Economic Cycles and Mean Reversion

In 1999, Warren Buffett gave a rare explanation of why he felt the stock market would generate poor returns for investors over the long haul.[1] He used simple arithmetic to show that elevated valuations and profit margins made equities vulnerable. The piece was 9 pages, over 4,000 words long, and had a single exhibit.

In an age of factually light 200-character Twitter "tribalism", we are not surprised the work has faded from investors' frontal lobes. The piece is also not conducive to frenetic IPOs, SPACs, and other recently popular activities. Having read the piece when it was published, the concept has survived in KCR's collective memory due to its elegant simplicity and incontrovertible arithmetic truths.

Mr. Buffett explains that over the long-term, there are five principal drivers of returns. They are:

- **profit margins:** subject to competition and policy, they cannot rise forever
- **interest rates:** the "gravity" of valuation, we are coming off the zero bound
- **starting valuation:** current valuations are now above the peak of the dot.com bubble
- **ending valuation:** to each their own, influenced by sentiment and rates
- **the growth rate of GDP:** aggregate economic activity is the source of long-run equity returns

Knowing where you are at any given moment can be of immense service in sizing risk appetites.

Buffett's missive was not a forecast. He was clear that market prices can decouple from value for long stretches. At the same time, he was equally clear that, **eventually**, **valuation matters.** The article starts off by defining investing as the act of "…laying out money now to get more money back in the future-more money in real terms, after taking inflation into account."

Over the years, some KCR subscribers have taken umbrage at our frequent use of Buffett's market cap to GDP chart. The objections usually come from…. interest rates and margins. So this piece will focus on past and present margins using Mr. Buffett's 1999 article as the cornerstone from which we work.

We believe changing profit margins are one of the most interesting aspects of the simple algebra that underpins market returns. Over the long-term, the market's valuation must be connected to the growth in the real economy (GDP). While most people are comfortable estimating 2%-5% GDP growth, margins are, in many ways, the great unknown.

History is clear that margins are subject to various economic cycles and mean reversion. Margins possess a sort of analytical aphrodisiac during boom times and can foment the irrational euphoria that characterizes market peaks. Contrarily, margins can also add to the "hangover" after such periods, amplifying negative sentiment.

KCR has read a great deal of precision work around the recent boom in margins, its sources, and possible persistence or lack thereof. While always interesting, we believe the specificity frequently professes a level of certainty outside our comfort zone.

This piece is designed to put today's market valuations and margins in historical context. We believe forecasting the future is futile, but tremendous insights can be drawn by studying the past. In the spirit of that belief, our review of Mr. Buffett's views in 1999 will hopefully highlight one of the most significant structural risks to investors today.

Our concerns should not be confused with a forecast. At the end of the paper, we explain a tool we offer to subscribers. You can input your own assumptions around margins, growth, valuations, and interest rates to see what 10-year returns various assumptions generate using Mr. Buffett's arithmetic.

With that, we will dive into a brief review of Mr. Buffett's 1999 missive on profit margins.

[1] *Mr. Buffett on the Stock Market*, Fortune Magazine 1999, Carol J. Loomis, Warren Buffett

Margins, Interest Rates & Extreme Pessimism:

Buffett explains that in the 17 years between 1964 – 1981, the price of the Dow Jones was entirely unchanged despite US GDP growing 370% and sales of the Fortune 500 sextupling. He explains that the market's failure to rise for 17 years stemmed from a deadly combination of soaring interest rates and collapsing margins.

Specifically, rates rose from 4% to 14%, while profit margins plunged from 5.9% to 3.5%. That combination created extreme pessimism. By the start of 1982, all US securities' combined market cap would sum to a meagre **36%** of that year's GDP. Note: current market cap to GDP is 176%. He described the pessimism clearly:

"And as is so typical, investors projected into the future what they were seeing. That's their unshakeable habit…What they were observing, looking backward, made them very discouraged about the country. They were projecting high interest rates, they were projecting low profits, and they were therefore valuing the Dow at a level that was the same as 17 years earlier, even though GDP had nearly quintupled." –Buffett, 1999

Extreme Optimism & the Other Side of the Economic Cycle:

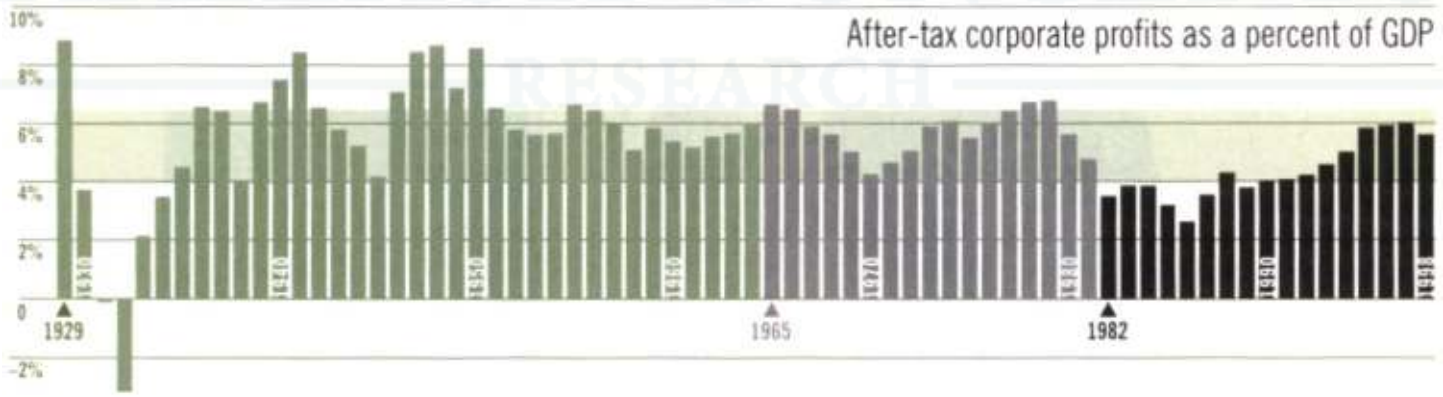
As Buffett explains, that troika of high interest rates, low margins, and extreme pessimism in 1982 would turn out to be one of the greatest moments to buy US equities. Over the next 17 years (1982 – 1998), the S&P would compound at 18% a year, leaving investors with a 1,656% return. A combination of modest GDP growth, falling interest rates, and soaring profit margins were the principal *economic* drivers of the market's returns.

Buffett goes on to note that these fundamentals were accompanied by a tremendous behavioral bias towards the end of the 1990s. Having watched equities rise relentlessly, Buffett described the euphoria of 1998 as

"…[a] game that is responding not to interest rates and profits but simply to the fact that it seems a mistake to be out of stocks. … Through this daily reinforcement, they become convinced that there is a God and that He wants them to get rich." -Buffett, 1999

Valuation also loomed large in Buffett's view. By 1998, investors were paying 30x peak profits based on his assessment that margins could go no higher. In 1998, equities were valued at **140%** of GDP – a new record.

The chart below shows the after-tax-profits of corporate America presented in Buffett's 1999 missive. He explains that after the 1929 crash, the Depression and wartime profits boom, "…from **1951** on [margins]… settled down…to a 4% to 6.5% range."



Source: Fortune Magazine; Data from 12/31/1929 - 12/31/1998

The Might of Margins & Mean Reversion: Are Today's Profits Sustainable?

The chart below is identical to the one above. We merely added in the margins in the years following Buffett's 1999 article. How did his view on margins and the market work out?

