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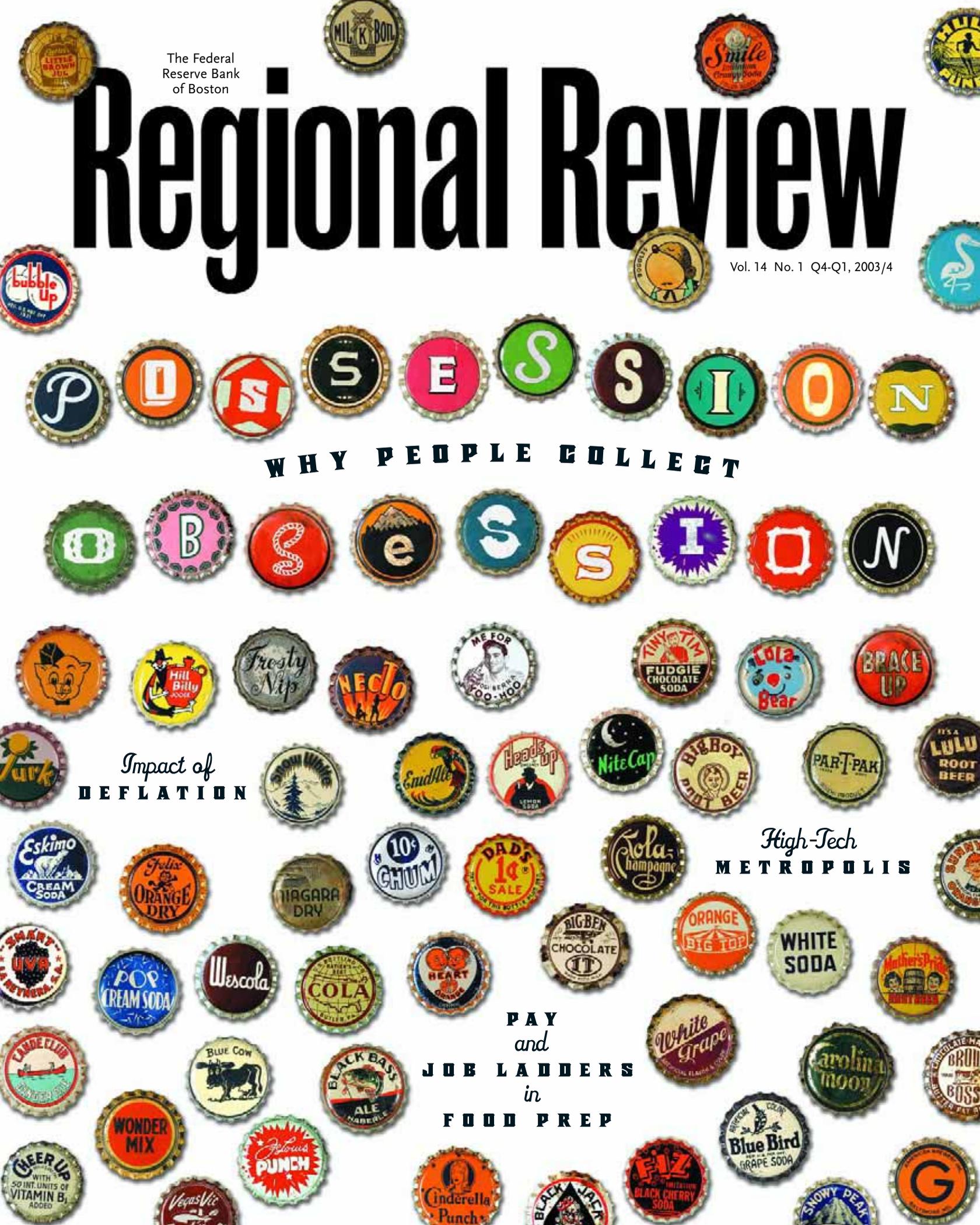
**WHY PEOPLE COLLECT**



*Impact of*  
**DEFLATION**

*High-Tech*  
**METROPOLIS**

**PAY**  
*and*  
**JOB LADDERS**  
*in*  
**FOOD PREP**



# this issue

THIS MONTH, the *Regional Review* takes on a wide array of interesting and important topics.

The long-term prospects of lower-skilled American workers continue to be a major source of public concern. In **Too Many Cooks?**, Urban Institute researchers Julia Lane and Harold Salzman and University of Massachusetts Lowell professors Philip Moss and Chris Tilly consider whether consolidation and outsourcing in the food preparation industry have led to a disappearance of traditional training opportunities and job ladders. They find that these trends may in fact generate better jobs with more extensive job ladders, but the typical entry-level worker lacks the needed qualifications to make the most of these opportunities.



In **Objects of Desire**, Carrie Conaway examines the motivations of collectors. She finds that most collectors—both individuals and institutions such as museums and libraries—hope to make an imprint on the world and preserve a legacy for future generations. But while individuals typically want to acquire every example of an item no matter how small the variation, institutions favor acquisitions that have universal appeal and represent elements of a larger story.

Finally, as inflation fell to its lowest levels in 40 years, many people began to wonder about the consequences if the inflation rate became negative and overall prices began to fall. Boston Fed economists Jeffrey Fuhrer and Geoffrey M.B. Tootell discuss the costs of deflation in **Issues in Economics**. They argue that while the probability of deflation in the near future is low, there are serious costs in both the short run and the long run.

*Cathy E. Minehan*

CATHY E. MINEHAN  
PRESIDENT, FEDERAL RESERVE BANK OF BOSTON



## Issues in Economics 2

By Jeffrey Fuhrer and Geoffrey M.B. Tootell

A steady decline in the core rate of inflation over the past few years has prompted the question: What are the economic consequences when the inflation rate drops below zero?

## Focus on High-Tech 6

By Pingkang David Yu The Boston metro area fares well when assessing a region's high-tech capacity by its share of scientific and technical occupations.

## Objects of Desire 12

By Carrie Conaway Although their motivations might appear different, both individual collectors and museum curators seek to define themselves and leave their mark on the world through the things that they acquire.

## Too Many Cooks? 20

By Julia Lane, Philip Moss, Harold Salzman, and Chris Tilly Consolidation and outsourcing in the food industry have created higher-paying food prep jobs, but also have erected barriers for lower-skilled workers trying to move up the ladder.

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By Owen Canfield



**DO IT YOURSELF**  
Improved self-checkout technology means retailers can now offer more choice for customers in how they pay.

KATHLEEN DOOHER

# observations

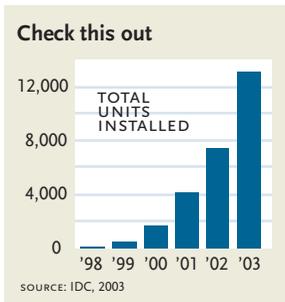
## Self-checkout checking in?

FROM STOP & SHOP to Home Depot, seasoned shoppers have begun to forego typical checkout lanes with a human cashier in favor of the do-it-yourself machinery of automated checkouts. However, although self-checkouts have become more popular, a Food Marketing Institute survey found that just 30 percent of retailers are testing them today. Of course, any new technology needs some time to get going, right?

Yet, self-checkouts aren't new. The first automated checkout system, manufactured by a company called CheckRobot, appeared more than 15 years ago in Atlanta's

Kroger supermarkets. Why did it take over a decade before the technology spread?

One possibility is that today's technology-savvy consumers are more comfortable with robotic sophistication, although the Kroger executives who evaluated the 1980s experiment were surprised at how quickly shoppers took to their system. A more likely factor is cost. Improvements in the machines' ease of use, scanning accuracy, and database technology (for keeping track of items) have all worked to reduce operating expenses. At the same time, increased competition among checkout manufac-



turers has driven down the unit purchase price. It now takes only 15 months for a device to pay for itself through labor cost savings, down from 30 months in 1991.

But perhaps the biggest factor is a heightened attention to design. Unlike the earlier one-size-fits-all machines, today's modular terminals can accommodate both a large conveyor-belt device for a home furnishing warehouse and a small kiosk-like device for a convenience store. At least one manufacturer, NCR, also helps stores design their checkout area based on layout and staff configuration. These innovations have allowed retailers to rethink how they use the machines. Now, instead of replacing staffed aisles with self-checkout lanes to cut costs, as originally conceived, retailers add them as a way to increase customer satisfaction by offering more choice in how to check out.

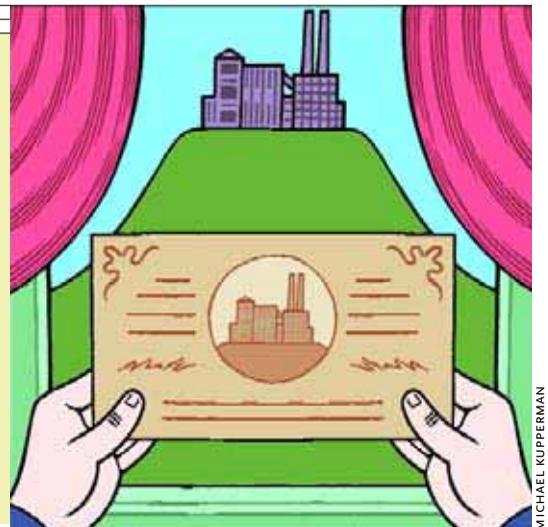
There are still some snags: items without bar codes often do not ring up correctly, machines are not always user-friendly, some systems did not initially accept the new \$20 bills, and, according to a study by IHL Consulting Group, they can actually be slower than a fully staffed checkout in certain circumstances. But more flexibility in how and where self-checkouts are set up will ultimately make the scanners more cost-efficient and popular with consumers, possibly enough to become commonplace in mainstream stores and thrive in niche markets. While they may not completely replace human cashiers anytime soon, as the kinks are worked out, self-checkouts may well check in for good.

—Brad Hershbein

## Local restocking

When it comes to picking stocks, investors may not have to look that far from home. According to University of Illinois finance professors Zoran Ivkovich and Scott Weisbenner, annual returns on local investments—nationally traded companies located within 250 miles of the particular investor holding them—outperform non-local stocks in the local investor's portfolio by 3.2 percent; among smaller, non-S&P 500 stocks, the local premium is even greater, at 6.2 percent. And this risk-adjusted premium has not diminished over time.

Why is there such a difference between the performance of investors' local and non-local investments, and why does it persist? Ivkovich and Weisbenner posit that investors can employ local knowledge to make better distinctions among local firms than among firms located farther away. >>next page



MICHAEL KUPPERMAN

## Observations

CONTINUED FROM PREVIOUS PAGE

<< But, in theory, the higher returns should boost investor demand for stocks with relatively large local ownership—especially if the stocks are of small companies—driving up their price and eliminating the return premium. History suggests at least one possible solution to this conundrum: Most investors may not yet know how to use this information to their benefit.

