

FIRM CHURN ON MAIN STREET AND WALL STREET

STOCK MARKETS BEGAN the year with a big divergence between movements in the valuations of so-called new economy and old economy firms. Indeed, since the New Year, the Dow Jones industrial average of 30 major, established stocks fell by around 14 percent, whereas the Nasdaq stock index, which contains many new economy firms, jumped by nearly 25 percent (see Chart 1). Much of this split reflects a growing belief among investors that the high-tech revolution will cause a massive shift in profitability away from older industries to the newer, high-tech sector. While these changes in relative stock prices may seem novel, shifts have occurred during other periods of economic transformation.

In fact, since the mid-1970s, the U.S. economy has undergone several waves of restructuring as capital and labor shifted from declining to growing industries in a process of creative destruction. Driving these changes are fundamental factors, such as product innovations (for example, the personal computer and the Internet), increased foreign competition and dramatic price developments (such as energy price swings or inflation). In this process, called the churn, the economy redirects resources toward their most profitable use, often resulting in a substantial turnover among firms.¹

Accompanying the increased churn on Main Street has been a faster turnover among the leading stocks on Wall Street. To a great extent, developments on Main Street affect Wall Street, and vice versa. For example, innovations in computer technology have driven up the value of high-tech stocks, while improvements in financial markets have helped nurture the high-tech sector.

The stock market values (market capitalizations) of different firms mirror aspects of Main Street because stock valuations embody the collective judg-

ment of many investors about the firms' future profitability, growth and risk. As new industries emerge and old ones die, the relative stock market capitalization of firms changes. In this way, creative destruction on Main Street shows up on Wall Street.

This article relates shifts in the industrial structure of the U.S. economy to the churn among the leading stocks in major stock indexes and exchanges. Although creative destruction has led to turnover in the leading American stocks throughout the 20th century, the churn's pace has picked up in recent decades, likely in response to increased turnover of firms on Main Street.² Furthermore, there are some interesting industrial patterns in the financial churn. To illustrate these points, I review changes in the most widely known American stock index, the Dow Jones industrial average. I then shift to the broader Standard & Poor's Corp.'s market index of 500 stocks and the Nasdaq stock exchange. I conclude with some suggestions about the broad meaning of the stock market churn and some practical implications for policymakers and investors.

How the Dow Churns

One of the best available gauges of stock market churn over the long haul is the rate of change in the firms that make up the Dow Jones industrial average. Charles H. Dow created this index in 1896, using the average price of 12 leading stocks. Many of the original companies produced farm goods and were later replaced by rising manufacturing firms. Indeed, only one of the original 12, General Electric Co., founded by Thomas Edison, is currently in the index, largely because of its success in transforming itself over the last century. The Dow expanded to cover 20 stocks in 1916 and added 10 more in 1928, bringing the total to 30. Of these 30 companies, only three are still in the index: General Electric, General Motors Corp. and what is now Exxon Mobil Corp. Over time, the Dow has increasingly become more service and high-tech oriented and less dominated by heavy manufacturing and energy firms. For example, since the mid-1980s, companies like McDonald's Corp., Intel Corp.

