

THE
SERVICE
SECTOR:
∞
GIVE · III
SOME
RESPECT



☺☺ *“In the exchanges that men carry on with one another there is only one thing that is and can be compared ... services rendered and received.”* ☺☺ *“Manufacturers, lawyers, doctors, civil servants, bankers, merchants, sailors, soldiers, artists, workers, all of us, such as we are ... render and receive services. It is in them alone that value resides, and not in the ... raw materials and ... natural resources ... that they put to work.”* ☺☺ *“One who has more talent renders more services ... from which it follows that he is voluntarily granted a greater remuneration.”* *“Capital is not an accumulation of material objects, dependent on the durability of matter, but an accumulation of values, that is, of services.”* ☺☺ *“Liberty tends inevitably to lead to the just equivalence of services, to bring about greater and greater equality, to raise all men up to the same, constantly rising standard of living.”* ☺☺

☺☺ Frédéric Bastiat championed revolutionary ideas in a revolutionary age. Born at Bayonne, France, in 1801, Bastiat was 14 when Napoleon’s army fell at Waterloo and 29 during the Revolution of 1830. Living at the height of mercantilism but inspired by Adam Smith and Jean-Baptiste Say, Bastiat worked feverishly to promote free trade and other market-based economic principles that special interests sought to obscure. Rising to prominence in 1844 upon the publication of his first pamphlet, “The Influence of French and English Tariffs on the Future of the Two Peoples,” Bastiat gained a reputation as perhaps the greatest expositor of free market ideas who ever lived. It has been said that Bastiat killed protectionism with ridicule. In an outpouring of essays and public appearances, he used exaggeration to expose the fallacy of protectionist policies. Less acknowledged but nonetheless significant was Bastiat’s emphasis on *services* as the great denominator of all value. Bastiat’s career was cut short by illness, and he died in 1850 at age 49. ☺☺

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I remember when they called them service stations. When I started out pumping gas at my dad's station, I used to check the oil and wipe the windshields whether they needed it or not. I didn't know it at the time, but I was part of the service sector. Even so, I could still tell people what I did and they knew what I was talking about. Or, they could just look at my fingernails.

It's more ambiguous these days. I guess I'm still in the service sector. But when I have to fill in the little blank that asks my occupation, I hardly know what to write. Lately, I just put central banker. In any case, newsprint has replaced car grease on my hands.

Chances are, you're in the service sector, too. Most people are these days, although they may not be aware of it and would be hard-pressed to define their job in a sentence or two. Can you imagine explaining to a class of third-graders what a biogenetic engineer does? It's a lot easier to explain the tangible—that you build houses for a living—than it is to explain the intangible—that you analyze investment strategies to increase the values of your clients' portfolios.

Many pundits don't give the service sector much respect. But that doesn't seem to matter to college students who are looking forward to entering the service sector as computer programmers, engineers, bankers and accountants. How often do you hear that service workers are among the highest paid and the best educated? Instead, we hear that the country is going to hell in a handbasket because services are replacing goods in our output mix.

Our annual report essay takes issue with that point of view. It shows that our expanding service sector is not a sign of decline but a logical phase in our growing prosperity. In fact, it is the strength of the service sector that has fueled the growth of the U.S. economy for the past several years—something else that hasn't gotten the respect it deserves. I call it the Rodney Dangerfield recovery. Many people still talk about the recovery from the last recession as if it were a very new and very fragile thing, but the recovery began in 1991. April 1 will mark its fourth anniversary, and that's no April Fool's joke.

Even though the recovery got off to a slow start in terms of job growth, that's ancient history now. We've had three years of good output growth and two years of good job growth. 1994 was the best year of all. The economy strengthened throughout the year, with real GDP growing at a 4.5-percent annual rate and unemployment falling to a 5.4-percent rate at year's end. For the year as a whole, real GDP increased 4 percent, and the economy gained 3.5 million new jobs. The consumer price index increased 2.7 percent from December to December for the second year in a row. The "misery index," the inflation rate plus the unemployment rate, was at its lowest level in many years.

Monetary policy in 1994 backed off from the extraordinarily easy stance of the previous two years. The 50 mph head winds that had justified the extraordinary ease dissipated and turned into tail winds. Much of the slack left over from the recession gave way to conditions associated with inflationary pressures in the past. The policy adjustment was apparently successful, as real growth remained strong and inflationary pressures have yet to surface in final consumer prices.

