

Contours of Crisis:

Plus ça change, plus c'est pareil?

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<http://www.bnarchives.net/>

This is the first in a series of short articles we plan to write on the current crisis. Our aim in this series is threefold: to outline some of the important contours of the crisis; to situate these patterns in historical context; and to reflect on their possible causes and implications.

Since the crisis is still ongoing, such analysis can only be cursory and suggestive. But it is nonetheless useful to put our preliminary research and thoughts in writing. By spelling out what we do know (or think we know) about the crisis, we can better identify what we don't know and need to ask.

This paper sets the stage for the series. It outlines the conventional wisdom about the cause of crisis; it describes the chronology of events; and it contrasts the pattern and magnitude of the current downturn with those of earlier episodes. The overall picture painted by this analysis is highly stylized: crises appear to come and go with remarkable regularity, their oscillations are fairly similar and they share the same order of magnitude. The whole process seems almost “automatic,” and automaticity is reassuring: it suggests that the current crisis has run much of its course and that doom and gloom will soon give way to a new upswing.

But what if this automaticity is a mirage?

The Mismatch

Most observers like to blame the ongoing turbulence in the global political economy on finance – or more precisely, on a *mismatch* between finance and reality.

The mismatch begins with the assumption that there are two types of capital: “real” and “financial.” Real capital is a productive entity, made of machines, structures, work in progress and (some say) knowledge. Financial capital is a symbolic entity, consisting of equity and debt claims on real capital. In a perfect world, the two types of capital are exactly equal: the dollar value of GE's stocks, bonds and other outstanding obligations represents the productive value of the company's capital stock, so the two magnitudes must be the same. The assets and the entitlements to the assets have to match, by definition.

But the world isn't perfect. Greed and fear, irrationality and fraud, corruption and manipulation, insufficient competition and too much government, overregula-

tion and excessive deregulation, imperfect information and short-term memory, all conspire to distort the picture. These distortions cause finance to deviate from its “fair value,” either up or down. And as the deviation grows larger, finance ceases to mirror reality. It becomes a “fiction.”

The current crisis, goes the argument, is the unavoidable consequence of such deviation. Since the 1980s, we are told, finance has inflated into a huge bubble, having risen far above the underlying stocks of real assets. But then, whatever goes up must come down. Since finance, in the final analysis, is merely the image of the real thing, at some point it has to shrink back to its “true” size. And that is exactly what we are now witnessing: a violent financial crisis that dispels the fiction and brings finance down to its “par value.”

The Excess Unwound

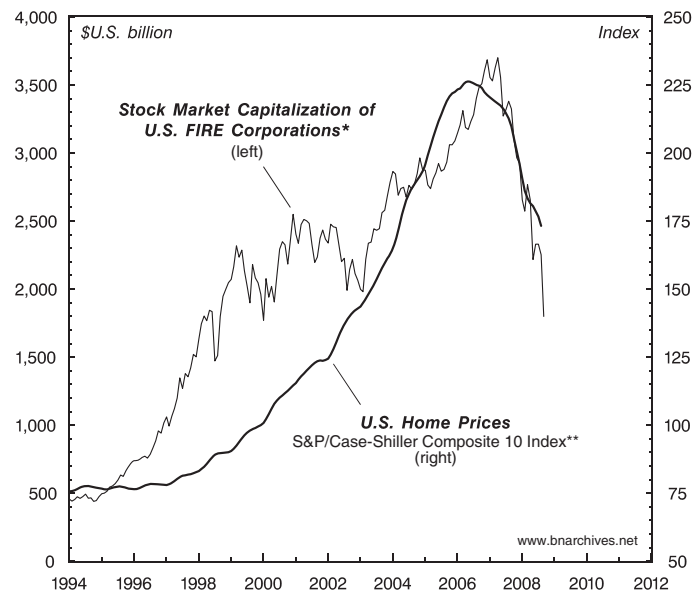
According to the mismatch thesis, the current turmoil started in the U.S. housing market. This was the epicenter. From here the tremor spread like a tidal wave: first to the entire U.S. FIRE sector (an acronym for “finance, insurance and real estate”), then to every financial market around the world, and finally to the so-called “real economy.” This domino sequence is listed in [Table 1](#) and illustrated in Figures 1–3.

Table 1
The Dominoes

MARKET	PEAK
U.S. House Prices	July 2006
U.S. FIRE Stocks (Capitalization)	May 2007
U.S. Stocks (Capitalization)	October 2007
World Stocks (Capitalization)	October 2007
U.S. Coincident Indicators	4 th Quarter, 2007

[Figure 1](#) shows the rise and fall of U.S. house prices, along with the expansion and contraction of the FIRE sector. Prices of homes started to soar in 1997/8. According to the pundits, the blaze was fuelled by three key actors. The first was Fed Chairman and Ayn Rand acolyte Alan Greenspan, who lowered interest rates and in the belief that “human nature” would limit risk taking. The second were the financial institutions that gladly ignored the risks and went on to offer mortgages to anyone willing to borrow. And the third were the eyes-wide-shut regulators, who seemed unable to see what was going on even if they cared. House prices had nowhere to go but up, and within a decade they tripled.

Figure 1
Houses on Fire



* The FIRE sector comprises corporations that operate primarily in finance, insurance and real estate. The last data point is for October 2008.

** The S&P/Case-Shiller Composite 10 Index measures average resale prices of single family homes in 10 metropolitan areas (Boston, Chicago, Denver, Las Vegas, Los Angeles, Miami, New York, San Diego, San Francisco and Washington DC). The original index is reported as a 3-month moving average. The last data point is for September 2008.

SOURCE: Global Insight (series code: HPICSC10.M for the S&P/Case-Shiller Composite 10 Index); Datastream (series code: FINANUS(MV) for the stock market capitalization of U.S. FIRE corporations).

Everyone was bullish. Home buyers were eager to borrow, convinced that prices would go on rising and that their houses could always be resold at a profit. The bankers bent over backwards to lend them the money – and then melted the individual mortgages into large pools of asset-backed securities. And the so-called investment community – including “high net-worth individuals,” large corporations,

money managers and the banks themselves – lined up to buy tranches of the new “structured investment vehicles,” usually without asking too many questions.

And for a while there was little to ask about. Since house prices were rising, default wasn't an issue. A home owner who couldn't service his mortgage would have his house repossessed and quickly resold to the next sucker in line, often at a higher price. And if the parties still felt that there was some residual risk left, they could always offset the hazard with higher interest rates, mortgage insurance and a whole slew of derivatives. The process seemed so robust that even “sub-prime” mortgages, lent to borrowers with little or no income, received a triple-A grading from honest-to-god analysts and fail-proof rating agencies.¹

By the early 2000s, the real-estate boom went global. Worldwide, the annual issuance of asset-back securities rose nearly five-fold – from \$532 billion in 2000 to \$2.5 trillion in 2006 – with much of the expansion accounted for by mortgage-backed instruments, whose new issues rose from \$275 billion in 2000 to over \$2 trillion in 2006. In the United States, repackaging reached record levels. By the early 2000s, over half of all single home mortgages and roughly one third of multifamily home mortgages were melted and resold as securities – up from 10 and 5%, respectively, in 1980.²

There was simply no way to lose money in this business, and the stock market certainly reflected that belief. The real-estate boom encouraged many other forms of debt financing, ranging from plain vanilla, to the exotic, to the kinky. And with U.S. FIRE companies cutting a profit on every deal, the total equity capitalization of their sector nearly quadrupled – from \$1 trillion in 1997 to \$3.7 trillion in 2007.

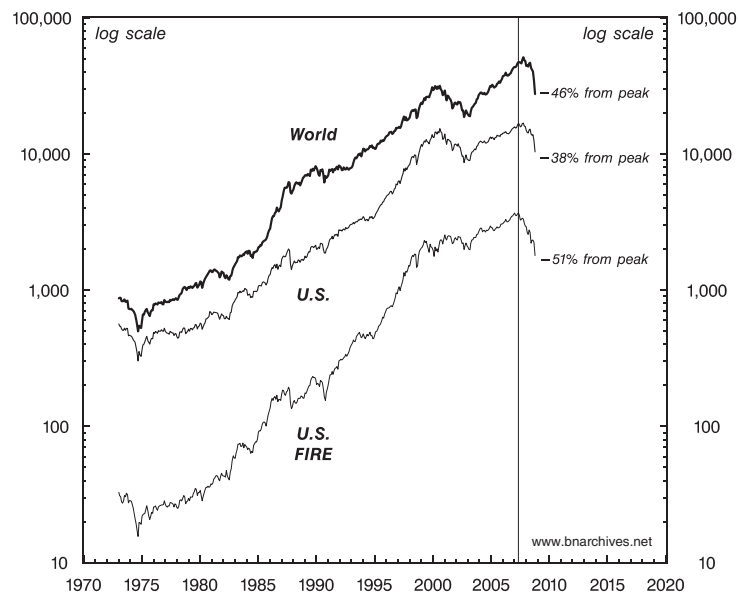
And then the music stopped.

As [Figure 1](#) shows, in July 2006, U.S. house prices started to drop. Initially, investors hung in suspension. Pretending as if nothing had happened, they continued to buy FIRE stocks, pushing the market even higher. But the downward spiral in house prices persisted – and then, suddenly, in May 2007, everyone started rushing for the door. By September 2008, house prices were down nearly 25% relative to their 2006 peak, while U.S. FIRE stocks went into free fall. In October 2008, the total market capitalization of the sector was more than 50% below its May 2007 peak.

¹ For a colorful description of the sub-prime lending and investment cycle, see Michael Lewis, “[The End](#),” *Portfolio.com*, November 11, 2008. For a more detailed account, see Robin Blackburn, “[The Subprime Crisis](#),” *New Left Review* 50, March-April, 2008, pp. 63-106.

² See SIFMA, ASF, ESF, AusSF and McKinsey & Company, “Restoring Confidence in the Securitisation Markets,” October 15, 2008, pp. 3-4.

Figure 2
Stock Market Capitalization (\$U.S. billion)



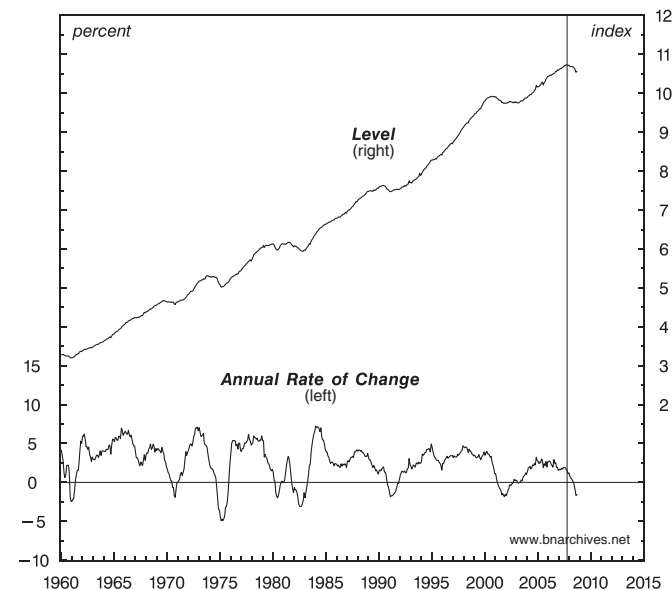
NOTE: The vertical line marks the month of May 2007. The last data points are for October 2008.

SOURCE: Datastream (series code: FINANUS(MV) for the U.S. FIRE sector; TOTMKUS(MV) for the U.S. market; and TOTMKWD(MV) for the world market).

The gathering storm didn't register immediately on the broader stock market. [Figure 2](#) shows the market capitalization of three broad aggregates – U.S. FIRE equities, all U.S. equities, and all world equities. The three series are denominated in current \$U.S. and plotted on a logarithmic scale to facilitate comparison.³

³ A logarithmic scale has two convenient features. First, it amplifies the variations of a series when its values are small and compresses these variations when the values are large. This property enables us to conveniently examine exponential growth (note that the numbers on the scale jump by multiples of 10). It also allows us to compare series with very different orders of magnitudes (note that world market capitalization is 15 times larger than the market capitalization of the U.S. FIRE sector). Second, the slope of a series is indicative of its percent rate of change – the steeper the slope the greater the growth rate, and vice versa.

Figure 3
U.S. Composite Index of Coincident Indicators



NOTE: The vertical line marks the month of October 2007. The last data points are for October 2008.

SOURCE: Conference Board through Global Insight (series code: JCOIN.M).

The data show that, while the U.S. FIRE sector started to drop in May 2007 (marked by the vertical line in the chart), the overall U.S. and global stock markets took another five months before tanking. However, once the broad reversal started, the downward convergence was swift. From October 2007 to October 2008, U.S. listed corporations lost 38% of their market capitalization, while the global market lost 46%.

The last to join the downward spiral was the so-called “real economy.” [Figure 3](#) shows the U.S. Composite Index of Coincident Indicators, a weighted average of four indicators that move more or less together with the business cycle.⁴ Although

⁴ The four coincident indicators that make up the composite index include: (1) the number of employees on non-agricultural payroll (with an index weight of 52.9%), (2) personal income less transfers expressed in constant dollars (20.8%), (3) the level of industrial production

this Composite Index pertains only to the United States, in the current environment of global integration it provides a good proxy for world trends.

The figure presents two manifestations of the index: one is the actual level; the other is the annual rate of change, calculated by comparing the same month in successive years (so that the reading for October 2008 denotes the rate of change from October 2007, etc.). The growth series, plotted at the bottom of the chart, shows that the “real economy” started to decelerate at the end of 2006. But the actual level of the index, depicted by the top series, peaked at the end of 2007 (marked by the vertical line in the figure) and started its month-to-month declines only in early 2008.

So on the face of it, the world appears to be in the midst of a *finance*-led crisis, a decline triggered and significantly amplified by the collapse of fictitious capital. “The salient feature of the current financial crisis,” explains George Soros, “is that it was not caused by some external shock. . . . The crisis was generated by the financial system itself.”⁵ According to this view, the biggest distortion was in the U.S. housing sector, whose bubble was the largest and first to deflate. The next victim was the broader financial market, which was also grossly inflated and therefore justly punctured. And the last to capitulate was the “real economy,” whose excesses obviously were more limited yet certainly worthy of a periodic cleanup.

But that is only half the story.

Toward a New Upswing?

The mismatch thesis tells us that fictitious capital, by its very nature, tends to distort the picture in both directions: it grows by too much in the upswing, only to shrink by too much in the downswing. And indeed, many experts are already wondering if finance hasn't been *overly* deflated.

