



'NET INTEREST' GROWS AS BANKS RUSH ONLINE



INSIDE

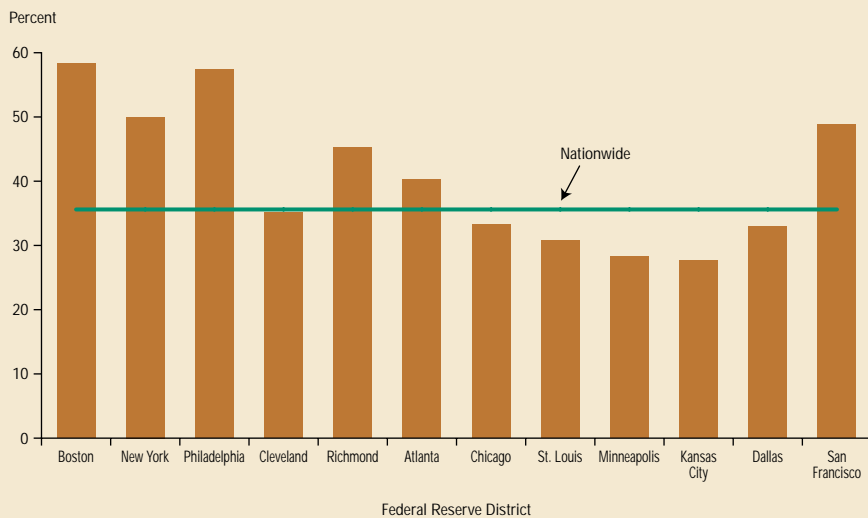
*Firm Churn on Main Street
and Wall Street*

Capital In and Out of China

WITH SPEED AND ingenuity worthy of any of the hottest dot-com companies, commercial banks are staking out positions on the Internet—ground zero in the 21st century battle for market share. While true Internet banks are capturing attention for their radical business strategies, community banks, often acting collectively, are quickly carving out their own online niches to attract business and strengthen customer relationships. The big banks have the most ambitious agendas, attempting to overtake nonbank competitors that early on established a strong presence in online financial services. Based on the data available, Eleventh District banks have been as aggressive as similarly sized banks nationwide in pursuing an Internet presence.

As with most electronic commerce ventures, the revenues are still small. Moreover, the risks inherent in Internet-based electronic payment systems are considerable. But the current spate of product innovations could yield the next killer application, and many more technological advances are on the horizon. For banks that manage to grab a share of the burgeoning market, the profit potential may be enormous.

Chart 1
Banks with a Web Site
 (December 31, 1999)



SOURCE: Reports of Condition and Income.

The True Internet Banks

The Office of Thrift Supervision approved the first all-Internet charter, for Security First Network Bank, in 1995. The first national charter approved for an electronic bank was given to Houston-based CompuBank, N.A. in August 1997. Initially, CompuBank did not offer banking transactions over the Internet, but added that feature later. By year-end 1999, nine cyberbanks were in existence. Their business strategy hinges on keeping capital expenditures low by not operating physical branch offices. Customers transact with the bank using a personal computer and a secure Web browser—software that encrypts information sent over the Internet—ATMs, mail, telephone and fax. In most instances, Internet banks strive to underprice their conventional competitors on fees and pay higher interest rates on deposits.

As is typical in the e-commerce economy, few of these fledgling entities have achieved consistent and sustained growth and profitability. Yet some have already attracted suitors. In 1998, Royal Bank of Canada purchased Security First Network Bank as a vehicle for expanding its market share in the United States.

In January, E-Trade Group Inc. received regulatory approval to acquire Telebank Financial Corp. in what was the first merger of an online brokerage and an online thrift institution. The resulting entity offers single log-on for brokerage and bank accounts, as well as a web page with consolidated account information.

Online Strategies

With similar celerity, traditional bricks-and-mortar banks are adopting the Internet as an auxiliary distribution channel. Federal banking regulatory agencies report that more than 3,500 banks and thrifts operated web sites at year-end 1999, and new sites are going live daily. These banks are employing various online strategies, which banking regulators classify into three broad categories.

The most basic are informational, or Level 1, web sites, which serve as marketing tools. They convey publicly available information, such as loan or deposit interest rates and product information, and may allow customers to send nonsensitive electronic mail, such as a request for a brochure. These sites may also allow the bank to collect data

about visitors to refine sales and marketing efforts.