We at the Federal Reserve will continue our vigilance against inflation, which undermines the value of our money and erodes our faith in our government and its institutions. History has taught us that it is only through a sound, stable

economy that job growth, productivity and opportunity will endure and thrive. It has also taught us that as we move from manufacturing to services, we will find new job opportunities that are as good or better than what we've left behind. The lesson to remember is that it is our free enterprise system that has provided us with the highest standard of living of any nation in the world. This same system has enabled us to make the transition to a more service-oriented economy, a reflection of a richer and more prosperous America.



Robert D. McTeer, Jr.
President and Chief Executive Officer





“If God had made man a solitary animal, everyone would labor for himself....

But, since man is a social creature, services are exchanged for services....

Do this for me, and I will do that for you.” – Frédéric Bastiat

Americans eat more meals than ever at restaurants—from the fabled Brown Derby in Los Angeles to McDonald’s in Almost Anywhere, U.S.A. They take their clothes to the dry cleaners, their cars to a mechanic, their dogs and cats to veterinarians. They go to a barber shop or a beauty salon for hair care. Two-career families drop young children off at day-care centers.

For their homes, Americans hire maids, gardeners, plumbers, carpenters, electricians, carpet cleaners, chimney sweeps, exterminators, interior decorators, architects and alarm-monitoring companies. Outside the home, schoolteachers, police officers, mail carriers, garbage collectors and other public servants contribute to Americans’ day-to-day lives. Lawyers, accountants, stock brokers, insurance agents, financial planners and bankers help keep finances and personal affairs in order.

At night and on weekends, Americans sample the talents of a dazzling variety of entertainers—television stars, athletes, actors, comedians, musicians, to suggest just a few. For their personal fulfillment, they turn to fitness instructors, tutors, librarians, psychics, tour guides and music teachers. Whether buying a loaf of bread or a new car, shopping more often than not requires assistance from salesclerks.

Getting from here to there, and back again, would be a Lewis and Clark adventure without travel agents, ticket-takers, baggage handlers and flight attendants. To maintain

their health and well-being, Americans turn to doctors, nurses, dentists, social workers, massage therapists, psychiatrists and pharmacists. No matter how well we take care of ourselves, everyone eventually will need a funeral director.

All this—and much, much more—we call the service sector.

The service sector dominates the U.S. economy. It makes up two-thirds of the nation’s output. Nearly four of five Americans earn their livelihoods providing services. Not surprisingly, something so big inspires a host of superlatives. Services is the economy’s fastest growing sector. It leads the economy with the most self-employed, the most moonlighters, the most people who work at home. Services is the economy’s most diverse sector, encompassing neurosurgeons, college professors, delivery-truck drivers and dishwashers. It contains some of the newest professions and some of the oldest. It includes the most stable jobs and the least stable

ones. Service workers are the highest paid and best educated, and they are the lowest paid and least educated.

And that’s not all.

Services is probably the most maligned and least understood sector of the economy. Americans hear time and again that the service sector is the equivalent of weeds in an economy’s garden. Service jobs are low-paying, low in productivity, low in status—or so the litany goes. They offer only scant prospects for advancement and crowd out the economy’s good jobs.



“Value is not inherent in matter....If a material object renders a service for someone, it has value; if it renders no service, it has no value....Whether or not a service has material form, it has value, since it is a service.” – Frédéric Bastiat

The rise in services feeds fears about manufacturing's decline and about the nation's "good" jobs going overseas. Naysayers warn of an economy whose output is increasingly devoid of any material substance. The transition to services, they contend, will leave many Americans stuck in dead-end jobs, poorer than their parents, saddened by America's loss of national prestige. Convinced of impending demise and looking to place the blame, critics surmise that the fault lies with our free enterprise system. The market economy has failed to keep Americans on the road to prosperity. Its turn toward services has led us astray.

One putdown perhaps best captures the essence of service-sector phobia: "We're becoming a nation of hamburger flippers" (*Exhibit 1*). This gloomy vision of a nation of hamburger flippers has been repeated so often it's usually accepted with little question. That's a mistake. If Americans are going to understand the economic forces shaping their lives, they shouldn't close their minds at the sound of a catchy phrase.

