Malleability, Misrepresentation, Manipulation: The Rhetoric of Images in Economic Forecasting

Figure 1. Economic Forecasting with Graphics: An Imprecise Science.

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Although we often hear that data speak for themselves, their voices can be soft and sly.
~Mosteller, Fienberg, and Rourke

Fact, logic, and data drive the world of economics. Experts analyze past and current information in order to draw conclusions on possible future market behavior. In turn, investors read these interpretations and combine them with their own data collection, forming a personal belief and acting accordingly. These actions create more data, which the analysts then collect and examine, creating an interminable loop of information exchange. This unending interaction seems simple enough; however, the accuracy of economic forecasting is a testament to the true complexity of this analyst-data-investor matrix. A major source of uncertainty in the field of forecasting is the fact that in order to convey pure data to investors in ways they can understand, a medium of communication must be used. The sheer volume of data being created each second cannot just be passed to the investor for comprehension; the analyst must observe it, draw conclusions, and somehow deliver his or her “factual prediction” to the investor. It is in this transference from numbers and fact to visuals and argument that data speaks slyly.

A powerful example of this phenomenon occurs when viewing any visual attributed to an economic forecast. Primarily, the transference of data to graphical representation is of great concern. Economic graphs are unique in the realm of visual images in that they convey an extremely large amount of concrete information using simple lines and values. Their ability to reduce complex theory into a simple visual concept certainly asserts them as powerful rhetorical devices. However, this potency is oft misused by those who purport to convey truth in forecasting. The strong logical appeal of a graph can easily overshadow the content of an economic analysis, a dangerous effect in the hands of an analyst looking for one small piece of data in the
insurmountable pile of information that exists, and grows, constantly. Furthermore, many economic reporters and quasi-forecasters utilize non-graphical images in their clouded rhetoric, obscuring the financial analysis with a pathetic appeal. Clearly, visual rhetoric is a subtle yet potent source of manipulation in the economic realm. This practice of misrepresentation and misdirection with images abounds in financial literature, detracts from the truth value of economic prediction, and casts further doubt upon the practice's merit.

Partly Cloudy, Mid 70’s, Dow to 11,000: The Imprecise Art of Graphics and Forecasting

*Unfortunately, the very virtues of graphics are their Achilles’ heel.*
~Richard P. Runyon

In order to analyze the rhetorical potency and effects of graphical representations of economic data, a solid understanding of graph construction and utilization is needed. In economic literature, the prevailing type of graph is a line-graph. This graph supposedly displays trends more efficiently; however, studies have found this misconception cannot be supported by any experimental data (Meyer 333). It seems that the industry found one way to display information and stuck with it, thus creating the genre of economic graph that is so prevalent in publications today. However, bar graphs, and to a lesser extent, pie charts, are used as well. Meyer’s study finds that all of these forms of data depiction are less efficient than a table at conveying information, as their visual elements do not state numerical data explicitly (Meyer et al. 268). Simply put, it is the very nature of graphs to simplify hard data into visual representation, and in this process, exact data conveyance is lost.
Another fallacy of graphical representation is the lack of uniformity. Specifically focusing on the prevalent line graph, Richard Runyon, Author of *How Numbers Lie*, explores the elasticity of the axes of a graph: “There are no universally agreed-upon methods of representing the relative lengths of the vertical and horizontal axes. Therefore, these axes are like rubber bands, ready to expand or contract on demand of the user” (38). This presents a large problem in the display of economic graphs, as it is impossible to define a universal scale due to the amount of different data sets that are visually displayed. Analysts take this fact and run with it, scaling graphs in infinitely different ways in order to obtain the most rhetorically potent effect. While many may argue that graphs are not rhetorical devices, they must only be told of Klaus Hentschel’s argument that graphs are rhetorically potent in at least one manner: they are trying to persuade the viewer that they are objective, relevant, and factual (Hentschel 13).