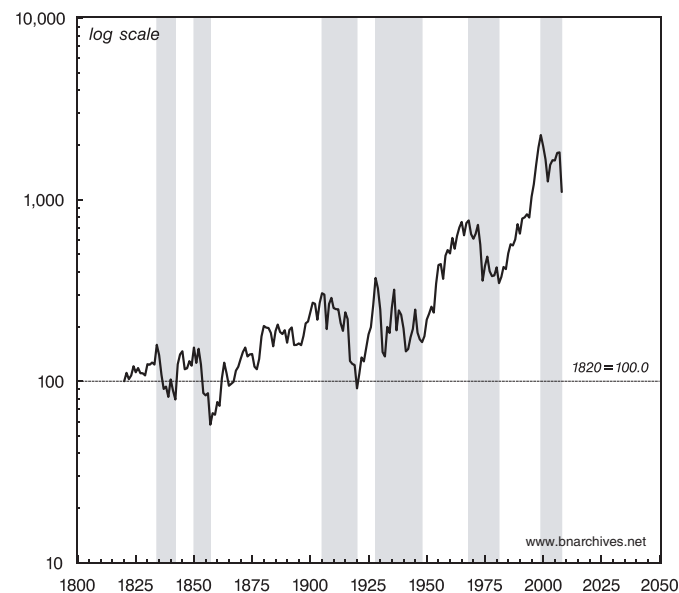
Measured against the historical record, the current market collapse certainly is extremely large. The magnitude of this collapse is contextualized in [Figure 4](#) and [Figure 5](#), where we show the history of U.S. stock prices since 1820. Before examining these charts, though, note that they express stock prices not in *actual* dollars, but in *constant* dollars. The latter measure is computed by dividing actual stock prices (expressed as an index) by consumer prices (also expressed as an index). This computation serves to “purge” from the stock market index the effect of inflation (and occasionally deflation). And once inflation has been expunged, the result represents stock prices denominated in constant dollars – i.e., in dollars with a “constant purchasing power.”⁶

(14.7%), and (4) manufacturing and trade sales expressed in constant dollars (11.6%). (The meaning of “constant dollars” is explained later in the article.)

⁵ George Soros, “[The Crisis & What to Do About It](#),” *The New York Review of Books*, Vol. 55, No. 19, December.

⁶ The notion of “constant dollars” is deeply problematic both theoretically and philosophically. But since we are dealing here with the conventional creed, we take this notion at face value.

Figure 4
U.S. Stock Prices in Constant Dollars



NOTE: Grey areas indicate major bear markets. The U.S. stock price index splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The constant dollar series is computed by dividing the stock price index by the Consumer Price Index. The last data point is for 2008.

SOURCE: Global Financial Data (series codes: _SPXD for stock prices; CPUSA for consumer prices); Standard and Poor's through Global Insight (series codes: SP500@40.D7 and SP500.D7 for stock prices); IMF through Global Insight (series code: L64@C111 for consumer prices).

Why is it so important to distinguish between the two measures? To answer this question, note that stock prices in actual dollars can always be expressed as the product of two separate magnitudes: (1) the average price level of all commodities (in actual dollars), and (2) the ratio between stock prices and the average price level (which yields a pure number). This decomposition is true by definition:

$$\text{stock prices} = \text{average price level} \times \frac{\text{stock prices}}{\text{average price level}}$$

$$= \text{average price level} \times \text{stock prices in constant dollars}$$

Now, during periods of inflation or deflation, changes in the average price level (the first component on the right-hand side of the equation), can easily overwhelm changes that are *unique* to the stock market (the second component on the right). To illustrate, between 1900 and 2008, actual stock prices rose 133-fold. In terms of our equation, most of this increase was due to inflation: the average price level rose nearly 30-fold, whereas the ratio of stock prices to the average price level rose less than fivefold.⁷

Clearly, stock owners are focused primarily on the second component. At the very minimum, their concern is not to keep up with inflation but to *outperform* it, and that is why we gauge the long-term performance of the stock market in constant dollars rather than actual ones.⁸

With this qualification in mind, let us return now to [Figure 4](#). The chart shows the stock market index in constant prices, plotted against a logarithmic scale. The vertical grey bars indicate what we consider to be *major bear markets* – i.e., periods during which the stock market suffered protracted declines.

As it turns out, there is no general definition for a bear market – let alone a “major” one. So we’ve devised our own. In what follows we define a major bear market as *a multiyear period during which stock prices, measured in constant dollars, move on a downtrend, and in which each successive peak is lower than the previous one*.

According to this definition, over the past two centuries, the United States experienced six major bear markets. These periods are listed in [Table 2](#), along with the cumulative declines in stock prices.

A similar picture emerges from [Figure 5](#), which measures the annual growth rate of the stock market index (again, in constant dollars). The thin line in the chart shows the percent variation from year to year. The thick line smoothes these variations as a 10-year moving average – meaning that every observation in the series measures the *average* annual growth rate in the previous ten years.⁹

⁷ The computations here are based on data charted in [Figure 4](#).

⁸ Beating inflation is merely the beginning. For the modern investor, the ultimate goal is to beat the performance of other investors – i.e. to achieve *differential accumulation*. We hope to explore this latter emphasis in future articles in this series.

⁹ To illustrate, the 10-year moving average for 2008 represents the average growth rate of the stock market index in the period 1999-2008, the 10-year moving average for 2007 represents the average for 1998-2007, and so on.

Table 2
Major U.S. Bear Markets*
(constant-dollar calculations)

PERIOD	DECLINE FROM PEAK TO TROUGH (%)
1834–1842	–50%
1850–1857	–62%
1905–1920	–70%
1928–1948	–56%
1968–1981	–55%
1999–2008	–51%

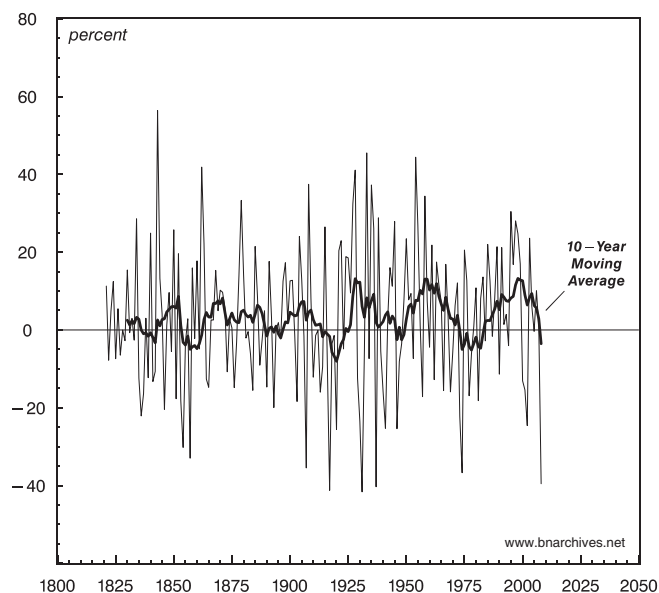
* A major bear market is defined as a multi-year period during which stock prices, measured in constant dollars, move on a downtrend, and in which each successive peak is lower than the previous one.

The last data points in [Figure 5](#) are for 2008. The year-to-year change shows a drop of 40% – on par with the record declines of 1917, 1931, 1937 and 1974. Furthermore, as the moving-average series indicates and [Figure 4](#) confirms, this decline wasn’t a fluke event, but rather part of a decade-long bear market. According to the smoothed series, the market peaked in 1998, with the 10-year moving average growth rate hovering around 13%. From then on, annual growth rates decelerated, and by 2008 pushed the 10-year moving average down to nearly –4%.

To the eyes of a seasoned financier, these magnitudes mean that the crisis may be approaching a bottom. According to [Figure 5](#), prior crises were similarly bounded. Their highest starting point, measured by the 10-year moving average series, was 13% (in 1929 and in 1959), and their lowest trough, measured by the same series, was –8% (in 1920). The extent of deceleration in growth rates, measured by the peak-to-trough difference of the 10-year moving average, ranged from a low of 6.5% (during in the 1834-1842 crisis), to a high of 15.5% (in 1928-1948).

The present crisis, measured by the 10-year moving average series, has already met or exceeded these extreme values. It started from a record ceiling of 13.3%; its current low is –3.6%; and the extent of its deceleration, computed as the difference between these two values, marks a new record: 16.9%. For long-term investors, these numbers indicate that much of the crisis is probably behind them.

Figure 5
U.S. Stock Prices in Constant Dollars
(annual growth rate)



NOTE: The U.S. stock price index splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The constant dollar series is computed by dividing the stock price index by the Consumer Price Index. The last data points are for 2008.

SOURCE: Global Financial Data (series codes: _SPXD for stock prices; CPUSA for consumer prices); Standard and Poor's through Global Insight (series codes: SP500@40.D7 and SP500.D7 for stock prices); IMF through Global Insight (series code: L64@C111 for consumer prices).

And the news gets even better. According to [Figure 4](#), historically, each major bear market was followed by a long bull run, and each of those bull runs pushed stocks to a new record high. These upswings occurred in 1842–1850, 1857–1905,

1920–1928, 1948–1968 and 1981–1999, and it isn't far fetched to think that a new one may soon be brewing.

Given that the present bear market is approaching historical lows, and since previously such bottoms were always followed by major upswings, many forward-looking strategists – from permanent bull Barton Biggs, to Wizard of Omaha Warren Buffet, to doom-and-gloom Martin Wolf – are now advising their followers to fasten their seat belts.¹⁰ News from the so-called “real economy” is likely to remain very bad and may possibly get worse – but most of the negatives are already “in the price.” And since fictitious capital is notorious for “overreacting,” particularly during deep downturns, current stock prices offer a once-in-a-life-time buying opportunity for those prescient enough to see into the next takeoff.

But, then, if the market has bottomed and the upswing is so certain, why isn't every investor buying?

Financial Cycles and the Reordering of Society

It is easy to fall for the aesthetic gyrations of the stock market. Their stylized cycles make them look natural. They “revert to mean,” as Francis Galton would have it. They oscillate within fairly clear boundaries. Their ups and downs seem almost automatic (at least in retrospect). Their regularities are so neat many are tempted to forget David Hume and extrapolate the past into the future.

And here lies the problem. The long-term cycles of the stock market, no matter how stylized and regular they seem, are not self-generating. They don't just happen on their own. Each cycle has a reason, and that reason is deeply social and historically unique.

Note that, during the twentieth century, *every oscillation from a bear to a bull market was accompanied by a systemic societal transformation*:

- The crisis of 1905–1920 marked the closing of the American Frontier, the shift from robber-baron capitalism to large-scale business enterprise and the beginning of synchronized finance.
- The crisis of 1928–1948 signaled the end of “unregulated” capitalism and the emergence of large governments and the welfare-warfare state.
- The crisis of 1968–1981 marked the closing of the Keynesian era, the resumption of worldwide capital flow and the onset of neoliberal globalization.

¹⁰ Barton Biggs, “The Mother of Bear Market Rallies is on the Horizon,” *Financial Times*, November 25, 2008, p. 24; Warren E. Buffett, “[Buy American, I Am.](#),” *The New York Times*, October 17, 2008; Martin Wolf, “Why Fairly Valued Stock Markets are an Opportunity,” *Financial Times*, November 26, 2008, p. 11.

Furthermore, none of these transformations were “in the cards.” Most observers in the 1900s didn’t expect managerial capitalism to take hold; few in the 1920s anticipated the welfare-warfare state; and not too many in the 1960s predicted neoliberal regulation. All three transformations involved a complex set of conflicts, their trajectories were all fuzzy, and their outcomes were all but impossible to anticipate.

In other words, underneath the seemingly *repetitive* long-term patterns of the market lies an *open-ended* and inherently unpredictable reordering of the entire political economy. Although past bear markets have always given way to long bull runs, these transitions were never automatic. Each and every one of them reflected a profound transformation of the underlying social structure. And in our view, this correspondence still holds. In order for the current crisis to end and a new upswing to begin, something very big has to happen: the social structure must change.

The precise nature of this transformation – assuming it occurs – is likely to remain opaque until the process is well under way. But one thing seems clear enough. A new upswing means the rekindling of accumulation, and if we are to understand what this upswing might entail, we need to go back to the beginning and start from the entity that matters most: capital.

For more on that issue, stay tuned for the next installment in our series.



Jonathan Nitzan and Shimshon Bichler are co-authors of *Capital as Power: A Study of Order and Creorder*, RIPE series in Global Political Economy (London and New York: Routledge, forthcoming 2009). All their publications are freely available from *The Bichler & Nitzan Archives* (<http://bnarchives.net>)

Contours of Crisis II: Fiction and Reality

Shimshon Bichler and Jonathan Nitzan

Jerusalem and Montreal, April 2009

<http://www.bnarchives.net/>

This is the second in our *Contours of Crisis* paper series. The [first article](#) set the stage for the series. It began by outlining the conventional view that this is a *finance*-led crisis, that this turmoil was triggered and amplified by “financial excesses”; it then described the domino sequence of collapsing markets – a process that started with the meltdown of the U.S. housing and FIRE sectors (finance, insurance and real estate), expanded to the entire financial market, and eventually pulled down the so-called “real economy”; and, finally, it situated the pattern and magnitude of the current decline in historical context.

The current market collapse is very significant. Even after their last month’s rise, U.S. equity prices, measured in constant dollars, remain 50% below their 1999 peak – a decline comparable to the previous major bear markets of 1905-1920, 1928-1948 and 1968-1981. For many observers, though, the depth of the financial crash also implies that much of it may be over, and that the boom bulls will soon oust the doom bears.

Predicting boom out of doom isn’t far fetched. Equity markets are highly cyclical, and their gyrations are remarkably stylized. As our first article showed, over the past century the United States has experienced several major bear markets with very similar patterns: they all had more or less the same duration, they all shared a similar magnitude, and they all ended in a major bull run. In other words, there seems to be a certain automaticity here, and automaticity gives pundits the confidence to extrapolate the future from the past.

But this automaticity is more apparent than real. Finance, we pointed out, is not an independent mechanism that goes up and down on its own. In this sense, the long-term movements of the equity market are not “technical” swings, but rather reflections and manifestations of deep social transformations that alter the entire structure of power. During the past century, every transition from a major bear market to a bull run was accompanied by a *systemic reordering of the political economy*: the 1920–1928 upswing marked the transition from robber-baron capitalism to big business and synchronized finance; the 1948–1968 uptrend came with the move from “laissez faire” capitalism to big government and the welfare-warfare state; and the 1981–1999 boom coincided with a return to liberal regulation on the one hand and the explosive growth of capital flows and transnational ownership on the other.