Some analysts believe such was the case with the “January effect,” first discussed in the late 1970s. Researchers found that investors would sell losing stocks at the end of the year in order to offset capital gains taxes and then buy them back in January, driving up that month’s returns. Knowledgeable investors could buy in December and sell in January, making an easy profit. According to more recent research, however, the January effect has diminished somewhat as individual investors have learned the game and better information technology has made it easier and faster for them to manage their own trades.

Will the local premium found by Ivkovich and Weisbenner follow a similar path? Currently, personal investors typically invest in only a couple of local publicly held firms, and few rigorously compute their gains and losses, so the benefits from local stock ownership may not be that obvious. Additionally, the information necessary to identify the best local stocks is harder to get. It is difficult for investors to know who the smart locals are, and other effects such as state taxes and trading regulations may complicate the process.

Still, as Internet communications and online databases become more sophisticated, it may become easier for investors to perform the calculations. Also, firms may start to advertise the percentage of local residents who own shares of their company if they think it will encourage other investors to buy their stock. In the long run, the opportunity for financial gain may vanish as investors catch on; in the short run, investors may have much to gain by thinking local.

—Brad Hershbein

# issues in economics

## What is the cost of deflation?

THE PROSPECT OF DEFLATION—a falling overall price level—received a fair amount of attention during late 2002 and 2003. Prompted by a steady decline in the core rate of inflation to levels not reached since the early 1960s, many people began to wonder about the economic consequences when the inflation rate drops below zero. Although the ongoing economic recovery suggests that there is a low probability of deflation in the near future, questions about the impact of falling prices are worth considering.

At first glance, falling prices might seem like a good thing. Who wouldn’t want the prices of the things he or she buys to be cheaper? But in a period of deflation, overall prices drop—including the price of labor (wages), houses and other assets, and most goods and services. In the simplest example of deflation, all prices and wages fall at the same rate. In this instance, the purchasing power of incomes and the relationship be-

With core inflation running at its lowest levels since the early 1960s, many have wondered about the economic impact when inflation drops below zero.

By Jeffrey Fuhrer and Geoffrey M.B. Tootell  
Illustration by Joe Zeff



tween the prices of different goods (hamburger versus steak, for example) would not change.

One classic argument for deflation is that anyone holding cash benefits, since a dollar bill buys more as prices fall. However, it is worth noting that no developed country in the twentieth century has ever intentionally moved to a negative rate of inflation and decided to stay there. (Japan's recent experience with declining prices is probably best described as unintentionally moving to deflation and being stuck there, rather than deciding to stay). Apparently, countries behave as if the costs of deflation outweigh any of its benefits.

It also means that we have no post-WWII examples from which to draw conclusions about how damaging the costs would actually be. Nonetheless, we can make a rough assessment by first considering the short-run costs of getting to deflation and then the long-run costs that would be permanently incurred by an economy that persistently operates with falling prices.

### THE TRANSITION COSTS

Transition costs arise in moving from an economy with a positive rate of inflation to one where prices are falling. This can happen either through a deliberate macro policy designed to reduce inflation or less

forming loans and eroding bank balance sheets—and raising the costs of the transition even more.

Although financial instruments and institutions eventually might adjust to an economy with falling prices, in the short run, these adjustments would contribute to economic weakness and increase the cost of moving the economy to deflation. And there are reasons to think that financial arrangements would have trouble adjusting completely, especially in the transition. For example, since people seem to care more about nominal losses than equivalent nominal gains, it might be difficult to get people to hold financial instruments that build in nominal declines in value in order to adjust to deflation.

**Nominal wages (money wages not adjusted for inflation) tend not to fall.** This may be an artifact of living with 60 years of post-war inflation where workers are hesitant to accept wage cuts, or it may be a more fundamental psychological attribute that people simply dislike seeing their paychecks shrink. John Maynard Keynes developed his early theories of downwardly sticky wages in the 1930s, a period not characterized by long-term inflation, suggesting that this tendency is not only the result of an inflationary environment.

Whatever the cause, if wages will not fall when other prices are falling during a significant economic contraction, real wages (wages

## The biggest long-run cost of deflation may be the problems it poses for monetary policy

deliberately when economic forces reduce inflation without an effective policy counterbalance. While the term “transition” might suggest that these costs are trivial, in practice they can be large.

**Significant economic weakness is typically what precipitates deflation.** Deflation is usually triggered by a very weak economy, and the cost of such a period of economic weakness can be extremely serious. We knew this even before the recent 14-year Japanese episode, but that experience makes the case even more vividly—disinflation requires a cost in lost output. If historical relationships hold, the short-run cost of getting the United States economy from an inflation rate of 2 percent to a deflation rate of -2 percent, for example, would be about \$1.4 trillion in lost output—or about 13 percent of one year's GDP.

**The financial system needs time to adjust to falling prices.** Our modern financial system has evolved to accommodate steadily rising prices. Long-term contracts have been written under the assumption of a low but positive rate of inflation for the foreseeable future. Any unanticipated change in the inflation rate (or an expected change with only a small lead time) would require that these arrangements adjust. While it's difficult to know exactly how long such an adjustment would take, all the changes would probably not occur immediately. In the meantime, debtors would face increasing real debt payments—the opposite of what all parties assumed when the contracts were signed. Collateral values would decline over time. During an economic contraction, this would likely lead to an even further rise in delinquency and default rates, increasing the number of nonper-

adjusted for inflation) will rise. This inability to lower real wages during times of weak labor demand might restrict employment and exacerbate the contraction—at least until wages can adjust.

### IN A STEADY STATE

If financial and labor markets are able to completely adjust, a stable deflation rate induces a positive real return to holding cash. However, an economy with stable deflation also incurs many of the same costs as when inflation is positive—and these costs may be larger than any gains to cash holders.

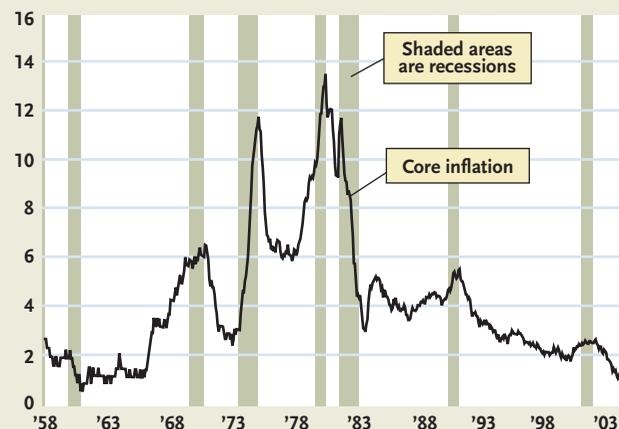
**All price changes produce some costs.** Distortions due to imperfectly indexed contracts or tax codes affect the economy just as much in deflationary environments as in inflationary ones. If taxes on capital income are not indexed to inflation, they might discourage investment in an inflationary environment (taxes would be figured on nominal returns, including the component reflecting inflation) and encourage too much investment in a deflationary period.

**The government can lose revenue when the “inflation tax” is reduced.** Since income tax rates are not indexed to prices, deflation lowers tax rates even if real spending power has not changed. At some point, those lost revenues must be recovered and other taxes must rise. If the new taxes distort economic incentives more than the inflation tax, then deflation increases the inefficiency of the economy. Even when tax rates are indexed to falling prices, there is an increased government obligation because the real rate of its outstanding debt is rising as prices fall.

## Low U.S. inflation

Core inflation has declined to about 1.6 percent.

ANNUAL PERCENT CHANGE IN CORE INFLATION MEASURED BY CPI-U  
(ALL ITEMS EXCLUDING FOOD AND ENERGY)



NOTE: Recession periods are defined by the National Bureau of Economic Research.  
SOURCE: U.S. Bureau of Labor Statistics / Haver Analytics

**There is a zero lower bound on nominal interest rates.** But perhaps the biggest steady-state cost of deflation is its effect on monetary policy. For the most part, monetary policy operates through the central bank's ability to control the federal funds rate, which influences a broad array of credit market rates, such as Treasury bills, commercial paper, commercial lending rates, and mortgage rates. When the inflation rate is positive, as the Fed reduces nominal rates, real interest rates (nominal rates adjusted for inflation) drop as well. It is by lowering the real interest rate—often into negative territory—that monetary policy is able to encourage investment and other spending decisions that help increase production and bring the economy out of recession.

Thus, when an economy with deflation faces a recession, the fact that nominal interest rates cannot fall below zero means the central bank may not be able to push real interest rates low enough to alleviate the situation. As a result, an economy characterized by deflation would likely experience considerably greater fluctuations in output and employment than an economy with stable or rising prices. The central bank has other policy tools it can use—and these came under discussion last year when concerns about deflation surfaced. But, there is some risk associated with relying on these tools since they haven't been seriously tested in the post-war U.S. economy.

What prevents nominal rates from falling below zero? The main reason is that currency pays a zero rate of interest; this places an effective limit on any drop in interest rates below zero for these other assets—T-bills, certificates of deposit, etc. If their interest rates begin to fall toward zero, investors find currency an attractive alternative and increase their holdings of cash. There have been some instances when short-lived liquidity problems have temporarily produced negative interests, certain Japanese Treasury issues briefly in the late 1990s, for example. But to date, we have not observed any assets that have consistently offered a negative nominal interest rate.

Some have proposed to “solve” this problem by having currency

offer a negative interest rate. That is, at any point its value would be equal to its face value less accumulated interest. This would allow real rates on other assets to fall below zero. However, it would make currency less attractive, as people would have to calculate its worth every time they made a transaction (similar to trying to pay with a savings bond). Negative returns would also produce a rush to foreign assets, which would tend to depreciate the dollar and increase inflation.

### CHOOSING THE INFLATION RATE

Some people argue that if deflation is the result of strong productivity growth, such downward pressure on prices is perfectly acceptable. Deflation brought on by strong productivity growth might reduce the transition costs, but it would not reduce the steady state costs. While an unexpected surge in productivity growth could temporarily put downward pressure on the inflation rate—as may have occurred in the late 1990s—there is no reason to accept this unintended deflation as an appropriate long-run resting place.

In the long-run, monetary policy should be able to move the economy to any rate of inflation for any rate of productivity growth. Four percent productivity growth is perfectly consistent with a long-run inflation rate of 2 percent, 0 percent, –2 percent, or any other number. Since the Fed can set this rate and most of the costs of deflation arise even when productivity growth is high, high productivity growth is not a good reason to incur those costs.

