referred to as information transparency, is a precondition of a competitive market and the purpose of securities regulation.[106]

1.53 George Akerlof, an American economist and a Nobel Laureate in Economics, using an example of the market for used cars, established that when prospective purchasers are persistently lacking information about the car quality, or faced with information asymmetry disfavouring the buyers, the sellers and the buyers are unable to achieve the pricing point that would be accepted by both sides.[107] This is because the buyers, without knowledge of a particular car offered for sale, assume the quality of any car to be average and are only willing to pay the price that reflects the average quality. Given that good quality is not rewarded by a better price, sellers of good cars withdraw from the market leaving only cars of below average quality available for sale. The buyers, in turn, would revise their quality expectations and

[102] R Coase, 'The Problem of Social Cost' (1961) 3(1) Journal of Law and Economics 1; G Calabresi, 'Some Thoughts on Risk Distribution and the Law of Torts' (1961) 70(4) Yale LJ 499. See generally JR Hackney Jr, *Under Cover of Science: American Legal-Economic Theory and the Quest for Objectivity* (Duke University Press, 2007).

[103] JR Hackney Jr, 'The Enlightenment and Financial Crisis of 2008: An Intellectual History of Corporate Finance Theory' (2010) 54(4) Saint Louis Univ LJ 1264–5.

[104] Hackney, 'The Enlightenment and Financial Crisis of 2008' (n 103).

[105] GA Akerlof, 'The Market for Lemons: Quality Uncertainty and the Market Mechanism' (August 1970) 84(3) Quarterly Journal of Economics 490.

[106] Breyer, *Regulation and its Reform*, pp 161–4 (n 96). For the history of disclosure rules under US securities regulations, see JR Brown Jr, 'Corporate Governance, the Securities and Exchange Commission, and the Limits of Disclosure' (2007) 57(45) Catholic Univ L Rev 48 *passim*.

[107] Akerlof, 'The Market for Lemons', p 491 (n 105). Of course, a car is not a financial asset and the market for used cars may not necessarily be a precise analogue for the market in financial assets. The Great Moderation was exquisitely pleasurable precisely because credit expansion allows the prices of both cherries and lemons to expand happily and, accordingly, allows the market participant to anticipate that this trend will continue.

the price they are willing to pay downward. Eventually, fewer good quality cars are offered and demand for cars diminishes as the quality of the cars declines. At the end of this process, no cars are offered at the price that buyers are still willing to pay, making the market for cars illiquid.[108]

1.54 If the information asymmetry is reversed and buyers are better informed of the cars' quality, the price equilibrium that satisfies both buyers and sellers could always be achieved.[109] This finding of Akerlof's model justifies the popular idiom of an informed consumer being a better customer. Consistent with this theory, US securities regulation has developed a comprehensive disclosure regime aimed, in particular, at facilitating information flow between investors and fund managers.[110] This analysis draws on the Akerlof model in its postulate and belief that the functioning of money market funds could be improved through reversing information asymmetry in favour of fund investors.

1.55 It is recognized, however, that emphasis on information symmetry does not necessarily ensure the rationality of investors' responses to market events. As evidenced by the financial crisis, the money market fund investors' judgment was irrational.[111] While asset-level information was available to the public, investors' rapid withdrawals from prime institutional money market funds amounted to a full-blown panic. Confused by the perceived riskiness and complexity of prime money market fund operations, investors triggered a 'flight to quality', which is a shift in investment behaviour when investors sell assets perceived to be risky and purchase assets perceived to be safe.[112] Flight to quality episodes illustrate the limits of risk disclosures. Details of complex financial transactions and the contingency effect in case of a transaction failure through market interconnectedness, both

[108] Akerlof, 'The Market for Lemons', p 491 (n 105).

[109] Akerlof, 'The Market for Lemons', p 492 (n 105).

[110] Speech by SEC Chairman Mary Schapiro: Statement on Money Market Funds Before the Open Commission Meeting (27 January 2010), stating that the new disclosure rules for money market funds 'will enable investors to better judge the risk profile of their money market funds'; also stating that the 'new disclosure also will impose a discipline on fund managers to avoid taking undue risks'.

