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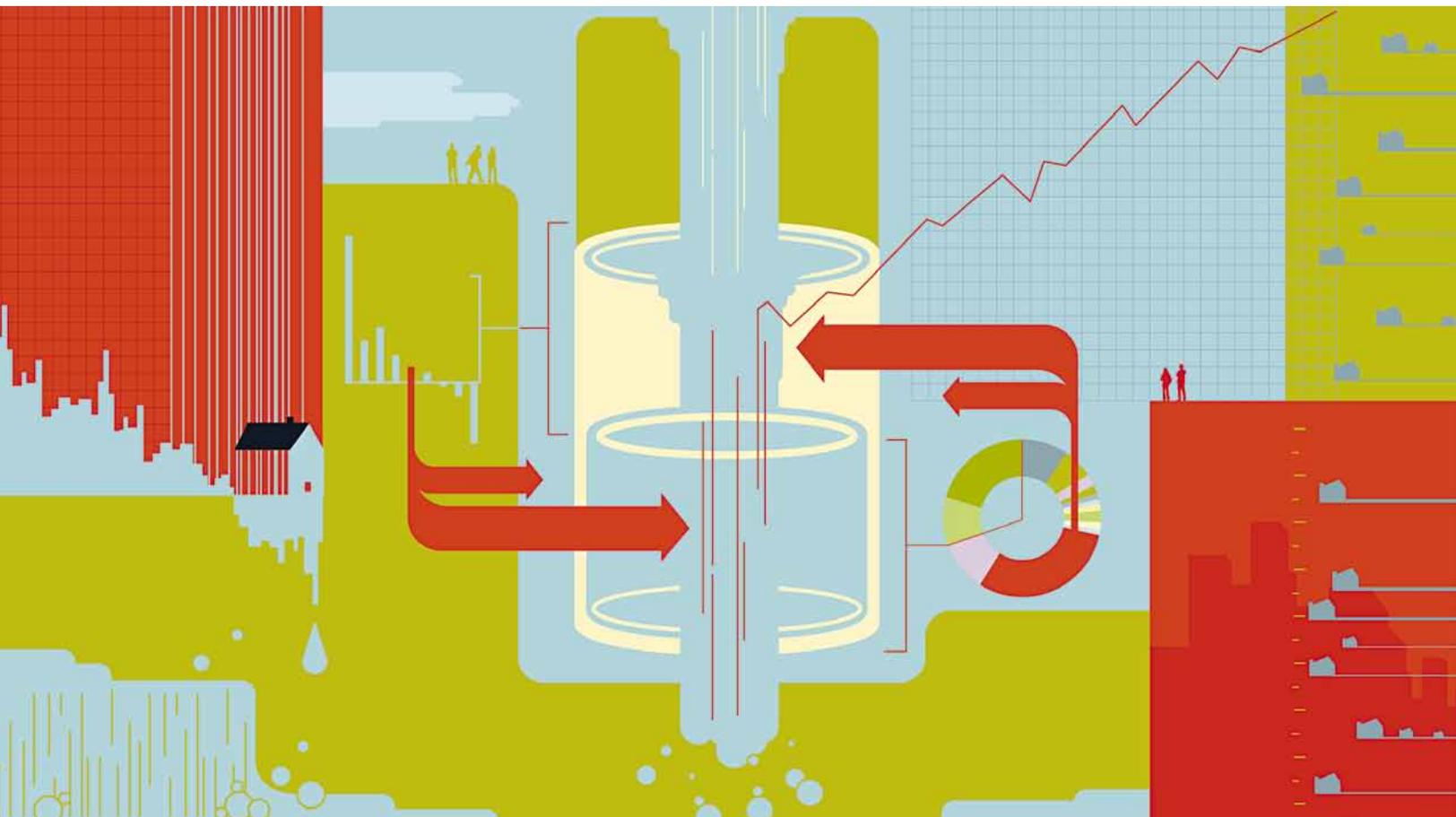
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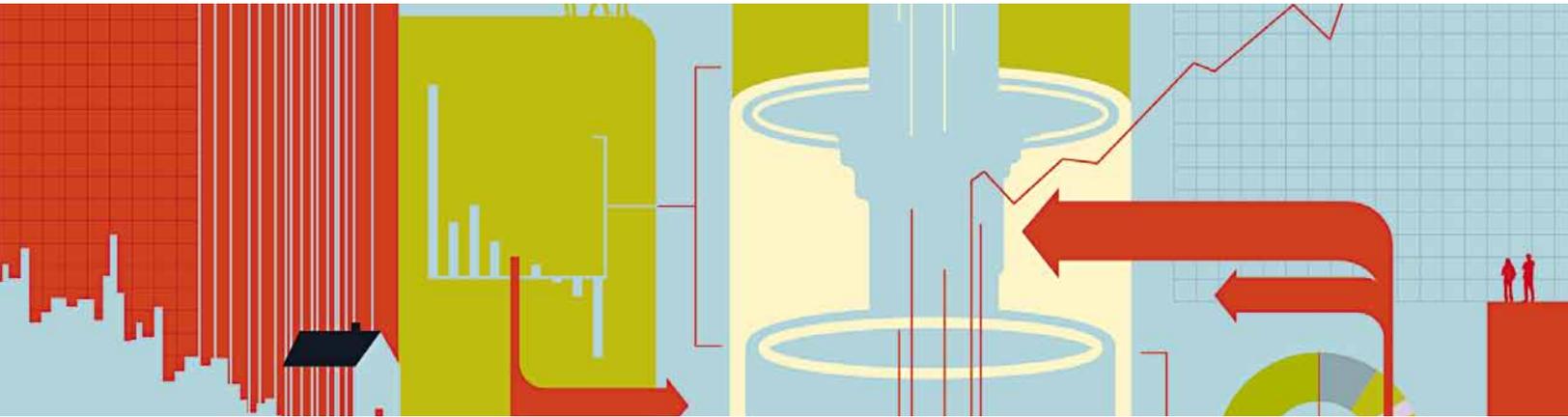
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Why value value?—defending against crises