In fact, the central bank is the only actor that can determine, in the long run, the overall rate of increase of nominal prices. Inflation depends on the balance between aggregate nominal demand and aggregate nominal supply. There is essentially no way for individual consumers and firms to affect that balance.

Moreover, consumers' and firms' well-being depends primarily on relative prices. Consumers take their income and make purchases according to their desires and relative prices. It matters less whether prices and wages are rising at 0 percent or 5 percent, and more whether the price of hamburger and other things they buy are rising relative to their wages and other sources of income. Similarly, firms care more about the differences between input and output prices—wages paid compared to the price of their product—because this is what influences their bottom line. While they may care some about inflation, their primary concern is still these relative price movements.

When the central bank keeps inflation low, it ensures that the signals given to consumers and firms by relative prices are not confused by changes in inflation. When inflation is kept low, firms and consumers spend relatively few resources in activities aimed at neutralizing the influence of inflation on their economic well-being (think of the time spent in countries with extremely high rates of inflation avoiding the effects of inflation on consumer and financial transactions). A significant, sustained deflation would cause both of these problems. It would also make the conduct of monetary policy much more difficult when recessions occurred, increasing the costs from lost output that occur during such downturns. \*

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# focus on high-tech

## What's in a name? Gauging high-tech activity

**F**OR THE PAST TWO DECADES, high-tech fever has been contagious. Regional economic researchers have been struck by the dynamism of these new industries, dubbed “high-tech,” and their apparent roles in driving differences in regional growth rates. Places like Silicon Valley, and Routes 128 and 495 outside Boston, have achieved fame as prototypes for new industrial regions. And state and local officials have created strategies to grow, attract, and retain high-tech industries and firms.

But what exactly is a high-tech industry? And how can we determine how high-tech a city or metro area is? In the late 1970s, researchers often used the share of scientists or engineers to classify an industry as high-tech, but recent studies have tended to focus on factors such as whether the industry produces high-tech products (like electronics and computers) or uses high-tech inputs (for example, spends a lot of money on research and development).

A growing body of research suggests that human capital—skilled labor—may be a better gauge and a more important driver of economic development. Growth theorists have stressed the importance of human capital to productivity and income growth for the economy as a whole. Other researchers have tried to assess the role of skilled labor in regional employment growth. In “The Rise of the Skilled City,” for example, Edward Glaeser and Albert Saiz suggest that metro areas with educated workers grow more quickly than comparable cities with less human capital, for the most part because they are more economically productive and better able to adapt to economic change.

This rising emphasis on human capital has prompted some researchers to refocus on measures of high-tech that capture the scientific and technical

By Pingkang David Yu

Illustrations by Christian Northeast





composition of the workforce. In a recent study, researchers from the University of Minnesota selected a group of science and technology occupations, including scientists, engineers, managers with scientific and engineering backgrounds, and certain computer professionals, and ranked industries by the shares of their national workforce engaged in these occupations. If the share equaled or exceeded three times the national average (of 3 percent), the industry is classified as high-tech. Unlike some studies, services are not excluded, reflecting the belief that high-tech services are as important to a modern economy as high-tech manufacturing.

Computer services and electronics are identified as high-tech industries in this man-

Even with the decline of the minicomputer, Boston continues to generate high-tech jobs

ner, as might be expected. But so are a number of industries not always so classified—including pharmaceuticals, engineering and architectural services, management and public relations, research, testing and evaluation services, and even Federal Reserve Banks (called “Central Reserve Depository Institutions” in the table on page 8). Some of these are among the fastest-growing high-tech industries in the nation. In the 1990s, for instance, employment in all the above-mentioned industries (except Federal Reserve Banks) grew faster than jobs in electronics.

Using this method to calculate a metro area’s high-tech jobs sheds new light on the location of jobs in high-tech industries (see

sidebar). It also suggests that Boston may be holding its own with Silicon Valley in a number of important ways.

#### **BOSTON AND SILICON VALLEY**

Economic development researchers and policymakers have long been fascinated by comparing Silicon Valley and the Boston metro area, two of the nation’s oldest and largest high-tech clusters. In her 1994 book, *Regional Advantage*, for example, AnnaLee Saxenian characterized Silicon Valley as an innovative region led by small, tight-knit firms, while Boston’s Route 128 was dominated by large bureaucratic companies that were slow to respond to market changes. On the other hand, John Campbell looked at Massachusetts firms in the software and networking industries for the *Regional Review* in 1995 and found management and market orientation to be surprisingly similar to that of firms in Silicon Valley.

# High-tech metropolis

Which metro areas have a large number of high-tech jobs? Using a definition based on the share of scientific and technical workers, Chicago and Washington, D.C. top the list, each with more than 300,000 workers in high-tech industries. New York and Philadelphia both contain a significant number of jobs in high-tech industries—as do Dallas, Seattle, Minneapolis-St. Paul, and Houston—suggesting that the American Sunbelt is not the only high-tech winner. Nor are jobs in high-tech industries concentrated only on the coasts, as Detroit, Chicago, Minneapolis-St. Paul, Austin, Phoenix, and Denver all show substantial high-tech employment.

Some metro areas tend to have their high-tech jobs concentrated in a relatively small number of industries. Washington, D.C.'s high-tech jobs are concentrated in research, development and testing services, and computer services; New York specializes in financial services and management/public relations; and Silicon Valley and Seattle specialize in high-tech manufacturing. By contrast, jobs in high-tech industries in Chicago, Boston, and Philadelphia are spread more evenly across a range of industries.

## Where are high-tech jobs?

Selected metro areas	Jobs in high-tech industries (000)	High-tech share of all jobs (percent)	High-tech diversification index
Chicago	318	12	0.80
Washington, D.C.	305	20	0.46
San Jose (Silicon Valley)	282	41	0.64
Boston	266	21	0.77
New York	217	10	0.54
Philadelphia	208	13	0.79
Dallas	187	16	0.65
Seattle	171	21	0.45
Minneapolis-St. Paul	144	15	0.82
Houston	144	12	0.67
Orange County	144	18	0.83
Atlanta	142	10	0.61
Detroit	117	9	0.60
Phoenix	110	13	0.68
San Diego	109	16	0.84
Denver	87	15	0.62
Austin	74	20	0.51
Portland, OR	73	13	0.73
Tampa-St. Petersburg	68	9	0.71
Raleigh-Durham	65	17	0.69

NOTES: Metro areas are defined by the MSA/PMSA Census boundaries. High-tech diversification index measures concentration among high-tech industries, with higher values indicating greater diversification (less concentration) across high-tech industries.

## Employment in key high-tech industries, Boston and San Jose, 1997

	Boston	San Jose
<b>Total high-tech industry employment</b>	<b>260,500</b>	<b>281,200</b>
<b>MANUFACTURING</b>	<b>100,400</b>	<b>196,900</b>
Electronic components & accessories	19,900	65,400
Laboratory apparatus & scientific equipment	16,500	19,800
Search, detection, navigation, & guidance equip.	14,500	3,400
Communications equipment	11,600	36,000
Surgical, medical, & dental instruments	9,100	10,900
Special industry machinery, except metalworking	7,200	7,000
Computer & office equipment	7,000	36,700
Aircraft & parts	5,700	0
Drugs	3,400	1,500
Photographic equipment & supplies	2,700	0
Ordnance & accessories	1,500	0
Industrial inorganic chemicals	1,300	0
Guided missiles, space vehicles, & parts	0	16,200
<b>SERVICES</b>	<b>160,100</b>	<b>84,300</b>
Software, data processing, & computer services	64,300	47,000
Engineering, architectural services, & surveying	28,900	14,900
Management & public relations services	27,900	7,400
Research, development, & testing services	22,300	14,400
Life insurance	15,600	600
Central reserve depository institutions	1,100	0
<b>Ratio of high-tech manufacturing to services</b>	<b>0.6</b>	<b>2.3</b>

NOTES: A "0" for employment in a given industry does not necessarily indicate no worker presence in that industry, as the Economic Census assigns employment in plants based on the predominant product/service rendered, and not any secondary output that is produced. Figures are rounded to the nearest hundred.

SOURCE: 1997 Economic Census and Bureau of Labor Statistics



Boston's strength in high-tech services may offer an edge, as high-tech employment in services rose faster than in manufacturing over the decade.

Using a human-capital-based measure of high-tech industries, our study finds that Boston and Silicon Valley both live up to their reputations as high-tech centers, each with more than 250,000 jobs in high-tech industries. Despite the decline of the minicomputer industry centered around Route 128, the Boston metro area continues to generate a large enough stream of high-tech jobs to remain on par with its West Coast counterpart.

In Boston, however, these jobs account for a much smaller share of all jobs (21 percent) as compared to Silicon Valley (41 percent). This difference may contribute to the perception that Silicon Valley leads Boston as a high-tech center, despite their roughly similar overall high-tech job totals. On the other hand, Boston retains significant employment in traditional industries such as transportation and warehousing (32,000 jobs) and printing (14,000 jobs), which contributes to its more diversified economy.

Even within high-tech, Boston has a more diversified job base. Silicon Valley hosts jobs in only 18 of 30 high-tech industries, with a large proportion of its workforce employed in electronics, computer and office equipment, communications equipment, and missiles and space vehicles. In contrast, Boston's high-tech employment is spread much more evenly across almost the entire list.

Boston also has much higher concentrations in high-tech services, such as computer programming and data processing, engineering, architecture and surveying, research, development and testing, and management and public relations. (By contrast, Silicon Valley is more concentrated in high-tech manufacturing.) This representation in high-tech services may well offer Boston an important edge: U.S. high-tech employment in services increased more than in manufacturing over the past decade; and employment in science and technology occupations rose much faster in services than in manufacturing. Since high-tech services firms tend to cater to other businesses (as opposed to households), they may fuel future economic growth by introducing new technologies across industries and building

Regions may want to rethink their definition of high-tech when setting development policies



channels for cross-fertilization.

Boston's diversification may also confer some advantage in weathering economic downturns. In the recent recession, for example, Silicon Valley's unemployment rate reached 9.5 percent, higher than Boston's rate of 5.4 percent (both seasonally adjusted). Nonetheless, Massachusetts suffered larger job losses in percentage terms than almost every other state, including California. High-tech diversification is not a panacea for job loss

during a recession, and other factors may be more important during any particular downturn.

It is also interesting to note that although previous research attributed much of Silicon Valley's success to its network of small high-tech firms, today the number of employees per establishment in the high-tech industries of Silicon Valley (42 employees) is much larger than that in Boston (29 employees). Although large high-tech companies are Boston's legacy, this suggests that numerous entrepreneurial activities are under way. And the emergence of new high-tech establishments along Route 495 outside Boston, and the new

wave of innovation around biotech, are contributing to Boston's high-tech vitality.