The Questions

So what should we expect in the wake of the current crisis? What type of transformation can pull capitalism out of its current rout? How will this transformation be brought about, by whom and against what opposition? Can this transformation be achieved – and what might the consequences be if it fails?

Unfortunately, these questions cannot readily be answered for two basic reasons. The first reason concerns our very inability to transcend the present. Contrary to what the prophets of economics and the fortunetellers of finance like to believe (though consistently fail to demonstrate), the future of society is largely *unknowable*.

It is of course true that, in *retrospect*, many historical developments appear obvious, if not inevitable. Looking back, the transition of the 1920s to big business and synchronized finance, the emergence during the 1940s and 1950s of large governments and the welfare-warfare state, and the imposition since the 1980s of neoliberal regulation and freely flowing finance all seem to make perfect sense. These transformations succeeded in resolving the crises that preceded them, and that success makes them look predestined. But note that *before* they happened, these transformations were almost unthinkable. Few if any of the experts saw them coming, and their precise nature remained opaque until the ensuing social restructuring was more or less complete.

The key difficulty of anticipating such transformations is novelty. Fundamental social change creates something *new*, and what is truly new can never be predicted. According to Hegel and Marx, no individual – not even the best paid market wizard – can transcend her own epoch. The consciousness of social individuals – and certainly of those convinced that they are “independent” and “rational” – is largely a collective creature, molded by the political-economic order to which they are subjugated. This subjugation makes it difficult for anybody – including critics of capitalism – to jump over Rhodes and anticipate a different future. And, indeed, it is only in hindsight and after much rationalization that the ideologues start to characterize new developments as “unavoidable” and that the econometricians begin to build models that “could have” predicted them. It is only after the fact that the foretellers have known it all along.

And then there is the second reason. In order to contemplate the future, even in the absence of novelty, one needs a firm grasp of reality. Yet it is precisely during a deep crisis such as today's that this firm grasp suddenly disappears. “The whole intellectual edifice . . . collapsed in the summer of last year,” explains Alan Greenspan to his Congressional inquisitors.¹ “Our world is broken – and I honestly don't know what is going to replace it,” grieves Bernie Sucher of Merrill Lynch. “[T]he pillars of faith on which this new financial capitalism were built have all but collapsed,” observes Gillian Tett of the *Financial Times*, and that collapse, she concludes, “has left

¹ Edmund L. Andrews, “Greenspan Concedes Error on Regulation,” *New York Times*, October 23, 2008, p. 1.

everyone from finance minister or central banker to small investor or pension holder bereft of an intellectual compass, dazed and confused.”²

What brought this sudden conceptual disintegration? Why has “our world” – i.e., the world according to the financiers – broken down? What caused the “intellectual edifice” to collapse and the “pillars of faith” to crumble? How could so solid an ideology become so useless, so quickly?

The Justifications

Financial crisis, tells us György Lukács, threatens the foundations of the capitalist regime. The ruling class loses its self-confidence and begins to substitute ad-hoc excuses for natural-state-of-things theories. And as the ideological glue that holds the regime together weakens, class conflict becomes visible through the cracks of universal rhetoric, while naked force suddenly looms large behind the front window of tolerance.

The present crisis fits this pattern, and so do the justifications. Some, like Alan Greenspan, blame it all on human nature. According to Greenspan, the banks did something totally unexpected: they suddenly decided to disobey the sacred rules of rational self-interest. Instead of following the eternal decrees of mainstream economics, they started to accumulate excessive risk that threatened their solvency. And since this blunt violation of the holy economic scriptures was never supposed to happen, it's only understandable that even God's representative at the Fed couldn't predict the consequences.³

Others, like Oxford economist John Kay, see the fault not at the level of the individual, but of the system as a whole. When the Queen of England wondered why the “the credit crisis and its evolution were not predicted” by the experts, the loyal subject quickly jumped to his colleagues' defense. National economies, financial markets and businesses, Kay explained, are simply too complex, dynamic and non-linear, and these systemic intricacies turn prediction into a “wild goose chase.”⁴

And then there are those, like financial commentator Gideon Rachman, for whom the problem is largely temporary. The economists, Rachman suggests, have

² Gillian Tett, “Lost Through Destructive Creation,” FT Series: Future of Capitalism, *Financial Times*, March 10, 2009, p. 9.

³ “All the sophisticated mathematics and computer wizardry,” observes the high priest, “essentially rested on one central premise: that the enlightened self-interest of owners and managers of financial institutions would lead them to maintain a sufficient buffer against insolvency by actively monitoring their firm's capital and risk position” (Alan Greenspan, “We Need a Better Cushion Against Risk,” *Financial Times*, March 23, 2009, pp. 9). “[T]hose of us who have looked to the self-interest of lending institutions to protect shareholder's equity (myself especially) are in a state of shocked disbelief. Such counterparty surveillance is a central pillar of our financial markets' state of balance. If it fails, as occurred this year, market stability is undermined” (U.S. Congress, *Testimony of Dr. Alan Greenspan, the Committee of Government Oversight and Reform*, October 23, 2008).

⁴ John Kay, “Kudos for the Contrarian,” *Financial Times*, December 30, 2008, p. 9.

actually made great strides in understanding how the economy works. But from time to time the economy gets infected by a “new type of economic virus,” and we need to be a bit patient until the economists discover the cure.⁵

Unfortunately, these justifications all miss the point. The key question to ask is not what the economists disagree on, but what they all agree on. And what the vast majority of them consider as true is the *mismatch thesis*: i.e., the conviction that the basic cause of the current crisis is a discrepancy between nominal finance and the so-called “real” economy.

This mismatch thesis is highly detrimental. Since most economists accept it, few ask new questions, and even fewer give new answers. The purpose of our present paper is to break the deadlock by debunking this thesis.⁶

The Mismatch Thesis

The essentials of the mismatch thesis are simple enough. The thesis argues that, over the past decade, the nominal world of finance has deviated from and distorted the “real” world of accumulation. Finance, say the thesis’ adherents, has inflated into a bubble; the bubble has grown to become much bigger than the underlying “real” capital it was supposed to represent; and since there is no such thing as a free lunch, the current crash is the inevitable price we all have to pay for failing to prevent this discrepancy.

The confessions now come out loud and clear. “It must be said plainly,” declares Sir Martin Sorrell, CEO of WPP, “that capitalism messed up – or, to be more precise, capitalists did. We – business, governments, consumers – submitted to excess; we got too greedy.”⁷ In other words, the culprit is the royal “We.” In the brave new world of neoliberalism, all of us are capitalists, at least in aspiration. And since this convenient collectivism makes each and every one of us responsible for the mess, it is only natural, at least according to the editors of the *Financial Times*, that “Everyone is paying the price.”⁸

And not that anyone could have done anything to avert this sorry outcome. The mismatch between finance and “reality,” many now concede, is neither a fluke event nor something that the market itself can fix. It is a natural defect, an unfortunate imperfection built into the very DNA of capitalism. Finance can never be fully tamed, assumes John Kay, and “since financial stability is unattainable,” he concludes, “the more important objective is to insulate the real economy from the consequences of

⁵ Gideon Rachman, “Generation L and its Fearful Future,” *Financial Times*, January 13, 2009, p. 11.

⁶ Some of our arguments here draw on Chapter 10 of our book *Capital as Power. A Study of Order and Creorder* (London and New York: Routledge, 2009), as well as on our earlier monograph, “The Gods Failed, The Priests Lied” (Montreal and Jerusalem, Hebrew, May 2007).

⁷ Martin Sorrell, “The Pendulum Will Swing Back,” *Financial Times*, April 9, 2009, p. 9.

⁸ Editors, “The Return of the ‘Real’ Economy,” *Financial Times*, December 31, 2008, p. 6.

financial instability.” The best we can do, tells us Nobel Laureate Robert Solow, is somehow “regulate” the financiers. And how should this regulation be achieved? Simple: by putting a “boundary” between the bankers’ world and our own, so that their “bubbles of excessive speculation and financial innovations” do not cause “serious disruption to the real economy.”⁹

Naturally, the mismatch thesis, like other basic theories, comes in a wide variety of flavors sparkled with colorful debates. But its underlying principles are broadly accepted by both liberals and radicals, and few if any question their general validity.

This intellectual complacency, we argue, is grossly misplaced. As we shall see later in the article, the thesis itself does not withstand scrutiny. But the problem begins before we even get to the thesis: it starts with the very assumptions the argument is built on.

The Basic Assumptions

There are three key assumptions. The first is that nominal finance and “real” capital are two *quantitative* entities that can be measured. The second is that these two quantities can be measured *independently* of each other – one in money units, the other in hedonic-productive units. And the third is that, under ideal circumstances, the two quantities should be equal, so that the magnitudes of nominal finance and “real” capital are the same.

Unfortunately, none of these assumptions holds water. Stated briefly, the first problem is that, while finance has a definite quantity denominated in dollars and cents, “real” capital does not: its units – whatever they are – *cannot* be measured. Economists pretend to solve the impasse by using a proxy measure, but their solution creates a second problem. The proxy they use is not “real,” but nominal: instead of material units, it’s counted in dollars and cents! Finally, even this nominal expression of “real” capital doesn’t do the trick: it rarely equals the magnitude of finance and, moreover, it tends to oscillate in an opposite direction!

These considerations lead to two distinct options, both unpalatable. If we accept that “real” capital doesn’t have a quantity, it follows that finance has nothing to match and therefore nothing to *mismatch*. And if we concur with the economists and use their nominal proxy, we end up with a pseudo “real” capital that rarely if ever matches the quantity of finance. In other words, we end up with a theory that is almost always wrong – a conclusion which in turn means either that capital suffers from a chronic split personality, or that the economists simply don’t know what they are talking about.

⁹ John Kay, “Why More Regulation Will Not Save Us from the Next Crisis,” *Financial Times*, March 26, 2008, p. 15; Vincent Boland, “Top Economists Press for Banking Regulation Shake-Up,” *Financial Times*, December 4, 2008 and “Economists Join Drive for Rethink on Regulation,” *Financial Times*, December 16, 2008, p. 25.

With this overview in mind, let us now turn to the details, beginning with the underlying separation between the “real” and the nominal.

The Duality

Modern economics, both mainstream and heterodox, starts from a basic duality. According to this view, first spelled out in the eighteenth century by philosopher David Hume, the economy consists of two distinct spheres: “real” and nominal. The important sphere is the “real” one. For the liberals, this is the domain of scarcity, the sphere where demand and supply allocate limited resources between unlimited wants. For the Marxists, this is the bedrock of the class struggle, the arena where workers produce value and capitalists exploit them through the appropriation of surplus value.

Taken in its totality, the “real” economy is the site where production and consumption take place, where sweat and tears are shed so that desires can be fulfilled, where factors of production mix with technology, where capitalists invest for profit and workers labor for wages, where conflict clashes with cooperation, where anonymous market forces meet the visible hand of power. It’s the *raison d’être*, the locus of action, the means and ends of economics. It is the *real* thing.

The nominal economy merely reflects this reality. Unlike the “real” economy, with its productive efforts, tangible goods and useful services, the nominal sphere is entirely symbolic. Its various entities – fiat money, credit and debt, equities and securities – are all denominated in dollars and cents. They are counted partly in minted coins and printed notes, but mostly in electronic bits and bytes. This is a parallel universe, a world of mirrors and echoes. Whether accurate or inaccurate, it is a mere *image* of the real thing.

This duality of the “real” and the nominal pervades all of economics, including the concept of capital. Here, too, there are two types of capital: “real” capital, or wealth, and financial capital, or capitalization. “Real” capital is made of so-called capital goods. It comprises means of production – plant and equipment, infrastructure, work in progress and, according to many economists, also knowledge. Financial capital, by contrast, is the symbolic ownership claims on capital goods. It exists as nominal “capitalization” – namely, as the present value of the earnings that the capital goods are expected to generate.

Irving Fisher’s House of Mirrors

The duality of “real” and financial capital was articulated a century ago, by the American economist Irving Fisher. This was the beginning of a process that economists today like to call “financialization,” and Fisher was one of the first theorists to systematically articulate its logic. Table 1 summarizes his framework:

Table 1
Fisher’s House of Mirrors

	PRESENT CAPITAL		FUTURE INCOME
QUANTITIES (“REAL”)	capital wealth	① →	income services
			↓ ②
VALUES (FINANCIAL)	capital value	← ③	income value

SOURCE: Adapted from Irving Fisher, *The Rate of Interest* (NY: The Macmillan Company, 1907), p. 14

Let’s hear what Fisher has to say about this logic and then try to summarize it in simple words:

The statement that “capital produces income” is true only in the physical sense; it is not true in the value sense. That is to say, *capital-value does not produce income-value*. On the contrary, *income-value produces capital-value*. . . . [W]hen capital and income are measured in *value*, their causal connection is the reverse of that which holds true when they are measured in *quantity*. The orchard produces the apples; but the value of the apples produces the value of the orchard. . . . We see, then, that present capital-*wealth* produces future income-*services*, but future income-*value* produces present capital-*value*.¹⁰

The three-step sequence in Table 1 goes as follows. In step 1, the stock of “real” capital goods, or what economists think of as “wealth,” generates future income services. For example, in an Intel factory, the machines comprise the “real” capital wealth that exists here and now, while the microchips that these machines will (supposedly) produce constitute the future income services.

In step 2, the future income services become future income value. This conversion will happen in the future, when Intel’s owners sell the microchips in return for dollars and cents. However, step 3 shows us that the owners of Intel don’t have to wait until the income services are produced and the income value is earned. They can easily capitalize, or “discount,” these flows, here and now. This capitalization closes the circle. It brings the future income flows to their “present value,” and by so doing helps the owners convert their physical capital wealth into a financial capital value.

The end result is an equality. The “real” capital on the asset side of Intel’s balance sheet corresponds to the financial capital on its liabilities side. The quantity of

¹⁰ Irving Fisher, *The Rate of Interest* (NY: The Macmillan Company, 1907), pp. 13-14, original emphases.

Intel's machines, structures, inventories and knowledge, taken in the aggregate, is equal to the total dollar value of its capitalized equity and debt obligations. The nominal "Idea" mirrors the real "Thing."

Nowadays, after a century of economic and financial indoctrination, the informed reader may find this process fundamental, if not trivial. But in fact, it is neither fundamental nor trivial. If anything, it is fundamentally wrong. Let's see why.