More sophisticated web sites allow for interactive confidential information transfers between users and financial institutions. Known as Level 2, or communicative, web sites, they allow data or file uploads or downloads, enabling customers to make inquiries about their accounts, for example, or submit loan or deposit account applications.

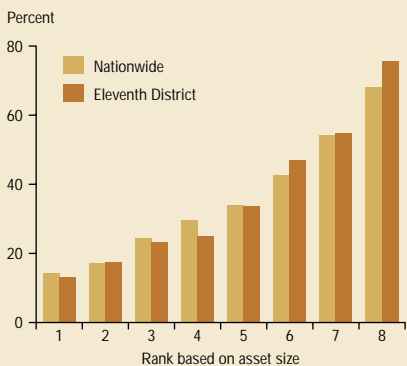
The most complex web sites are Level 3, or transactional, information systems, which allow customers to make real-time queries about accounts, update account information, transfer funds, pay bills and make other transactions. As the technology becomes cheaper and more reliable, transactional banking web sites, once the domain of the largest banks, are proliferating. Based on interviews with vendors, the Comptroller of the Currency estimates that over 90 percent of new banking web sites will be fully transactional.¹ As of June 30, 1998, there were 223 transactional bank web sites, based on information collected informally by the banking regulatory authorities. By year-end 1999, roughly 1,121, or about one-third of bank and thrift web sites, had transactional capabilities. Add credit unions to the number and the total rises to 2,100 transactional sites nationwide.

The attraction for financial institutions is clear. The cost of an Internet banking transaction is an estimated 1 cent, compared with \$1.14 per transaction by teller, 55 cents by phone, 29 cents by ATM and 2 cents by proprietary computer system.²

The Mouse That Roared

Little hard data about banking web sites exist, and most of the information gathered thus far has resulted from informal monitoring by banking regulators. However, beginning in June 1999, domestic insured commercial banks were required to report the primary Internet web address of their home page on the quarterly Reports of Condition and Income, also known as call reports, that they file with the federal banking agencies. Because banks only recently began reporting this information, these

Chart 2
Banks with a Web Site,
by Asset Size
(December 31, 1999)



SOURCE: Reports of Condition and Income.

web data are subject to considerable error. Based on the call reports, Chart 1 depicts the proportion of banks with web sites as of year-end 1999. The Boston and Philadelphia Federal Reserve Districts had the highest proportions of banks with web sites, at 58 percent and 57 percent, respectively. The Kansas City and Minneapolis Districts had the lowest proportions, with about 28 percent of the banks in both districts reporting a web presence. In the Dallas District, 33 percent of banks had web sites, which was just below the nationwide figure of 36 percent.

In Chart 2, the banks are divided by asset size into eight equal groups, with the smallest banks in Group 1 and the largest in Group 8. The chart shows that the larger banks are more likely than the smaller banks to have web sites. Further, Eleventh District banks closely follow the trend exhibited by banks nationwide. Of the largest banks, 68 percent nationwide and 76 percent within the District have web sites. Conversely, among the smallest banks, 14 percent nationwide and 13 percent in the Eleventh District are on the web.

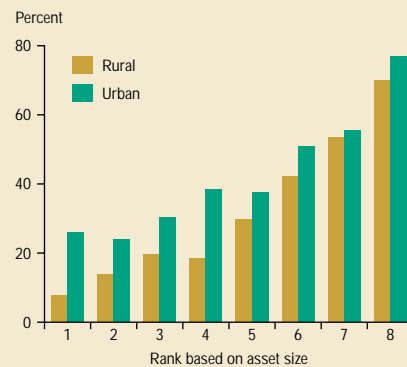
Charts 3 and 4 show the differences between urban and rural banks with regard to Internet activity. In Chart 3, U.S. banks are divided by asset size and location. Among both urban and rural banks, the larger banks were more likely than the smaller banks to have web sites. Further, among the smaller

banks, urban banks were far more likely than rural banks to have web sites. In Group 1, which represents the smallest banks, 29 percent of the urban banks reported having web sites, compared with just 8 percent of the rural banks. Similarly, in Group 2, 27 percent of the urban banks had web sites, more than double the 13 percent of rural banks. In contrast, at the other end of the size spectrum, the proportion of rural banks on the Internet equaled or even exceeded the proportion of urban banks with web sites.

Eleventh District banks exhibit a pattern nearly identical to banks nationwide, with the smaller urban banks being more aggressive than smaller rural banks on the World Wide Web (Chart 4). In Group 1, 26 percent of rural banks and 8 percent of urban banks had web sites. In Group 2, 24 percent of urban banks and 14 percent of rural banks had sites. Within the District, the larger rural banks have gone online in similar proportions to their urban counterparts.

