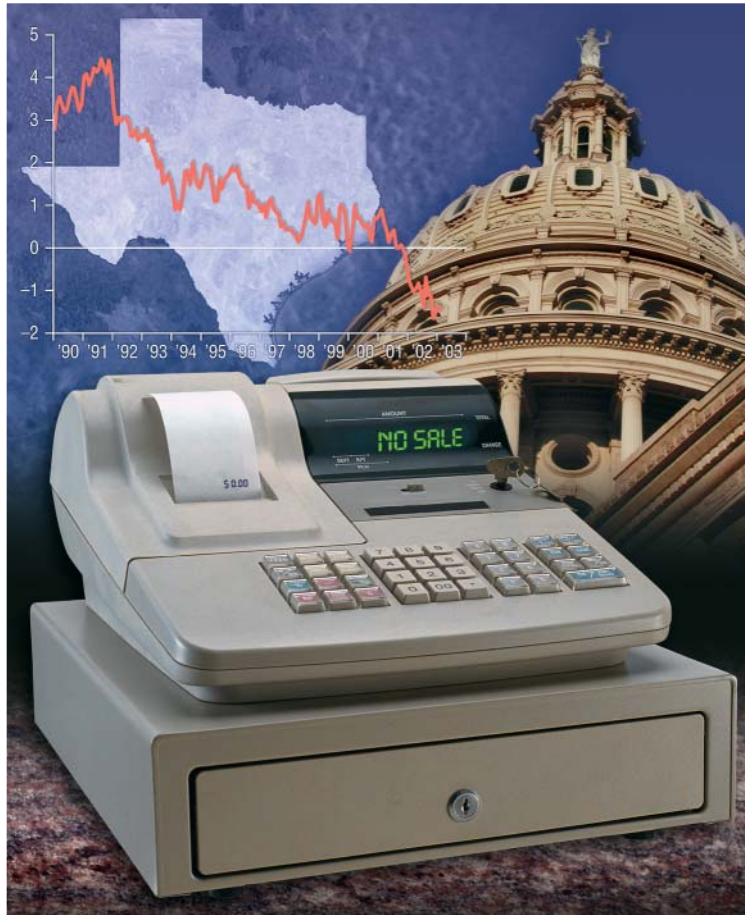


Southwest Economy



The Sales Tax Crunch

Like many others in these turbulent economic times, the state of Texas is short on cash. Changing economic conditions have forced the comptroller to revise downward her revenue estimate for the 2003 fiscal year, which ends August 31, 2003. Where the state once expected to raise \$29.5 billion in general revenue funds, it now expects to raise only \$27.9 billion.

The revenue shortfall is largely attributable to an unanticipated decline in revenues from the sales tax and its economic twin, the motor vehicle sales tax (*Chart 1*). Over the 2002–03 budget cycle, sales tax receipts are running more than \$1.8 billion (6 percent) below original expectations; tax receipts on motor vehicle sales are running almost \$0.3 billion (5 percent) below expectations. Between them, these two taxes account for more than \$1.5 billion of the state's \$1.66 billion revenue shortfall for 2003.

Where Texas once anticipated a 5 percent increase in tax revenue from sales and motor vehicle sales between 2002 and 2003, it now projects a 1 percent decrease. Furthermore, even the revised forecast is proving a tad optimistic. Through the first half of fiscal year 2003, revenues are down 3 percent year-over-year.

(Continued on page 2)

New Economy Myths and Reality

In the late 1990s, some economists announced that the American economy had fundamentally changed. According to this “New Economy” view, technological advances had brought on a higher sustained level of productivity growth, which allowed faster economic growth with less inflation. But given events since 2000—the long, steep stock market downturn, the falloff in business investment and the subsequent recession—many question whether anything in the New Economy view is valid.