Thus, cities and regions may want to rethink their working definitions of high technology and the economic development initiatives that promote it. By abandoning narrow notions of high-tech restricted to maturing technologies in computers, electronics, and telecommunications and by focusing on science and technology occupations as a marker, it may be possible to identify emerging sectors. Strategies that seek to diversify a region away from only a few high-tech sectors may help to insulate the region from severe recessions and long-term structural change. With this in mind, regions may be able to improve their chances of maintaining a vibrant economy and securing a dynamic future.\*

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# Objects OF DESIRE

*By* Carrie Conaway  
*Photographs by* Kathleen Dooher  
*Color illustrations by* Michael Klein  
*Black and white illustrations by* Casey Reed

## CREATING LEGACIES, ONE COLLECTION AT A TIME

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To most people, stuff is...stuff. To collectors, stuff is living history.

FOR COLLECTORS, Patrice Moore's story is a cautionary tale. Mr. Moore is the man who, in December 2003, was found buried in his Bronx apartment in a decade's worth of magazines, newspapers, books, and junk mail. Trapped for two days, he was finally discovered by his landlord, who serendipitously came by to offer him a loan he'd requested earlier in the week. Rescue workers spent over an hour removing rubbish to reach him, and he had to be hospitalized for the leg injuries he sustained when the weight of his accumulated papers crashed down upon him.

Hoarders like Mr. Moore take collecting to an extreme, endangering their own health and safety in order to avoid throwing anything away. But hoarding is just an outlying case of what many researchers believe to be part of human nature—the desire to create, sustain, and preserve. Indeed, our early survival as a species depended on our ability to stockpile grains, nuts, and meats as a hedge against the

## *A lot of Moxie*



At the turn of the twentieth century, the most popular drink in America was a former patent medicine called Moxie. It was also one of the most heavily promoted. Moxie logos appeared on dishware, toys, thermometers, fans, and even sheet music. Today, hundreds of collectors like Peter Bergendahl of Henniker, New Hampshire, are on the prowl for Moxie collectibles. Bergendahl focuses on Moxie bottles and bottlecaps. Think that makes for slim pickings? Think again—there are over 120 variations of bottles alone.



precariousness of the human food supply. Back then, collecting was about preserving our lives in the most literal way; without it, we would have become extinct.

Collecting today, thankfully, does not usually have life-or-death consequences, Mr. Moore's paper avalanche notwithstanding. But it is almost as ubiquitous as it was when humans first walked the earth. Most children have a collection, be it seashells, stickers, or baseball cards. And even adults who do not consider themselves collectors may keep scrapbooks of family letters and photographs or purchase the occasional highly valuable or nostalgic item. If it's true that collecting is in some way hard-wired, then it's no surprise that its draw is quite powerful. What else could explain the enormous success of *Antiques Roadshow*, the most popular primetime show on PBS? Its appeal rests on the dramatic tension and emotion of the moment when people discover that their junk is a treasure—or worse, their treasure is junk.

Viewed this way, dedicated collectors aren't so different from everyone else; they just take a broader perspective. Rather than save only their own family history, or purchase only modern knick-knacks or limited-edition items, they seek both to differentiate themselves through their discerning eye and to honor and protect a small piece of history—whether typewriters, folk art paintings, or Civil War bullets. Their desire to preserve is deeply felt; they reap great delight from marking the boundaries of the collection, acquiring objects, learning about their items and sharing that knowledge, and completing a collection. Perhaps most important, they also preserve a sense of historical context and continuity through their collection.

This desire to define and distinguish oneself and to establish a legacy is not unique to individual collectors. As a society, we also create institutions—museums, libraries, and archives—whose purpose is to preserve our history, culture, and collective memory. As the nation's conservators, the reasons institutions acquire objects are different from those of the individual collector. Institutions seek representativeness rather than completeness, universal narratives rather than particular details. And they must consider not only what captures their curators' hearts and minds, but also what attracts visitors and resources. Yet they, too, aspire to ensure that their knowledge—their mark on the world—will endure through the institution even after the individuals involved are gone.

#### **POSSESSION OBSESSION**

Asking collectors about their collections is like asking new parents about their children. The delight in their voices and the sparkle in their eyes will betray their passions as they tell you where they obtained each item, why they chose it, how much it cost, and what makes it unique. And if you happen to converse with

Investing in stocks usually pays off better than investing in a collection, but most collectors aren't in it for the money

serious collectors—those who run a collecting club or write research articles about their collectibles in their spare time—the depth of their knowledge will be as astounding as the depth of their collection. They will tell you the entire history of the production of their beloved objects, who invented it, why the product is designed as it is, and why it is no longer made. They will be able to discriminate between minor variations in the product and tell you how each and every alteration affects its value. They will be custodians of history, admittedly of a very particular kind.

What motivates people to devote their lives to preserving what many others would view as arcana? For some, it is an investment. Collectors dream of buying an unrecognized treasure on the cheap, waiting until the market is ripe, and selling it for a 1,000 percent return. But those who plan to retire on the money they'll make by selling their old comic book collections may be surprised to find that most collections really aren't a great investment. Although there are always a few lucky winners in the collectibles lottery, a recent survey of the academic literature by economists Benjamin Burton and Joyce Jacobsen finds that “the majority of collectibles yield lower financial returns than stocks,” and at greater risk.

For many collectors, though, it's not about the money. “To me, money takes the fun out of it,” says Steve Silberberg, a Hull, Massachusetts, resident and owner of one of the largest collections of air sickness bags in the U.S. To dedicated collectors like Silberberg, the act of acquiring their objects of desire has a value in and of itself, one that at least equals any potential financial gain they might receive. Peter Bergendahl, a New Hampshire collector of Moxie soda bottles and bottle caps, agrees. “I realize that my collection is an investment, but I don't like to think of it that way. Knowing something is out there and looking for it, the search for the object, is the whole point. It's no fun without that.” The pleasure of the experience is what gets collectors up early on summer weekends to make crack-of-dawn sorties to antiques shows. It's why they feel thrilled when they find a cherished item in a junk box at a garage sale or triumphant when they outbid someone at an auction.

But neither is it just about the fun. Dedicated collectors are after more than the simple enjoyment of



In 1990, a Swatch watch designed by Italian painter-sculptor Mimmo Paladino sold at Sotheby's for just over \$20,000. Original retail price, just two years prior: \$70.

## Toy story



In February 2004, Boston's Museum of Afro-American History opened a temporary exhibit of 40 historic and contemporary black dolls. "Dolls are a powerful way of talking about history," says executive director Beverly Morgan-Welch. "They tell the story of changing images of black people by how they were designed, where they were made, who bought them, and who played with them. The more people see these objects as being part of American culture, the more they can understand a more inclusive America."



finding or owning things. Since they wish to make a distinct imprint on the world, they choose what they collect carefully and deliberately, which leads them both to narrow their fields of vision and to deepen their expertise within that field.

For this reason, a collector's accumulated objects must in some sense be the same—Man Ray prints, Bakelite jewelry, diner memorabilia—which sets a boundary on what is and is not in the collection. At the same time, every item in a collection must be unique. Most collectors avoid duplicates, except to be sold or traded for other items. Most also seek completion: owning every Topps baseball card issued in 1985, or one example of every piece of vintage Fiesta ware ever manufactured in medium green. This is true even for those who collect in areas where a collection can never truly be complete, such as art; for example, they may try to obtain one piece of art from each period of an artist's life, or one piece by every major artist working in a particular style.

The collections of Dave Sutherland, a former Vermont radio broadcaster and current president of the New England Antique Radio Club, are typical. Sutherland collects a specialty type of radio that radio stations used to give away in the 1950s. Shaped like an old RCA microphone, the frequency of the station was printed on the front and a call letter flag on the top. He aims to obtain one of these for all the frequencies he worked for. He is also searching for all the program guides for his former employer, New Hampshire radio station WKNE, from the 1940s and 1950s, as well as all the sizes of milk bottles from all the dairies in his hometown of Brattleboro, Vermont, and a variety of barber bottles and shaving mugs. Establishing these rules of the game—these limits and boundaries—creates the tension and excitement collectors need to continue their search year after year.

The personal relevance of Sutherland's collections is also typical. Because of the time, money, and emotional energy collecting demands, most people collect something that holds personal meaning—perhaps items relating to professional interests or hobbies, or nostalgia for one's youth, or a remembrance of a friend or relative. Ray Goulet of Watertown, Massachusetts, founder of the New England Magic Collectors Association, collects Houdini and other magic memorabilia because he was a professional performer for 40 years and ran a magic studio for over two decades. Bergendahl started his Moxie collection because he remembered his mother drinking Moxie in his youth and because he used to earn money as a kid by returning bottles for deposit. Many get their start by inheriting a valuable item, then starting a collection of the same.

For the same reason, collections rarely stem from commonly used items such as paper napkins or toothbrushes. These types of items do not hold emotional

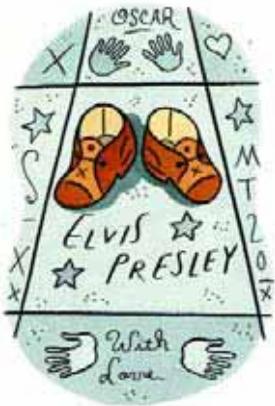
Because of the time, money, and energy collecting demands, most people only collect things that hold personal significance

meaning for most people, so they don't seem like items that are worth collecting. It is only when an item is imbued with personal or historic meaning that it becomes collectible. One could imagine, for instance, collecting the monogrammed napkins from a celebrity's wedding or a set of vintage toothbrushes demonstrating the history of tooth-brushing technology.