Informal monitoring by Dallas Fed banking supervision staff indicates that more than half of state member banks in the Eleventh District maintained web sites as of year-end 1999. Of these sites, 18 percent were informational, 27 percent were communicative and 55 percent were fully transactional.

Chart 4
Eleventh District Banks
with a Web Site,
by Asset Size and Location
(December 31, 1999)



SOURCE: Reports of Condition and Income.

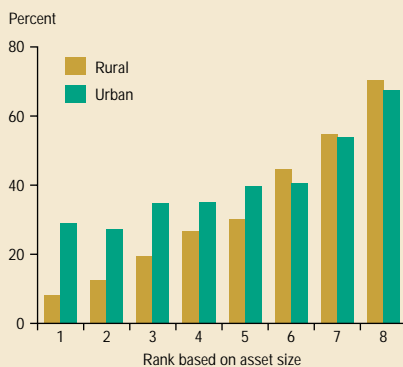
Dot-Com Banking

Internet banking is emerging as more than a means of putting existing services online. Innovative partnerships and strategic alliances have provided many revenue-generating opportunities. Some bank web sites have bundled information and services in useful ways to create a sort of electronic resource center or virtual mall with links to other services and vendors. By positioning their web sites as an access point to a range of service offerings outside their traditional lines of business, banks are generating new fee income from advertising, referrals and commissions from their web partners.

Some financial institutions are making use of "screen-scraping" technology, which aggregates account data from various web sites with customer permission. The web site then becomes a portal for all of a customer's financial transactions. One banking web site, expected to be launched in April, will use screen scraping to assemble all of a customer's financial holdings onto one web page, including stocks, mutual funds, e-mail, credit cards and other account-related information. The site will also provide "virtual personal assistants," which can help with personal chores, shopping, travel services, news, calendars and personal-organizer tasks.

A much-anticipated new service is

Chart 3
U.S. Banks with a Web Site,
by Asset Size and Location
(December 31, 1999)



SOURCE: Reports of Condition and Income.

The banking industry has long embraced the concept of electronic financial transactions, having pioneered such services as telephone banking and dial-up personal computer banking.

bill presentment, which is expected to do for the banking industry what online trading did for the brokerage industry. Bill presentment technology consolidates a customer's bills on one web site to allow the review of detailed invoices online. A few banks already offer bill presentment, which requires them to enter into networks with billers, such as utilities; others are in the testing stage. More than 15 million households are expected to receive their bills online by 2002, according to Jupiter Communications, a technology consulting firm.³ As such, bill presentment offers a huge marketing opportunity for banks to gain insights into customers' buying habits, payment records and risk profiles.

Mixed Consumer Response

The banking industry has long embraced the concept of electronic financial transactions, having pioneered such services as telephone banking and dial-up personal computer banking. Consumers have developed a high degree of comfort for using remote basic banking services, as demonstrated by the rapid proliferation of ATMs since their introduction 30 years ago.

The public is quickly becoming Internet-savvy. Already more than half of all U.S. households have at least one personal computer, up from about one-third in 1997. A PricewaterhouseCoopers survey found 43 percent of computer owners were connected to the Internet in 1999, up 50 percent from 1998.⁴

One of the primary uses for personal computers is to research financial information. However, widespread consumer acceptance of Internet banking has yet to be achieved. Only a small proportion of banking customers—6.6 million households—had online banking accounts in 1998, according to International Data Corp., a technology consulting group.⁵

A big hurdle for banks is that consumer confidence is shaky. One market study, conducted in August 1999 by Jupiter Communications, found that 64 percent of online consumers are unlikely to trust a web site, even if it prominently displays a privacy policy.⁶

Other industry studies have concluded that security concerns are a primary reason online users have not made a purchase.

Security risk—the potential for unauthorized access to networks, systems and databases—is inherent in electronic delivery channels. Consistent use of a range of technologies and procedures is essential to safeguard data. The major approaches include secure web servers separated by firewalls from general-purpose web servers; data encryption and digital signatures to ensure data integrity and authenticate users; and controls such as passwords and PINs, along with technologies such as tokens, smart cards and biometrics.