Although those who hold this view consider accelerated productivity growth fundamental to the late '90s boom, other forces were also at work. These include the earlier deregulation of key U.S. industries, financial inno-

(Continued on page 5)

INSIDE:
*Falling Crime and Rising
Border Enforcement:
Is There a Connection?*

New Economy Myths and Reality

(Continued from front page)

vation and freer trade in many parts of the world. Despite this, the flood of Internet-related businesses and the spectacular rise in their stock valuations led some to see the New Economy as solely an Internet phenomenon.

Is the New Economy view simply Pollyanna economics? Or is it rooted in reality? An analysis of several myths shows that recent advances in information technology have, in fact, helped transform the U.S. economy. While such technology effects are an old story, the evidence suggests that the current situation differs significantly. The New Economy has not produced ever-increasing stock prices or tamed the business cycle. But it has accelerated productivity growth, making the economy more resilient and flexible, with less volatile growth rates and fewer and milder recessions, thereby improving living standards.

What Is the New Economy?

Many use the term *New Economy* to refer to events expected to result in always-rising corporate revenues, higher sustainable corporate valuations and the end of business cycles. We define the New Economy as one that employs technology to substantively alter production or consumption processes or both.¹

Other periods also experienced new economies. The years 1750 to 1850—the heart of the Industrial Revolution—saw a thirtyfold increase in British textile production. Whereas it took about 500 hours to hand spin a pound of cotton in the mid-18th century, 50 years later technology had reduced that time to about three hours. In the 50 years after harnessing electricity in 1880, U.S. industry increased mechanical horsepower by an estimated 100 times, an annual increase of nearly 10 percent.

These technological transformations ultimately created new economies that changed valuations, production processes, and how and where people worked. They resulted in a general improvement in living standards and a dramatic shift in the organization of production and markets. As economist Joseph Schumpeter

noted in the late 1930s, there is nothing new about technology transforming economic outcomes on both the supply and demand sides. Railroads, steam power, illumination, cable lines, electricity, air-conditioning and other innovations had profound consequences for what was produced, where it was produced and the product mix consumers demanded.

Further, these inventions seem to have followed a path similar to that of the computer and its spillovers. An initial boom is followed by saturation and then shakeout. Next comes a period when firms learn how best to utilize the new invention for long-term, stable growth, which is followed by a period of problem solving, social dislocation, and consumer and worker resistance to technological change.

New Economy Benefits

While innovation is always transforming our economy, the current situation appears to differ significantly:

- Technological change has accelerated not only the pace of innovation but also the pace at which new products gain widespread use and produce significant sales.²

- Consumer information has exploded, weakening producer pricing power and making markets more closely resemble the perfectly competitive model, in which all participants have complete information.

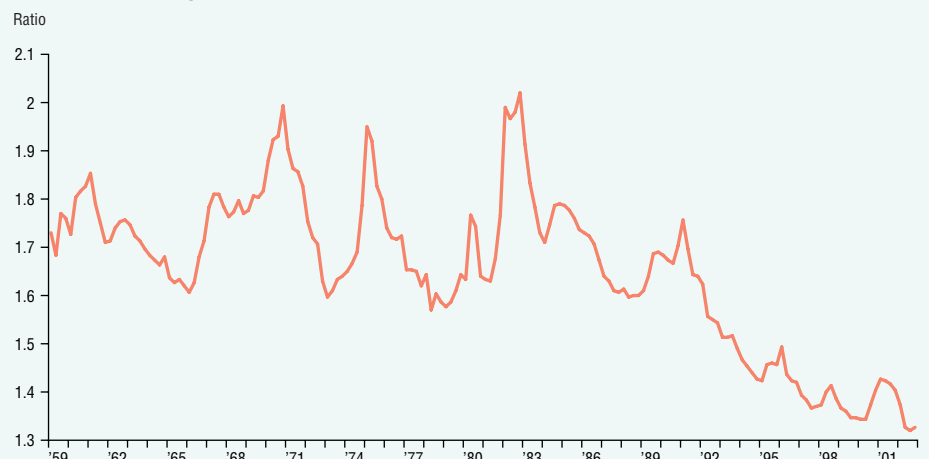
- Supply chain management, just-in-time inventory, rapid production and delivery systems, and the like are now proven business practices given momentum by new information technology. Inventories have grown increasingly smaller in relation to sales since the early 1990s (*Chart 1*). Evidence at the individual firm level and statistical analysis of GDP components suggest that applying the technology has produced a leaner supply chain that can better match inventories with sales. Better inventory management, in turn, has been largely responsible for the decline in the volatility of GDP growth, say some economists.³