Companies, investors, and governments must relearn the guiding principles of value creation if they are to defend against future economic crises.

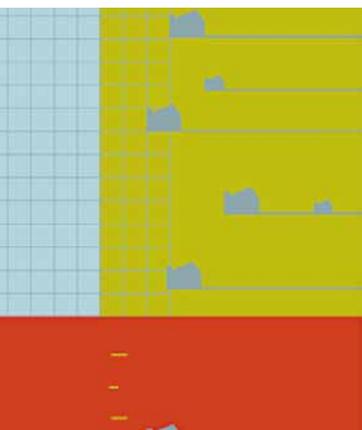
Timothy M. Koller

In response to the economic crisis that began in 2007, several serious thinkers have argued that our ideas about market economies must change fundamentally if we are to avoid similar crises in the future. Questioning previously accepted financial theory, they promote a new model, with more explicit regulation governing what companies and investors do, as well as new economic theories.

My view, however, is that neither regulation nor new theories will prevent future bubbles or crises. This is because past ones have occurred largely when companies, investors, and governments have forgotten how investments create value, how to measure value properly, or both. The result has been a misunderstanding about which investments

are creating real value—a misunderstanding that persists until value-destroying investments have triggered a crisis.

Accordingly, I believe that relearning how to create and measure value in the tried-and-true fashion is an essential step toward creating more secure economies and defending ourselves against future crises. The guiding principle of value creation is that companies create value by using capital they raise from investors to generate future cash flows at rates of return exceeding the cost of capital (the rate investors require as payment). The faster companies can increase their revenues and deploy more capital at attractive rates of return, the more value they create. The combination



of growth and return on invested capital (ROIC) relative to its cost is what drives value. Companies can sustain strong growth and high returns on invested capital only if they have a well-defined competitive advantage. This is how competitive advantage, the core concept of business strategy, links to the guiding principle of value creation.

The corollary of this guiding principle, known as the conservation of value, says anything that doesn't increase cash flows doesn't create value.¹ For example, when a company substitutes debt for equity or issues debt to repurchase shares, it changes the ownership of claims to its cash flows. However, it doesn't change the total available cash flows,² so in this case value is conserved, not created. Similarly, changing accounting techniques will change the appearance of cash flows without actually affecting cash flows, so it will have no effect on the value of a company.

These principles have stood the test of time. Economist Alfred Marshall spoke about the return on capital relative to the cost of capital in 1890.³ When managers, boards of directors, and investors have forgotten these simple truths, the consequences have been disastrous. The rise and fall of business conglomerates in the 1970s, hostile takeovers in the United States during the 1980s, the collapse of Japan's bubble economy in the 1990s, the Southeast Asian crisis in 1998, the dot-com bubble in the early 2000s, and the economic crisis starting in 2007 can all, to some extent, be traced to a misunderstanding or misapplication of these principles. Using them to create value requires an understanding of both the economics of value creation (for instance, how competitive advantage enables some companies to earn higher ROIC than others) and the process of measuring value (for example, how to calculate ROIC from a company's accounting statements).