Federal consumer protection regulations provide an added safety net for Internet banking customers.⁷ Many of the general principles, requirements and controls within the current consumer protection regulatory framework apply to financial services conducted electronically. For example, the Fair Credit Billing Act (FCBA) and Electronic Fund Transfer Act (EFTA) establish procedures for resolving errors on credit account and bank account statements, respectively. Credit transactions are covered under the FCBA, which is implemented by Regulation Z. The regulation limits the cardholder's liability for unauthorized use to \$50. The EFTA is implemented by Regulation E, which limits consumer liability for unauthorized transactions to a maximum of \$500. Prompt notification of an unauthorized transaction or the loss or theft of an access device could substantially reduce any consumer liability. Both regulations specify initial and periodic statement disclosure requirements.

The Cookie Monster

Another critical issue is privacy, which refers to the collection and sharing of customer information. The levels of privacy on the web vary widely, and even sites with stringent privacy policies are often lax about following them. Further, web site operators with clear policies on how their customer information will be shared and monitored

are often unaware of their alliance partners' privacy practices.

A focal point of the controversy is the use of "cookies," text files planted by a web site on a visitor's computer hard drive. Cookies can convey to the web site information about a computer and its movements around the web without the knowledge or consent of the user.

In November 1999, the four federal banking agencies reported that the majority (64 percent) of the 364 financial institution web sites surveyed collected personal information.⁸ The items collected most often were the consumer's name, e-mail address and postal address. Thirty-eight percent of the institutions that collected personal information and 77 percent of those that did not had not posted a privacy policy or information-practice statement.

The privacy issue is so sensitive that it threatened to derail the Gramm-Leach-Bliley Act, which was signed into law last November. The financial services modernization law contains a number of privacy provisions and gives federal banking regulators, the Securities and Exchange Commission and the Federal Trade Commission up to six months to issue privacy regulations.

The Federal Reserve Board, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corp. and the Office of Thrift Supervision jointly released a proposed rule on February 22. Regulation P, Privacy of Consumer Financial Information, would apply to institutions regulated by the Federal Reserve. The proposed regulations that would apply to other institutions are substantively similar.

The privacy provisions of Gramm-Leach-Bliley enable consumers to prevent a financial institution from disclosing nonpublic personal information to unaffiliated third parties. The provisions do not restrict the disclosure of such information among affiliated companies.

Under Gramm-Leach-Bliley, before a financial institution can disclose nonpublic personal information to a non-affiliated third party for marketing and certain other purposes, it must provide a description of its privacy policies and an opportunity for consumers to opt out of the disclosure. In addition, a financial

institution must provide initial and annual notices of its privacy policies to consumers with whom it establishes a customer relationship.

The Federal Reserve Board's proposed regulation implements the requirements of Gramm-Leach-Bliley by defining "nonpublic personal information," "consumer" and "customer" and by providing guidance on the timing of notices and the means by which consumers can exercise their opt-out rights. Under the proposed rule, consumers can opt out at any time. The proposed regulation also contains other provisions designed to clarify the requirements of the Gramm-Leach-Bliley Act. Public comments on the Board's proposal were due by March 31.

Expectations for privacy are far greater on financial web sites than on general e-commerce sites. Banks may be in a unique position to overcome negative customer perceptions and gain a competitive advantage over nonbank competitors by leveraging their public trust and strong reputations through effective branding strategies.

A Melding of the Material and Virtual Worlds

Advancing technology is driving Internet banking, and it is relentless. Access to the Internet is becoming ubiquitous, no longer requiring a personal computer. Handheld wireless organizers, kiosks and interactive web television will soon be common access devices. A new generation of mobile phones provides Internet messaging and limited screen capabilities. As the mass market adopts these technologies, consumer demand for 24-hour, remote, self-serve access to personal financial information will push even more banks online. The number of households conducting banking transactions over the Internet may reach 32 million by 2003, according to International Data Corp.⁹

The Internet economy is forcing the banking industry to embrace new technologies, develop new business practices and adopt new ways of thinking. As a result, banks are entering untested markets, forging novel alliances, gen-

erating additional revenue streams and developing closer customer relationships. From early indications, the banking industry, in its striking transformation, has embarked on an extraordinary era.

— Karen Couch
Donna L. Parker

Couch is an analyst in the Financial Industry Studies Department of the Federal Reserve Bank of Dallas. Parker is an examiner in the Banking Supervision Department.