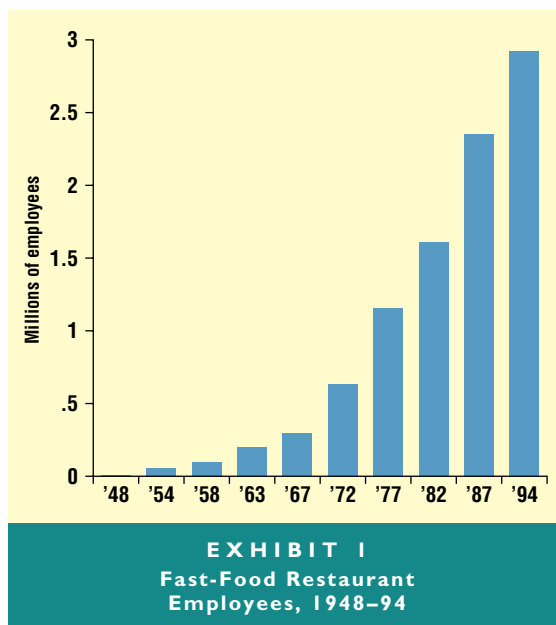
Much of the bad-mouthing of the service sector amounts to only half-truths. A more thorough analysis reveals that the growth of services is neither a sign of failure nor a reason for doom and gloom. It isn't the result of a nefarious plot by foreigners or some bungling by policymakers. Rather, the rise of services, properly understood, merely reflects the evolution of what we consume and how we produce. It's just progress—the progression of our tastes and our tools. And Americans' living standards can continue to rise if we build the necessary human capital—intellectual capital—needed for the Information Age.

THE SERVICE SECTOR: A STUDY IN DIVERSITY

The service sector encompasses the myriad transactions that don't typically involve tangible commodities. The somewhat arbitrary split between goods and services is perhaps best defined by examples: if a consumer buys a new car, it counts in the goods category. Renting or repairing one is a service. If an astigmatic American purchases eyeglasses, that's goods. A visit to the eye surgeon for radial keratotomy counts as a service. Building a television set is goods; equipping it with cable programming is a service. Making a key is manufacturing; duplicating it is a service. Painting the walls of a newly constructed home counts as goods; waxing the floors goes in the books as a service. Stone used in buildings shows up as goods, but stone sculpted into a statue becomes a service performed by an artist. Printing a book counts as goods, but copying its pages is a service.

In reality, goods and services aren't all that different. Both have value, and both are useful. Both can be bought, sold and even bestowed. They're just alternative ways of satisfying consumer needs. Why, then, are services so often dismissed as second class? If someone manufactures a truck, it's celebrated, yet if someone hangs on the back of one collecting trash, it's often denigrated, even though the only real value in a garbage truck is its use in the removal of waste.

Available statistics indicate that 95 million Americans, or roughly three-fourths of the work force, work in service industries (*Exhibit 2*). The biggest providers of service jobs are retail and wholesale trade, government, health care and the business professions. The number of service companies is booming. Service-producing establishments have grown one-