With this knowledge, companies can make wiser strategic and operating decisions, such as what businesses to own and how to make trade-offs between growth and returns on invested capital—and investors can more confidently calculate the risks and returns of their investments.

Market bubbles

During the dot-com bubble, managers and investors lost sight of what drove ROIC; indeed, many forgot the importance of this ratio entirely. When Netscape Communications went public in 1995, the company saw its market capitalization soar to \$6 billion on an annual revenue base of just \$85 million, an astonishing valuation. This phenomenon convinced the financial world that the Internet could change the way business was done and how value was created in every sector, setting off a race to create Internet-related companies and take them public. Between 1995 and 2000, more than 4,700 companies went public in the United States and Europe, many with billion-dollar-plus market capitalizations.

Many of the companies born in this era, including Amazon.com, eBay, and Yahoo!, have created and are likely to continue creating substantial profits and value. But for every solid, innovative, new business idea, there were dozens of companies that turned out to have virtually no ability to generate revenue or value in either the short or the long term. The initial stock market success of these flimsy companies represented a triumph of hype over experience.

Many executives and investors either forgot or threw out fundamental rules of economics in the rarefied air of the Internet bubble. Consider the concept of increasing returns to scale—also known as “network effects” or “demand-side economies of scale”—an idea that enjoyed great popularity

during the 1990s in the wake of Carl Shapiro and Hal Varian's book *Information Rules: A Strategic Guide to the Network Economy*.⁴

The basic idea is this: in certain situations, as companies get bigger, they can earn higher margins and returns on capital because their product becomes more valuable with each new customer. In most industries, competition forces returns back to reasonable levels. But in industries with increasing returns, competition is kept at bay by the low and decreasing unit costs incurred by the market leader (hence the “winner takes all” tag given to this kind of industry).

Take Microsoft's Office software, a product that provides word processing, spreadsheets, and graphics. As the installed base of Office users expanded, it became ever more attractive for new customers to use Office as well, because they could share their documents, calculations, and images with so many others. Potential customers became increasingly unwilling to purchase and use competing products. Because of this advantage, in 2009 Microsoft made profit margins of more than 60 percent and earned operating profits of approximately \$12 billion on Office software—making it one of the most profitable products of all time.

As Microsoft's experience illustrates, the concept of increasing returns to scale is sound economics. What was unsound during the Internet era was its misapplication to almost every product and service related to the Internet. At that time, the concept was misinterpreted to mean that merely getting big faster than your competitors in a given market would result in enormous profits. To illustrate, some analysts applied the idea to mobile-phone service providers, even though mobile customers can and do easily switch providers, forcing the providers to compete largely on price.

With no sustainable competitive advantage, mobile-phone service providers were unlikely ever to earn the 45 percent ROIC that was projected for them. Increasing-returns logic was also applied to Internet grocery-delivery services, despite these companies having to invest (unsustainably, eventually) in more drivers, trucks, warehouses, and inventory as their customer bases grew.

The history of innovation shows how difficult it is to earn monopoly-sized returns on capital for any length of time except in very special circumstances. That did not matter to commentators who ignored history in their indiscriminate recommendations of Internet stocks. The dot-com bubble left a sorry trail of intellectual shortcuts taken to justify absurd prices for technology company shares. Those who questioned the new economics were branded as simply “not getting it”—the new-economy equivalent of defenders of Ptolemaic astronomy.

When the laws of economics prevailed, as they always do, it was clear that many Internet businesses, including online pet food sales and grocery-delivery companies, did not have the unassailable competitive advantages required to earn even modest ROIC. The Internet has revolutionized the economy, as have other innovations, but it did not and could not render obsolete the rules of economics, competition, and value creation.

Financial crises

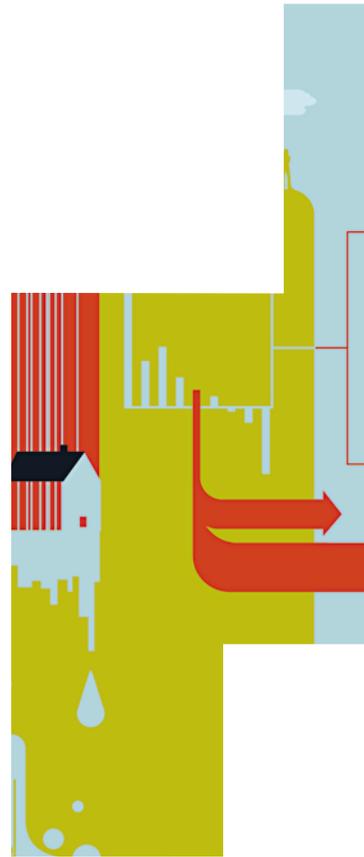
Behind the more recent financial and economic crises beginning in 2007 lies the fact that banks and investors forgot the principle of the conservation of value. Let's see how. First, individuals and speculators bought homes—illiquid assets, meaning they take a while to sell. They took out mortgages on which the interest was set at artificially low teaser rates for the first