Notes

- ¹ Kori L. Eglund, Karen Furst, Daniel E. Nolle and Douglas Robertson, "Banking over the Internet," *Comptroller of the Currency Quarterly Journal*, Vol. 17, No. 4 (December 1998), p. 25. The study is available online at www.occ.treas.gov/qj/qj.htm.
- ² Erran Carmel, Jeffrey A. Eisenach and Thomas M. Lenard (1999), *The Digital Economy Fact Book*, 1st ed. (Washington, D.C.: The Progress & Freedom Foundation), p. 65. The numbers are in 1999 dollars.
- ³ Jupiter Communications, press release dated January 28, 1999, available online at www.jup.com.
- ⁴ PricewaterhouseCoopers, news release from United Kingdom press room dated October 4, 1999, available online at www.pwcglobal.com.
- ⁵ International Data Corp., press release dated June 1, 1999, available online at www.idcresearch.com.
- ⁶ Jupiter Communications, press release dated August 17, 1999, available online at www.jup.com.
- ⁷ Federal Financial Institutions Examination Council, *Guidance on Electronic Financial Services and Consumer Compliance*, issued July 15, 1998, available online at www.ffiec.gov/opr071598.htm.
- ⁸ *Interagency Financial Institution Web Site Privacy Survey Report*, issued November 1999, available online at www.bog.frb.fed.us/boarddocs/surveys.
- ⁹ International Data Corp., press release dated June 1, 1999, available online at www.idcresearch.com.

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

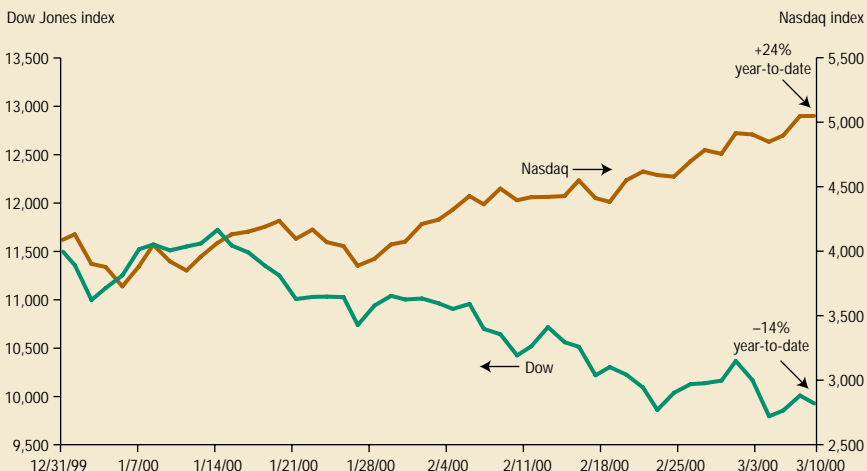
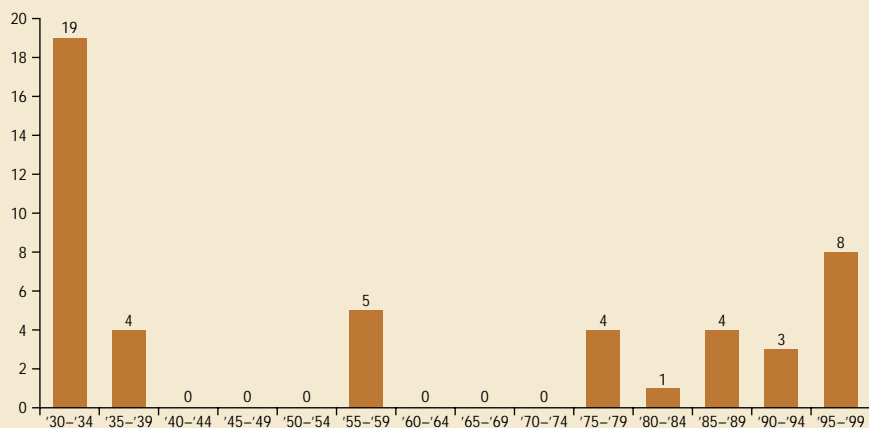


Chart 2
Change in Dow Jones Industrial Average Composition, 1930–99

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

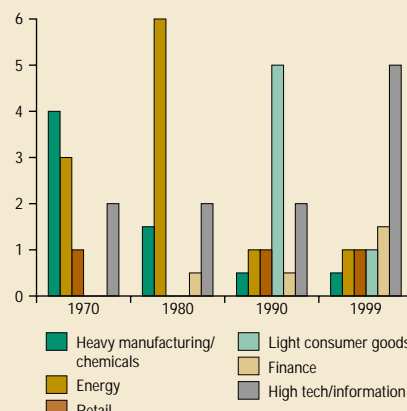
were manufacturers: General Motors, Eastman Kodak Co., General Electric and Xerox Corp. Of the remainder, three were oil producers, one was a retailer and two—IBM Corp. and AT&T Corp.—were early high-tech firms. By 1980, six of the top 10 firms were in the energy industry and only one and one-half were 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-