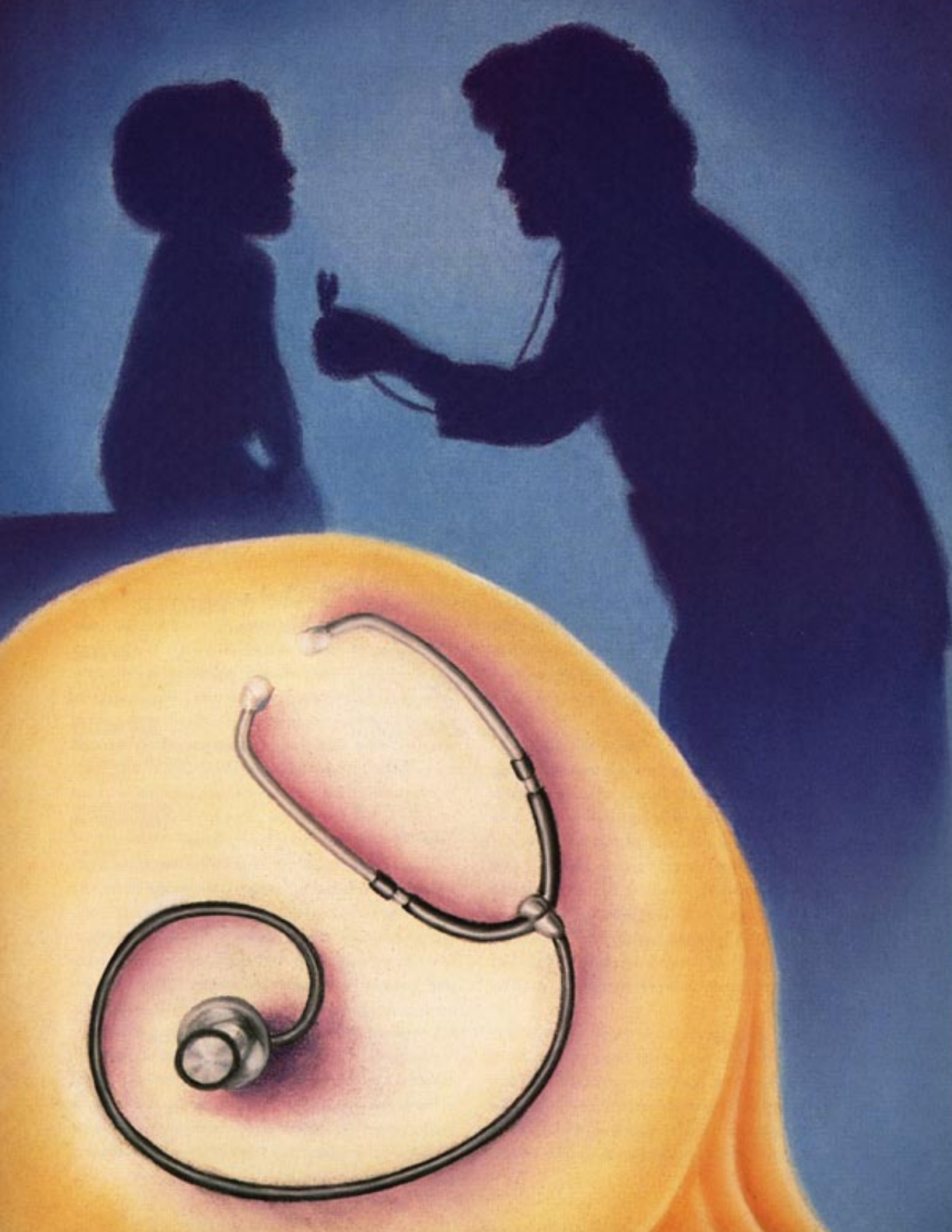


EXHIBIT 2
A Snapshot of Where America Works

Employment by occupation (in thousands)

Industry	Total employed	Executive, administrative and managerial	Professional specialty	Technicians and related support	Sales	Administrative support, including clerical	Other services	Precision production, craft and repair	Machine operators, assemblers and inspectors	Transportation and material moving	Handlers, equipment cleaners, helpers and laborers	Farming, forestry and fishing
Total employed	124,897	16,738	17,906	3,920	15,065	18,794	16,754	13,868	7,956	5,173	5,117	3,606
Goods-producing	32,351	3,889	2,066	799	787	2,743	340	8,745	6,489	1,449	2,013	3,031
Agriculture	3,479	119	80	50	14	171	17	37	8	55	20	2,908
Mining	684	104	73	28	5	57	5	240	31	122	17	2
Construction	7,921	1,068	165	71	55	478	27	4,544	81	523	879	30
Manufacturing	20,267	2,598	1,748	650	713	2,037	291	3,924	6,369	749	1,097	91
Service-producing	92,546	12,849	15,840	3,121	14,278	16,051	16,414	5,123	1,467	3,724	3,104	575
TCPU	8,707	1,096	474	315	277	2,371	256	1,210	137	2,015	542	14
Trade	26,204	2,336	519	174	10,842	2,419	4,944	1,417	401	1,049	2,011	92
FIRE	8,192	2,241	269	151	2,058	2,863	324	170	18	17	15	66
Other services	43,406	5,839	13,734	2,278	1,077	6,799	9,232	2,102	887	591	496	371
Government	6,037	1,337	844	203	24	1,599	1,658	224	24	52	40	32

NOTE: Data are for November 1994. TCPU stands for transportation, communication and public utilities. FIRE stands for finance, insurance and real estate.

third faster than goods producers since 1980. What's more, by 1991 the roster of service firms exceeded 5 million, five times the count for goods. The service sector lends itself to small-scale entrepreneurs. The average service firm employs just 14 workers, less than one-third the number for a typical manufacturing company.

Average pay in service-producing jobs is \$10.70 an hour, which, as the critics like to point out, trails the average manufacturing wage of \$12.10 an hour, including overtime. However, service-sector jobs range from the top of the scale to the bottom. National Basketball Association players, the best-paid athletes in team sports, make an average of \$1.6 million a year. Corporate attorneys with 10 years experience average an annual salary of \$95,000. A computer whiz can expect about \$48,000, a financial manager \$40,000. Teachers' pay averages \$30,000, and bus drivers earn \$21,000. Janitors make \$15,700, and cashiers, many of whom work part-time, earn \$11,700.