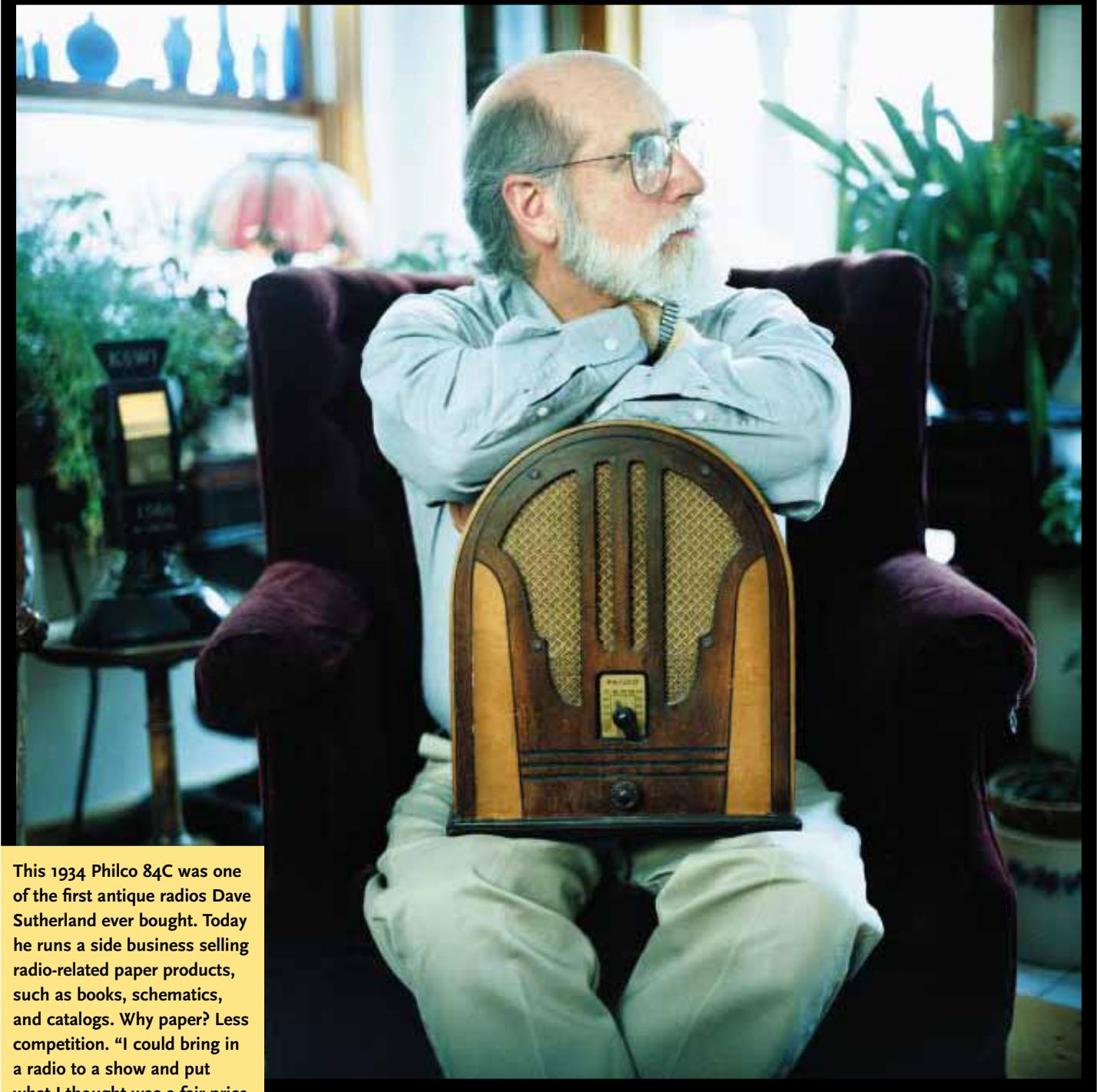
But when it comes down to it, collectors don't simply care about owning stuff, no matter how personally relevant or satisfying it is to own a particular piece of history. Much of the pleasure of experience is in sharing it with others. This is why there is an association for almost every area of collecting one can imagine: the Paperweight Collectors Association, the National Fishing Lure Collectors Club, the Candy Containers Collectors of America, and the Toothpick Holder Collectors Society, just to name a few. Marty Bunis, who organizes a quarterly swap meet for the New England Antique Radio Club, says, "People come here because they speak the same language and they're interested in the same things. They can get advice, and if they need something, it will be here or someone will know where to get it. It's more than a market; it's a place to socialize." By meeting with other like-minded people, collectors can distinguish themselves among their peers and can pass along their knowledge and enthusiasm to the next generation of collectors.

#### MORE THAN THE NATION'S ATTIC

As a society, we also care about saving our national treasures and remembering our cultural heritage. This is why we are, for instance, spending \$18 million and three-plus years to preserve and display the Star Spangled Banner that flew over Fort McHenry in 1814 and inspired our national anthem. But these efforts also go on at a much broader, institutional scale. We build museums ranging from the sublime (the Smithsonian Institution, the Metropolitan Museum of Art) to the ridiculous (the Museum of Dirt in Boston, the Umbrella Cover Museum in Peak's Island, Maine)—and we build them frequently, with about 16,000 museums currently operating in the U.S. We preserve millions of rare books and papers in university libraries. We create specialized archives such as the Vermont Folklife Center, which stores audio recordings of everyday Ver-



One of the largest collections of celebrity shoes in the world—including Marilyn Monroe's high heels, Elvis Presley's boots, and Shaquille O'Neal's size 20 sneakers—grew from the collection of a Toronto podiatrist and can now be found at the Bata Shoe Museum in Toronto.



This 1934 Philco 84C was one of the first antique radios Dave Sutherland ever bought. Today he runs a side business selling radio-related paper products, such as books, schematics, and catalogs. Why paper? Less competition. "I could bring in a radio to a show and put what I thought was a fair price on it, but someone else would have the same radio in better condition and sell theirs, and I'd be left with mine," says Sutherland. "But there are only two of us who do the radio shows in New England who sell the paper stuff."



monsters' life stories, and the New Hampshire Political Library, which documents the state's unusual political history. We establish local historical societies to record the changing histories of our cities and towns through maps, census records, and significant objects. And in most cases, we make these preserved materials accessible to the public, for now and for the future.

These institutions are entrusted with describing and preserving important pieces of a culture or history—but to do their jobs well, they must do more than that. They must provide a coherent narrative and compelling presentation so that they will attract visitors, resources, and funding to their institution. This ensures the institution's viability and allows its story to be told to future generations. Building this kind of narrative typically doesn't mean displaying every possible example of a particular item, as an individual collector might, since the more narrow the range of objects, the less general appeal they will hold. Instead, institutions must cull the multitudes of possible items in their collections down to a manageable and meaningful few.

To accomplish this, institutional collectors establish a mission—a way of defining what is in and out of their collection and thereby of setting criteria for what to acquire. For example, the Concord Museum focuses on the town of Concord, Massachusetts, with a special emphasis on the early years of the American Revolution and on Concord's famous nineteenth-century authors such as Emerson and Thoreau, whereas the Peabody Essex Museum collects maritime and Asian art along with architectural artifacts. The difference is that, by charter, institutions must generally stay within that mission, whereas collectors can always alter their goals as their interests and opportunities change.

Furthermore, because they are responsible to respond to a broad range of interests, institutions will seek out different objects than will individual collectors. Museums care more about obtaining the best examples and the items that represent the watershed moments in their area of focus. Matt Zeysing, assistant curator of the Naismith Memorial Basketball Hall of Fame in Springfield, Massachusetts, comments, "The Hall of Fame doesn't actively pursue a jersey worn by Kobe Bryant from any particular game, but last year we got his shorts from the night that he set the NBA record by hitting 12 three-point shots in a game. If he hadn't hit those shots, we wouldn't have pursued anything from Kobe Bryant from that game."

At the same time, cultural institutions will often pursue items that would be of little interest to the average collector but help to fill in gaps, tell a story, or bring a historic event to life. For instance, the Concord Museum has a collection of tourist artifacts, such as china and postcards, that have only negligible value but provide insight into town life at the turn of the twentieth century. "The tourist china, which was produced

To be successful, museums and libraries must cull their collections down to the best and most meaningful items



**Sometimes collecting can save you money. Average annual insurance premiums for a 1965 Jaguar run about \$650, less than half the cost of insuring a new car.**

from the 1890s through the 1920s, illustrates a period when Concord's sense of its own past got commercialized in a distinctive way," says David Wood, curator of the museum. "People were selling Concord as a destination, and when visitors came here they were selling souvenirs to them. It also provided a way of living for a number of people in Concord." These artifacts, though not particularly popular among collectors, are critical to the museum as a way to reflect and interpret Concord's changing economy and changing view of itself over the years.

Items with an interesting provenance—evidence of its prior history of ownership or use—are particularly important because that background information provides the details that make an exhibit sparkle. The average old overstuffed armchair wouldn't make it into a museum, for instance. But Archie Bunker's famous armchair from the television show *All in the Family*, which the Smithsonian National Museum of American History acquired in 1978, is a highlight of the museum's popular culture collection and is considered one of the museum's biggest draws. Likewise, Jeff Leich, executive director of the New England Ski Museum in Franconia, New Hampshire, notes that for his museum, "what has value more than just a pair of skis is if we can get some information about who used the skis, where they were used, and what was the history of this person, even if it was not a historically significant person. From a museum point of view, that's much more interesting because you can connect the item to a geographical place and a point in time."

But actually acquiring the objects that bring a story together can be a challenge. Many museums and archives only obtain new items through donations, largely because they lack the funding to purchase items on the open market. Even those that do purchase items end up competing with others for the most special and unique treasures. For example, the Basketball Hall of Fame competes for objects not only with private collectors of basketball memorabilia, but also with the nonprofits to which players often donate their game-worn jerseys, game balls, and other memorabilia. Likewise, in a recent estate liquidation, Ken Gloss, proprietor of the Brattle Book Shop in Boston, discovered 10 letters written by Thomas Jefferson, a find which would have made a significant addition to any Amer-

# One man's junk is another man's treasure

What distinguishes a collectible from ordinary rubbish is not always clear. Nonetheless, there are two primary characteristics that collectible items share: desirability and rarity.

## DESIRABILITY

Whether it is destined for a museum or a private collection, to be collectible, an item must be desirable to someone other than the collector. So, your seventh-grade love letters probably won't qualify, unless you become famous (or notorious). But what makes something desirable?

✓ **CONDITION.** Condition is so important that third-party grading services have sprung up in some collecting areas to grade and validate the quality of items. The coin collecting market is one of the best-developed examples, with 70 possible grades of coin in the Sheldon Numerical Grading System. The same Morgan dollar—a silver dollar issued primarily between 1878 and 1904—can be worth anywhere from \$5 to over \$100,000, depending on its condition. Do not mistake condition for perfection, however; some of the most desirable collectibles are actually mistakes. The classic example is the Inverted Jenny, a 1918 24-cent air mail stamp with an image of a Curtiss JN-4 biplane. A production error caused some sheets of the stamps to be printed with the airplane image upside down, and one of those sheets got into circulation before the mistake was noticed. Today a correctly printed Jenny stamp goes for about \$100, but the inverted versions sell for up to \$200,000 apiece.

✓ **AESTHETICS.** Form, color, size, and materials also matter for desirability, though these preferences tend to change with popular tastes. For instance, very large items historically were not viewed as popular collectibles



because of the difficulty of storing them, but this has been changing in recent years. Rudy Franchi, a vintage movie poster dealer and appraiser on *Antiques Roadshow*, points out, “The typical movie poster is 27 by 40 or 41 inches and is known as a ‘one-sheet’.” The market for larger movie posters used to languish, but people are now living in bigger homes, and so they are able to display bigger things. Now there’s a big fad in buying the larger sizes, known as ‘six-sheets,’ that are 81 by 81 inches, as well as foreign posters, which are often larger.”