[111] For further discussion of the role of money market funds in the financial crisis, see Ch 10. That having been said, all lending (but, in particular, short-term lending) might be considered fundamentally irrational in the light of the disparity between the benefits of the interest accrued and the risk of losing one's entire investment capital. This idea is captured by the neat phrase 'picking up pennies in front of a steam roller'. On this basis, disinvesting—the undoing of an irrational decision—is itself rational. See eg NN Taleb, *Antifragile: Things that Gain from Disorder* (Random House, 2012).

[112] There are multiple evidences of 'flight to quality' during the periods of sudden shocks, such as the Russian debt default in 1998, the US terrorist attack on 11 September 2001, the sub-prime mortgage crisis of 2007–08. See eg RJ Caballero and A Krishnamurthy, 'Collective Risk Management in a Flight to Quality Episode' (2008) 63(5) Journal of Finance 2196. A Kaul and B Phillips, 'Economic Conditions, Flight to Quality and Mutual Fund Flows', 21st Australasian Finance and Banking Conference, Sydney, Australia (2008) p 19, stating that Canadian mutual fund investors moved $1,850 million into money market funds and $627 million out of equity during the collapse of the Long-Term Capital Management hedge fund.

horizontal and vertical, are often beyond the reach of even the most sophisticated institutional investors and securities analysts.[113]

1.56 To protect fund investors adequately, consideration is given to the effects of cognitive and emotional factors on investment decisions.[114] This leaves room for other theoretical influences in the current regulatory construct such as behavioural economics, which rests on findings that investors often respond to risks irrationally and entails factoring these psychological aspects into economic models of rational behaviour.[115] Under US securities law, mutual funds that are normally sold to retail investors operate under an array of prescriptive rules and are subject to extensive disclosure requirements, while investment vehicles geared towards institutional investors and high net worth individuals are free to employ a greater choice of investment strategies and avoid the majority of reporting and disclosure requirements. This generally leads to permitting sophisticated investors[116] to choose from a broader range of investments, while limiting the investment choices of retail investors to safe, less complex alternatives.[117]

1.57 US and European money market funds are sold to both retail and institutional investors, although—as shown in Chapters 2 and 6 of this book—the breakdown of retail and institutional ownership may vary depending on a particular market infrastructure. It is worth mentioning at the outset that the differentiation of retail and institutional clients has proved to be a challenge. Money market funds, and especially those domiciled in the US, often source investments through specialized systems serving retail investor cash balances at investment managers, employee benefit plans, broker-dealer and futures dealer customer cash balances, and cash management accounts at banks.[118] These

[113] See eg SL Schwarcz, 'Rethinking the Disclosure Paradigm in a World of Complexity' (2004) 1 Univ Illinois L Rev 1, examining the problems of the complexity of financial instruments vis-à-vis the usefulness of disclosures to investors.

[114] See generally J Schwartz, 'Reconceptualizing Investment Management Regulation' (2009) 16 Geo Mason L Rev 521, describing a two-tier approach to investment management regulation in the US. Specifically, the current regulatory framework implies that investors with limited resources, such as retail clients, are often unable to properly analyse their investment options and liable to make poor choices based on available heuristics.

[115] See generally A Tversky and D Kahneman, 'Judgment under Uncertainty: Heuristics and Biases (1974) 185(4157) *Science* 1124. See also JE Fisch, 'Regulatory Responses to Investor Irrationality: the Case of the Research Analyst' (2006) 10 Lewis & Clark L Rev 64. The article questions the validity of the assumption that greater disclosures improve investor decisionmaking and cautions against costs imposed by additional disclosures that are of only marginal usefulness.

[116] 17 CFR § 230.501 Definitions and Terms Used in Regulation D. Sophisticated investors in the US federal securities laws are defined by the term 'accredited investors'. See also US Securities and Exchange Commission, 'Accredited Investors' (October 17, 2011), available at <http://www.sec.gov/answers/accred.htm> (accessed 7 June 2013).