The service sector shows the same variability in other characteristics. Average weekly hours go from 60 or more for top white-collar professionals to as low as 28.8 in retailing, a sector that depends heavily on part-timers. The unemployment rate can be relatively high—almost 7.5 percent among transport workers, for example. Or it can be rela-

tively low, as with 3 percent for managers. Union membership goes from practically nil in finance, insurance and real estate to 37 percent in government and 30 percent in transportation and public utilities. Working conditions vary from the amenities of the plushiest penthouse suite (corporate liquidators) to long hours in extreme heat and cold, often on tired feet (beat cops). Safety ranges from the relatively riskless office to the peril of burning buildings (firefighters) or the nation's highways (truck drivers). Service jobs offer some of the economy's most flexible work schedules (authors), as well as some of its most demanding (obstetricians).

What shouldn't be missed about the service sector is its relentless expansion, decade after decade (*Exhibit 3*). The United States had a predominately agricultural economy two centuries ago, with 92 percent of Americans working on farms. At the start of the 1900s, agriculture was still the primary occupation, employing 40.4 percent of Americans, and services, including government jobs, made up 31.4 percent of U.S. employment. By 1930, the goods-producing industries—manufacturing, mining and construction—had eclipsed agriculture as a source of employment. Yet services, largely ignored in the fanfare over the Industrial Age, already had grown to more than half the work force. By the end of the 1960s, the service sector employed two-thirds of U.S. workers. The pro-

portion of jobs in goods-producing industries had already reached its peak in the early 1950s. In the past two decades, the transition toward service jobs continued to move steadily forward. One undeniable lesson of this history: *the rise of services is not some curiosity of modern times. It's something experienced by our grandparents, and even their forebears, and it came in tandem with rising U.S. standards of living.*

What, then, of the nation of hamburger flippers? It might seem that fast-food workers are indeed the standard of the service sector. In 1948, there were a mere 9,723 Americans working in fast-food restaurants. By 1994, there were 2.9 million, making it one of the most rapidly growing occupations in the postwar era. The pay isn't bounteous. A Bureau of Labor Statistics survey found average wages in fast-food outlets only 50 cents above the federal minimum wage of \$4.25 in 43 states and most metropolitan areas. The top-paying places average just \$5.50 an hour.

What critics ignore, however, is that these jobs aren't really typical of services. Fast-food restaurants rely heavily on teenagers, temporary employees and workers with little or no job experience. Nearly 70 percent of fast-food workers haven't yet celebrated their 20th birthday. A high proportion are part-timers, with an average workweek of 29.5 hours. And there's a rapid turnover rate. Nearly half the employees stay on the job one year or less. Industry analysts estimate that the first job for one in 15 U.S. workers today was at a McDonald's.

In other words, fast-food jobs are typically just first jobs for millions of American teenagers, a segment of society with a historically high unemployment rate. The fast-food industry has brought convenience and cheaper food—just what the public wants—while helping teach our kids business. Far from being a blight on the economy, it's just a peculiar industry. Few of its characteristics apply to the service sector as a whole, and it's misleading to use fast-food workers as the norm.

The other lightning rods for those who bemoan the rise in services concern manufacturing and trade. Critics argue that our economic system has failed to protect its good factory jobs—that other nations somehow bested us by taking away our manufacturing industries. These arguments have popular appeal, but they fail to recognize that the U.S. economy is producing what consumers want—relatively more services and relatively fewer goods. And they ignore how modern technology has improved the output of factory workers, freeing millions to provide additional services.

Factory employment has fallen to 18 million, down from a peak of 21 million in 1979. As a portion of employ-

