**Today’s Market in Historical Perspective**

**by**

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 In 1972, the year the microprocessor was introduced, the floor of the New York Stock Exchange was crowded with traders on business days, jostling each other as they sought to buy and sell securities for their customers. Today it is nearly deserted, the side rooms closed. Many stock exchanges, such as NASDAQ, have no trading floor at all. Stocks today are traded electronically, often with no human input whatever.

 Basically, the floor of the NYSE is now little more than a backdrop for the nightly stock report on television. But that nightly stock report is by no means the least of the changes that have come to the securities industry in recent decades, for it is indicative of the profound democratization of capital that has taken place. In the mid-20th century, what went on in Wall Street was of interest to only a small percentage of the population. Today, with the spread of mutual funds, 401(k)s, IRAs and other means of investing, nearly everyone has a stake in Wall Street and they keep abreast of what is happening there.

 The changes that have swept the securities industry in recent decades have been driven by three things, the digital revolution brought on by the microprocessor, the huge increase in wealth that it has produced, and the globalization of both the world economy and the securities industry.

 Virtually all aspects of modern life have been affected—and often utterly transformed—by the digital revolution that began in 1972, but perhaps none more so than what we know by the metonym Wall Street.

 To get an idea of just how profound that revolution has been, consider this. If every computer in the world had suddenly stopped working in 1972, the average man on the street would not have noticed until his bank statement failed to come in at the end of the month. Today, stop every computer and civilization crashes in seconds. Automobiles wouldn’t run, planes would fall out of the sky, phones wouldn’t work, food could not be delivered, hospitals wouldn’t be able to function, newspapers could not be printed, televisions wouldn’t play. Human beings would be cut off from everyone beyond the reach of their own voices, as profoundly isolated as people were in the Middle Ages.

 That is an indication of how many opportunities were opened to investment and how many new economic niches became possible as the revolution deepened and broadened.

 The digital revolution has created a whole new class of super-fortunes. Seven of the ten richest people in the United States owe their fortunes to the microprocessor, either directly, such as Microsoft’s Bill Gates, or indirectly, in businesses that could not exist without abundant computer power, such as Amazon’s Jeff Bozos. Indeed Bezos this year became the first centi-billionaire, worth an astounding $160 billion.

 And for every Forbes 400 member, there are many hundreds of people whose fortunes are only small when compared with the mega-fortunes.

 Thus the digital revolution has hugely increased the amount of capital to be invested, for it has produced, and continues to produce, the greatest inflorescence of wealth in world history. In 1982, the year of the first Forbes 400 list, a person needed a fortune of $82 million to make the list. Today, only 36 years later, $2.1 billion is required to do so. One-third of the billionaires in the country are not rich enough to be on the Forbes 400 list.

 And all of this vast new pool of capital has to be managed and invested. Managing and investing capital, of course, is what stock and bond markets do, moving it from investors to businesses and from investor to investor. This has required a profound change in how Wall Street does business as the old ways—basically paper—could not keep pace.

 On October 29, 1929, the market crashed and traded 16 million shares in a single day. That record volume stood for 39 years, longer than Babe’s Ruth home run record. But in the late 1960's, as more and more mutual funds opened up to meet the needs of smaller investors, volume began an inexorable rise. In 1967, the slowest trading day of the year had a volume of 5.9 million shares. But that was almost 700,000 more shares than the busiest trading day of 1960.

 The system began to groan under the weight of this new volume. The number of fails—where buyers and sellers record trades differently and the matter has to be straightened out before the trade can be completed, an expensive business—rose alarmingly. In December, 1968, there were $4.1 billion in securities that simply could not be accounted for at all. It was this “back-office crisis” that would first bring the computer to Wall Street.

 In 1968, the NYSE decided to close on Wednesdays in order to allow back offices to whittle down the enormous backlog. It would be two years before normal trading hours resumed, after brokers made considerable investments in computers to handle the new data flow. With computers, the fail rate declined greatly.

 Non-computer related changes were also coming to Wall Street at this time as well. Muriel Siebert became the first female holder of a seat on the New York Stock Exchange in 1967, followed two years later by its first black member.

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 Brokers had dominated Wall Street since the Buttonwood Agreement of 1792, the origin of the New York Stock Exchange. The agreement called for the brokers who had signed it to favor each other in trading and to not effect trades at below a certain commission rate. In other words, it was a combination in restraint of trade, fixing commission rates. This was very profitable for brokers, of course.

 But as mutual funds came more and more to dominate trading on the Street, they wanted this to change. Commissions were based on the share price and the number of shares traded, even though it cost no more to trade a block of 10,000 shares than it did a “round lot” of 100 shares. Nor did the trade of a $200 stock cost more to execute than the trade of a $20 one. But the commission was nonetheless ten times as high.

 Mutual funds and pension funds made much larger trades than did individual investors and they turned over their portfolios at much higher rates. They began to put pressure on the Securities and Exchange Commission to force change and the commission acted.

 On May 1st, 1976, remembered on Wall Street thereafter as “May Day,” fixed commissions were abolished. For the first time since 1792, brokers could compete for customers by offering lower commission rates. Not surprisingly, rates plunged as discount brokers such as Charles Schwab entered the market and the traditional brokerage houses had no choice but to lower their own rates.