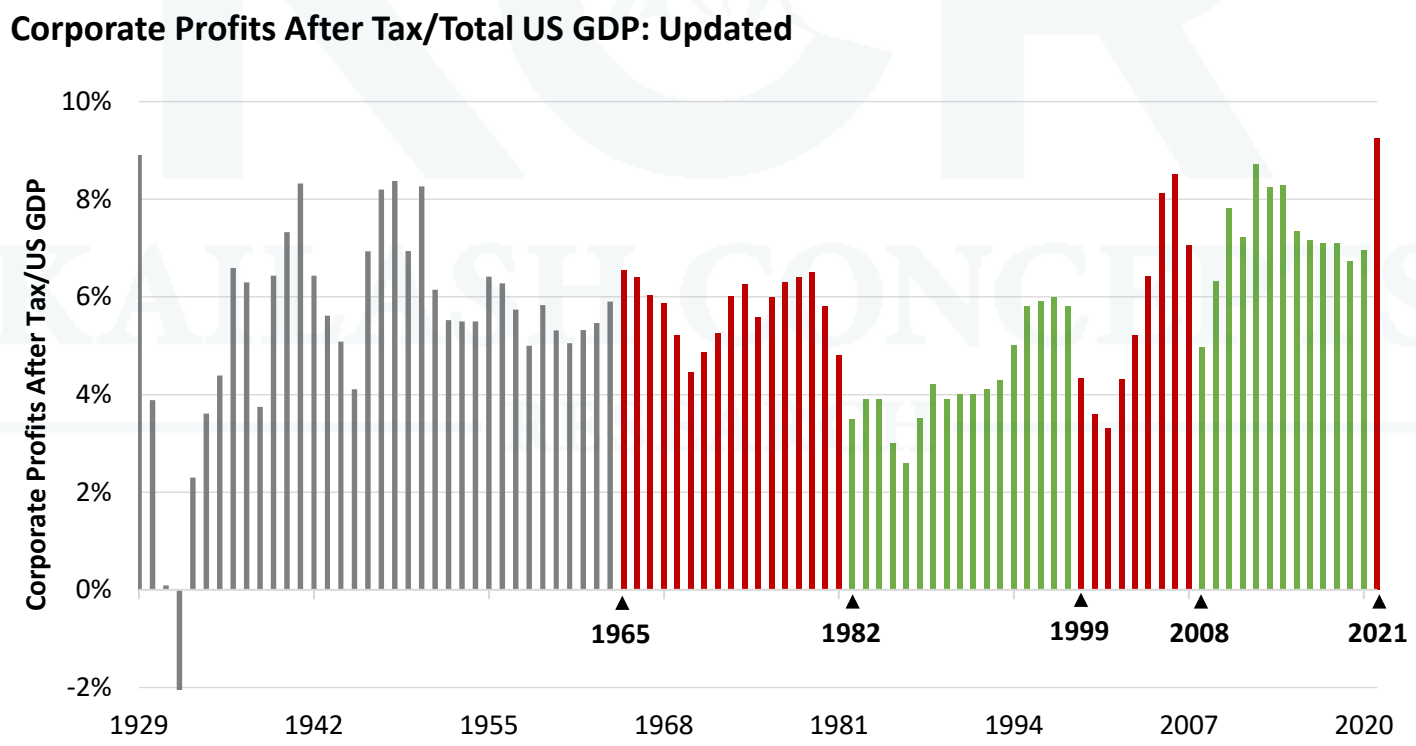
You can see that immediately after 1998, margins imploded and fell to 3.3% by 2001, sending the market into a tailspin. We shaded all the bars red through the end of 2008. From December 31, 1998 – December 31, 2008, the market returned a paltry -1.38% per year. By 2008 margins were below 5% yet again.

As we all know, December 2008 was a difficult time. The margins of the 2004-2007 years were a chimera built on the back of unsustainable debt formation. When the bill came due, panic ensued, margins imploded, and valuations collapsed yet again.

By 2009 however, on the back of unprecedented monetary policy and aggressive stimulus, corporate profits had recovered to over 6% of GDP. Interest rates would fall from over 5% to 0.25% as the government frantically bailed out Wall Street. In 9 of the 13 years between 2009-2021, the Fed would keep rates at 0.25%. As documented extensively in our research, this created a corporate debt bubble that dwarfs anything in US history.

This borrowing bender, combined with increasing industry concentration – a topic we will cover in detail in future work – led to the longest profit boom in US corporate history. **In 2021, US corporations would book profits relative to GDP last seen in 1929.**

Over that 13-year period (2009-2021), equity investors compounded their wealth at 15.96% annually. Record stimulus, interest rates at or below 0%, and record margins sent stocks soaring. Market cap to GDP ratios flew past the dot.com highs of 176%. By December of 2021, they had reached an incredible 235%.



Source: Kailash Capital, St. Louis Fed, Fortune Magazine; Data from 12/31/1929 - 12/31/2021

We make no claims to timing markets, but we believe the high-water mark for margins may be in.

In retrospect, that Buffett's estimates for long-run market returns panned out perfectly despite collapsing interest rates and unusually high profit margins is a testament to the importance of **what you pay.** Valuations in 1999 were simply too high. 30x peak margins of 6% or 145% of GDP led to a lost decade for investors.

In our view, one of the most remarkable components of Buffett's 1999 article was his view on US margins. He believed that no rational person could expect US profit margins to consistently exceed 6% for long. Typical of Buffett, his rationale for 6% margins being the upper boundary went beyond merely observing the ranges that typified post-WWII America.

Rather his views stemmed from a profound understanding of what we will call "healthy capitalism." Incredibly, he specified the following:

"…you have to be wildly optimistic to believe that corporate profits as a percentage of GDP can, for any sustained period, hold much above 6%. One thing keeping the percentage down will be competition, which is alive and well. In addition, there's a public policy point: If corporate investors, in aggregate, are going to eat an ever-growing proportion of the American economic pie, some other group will have to settle for a smaller portion. That would justifiably raise political problems – and in my view a major reslicing of the pie just isn't going to happen."