[117] Schwartz, 'Reconceptualizing Investment Management Regulation', pp 532–6 (n 114).

[118] JD Hawke Jr, 'Economic Consequences of Proposals to Require Money Market Funds to "Float" Their NAV'; File No. 4-619, Submission to the US Securities and Exchange Commission

small cash balances of retail investors are usually aggregated in large accounts, often referred to as omnibus accounts, and placed as a single money market fund account under the name of the institution managing the omnibus account, or the so-called 'street name'. Thus, the boundaries between retail and institutional investors in money market funds are blurred, suggesting that simplistic approach based on the size of the account may not yield the desired benefits. The current money market fund regulatory models on both sides of the Atlantic treat retail and institutional investors equally. Deviating from these models, a release published by the US Securities and Exchange Commission on 5 June 2013 envisions potential differences in regulatory treatment for prime retail money market funds depending on the size of a permitted daily asset withdrawal by a single shareholder.[119]

1.58 Regardless of the challenges in differentiation, both types of money market fund investors are known to be risk averse. Both types of investors exhibit a *flight to quality* behaviour, which means that money market funds' assets under management tend to rise during the periods of increased market volatility, or when the probability of market losses is the highest.[120] The most apparent normative implications of this discussion call for the establishment of detailed risk-limiting rules, sometimes referred to as prudential standards, to urge the fund managers towards the most conservative practices as a means of investor protection.[121] Promulgating rules for prudential regulators is achievable and practical; and the general approach is usually incremental.

1.59 The prudential approach is the most prominent in banking regulation and is also notable in the securities law in relation to money market funds.[122] From the standpoint of implementation and maintenance, prudential measures are practical and, as such, are beneficial for the supervised entities. However, the pitfalls are plentiful and are often rooted in the fallibility of regulation itself.[123] Furthermore, being the

in Request for Comment on the President's Working Group Report on Money Market Fund Reform, Release No IC-29497 (November 2, 2012) p 30, available at <http://www.sec.gov/comments/4-619/4619-274.pdf> (accessed 7 June 2013).

[119] 2013 Proposing Release, p 72 (n 7), limiting permitted daily asset withdrawal by a single shareholder to $1.0 million.

[120] G Pennacchi, 'Deposit Insurance, Bank Regulation, and Financial System Risks' (January 2006) 53(1) Journal of Monetary Economics 1. A substantial asset withdrawal from US prime institutional money market funds in the aftermath of the Lehman Brothers bankruptcy is an extraordinary exception to this general rule. A detailed overview of this event is provided by Ch 6.

[121] MK Brunnermeier et al, 'The Fundamental Principles of Financial Regulation' (2009) 11 Geneva Reports on the World Economy 1, providing a rationale for financial regulation and the basic principles of the prudential approach. It explains the prudential approach through a comparison to common law that builds on accumulated experience and the best practices.

[122] 17 CFR § 270.2a-7. Chapter 6 provides an exhaustive discussion of this regulation.

[123] See eg FCIC Report (n 48), providing multiple examples of regulatory failure leading to the financial crisis.

least flexible, the prudential approach attracts the major criticism that it constrains financial innovation, on the one hand, and risks falling behind market developments, on the other.[124] One of the major benefits of this book is a substantial historical inquiry illustrating the development of money market fund regulation vis-à-vis market developments on both sides of the Atlantic, which is expected to enable the policymakers to make more enlightened regulations.

1.60 The analysis of money market funds established in jurisdictions outside the EU and the US presented in Chapter 9, explores both the prevalent quest for financial product homogeneity and the benefits of cultural diversity. The evolution of the money market fund industry can be viewed as a reflection of globalization. Money market funds traverse national borders, providing the flow of capital to those markets and institutions that offer the most attractive financial terms at any given moment. Recalling the earlier discussion, from the point of view of neoclassical economics, efficiency in the deployment of capital *per se* constitutes a worthy regulatory goal.[125] However, the fluidity of capital provided by money market funds may also cause a severe shortage of capital and become a major destabilizing force should investment preferences for these funds change.[126] Furthermore, there are also legal traditions and financial systems that do not subscribe to the efficiency narrative so prevalent in Western economic culture.[127] This point is highlighted, since the post-crisis regulatory debate appears to have little appetite to face crucial cross-border issues of money market regulation, and focuses instead predominantly on issues of systemic risk and the perceived need for the harmonization of investment standards in the EU and the US. Regulators outside the major financial markets may view the development of the domestic money market fund industry differently, as a means to advance and support the private capital market, in general.