few years but then rose substantially when the teaser rates expired and the required principal payments kicked in. In these transactions, the lender and buyer knew the buyer couldn't afford the mortgage payments after the teaser period ended. But both assumed either that the buyer's income would grow by enough that he or she could make the new payments or that the house's value would increase enough to induce a new lender to refinance the mortgage at similar, low teaser rates.

Banks packaged these high-risk debts into long-term securities and sold them to investors. The securities too were not very liquid, but the investors who bought them—typically hedge funds and other banks—used short-term debt to finance the purchase, thus creating a long-term risk for whoever lent them the money.

When the interest rate on the home buyers' adjustable-rate debt increased, many could no longer afford the payments. Reflecting their distress, the real-estate market crashed, pushing the values of many homes below the values of the loans taken out to buy them. At that point, homeowners could neither make the required payments nor sell their houses. Seeing this, the banks that had issued short-term loans to investors in securities backed by mortgages became unwilling to roll over the loans, prompting the investors to sell all such securities at once. The value of the securities plummeted. Finally, many of the large banks themselves owned these securities, which they, of course, had also financed with short-term debt that they could no longer roll over.

This story reveals two fundamental flaws in the decisions made by participants in the securitized mortgage market. They assumed that securitizing risky home loans made the loans more valuable because it reduced the risk of the assets.



This violates the conservation-of-value rule. Securitization did not increase the aggregated cash flows of the home loans, so no value was created and the initial risks remained. Securitizing the assets simply enabled their risks to be passed on to other owners: some investors, somewhere, had to be holding them. Yet the complexity of the chain of securities made it impossible to know who was holding precisely which risks. After the housing market turned, financial-services companies feared that any of their counter parties could be holding massive risks and almost ceased to do business with one another. This was the start of the credit crunch that triggered a recession in the real economy.

The second flaw was to believe that using leverage to make an investment in itself creates value. It does not, because—referring once again to the conservation of value—it does not increase the cash flows from an investment. Many banks used large amounts of short-term debt to fund their illiquid long-term assets. This debt did not create long-term value for shareholders in those banks. On the contrary, it increased the risks of holding their equity.

In the past 30 years, the world has seen at least six financial crises that arose largely because companies and banks were financing illiquid assets with short-term debt.

Excessive leverage

As many economic historians have described, aggressive use of leverage is the theme that links most major financial crises. The pattern is always the same: companies, banks, or investors use short-term debt to buy long-lived, illiquid assets. Typically, some event triggers unwillingness among lenders to refinance the short-term debt when it falls due. Since the borrowers don't have enough cash on hand to repay the short-term debt, they must sell some of their assets. But because the assets are illiquid, and other borrowers are trying to do the same, the price each borrower can realize is too low to repay the debt. In other words, the borrower's assets and liabilities are mismatched.

In the past 30 years, the world has seen at least six financial crises that arose largely because companies and banks were financing illiquid assets with short-term debt. During the 1980s, in the United States, savings-and-loan institutions funded an aggressive expansion with short-term debt and deposits. When it became clear that these institutions' investments (typically real estate) were worth less than their liabilities, lenders and depositors refused to lend more to them. In 1989,

the US government was forced to bail out the industry.

In the mid-1990s, the fast-growing economies in East Asia, including Indonesia, South Korea, and Thailand, fueled their investments in illiquid industrial property, plants, and equipment with short-term debt, often denominated in US dollars. When global interest rates rose and it became clear that the East Asian companies had built too much capacity, those companies were unable to repay or refinance their debt. The ensuing crisis destabilized local economies and damaged foreign investors.

Other financial crises fueled by too much short-term debt have included the Russian-government default and the collapse of the US hedge fund Long-Term Capital Management, both in 1998; the US commercial real-estate crisis of the early 1990s; and the Japanese financial crisis that began in 1990 and, according to some, continues to this day.