Mirror, Mirror on the Wall, Who is the Prettiest of them All?

The first question to ask is why do economists need two spheres to begin with – particularly when one sphere is simply a mirror image of the other? Why worry about the nominal Idea when one already knows the "real" Thing itself? Isn't this duplication redundant, not to say irrational and wasteful?

For most economists, the answer to the last question is a resounding yes: the nominal sphere is definitely redundant. Money may be useful as a "lubricant," a way to lessen the friction of a barter economy. But that is just a sidekick. Analytically, money is no more than a duplicate. "There cannot, in short, be intrinsically a more insignificant thing, in the economy of society, than money," declares nineteenth-century economist John Stuart Mill.¹¹ And that view hasn't changed much since it was first pronounced: "Money is 'neutral,' a 'veil' with no consequences for real economic magnitudes," reiterates twentieth-century Nobel Laureate Franco Modigliani.¹² These are not misquotes. Open any economics textbook and you'll find almost all of it denominated and analyzed solely in "real" terms. In theory, the only thing that matters is the "real" economy. The nominal side is entirely redundant.

But this theoretical posture is mostly for show. In practice, economists can do very little without the nominal world, and for a very simple reason. As it turns out, their so-called "real" economy cannot be measured directly. The only way to count its quantities is indirectly, by looking at the economy's nominal mirror.

And here there arises a tiny problem. If economists see the reality *only* through its reflections, how can they ever be sure that what they see is what they get?

Fundamental Quantities

As we have seen, economists begin with two parallel sets of quantities – "real" and nominal – and, in line with this duality, assume that the value of finance, measured as capitalization, is equal to the amount of wealth embedded in capital goods. But there is a clear pecking order here. The key is "real" capital. This is the productive

source of the entire process. "Real" capital is what generates future income services, which, in turn, become future income value; and it is this future income value that gets discounted into the present value of nominal finance.

In other words, the whole exercise is benchmarked against the material-productive quantity of "real" capital. A mirror can only reflect that which already exists, and that requirement cannot be bypassed. In order to compute the quantity of nominal finance, we first need to know the quantity of "real" capital. And yet this prerequisite *cannot* be fulfilled. It turns out that the quantity of "real" capital is a pure fiction. Nobody has ever been able to measure it, and for the simplest of reasons: it doesn't exist.

Although economists like to mystify and obscure the issue, the gist of the problem is fairly easy to explain. Commodities are qualitatively different entities. Apples are different from microchips, just as automobile factories are different from oil rigs. These differences mean that we cannot compare and aggregate such entities in their own natural units. The solution to this diversity is to devise a "fundamental quantity" common to all commodities, a basic measure that all commodities can be expressed in or reduced to.

This method underlies the natural sciences. In physics, for example, the basic measurement units are mass, distance, time, electrical charge and heat. These are the fundamental quantities from which all other physical quantities derive: velocity is distance divided by time; acceleration is the rate of change of velocity; force is the product of mass and acceleration; etc.

Utils and Abstract Labor

Taking their cues from the physicists, economists have come up with their own fundamental quantities. The liberals, who like to emphasize the hedonic purpose of the economy, focus on the well-being that goods and services supposedly generate. This well-being, they argue, can be measured in "utils" – the universal unit of the liberal world. Unlike liberals, Marxists accentuate the grueling aspect of the economy – namely the process of production. This process, they claim, can be enumerated in terms of the socially necessary time it takes to produce a commodity, measured in universal units of "abstract labor."

In this way, every commodity – including the various artifacts of "real" capital – can be measured in terms of a universal unit (with the particular choice depending on the economist's theoretical preference). And once the reduction is achieved and the commodity quantified in util or abstract-labor terms, everything else falls into place.

To illustrate, a liberal statistician might determine Intel's productive capacity as equivalent to 1 trillion utils, to be generated over the life span of the company's "real" capital; this flow of income services would then give rise to \$50 billion of net income value; and, to close the circle, this income value, properly discounted to its present value, would be worth \$200 billion in nominal market capitalization. Now, since the statistician is using fundamental quantities, she can easily compare different

¹¹ John Stuart Mill, *Principles of Political Economy. With Some of Their Applications to Social Philosophy* (New York: Co-operative Publication Society Mill: 1848. [1900]), Book 3, Ch. 7.

¹² Lucas Papademos and Franco Modigliani, "The Supply of Money and the Control of Nominal Income," in *Handbook of Monetary Economics*, edited by B. Friedman and F. Hahn (New York: North Holland, 1990), p. 405.

companies. For instance, if ExxonMobil has 2 trillion utils' worth of productive capacity – that is, twice as much as Intel's – its market capitalization should also be twice that of Intel's – i.e., \$400 billion.

A Marxist statistician would compute things a bit differently. Recall that “real” capital here is measured in terms not of the utils it generates but of the abstract labor time socially necessary to produce it. In our example, if the “real” capital of ExxonMobil requires 10 million hours of socially necessary abstract labor to produce, while that of Intel takes only 2 million, their relative magnitudes is 5:1. And if the dollar capitalization of the two companies were to reflect this ratio, ExxonMobil would have a financial worth five times larger than Intel's.

This quantitative correspondence between financial and “real” capital is the foundation of the mismatch thesis. The liberal version of the thesis begins by assuming that the two magnitudes should match – and then uses various distortions to justify their mismatch. The Marxists start from the other end. They assume that capitalism has a built-in tendency that drives these two magnitudes apart – and then use crisis to bring them back to a match.¹³ But both versions – whether they begin from a match or a mismatch – hinge on the *quantity* of “real” capital. This quantitative benchmark is the ultimate “reality” that financial capital supposedly matches or mismatches.

The only problem is that this “reality” is really a fiction.

Revelations

The simple fact is that, unlike physicists, economists have never managed to identify, let alone calculate, their fundamental quantities. Whereas mass, distance, time, electrical charge and heat are readily measurable, no liberal has ever been able to observe a util, and no Marxist has ever seen a unit of abstract labor.

To their credit, the founders of the neoclassical faith – the all-dominant doctrine of “Economics” – were quite honest about their utilitarian racket. Stanley Jevons, for instance, admitted that “a unit of pleasure or pain is difficult to even conceive,” while Alfred Marshall noted that desires and wants, which he correlated with utility, “cannot be measured directly.” But the lure of the util proved too difficult to resist, and the neoclassicists went right on to build their entire quantitative dogma based on this “difficult-to-even-conceive” unit.¹⁴

Marx treated his own fundamental quantity with much more respect. Unlike the neoclassicists, he truly believed that a unit of abstract labor could be measured – per-

haps by equating it with a unit of unskilled labor. “A commodity,” he asserted, “may be the product of the most skilled labour, but its value, by equating it to the product of simple unskilled labour, represents a definite quantity of the latter labour alone.” Moreover, in his view, this benchmark unit could be readily observed in the American free market, where “the abstraction of the category ‘labor’, ‘labor in general’, labor *sans phrase*, the starting point of modern political economy, becomes realized in practice.”¹⁵

The problem with these statements is that, even if we could somehow know what abstract labor looks like – a yet-to-be substantiated proposition – there is still no way to *convert* different forms of labor to units of abstract labor, however measured. And, indeed, in practice, neither Marx nor his followers have ever been able to calculate the abstract labor equivalent of an hour of an English foreman, a U.S. electrical engineer, a Japanese brain surgeon or a South African truck driver.¹⁶

Needless to say, this inability to measure utils and abstract labor is a make-or-break junction. If these indeed are invisible, not to say logically impossible, units, they cannot be used to measure the quantity of commodities – including the quantity of “real” capital. And if the magnitude of “real” capital is unknown if not unknowable, what then is left of the mismatch thesis?

But not to worry. Religion is rarely gridlocked on technicalities, and economics is no exception. Everyone knows that the real God reveals himself through his miracles, and, according to most economists, the same holds true for “real” capital: its quantity reveals itself through the price. Instead of trying to measure “real” capital in units of utils or abstract labor and then compare the result to the dollar value of that capital, the economists simply go in reverse. They first look at the dollar value of the capital goods and then *assume* that this dollar value reveals the “real” quantity of the underlying capital.¹⁷

¹⁵ The first quote is from Karl Marx, *Capital. A Critique of Political Economy. Vol. 1: The Process of Capitalist Production*. (Chicago: Charles H. Kerr & Company, 1867 [1906]), p. 51. The second quote is from Karl Marx, *A Contribution to the Critique of Political Economy* (Chicago: Charles Kerr & Company, 1911), p. 299.

¹⁶ The logical impossibility of this conversion is examined in Philip Harvey, “The Value-Creating Capacity of Skilled Labor in Marxian Economics,” *Review of Radical Political Economics*, 1985, Vol. 17, No. 1-2, pp. 83-102. For a broad critique of Marx's value theory, see Nitzan and Bichler, *Capital as Power. A Study of Order and Creorder* (London and New York: Routledge, 2009), Chs. 6-7.

¹⁷ The actual computation, of course, is a bit more involved. In practice, the economists consider the quantity of “real” capital as equal not to its actual dollar value, but to its “constant” dollar value – i.e., to its aggregate nominal dollar value divided by its unit price. The problem is that in order to compute the price of a unit of “real” capital, we first need to know what that unit is. However, as we have seen, this unit – expressed in either utils or abstract labor – is unknowable, so the economists are forced to pretend. They convince themselves that they know what this unit is, assign it a price and then use this price to “deflate” the dollar value of capital goods. But, then, if one already knows how to measure capital directly in utils or abstract labor, what's the point of the indirect calculations?

¹³ Marx's view on the difference between financial and “real” capital and their tendency to converge through crisis is carefully examined in Michael Perelman, “The Phenomenology of Constant Capital and Fictitious Capital,” *Review of Radical Political Economics*, 1990, Vol. 22, Nos. 2-3, pp. 66-91.

¹⁴ The quotes are from Stanley W. Jevons, *The Theory of Political Economy*, (Harmondsworth, Middlesex, England: Penguin, 1871), p. 11 and Alfred Marshall, *Principles of Economics. An Introductory Volume*, 8th ed. (London: Macmillan, 1920), p. 78.

Thus, for a liberal, a 1:3 price ratio between two Toyota factories means that the latter has three times the util-generating quantity of the former. Similarly, for a Marxist, this ratio is evidence that the abstract labor quantity of the second factory is three times that of the first.

Unfortunately, this logic makes us go in a circle. Recall that the starting point of the mismatch thesis is an ideal equality between the money quantity of capitalization and the “real” quantity of capital. But now it turns out that the “real” quantity of capital – the entity that nominal finance supposedly equals to and unfortunately distorts – is itself nothing but . . . money! So, in the end, there is no “real” benchmark – and yet, without such benchmark, what exactly is there to mismatch?

Let's be Pragmatic

At this point, the mismatch theorists – i.e., the vast majority of economists – should have packed up and gone home. Of course, this departure never happened – nor is it likely to occur anytime soon. The economists, for all their mischief, remain in the sweet spot. Contrary to the textbook ideal, the market for economic ideology is neither perfectly competitive nor fully informed. The economists retain the exclusive right to produce and sell the “economic” omens. And as long as the laity fails to see that the sellers are partly naked and the ideological merchandise often rotten, the buyers continue to pay, the market continues to clear, and the racketeers continues to prosper.

So let's remain seated and see where the economic plot takes us. Our new starting point now is that “money is real,” so that the dollar value of capital goods represents their quantity as “real” capital (with inverted commas, given the unreal nature of this “reality”). This correspondence supposedly applies at every level of analysis, from the single firm all the way to the global arena. “I find it useful,” says the know-all Alan Greenspan, “to think of the world economy's equity capital in the context of the global consolidated balance sheet. . . . with physical assets at market value on the left-hand side of the balance sheet and the market value of equity on the right-hand side. Changes in equity values result in equal changes on both sides of the balance sheet.”¹⁸

Now, this new setup, although logically faulty, if not circular, has one important advantage: it enables a “pragmatic” test. The nominal proxy for “real” capital now is fully observable and therefore readily comparable to the corresponding magnitude of financial capitalization. All we have to do is measure and see. The economic scriptures, summarized in Table 1 above, tell us that the two magnitudes should be mirror images of each other. But the facts say otherwise.

¹⁸ Alan Greenspan, “Equities Show Us the Way to Recovery,” *Financial Times*, March 30, 2009, p. 9.

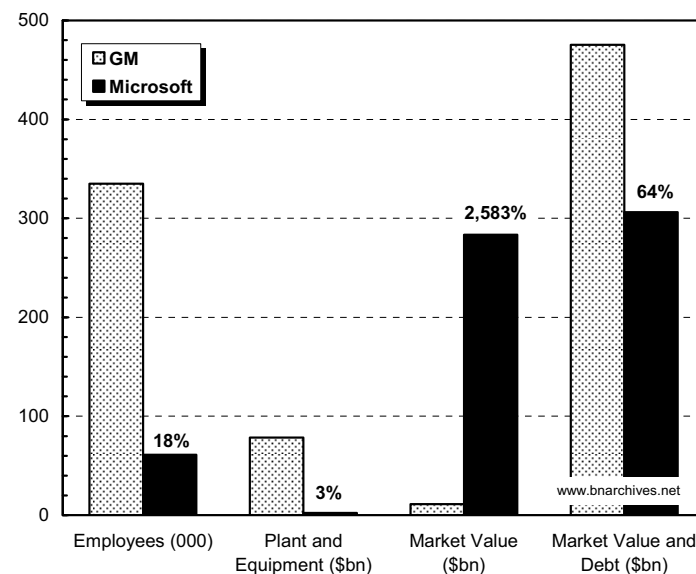
Microsoft versus General Motors

Figure 1 compares the so-called “real” and financial sides of two leading U.S. firms – Microsoft and General Motors (GM). Keeping with our vow, we go along with the economists and assume here that the productive capacity of each company – namely, its “real” capital – can be measured by the dollar value of its capital goods.

There are four sets of bars in the chart, each presenting a different type of facts about the two companies. The grey bars are for GM, the black ones for Microsoft. On top of each of the Microsoft bars, we denote the percent ratio of Microsoft relative to GM.

The two sets of bars on the left present data on the “material” operations of the two firms. In terms of relative employment, depicted by the first set, GM is a giant and Microsoft is a dwarf. In 2005, GM had 335,000 workers, 5.5 times more than Microsoft's 61,000. The second set of bars denotes the respective dollar value of the companies' plant and equipment, measured in historical cost (i.e. the original purchase price).

Figure 1
General Motors versus Microsoft, 2005



NOTE: The per cent figures indicate, for any given measure, the size of Microsoft relative to GM.