Building upon this graphical understanding, it is possible to explore graph use in the specific genre of economic forecasting. An extremely important finding with which to launch this exploration is that of David Laster et al. in their paper entitled “Rational Bias in Macroeconomic forecasts.” Their study found that, although forecasters reach a consensus about the most likely future market behavior, their actual published analysis differs from that consensus according to their salary (293). This conclusion has huge and pervasive implications for economics and finance: even though writers and forecasters may understand the possible range of market behavior, they choose to publish an extreme projection with which to gain attention, admiration, and affluence. Since so much data exists in this realm, these predictions can be backed by seemingly factual graphs and images which in reality are irrelevant and conniving.
A quick analysis of different graphical interpretations of the same data plot will show the vast range of visual representation from which a forecaster could pick a graph. The Dow Jones Industrial Average (DJIA) is a popular graph in just about every periodical publication, and its behavior is often used to summarize whole economy performance. Figures 2 and 3 look extremely different when compared, but they are the same data from the same source: the DJIA monthly from Yahoo! Finance. The only difference between the two is the method with which they are plotted: Figure 2 is a linear plot with a constant vertical-axis increment, while Figure 3 is based on a logarithmic scale and plots vertically according to proportion over time. The fact that these two are both legal graphs is irrelevant once this graph gets to the investor, however, as clearly their rhetorical depictions are vastly different. Figure 2 shows an extreme rise followed by a sizeable pullback, and an investor might not be so interested in putting his or her money into such a situation. Contrarily, Figure 3 shows a consistent increase with a few bumps and turns on its slow and meandering increase. The vastly different effects that these two graphs have on a reader are a testament to the danger of misinformation and tweaking in the genre of financial literature. Even more striking is the introduction of a third graph with which to compare the two. Figure 4 is a depiction of the same data set
from BigChart.com, and its plot includes more historical data, making the past few years look more like the amazingly volatile times that they were. This vast difference casts doubt upon all of the figures and simultaneously casts the interpreter of the graphs into a world of confusion.

Overall, the rhetorical potency of an economic graph is truly astounding, and its vast range of depiction is strikingly unexpected. These base findings, combined with a selfish forecaster desiring rhetorical potency, lead to uncertainty for the individual investor. The result of the slough of misapplied and misrepresented data is that an individual investor must be determined to gather his information from multiple sources in order to reduce their individual rhetorical potency. Since no true visual representation of data can actually exist due to the nature of graphs, the investor’s quandary is further intensified; how is she able to distinguish truth through analyzing lots of untruth? Adding even more to the situation is the fact that many investors do not devote their entire life to this endeavor. Many spend a limited amount of time researching and making decisions on their investments. This situation is explored by Laster et al. as well, as their study found that part-time investors gravitate towards a forecaster whose past record has been more sensationally successful than others; in doing so, they cut off their other sources and limit themselves to believing one analyst whose past success may be total luck, and whose extreme predictions are based on his or her desire for more notoriety (293). Such dependence is not a solution to the rhetorical potency of graphs and the biased approach of the analysts who choose them.
Throughout the 1980’s and 1990’s, as the Dow Jones industrial average rose from below 800 to above 11,000, Wall Street Analysts and financial journalists warned that stocks were dangerously overvalued and that investors had been caught up in an insane euphoria.

They were wrong.
~Glassman & Hassett

While this 1999 quotation from the authors of *Dow 36,000* seems blatantly false in light of the recent three-year economic slowdown, it seemed perfectly acceptable in the days of the late 1990’s. Investors had enjoyed years of economic prosperity and were being inundated with reports of new technologies, new businesses, and new standards of profit from investing. What Federal Reserve Board Chairman Alan Greenspan ominously called “irrational exuberance” seemed to be a fabrication of the old-world economy that was scared of new levels of economic prosperity (Greenspan qtd. in Glassman and Hassett, 4). However, the following years of recession would prove old-world economic theory correct, and many followers of the “new” economy were left to count their losses.