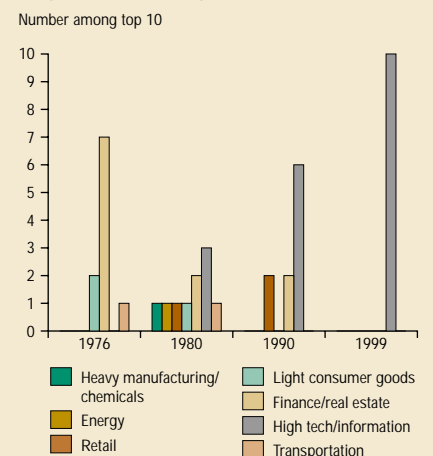
able firms. For this reason, the top S&P 500 stocks do not provide the most timely picture of where the industrial structure of the U.S. economy is headed in the long run.

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

Duca is a vice president in the Research Department of the Federal Reserve Bank of Dallas.

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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Capital In and Out of China

THE RATE AT which foreign capital has been flowing into China over the last decade has received much attention. China is now the second largest recipient of foreign direct investment in the world, after the United States. What few observers appreciate is that despite these announced capital inflows, China is a net capital-exporting country. Most interesting is that much of the net outflows are unreported in any normal way. This oddity on China's international accounting books looks like much more than just a statistical discrepancy.

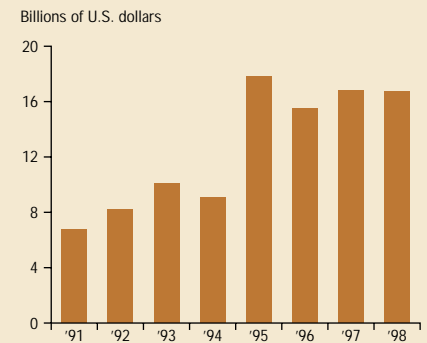
No one who applies the arithmetic of balance of payments accounting would be surprised that China is a net capital-exporting country. That is not an oddity. With respect to financial flows, what is true of individuals is true of nations, except that capital inflows and outflows involve movements in foreign currency. As an individual, if I spend more than I earn, I must make up the difference by borrowing—which is a capital inflow to me. Likewise, if a country imports more than it exports—buying more than it sells—it is a matter of pure arithmetic that the difference between the imports and exports is made up by foreign capital inflows. Conversely, if I make more than I spend, I must by definition be saving. Something similar happens with nations but is expressed a little differently. If a country exports more than it imports, receiving more in foreign currency than it spends on foreign products, the difference must typically be made up by capital outflows—outflows of foreign currency.

Since China's trade surplus is well known, the likely direction of China's capital flows should be obvious. China's accounting and reporting of this impact, however, is so irregular that it raises many questions. China's current account—which records exports and imports of goods and services—and its financial

and capital accounts—which are supposed to specify legitimate capital inflows and outflows—are positive on net. A look at Table 1 shows that in most years between 1991 and 1998 the positive foreign currency inflows under the current account were accompanied by positive foreign currency inflows under the financial and capital accounts. This is not how things are supposed to work.

In tracking down capital flow oddities, however, we have to exhaust all the normal accounting entries first. There is one more common accounting avenue that could be used when a current account surplus is not offset by a financial and capital accounts deficit. That outlet is reserves and related items, a sort of savings account at the central bank booked in foreign currency. When a country runs a current account surplus, it can legitimately accumulate foreign currency reserves, which it books under reserves and related items. Countries with fixed exchange rates routinely do this to accumulate the foreign reserves they need to maintain confidence and to defend their currency against speculative attacks if necessary. As seen in Table 1, that is what happened most years during 1991–98. A negative entry means foreign currency

Chart 1
Net Capital Outflows under Net Errors and Omissions



SOURCE: *Balance of Payments Statistics Yearbook, 1999*, International Monetary Fund.

is leaving the rest of the Chinese economy and becoming foreign currency reserves at the central bank.