- Customer service is often available around the clock. Many companies now deliver and process information and help customers via voice mail, the Internet and call centers. We take for granted service that is far better than that of a decade ago.

- Productivity growth has increased in recent years, with the rate about 1 percentage point higher in the post-1994 period than in 1973–94 (*Chart 2*). Many studies attribute this to the effective use of new information technologies.⁴ More-

Chart 1

Inventory/Sales Ratio Falls All Manufacturing Except Semiconductors



SOURCE: Census Bureau.

Excitement over new technology's potential for lowering expenses, boosting profits and expanding market share sometimes leads analysts and investors to believe the good times will never end.

over, productivity growth, coupled with falling pricing power, has raised real income across all income groups.

- Information technology has transformed our workplaces, production facilities, homes, schools and hospitals. The microchip has created a world characterized by better, faster and cheaper. Information technologies have changed where we work, how we work and what kind of work we do.

New Economy Costs

These changes, while positive, nonetheless come with costs. Replacement of existing capital is expensive, in terms of both outlays and personnel retraining. Newer equipment tends to be more complex, and technology often moves faster than some people can master it. Time that had been spent on other things is now devoted to maintaining technology-dependent environments, and learning to use the technology may take several hours, days or even weeks.

There are other trade-offs as well. Consumers' desire to stay connected to family, friends and businesses leads to continual hardware and software upgrades and has generated virtual monopolies for some providers. And increased identity theft and credit card and ATM fraud are directly linked to the commercial application of the Internet.

The New Economy has also created or exacerbated some medical conditions, such as carpal tunnel syndrome. But medical negatives always accompany change, even as people live longer, healthier lives. The good news is that the negative effects have been few and insignificant compared with those of past changes. And on the benefit side, medical breakthroughs from technological advances have become commonplace.

Dispelling the Myths

The differences between the benefits and costs of technological change, discussed above, have sometimes resulted in confusion over what the New Economy is really about. For example, do declining stock prices and rising corporate shutdowns—particularly among Internet-related firms—mean the New Economy is smoke and mirrors? Here are six New Economy myths, many of them closely linked to the rise of the Internet.

Myth 1: The Business Cycle Is Dead.

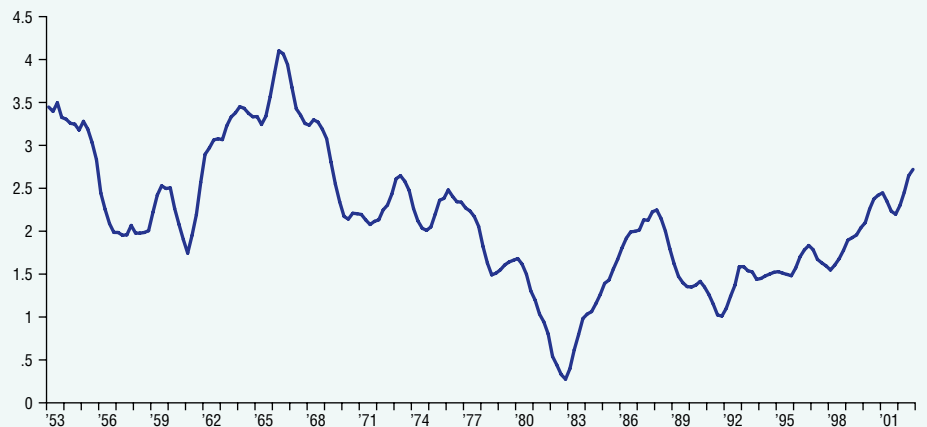
Unfortunately for investors, this myth often gets dusted off and sold as a new idea. It emerges as a boom matures and is about to end. Excitement over new technology's potential for lowering expenses, boosting profits and expanding market share sometimes leads analysts and investors to believe the good times will never end. In the midst of the 1990s