A rhetorically powerful result during these times of insane and unfounded economic prosperity was the inclusion of pseudo- and ill-formed graphical depictions of sustained market increase. Many of these graphs were inspired by the astonishing forecasts of *Dow 36,000* and other publications heralding the coming of the “new economy” in which steady increase would be interrupted only by mild corrections, generating wealth and happiness for all. These false depictions of markets infused rhetorical elements into financial reporting and forecasting, no doubt persuading readers into a false sense of security. Figure 5 is a powerfully manipulative pseudo-graphical representation of Glassman & Hassett’s irrational prediction published in the San Francisco Chronicle next to an article analyzing the book’s merits. The graphic was the
Figure 5. SF Chronicle DJIA Pseudo-Graph 12/7/1999: A manipulative example of “truth” represented through false graphics and insidious rhetorical appeals.

centerpiece of the front financial page of the newspaper, and its depiction of a completely make-believe data set is ludicrous and manipulative. The image shows steadily ascending pseudo-graph with a valiant adventurer gleefully viewing what is to come: a pinnacle of economic affluence, or the value of Dow 36,000. The rhetorical strategies put forth in this seemingly innocent depiction are plentiful and profound. The author of the image infuses strong pathetic appeal to the reader by setting a happy adventurer on the graph, and any stock holder perusing the page certainly would feel a certain connection to the investor-hero. Additionally, the pinnacle of 36,000 is set extremely high on the page; in fact, the peak breaks through the financial header, and seems to promise further growth beyond the scope of even the front page of the newspaper. However, regardless of the magnitude of the rise, the author depicts a journey that is far from insurmountable, and far closer to guaranteed. The ride from 10,000 to 36,000, according to this pseudo-graph, will be obstructed only by a few short blips and bumps along the way. When combined with strong logos appeals such as an article glorifying the current market upswing, all but promising continued growth through the next decade, and a bolded title likening the
economy’s increase to some aerial ascension, what investor wouldn’t be untruthfully misled as to the future of the economy? While it is true that no forecaster could have predicted the downturn that the market is suffering right now, it would take a complete fool to assume that never again would the market experience decline; it is a fundamental law of finance that the economy fluctuates, and no new industries or exuberant investing can change that fact. This axiom is blatantly ignored in the image, which, due to the nature of visuals, undoubtedly leaves a stronger mark on the reader than any analysis provided in the article.

In this time of economic absurdity spanning the late 90’s to the year 2000, pseudo-graphs were not limited to artistic depictions. In fact, many instances of more concrete, more believable, and therefore more rhetorically potent misrepresentations popped up across the country. A strong example of the pseudo-graph, infused with more logos appeals due to its more “factual” depiction of the market’s performance, appeared in the Atlanta Journal and Constitution on May 4, 1999 (see Figure 6). While seemingly more factual than the Figure 5, this image uses graphical tweaking and a general abandonment of the rules of truthful data display to spew rhetoric to the reader. The primary problem with the graph is its lack of axes; in fact, this image is just a line put on a page, with no reference to scale save a few haplessly placed dates and numbers. The effect of this pseudo-graph, however, is strong factual appeal to the reader:
they see numbers, and they see a line, so they see fact. The depiction shows an upswing of great proportions, but in relation to nothing save the large heading declaring a new Dow Jones record. The subtle rhetoric this graph exudes is extremely detrimental to an investor’s sense of reality. It includes a basic manipulation of the trust most investors have in data displays as truthful representations of market behavior. If these displays are so malleable and potent, they cannot be truly objective and truthful.

In addition to depictions of the Dow Jones, many publications started to include superfluous data predictions to enforce the commonly-held belief that the market was going up and staying up in the years to come. The St. Louis Post-Dispatch included three such graphs of questionable construction alongside a New Years Eve article that presented various forecasts for the year to come (see Figure 7). While each of these factors are factors in the direction of the economy, this convergence of data represents the ability of a forecaster to utilize any graph in any way they desire in order to make a point. There are countless economic variables that could have been graphed, but instead these three were chosen; the reason is that they might possibly support further economic growth. Regardless of the merit of the variables, the depiction of this data is extremely poor. The first graph of the unemployment rate (left side) is a textbook example of manipulating the axes in order to increase the visual impact of a graph. The vertical values of the graph are extremely small, and the overall change in unemployment is a small drop of .3%.
Additionally, the unemployment rate is a cyclical variable, meaning that its value fluctuates naturally and somewhat independent of market performance; therefore, this data should not be displayed to support an economic forecast of prosperity, and it certainly should not be displayed so poorly.