SOURCE: Compustat through WRDS (series codes: data29 for employees; data8 for net plant and equipment; data24 for price; data54 for common shares outstanding; data181 for total liabilities).

In line with our concession, we assume that these dollar values are proportionate to the “productive capacity,” or the “real” capital of the two companies. According to these statistics, in 2005 the “real” capital of GM, standing at \$78 billion, was 33 times larger than Microsoft’s, whose capital goods were worth a mere \$2.3 billion.

The two sets of bars on the right show the companies’ respective capitalization – that is, the magnitude of their nominal finance. Here the picture is exactly the opposite, with Microsoft being the giant and GM the dwarf. In 2005, Microsoft’s equity had a market value of \$283 billion, nearly 26 times GM’s \$11 billion. And even if we take the sum of debt and market value (which supposedly stands as the total claim on a company’s “real” capital), the GM total of \$475 billion was only 55% greater than Microsoft’s \$306 billion – a far cry from its relatively huge workforce and massive plant and equipment.

The usual response to such a discrepancy, from Alfred Marshall onward, points to “technology” and “human capital.” This is the “knowledge economy,” the experts tell us. Obviously, Microsoft’s disproportionate market value must be due to its superior know-how, packed as “immaterial” or “intangible” assets. And since intangibles are not included in the fixed assets of corporate balance sheets on the one hand yet bear on market capitalization on the other, we end up with a market value that deviates, often considerably, from the tangible stock of “real” capital.

This is a popular academic claim, and for good reason: it is entirely reversible and totally irrefutable. To illustrate, simply consider the reverse assertion – namely that GM has more know-how than Microsoft. Since nobody knows how to quantify technology, how can we decide which of the two claims is correct?

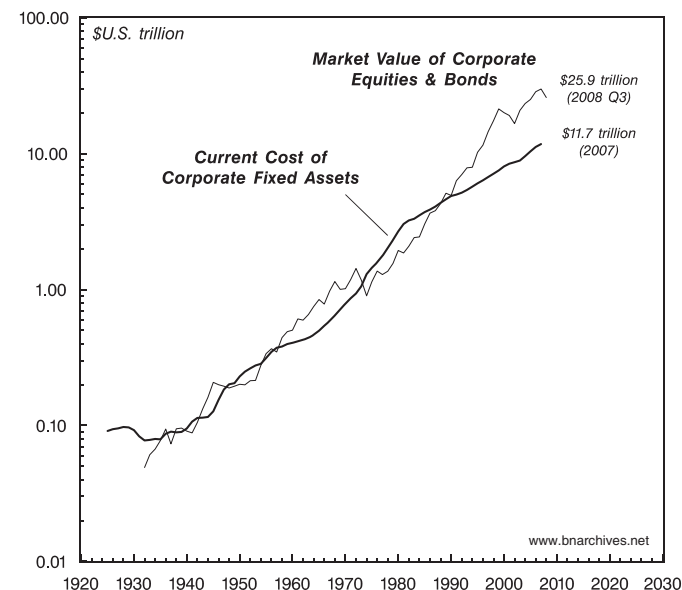
Tobin’s Q

The discrepancy between capitalization and “real” capital is by no means limited to individual firms or particular time periods. In fact, it appears to be the rule rather than the exception.

Figure 2 broadens the picture. Instead of examining two firms at a point in time, it looks at all U.S. corporations over time. The chart plots two lines. The thick line is our revised “real” benchmark, counted in dollar terms. It shows the current, or replacement cost of corporate fixed assets (comprising plant and equipment). This measure tells us, for each year, how much it would have cost to produce the existing plant and equipment at prices that prevailed during the year. The thin line is the corresponding magnitude of finance. It measures the total capitalization of corporate equities and bonds that presumably mirrors the quantity of these fixed assets. Note that we plot the two series against a logarithmic scale, and that often the difference between them is very large – having recently reached many trillions of dollars.¹⁹

¹⁹ A logarithmic scale amplifies the variations of a series when its values are small and compresses these variations when the values are large. This property makes it easier to visualize exponential growth (note that the numbers on the scale jump by multiples of 10).

Figure 2
The “Quantity” of U.S. Capital



NOTE: The market value of equities and bonds is net of foreign holdings by U.S. residents.

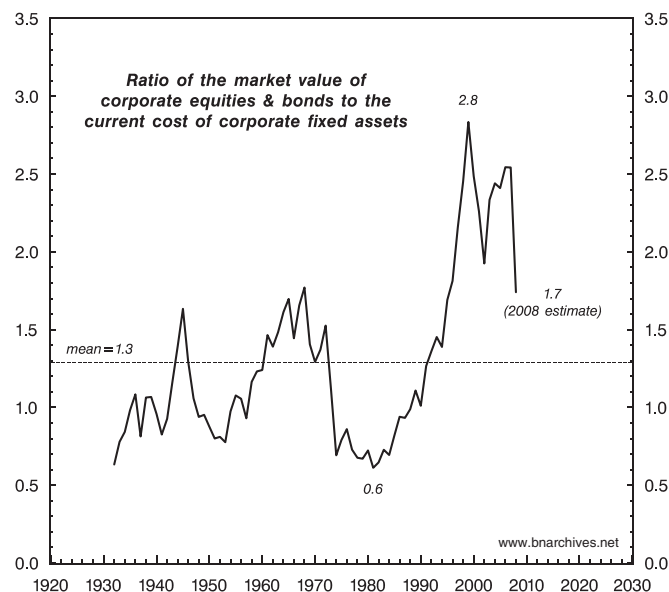
SOURCE: U.S. Bureau of Economic Analysis through Global Insight (series codes: FAPNREZ for current cost of corporate fixed assets). The market value of corporate equities & bonds splices series from the following two sources. 1932-1951: Global Financial Data (market value of corporate stocks and market value of bonds on the NYSE). 1952-2007: Federal Reserve Board through Global Insight (series codes: FL893064105 for market value of corporate equities; FL263164003 for market value of foreign equities held by U.S. residents; FL893163005 for market value of corporate and foreign bonds; FL263163003 for market value of foreign bonds held by U.S. residents).

Figure 3 calibrates these differences. The chart plots the so-called *Tobin’s Q* ratio for the U.S. corporate sector from 1932 to 2008 (with the last year being an estimate).²⁰

²⁰ The *Q*-ratio was proposed by James Tobin and William Brainard as part of their analysis of government stabilization and growth policies. See their articles “Pitfalls in Financial Model Building,” *American Economic Review. Papers and Proceedings*, 1968, Vol. 58, No. 2, May, pp. 99-

In this figure, *Tobin's Q* measures the ratio between corporate capitalization and capital goods: for each year, the series takes the market value of all outstanding corporate stocks and bonds and divides it by the current replacement cost of corporate fixed assets. Since both magnitudes are denominated in current prices, the ratio between them is a pure number.

Figure 3
Tobin's Q in the United States



NOTE: The market value of equities and bonds is net of foreign holdings by U.S. residents. The 2008 estimate is based on extrapolating the underlying series. The last data point for the market value of corporate equities and bonds is for 2008:Q3. The extrapolation assumes that during 2008:Q4 the market value of equities dropped by 20% and that the value of bonds remained unchanged. The last data point for the current cost of corporate fixed assets is for 2007. The extrapolation assumes that in 2008 this cost rose by 6% – an increase equivalent to the average growth of the previous ten years.

SOURCE: See Figure 2.

122; and “Asset Markets and the Cost of Capital,” in *Economic Progress, Private Values, and Public Policy: Essays in the Honor of William Fellner*, edited by B. Balassa and R. Nelson (Amsterdam and New York: North-Holland Publishing Co. 1977), pp. 235-262.

Here too we uphold our theoretical concession. We assume that Fisher’s symmetry between “real” assets and dollar capitalization, although failing the materialistic test, can still hold in nominal space. Now, if this assumption were true to the letter, *Tobin's Q* should have been 1. One dollar’s worth of “real” assets would create a definite future flow of money income, and that flow, once discounted, would in turn generate one dollar’s worth of market capitalization. The facts, though, seem to suggest otherwise.

There are two clear anomalies. First, the historical mean value of the series is not 1, but 1.3. Second, the actual value of *Tobin's Q* fluctuates heavily – over the past 77 years it has oscillated between a low of 0.6 and a high of 2.8. Moreover, the fluctuations do not look random in the least; on the contrary, they seem fairly stylized, moving in a wave-like fashion. Let’s inspect these anomalies in turn.

The Curse of Intangibles

Why is the long-term average of *Tobin's Q* higher than 1? The conventional answer points to mismeasurement. To reiterate, fixed assets consist of plant and equipment; yet, as we have already seen in the case of Microsoft vs. GM, capitalization supposedly represents the entire productive capacity of the corporation – in other words, *more* than just its physical plant and equipment. And since *Tobin's Q* measures the ratio between the whole and only one of its parts, plain arithmetic tells us the result must be bigger than 1. But, then, *how much* bigger? Even if we accept that there is mismeasurement here, the question remains as to why *Tobin's Q* should average 1.3, rather than 1.01 or 20 for instance. And here, too, just like in the case of Microsoft vs. GM, the answer is elusive.

To pin down the difficulty, let’s examine the structure of a balance sheet a bit more closely. Economists and accountants tell us that corporations have two types of assets: tangible and intangible.²¹ According to their standard system of classification, tangible assets consist of capital goods – machines, structures and recently also software. Intangible assets, by contrast, represent firm-specific knowledge, proprietary technology, goodwill and other metaphysical entities. Most economists (with the exception of some Marxists) consider both types of assets productive, and the accountants concur – but with a reservation. Although both tangible and intangible assets are deemed “real,” they cannot always be treated in the same way.

The reason is prosaic. Tangible assets are bought and sold on the market and therefore have a universal price. Since the market is assumed to know all, this price is treated as an objective quantity and hence qualifies for inclusion in the balance sheet.

²¹ For mainstream analyses of intangibles, see for example, Baruch Lev, *Intangibles. Management, Measurement, and Reporting* (Washington, D.C.: Brookings Institution Press, 2001); and Carol Corrado, Charles Hulten and Daniel Sichel, “Intangible Capital and Economic Growth,” Finance and Economics Discussion Series, Federal Reserve Board, Division of Research & Statistics and Monetary Affairs, Washington DC, 2006.

By contrast, most intangible assets are produced by the firm itself. They are generated through internal R&D spending, in-house advertisement expenditures and sundry other costs associated with the likes of “corporate re-engineering” and “structural re-organization.” These are not arm’s-length transactions. They are not subject to the universalizing discipline of the market, and therefore the intangible assets they generate lack an “objective” price. And items that do not have an agreed-upon price, no matter how productive, cannot make it into the balance sheet. The best the accountants can do is list them as current expenditures on the income statement.

There are two exceptions to the rule, though. One exception is when companies purchase pre-packaged intangibles directly through the market – for instance, by acquiring a franchise, patent, trademark, or copyright. The other is when one corporation acquires another at a price that exceeds the acquired company’s book value. Since the merger itself does not create new tangible assets, the accountants assume that the premium must represent the intangible assets of the new formation. They also assume that since this premium is determined by the market, it must be objective. And given that the intangibles here are objectively measured, the accountants feel safe enough to include them in the balance sheet.

So all in all we have three categories of “real” capital: (1) tangible assets that are included in the balance sheet; (2) intangible assets that are included in the balance sheet; and (3) intangible assets that are not included in the balance sheet. Now, as noted, fixed assets comprise only the first category, whereas capitalization reflects the sum of all three; and, according to the conventional creed, it is this disparity that explains why the long-term average of *Tobin’s Q* differs from 1.

A Measure of Our Ignorance

The historical rationale goes as follows. Over the past several decades, U.S.-based corporations have undergone an “intangible revolution.” Their economy has become “high-tech,” with knowledge, information and communication all multiplying manifold. As a consequence of this revolution, the growth of tangible assets has decelerated, while that of intangible assets has accelerated.

And how do we know the extent of this divergence? Simple, say the neoclassicists. Just use the “Quantity Revelation Theorem.” According to this theorem, the market knows all, and, if we read it correctly, its capitalization will tell us the true total quantity of capital. Now, it is true that this revelation takes place only under ideal conditions – i.e. when markets are perfectly competitive, when there are no economies of scale and when capitalists are powerless – but since nobody is likely to protest, we can just go ahead and assume that all of these conditions apply. With this assumption, the only thing left to do now is subtract from the market value of firms the market price of their fixed assets – and then call the difference the “quantity of intangibles.”²²

²² The “Quantity Revelation Theorem” is articulated in Martin Neil Bailey, “Productivity and the Services of Capital and Labor,” *Brookings Papers on Economic Activity*, 1981, No. 1, pp. 1-50.

Applying this true-by-definition logic, a 2006 study of the S&P 500 companies estimates that, over the previous thirty years, the ratio between their market value and the book value of their tangible assets has risen more than fourfold: from 1.2 in 1975 to 5 in 2005.²³ The increase implies that in 1975 intangibles amounted to 17% of the total assets, whereas in 2005 they accounted for as much as 80%. Much of this increase is attributed to the growth of out-of-balance-sheet intangibles, whose share of market capitalization during the period is estimated to have risen from 15 to 65%.

Conclusion: the 1.3 mean value of *Tobin’s Q* is hardly a mystery. It is simply another “measure of our ignorance” – in this case, our inability to measure intangibles directly. Fortunately, the problem can be circumvented easily by indirect imputation. And, indeed, looking at [Figure 3](#), we can see that much of the increase in *Tobin’s Q* occurred over the past couple of decades – coinciding, as one would expect, with the upswing of the “intangible revolution.”

This rationale may sound soothing to neoclassical ears, but accepting it must come with some unease. To begin with, the neoclassicists don’t really “measure” intangibles; rather, they deduce them, like the ether, as a residual. This deduction – whereby intangibles, like God’s miracles, are proven by our very inability to explain them – already gives the whole enterprise the mystical aura of an organized religion. And there is more. According to the neoclassicists’ own imputations, the residual accounted, at least until very recently, for as much as 80% of total market value. To accept this magnitude as a fact is to concede that the “measurable” basis of the theory, shaky as it is, accounts for no more than 20% of market capitalization – hardly an impressive achievement for a theory that calls itself scientific. Finally, the imputed results seem excessively volatile, to put it politely. Given that the quantity of intangibles is equal to the difference between market value and tangible assets, oscillations in market value imply corresponding variations in intangible assets. But, then, why would the quantity of a productive asset, no matter how intangible, fluctuate – and often wildly – even from one day to the next? And how could the variations be so large? Should we believe, based on the recent global collapse of market capitalization, that the corporate sector has just seen more than half of its intangible productive capacity evaporate into thin air?