KCR finds the statement to be as profound in error as it is in accuracy. What has just happened? We have watched as corporate investors feasted on a record amount of the pie for nearly 10 straight years.

Over that horizon, we have seen social discord in this country unlike any time we can recall. The Financial Times recently reported that "More than a third of Republicans and Democrats today believe violence is justified to achieve their political ends."[2] Nobody can predict the future, but this hardly seems to be a backdrop to sustain profit margins last seen in 1929.

This is important. Recent increases in interest rates have exerted their gravitational pull on equities. But the recent sell-off has brought valuations down…to the dot.com levels. Using price-to-earnings ratios, investors are paying 20x profits generated off the highest margins in nearly 100 years.

We believe that today is **not** different. There is precedent for this moment in history. The social cost of margins holding at 1929 levels seems dangerously high. Yet investors, holding equities at valuations last seen at the peak of the dot.com bubble, appear to be projecting into the future what they just saw "as that is their unshakeable habit."

In our view, the most compelling evidence of this can be found in John Maynard Keynes' legendary book *The Economic Consequences of the Peace.* See if the below resonates with you. If it does, we suggest you fast-forward to our 10-year forward estimates calculator on the following page.

The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth, in such quantity as he might see fit, and reasonably expect their early delivery upon his doorstep….But, most important of all, he regarded this state of affairs as normal, certain, and permanent, except in the direction of further improvement, and any deviation from it as aberrant, scandalous, and avoidable. The projects and politics of militarism and imperialism, of racial and cultural rivalries, of monopolies, restrictions, and exclusion, which were to play the serpent to this paradise, were little more than the amusements of his daily newspaper, and appeared to exercise almost no influence at all on the ordinary course of social and economic life, the internationalization of which was nearly complete in practice. -Keynes, 1919

In a mirror image of the pessimism that occluded investors' views in 1982, investors today appear to be extrapolating these unprecedented margins forward.

[2] *Is America Heading for a Civil War, Edward Luce, May 31, 2022*

10 Year Return Estimation Tool: Buffett Arithmetic Made Simple

Buffett solves for 10-year future estimated returns by starting with the following knowns:

- starting valuations
- starting interest rates
- starting profit margins
- starting GDP

After that, one has to insert their own assumptions for future margins, interest rates, and valuations. With those inputs, we can approximate Buffett's methodology. The exhibit below shows how our tool, which uses a linear regression to account for how changes in rates interact with valuation, allows users to generate their own estimated future returns.

In the image below, we show how the tool would have done estimating the 10-year annual returns between December 1998 and December 2008. This is useful for seeing how the calculator generates "roughly right" estimates for users. At the bottom right, we show that with perfect foresight (knowing the exact value to enter for both 1998 and 2008) our Buffett tool estimated 10-year annual returns of +1.59% per year.

Underneath, we show the actual realized returns over that decade fell to -1.38% per year. A few observations:

- Buffett was deadly accurate in saying that market returns post-1998 would be terrible
- Our tool estimated market returns to be….terrible…at 1.59% per year
- The variance between our Buffett tool and the actual returns is due to sentiment – valuations fell slightly more than expected, considering the drastic cuts to interest rates as investors grappled with the GFC

Buffet Margin Tool	1998	In 10 Yrs
GDP	$9,326	$14,622
Sales	$4,902	$7,685
Earnings	$348	$492
10-Year GDP Growth		4.6%
Margins	7.1%	6.4%
PE	28.0x	16.4x
Raw Market Cap	$9,762	$8,056
Mcap/GDP (No Interest Rate Effect)	105%	55%
Interest Rate	4.8%	0.3%
Change in Interest Rate Over 10 Years		-5%
Impact of Change in Interest Rate		23%
Mcap/GDP after Adjusting for Interest Rate		78%
Ending Market Cap		$11,428
	10 Year Annual Return	1.6%
	Actual Realized Return	-1.4%

Please click here for a copy of our Buffett 10-year returns estimation tool preloaded with today's data. In the tool, you can enter various growth, margin, valuation, and rate assumptions to see how different scenarios would play out.

In the image below, we show a real-world example of the headaches facing investors today. This exhibit starts with the data as of June 30th, 2022 – exactly like the tool you will receive when clicking on the link. You can see that if we assume a decade of 8% annual growth, constant valuations, and constant interest rates at 3.0%, **but change margins from their current record levels to the peak of the dot.com level of 6%....** investors should expect roughly 0% returns for the next decade.

