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Revisiting the concept of a competitive "cash advantage"

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"J.P. Morgan never left the office for the day without looking over the entries in the daily ledger, particularly the firm's cash balance. Nothing concerned him more than the need to maintain liquidity."-- Professor Vincent P. Carosso[1]

Adherents of the concept of maximizing shareholder value often push corporate executives to distribute "excess cash," or cash not needed in current operations. The rationale for such a position, according to the 2014 Nobel Prize winning economist Jean Tirole, is that "By taking cash out of [a] firm, it prevents managers from 'consuming' it. That is, it reduces their ability to turn their 'free cash flow' into lavish perks or futile negative net present value investments."[2] Notwithstanding the pejorative nature of this statement, when firms do not have productive ways to invest in growth—through value-adding acquisitions or promising innovation initiatives—there is an argument to be made that, for many firms, a payout to shareholders is a sensible course of action. For other firms, though, a substantial cash reserve can provide a critical strategic advantage under certain circumstances, such as during financial crises and other periods of distress.

Defining and evaluating cash and capital-based strategies can raise existential considerations, which are perhaps best seen by reviewing how the strategic aspects of each have changed over time. For example, in the 1930s, value-investing pioneer Benjamin Graham observed that, "In the working capital is found the measure of the company's ability to carry on its normal business comfortably and without financial stringency, to expand its operations without the need of new financing, and to meet emergencies and losses without disaster."[3] Given the marketplace mood during the Great Depression, a focus on cash and the management of liquid assets was certainly understandable.

As the Depression started to fade from memory, however, focus began to shift away from liquid assets to longer-term forms of capital. For example, in 1956, strategist Joe S. Bain published his seminal book, "Barriers to New Competition," which noted that "absolute capital requirements may be so large that relatively few individuals or groups could secure the needed capital, or that entrants could secure it only at interest rates and other terms which placed them at a net cost disadvantage to established sellers."[4] The strategic nature of capital requirements seems to have been widely recognized up to the beginning of the shareholder value era in 1979.[5] However, that would soon change.

The rise of the problematic "excess cash" idea

One consequence of the incredibly easy-money-policy environment since the early 1980s[6] is that "capital," broadly defined, is no longer scarce and therefore "capital requirements" no longer tend to be viewed as either a competitive advantage or disadvantage. The higher-order consequences of this development have been significant. For example, consider the impact on cash holdings: so-called "excess cash" is frequently excluded from many M&A valuations, as indicated by a popular corporate finance textbook first published in 1990:

> This excess cash generally represents temporary imbalances in the company's cash flow. For example, the company may build up cash while deciding how to invest or distribute it. These excess cash or marketable securities balances are not generally directly related to the company's operations, so we treat them as non-operating or as financing (negative debt).[7]

The phrase pertaining to "excess cash" not being related to a company's operations can be particularly troubling from a strategic perspective because:

- Running out of cash is a common cause of corporate failures,[8] and
- Cash holdings that today may appear to be in "excess," tomorrow may be barely adequate to sustain operations, especially if tomorrow brings with it significant levels of distress.

One of the most popular examples of the above can be found in the 1998 failure of the hedge fund Long-Term Capital Management (LTCM). Nine months prior to its failure the celebrated managers of the fund, which included two Nobel Prize winning economists and a former Vice Chairman of the Board of Governors of the Federal Reserve System, returned $2.7 billion of capital to their investors thereby leaving the fund "with a pared-down capital balance of $4,667,953,483." According to journalist Nicholas Dunbar's insightful account:

> The effect of shrinking the capital base was to increase balance sheet leverage—the ratio of assets to capital—from 18.3 to 27.7. With its $1.25 trillion off-balance sheet positions, the fund's true leverage was even higher. No one questioned this leverage as excessive. …At LTCM's zenith, they had a vision of zero capital and infinite leverage.[9]