Chart 1
Dow Jones Industrial Average and Nasdaq in Early 2000

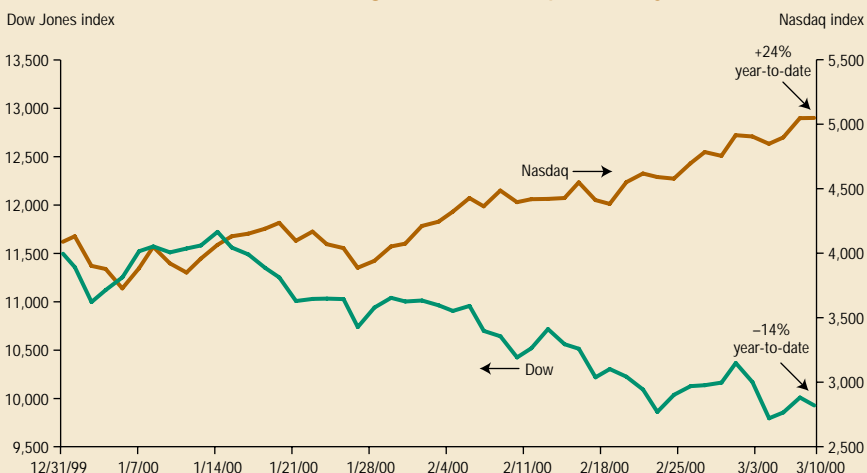
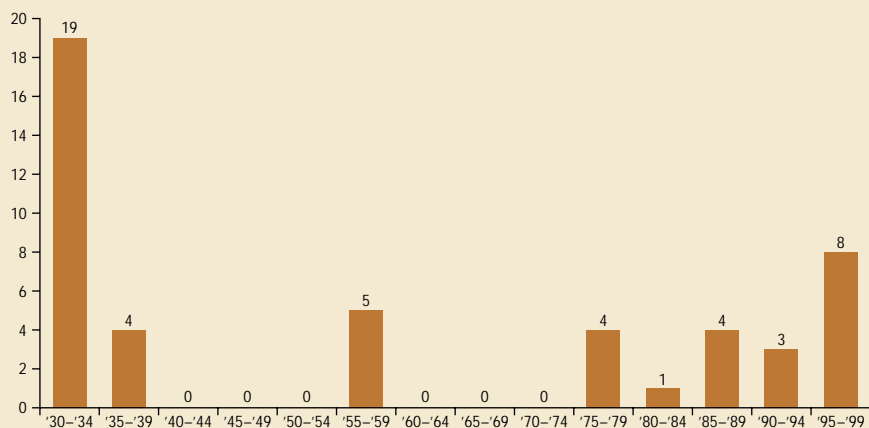


Chart 2
Change in Dow Jones Industrial Average Composition, 1930–99

Number of changes to index



and Microsoft Corp. have replaced Dow stalwarts such as Goodyear Tire & Rubber Co., U.S. Steel and Texaco.

Much, but not all, of the turnover in the Dow since 1928 occurred during the Great Depression. Chart 2 plots the number of Dow firms replaced in each five-year period since 1930. The number of changes peaked in the early 1930s and then generally remained low until the mid-1970s. Although some changes were clumped together in the late 1950s, the early post-World War II period was an era of stability. Since the mid-1970s, however, the Dow's composition has changed at a faster pace, reflecting a more rapid churn in the U.S. economy.

Prior to the last two economic expansions, there was a tendency for the churn to be concentrated during downturns, such as the Great Depression and the recessions of the late 1950s and late 1970s. More recently, however, we have seen a fast churn during the last two economic expansions. To some extent this reflects the timing of the high-tech revolution, exemplified by the addition of Hewlett-Packard Corp., Intel and Microsoft to the Dow during the 1990s.

The faster churn may also stem partly from steps taken to deregulate the U.S. economy in the late 1970s and early 1980s. These actions, which fostered greater competition and increased foreign trade, allowed the natural churn of the market system to operate during good times, making it easier for the un-

employed to find new jobs. In this way, our recent experience with free market policies during the long expansions of the 1980s and 1990s has helped us recognize what Cox and Alm call "the upside of downsizing."³

One drawback of tracking the Dow's composition is that firms in the index are picked partly because they have long track records that suggest they will endure. As a result, it takes a long time for a rising firm to enter the index. This factor, plus the small number of stocks in the Dow, limits the index's ability to track the industrial mix of leading stocks. This subject is better studied using the S&P 500.

The Churning Leadership of the S&P 500

Relative to the Dow, the S&P 500 is a broader index of stocks that typically includes Dow components. The S&P 500 comprises 500 stocks whose breadth and blue-chip characteristics have encouraged investors to use it for passive index investing and as a benchmark for judging the returns of individual stocks or of actively managed portfolios. These characteristics also make the top 10 U.S. companies in the S&P 500 a good mirror of the industrial mix of leading U.S. firms.⁴