The second graph likewise misses the mark in its construction. Here, the graph constructor decided to adhere to the Runyon’s rules of zero-point graph construction (one where every possible vertical value is displayed on the graph), which has the effect of reducing the accuracy of the bar chart (Runyon 40). A far more prudent choice would have been to depict this statistic as a line graph, notify the reader of liberties taken with the vertical axis, and display the data more precisely. Lastly, the third graph depicts the growth in Gross Domestic Product of the last quarter. This graph is scaled more accurately so that the reader can see fluctuations, but a growth in GDP does not directly translate to a stronger market performance. In totality, these three graphs presented together provide a confused display of data that shifts its approach to axis scale, relevance, and precision throughout the visual exploration. This visual is most detrimental to an investor who looks at the data, cannot fully understand the import of what is being displayed, and so takes the claims of future prosperity on face value. This is the sad effect of the poorly displayed economic graph: that those who view them, if somewhat inexperienced, will assume them to be true and assimilate their claims into their mental library of investing maxims.

Beyond even misrepresented fact through poor graphical depiction and pseudo-graphical rhetoric, there exists an even more blatant and powerful form of finance literature rhetoric: that of photographs. In the same manner that a reader identifies with the courageous climber of Figure 4, a depiction of a floor trader elicits a pathetic response
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and a kinship due to mutual economic endeavor. This type of pathos appeal occurs often in financial writing, and the volatile span before the initial market recession is no exception. Two specific occurrences during this time of economic exuberance exemplified the rhetorical potency of photographs alongside an economic article: a floor trader anxiously watching the Dow Jones break through a record 10,000 points, and a new-years celebration on the floor of the Eurodollar exchange. Figure 8 was published in the St. Louis Post-Dispatch on March 18, 1999 alongside an article that explored the psychological implications of breaching a mark of 10,000. The author argued that this milestone could trigger a giddy response in investors that defies reason, which would in turn send the market skyrocketing (See Works Cited: Figure 8). The image, of course, was center-stage on the page, commanding the reader’s attention to the eager and nervous face of the trader. The depiction is not so much one of fear but of anticipation; the caption and article heading assure the reader that the face is not scared but anticipatory. The entire article is composed with eagerly hopeful rhetoric: the title exclaims a record and proclaims “just” barely missing 10,000. Again, these arguments combined with strong pathetic appeal lead to manipulative financial reporting.
Figure 9 is purely celebratory: alongside an announcement that all stock indices broke records the past year was published an image of intense New Year’s Day 2000 celebration, confetti most definitely included. This depiction of intense celebration is intended to support the Atlanta Journal and Constitution article’s jubilant celebration of economic success. Such amazingly rhetorical presentation of data no doubt affected investors in thinking that their precious world of investment success would never end (See Works Cited: Figure 9).

All in all, the depiction of images and graphs during the overvalued period of last decade was extremely rhetorical in nature, leaving investors to sift through misinformation and irrational mis-projection. This unwarranted lack of objectivity led to the inability of financial advisors and investors alike to see the looming market drawback, and was a major cause for persistent optimism and myopia in the coming year of total volatility and uncertainty.