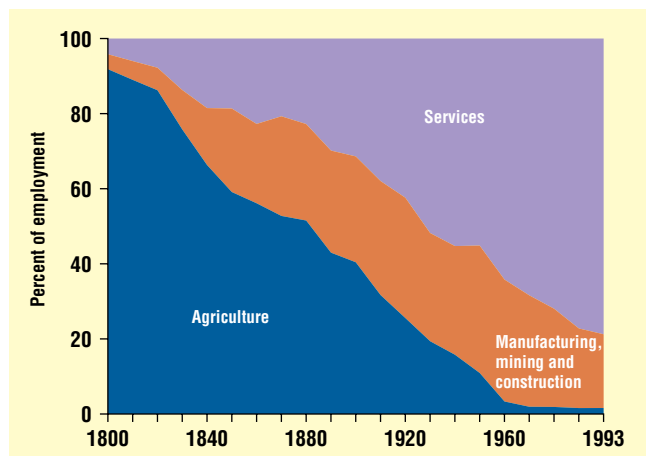


EXHIBIT 3
Employment: Americans Move to Services

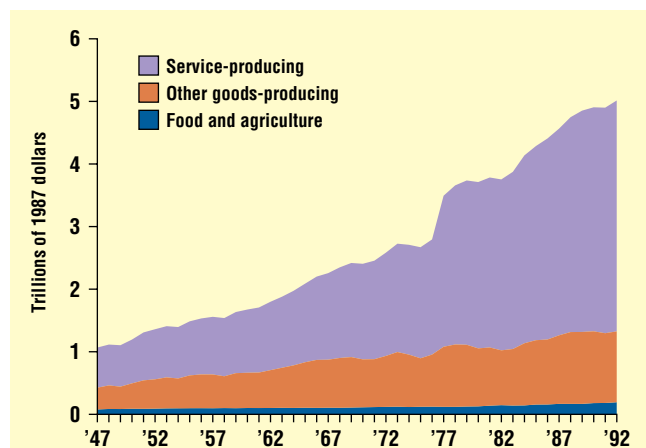


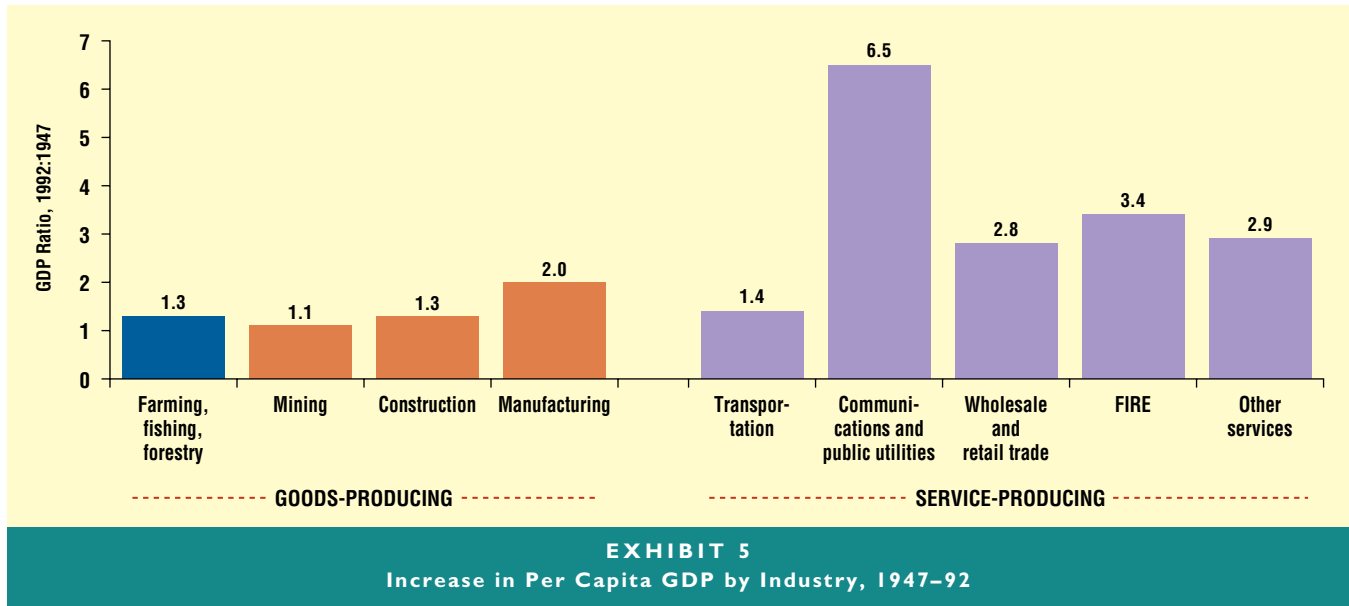
EXHIBIT 4
Gross Domestic Product

ment, manufacturing has slipped from 35 percent in 1953 to less than 16 percent today. Thousands of jobs in high-paying industries such as steel and automobile production have been lost in the past decade or so, most likely forever. The increase in the number of service jobs in recent decades may make it look as if that sector is looting manufacturing of its labor resources.