Such a philosophy culminated in LTCM's historic failure during the financial crisis of 1998, which in many ways was inevitable because it is a well-known fact that, "When bank [or financial] crises come, people don't want accounts in banks: they want cash."[10] This is important because if financial history has taught us anything, it is that there is always a next crisis.[11]

Crises, leverage and equity

Crises are obviously not limited to banking, or even to specific industries. Individual firms often fall under distress and fail as a result.[12] For example, while most right-thinking executives would disagree with the concept of "zero capital and infinite leverage," many executives nevertheless over-leverage their balance sheets and by so doing become at-risk of both "forced selling," or selling at dramatically discounted prices to quickly raise cash, and even failure when the effects of leverage magnify operational, financial and/or macroeconomic distress.[13] For example, in a firm that is not leveraged, a 1 percent decline in assets will generally not have a material impact on its operations because that decline equates to a 1 percent decline in equity. However, in a firm that is excessively leveraged at, say, 44-to-1 like Lehman Brothers was prior to its historic failure, then a 1 percent decline in assets results in an approximate 50 percent equity decline (= 1 / 44 – 1 percent = 1.27 percent).[14] Such a setback would obviously generate significant levels of distress and confusion, which is a reason why, after the 2007-2008 financial crisis, so many people referred to the crisis as a "1-in-100 year event." Such statements were erroneous as the frequency of discontinuous financial events has averaged approximately one every ten years or so, some of which were more severe than the 2007-2008 event.[15]

The classic crisis irony

Distress and the resulting need for cash often go hand-in-hand because at the moment of crisis—be it operational, financial and/or macroeconomic—a firm will often confront "a timeless irony: when you need money most, the most likely sources of it are likely to be hurting as well."[16] The most likely sources of funding are, of course, the capital markets, financial institutions and trade creditors. When these sources of funding dry up, asset pricing in general, and securities pricing in particular, tends to dramatically decline[17] thereby providing a rich opportunity for those with the cash available to capitalize on it. For example, Berkshire Hathaway Chairman and CEO Warren Buffett has built a highly lucrative career doing exactly this. While Mr. Buffett's distressed investments in Goldman Sachs and GE during the financial crisis of 2007-2008 are well-known,[18] perhaps less well-known is that many years prior to that crisis, in 1995, a biographer of his observed that, "The trick in such markets was to have the cash to exploit the moment—as Buffett put it, 'to have your check clear.'"[19]

Cash's competitive advantage

In light of the above, holding ample and what may appear to some--or perhaps even most--to be "excess cash" can be considered a source of competitive advantage from two different but intimately related perspectives: First, holding ample cash prior to periods of operational, financial and/or macroeconomic distress mitigates the risk of becoming a "forced seller," and second, it enables a firm to take strategic advantage of the "forced selling" of others during and after periods of distress.[20] Significantly, there is both contemporary and historical precedent for this type of strategic approach, in addition to the obvious example of Mr. Buffett.

From a contemporary perspective, consider the example of the late Larry Tisch, who was the co-founder, Chairman and CEO of Loews Corporation. A biography of Mr. Tisch, which is appropriately titled, "The King of Cash," includes this description of his management style by a fellow executive:

> "Larry Tisch is hard-nosed, a good thinker, and asset-oriented, which at this phase is a lot more than these guys who are interested only in earnings per share." This description, by Smith Barney President Bill Grant in 1971, summarized approvingly Tisch's value-oriented investment style. … What Grant envied at least as much about Tisch was liquidity: "He's got one of the greatest reserves of cash in American business today."[21]

This strategy has been maintained at Loews after Larry Tisch's son Jim took over as CEO. For example, Jim Tisch recently observed that, "We always wanted to have large amounts of cash on the balance sheet. With cash you can take advantage of opportunities. ... It's part of the corporate DNA to have cash."[22]

From a historical perspective, consider the case of the National City Bank, precursor to today's Citigroup which, significantly, emerged from both the Panic of 1893 *and* the Panic of 1907 in stronger financial positions than its competition.[23] As James Stillman, the bank's president at the time, explained to a colleague in early 1907, which was prior to the onset of the infamous panic:

> I have felt for some time that the next panic and low interest rates following [it] would straighten out a good many things that have of late years crept into banking. What impresses me as most important is to go into next Autumn (usually a time of financial stringency) ridiculously strong and liquid, and now is the time to begin and shape for it… If by able and judicious management we have money to help our dealers when trust companies have suspended, we will have all the business we want for many years.[24]

And so Mr. Stillman and the bank's management did, for as Citigroup's official historians later observed, "The bank's performance during the panic capped a remarkable overall achievement. Since 1891 Stillman had built National City from a small treasury unit … into the country's foremost commercial bank."[25] Tragically, Citigroup's financial strategy changed over the years, which culminated in the firm's historic failure during the financial crisis of 2007-2008. This corporate failure in particular highlighted the role that weak cash positions can play in failed strategies,[26] and it obviously contrasts sharply with James Stillman's historically successful strategy.

Following the 2007-2008 financial crisis, the mathematical models and related technologies upon which many modern financial and risk management functions were built came under intensive popular attack.[27] While some of the criticism was certainly understandable, more focus should have been directed to the strategies underlying how models and their technologies were used, and how those strategies differed from those that were employed by the firms, which includes some hedge funds, that did not fail, and in fact actually prospered, during the crisis. For example, such an analysis was performed in 2002, which was after the "new economy" boom went bust, by the financial analyst, historian and value investor James Grant whose insights at the time are likely just as applicable today; namely, that "The secret of success isn't the quality of technology, but the quality of management. It almost goes without saying that the quantity of cash is likewise important."[28]

Financial risk and strategic uses of cash

The dramatic rise of financial risk in recent years follows the popularity of "financial innovation," which in many cases pertains to creating financial products that structure funding in ways to mitigate the effects of regulation and taxes. There is, of course, nothing nefarious about this as loopholes are included in regulations and tax rules for a reason; however, as in many kinds of human interactions, there can be unintended consequences with financial innovation.

One such consequence is the macroeconomic distress caused by over-leveraged firms exposed to financially innovative products, of which LTCM in 1998 and AIG in 2008 are prime examples. A higher order consequence of such exposures is the spill-over that financial disruptions can have on the real economy. The failure of AIG in 2008 offers an example of this as journalist Roddy Boyd observed:

> Given that almost a dozen insurance subs were compromised, millions of policyholders were in danger of literally being at risk with no economic backing to support their claims. Internationally, there would be immediate slowdown to shipping and aviation, as AIG was a key player in insuring both market segments.… Financially, it would have been true chaos. What cash or liquid assets there was at AIG would have been sent, eventually, to the insurance subsidiaries to meet those obligations. Left remaining would have been a $1.2 trillion balance sheet that would have dwarfed the collapse from the looming Lehman bankruptcy.[29]

This example is important because the risk of future macroeconomic distress may currently (as of mid-2015) be increasing. As an indication of this, a financial innovation-inspired boom is underway in the captive reinsurance market, which grew to $364 billion in 2012 from just $11 billion ten years prior.[30] Such developments could have cross-industry repercussions given the interconnectivity of the insurance/reinsurance industry and the real economy. To explain, commercial property, Directors and Officers liability, accounts receivable, inventories, and many other corporate assets and exposures can all be insured. Therefore, if financial risk in the insurance/reinsurance industry manifests in a material way it could disrupt claims payments thereby causing some firms to suffer cash shortages when they are potentially most in need of cash.[31]

During periods of distress, cash shortages generally result from the interaction of three factors: a dramatic decline in cash flow from operations, an inadequate stock of cash on the balance sheet and inefficient or ineffectual hedges.[32] Firms suffering cash shortages are vulnerable to competitors who are better positioned—or who are "cash rich" in a crisis. This is a key lesson that financial history teaches, one that can be strategically employed by a wide variety of firms across industries.