Hope Against Data: A Case Study of Futile Visuals in the Transitioning Economy

*Most analysts believe that tech stocks will continue to dominate the market as long as the Federal Reserve sticks to its policy of fighting inflation with higher interest rates.*

~Tom Walker, 17 Mar. 2000
The transitional period that followed the historic growth of the late 1990’s was one of extreme volatility. Despite the evident weakness in the economy, analysts, such as Tom Walker of the Atlanta Journal and Constitutional, kept heralding the coming of a ‘new economy’, one in which technology stocks would continue to increase despite the strong sell-off of many other industries. This departure from orthodox economic teachings represented a myopic attempt by analysts and investors to ignore the telltale signs of a drawback, continue their rash optimism, and force market growth regardless of whether is was justified. Naturally, these articles were combined with rhetorically potent visuals that appealed to the reader logically and pathetically in order to maintain optimism throughout the investing world.

An interesting phenomenon that emerged during this period was the disappearance of the pseudo-graph explored previously and a transition to very logical graphs that tried to explain why market setbacks were irrelevant in the profit-making juggernaut that was the technological revolution. Often times these graphs were misleading in their construction or content. A striking example of this logos-driven visual supplement occurred in an article published in the Atlanta Journal and Constitution on March 17, 2000 (See Figure 10). This graph is labeled “Old and New Get Closer,” insinuating that the data displayed will be an argument for the re-convergence of ‘old’ and ‘new’ markets, which would in theory cause a newfound stability from which more market increase could ensue. In fact, the graph only depicts the stock prices of four
firms: Cisco Systems and Sun Microsystems, and the older Coca-Cola and General Electric. The graph seems to show a market convergence, when in actuality it shows what could be a totally uncorrelated and random convergence of four firms’ stock percentages. Another important point to note is that this graph was published alongside an article that quotes a few experts stating that the gap between ‘old’ and ‘new’ is increasing, and that gap could be very worrisome for the economy (See Works Cited: Figure 10). Regardless of these quotations, the arrangement of the article is optimistic, and the visual supplement completely contradicts the testimonies cited. Moreover, because of its apparent factuality due to the inherent logos appeal of graphs, the visual sends a potent rhetorical spin on the actual content of the article which it supplements.6

Must Come Down: Denial, Blame, and Avoidance in Bear Market Images

*The sharp slowdown that began in the second half of last year has ‘yet to run its full course.’*
~Alan Greenspan, Federal Reserve Board Chairman, 2001 7

Greenspan’s understated, yet harrowing, assertion about market performance in March 2001 was just another indicator that reality was finally setting in for investors. As profit margins shrank and disappeared, investors wondered what had happened to their seemingly inexorable market increase. Images of Alan Greenspan as the enemy to inflation, looming and omnipotent, emerged in financial literature, and when combined with graphs depicting declines and interest rate changes, these images established a subconscious rhetorical link. The subtle rhetoric behind depictions of Alan Greenspan are most evident in two examples. Figure 11 is an image published in the San Francisco Chronicle with three supplemental graphs. The visual display dominated the front page of
the financials, commanding reader attention. Greenspan is enlarged to a dominating figure, unemotional and powerful, his lips pursed in the action of declaring an interest rate increase. Floor traders depicted to the left and below the figurehead are seen with faces of anxiety and anticipation; their success rests in the hands of this man. Such an image clearly adds a pathetic element to the raising of the interest rates, as investors associate with the floor traders in the image as they have in the past (Figures 5, 8, 9). Even the caption states that floor traders listen intently to Greenspan’s decision, implying that the reader should, too; listen, and fear, just as those in the image are doing.

Figure 11. San Francisco Chronicle 5/23/2000: Greenspan and Monetary Policy: Big Brother checks irrationality.