There are, however, other gauges of manufacturing that portray no decline at all. Output in manufacturing, for example, continues to rise, year after year (*Exhibit 4*). In 1992, the nation's factories churned out \$1.06 trillion in goods, up an inflation-adjusted 256 percent from 1947 and more than 27 percent from 1980. As a proportion of GDP, manufacturing slipped to roughly 19 percent in 1992, which is more a tribute to services' phenomenal expansion than to a loss of manufacturing output. The country is not manufacturing less. Quite the contrary, it's manufacturing more, just with fewer people.



“Man’s wants...are not static, but progressive.” “Hardly has man got himself a shelter when he wants a house; hardly has he clothed himself when he wants adornment; hardly has he satisfied the needs of his body when study, knowledge, art open to his desires a new endless vista.” – Frédéric Bastiat



As we use less labor to make the goods we want, more workers can be spared for the production of services. The result for Americans: we can consume both more goods *and* more services (Exhibit 5). To arbitrarily restore to the U.S. economy the 3 million manufacturing jobs lost since 1979 would require rolling back the impressive productivity gains made during the past 15 years. The country would be much poorer for it.

There’s been much worry over the country’s persistent deficits in merchandise trade, including more than \$140 billion in 1994. International trade, however, benefits the United States by allowing people and other resources to do what they can do best. Throughout its history, our nation has shifted to higher technology and to services, in which American companies and workers have a comparative advantage. In nearly every part of the world, U.S. firms are selling movies, insurance, financial services, medical care and much more. In 1980, overseas sales of merchandise exceeded services by 5 to 1; by 1994, the ratio had declined to 3 to 1. The United States runs a mounting services surplus—about \$60 billion last year.

Another myth is that manufacturing jobs are almost

always better than service jobs. This just doesn’t stand up. Workers in services, for example, are less likely to face unemployment because demand in those industries is steadier. Workweeks are generally shorter; job changes are fewer. The low wages in services, moreover, reflect mainly the low pay in retailing, a sector that attracts part-timers and job-hoppers after “a little spending money.” Many people aren’t seeking jobs with long hours. Where do they find work? Not in manufacturing. On average, factory employees work overtime. In retail trade, people find jobs with shorter and more flexible hours, easier working conditions and, naturally, lower pay. Many manufacturing jobs are dull, dirty, dangerous and dead-end, especially for the low skilled. The service sector has its share of undesirable tasks, but they should be compared with the worst factory jobs—not, as so often is the case, with the best. Scrubbing floors may leave a janitor’s back aching, but he’ll get little sympathy from an machine operator who spent eight hours changing spools of yarn in the noise and dust of a textile mill.

What’s more, the wage edge for manufacturing shows

signs of eroding. For many years now, pay in services has been rising relative to pay in goods. In 1980, the spread between average hourly wages in manufacturing and those in services exceeded 20 percent. By 1994, the gap narrowed to less than 2 percent. Setting aside retailing, U.S. service-producing jobs now actually pay an hourly wage that's 5 percent higher, on average, than manufacturing (*Exhibit 6*).

There's no reason to believe the trend toward higher service incomes will reverse itself. In fact, the most recent evidence suggests that service occupations are offering better pay and benefits to pull labor out of goods production. A 1994 study by the U.S. Department of Labor found that most jobs created since the end of the last recession in 1992 paid more than the national average of \$11.24 an hour. Significantly, all the gains came in service industries, which added managers, professionals and salespeople. Goods-producing industries had net declines in employment. The bottom line: *the service sector isn't just producing the jobs. It's creating good jobs. Sometime in the 1990s the critics probably will have to rethink their positions as service jobs become, on the whole, better paying than manufacturing work.*

GROWTH IN SERVICES: THE ROLE OF TASTES

We value highly what services do for us. They make our lives easier, as with caterers at party time or a 24-hour tax preparer on April 14. They make our lives more enjoyable, as with a trip to the movies, the Super Bowl or a comedy playhouse. Services make us more secure through insurance policies, alarm monitoring and 911 emergency operators. Most important perhaps, services save us time—the scarcest of resources. Delivery companies bring pizza for a quick dinner,

maids free us from household chores and pet trainers take on the task of teaching Fido to fetch the morning paper.

By the way they spend their dollars, Americans are telling the market that they want more services, and the economy is responding by providing them. Why do we want *more* services? For the most part, it's because we're getting richer. It's all tied up in economic progress: investment and new technology improve our tools, make us more productive and raise our incomes. Then, we buy more services.