1.61 An essential step in rationalizing money market fund regulation is to agree on the socially desirable ends of fund investment behaviour. Over-regulation is a danger in itself as, at the extreme, it may negate the basic economic rationale for money market funds to exist.[128] Under the economic efficiency doctrine

[124] FCIC Report (n 48).

[125] An efficient capital allocation is a significant contributing factor in wealth creation and improving the availability of credit globally. See 15 USC § 77a et seq at section 2(b) 'Consideration of Promotion of Efficiency, Competition, and Capital Formation', providing that the US Securities and Exchange Commission is required to consider whether the action will promote efficiency, competition, and capital formation in its rulemaking initiatives in addition to investor protection.

[126] Substantial evidence of the negative consequences of money market fund investment activities is provided in Ch 10.

[127] See eg A Arakcheev, V Baklanova, and J Tanega, 'Islamic Money Management: a Western View' (2011) 6(2) Capital Markets Law Journal 238 examining the applicability of the Western asset management tradition to Islamic finance and discussing related philosophical and cultural differences.

[128] See eg Letter from Vanguard to SEC (4 June 2012) pp 4–5, available at <http://www.sec.gov/comments/4-619/4619-192.pdf> (accessed 7 June 2013), highlighting the potential harm of a reform that would require US money market funds to abolish constant net asset value pricing.

only those regulatory measures are justified that could help to achieve an efficiency improvement.[129] Yet, because the social cost of the crisis is enormous, the post-crisis governmental production of new regulatory and supervisory services amidst calls for tougher, more restrictive regulation seems to have obtained a blank cheque for its activities. In money market fund regulation, costs should be carefully controlled.[130] Every new rule would take away a few basis points of return from investors in an already low yield and low risk investment alternative.[131] It is money market fund investors who pay for fund regulation. Thus, this book is expected to provide fund investors not only with the basic information, but with the essential details enabling them to understand the production of regulation. As Justice Brandeis warned back in 1933: 'Remember, the inevitable ineffectiveness of regulation.'[132] This warning underscores the necessity of this book as an essential tool in investor education. An educated investor, who welcomes public scrutiny, is the most cost-effective mechanism for building a stronger money market fund industry.

[129] The outcome is deemed to be 'Pareto optimal' if there is no other resource allocation that makes everyone at least as well off and at least one party better off. Coase, 'The Problem of Social Cost' (n 102), and RA Posner, *Economic Analysis of Law* (7th edn, Aspen Publishers, 2007).

[130] See eg US Chamber of Commerce, 'Money Market Fund Reform. Remarks by: Senator Pat Toomey (R-PA)' (February 8, 2012), urging careful consideration of the cost of additional money market fund reforms and whether these costs justify potential benefits, available at <http://www.preservemoneymarketfunds.org/wp-content/uploads/2011/04/Toomey_Remarks_2_8_12_13291521511.pdf> (accessed 7 June 2013).

[131] Fidelity Investments, 'Comment Letter to Money Market Fund Reform File Number S7-11-09', Release No IC-28807 (24 August 2009) p 21, available at <http://www.sec.gov/comments/s7-11-09/s71109-38.pdf> (accessed 7 June 2013), estimating that the cost of money market fund reform, as proposed by the US Securities in Exchange Commissions in 2009, would range from 19 to 42 basis points of annual return for institutional investors and from 14 to 31 basis points for retail investors.

[132] Quoted in MP Fink, 'How Regulators Failed to Prevent the Financial Crisis', Money Management Executive (10 January 2011), available at <http://www.mmexecutive.com/news/-214926-1.html> (accessed 7 June 2013).