Now that we have examined relations between the current account, the financial and capital accounts, and the reserves and related items, it is obvious from Table 1 that everything is still not accounted for and in balance. This brings us to what is surprising and peculiar about China's capital flows. This final avenue is the net errors and omissions

(Continued on page 12)

Table 1
China's Balance of Payments, 1991–98

(Millions of U.S. dollars)

	1991	1992	1993	1994	1995	1996	1997	1998
Current account	13,272	6,401	-11,609	6,908	1,618	7,243	29,718	29,325
Financial and capital accounts	8,032	-250	23,474	32,645	38,674	39,966	22,957	-6,323
Reserves and related items	-14,537	2,060	-1,769	-30,453	-22,469	-31,705	-35,857	-6,248
Net errors and omissions	-6,767	-8,211	-10,096	-9,100	-17,823	-15,504	-16,818	-16,754

SOURCE: *Balance of Payments Statistics Yearbook, 1999*, International Monetary Fund.

Regional Update

THE TEXAS ECONOMY continues to rebound from weakness in the first half of 1999, getting a healthy boost from rising exports and energy prices. Recovering Asian economies are benefiting manufacturing industries. Texas manufacturing employment rose 0.6 percent in January. Manufacturing jobs fell 2 percent in 1999, the first employment drop since 1991.

Oil prices doubled in the past year, rising to the highest levels in nine years. On net, high oil prices benefit the Eleventh District and are helping the energy industry recover from the low oil prices of a year ago. Texas employment in mining and oil and gas extraction has stabilized after falling over the past two years.

Although high oil prices are helping the energy industry, drilling activity has been lackluster. As reported in the Beige Book, the industry remains unimpressed by high oil prices and is unwilling to take significant risks, choosing instead to

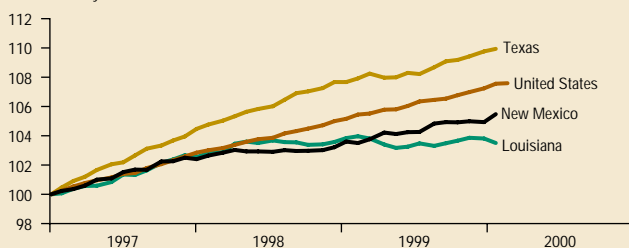
pay down debt with the increased cash flow. One respondent stressed the financial and psychological damage caused by oil prices at \$10 per barrel and said firms need to clean up their financial problems before moving forward.

The Texas Leading Index declined slightly in January, pulled down mostly by a drop in the stock price index. Between November 1999 and January 2000, seven components of the index increased and only one—average hours worked—showed weakness. Texas' 1999 job growth was recently revised down and now appears to incorporate more negative effects from low oil prices. Data currently suggest that Texas jobs grew more slowly in the first half of 1999 than originally reported, ending the year up 1.9 percent. Job growth this year will be stronger and, based on current information, may exceed 2.5 percent.