For example, as shown in Chart 3, four of the 10 most valuable firms in 1970

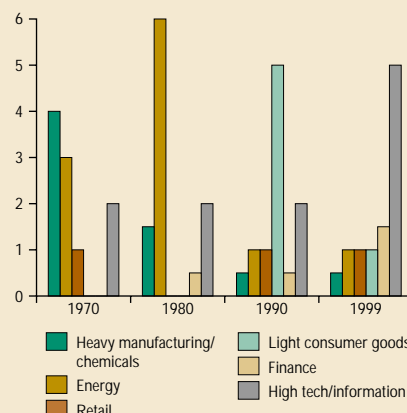
were manufacturers: General Motors, Eastman Kodak Co., General Electric and Xerox Corp. Of the remainder, three were oil producers, one was a retailer and two—IBM Corp. and AT&T Corp.—were early high-tech firms. By 1980, six of the top 10 firms were in the energy industry and only one and one-half were heavy manufacturers (General Electric was reclassified as half manufacturing and half financial). This shift in industrial mix reflected two factors. One was the rise of foreign manufacturers, which reduced the profitability and market dominance of their U.S. counterparts. The second was the increase in oil reserves and the returns to oil exploration companies.

A decade later, however, only one energy firm remained among the top 10 S&P 500. This reflected not only the sharp decline of oil prices in the mid-1980s but also the decade's consumption boom. By 1990, five of the top 10 companies produced light consumer goods, including household products maker Procter & Gamble Co. and food industry giant Coca-Cola Co. The 1980s consumer boom also propelled an innovative retailer, Wal-Mart Stores, into the top 10 ranks of the S&P 500.

While consumer spending remained strong in the 1990s, the mix of household and business purchases shifted in response to the Information Revolution. The rise of new information technolo-

Chart 3
Industry Composition of Top 10 S&P 500 Index Firms, 1970–99

Number among top 10



The more dramatic rise of high-tech companies in the Nasdaq rankings relative to other exchanges or indexes largely stems from the more open, upstart nature of this exchange.

Table 1
Top 10 Firms by Market Capitalization at Year-End 1999

S&P 500	
Firm	Market value (\$ billions)
Microsoft	604.1
General Electric	507.7
Cisco Systems	366.5
Wal-Mart Stores	307.8
Exxon Mobil	278.2
Intel	275.0
Lucent Technologies	235.0
IBM	194.4
Citigroup	187.7
America Online	169.6

Nasdaq	
Firm	Market value (\$ billions)
Microsoft	604.1
Cisco Systems	366.5
Intel	275.0
Oracle	159.5
MCI WorldCom	150.6
Dell Computer	130.8
Sun Microsystems	119.8
Qualcomm	116.2
Yahoo	113.9
Amgen	61.3

gies embodied in the personal computer, Internet services and advanced telecommunications devices has profoundly affected both the structure of the U.S. economy and relative stock valuations. In fact, by the end of 1999, five of the top 10 S&P 500 firms were high-tech companies, up from only two in 1990. (For a list of the current top 10 S&P 500 firms, see Table 1.)

There are some caveats in interpreting the top 10 rankings. One is that some changes in the industrial mix partly reflect mergers. Another is that the analysis focuses on U.S. firms. In addition, shifts in the top 10 rankings probably overstate the magnitude of sales and employment shifts; nevertheless, changes in the top 10 ranks likely reflect the *direction* of changing economic fundamentals. Another drawback of tracking these rankings is that the S&P 500 contains mostly mature firms, implying that it takes a long time before newly rising companies are added. Examples include Microsoft, Intel and Cisco Systems, which were only added in the late 1990s even though they are now among the index's 10 most valu-

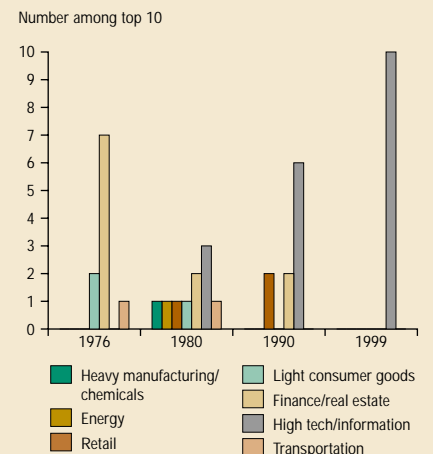
able firms. For this reason, the top S&P 500 stocks do not provide the most timely picture of where the industrial structure of the U.S. economy is headed in the long run.