Chart 2

Productivity Growth Rises

5-Year Moving Average

One quarter percent change, annualized



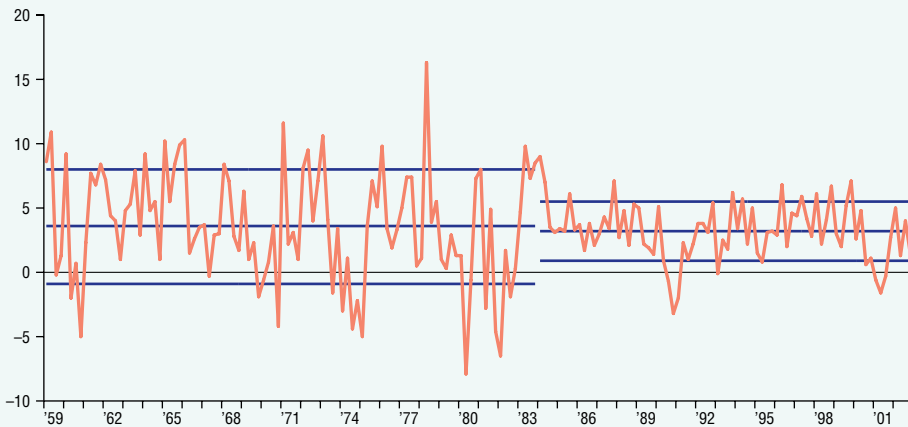
NOTE: Data are output per hour for nonfarm businesses.

SOURCE: Bureau of Labor Statistics.

Chart 3

Real GDP Growth Becomes More Stable

One quarter percent change, annualized



NOTE: For 1959–83 and 1984–2002, horizontal lines represent the average (middle line) and plus and minus one standard deviation from the average.

SOURCE: Bureau of Economic Analysis.

boom, well-known MIT macroeconomic theorist Rudi Dornbusch proclaimed, “This expansion will run forever; the U.S. economy will not see a recession for years to come.”⁵

Of course, less than three years later the expansion did end. Business cycles are not dead and never will be. The best we can hope for is that new technology will allow firms to better use information, thereby reducing output volatility and the frequency and severity of recessions. As Chart 3 shows, GDP growth since 1984 has been less than half as volatile as in 1959–83, with only two mild recessions.⁶

Myth 2: Faster Productivity Growth Permanently Lowers Unemployment and Inflation Rates. Faster productivity growth is one of the New Economy’s defining features. As long as growth rises, the economy can enjoy both low unemployment and low inflation. In other words, rising productivity growth counterbalances the inflationary effects of tight labor markets.

Unfortunately, productivity growth can’t rise forever. Once growth stabilizes, even at a high level, the possibility of low unemployment with simultaneous low inflation ends. For inflation, whether the productivity growth rate is changing is more important than its level. As productivity growth levels off, policymakers

face a sharper trade-off between inflation and unemployment.⁷

Myth 3: The Internet Changes Everything About Business Valuation. Like many technological innovations—electricity, air transportation and wireless communications, for example—the Internet has, in a sense, “changed everything.” But does this make Internet-related firms more valuable than other businesses? Some economists and analysts claimed that productivity growth would boost

future profits and that lower and more stable inflation and a more stable economy justified a lower equity premium.