Market bubbles and crashes are painfully disruptive, but we don't need to rewrite the rules of competition and finance to understand and

avoid them. Certainly the Internet has changed the way we shop and communicate. But it has not created a “New Economy,” as the 1990s catchphrase went. On the contrary, it has made information, especially about prices, transparent in a way that intensifies old-style market competition in many real markets. Similarly, the financial crisis triggered in 2007 will wring out some of the economy’s recent excesses, such as people buying houses they can’t afford and uncontrolled credit-card borrowing by consumers. But the key to avoiding the next crisis is to reassert the fundamental economic rules, not to revise them. If investors and lenders value their investments and loans according to the guiding principle of value creation and its corollary, prices for both kinds of assets will reflect the real risks underlying the transactions.

Equity markets

Contrary to popular opinion, stock markets generally continue to reflect a company’s intrinsic value during financial crises. For instance, after the 2007 crisis had started in the credit markets, equity markets too came under criticism. In October 2008, a *New York Times* editorial thundered, “What’s been going on in the stock market hardly fits canonical notions of rationality. In the last month or so, shares in Bank of America plunged to \$26, bounced to \$37, slid to \$30, rebounded to \$38, plummeted to \$20, sprung above \$26 and skidded back to almost \$24. Evidently, people don’t have a clue what Bank of America is worth.”⁵ Far from showing that the equity market was broken, however, this example points out the fundamental difference between the equity markets and the credit markets. The critical difference is that investors could easily trade shares of Bank of America on the equity markets, whereas credit markets (with the possible exception of the government bond market) are not nearly as liquid. This is

why economic crises typically stem from excesses in credit rather than equity markets.

The two types of markets operate very differently. Equities are highly liquid because they trade on organized exchanges with many buyers and sellers for a relatively small number of securities. In contrast, there are many more debt securities than equities because there are often multiple debt instruments for each company and even more derivatives, many of which are not standardized. The result is a proliferation of small, illiquid credit markets. Furthermore, much debt doesn’t trade at all. For example, short-term loans between banks and from banks to hedge funds are one-to-one transactions that are difficult to buy or sell. Illiquidity leads to frozen markets where no one will trade or where prices fall to levels far below that which reflect a reasonable economic value. Simply put, illiquid markets cease to function as markets at all.

During the credit crisis that began in 2007, prices on the equity markets became volatile, but for the most part they operated normally. The volatility reflected the uncertainty hanging over the real economy. The S&P 500 index traded between 1,200 and 1,400 from January 2008 to September 2008. In October, upon the collapse of US investment bank Lehman Brothers and the US government takeover of the insurance company American International Group (AIG), the index began its slide to a trading range of 800 to 900. But that drop of about 30 percent was not surprising given the uncertainty about the financial system, the availability of credit, and its impact on the real economy. Moreover, the 30 percent drop in the index was equivalent to an increase in the cost of equity of only about 1 percent,⁶ reflecting investors’ sense of the scale of increase in the risk of investing in equities generally.

There was a brief period of extreme equity market activity in March 2009, when the S&P 500 index dropped from 800 to 700 and rose back to 800 in less than one month. Many investors were apparently sitting on the market sidelines, waiting until the market hit bottom. The moment the index dropped below 700 seemed to trigger their return. From there, the market began a steady increase—reaching about 1,100 in December 2009. Our research suggests that a long-term trend value for the S&P 500 index would have been in the 1,100 to 1,300 range at that time, a reasonable reflection of the real value of equities.

In hindsight, the behavior of the equity market has not been unreasonable. It actually functioned quite well in the sense that trading continued and price changes were not out of line with what was going on in the economy. True, the equity markets did not predict the economic crisis. However, a look at previous recessions shows that the equity markets rarely predict inflection points in the economy.⁷ [o](#)

¹ Assuming there are no changes in the company's risk profile.

² Indeed, the tax savings from debt may increase the company's cash flows.

³ Alfred Marshall, *Principles of Economics*, Volume 1, New York: Macmillan, 1920, p. 142.

⁴ Carl Shapiro and Hal R. Varian, *Information Rules: A Strategic Guide to the Network Economy*, Boston: Harvard Business School Press, 1998.

⁵ Eduardo Porter, "The lion, the bull and the bears," *New York Times*, October 17, 2008.

⁶ Richard Dobbs, Bin Jiang, and Timothy M. Koller, "Why the crisis hasn't shaken the cost of capital," *mckinseyquarterly.com*, December 2008.

⁷ Richard Dobbs and Timothy M. Koller, "The crisis: Timing strategic moves," *mckinseyquarterly.com*, April 2009.