Four steps to a cash strategy that enables competitive advantage

1. Implications of the balance sheet. A first step to implementing a strategic cash approach is for executives to consider the interactive dynamics of the left-hand-sides and right-hand-sides of their balance sheets. For example, institutions that "lend long and borrow short" would obviously benefit from a strong cash position over time. Another example is in the use of leverage: operational leverage is a very positive tactic that helps firms become more cost competitive. Financial leverage, on the other hand, can be a "double-edged sword" as it magnifies profitability during good times but it also intensifies losses during periods of distress, as the examples of LTCM, Lehman Brothers and AIG vividly illustrate.

2. Assess competitors' balance sheets. Second, executives must assess the interactive dynamics of their key competitors' balance sheets and pay particular attention to competitors that are overextending themselves. A master of this kind of analysis is Liberty Media Chairman of the Board John C. Malone who, for example, has "relished the role of bargain hunter amid the spoils of bad deals made by his competitors."[33]

3. Scenario analysis. In the third step, a form of scenario planning can be used by executives to identify a set of existential conditions that would affect both the left-hand-sides and right-hand-sides of their balance sheets. For example, they might create a scenario that depicts the simultaneous write-downs of significant accounts receivable and inventories along with some form of credit impairment that disrupts funding requirements. Once these scenarios are identified, effective executives constantly scan the environment to determine if such "unwanted futures" are actually developing.[34]

4. Competitor scenarios. The fourth step is to perform this same kind of scenario analysis on key competitors. If a firm observes that one or more of its competitors' are likely to find themselves in an "unwanted future"—for example, the stress that Bear Sterns was under before it failed—then it is time to further strengthen its own cash position. Its twin objectives: first, not to become a "forced seller" in the advent of stressful macroeconomic, financial and/or operational distress; and second, to position itself to take strategic advantage of any forced selling by its competitors; for example, JP Morgan's distressed acquisition of Bear Sterns during the recent financial crisis.

Scenario anticipation analysis should not be confused with the currently popular "stress test" practice. A "stress test" is a form of modeled loss that in theory is meant to portray some statistical "worst case" scenario at a given level of confidence. In practice, "stress tests" can be easily gamed to show how strong a firm purportedly is, and they sometimes devolve into reporting exercises that have little bearing on how a business is actually managed or run.[35] "Stress tests" based on some form of value-at-risk (VaR) model do not provide either the risk management[36] or strategic[37] perspectives required to either assess cash needs or determine how to take strategic advantage of the bargain prices that typically are available during times of distress.[38]

As this paper has argued, cash is a strategic resource, and like all strategic resources it can be used wisely or unwisely.[39] When it is used unwisely, a firm's cash holdings can sometimes be used against it by helping to fund a takeover.[40] Therefore, holding ample cash is only a first step; determining how cash will be strategically deployed and how the strategy will be communicated to capital providers are critical next steps. Firms such as Loews and Berkshire Hathaway are time-tested experts in these areas and thus provide ready examples for executives, strategists and researchers to study.

Abstract

Purpose of this paper	This paper profiles how ample cash holdings can serve as a competitive advantage by first mitigating the risk of becoming a forced seller during periods of distress, and then positioning a firm to take strategic advantage of forced selling and other forms of distress-generated opportunities.
Design/methodology/approach	This paper profiles the changing role of cash over time in corporate strategy, and how inadequate/strong cash positions have caused or contributed to corporate failures/successes.
Findings	The findings of this paper, which are supported by historical and contemporary examples, are that ample cash reserves can be a powerful source of competitive advantage for certain firms.
Research & Practical limitations/implications	This article supports earlier work published in *Strategy & Leadership* that shows how Graham and Dodd-based analysis is a viable avenue of academic research and a viable method with which to assess and formulate corporate strategic initiatives such as mergers and acquisitions, share buy-backs, risk management and, in this case, the strategic uses of cash.
What is original/value of paper	This paper offers leaders and financial executives a practical explanation of how ample cash holdings can serve as a competitive advantage.