Irrationality

The solution to these riddles is to invoke irrationality. In this augmented neoclassical version, capitalized market value consists of not two components, but three: in addition to tangible and intangible assets, it also includes an amount reflecting the *excessive*

A no-questions-asked application of this theorem is given in Robert E. Hall, “The Stock Market and Capital Accumulation,” *The American Economic Review*, 2001, Vol. 91, No. 5, December, pp. 1185-1202.

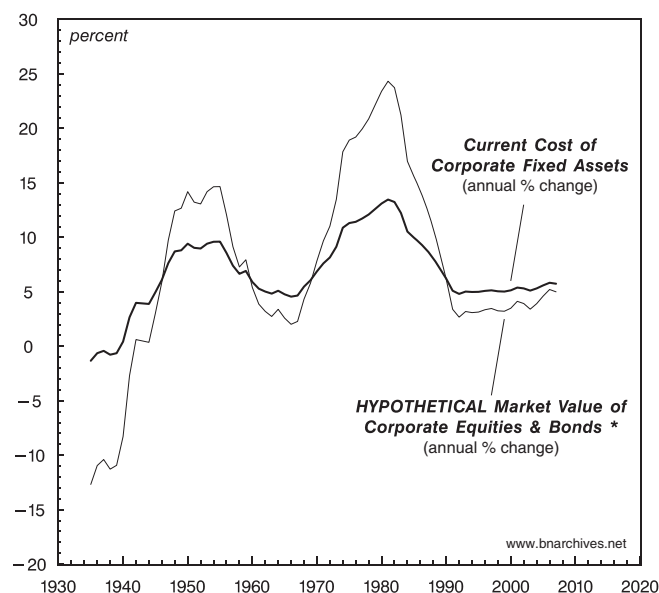
²³ Keith Cardoza, Justin Basara, Liddy Cooper and Rick Conroy, “The Power of Intangible Assets: An Analysis of the S&P 500,” Chicago, Illinois: Ocean Tomo, Intellectual Capital Equity, 2006.

optimism or pessimism of investors. And this last component, goes the argument, serves to explain the second anomaly of *Tobin's Q* – namely its large historical fluctuations.

This irrationality rationale is illustrated in Figure 4. To explain it, let's backtrack and refresh the basics of rational economics. During good times, goes the argument, capitalist optimism causes investors to plough back more profits into “real,” productive assets. During bad times, the process goes in reverse, with less profit earmarked for that purpose. As a result, the growth of “real” assets tends to accelerate in an upswing and decelerate in a downswing.

Figure 4

The World According to the Scriptures



* Computed annually by adding to the historical average of the growth rate of current corporate fixed assets 2.5 times the deviation of the annual growth rate from its historical average.

NOTE: Series are smoothed as 10-year moving averages. The last data points are for 2007.

SOURCE: U.S. Bureau of Economic Analysis through Global Insight (series codes: FAPNREZ for current cost of corporate fixed assets).

This standard pattern is illustrated by the thick line in the figure. The line measures the rate of change of the current cost of corporate fixed assets (the denominator of *Tobin's Q*), with the data smoothed as a 10-year moving average in order to accentuate its long term pattern. According to the figure, the U.S. corporate sector has gone through two very long “real” accumulation cycles (measured in current prices) – the first peaking in the early 1950s, the second in the early 1980s.

The vigilant reader will note that the accumulation process here reflects only the tangible assets – for the obvious reason that the intangible ones cannot be observed directly. But this deficiency shouldn't be much of a concern. Since neoclassical (and most Marxist) economists view intangible and tangible assets as serving the same productive purpose, they can assume (although not prove) that their respective growth patterns, particularly over long periods of time, are more or less similar.²⁴ So all in all, we could take the thick line as representing the *overall* accumulation rate of “real” capital, both tangible and intangible (denominated in current dollars to bypass the impossibility of material quantities, measured in utils or abstract labor).

Now this is where irrationality kicks in. In an ideal neoclassical world – perfectly competitive, completely transparent and fully informed – Fisher's “capital value” and “capital wealth” would be the same. Capitalization on the stock and bond markets would exactly equal the dollar value of “real” tangible and intangible assets. The two sums would grow and contract together, moving up and down as perfect replicas. But even the neoclassicists realize that this is a mere ideal.

Ever since Newton, we know that pure ideas may be good for predicting the movement of heavenly bodies, but not the folly of men. Newton learned this lesson the hard way after losing plenty of money in the bursting of the “South Sea Bubble.” Two centuries later, he was joined by no other than Irving Fisher, who managed to sacrifice his own fortune – \$10 million then, \$100 million in today's prices – on the altar of the 1929 stock market crash.

So just to be on the safe side, neoclassicists now agree that, although capitalization does reflect the objective processes of the so-called “real” economy, the picture must be augmented by human beings. And the latter, sadly but truly, are not always rational. Greed and fear cloud their vision, emotions upset their calculations and passion biases their decisions – distortions that are further amplified by government intervention and regulation, lack of transparency, insider trading and other such unfortunate imperfections. All of these deviations from the pure model lead to irrationality, and irrationality causes assets to be *mispriced*.

²⁴ If, as is now fashionable to believe, the trend growth rate of intangibles is faster than that of tangibles, then the *overall* growth rate of so-called “real” assets (tangible and intangible) would gradually rise above the growth rate of tangible assets only illustrated in Figure 4. However, since the cyclical pattern would be more or less the same, this possibility has no bearing on our argument.

The Boundaries of Irrationality

But not all is lost. Convention has it that there is nonetheless order in the chaos, a certain rationality in the irrationality. The basic reason is that greed tends to operate mostly on the upswing, whereas fear usually sets in on the downswing. “We tend to label such behavioral responses as non rational,” explains the ever-quotable Alan Greenspan, “But forecasters’ concerns should be not whether human response is rational or irrational, only that it is observable and systematic.”²⁵ Regularity puts limits on irrationality; limits imply predictability; and predictability helps keep the faith intact and the laity in place.

The boundaries of irrationality are well known and can be recited even by novice traders. The description usually goes as follows. In the upswing, the growth of investment in productive assets fires up the greedy imagination of investors, causing them to price financial assets even higher. To illustrate, during the 1990s developments in “high-tech” hardware and software supposedly made investors lose sight of the possible. The evidence: they capitalized information and telecommunication companies, such as Amazon, Ericsson and Nortel, far above the underlying increase in their so-called “real” value. A similar scenario unfolded in the 2000s. Investors pushed real-estate capitalization, along with its various financial derivatives and structured investment vehicles, to levels that far exceeded the underlying “actual” wealth.

This process – which neoclassicists like to think of as a “market aberration” – leads to undue “asset-price inflation.” The capitalization created by such “bouts of insanity,” says Eric Janszen, is mostly “fake wealth.” It represents “fictitious value” and leads to inevitable “bubbles.”²⁶ But there is nonetheless a clear positive relationship here. “Bubbles,” says George Soros, “have two components: a trend that prevails in reality and a misconception relating to that trend.”²⁷ And the relationship is straightforward: the irrational growth of “fake wealth,” although excessive, moves in the *same* direction as the rational growth of “real wealth.”

The process is inverted during a bust. This is where fear kicks in. The so-called “real” economy decelerates, but investors, feeling as if the sky is falling, bid down asset prices far more than implied by the “underlying” productive capacity. An extreme illustration is offered by the Great Depression. During the four years from 1928 to 1932, the dollar value of corporate fixed assets contracted by 20%, while the market value of equities collapsed by an amplified 70% (we have no aggregate figures for bonds). A similar undershooting is supposedly occurring right now: market values have fallen by one half or more, while the replacement cost of the so-called “real” capital stock has merely decelerated or perhaps declined slightly. Yet here, too, the relationship is clear:

²⁵ Alan Greenspan, “We Will Never Have a Perfect Model of Risk,” *Financial Times*, March 17, 2008, p. 9.

²⁶ Eric Janszen, “The Next Bubble. Priming the Markets for Tomorrow’s Big Crash,” *Harper’s Magazine*, February 2008, pp. 39-45.

²⁷ George Soros, “The Crisis & What to Do About It,” *The New York Review of Books*, 2008, Vol. 55, No. 19, December 4.

the irrational collapse of “fictitious value,” however exaggerated, moves *together* with the rational deceleration of “productive wealth.”

This bounded irrationality is illustrated by the thin line in Figure 4. Note that this series is a hypothetical construct. It describes what the growth of capitalization might look like when neoclassical orthodoxy gets “distorted” by irrationality and market aberrations. The value for each year in the hypothetical series is computed in two steps. First, we calculate the deviation of the growth rate of the (smoothed) “real” series from its historical mean (so if the smoothed growth rate during the year is 8% and the historical mean rate is 6.7%, the deviation is 1.3%). Second, we add 2.5 times the value of the deviation to the historical mean (so in our example, the hypothetical smoothed growth rate would be $2.5 \times 1.3 + 6.7 = 9.95\%$). The coefficient of 2.5 is purely arbitrary. A larger or smaller coefficient would generate a larger or smaller amplification, but the cyclical pattern would remain the same.

This simulation solves the riddle of the fluctuating *Tobin’s Q*. It shows how, due to market imperfections and investors’ irrationality, the growth of capitalization overshoots “real” accumulation on the upswing, therefore causing *Tobin’s Q* to rise, and undershoots it on the downswing, causing *Tobin’s Q* to decline.

And so everything falls into place. *Tobin’s Q* averages more than 1 due to an invisible, yet very real intangible revolution. And it fluctuates heavily – admittedly because the market is imperfect and humans are not always rational – but these oscillations are safely bounded and pretty predicable. The dollar value of capitalization indeed deviates from the “real” assets, but both the image and the “fundamentals” it reflects move in the same direction.

Or do they?

The Gods Must Be Crazy

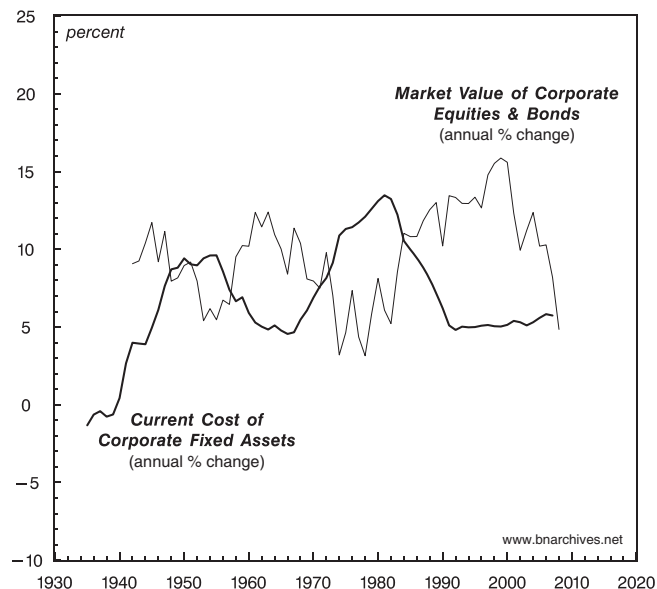
It turns out that while the priests of economics were busy fortifying the faith, the gods were having fun with the facts. The result is illustrated in Figure 5 (where both series again are smoothed as 10-year moving averages). The thick line, as in Figure 4, shows the rate of change of corporate fixed assets measured in current replacement cost. But the thin line is different. Whereas in Figure 4 this line shows the rate of growth of capitalization stipulated by the theory, here it shows the *actual* rate of growth as it unfolded on the stock and bond markets. And the difference couldn’t have been starker: the gyrations of capitalization, instead of amplifying those of “real” assets, move in exactly the *opposite* direction.

It is important to note that our concern here is not with short-term interactions. Market buffs love to believe that forward-looking investors are able to “anticipate” the “real” economy – and in so doing make the fluctuations of finance look as if they “lead” the business cycle. This belief, whether true or not, is irrelevant to Figure 5. In this chart, the lag between the two cycles is measured not in months, but in decades – enough to bankrupt even the shrewdest of contrarians. Furthermore, this long-wave pattern seems anything but accidental. In fact, it is rather systematic: whenever the

growth rate of “real” assets decelerates, the growth rate of capitalization accelerates, and vice versa.²⁸

Figure 5

U.S. Capital Accumulation: Fiction vs. Reality



NOTE: The market value of equities and bonds are net of foreign holdings by U.S. residents. Series are shown as 10-year moving averages. The last data points are 2008:Q3 for the market value of corporate equities and bonds, and 2007 for the current cost of corporate fixed assets.

SOURCE: See Figure 2.

This reality puts the world on its head. One could perhaps concede that “real” assets do not have a material quantum – yet pretend, as we have agreed to do here, that somehow this nonexistent quantum is proportionate to its dollar price. One could fur-

²⁸ Given our rejection of “material” measures of capital, there is no theoretical value in comparing the growth of the two series when measured in so-called “real” terms. But just to defuse the skepticism, we deflated the two series by the implicit price deflator of gross investment and calculated their respective “real” rates of change. The result is similar to Figure 5: the two growth rates move in opposite directions.

ther accept that the dollar value of “real” assets is misleading insofar as it excludes the “dark matter” of intangible assets (up to 80% of the total) – yet nonetheless be convinced that these invisible intangibles are miraculously “revealed” by the know-all market. Finally, one could allow economic agents to be irrational – yet assume that their irrational pricing of assets ends up oscillating around the rational “fundamentals” (whatever they may be). But it seems a bit too much to follow Fisher and claim that the long-term growth rate of capitalization is driven by the accumulation of “real” assets when the two processes in fact move in opposite directions.

And, yet, that is precisely what neoclassicists (and most Marxists) seem to argue. Both emphasize the growth of “real” assets as the fountain of riches – while the facts say the very opposite. According to Figure 5, during the 1940s and 1970s, when the dollar value of “real” assets expanded the fastest, capitalists saw their capitalization growth dwindling. And when the value of “real” assets decelerated – as they had during the 1950s and early 1960s, and, again, during the 1980s and 1990s – the capitalists were laughing all the way to the stock and bond markets.

The Crash of the Mismatch Thesis

Given these considerations, it is hardly surprising that few economists predicted the current crisis – and that, of those who did, none rested their case on evidence of a finance/“reality” mismatch. There was simply no evidence to use. There was no way of knowing the “real” quantity of capital before the crisis started, and therefore no way of knowing whether or not this quantity was distorted by finance. And there was also no point in hanging one’s hopes on the nominal value of capital goods – since this value, whatever its stands for, is *always* distorted by finance.