KCR's team respects and understand that others may believe rates will fall again, margins remain forever at records, and valuations could rise. To each their own. We present the below only as an example of the outsized impact that today's record margins play in justifying current valuations. Even under very high rates of growth, flat interest rates, and constant valuations, a decrease in profit margins to prior peak levels creates a formidable headwind.

Buffet Margin Tool	Current	In 10 Yrs
GDP	$24,904	$53,767
Sales	$14,666	$31,664
Earnings	$1,838	$1,900
10-Year Growth		8.0%
Margins	12.5%	6.0%
PE	20.1x	20.1x
Raw Market Cap	$36,887	$38,136
Mcap/GDP (No Interest Rate Effect)	148%	71%
Interest Rate	3.0%	3.0%
Change in Interest Rate Over 10 Years		0%
Impact of Change in Interest Rate		0%
Mcap/GDP after Adjusting for Interest Rate		71%
Ending Market Cap		$38,136
	10 Year Annual Return	0.3%

An Important Appendix:

KCR would like to offer our sincerest thanks to the marvelous Kate Pinard of the Bureau of Economic Analysis. Her remarkable depth of knowledge around the Nation's accounting for corporate profits was shared with a patience, candor, and kindness that was immensely helpful. Kate is a peerless statistician, and we are grateful for her hard work and all those at the BEA who work to offer the public a solid appraisal of our nation's economic status and health.

Charlie and I are disgusted by the situation, so common in the last few years, in which shareholders have suffered billions in losses while the CEOs, promoters, and other higher-ups who fathered these disasters have walked away with extraordinary wealth. Indeed, many of these people were urging investors to buy shares while concurrently dumping their own, sometimes using methods that hid their actions. To their shame, these business leaders view shareholders as patsies, not partners. –Warren Buffett, Berkshire Hathaway, 2001

We put the 2001 quote above in this appendix as we feel there may be a similar set of quotes forthcoming in the years ahead.

One of the most interesting parts of this project came about on the data side. KCR does not spend a lot of time trafficking in macro and is not intimately familiar with the macro data sets. One of the things we **do** focus on a lot of time is security-level data.

The margin data you see in the charts above is **not precisely** the margin data you will currently find at the Government's Bureau of Economic Analysis ("BEA"). The BEA is a remarkable organization, and its division on Corporate Profitability undertakes the massive task of trying to keep track of the country's profits in both public and private businesses based on a collection of methodologies.

To say the task was formidable is an understatement. We found that the margins from the BEA in the late 1990s were significantly lower than the margins in the chart Buffett used in Fortune Magazine in 1999. Was Buffett dishonest? Fortune Magazine? We doubted it.