The image gives an overall feeling of helplessness, and when coupled with graphs that seem to show a correlation between interest rate hikes and market non-performance, their potency is amplified. Such a subconscious and manipulative message is unneeded and detrimental to financial literature.
Another potent depiction of Greenspan was published on March 1, 2001 in the Atlanta Journal and Constitution. Figure 12 is a huge graphic, seeming to progress in a manner that answers three questions: what is the data, who does it affect, and what is the cause. The top of the image is a graph depicting consumer confidence, which, while an important factor in market performance, is not the end-all-be-all of economics. However, the logical depiction of numerical data is enough to persuade the reader that something is wrong. Next in the image, just below the first graph, are floor traders, dejected after another day of decline. Lastly, we see another larger-than-life image of Alan Greenspan next to a graph of the DJIA, and his picture is supplemented with the quotation that introduced this section. The image is infused with rhetoric: the frowning face of Greenspan seems to reflect the dip in market performance in the adjacent graph; the floor traders, just below a graph showing lack of consumer confidence, seem to be at a loss for their own confidence as well. The central figure, however, is Greenspan, with his
declaration that the market is due for more declines. The effect of including the
Chairman’s photograph in the middle of graphical depictions of economic decline is an
association of Greenspan to poor market performance. The image seems to blame his
desire to curb inflation for the fact that the market is experiencing a significant
withdrawal. Clearly, monetary policy strongly affects the economy, but the reason the
economy suffered such dramatic declines is the occurrence of dramatic overvaluation in
the period just before the bubble burst; Greenspan’s interest hikes were not the culprit,
but the mechanism by which irrationality was corrected.

Beyond depictions of government officials, publications have
been exposing corporate leaders as scapegoats for company collapse.
The New York Times recently published an article investigating
the rise and fall of Sprint Corporation,
specifically focusing on
their ex-CEO William
Esrey. Figure 13 shows
the Business Page
graphic that seems to
correlate Esrey with the
horrible performance of
Sprint stocks in the last few years. This construction is a hugely rhetorical appeal, one
that completely ignores the performance of the rest of the telecommunications market in
the same stretch of time as displayed in the graph. This lack of depiction is akin to
drawing results from a scientific experiment that has no control group; without being sure
whether it is a direct correlation, the conclusion is drawn that some factor is the reason
for the result. Additionally, the depiction of Esrey is unwelcoming and unflattering. Profile shots give the feeling of inaccessibility, and Esrey’s stern look does no good for the reader’s interpretation of his demeanor.

This image, coupled with a graph that shows the ascension and decline of his corporation, establishes a subtle and manipulative rhetorical link. By observing a graph of the entire telecommunications market, it becomes evident that Sprint’s decline was no different than that of the industry’s (Figure 14); in fact, Sprint may have just been one victim to the economic volatility that claimed the lives of many technological companies in the last 3 years of recession. The article, however, seems to be exploring some strange scenario in which another evil CEO causes his company to fail. This behavior is a clear example of bear market images and their manipulative uses. Journalists and forecasters, who may have projected a horribly inaccurate market increase, find scapegoats and write them up, using logical appeals of graphs and pathetic appeals of images to assert their claim as true. These examples are potent case in which rhetoric supersedes financial objectivity.

Figure 14. Sprint vs. Telecom Index: Failed company, or victim of volatility? (Sprint in Red, Industry in Blue)
Visual rhetoric saturates financial literature. Periodicals are the most notorious, and no doubt most widely distributed, source of this detrimental trend in economic reporting and forecasting. Not only do graphs manipulate due to their very nature as malleable entities, but the sheer volume of data that our society collects and the frequency with which it is amassed allows any forecaster to pick and choose his or her graph to suit the hypothesis. In addition, many publications utilize subtle pathetic appeals through photographs, establish unfounded connections by placing data and images in close proximity, and generally use visuals to cloud, rather than support, their argument.

While visuals would be much more useful in this field as supplementary and solely factual, the nature of graphs and images lead to this detrimental inescapable rhetorical push, and analysts use this to their advantage. The direction of this inevitable impetus is up to the biased forecaster, trying his or her hardest to gain publicity in order to make more money. These rhetorical advances should not be included in economic writing, but their vice remains their virtue: they simplify complex data into comprehensible, albeit condensed, visual information. In order to avoid this manipulation, the reader of economic images should be extremely careful and skeptical while analyzing any article with a visual attached. Each image has rhetorical potency, and it is necessary for the reader to gain his or her information from multiple sources in order to reduce the individual rhetorical potency of each source. The data of financial literature and economic forecasting will always speak slyly, with self-serving goals in mind; but,
with an understanding of the manipulative power of images, it is possible to differentiate a tantalizing visual whisper from spoken economic truth.