Endnotes

[1] Vincent P. Carosso, *The Morgans: Private International Bankers 1854-1913* (Cambridge, MA: Harvard University Press, 1987), p. 437.

[2] Jean Tirole, *The Theory of Corporate Finance* (Princeton, NJ: Princeton, 2006), p. 51.

[3] Benjamin Graham and Spencer Meredith, *The Interpretation of Financial Statements: The Classic 1937 Edition* (NY: HarperBusiness, 1998 [1937]), p. 31.

[4] Joe S. Bain, *Barriers to New Competition: Their Character and Consequences in Manufacturing Industries* (Cambridge, MA: Harvard University Press, 1956), p. 55.

[5] See, for example, William E. Fruhan, Jr., *Financial Strategy: Studies in The Creation, Transfer, and Destruction of Shareholder Value* (Homewood, IL: Irwin, 1979).

[6] A full discussion of this topic is beyond the scope of this paper. However, one of the characteristics of it is the willingness of the Federal Reserve to pump money into the capital markets during times of distress. This practice became so widely known and expected that it was given a name: “the Greenspan Put,” which has been summed-up by Charles Morris, *The Trillion Dollar Meltdown: Easy Money, High Rollers, and The Great Credit Crash* (NY: PublicAffairs, 2008) as follows:, “No matter what goes wrong, the Fed will rescue you by creating cheap money to buy you out of your troubles” (p. 65). Pages 62-65 of this book are titled, “The ‘Greenspan Put.’” Note also Marc Faber, *Tomorrow’s Gold: Asia’s Age of Discovery 4th Ed.* (Hong Kong: CLSA, 2010 [2002]), p. 19. When Greenspan retired, he was replaced by Ben S. Bernanke who famously stated that he would drop money from helicopters if the need arose thereby earning the nickname “Helicopter Ben,” and thus there was an efficient transition from the “Greenspan Put” to the “Bernanke Put” (and now to the “Yellen Put”).

[7] Tom Copeland, Tim Koller and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies* (NY: Wiley, 2000 [1990]), pp. 160-161. Interestingly, this work was published around the peak of the “new economy” boom. As Faber (2010 [2002]) observed, “During every manic [business cycle] phase … cash is always regarded as a totally unattractive investment alternative. Actually, there is frequently a panic out of cash” (p. 138).

[8] According to Martin J. Whitman and Fernando Diz, *Distress Investing: Principles and Technique* (Hoboken, NJ: Wiley, 2009), “Companies that become troubled almost always suffer from a cash shortage” (p. 121).

[9] Nicholas Dunbar, *Inventing Money: The story of Long-Term Capital Management and the legends behind it* (NY: Wiley, 2000), pp. 181, 188 and 190.

[10] Martin Mayer, *The Fed: The Inside Story of How The World’s Most Powerful Financial Institution Drives The Markets* (NY: Free Press, 2001), p. 103.

[11] Joseph Calandro, Jr., "A leader’s guide to strategic risk management," *Strategy & Leadership,* Vol. 43, No. 1, 2015, pp. 26-35. By way of background, from the famous Panic of 1907 until the present day there has generally been at least one contagious financial event every 10 years or so. For more information on the Panic of 1907 see, for example, Robert Bruner and Sean Carr, *The Panic of 1907: Lessons Learned from the Market’s Perfect Storm* (Hoboken, NJ: Wiley, 2007).

[12] According to Stuart C. Gilson, *Creating Value Through Corporate Restructuring: Case Studies in Bankruptcies, Buyouts, and Breakups* (NY: Wiley, 2001):

> … corporate restructuring is no longer a rare or episodic event that happens to someone else. It has become a common and significant event in the professional lives of many [corporate] managers. The reach of corporate restructuring is far greater than this when one also considers the web of relationships between restructured companies and their customers, suppliers, lenders, employees, and competitors. And restructuring directly impacts the millions of investors who provide capital to these firms (p. 3).