—Fiona Sigalla

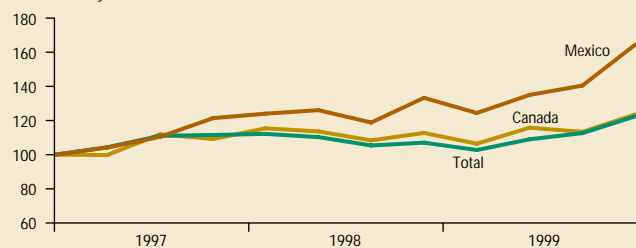
Total Nonfarm Employment

Index, January 1997 = 100



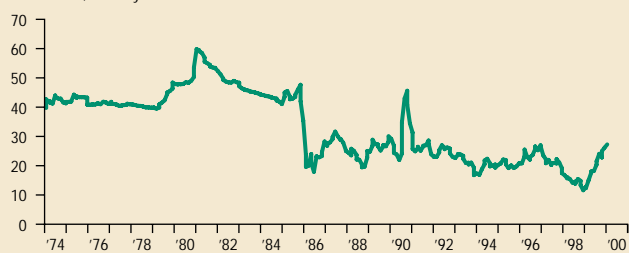
Texas Exports Continue to Bounce Back

Index, January 1997 = 100



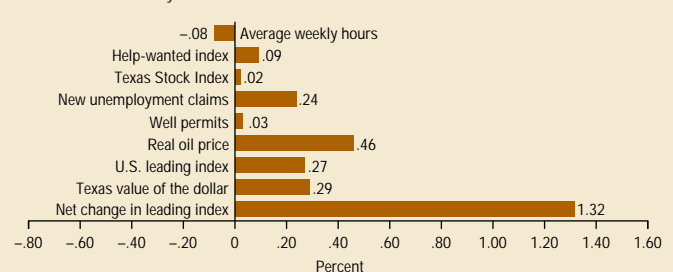
Real Oil Price

Real dollars, January 2000



Net Contributions of Components to Change in Leading Index

November 1999–January 2000



Regional Economic Indicators

	Texas Leading Index	TIPI† total	Texas employment*					Total nonfarm employment*		
			Mining	Construction	Manufacturing	Government	Private service-producing	Texas	Louisiana	New Mexico
1/00	125.9	127.8	144.1	542.8	1,081.3	1,557.9	5,939.9	9,266.0	1,890.0	737.9
12/99	126.5	128.0	143.8	536.8	1,080.8	1,552.0	5,938.0	9,251.4	1,895.6	734.1
11/99	124.7	127.9	143.6	534.8	1,080.8	1,548.6	5,914.9	9,222.7	1,896.5	734.5
10/99	124.3	127.5	144.0	532.9	1,081.4	1,546.2	5,897.9	9,202.4	1,892.9	734.0
9/99	123.4	126.7	144.2	531.5	1,080.3	1,551.3	5,887.0	9,194.3	1,889.7	734.1
8/99	123.9	126.7	143.8	529.5	1,081.0	1,536.5	5,869.1	9,159.9	1,886.4	733.4
7/99	124.2	126.3	143.7	527.0	1,081.9	1,518.1	5,850.3	9,121.0	1,889.5	729.4
6/99	124.2	125.2	144.4	525.6	1,080.7	1,534.0	5,843.1	9,127.8	1,885.4	729.3
5/99	123.3	125.9	145.3	520.9	1,082.1	1,533.7	5,820.1	9,102.1	1,883.9	728.4
4/99	123.7	125.5	147.3	524.6	1,084.6	1,532.6	5,810.9	9,100.0	1,888.1	729.1
3/99	122.0	126.5	150.7	523.0	1,093.6	1,532.2	5,823.9	9,123.4	1,895.6	725.9
2/99	121.8	127.2	152.2	521.5	1,095.3	1,528.8	5,798.1	9,095.9	1,898.4	724.1

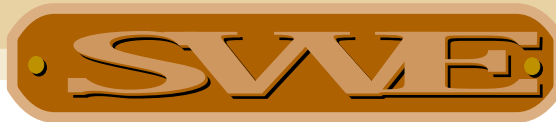
* in thousands

† Texas Industrial Production Index

Further Information on the Data

For more information on employment data, see "Reassessing Texas Employment Growth" (*Southwest Economy*, July/August 1993). For TIPI, see "The Texas Industrial Production Index" (Dallas Fed *Economic Review*, November 1989). For the Texas Leading Index and its components, see "The Texas Index of Leading Indicators: A Revision and Further Evaluation" (Dallas Fed *Economic Review*, July 1990).

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Beyond the Border

(Continued from page 10)

entry, which is supposed to account for measurement errors, generally small discrepancies, but definitely does not for China. If the net errors and omissions entry were just a measurement error, the size of the entry, whether positive or negative, would not be far from zero. Similarly, if this entry were really just a discrepancy, we would expect over time that the positive and negative values would cancel each other out. In that case, the accumulated annual balances under this item would not show a persistent pattern. This, in fact, is not only how the net errors and omissions entries of most

industrial countries behave over time but is how these entries typically behave for Asian developing or newly industrialized countries.

China is the exception. From 1991 through 1998, the most recent year for which data are available, China's net errors and omissions showed a net capital outflow every year (see Chart 1). A positive value one year did not offset a negative value the next, as in other countries. The cumulative net outflow over this period was \$101.1 billion, nearly two-fifths of total foreign direct investment in China.

What makes China's net errors and omissions particularly interesting is that they are not measured directly. The amounts are simply what is left over after the difference between exports and imports

is accounted for by other, known, capital flows. China imposes strict foreign exchange and capital controls. What causes these flows to be concealed so much more than in other countries? Political and economic uncertainty? Mistrust of the domestic financial system? Taxes and tariffs? In any case, the magnitude and persistence of this entry at least give us an idea that something large is going unmentioned year in, year out.

—Dong Fu

Dong Fu is assistant economist at the Federal Reserve Bank of Dallas.

Federal Reserve Bank of Dallas
p.o. box 655906
Dallas, Texas 75265-5906

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