 This spelled the end of small, boutique brokerage houses that had been so characteristic of Wall Street in earlier times. Lacking economies of scale, they could not match the new, low rates. They had to merge or go out of business. Brokerage quickly became strictly big business, exemplified by Merrill-Lynch the biggest of all.

 The new, much lower rates also caused a huge increase in daily volume. It is economics 101, after all, that when prices go down, demand goes up. The days when a 3-million share day was a busy one were long gone. By the 1980's 100 million share days were not unknown. That trend has continued. Billion share days are now becoming common. So while commissions have been radically reduced, total commission income has soared since 1976. Finance is a much larger part of the overall American economy than it was in the mid-20th century.

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 The digital revolution has also radically reduced the costs of international communication. The main AT&T cable across the Atlantic, laid in 1956, was made of copper and could handle only 89 simultaneous calls. Reservations had to be made to make these calls at a particular time and the per-minute price was very high. There were only about 1 million overseas calls a year originating in the United States in the 1950's. Today, with satellites and fiber optic cables greatly increasing capacity and thus producing a radical reduction in cost, tens of millions of calls are made every day. Combined with email, instant messaging, and video conferencing, this has allowed the securities industry to effectively merge into a single global market that operates around the clock. What happens in Tokyo is immediately reflected in markets further west as they open.

 This communications revolution has also allowed the financial markets to lose their geographic specificity. In the 1950's, major players on Wall Street had no choice but to work in New York. By the 1980's that was no longer true. Michael Milken, perhaps the best known figure on Wall Street in that decade lived in Los Angeles.

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 But while computerization remade Wall Street, and made it much more profitable, it also caused great problems for the street as computer trading programs could, and some times did, spin out of control.

 The 1980's saw the end of the greatest period of peacetime inflation in the nation’s history. As the inflation rate fell, interest rates fell commensurately, increasing bond prices and Wall Street’s Dow-Jones Industrial Average began a breath-taking rise. It crossed 1000 for the last time in 1982 and by 1987 stood at 2500.

 This great bull market, of course, caused more and more people to begin investing, but as always they sought ways to hedge against loss. For the first time in history, computers made this possible, at least for awhile. Using complex trading strategies that involved not only stocks and bonds, but also puts (the right to sell a stock at a given price before a certain date) and calls (the right to buy a security at a set price before a certain date), computers could trade almost instantaneously and create what was called “Portfolio insurance,” protecting the customer from loss.

 This worked well in normal market conditions. But, it would turn out, not in the unusual conditions that occur when the market turns volatile.

 The market, five years into a bull run, began to cool off in the fall of 1987. The Federal Reserve was raising interest rates to prevent the recurrence of inflation. The great merger activity of that decade was slowing down as federal anti-trust regulators began pushing back. The budget deficit was going up, making investors worry about future tax increases. People began to become more cautious and the DJIA declined by ten percent in the week that ended on October 16th.

 People with this new portfolio insurance were assured that they had nothing to worry about. But as the market fell, more and more puts and calls had to be sold to maintain the hedge. On Friday, October 16th, portfolio insurance providers sold a staggering $4 billion worth. But they would have needed to sell $12 billion in order to provide full protection. That was not possible.

 Arbitragers, traders who make money by exploiting price differentials, saw opportunity and on Monday, October 18th, an avalanche of sell orders were waiting for the opening bell. A vicious circle developed, where more selling, required more puts and calls to be sold, which generated more selling. By the end of the day, the market was down 23 percent on volume of 600 million shares, three times the previous volume record.

 The next day, the Federal Reserve promised to provide any needed liquidity and the market steadied. The stock exchanges instituted “circuit breakers” to halt trading if prices fell by more than a certain percentage, allowing traders to catch their breath and allow the panic to subside. The SEC also instituted new regulations. The particular form of out-of-control computer trading that led to the crash of 1987 won’t happen again, but that is not to say that new computer trading techniques won’t also cause a new crashes.

 Because the crash had been caused by computer programs run amok, not by fundamental economics, the market soon began to climb again and regained its old high in only two years (it had taken 25 years for the DJIA to regain its 1929 high, a measure of how much Wall Street has changed since the 1920's).

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 In the 30 years since the crash of 1987, the securities industry has become much larger as the world has become much richer. The securities has also become much more integrated internationally.

 Just as the actual seats on the stock exchange had disappeared in 1881, when the trading became to active for sit-down auctions, the symbolic seats, the ownership of which entitled the holder to trade on the exchange disappeared for the same reason in 2005. That year the NYSE merged with rival Archipelago and became a for-profit company. In 2007, it merged with Euronet, the European combined stock market and became NYSE -Euronet, the first transatlantic stock exchange.

 Volume has continued to rise, as has the Dow-Jones Industrial Average, which in 2018 climbed to a level ten times what it had been in 1987.

 Trading strategies and computer trading programs have become ever more complex and stock trading ever more automated. Today’s Wall Street bears little resemblance to the insular boy’s club it essentially was as late as 1960, when the 1350 members of the New York Stock Exchange were in charge of the Street. So while the crowded trading floor of the New York Stock Exchange was the public face of Wall Street, today it is a Bloomberg screen, glowing with numbers moving at a breath-taking pace.

 What hasn’t changed, of course, is human nature. As Wall Street becomes ever more abstract, fear and greed will still be the dominant emotions moving the markets. And new technologies and new computer trading programs will produce plenty of both.