[13] According to Bruce Wasserstein, *Big Deal: 2000 and Beyond* (NY: Warner, 2000), "Both the use of debt to fund acquisitions and the ensuing difficulty of servicing debt during downturns have been recurring trends in American economic life" (p. 70).

[14] Lawrence G. McDonald and Patrick Robinson, *A Colossal Failure of Common Sense: The Inside Story of the Collapse of Lehman Brothers* (NY: Crown, 2009), pp. 287-288. Even Lehman Brother's excessive leverage pales in comparison to LTCM's in 1998. For example, according to Roger Lowenstein, *When Genius Failed: The Rise and Fall of Long-Term Capital Management* (NY: Random House, 2000), "even omitting derivatives, its leverage was greater than 100 to 1" (p. 191).

[15] Following endnote 11 above. More knowledgeable people have referred to the 2007-2008 financial crisis as a 3-in-100 year event thereby equating its severity to the Panic of 1907 and the Great Depression. This view is, of course, backward looking but that is as it must be because it is not possible to forecast future financial markets. As James Grant, *Mr. Market Miscalculates: The Bubble Years and Beyond* (Mt. Jackson, Va: Axios, 2008) observed, "The philosophical premise of value investing is that the future is unpredictable. Not knowing, and knowing that one can't know, the careful investor insists on a margin of safety in the form of a low price" (p. 353).

[16] Lowenstein (2000), p. 156.

[17] This type of behavior is driven by feedback effects, which in economics are not well understood. For example, Nate Silver, *The Signal and The Noise: Why so many predictions fail—and some don't* (NY: Penguin, 2010) observed that, "Although economists have a reasonably sound understanding of the basic systems that govern the economy, the cause and effect are all blurred together, especially during bubbles and panics when the system is flushed with feedback loops contingent on human behavior" (p. 195). And thus, according to Emanuel Derman, *My Life as a Quant: Reflections on Physics and Finance* (Hoboken, NJ: Wiley, 2004), "given the fluctuations of the human psyche, it [mainstream economics and its theoretical offshoot, quantitative finance] is a pragmatic study of surfaces rather than a principled study of depths" (p. 28).

[18] For information on the Goldman deal see, for example, Clayton Rose and David Lane, *Going to the Oracle: Goldman Sachs, September 2008,* HBS case services #9-309-069, June 21, 2011, and Clayton Rose and Sally Canter Ganzfried, *Teaching Note - Going to the Oracle: Goldman Sachs, September 2008,* HBS case services #5-312-045, August 24, 2011.

[19] Roger Lowenstein, *Buffett: The Making of an American Capitalist* (NY: Broadway, 2001 [1995]), p. 154.

[20] For more information see, for example, Joseph Calandro, Jr., "'The Most Important Thing' is Value Realization," *Journal of Private Equity,* Fall 2012, pp. 89-93.

[21] Christopher Winans, *The King of Cash: The Inside Story of Laurence Tisch* (NY: Wiley, 1995), p. 75. See also p. 203 regarding how Mr. Tisch applied this strategy to CBS; namely, "he was strengthening CBS's finances so the company could survive in any kind of weather, and he was building a war chest [of cash] that could be cracked open when assets that made sense for CBS could be had for bargain prices."

[22] As quoted by Joseph L. Bower, *Loews Corporation: Corporate Strategy as a Portfolio,* HBS case services #9-309-004, March 21, 2014, p. 5.

[23] For an economic analysis of both panics, as well as the panics that proceeded them, see Elmus Wicker, *Banking Panics of the Gilded Age* (NY: Cambridge, 2006 [2000]).

[24] Harold van Cleveland and Thomas Huertas, *Citibank: 1812-1970* (Cambridge, MA: Harvard, 1985), p. 52.