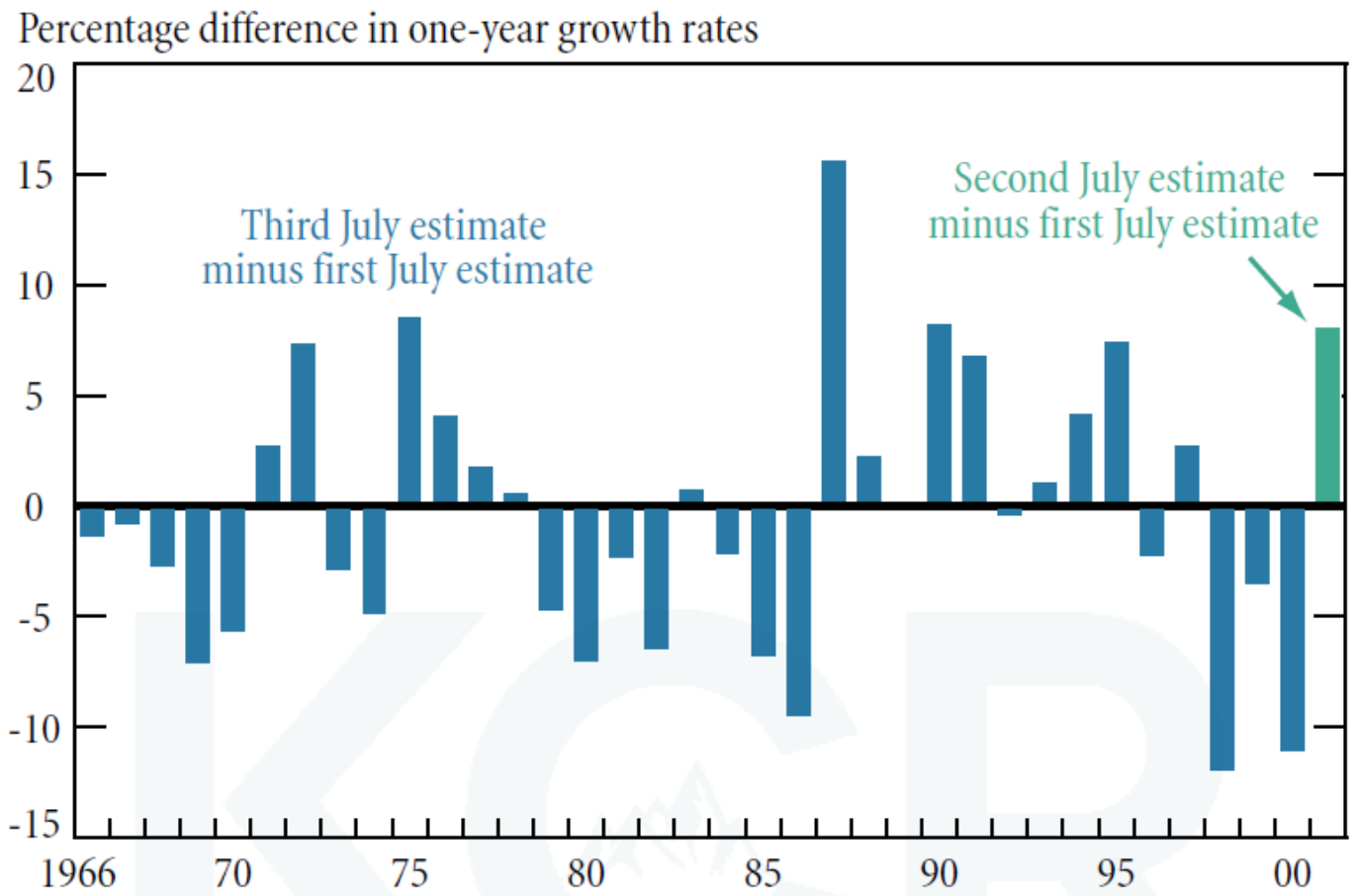
After researching how the BEA handles revisions, we stumbled on a remarkable document published by the Federal Reserve Bank of New York.[3] The article discusses the multiple negative revisions to corporate profits the BEA was forced to implement for the years 1998 – 2002. The paper explains that the arduous revisions to profits implemented by the BEA for these years were "…among the largest of the past forty years."

The cause? As the NY Fed explains:

"…we show that the unanticipated surge in the exercising of employee stock options over this period is a large part of the story. In some industries, this unexpected surge is large enough to explain the full extent of the revisions. In other industries, it is clear that other factors – including the widely publicized accounting scandals of recent years – played a partial role."

How big were the negative revisions the BEA had to put in for the 1998, 1999, and 2000 years? The chart below shows that these were the largest negative revisions since 1966.

[3] *Recent Revisions to Corporate Profits: What We Know and When We Knew It,* Charles P. Himmelberg, James M. Mahoney, April Bang, and Brian Chernoff, March 2004



Source: Federal Reserve Bank of Philadelphia, Himmelberg, Mahoney, Bang & Chernoff estimates

So **why** were the revisions so material? Like the rest of us, the BEA has to rely on various publicly available sources to estimate corporate profits. The authors cite two primary causes for these record negative revisions. The first being employee stock options – a serious issue and abuse that FASB would later address in their 2006 ruling FAS123R.

The authors move on to a second possible cause for the massive revisions. They state that the "…increase in 'aggressive accounting' – accounting choices designed to artificially inflate profits – especially among publicly traded corporations whose management has an incentive to report to shareholders growing profit figures."

This publication has written extensively both in our own newsletter and in the peer-reviewed world of academia about the misrepresentations to profits caused by the aggressive use of stock compensation. When we pair that up with what our sophisticated tools designed to detect earnings manipulation are telling us, we expect that Ms. Pinard, and her colleagues may find themselves facing the same arduous task of downward revisions in the years ahead.

A critical component of building solid evidence-based models is to have what is known as "point in time data." What that term means is that the data we use when constructing our models and building evidence-based research uses data that represents what the market had access to at that moment in time.

Using revised data would be a classic example of "quant-gone-wrong." This phenomenon is often called "peek ahead bias" or "data snooping" and can create disastrous results for people using historical data to inform their investment process.

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