With this dismal record, why do capitalists continue to employ economists and subsidize their university departments? Shouldn’t they fire them all, demand that their Nobel Laureates be stripped of their prizes and close the tap of academic money? The answer is not in the least, and for the most obvious of reasons: misleading explanations help divert attention from what really matters.

The economists would have the laity believe that the “real thing” is the tangible quantities of production, consumption, knowledge and the capital stock, and that the nominal world merely reflects this “reality” with unfortunate distortions. This view may appeal to workers, but it has nothing to do with the reality of accumulation. For the capitalists, the only real thing is nominal capitalization, and what lies behind this capitalization is not the production cost or productivity of capital goods, but the fist of capitalist power. To study this power is to study the logic of the capitalist order, and it is here that the economists come in handy. By emphasizing production and consumption, they help avert, divert and marginalize any attempt to understand the power underpinnings of accumulation.

But the times, they are a-changingin'. The current crisis has caused the economists' stature to diminish somewhat, and with the smokescreen dissipating, if only briefly, the power basis of capital comes into view.

For more on that issue, stay tuned for the next installment in our series.



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Contours of Crisis III: Systemic Fear and Forward-Looking Finance

Jonathan Nitzan and Shimshon Bichler

Montreal and Jerusalem, June 2009

[http:// bnarchives.net/](http://bnarchives.net/)

This is the third installment in our series about the current crisis. The [first article](#) examined the conventional view that this is a *finance*-led crisis, a turmoil triggered and exacerbated by “financial excesses.”¹ The [second](#) debunked the “mismatch thesis,” the belief that the present crisis is our punishment for letting financial fiction distort economic “reality.”² The current paper takes on the notion of the forward-looking investor. According to the conventional creed, investors are forever looking into the future: they discount not profits that have already been earned, but those that they *expect to earn*. This forward-looking premise lies at the heart of modern finance, and investors usually follow its rituals with religious zeal.

But not always.

Occasionally, capitalism is struck by a systemic crisis, a period in which the very existence of the system is put into question. And when that happens, all bets are off. Capitalists lose sight of the future, and forward-looking finance suddenly collapses.

Takeoff

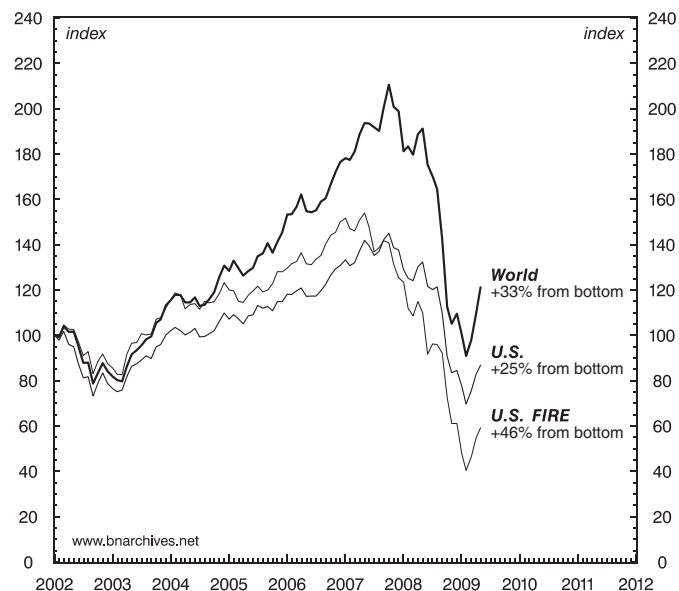
Consider the current moment.

On the face of it, the capitalist class is finally seeing the light at the end of the tunnel. For a few months now, its analysts, statisticians and public officials are spotting “green shoots” everywhere they look. The snowballing global recession, they say, seems to have slowed down. Managers the world over are purchasing more inputs after a long period of buying less; Asian exporters are beginning to put some factories back to work; raw material prices have stabilized, and some are beginning to rise; bank lending is slowly reviving, and home owners are starting to refinance their mortgages at lower rates; and in the United States, the world's biggest producer-consumer, initial unemployment claims seem to have peaked and consumers are beginning to loosen their purse strings. But the most important sign comes from the equity market: stock prices are the ultimate barometer of capitalist health, and they are soaring.

¹ Shimshon Bichler and Jonathan Nitzan, “Contours of Crisis: Plus ça change, plus c'est pareil?” *Dollars & Sense*, December 31, 2008.

² Shimshon Bichler and Jonathan Nitzan, “Contours of Crisis II: Fiction and Reality,” *Dollars & Sense*, April 28, 2009.

Figure 1
Stock Market Prices



The market takeoff is evident in Figure 1. The chart traces the U.S. dollar price of three key indices – all world equities, U.S. equities, and the equities of the U.S. FIRE sector (finance, insurance and real estate). All three indices show a sharp, synchronized rise. In just three months, from February to May, the world index gained 33%, the U.S. index 25%, and the U.S. FIRE index – previously the most battered of the three – a whopping 46%.

Suddenly, the bulls are everywhere. The greatest returns are usually earned during the initial part of a rally, and no respectable fund manager likes being beaten by a rising average. With the economy apparently bottoming out and with the market having been in a major bear phase for nearly a decade, investors are no longer afraid

of losing money; their fear now is not making enough of it.³ And so arises the specter of “panic buying,” a frenzied attempt to jump on the bandwagon before the really large gains are gone.⁴

Of course, not everyone buys this rosy scenario. Many observers feel that the recent stock market rally is no more than a dead-cat bounce. In the eyes of the pessimists, investors are knee-jerking to a false start. The economic recovery, they say, will be W-shaped, and the market will re-collapse before any real boom can begin. This recession, they warn, is nasty and likely to linger for years.

Forward Looking

Regardless of who is right, though, there is something fundamentally wrong with the debate itself. The current news may be good or bad, revealing or misleading – but, then, investors aren’t supposed to take their cue from the current news in the first place.

To trade assets on the basis of today’s statistics is to be *backward looking*. It is to be retrospective rather than predictive, to react rather than initiate, to trail rather than lead. It puts investors at the tail end of social dynamics.

Needless to say, such behavior is entirely improper.

According to the sacred annals of modern finance, formalized a century ago by Irving Fisher and popularized during the Great Depression by Benjamin Graham and David Dodd, asset prices are *forward looking*: “The value of a common stock,” dictate Graham and Dodd in their 1934 immortal doorstopper, “depends entirely upon what it will earn in the future.”⁵

These lines were written against the backdrop of the 1920s. The roaring stock market and the accompanying optimism ushered in by the end of the First World War offered a fertile breeding ground for “new-era theories,” especially in the land of limitless possibilities. The principles of discounting gained adherents, and soon

³ Given the extent of the crash, some strategists started to speak of an imminent bull run already in late 2008. But the bulk of the pack remained in watchful waiting, and it is only now, after the market had finally turned, that run-of-the-mill analysts claim they have anticipated it all along. For a historical examination of major bear markets and subsequent bull runs, see our “Contours of Crisis: Plus ça change, plus c’est pareil?”

⁴ “A long-unheard phrase was on the lips of many equity traders during this week’s market rally – panic buying. Even after two months of steady gains for stocks, there were few signs of investor fatigue – indeed, the overriding sense was the fear of being left behind. . . . ‘You could say there was an element of panic about it – there were a lot of underweight players driving the market higher out there,’ said Tony Betts, senior sales trader at CMC Markets in London. ‘We clearly reached a situation where the bears felt they had suffered enough punishment’” (Dave Shellock, “Investors Willing to Dive Back into the Fray,” *Financial Times*, May 8, 2009).

⁵ The quote is from Benjamin Graham and David L. Dodd, *Security Analysis*, 1st ed. (New York and London: Whittlesey House McGraw-Hill Book Company Inc., 1934), p. 307-9. Fisher’s analysis of present value is articulated in *The Rate of Interest. Its Nature, Determination and Relation to Economic Phenomena* (New York: The Macmillan Company, 1907).

enough past profits became *passé*. They no longer mattered for the stock market. From now on, declared the gurus of finance, one should view the markets “from the standpoint of eternity, rather than day-to-day.”⁶ Looking forward, the only thing that counted was the *future* trend of earnings.

This forward-looking emphasis – the notion that asset prices discount the deep future – is now sacrosanct. Over the past half-century, this view has been published and republished in millions of articles and monographs, reproduced endlessly in finance textbooks, embedded deeply in computer models and hardwired into pocket calculators. Every accountant, analyst and capitalist accepts it as an article of faith. It is beyond dispute.

But, then, if asset prices depend on the future trend of earnings, why worry about the present recession, no matter how deep?

The Twist

Every investor is conditioned to know that crises come and go with remarkable regularity and that recession always gives way to expansion, so what’s the point of following the latest news on green shoots, commodity prices, or the actions and inactions of purchasing managers and policy makers? Although these immediate news items may be important for journalists, politicians and even economists, their impact on the long-term trend of profit is negligible – so why should they be of any concern to dominant capitalists and their prescient analysts?

And, sure enough, most of time the latter don’t seem to care.

Figure 2 shows the relationship between the dollar price and dollar earnings per share of the S&P 500, a group representing the largest listed corporations in the United States. The series are monthly, with price calculated as the monthly average of daily closings, and earnings per share computed as the average for the past 12 months (both series are normalized, with September 1929=100). The data go back to the 1910s and are plotted against a logarithmic scale to facilitate visual inspection.⁷

Now, if one takes a century-long view, equity prices seem to move more or less together with earnings per share. But from a shorter perspective, the fit is very loose and often negative. The chart shows that the variations of the two series are usually out of sync, that their magnitudes are often very different, and that there are extended periods during which they move in opposite directions.

⁶ Benjamin Graham quoted in Jason Zweig, “Be Inversely Emotional, Not Unemotional,” *The Wall Street Journal*, May 26, 2009, p. 28.

⁷ A logarithmic scale amplifies the variations of a series when its values are small and compresses these variations when the values are large. This property makes it easier to visualize exponential growth (note that the numbers on the scale jump by multiples of 10).

Figure 2
S&P 500: Price and Earnings Per Share, 1910-2009



NOTE: Earnings per shares denote net profits per share earned in the previous twelve months. Both series are expressed in \$U.S. and rebased with September 1929=100. The last data points are December 2008 for earnings per share and May 2009 for price.

SOURCE: Robert Shiller

(http://www.econ.yale.edu/~shiller/data/ie_data.xls retrieved on June 5, 2009). Stock price data are monthly averages of daily closing prices. Monthly earnings are interpolated from annual data before 1926 and from quarterly data after 1926.

Theorists of finance don’t consider this loose association problematic. On the contrary, they see it as fully consistent with their basic model. According to this model, investors price an asset by discounting the future profits the asset is expected to generate. In this ritual, investors set the price of the asset – say a share of Microsoft – as equal to the ratio between what they expect Microsoft’s future profits to be on the one hand, and the rate of return they wish those profits to represent on the other. For instance, if investors expect ownership of a Microsoft share to generate a perpetual profit stream of \$100 annually, and if they want this stream to represent a

20% rate of return, then they would be willing to pay for the share (or demand to be paid) a price of \$500 ($=\$100/0.2$).⁸

Obviously, prices set in this manner should bear little or no relationship to the current level of profit. There are three reasons for the dissociation.

First, since the price is determined on the basis of future earnings, there is no inherent reason for it to be correlated with profits that have already been earned. And that is just for starters. Note that future earnings, by their very nature, cannot be known with certainty and are forever conjectural. For this reason, investors discount not the profits they *will* earn, but the profits they *expect* to earn. In the case of Microsoft above, for example, investors can easily misjudge the perpetual future flow of earnings per share to be \$50 or \$400, instead of the eventual \$100; this error will in turn cause them to price the company's stock at \$250 or \$2000, respectively ($=50/0.2$ or $400/0.2$); and since profit expectations are rather open ended, the effect is to further widen the disparity between price on the one hand and current earnings on the other.

Second, a given level of expected earnings can generate any number of asset prices, depending on the discount rate of return. For instance, if the discount rate for Microsoft in our example were 10% (rather than 20%), the stock price would double to \$1,000 ($=\$100/0.1$). Now, the discount rate changes constantly – partly because of variations in the overall rate of interest and partly in response to changing perceptions of risk specific to the particular equity in question. And since in and of themselves these changes are unrelated to current earnings, the effect is to further reduce the correlation.

Finally, investors are not always able to follow the rituals of finance with sufficient precision. Regardless of how hard they try, their computations are constantly thrown off by various market “imperfections,” government “intervention” and other such diseases; and sometimes, particularly when the investors get excited, the calculations can even become “irrational,” god forbid. Now, since neither the miscalculations nor the irrationality are correlated with current profits, the result is to loosen the fit even more.

So if we adhere to the scriptures of finance, we should expect to see *no* systematic association between equity prices and current profits. And given that most investors obey the scriptures – including the allowed imperfections and irrationalities – their actions tend to validate the “theory.”

But not always.

⁸ The practical computation, of course, could be far more complicated, but the basic relationship between expected profits and the discount rate of return is always present. For a detailed critical examination of discounting, see Jonathan Nitzan and Shimshon Bichler, *Capital as Power. A Study of Order and Creorder* (London and New York: Routledge, 2009), Ch. 11.

Looking Backward

Figure 2 shows two clear exceptions to the rule: the first occurred during the 1930s, the second during the 2000s. In both periods, which the chart shadows for easier visualization, equity prices moved *together* – and tightly so – with current earnings.

Needless to say, this tight correlation is a gross violation of conventional, forward-looking finance. In fact, the violation is far worse than it seems.

Note that, despite their name, monthly earnings per share represent profits that were earned not during the current month, but during the previous twelve months. This measurement convention means that, during the 1930s, and again during the 2000s, investors committed a cardinal sin. They priced assets based not on future earnings, and not even on current earnings, but on *past* earnings!

What caused this sharp departure from conventional practice? Why would investors suddenly abandon their convenient forward-looking ceremony and instead take their cue from the dead past? Why give up the predictive powers of precise positivism in favor of poor historicism?

Systemic Fear

In our view, the reason is *systemic* fear.

Systemic fear has little to do with the habitual apprehension that constantly punctures capitalist greed. Business as usual is always uncertain, and investors are forever fearful about profit. They are concerned that earnings may not rise as quickly as they hope or that they might fall, that volatility will increase or that interest rates will rise. But these fears, no matter how intense, are self-contained. They concern the level and pattern of profit, not its existence.