## RARITY

“There are some books that are absolutely fabulous literature, but there are too many of them,” says Ken Gloss, proprietor of the Brattle Book Shop in Boston. “For instance, Shakespeare, next to the Bible, is the most commonly printed literature in the English language. It’s wonderful stuff, but there are millions and millions of them so they’re not worth much. You’re looking for the one that’s a little more unusual, that you don’t see all the time.”

Items can be rare for several reasons:

✓ Some items are simply **UNCOMMON AND IRREPRODUCIBLE.** Among those who collect materials about the signers of the Declaration of Independence, for instance, the autograph of the all-but-unknown Thomas Lynch or Button

Gwinnett is worth far more than the John Hancock of, say, John Hancock.

✓ In many cases, what people collect is only in short supply because they define their collecting area so narrowly. But sometimes rarity is **CREATED BY THE MANUFACTURER.** In the 1980s, The Swatch Group created a frenzy by selectively releasing Swatch designs to a limited number of distributors, such that every retailer had a different selection, and by limiting sales to one per person. Swatch also launched an intensive promotional campaign touting their watches as a good investment. Swatch Fever spiked, and sales in the U.S. alone increased from \$3 million in 1983 to \$200 million in 1987. The same strategy applies to anything manufactured in limited edition, such as Franklin Mint plates, Beanie Babies, or Precious Moments figurines.

✓ On the other hand, it **CAN'T BE TOO RARE.** “If there’s only one of something, there can only be one collector,” points out David Wood, curator of the Concord Museum in Concord, Massachusetts. “What fires people up is things that are relatively common, so that you can get a complete collection of it in every form and every style.” These sorts of items are easier to find at antiques stores, flea markets, and garage sales, adding to the serendipity of the collecting experience and fueling the motivation of the devoted collector to keep searching.

ican history museum. But their value was too high for most institutions to afford, so almost all were sold to private collectors instead.

#### LEAVING AN IMPRINT

The desire to make an impact on the world may be subtle or even unspoken, but it is a prime motivator of human behavior—and it is what unites the otherwise disparate goals of individual collectors and their institutional counterparts. Individual collectors seek depth; institutions, breadth. Individuals look for differences; institutions, commonalities. Yet they share a desire for their collections to stand the test of time—to cheat death, if you will, by ensuring that their take on the world and their accumulated knowledge and effort will live on even after they as individuals are gone.

A lasting legacy for institutions is relatively easy to imagine, since they amass their collections with an eye toward stewarding history. And many, if not most, institutions do manage to live on, shaping and influencing our collective memory into the future. But this approach is no guarantee of success. Dreams of Freedom, Boston's immigration museum, had a well-regarded collection and an innovative approach to its interpretation, but it closed after only three years due to lack of funding. Furthermore, tastes change. What seems a meaningful collection of items today might not feel relevant to visitors 50 years from now. To survive, museums must shift with the wind to maintain their vitality without losing their sense of purpose.

The collections of individuals face a more complicated fate. The decision-making process that collectors use when obtaining objects—their focus on personal significance, completion, and minute differences between objects—often renders large portions of their collections unappealing to others. Often their families are not interested in maintaining or expanding the collection in future generations, leaving many simply to sell off a lovingly gathered assortment for lack of other ways to ensure its future. In some cases, particularly significant items may be donated to museums, but this can mean a loss of coherence for the rest of the collection as well as a loss of the sense of the collector's personality as demonstrated by his or her assembled items. Says Bergendahl, the Moxie collector, "I just hope that when I die, my son realizes that there's some value there and doesn't take it all to the dump."

Once in a great while, though, an individual's collection possesses enough historical, cultural, or artistic significance to merit its transformation into a public institution. Perhaps one of the best-known examples is the Isabella Stewart Gardner Museum in Boston, Massachusetts. In Mrs. Gardner's heyday of the late nineteenth century, members of the social elite were expected to be at least amateur collectors of fine arts, textiles, and furniture simply in order to furnish their

The most important legacy of a collection is the wisdom and beauty the world gains from its having been assembled

homes to the standards of the day. But Mrs. Gardner's unusual artistic vision and personal character produced collections of notably high quality, ranging from Dante manuscripts to the works of contemporary American artists such as Sargent and Whistler to her true passion, Italian Renaissance art.

Even early on in her collecting career, she acquired some fairly significant works of art, including a Vermeer and a Botticelli, and she and her husband originally planned to donate many of them to the Museum of Fine Arts in Boston upon their deaths. But "in 1896, after getting the Titian [*Europa*, considered "the greatest Venetian painting in America"], two Reubens, and a Cellini, they realized that they had a museum in their own right," says Alan Chong, the museum's curator.

With the assistance of her advisor, Bernard Berenson, she continued to acquire world-class art in the ensuing years, but with a more curatorial eye—filling in holes in the collection and focusing more narrowly on a few areas of specialization. The charming, nontraditional museum she created opened in 1903, with the stipulation that its items be left "for the education and enjoyment of the public forever." Her museum today draws more than 181,000 visitors per year; it is one of the most popular attractions in the city of Boston and certainly one of its most enduring.

Though the transition of her collection from individual to institution may be unusual, Mrs. Gardner's desire to live on through her collection is hardly unique. But most collectors are not fortunate enough to have the discriminating eye and the financial wherewithal to establish a new world-class cultural institution based on their collection. The best most can hope for their accumulated things is that they will find themselves in the hands of a gentle caretaker—a devoted archivist or librarian, a child who takes on a parent's collection out of a sense of duty if not love. At worst, the collection itself may simply fade away.

A collection's true legacy, however, is not the items in it, but the wisdom and beauty the world gains from its having been assembled. Individual collectors find others who share their passions to pass on their knowledge and experience. Institutions share their knowledge with the world through public access, scholarly research, and interpretation. In these ways, the collection—and the collector—will still carry on. ✱



The kewpie doll was a hot collectible item before World War I; more than five million of the ceramic cherubs were sold in just four years.

## *Dishing it up*



“People don’t just buy Fiesta-ware to put on their shelves. They integrate the dishes into the way they live their lives,” says Fiesta-ware collector Daphne Durham of Cambridge, Massachusetts. Online Fiesta-ware discussion boards, such as [mediumgreen.com](http://mediumgreen.com), allow collectors to compare notes on how they use the dishes. Members post photos of new acquisitions or new uses, share research, and chat with other collectors. Durham says, “The sense of community I get from the boards is what keeps me interested.”





IN MARCH 1996, some five years into an economic recovery, the *New York*

*Times* ran a series of front-page articles entitled, “Downsizing in America.” The stories chronicled the fortunes (and misfortunes) of American workers recently downsized and restructured out of their jobs. The series fueled ongoing concern and public debate about the changing prospects for U.S. workers, particularly those with less education and low skills.

In the past, large U.S. businesses provided entry-level workers with opportunities for skill development and advancement. Workers starting out with few skills had a chance to move into “good” jobs via a long-term employment relationship with on-the-job training and job ladders with the possibility of promotion and higher pay. Firms were able to offer these opportunities in part because they brought together a large and varied set of jobs under a single roof.

Many observers, pointing to the *Times* series and other similar examples in the media, concluded that these traditional arrangements had largely been scrapped. And they often cited two distinct but related

# Too many COOKS

Changing wages  
and job ladders in  
the food industry

By Julia Lane,  
Philip Moss,  
Harold Salzman, and  
Chris Tilly

Illustrations by Gene Greif



## Food-prep workers are now more likely to be located in food manufacturing firms than in restaurants and cafeterias

changes—both dramatic—as reasons. The first was a change in the relationship between firms. Companies began to look to outside firms to provide many tasks previously done in-house, becoming embedded in a stable network of outside firms hired to perform the outsourced functions. The second was a change in the relationship between workers and firms. In this shift, increasing competition in both product and labor markets drove firms to abandon their traditional way of dealing with employees in favor of a relationship conducted more like an arm’s-length market transaction. Both changes created firms that were less vertically integrated and that relied on outside firms for all activities, save a few “core competencies.”

The end result: the replacement of traditional long-term employment relationships with McJobs—low-skilled jobs with high turnover rates and little opportunity for training. Flipping burgers became a potent symbol to those worried that the U.S. economy was increasingly creating more and more jobs with diminished prospects for advancement.

Yet, others pointed out that most aggregate indicators of internal employment practices have changed relatively little since the 1970s. Declines in the length of time the average employee

stays with an employer are small (although declines are larger for certain groups, such as less-educated young men). The difference in employee tenure between large and small firms, which one might expect to narrow over time as larger firms move away from long-term employment, shows no such change between the 1980s and 1990s. Estimates of the portion of wages that represent the investment in skills useful to the current employer also show essentially no change.

Inspired by the image of the burger flipper as the prototypical job of the future for low-skilled workers—and as part of a larger research project—we visited ten firms in the food industry that ranged in size from a few dozen employees to tens of thousands. We focused on food preparation—warehouse workers, food preparation workers, food machine operators, and drivers. We also studied supervisors and managers, as they constitute key points on the mobility ladder. And we supplemented this with statistical analysis using a dataset developed by the U.S. Census Bureau.

We find both good news and not-so-good news. In the firms we visited, shifting functions from food service providers (restaurants, institutions such as schools, hospitals, and busi-

nesses, and firms that contract to provide food services) to suppliers—in particular, food manufacturers—may actually create higher-quality jobs and more extensive job ladders. However, this may be a mixed blessing for lower-skilled workers, as we also find evidence that the bar for entry-level jobs has been raised. In addition, promotions into management may now require greater credentials than before, curtailing mobility and advancement for workers with the least skills.

### CONSOLIDATION AND OUTSOURCING

All segments of the food industry that we examined—food service providers (such as restaurants, company cafeterias, schools, and hospitals), contracted food service providers (such as Aramark and Sodexo), food distributors, and food manufacturers—have experienced significant consolidation over the past two decades. Thirty-five years ago, the food service contracting industry barely existed. Today, the top four food service contractors account for more than 50 percent of sales and dominate the market for institutional food service. Aramark began as a vending machine contractor providing food service at sporting events. Sodexo, Inc. (which includes Marriott, International) was founded in 1966 by Frenchman Pierre Bellon in a borrowed space within his uncle's Marseilles anchovy factory. Compass Group, currently number one, has sales of over \$17 billion. "Our business is about economies of scale," a Compass executive told the *Wall Street Journal* in 2002. "Frankly, the bigger you are, the more money you can make."