Regardless of the investor’s to escape visual manipulations with the presented knowledge, the genre of economic literature is saturated with infused rhetoric that does not belong. It was stated at the introduction of this paper that fact and logic drive the world of economics; due to this truism, pathetic appeals and manipulative graphical depictions have absolutely no place in the literature. Journalists and analysts need to take responsibility for their academic and economic integrity, and need not to consider their paycheck the determining factor in their forecasts. The science of forecasting is dubitable enough as it is, let alone with a hoard of selfish swindlers saturating investors with verbal and visual rhetoric.
Figure 1: “Blob” From:

Figure 2: “DJ INDU AVERAGE, LINEAR” From:
<http://finance.yahoo.com/q?s=^DJI&d=c&k=c1&a=v&p=s&t=my&l=off&z=m&q=l>

Figure 3: “DJ INDU AVERAGE, LOGARITHMIC” From:
<http://finance.yahoo.com/q?s=^DJI&d=c&k=c1&a=v&p=s&t=my&l=on&z=m&q=l>

Figure 4: “DJI: All Data, Daily” From:
<http://bigcharts.marketwatch.com/intchart/frames/frames.asp?symb=DJI&time=8&freq=1>

Figure 5: “Up, Up, and Away” From:
Louis, Arthur M. “Up, Up, and Away; Two new books see remarkable stock market growth but differ on how long it will take to get there.” San Francisco Chronicle 7 Dec. 1999: D1.

Figure 6: “Cyclicals” From:
Walker, Tom. “Cyclicals drive the Dow past 11,000.” Atlanta Journal and Constitution 4 May 1999: 1F.

Figure 7: “Who Knew?” From:
Prial, Dunstan. “Economists predict more good times; but considering their past record, who believes them?; ’98 consensus was way off.” St. Louis Post-Dispatch 31 Dec. 1999: C1.

Figure 8: “Tense Trader” From:
“Dow Sets Record, is just shy of 10,000; Milestone is sure to make investors even giddier.” St. Louis Post-Dispatch 16 Mar. 1999: C6.

Figure 9: “Confetti” From:

Figure 10: “Old and New Get Closer” From:
Figure 11: “Greenspan” From:

Figure 12: “Pessimistic Snapshot” From:

Figure 13: “William Esrey, Sprint Share Price” From:

Figure 14: “Chart Compare ^XTC vs. FON” From:

Figure 15: “DJIA, 5-Month Plot” From:

Figure 16: “DJIA, One-Day Plot” From:

Figure 17: “Putting the Dow’s performance in perspective” From:

Figure 18: “For the Week” From:
Walker, Tom. “Bulls still running on Wall Street; Unexpected rally in stocks on final trading day of tough week whets appetites for another leg up.” Atlanta Journal and Constitution 9 Jan. 2000: 1H.

Figure 19: “On Different Paths” From:

Figure 20: “Confidence Returns to Dow” From:

Figure 21: “Big Gains” From:


Works Consulted


Meyers, Mike. “Does Dow 10,000 really mean anything?” Star Tribune (Minneapolis, MN) 30 Mar. 1999: 1D.


Appendix: Further Examples of Visual Rhetoric in Economic Literature


Figure 15. Dow Jones Industrial Average, 5 month plot, 4/5/1999. Source: St. Louis Post-Dispatch (See Works Cited: Figure 15).

Figure 16. Dow Jones Industrial Average, 1 Day Plot, 12/24/1999. Source: Atlanta Journal and Constitution (See Works Cited: Figure 16).

Figure 17. Dow Jones 3-D depiction, 4.5 months, 1/15/1999. Source: Atlanta Journal and Constitution (See Works Cited: Figure 17).