[25] Ibid.

[26] According to Andrew Ross Sorkin, *Too Big To Fail: The inside story of how Wall Street and Washington fought to save the financial system—and themselves* (NY: Viking, 2009):

> Citigroup, the largest American financial institution before the crisis, devolved into what Treasury officials began referring to as "the Death Star." In November 2008 they had put another $20 billion into the financial behemoth, on top of the original $25 billion TARP investment, and agreed to insure hundreds of billions of dollars of Citi's assets. In February 2009 the government increased its stake in the bank from 8 percent to 36 percent. The bank only a decade earlier had spearheaded a push toward deregulation was now more than one third owned by taxpayers (p. 530).

[27] For example, Felix Salmon, "Recipe for Disaster: The Formula That Killed Wall Street," *Wired,* February 23, 2009, http://archive.wired.com/techbiz/it/magazine/1703/wp_quant?currentPage=all On the role of technology in quantitative finance see, for example, Derman (2004), pp. 165, 169, 206, and 212.

[28] Grant (2008), p. 91.

[29] Roddy Boyd, *Fatal Risk: A Cautionary Tale of AIG's Corporate Suicide* (Hoboken, NJ: Wiley, 2011), p. 281.

[30] Mary Williams Walsh, "Risky Moves in the Game of Life Insurance," *The New York Times,* April 11, 2015, http://www.nytimes.com/2015/04/12/business/dealbook/insurers-bypass-rules-to-add-hidden-risk.html?hp&action=click&pgtype=Homepage&module=second-column-region&region=top-news&WT.nav=top-news&_r=0

[31] Thanks to Robert M. Randall for finding this example.

[32] Understanding the dynamics of the stock and flow of cash over time is critically important; as is an understanding of how economical hedging can strategically enhance these dynamics.

[33] Mark Robichaux, *Cable Cowboy: John Malone and the rise of the modern cable business* (Hoboken, NJ: Wiley, 2002), p. 75.

[34] This process was inspired by John C. Camillus, "Strategy as a Wicked Problem," *Harvard Business Review,* May 2008, pp. 1-9.

[35] For example, James Grant, "Operation Barn Door," *Grant's Interest Rate Observer*, March 20, 2015 observed that, "Citigroup, of all accident-prone institutions, last week passed a Federal Reserve-administered stress test with flying colors. What does this fact tell us? It tells us less about the bank (which spent more than $180 million on cramming and test prep) than it does about the Federal Reserve" (p. 1).

[36] In this I am in total agreement with Derman (2004), pp. 256-257.

[37] For more information on strategic scenario analysis see, for example, Liam Fahey and Robert M. Randall, Eds., *Learning From the Future: Competitive Foresight Scenarios* (NY: Wiley, 1998).

[38] Investors who specialize in failing and failed firms are pejoratively known as "vulture investors." For more information see Hilary Rosenberg, *The Vulture Investors* (NY: Wiley, 2000 [1992]). For a profile of the technical aspects of this discipline see, for example, H. Peter Nesvold, Jeffrey M. Anapolsky and Alexandra Reed Lajoux, *The Art of Distressed M&A: Buying, Selling, and Financing Troubled and Insolvent Companies* (NY: McGraw-Hill, 2011), Whitman and Diz (2009) and Gilson (2001), Ch. 6.

[39] A wise use of cash, according to Ray Dalio, the head of Bridgewater Associates--the world's largest hedge fund, is to capitalize on economical investments during periods of distress. For more information see Morgan Housel, "The Investing Lesson of 1937: Hold Some Cash," *The Wall Street Journal,* March 27, 2015, http://www.wsj.com/articles/the-investing-lesson-of-1937-hold-some-cash-1427464147

[40] And thus ample cash holdings are sometimes used as a takeover screen. For an example see "Identifying Takeover Targets," *Money-Zine,* March 16, 2015, http://www.money-zine.com/investing/stocks/identifying-takeover-targets/