As food services companies grew larger, they demanded larger, more stable distributors to supply them. "Years ago. . . you'd have 15 different companies," explained a manager. "One would just deliver your eggs. One would deliver your lettuce. One would deliver your cheese. One would deliver your meat. Now, you have these big companies that pretty much deliver everything." Consolidation is particularly evident among the food distributors that supply a broad product line. The top three—Sysco, Alliant, and U.S. Food—grew from a 32 percent share of industry sales in 1995 to 43 percent in 2000; the following year, U.S. Food acquired Alliant.

Larger distributors, in turn, sought ways to increase the size and stability of their customers, bolstering consolidation in chain restaurants, food service contractors, and supermarkets. They also spurred manufacturing consolidation. In salad manufacturing, for example, "people are starting to buy each other up," noted one executive. The top four food manufacturers account for 14 percent of overall food sales, but the share is much higher in particular segments such as meat products (35 percent) and baked goods (29 percent).

This widespread industry consolidation was accompanied by increased outsourcing at each stage of the food production chain. Contracted food service firms increasingly served more

## THE FOOD CHAIN

We focus on three segments of the food service industry which accounted for nearly 10 million jobs in 2000:

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**FOOD MANUFACTURERS** buy raw produce and meat from farms and fisheries and produce food products. They employ about 1.5 million workers in the United States, or about 1 percent of the U.S. workforce. In the U.S., they include giants such as Kraft, ConAgra, and Tyson, but also thousands of smaller firms (22,000 companies nationally).

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**FOOD DISTRIBUTORS** buy food products from food manufacturers and deliver them to food service providers. Broadline distributors provide all types of products to all types of customers; specialty distributors specialize in a food class or customer type; and system distributors cater to chains with centralized purchasing. All together, distributors employ about 670,000 workers in the United States.

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**FOOD SERVICE PROVIDERS** are the firms that serve meals to customers. These include chain and independent restaurants, and also schools, hospitals, and businesses that staff their own cafeterias and contracted providers like Sodexo and Aramark which are hired to staff institutional cafeterias. In the last 20 years, food service providers increasingly did less food preparation, as food-prep jobs shifted "upstream" to distributors and food manufacturing firms.

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and more of the meals consumed in private firms, schools, hospitals, and other institutions. Contractors can achieve economies of scale in buying food, machinery, and off-site food preparation that improve quality and lower costs in ways that are impossible for independents. In addition, by contracting out, firms shed the costs of recruiting, training, and Workers' Compensation insurance for food-prep workers, and they do not have to worry about pay equity with their employees with greater skill or longer tenure.

Consolidation has also helped shift food preparation "upstream" from cafeterias and restaurants to food distributors and, especially, to manufacturers. "There [are] more and more foods being done [by] the manufacturer," a manager told us. "The reason for that is quality. . . . You can pretty much buy anything prefabricated now . . . even entrées. I know folks that run hotels. . . they're buying their chickens—chicken cordon bleu—already done, and they're just baking them. And this is a hotel getting \$50 and \$60 a plate [for catered banquets]." Restaurants also report significantly lower Workers' Compensation costs since they have fewer lower-skilled workers wielding sharp knives.

This shift has occurred in smaller independent restaurants, too. A line cook at one upscale restaurant told us that all meat now comes into the restaurant precut and all salad greens arrive



## One seafood manufacturer trains and pays workers to sort by quality, so it can offer a premium grade at a premium price

prepackaged. The pastry chef noted that improvements in production technology, such as flash freezing and automated cake design, increased the purchase of cakes and pastries by all but a few high-end restaurants, and increased the range of baked goods and dessert offerings of many mid-range restaurants. New York cheesecake and flourless chocolate cake are now staple items at restaurants (and diners) across America.

Large distributors have been at the forefront of many of these changes. Selling prepared salad lowers transportation costs compared to shipping component ingredients separately; prepared food weighs less and takes up less room. Prepared food is also better preserved, which reduces spoilage and allows greater latitude in delivery times.

Even food manufacturers have farmed out tasks. At one manufacturer of potato salad, a vice president contrasted operations in the late 1980s with today. “Back then, we brought the potatoes in, dumped ’em, peeled ’em, washed ’em, and made salad. Now, a guy in [a nearby area] peels and washes them—all we do is cook. We don’t want to bring bacteria into the plant. . . . Our philosophy is to do what we do best, and let other people do what they do best.”

However, not all activities are equally likely to be purchased outside the firm. We also find evidence of limits to this practice, mainly the result of tradeoffs with quality, cost, and timeliness. One manager noted that fresh fruit preparations are rarely outsourced. He also said that his kitchen buys fresh bagels from an independent local distributor, not because the frozen bagels supplied by the national distributor are inferior, but because the site sells so many bagels that they would have to significantly increase oven capacity in order to warm them.

And decisions to outsource are not irreversible. One warehouse manager reported bringing the sorting and repacking of produce back in-house because of concerns about quality. He was also considering bringing back certain meat cutting and fish processing to reduce the time it took the firm to fill customer orders.

### THE IMPACT ON JOB QUALITY

In contrast to the public image of the low-wage burger flipper, we find that consolidation and outsourcing in the food industry has led to the creation of higher-paying jobs—for a number of reasons. First, jobs are shifting to larger enterprises. Second, jobs

## Consolidated Comestibles

Consolidation in the food industry has created larger firms offering higher pay. Big companies also have more extensive job ladders, increasing the potential for promotions and advancement. But entry-level workers often don't have the credentials required for the highest-paying positions.

are moving toward higher-paying industries. And third, jobs that once were done informally, such as menu planning and inventory management, are becoming increasingly specialized and professionalized.

Economic research indicates that, on average, larger firms pay better, and this is evident in the firms we studied. The school district that staffs its own cafeterias pays lower wages for food-prep workers than does the large food contractor at a nearby location (see table). Another large contractor in the same area also pays higher wages for cooks (\$10+ per hour) and sets a higher wage ceiling for prep workers. Likewise, warehouse workers at a regional and national distributor start at the same level (\$8 per hour), but employees at the national distributor pull ahead within a short period of time—\$16 after three months—compared to a maximum of \$12 at the regional firm. Drivers at the national distributor also receive significantly better pay (\$56,000 versus \$35,000–\$40,000).

In addition, jobs shifts from restaurants and other food service companies to distribution and manufacturing firms tend to be accompanied by increases in skill requirements, pay, and better working conditions. According to the U.S. Bureau of Labor Statistics, in 1999 food-prep workers in food service firms averaged \$7.25 an hour compared to about \$8.70 for food-prep and food machine operators in distribution companies, and \$10.88 for machine operators in food manufacturing. Even for the same occupation, wage differentials are striking: Bakers in restaurants have a median wage of \$7.60 an hour compared to \$10.20 for those in food manufacturing. Supervisors of food-prep workers also earn more in manufacturing (\$16.29) and distribution (\$16.47) than in food service (\$11.46).

Moreover, statistical analysis suggests that employment relationships have not become looser and more tenuous. Although we find that firms shed workers disproportionately at the low end of the skill and income level, this tendency has not increased over time. Instead, median earnings and turnover at a given firm tend to be persistent over time, although there is great variation across firms—indicating that businesses have not, on average, dramatically increased turnover. And, in food manufacturing, we find decreased turnover for low-wage work-

ers, along with slightly higher turnover for the highest paid.

Higher wages are possible in part as firms in the food industry develop innovative ways to expand their business, increase the skills required of workers, and even create new classes of jobs. One manufacturer was able to develop a premium market by partnering with one of the large distributors with national reach. The firm trains its own workers to separate different qualities of seafood, so it is able to offer a premium grade at a higher price; it trains salespeople from the distributor, so they can promote the premium products to their customers. And it increased average pay by moving to a piecework system where workers are rewarded for both quantity and quality.

Similarly, at large distributors, drivers not only provide transportation, but are also a strategic point of contact with customers. Consequently, they now have more responsibilities and receive more training. Drivers at one distributor receive extensive training in customer service, computers, and accounts receivable. At another company, they now take responsibilities for sales and account management.

Larger distributors have also started to offer new services—general management consulting, menu planning, marketing and pricing, inventory and purchasing control, and training in safety and food handling—all of which help smaller customers

### Local school district

Position	Hourly wage or salary	Requirements
Assistant cook / food preparer	\$7.33 – \$7.48	< High school diploma
	\$7.62	< 5 years' experience
Cook	\$8.05	6 – 12 years' experience
	\$8.90	> 12 years' experience
Supervisor	\$17,000	< High school diploma

### Large institutional food contractor

Position	Hourly wage or salary	Requirements
Dishwasher	\$7 – \$8	< High school diploma
Prep cook, entry-level cook, part-time cashier	\$7 – \$9	< High school diploma
Cashier	\$9 – \$12	< High school diploma
Cook and senior cook	\$9 – \$13	< High school diploma
Supervisor	\$13	< High school diploma
Assistant manager	\$25,000 – \$33,000	5 – 7 years' experience
Chef manager	\$33,000 – \$45,000	Experience as chef; some college increasingly preferred
Foodservice director	\$36,000+	Bachelor's degree increasingly preferred
General manager	\$50,000 – \$60,000	Bachelor's degree and outside experience increasingly preferred
Resident district manager (multiple sites)	not available	MBA increasingly preferred
District manager	not available	MBA increasingly preferred

SOURCE: Authors' calculations



## The best jobs with ladders into management require more formal training than is typical for the average entry-level worker

and attract new business. For example, one distributor employs a chef to demonstrate new food preparation ideas to clients. This type of innovation creates new job categories that previously were done either informally or not at all. The result is expanded opportunities and a new set of more professional and specialized positions.

But these events have also raised the initial hurdle for some entry-level workers. As distributors service larger and more varied accounts, and customers increasingly demand zero errors in order delivery (a “perfect pallet”), workers must pay closer attention to detail. And as clients expect new types of service, such as the guarantee that delivered products will have a certain shelf life, warehouse workers must now have the skills to use the computer system that tracks product expiration dates.

### **PROMOTIONS AND MOBILITY**

While consolidation and the movement of food-prep jobs seems to have improved job quality, the impact on mobility is mixed. On the one hand, larger companies tend not only to offer more rungs of management within a single operation, but they also generate a whole range of possibilities—district manager, vice

president of operations, all the way up to CEO—which have no parallel in smaller companies or independent restaurants. Thus, the shift to large national firms provides more potential mobility.