Figure 16 shows the daily range of DJIA values over the past 4 months along with the closing price. While this extra “daily range” information is useful, it also creates more ink clutter on the page, what Tufte calls “chartjunk” (Tufte qtd. in Weiner 139). The closing prices (depicted by a white dot) are quite hard to distinguish, so the actual market attitude (reflected by closing price) is not prominent in the graph. Additionally, chart axis elasticity is evident in this graph, as the scale is zoomed in to a 4-month period ranging 1500 points, as opposed to Figure 16, a one-day depiction with a 350-point range. This is just another concrete example of the malleability and lack of uniformity in economic data depiction.

Hope Against Data: More Case Studies of Futile Visuals

This graph is an interesting illustration of the DJIA, 4.5 month span. The added third dimension added is confusing, causing the reader of the graph to be more wowed by the visual effect than the actual data itself. Instead of focusing on the recent drop-off versus historical prices, the reader finds a temptation to look at the center of the image where the third dimension effect is most striking. This claim is supported by a study by Zacks et al. at Stanford University that explores the detrimental effects of extraneous depth cues in graphs (Zacks et al. 119). The overall effect is a general feeling of hopefulness despite the recent large drop in Dow value, and an affinity for ignorance and optimism in lieu of rational market analysis. This kind of sentiment abounds in the literature of this period.
This image is a classic case of faulty graph construction: a lack of respect for the common rules of data depiction. Vertical axis values are not given for either the Nasdaq or the Dow graph, leaving the reader to look at arbitrary representations of market performance. These ups and downs could be anywhere between 3 to 400 points! This simplified appeal is another example of excess graph generality, especially since it is done so irresponsibly. In addition to this, the general myopia and tendency towards exuberant ignorance is revealed through the use of this image as supplement to an article that all but ignores the recent tumultuous week and expects nothing less than another long upswing in the near future (The next few weeks would prove to be the beginning of the current 3-year long recession).

Figure 18. Dow Jones and Nasdaq Week-long performance, 1/9/2000. Source: Atlanta Journal and Constitution (See Works Cited: Figure 18).

This visual is a representation of the fabricated “new economy vs. old economy” rift that many financial analysts created due to irrational optimism about the technology market. Since the Nasdaq tech-heavy market was still on the rise while the Dow Jones had begun the drawback that inevitably would become a recession, analysts began lauding the technology sector as the bringer of unlimited profits, an industry which would ignore fundamental laws of economics and continue an upswing interminably. Sadly, this theory was disproved when the Nasdaq market crashed and continued declining for years to come. However, the example of using a potent logical appeal in the form of a graph is still strong; this type of “justification” for market behavior abounds in tumultuous times, sending falsely optimistic messages to investors regardless of telltale economic signs of a drawback.

Figure 19. DJIA vs. Nasdaq, a Rift, 2/23/2000. Source: Atlanta Journal and Constitution (See Works Cited: Figure 19).
Figure 20 is a good example of irrational optimism in the face of uncertainty. The data suggests volatility; when viewing the past performance depicted in this graph, it is clear that the current “upturn” could just be another up-down cycle like those in the months of March through July; however, the caption of the photograph is a declaration of renewed investor confidence, and the article from the Atlanta Journal and Constitution glorifies the upswing as the return of the prosperous market performance from years past (See Works Cited: Figure 20).

Figure 21 is another example of a photograph accompanying an article and sending rhetorical misinformation to the reader. The ecstatic shot of this trader seems to reflect positive market performance, but this image was taken after the only week in months that the DJIA had posted a gain. Placing this image alongside an article that explores recent gains is akin to denying any actual market behavior and attempting to purport financial success of the kind that was experienced in prior years. Such rhetorical appeals that infuse pathos into a world of logic and data are irresponsible, manipulative, and detrimental (See Works Cited: Figure 21).
End Notes:

1 Mosteller et al. qtd. in Tufte, page 4.
2 Runyon, page 36.
4 See Works Cited: Figure 5.
5 Walker, Tom. See Works Cited: Figure 10.
6 See appendix for more examples of this phenomenon.
7 Greenspan, Alan qtd. in Figure 11 (see Works Cited).
8 Wainer, page 146.