The Nasdaq and the Churn

Information about future industrial trends is better reflected by the composition of the top stocks traded on the Nasdaq. Unlike the Dow or S&P 500, which are baskets or indexes of a fixed number of stocks, the Nasdaq is a stock exchange. It is an all-electronic exchange, with no physical trading floor like the New York and American stock exchanges. Of these three exchanges, the Nasdaq is generally seen as having the easiest requirements and standards for firms to be listed. For this reason, the Nasdaq more quickly lists risky, upstart companies with high growth prospects. As a result, the top Nasdaq firms are more likely to reflect economic trends, such as the rise of high-tech products.

While one often hears the term "tech-heavy Nasdaq" in press reports, this description did not always apply. As illustrated in Chart 4, seven of the top 10 most valuable Nasdaq firms in 1976 were financial companies, reflecting the combination of high inflation and financial market innovation in the 1970s that boosted the value of non-

Chart 4
Industry Composition of Top 10 Nasdaq Firms, 1976-99



bank financial firms. Under these conditions, businesses and households sought financial investments that were less battered by inflation than were bank deposits, which suffered from ceilings on deposit interest rates that did not keep up with rising market interest rates. As a result, nonbank financial firms gained market share from banks and were important relative to other companies in the growth-oriented Nasdaq.

However, by 1980 three high-tech firms rose to the top 10 as the personal computer industry began to blossom. This trend continued over the next 20 years. By 1990, six high-tech firms were among the top 10 most valuable Nasdaq companies, and by summer 1999 all of the top 10 firms were high-tech concerns (see Table 1). The more dramatic rise of high-tech companies in the Nasdaq rankings relative to other exchanges or indexes largely stems from the more open, upstart nature of this exchange.

Conclusion

The dynamic nature of the U.S. economy is reflected not only in changing employment or sales data but also in the changing valuations of firms in the stock market, where countless numbers of investors assess the value of companies every day. In this sense, the churn on Wall Street can be viewed as the flip side of the churn on Main Street. Thus, the stock market can provide useful information about the patterns of creative destruction in the U.S. economy.

One example is the pace of change in the composition of the Dow, which has tracked the increased churn in the U.S. economy during the last 25 years. Another is the way the leading stocks in the S&P 500 reflect the evolving industrial structure of the economy. And, although stock market data can be volatile, some stock market information has the advantage of being forward-looking, unlike employment data, which tend to lag economic change, or sales data, which tend to reflect current conditions. In this regard, changes in the top 10 most valuable Nasdaq firms back in the early 1980s gave a good indication

of the high-tech revolution that greatly restructured America's economy in the 1990s. More generally, these three examples illustrate how the stock market has reflected many of the broader economic, political and cultural factors that have been reshaping the U.S. and the world.

The churn in the stock market also has some practical implications for policymakers and investors. One is that turnover among firms is the norm, not the exception. What is the exception is the period of stability among the leading stocks in the 20 or so years following World War II. A second implication is that such turnover poses some risks for overly relying on a conventional value approach to investing, in which portfolios are overweighted in favor of established, leading companies that have low price-earnings ratios. And a third is that investors could diversify against the risks posed by stock market churn by carefully investing some portion of their portfolios in growth stocks, some of which have the potential of becoming the blue-chip stocks of the future.

—John V. Duca

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Notes

- ¹ The seminal book on the churn is Joseph A. Schumpeter's *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process*, Vol. 1 (New York: McGraw-Hill, 1939). For further analysis, see W. Michael Cox and Richard Alm, "The Churn: The Paradox of Progress," *1992 Annual Report*, Federal Reserve Bank of Dallas.
- ² See W. Michael Cox and Richard Alm, "The Churn Among Firms: Recycling America's Corporate Elite," *Federal Reserve Bank of Dallas Southwest Economy*, Issue 1, January/February 1999, pp. 6–9.
- ³ See W. Michael Cox and Richard Alm, "The Upside of Downsizing," *Federal Reserve Bank of Dallas Southwest Economy*, Issue 6, November/December 1996, pp. 7–11.
- ⁴ This point is emphasized in a recent article by E. S. Browning, "Will Tech Stocks' Surge End with the Decade?" *Wall Street Journal*, August 23, 1999, pp. C1–2.



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