On the other hand, large national food contractors and distributors tend to adopt corporate human resources practices and seek managers from outside the firm with more education than is typical of their line workers. Positions are usually partitioned into three segments: line workers, facility-level managers, and managers above the facility level; and it is difficult to penetrate the top two segments from below. Two managers we spoke with who work at large food contractors hold bachelor’s degrees in food service management. When we asked one of them whether a college degree was the route to management, he gave a blunt reply: “That’s probably the easiest, probably the most common [way]. [Although] it’s probably not the fairest.” Even in manufacturing, it has become more difficult to move up without a college diploma.

Chances of promotion to management are greater at smaller independent or regional firms. These firms are more likely to choose managers from among shift or station supervisors, per-

haps in part because the current managers who are in charge of these decisions have themselves been promoted in this way. In tight labor markets and in industries where specialized knowledge is very important, firms are also more likely to train and promote workers from within their own ranks (as opposed to hiring workers from outside the firm with college degrees or other outside credentials).

Statistical investigation confirms that moving from the bottom has become somewhat more difficult, although not greatly so. One-third of workers are no longer in the industry five years later. Of those who remained, just under 50 percent of those hired in 1991 and starting among the bottom quarter of earners in their firm were able to move up out of this quartile after five years; this figure is down slightly from 60 percent for those hired in 1985.

Shifting employment to large distribution and manufacturing firms also altered the geographic location of entry-level jobs. When a distributor buys vegetables prepared near the farm—rather than selling unprocessed vegetables to be prepared by the restaurant—jobs shift from urban to rural areas (and presumably to the south and west of the country). For other prepared goods, ranging from pastry to prepared entrées, jobs gravitated to low-wage and low-rent locations in and around cities. That is, food-prep jobs are being pulled from restaurants scattered throughout urban areas to larger factory settings separate from the restaurants that serve their products.

This pattern of job migration may mean that workers are no longer in settings that provide a chance for them to learn informally and advance their careers. Food service positions are often important first jobs through which workers gain skills and establish an employment history, particularly for non-English-speaking workers, since the jobs often do not require extensive communication or writing skills. But this kind of job-to-job mobility requires geographical proximity to other firms and industries with better job opportunities.

## CONCLUSIONS

The dramatic restructuring of the food industries, from preparation to distribution to service, parallels restructuring that has occurred in other industries over the past several decades. The increasing dominance of large firms is leading to a battle of titans over who does the chopping and baking, how many middlemen there are, and where the highest profits will be made. In this shuffle, jobs are shifted between firms and around the country. For the moment, at least, this is leading to mixed outcomes, especially for less-skilled workers.

Food preparation job ladders may be disappearing in restaurants, cafeterias, and food service contractors, but our research suggests that employment is being shifted to food manufacturing firms with job ladders of their own. It also suggests one ex-

planation for the puzzle about why the media reports individual firms downsizing, while aggregate data exhibit no change in average job tenure and related measures: Media examples may reflect only a subset of firms. Processes that dismantle job ladders in one set of businesses may create new jobs and job ladders elsewhere, averaging to little change overall.

But the story is not simply one of outsourcing a fixed set of food preparation activities or of simply cutting costs. Food service managers weigh the tradeoffs between reducing cost and adding value. Food distributors invent markets—for chopped vegetables, soups, sauces, pastries, entrées—where none previously existed, as evidenced by the near ubiquity of New York cheesecake in restaurants throughout the country. This can expand the range of jobs and improve both pay and access to career ladders. In addition, consolidation grafts the management ladder of local operators onto national or international management structures.

However, this does not mean that the changes have improved the outlook for all workers. The small gains in job stability for employees in food manufacturing operations do not reduce turnover for workers at the low end, and firms' tendency to add and shed workers at the low end translates into a higher risk of layoff. The most common five-year mobility outcome for low-end workers is stagnation (remaining in the lowest quartile) or leaving the firm, not moving up.

Moreover, consolidation in the food industry has erected new barriers to the least-educated workers. The professionalization of management in large national companies means few opportunities for less-educated workers to advance to management, as these jobs now require more formal credentials. And the geographic relocation of less-skilled food preparation appears to have diminished entry-level job opportunities in some urban areas. While chances to move up in the food industry have not disappeared, they have shifted to new sub-sectors and new locations, and are subject to new rules. As in other industries, job-seekers, educators, and policy-makers must develop new ways for low-wage workers to gain the skills and experience necessary to move into good jobs. \*

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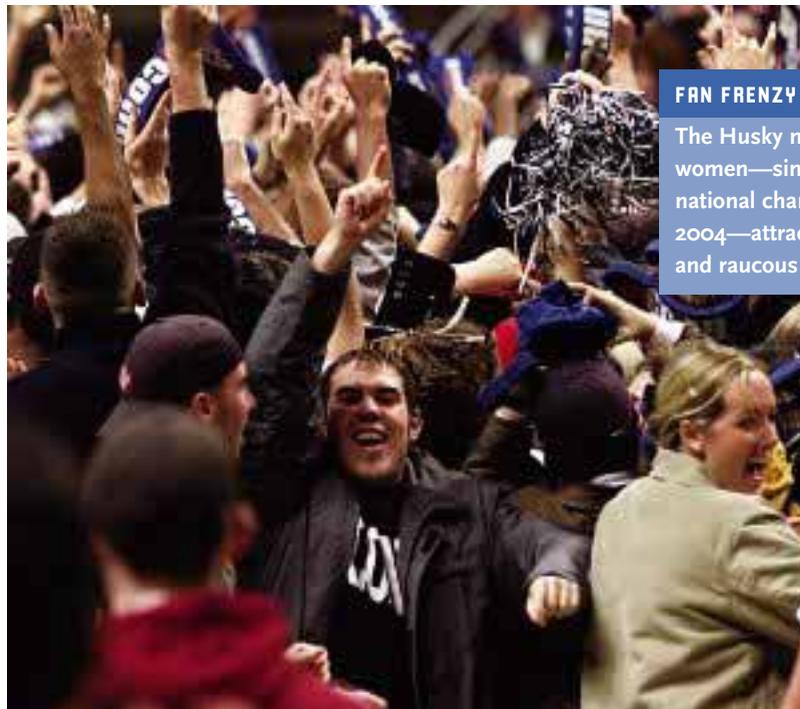
# letter from storrs, connecticut

UConn basketball is big in central Connecticut, and not just for the university. *By Owen Canfield*

**UConn basketball** is never completely dormant in Connecticut. Even through the hot summer, blue and white Husky dog posters adorn front windows, and one doesn't have to drive very far to find a Husky flag flying outside a fan's home. Travelers and vacationers from Nantucket to Normandy routinely catch sight of strangers with shirts or hats sporting symbols of the school. "Go UConn!" they call to each other as each goes his way.

But in early September, Husky fever starts to spike. Department and apparel stores move their UConn displays to the front and lay in new supplies and designs. Shirts, workout suits, jackets, sweaters, socks, scarves, hats, and blankets bearing all manner of UConn signs, stamps, and symbols are hot items. Rows of large white foam "helmets" made in the image of a Husky dog's head sit on shelves at every Wal-Mart. The Husky spirit runs so deep that many Connecticut residents have gotten in the habit of planning Christmas parties and winter birthday celebrations around the UConn basketball schedule. When the men's and women's teams are simultaneous national champions, who can blame them?

UConn alums have been devoted to their Huskies for decades, but the teams began to attract national attention when UConn left the Yankee Conference to help form the Big East Conference in 1979. With basketball powerhouses like Seton Hall and Villanova in the new conference, television networks clamored to broadcast the Big East's games. By the mid-1980s, the Husky men were already playing some of their games at the 15,000-seat Hart-



## FAN FRENZY

The Husky men and women—simultaneous national champions in 2004—attract a loyal and raucous following.

ford Civic Center, but attendance began to surge when coach Jim Calhoun was hired in 1986. Large, modern Gampel Pavilion opened on campus in January 1990. And the women's basketball program under coach Geno Auriemma grew more successful as well.

But it wasn't until the 1994-1995 season that the Husky men and women captured the region's, and the nation's, attention. "That's when [Capt.] Rebecca Lobo and the Husky women beat Tennessee during a regular season game," says Tim Tolokan, associate director of athletics for licensing and athletic tradition. "It was a sensational win, and that team went on to finish 35-0 and win the national

championship. At the same time, the UConn men were sent west in the NCAA tournament. They lost to UCLA, 102-96, in the Round of Eight, but most observers felt that UConn-UCLA game was the true national championship game."

Connecticut's state legislature sat up and took notice. "Three weeks later the legislature approved UConn 2000," notes Tolokan.

This \$2.3 billion, 20-

year university infrastructure and facilities improvement project has helped transform UConn. "The state, including members of the legislature, was euphoric over these two teams," says Tolokan. "People were saying these kids, these 25 or 30 kids in shorts, had made Connecticut people feel good about themselves." The university has also benefited from a nine-fold increase in alumni donations to the school over the last decade, growth which many attribute to the teams' success.

But the impact of UConn basketball goes well beyond the university or even the legislature. After all, nearly 10,000 people show up each season just to see the teams' first practices—and these people need to eat. The roads into and out of Storrs are dotted with restaurants and stores benefiting from the game-day traffic, and the University book-

store does brisk business when the teams are in town. Some 30 miles west, when games are played at the Hartford Civic Center, the state's capital city leaps to life. "The impact is huge," says R. Nelson Griebel, president and CEO of MetroHartford Alliance. "It's a very different city on those 20 dates." Restaurants flourish. Bars are crowded, especially after men's games. Downtown retail stores are busy. Business in nearby malls picks up, too, as ticket-holders stop to do some shopping.

Even those who don't go to games still end up supporting the team by watching the games on television. The UConn men are consistently featured on the networks, including ESPN and CBS. The women appear mostly on Connecticut Public Television (CPTV). Larry Rifkin, executive vice president of CPTV, says his station "will take every game we can get." He notes that while "production costs are often quite heavy," the games pay for themselves. Corporate sponsorships and individual donations—appeals for pledges take place before and after each game as well as during halftime and timeouts—more than cover the costs. Indeed, the station recently raised more than \$30,000 in one night by broadcasting an eight-hour UConn women's basketball feature, offering shirts, caps, banners, and media guides in exchange for pledges.

When the end of basketball season is at hand, Husky fever will die down, but it won't die away. Fans will find themselves searching the newspapers for news about next year's team members, post-season honors, or personal appearances. Husky flags and posters will still be in evidence, though not quite as prominently; displays will be moved to the back of the stores. Life will return to what regions that don't live and breathe basketball might think of as normal.

But after years of Husky fever, it's the infectious, agreeable ambience of basketball season that makes the people of central Connecticut feel most at home. \*

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JOSHUA DALSIMER

**TOO MANY COOKS?**

Shifting food-prep jobs from restaurants and cafeterias into manufacturing firms has improved prospects for some, but has reduced opportunity for others. Page 20

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