Chart 4 shows the dollars that poured into Internet-related IPOs. The rapid rise during the late 1990s and in 2000 suggests investors thought business valuation rules had changed. Now, many entrepreneurs longingly recall the days of so-called drive-by venture capital, when money was often thrown at those proposing a new use for the Internet, with no regard for how profits might be made.

The fact is, business fundamentals are the bedrock of success. Information technologies allow firms to conduct business faster, cheaper and more accurately while also expanding potential markets. But that’s no reason for business enterprises (and investors) to forsake business models designed primarily to generate profits and maximize shareholder wealth.

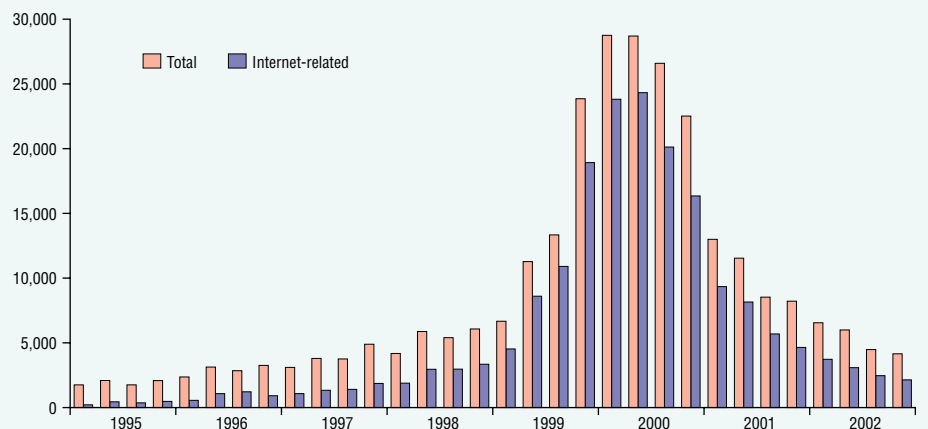
Myth 4: Customers Matter More than Profits. During the late 1990s, Internet start-ups frequently reported large quarterly losses but noted that their web traffic and accounts had increased at an astonishing rate and that further increases were expected. Following such announcements, investors often boosted the firm’s share price to astronomical levels.⁸

Nothing in a market economy matters more to stockholders than profits. Without profits, share prices eventually

Chart 4

Initial Public Offerings: Boom and Bust

Millions of dollars



SOURCE: PricewaterhouseCoopers/Venture Economics/National Venture Capital Association MoneyTree Survey.

fall, as subsequently happened to many high-tech stocks.

Looking back, it's easy to see how a speculative bubble could have formed. Investors came to believe Internet-related firms moving into new markets could quickly secure a large and loyal customer base with ever-expanding revenues. But instead, new information technology has likely increased competition and reduced profit margins. In a world of fierce competition, fast-moving information and low barriers to entry, a dominant market position can evaporate quickly.

Myth 5: Internet Traffic Doubles Every 100 Days. Linear extrapolations always make for easy, and wrong, predictions. At first, growth rates in both absolute and percentage terms can be very high, but eventually they decline. Internet traffic never doubled in 100 days, except for perhaps one brief period in 1995–96. This widely circulated myth likely began with a Commerce Department report.⁹

Actual growth rates for Internet traffic are considerably more modest but still high. Some think Internet traffic has probably doubled annually for the last several years.¹⁰ Unfortunately, exaggerated beliefs about growth rates have led to massive overcapacity and poor planning.

Myth 6: Manufacturing Is Old Economy, and It Is Disappearing. Manufacturing remains important and is being reinvented through Internet-enabled supply chain, production and performance management systems. There is no set number of manufacturing jobs needed to ensure good economic growth. As productivity increases in the manufacturing sector, fewer workers are needed to produce goods. More service jobs—such as engineering, design, sales, marketing and logistics—are created. The fact is, Old Economy companies, particularly the largest U.S. manufacturers, may be the biggest users of New Economy information technology. While some manufacturing jobs are disappearing, sector output remains steady.