Occasionally, though, there arises a very different and far deeper type of fear: the terrifying thought that *profit might cease to exist*. This latter fear is associated with systemic crisis – that is, with periods during which *the very future of capitalism is put into question*. It is what Hegel meant when he spoke of the bondsman's “fear of death”:

For this consciousness [of the capitalist bound to the steering wheel of a megamachine gone wild] was not in peril and fear for this element or that [such as falling profit or rising volatility], nor for this or that moment of time [like a sharp market correction or a declaration of war], it was afraid for its *entire being*; it felt the *fear of death*, the sovereign master [the ultimate wrath of the ruled]. It has been in that experience melted to its inmost soul, has trembled throughout its every fibre, and all that was fixed and steadfast has quaked within it [will capitalism survive?]⁹

⁹ Georg Wilhelm Friedrich Hegel, *The Phenomenology of Mind*, translated with an introduction and notes by J. B. Baillie, 2nd Revised ed. (London and New York: George Allen & Unwin and Humanities Press, 1807 [1971]), p. 237, emphases and contemporary parallels added.

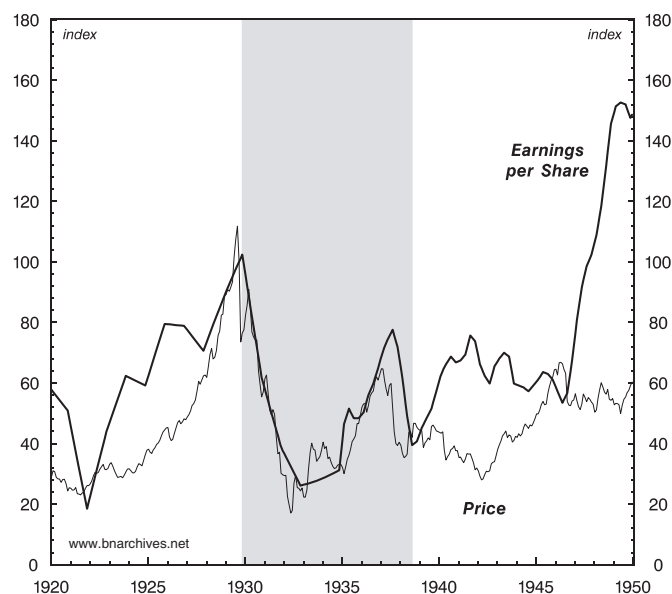
The first time capitalists were gripped by such systemic terror was during the Great Depression of the 1930s. The second time is right now.

The 1930s

Let's examine each of these periods more closely, beginning with the 1930s.

Figure 3 "magnifies" the data from Figure 2. It focuses specifically on the period from the early 1920s to the end of the 1940s, with the shaded area denoting the period of systemic crisis. For ease of comparison, the two series are rebased with October 1929=100 and plotted against an arithmetic scale.

Figure 3
S&P 500: Price and Earnings Per Share, 1920-1950



NOTE: Earnings per shares denote net profits per share earned in the previous twelve months. Both series are expressed in \$U.S. and rebased with October 1929=100.

SOURCE: Robert Shiller
(http://www.econ.yale.edu/~shiller/data/ie_data.xls retrieved on June 5, 2009). Stock price data are monthly averages of daily closing prices. Monthly earnings are interpolated from annual data before 1926 and from quarterly data after 1926.

The data show that, during the happy 1920s, stock prices moved rather independently of earnings, exactly as Graham and Dodd's "new-era theory" decreed. But once the stock market crashed in 1929 and the Great Depression began, the "new-era theory" broke down: the two series, instead of moving independently of each other, suddenly converged and remained tightly locked for nearly a decade.

Both series fell in tandem throughout the 1930-32 period, and then rose in tandem from 1933 to 1936 – charting what initially looked like a V-shaped recovery. But the hopeful V soon became a disheartening W. In 1937, a new downturn began, and the two series, which briefly decoupled, again converged in a free fall. It was only in 1939, after a decade of frustration, that the two series again diverged and that the new-era theorists could breathe a sigh of relief.

The political-economic background of the period requires little elaboration. During much of the 1930s, the United States, along with the rest of the world, was mired in a systemic crisis. The very existence of capitalism was at stake, with liberalism fighting for its life against both communism and fascism.

Few felt certain that capitalism would survive, and many – including some of the system's leading advocates – feared its imminent demise. In this context, the "future trend of earnings" was no longer a very meaningful concept, and there was little point in extrapolating, let alone quantifying, its growth rate.

There was no anchor ahead. All that was solid melted into air, all that was holy was profaned.

And so, in despair, forward-looking investors found themselves latching onto the only "real" thing they could see: the past.

Like the Aymara Indians of South America, they suddenly realized that the future was behind them.¹⁰

Their assets still represented a claim over the future, but the only way to price that future was to look backward, to what the assets had already earned.

The pricing anomaly ended in 1939. Suddenly, the disorder dissipated, optimism re-emerged and history could again be forgotten. The onset of the Second World War and the boom that ensued sent profit soaring. And the capitalists, cajoled by the apparent efficacy of the new welfare-warfare state, regained their confidence. They abandoned the stale past, returned to their forward-looking rituals and resumed the discounting of expected future earnings.

¹⁰ The Aymara language, spoken by Indians in Southern Peru and Northern Chile, reverses the directional-temporal order of most languages. It treats the known past as being "in front of us" and the unknown future as lying "behind us." To test this inverted perception, just look up at the stars: ahead of you you'll see nothing but the past (see Rafael E. Núñez, and Eve Sweetser, "With the Future Behind Them: Convergent Evidence from Aymara Language and Gesture in the Crosslinguistic Comparison of Spatial Construals of Time," *Cognitive Science: A Multidisciplinary Journal*, 2006, Vol. 30, No. 3, pp. 401-450).

The 2000s

This situation lasted for sixty years. During that period, capitalism went through many ups and downs, and there was the occasional scare that sent markets reeling. But none of the jolts was serious enough to evoke the Hegelian fear of death. At no point was the existence of the system itself in doubt. It was business as usual, with greed and fear easily incorporated into future earnings projections and risk calculations. The financial model seemed to work like clockwork.

But in 2000, the machine stopped. The threat of a new systemic crisis suddenly loomed large, and the specter of backward-looking pricing, having been dormant for decades, returned to haunt the markets.

Figure 4 displays price and earnings per share data from 1970 to the present, with the shaded area denoting a period of systemic crisis (the two series again are rebased – this time with December 2007=100 – and graphed against an arithmetic scale).

As the figure shows, until the early 2000s both series trended upwards. But in line with the “new-era theory” (which by now had become mainstream finance), the short term correlation between them remained loose and often negative. During that period, earnings have gone through several sharp declines. For instance, in the end-of-communism crisis of 1989-1991 they dropped 37%, and following the emerging markets scare of 1997-1998 they fell 6% – yet in both cases stock prices continued to soar. And conversely, in 1972-1974 earnings increased by 42%, while prices dropped by 43%; similarly, at the end of 1987 earnings increased by 14% while prices dropped by 27% (the latter divergences are seen more clearly on the logarithmic plot of Figure 2).

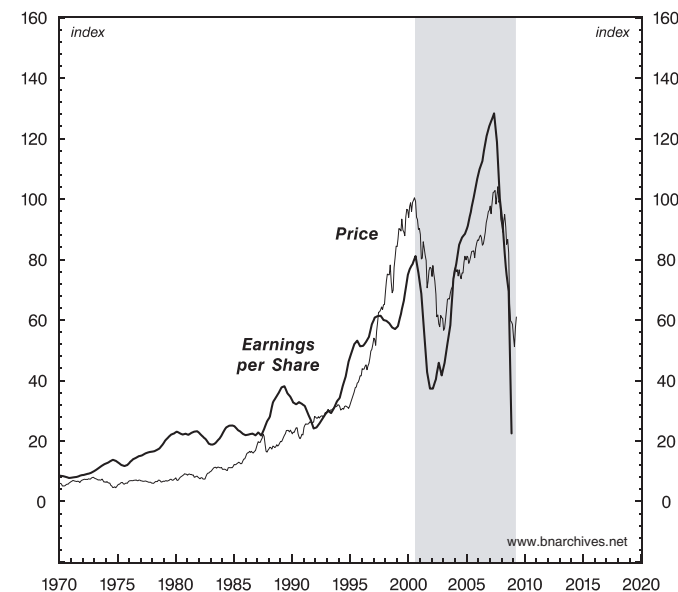
All in all, then, investors seemed perfectly happy to obey the theory. Throughout the period, they ignored the ephemeral present in favor of the eternal future.

But in 2000, they suddenly lost their forward-looking vision. The dotcom crash and the end of the “new economy,” together with the collapse of the Twin Towers and the onset of an “infinite war on terror,” signaled the beginning of a new era of uncertainty. Analysts started to debate the end of the Washington Consensus, strategists deliberated over the decline of the “American Empire,” and culturalists lamented the demise of the “global village.”

It is true that, initially, nobody was seriously contemplating the “end of capitalism.” But capitalists nonetheless started to grow wary. This was no longer business as usual, and the trajectory of future profits, which in previous decades had appeared neatly bounded and relatively easy to project, suddenly looked murky.

And so, once again, the capitalists found themselves with their backs to the future. Instead of projecting the earning trend looking forward, they began to watch earnings as they unfolded and discount their past declines.

Figure 4
S&P 500: Price and Earnings Per Share, 1970-2009



NOTE: Earnings per shares denote net profits per share earned in the previous twelve months. Both series are expressed in \$U.S. and rebased with December 2007=100.

SOURCE: Robert Shiller

(http://www.econ.yale.edu/~shiller/data/ie_data.xls retrieved on June 5, 2009). Stock price data are monthly averages of daily closing prices. Monthly earnings are interpolated from quarterly data.

By the middle of 2002, the crisis finally ended. Earnings staged a massive, V-shaped recovery and, over the next five years, rose by nearly 350%. And yet, despite the surge, capitalists still found the future hard to envisage. The earnings boom certainly was real enough – but so were its limits. In the United States, the national income share of corporate profits was hitting record highs, so the prospect for further redistribution in favor of capitalists seemed increasingly dim. And those who pinned their hopes on “real” growth were running into doomsday scenarios of “peak oil” and “climate tipping.”

With the future looking disheartening at best, capitalists preferred to keep their eyes on the past. Share prices started to rise only in October 2002, a full six months

after the earnings upswing began, and they continued to increase in tandem with profits (albeit at a lower rate) for the next five years.

And then all hell broke loose.

All Bets are Off

The contours of the current crisis are still unfolding, but one thing seems clear enough: the capitalist class has lost its self-confidence.

“Uncertainty is the only certain thing in this crisis,” bemoan the editors of the *Financial Times*. As of today, nobody knows what is going to happen:

[A] dense fog of confusion has . . . descended, obscuring where we are – falling fast, slowly, bumping along the bottom, or finally turning the corner. . . . Economies are behaving unpredictably and will continue to do so. The instability is both cause and consequence of the great uncertainty that has been spreading out from the financial markets. Fearful and confused, people react erratically to changing news, reinforcing confused market behaviour. It doesn’t help that our economic theories were constructed for a different world. Most models depict economies close to equilibrium. . . . And unlike what most models assume, prices are not properly clearing all markets. . . . [etc. etc.]¹¹

This sentiment is echoed in numerous publications and speeches, academic and popular. “The whole intellectual edifice . . . collapsed in the summer of last year,” concedes former Fed Chairman Alan Greenspan.¹² “[T]he pillars of faith on which this new financial capitalism were built have all but collapsed,” observes Gillian Tett in a special *Financial Times* series on the future of capitalism, and that collapse, she concludes, “has left everyone from finance minister or central banker to small investor or pension holder bereft of an intellectual compass, dazed and confused.”¹³ And with no intellectual compass to rely on, confesses Bank of England Governor Mervyn King, “[J]udging the balance of influences on the economy” becomes “extraordinary difficult.”¹⁴

But perhaps the clearest evidence for this loss of confidence is the “fear of death indicator”: the persistence of a backward-looking stock market.

As Figure 4 shows, since their 2007 peak, earnings have fallen by 80% – a drop comparable to the earning collapse in the first three years of the Great Depression depicted in Figure 3. If capitalism is here to stay, this must be the mother of all in-

vestment opportunities. As the system recovers, profits are bound to rebound – and, from their current lows, the rise could be spectacular indeed.

A shrewd academic would probably have developed this apparent “anomaly” into a full-blown mechanized model, complete with a universal taxonomy of “fear-of-death” eras, a menu that alerts investors when to switch and reswitch between forward- and backward-looking postures, and an easy to follow list of “how to profit” from both. And judging by what is on sale in the analysis market, this model could end up having plenty of paying followers.

We prefer to forego this investment opportunity and instead keep our speculations tentative and free. It seems to us that some investors must be feeling the greedy itch of an overly discounted market, and that this itch may explain the recent rise in equity prices shown in Figure 1. But for most investors, all bets are still off. This is a period of systemic crisis, a social upheaval in which the very future of capitalism is in question. And as long as capitalists continue to doubt their own future, they are likely to remain dubious of the models that describe this future and hesitant to apply the pricing rituals that these models dictate.¹⁵

Capitalism may survive this upheaval, as it survived the Great Depression. But its continuation may well entail a significant transformation – one that restructures both the architecture of power and the ideology of the powerful.

This is the transformation capitalists are eagerly waiting for. And until this transformation gets under way, backward-looking prices seem here to stay.



Jonathan Nitzan and Shimshon Bichler are co-authors of *Capital as Power: A Study of Order and Creorder*, RIPE series in Global Political Economy (London and New York: Routledge, 2009). All their publications are freely available from *The Bichler & Nitzan Archives* (<http://bnarchives.net>)

¹¹ Editors, “Sound and Fury in the World Economy,” *Financial Times*, May 16, 2009, p. 6.

¹² Edmund L. Andrews, “Greenspan Concedes Error on Regulation,” *New York Times*, October 23, 2008, p. 1.

¹³ Gillian Tett, “Lost Through Destructive Creation,” FT Series: Future of Capitalism, *Financial Times*, March 10, 2009, p. 9.

¹⁴ Editors, “Sound and Fury in the World Economy,” *Financial Times*, May 16, 2009, p. 6.

¹⁵ Note that the latest earnings-per-share reading in Figure 4 is for December 2008, whereas the most recent price datum is for May 2009. This gap means that the early 2009 increase in prices could end up being correlated with a yet-to-be reported rise in current earnings. . . .