The Reality

The 1990s stock market boom and record economic expansion led to the view that something fundamental had changed in the U.S. economy. The era featured rapid economic growth and low inflation and unemployment, a combi-

nation unseen in decades. This New Economy view was often confused with assertions that the commercial application of the Internet had changed basic business fundamentals and valuations, that the business cycle was dead and that Old Economy firms were doomed.

Many of these myths were dispelled when the stock market decline began in early 2000 and the economy slipped into recession in March 2001. Business cycles are alive and well. Profits matter. And Old Economy firms are not going away anytime soon.

Nevertheless, the development and adoption of new information technology appears to have brought on an era characterized by higher sustainable productivity growth. While the stocks of many high-tech firms are gone, many of the productivity benefits remain. Accelerating productivity ultimately leads to higher living standards and fewer and milder periods of declining output, making our economy more resilient and flexible.

That's the reality of the New Economy.

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Thomas F. Siems

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Notes

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¹ J. Bradford DeLong and Lawrence H. Summers, "The 'New Economy': Background, Historical Perspective, Questions, and Speculations," Federal Reserve Bank of Kansas City *Economic Review*, Fourth Quarter 2001, pp. 29–59.

² For example, it took 46 years for a quarter of American homes to be wired for electricity. Getting phones to a fourth of America took 35 years; cars, 55. More recently, the personal computer required only 16 years to penetrate a quarter of American homes, cellular phones took 13 years and the Internet seven. The rapid diffusion might be partly because these innovations built upon earlier ones. See W. Michael Cox and Richard Alm, "The Economy at Light Speed: Technology and Growth in the Information Age—and Beyond," Federal Reserve Bank of Dallas *1996 Annual Report*.

³ Owen Irvine and Scott Schuh, "Inventory Investment and Output Volatility," Federal Reserve Bank of Boston Working Paper no. 02-6, December 2002.

⁴ Among the studies are those by Stephen Oliner and Daniel E. Sichel, "The Resurgence of Economic Growth in the Late 1990s: Is Information Technology the Story?" *Journal of Economic Perspectives* 14, Fall 2000, pp. 3–22; and Dale W. Jorgenson and Kevin J. Stiroh, "Raising the Speed Limit: U.S. Economic Growth in the Information Age," *Brookings Papers on Economic Activity*, 2000, pp. 125–211. In contrast, Robert J. Gordon questions information technology's importance

to the recent productivity rise, concluding that the New Economy's effects are largely confined to durable goods manufacturing in "Does the 'New Economy' Measure Up to the Great Inventions of the Past?" *Journal of Economic Perspectives* 14, Fall 2000, pp. 49–74.

⁵ "Recession—No, Thank You!" *Wall Street Journal*, July 30, 1998.

⁶ Margaret M. McConnell and Gabriel Perez-Quiros identify the first quarter of 1984 as a statistically significant break date in the reduction of GDP volatility in "Output Fluctuations in the United States: What Has Changed Since the Early 1980's?" *American Economic Review* 90, December 2000, pp. 1464–76. In addition to new technology, better monetary policy, increased globalization and deregulation of key industries have also likely helped improve the economy's stability.

⁷ Evan F. Koenig, "Productivity, the Stock Market and Monetary Policy in the New Economy," Federal Reserve Bank of Dallas *Southwest Economy*, January/February 2000, pp. 6–12.

⁸ For example, on July 21, 1999, Amazon.com reported a substantial second quarter operating loss (roughly five times higher than the same period in 1998) but also announced that customer accounts had increased by more than 220 percent over the past year. Over the next six months—after more operating losses—the company's stock price rose by more than half.

⁹ Commerce Department, *The Emerging Digital Economy*, April 1998, citing a 1997 white paper by Inktomi Corp.

¹⁰ Andrew Odlyzko, "Internet Growth: Myth and Reality, Use and Abuse," *IMP: The Magazine on Information Impacts*, November 2000.