Back in 1857, German economist Ernst Engel observed that as families made more money, they allocated a smaller portion of the household budget to food. Engel's law applies to goods as a whole. Demand for food, clothing and shelter—and, indeed, for most manufactured products—doesn't keep pace with increases in incomes. As we fill our stomachs with food, our garages with cars and our homes with gadgets, we spend relatively more on services and less on goods. In economists' jargon, goods are necessities, but services represent "superior" forms of consumption.

A chicken dinner can serve to illustrate how consumers behave. The very poor might buy a bird to raise in their own yards, and eat even the less desirable parts. Those who are a little better off might go to a grocery store to buy a whole chicken, then cut it up and cook it themselves. A family that's richer can afford to purchase precut pieces, perhaps even skinless breasts. Their wealthier neighbor might stop by the pick-up window at Kentucky Fried Chicken for an already prepared meal. And the even-richer household might go to a fancy restaurant for the chef's specialty—chicken *cordons bleu*. In this progression, what's added are services, and the chicken, a good, becomes a smaller part of the overall price. The same

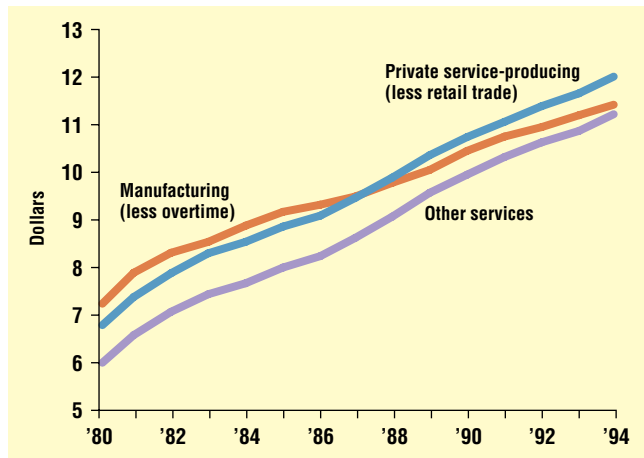


EXHIBIT 6
Hourly Earnings

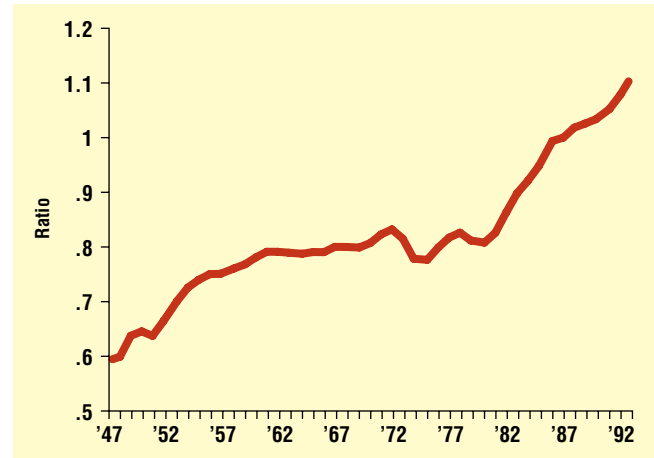


EXHIBIT 7
Relative Prices: Services vs. Goods

phenomenon occurs throughout the economy, with nearly everything consumers buy—from clothing to transportation.

In fact, services are what consumers want, even when they purchase goods. A homeowner who buys a lawnmower seeks nothing more than having his grass cut. Hiring a yardkeeping service accomplishes the same end, with less time and effort. The service solution usually costs more, so it's not surprising that households only turn to professional lawn care as incomes rise. Similarly, a poor family's source of entertainment might be a television topped by rabbit ears. A better off family can afford more varied fare—movies, amusement parks, cable television and travel, all of which are mainly services.

As they have more money, people move up to services or turn to goods embellished with a higher degree of service. They do this simply because they feel they are better off with more services, *not* because they are settling for some inferior form of consumption. Services, for the most part, are a matter of choice. We could do many of these jobs for ourselves, but often it's so much easier to do what we do best and pay someone else to help with life's daily chores. Substituting the services of a financial planner, a caterer or interior designer buys us time...which, more often than not, we use to enjoy other services, such as entertainment and travel. Total spending on recreational activities, adjusted for inflation, posted an average annual gain of 9 percent from 1970 to 1990.

The evidence of a shift to services with higher incomes is compelling. Since at least the late 1940s, services have become more expensive relative to goods in the United States (Exhibit 7). Expressed in terms of goods, Americans value services 86 percent more than they did in 1947. Two factors are at work to raise services' relative value. First, income-driven demand for services is increasing, putting upward pressure on services' relative price. Second, new technology reduces the cost of producing goods, so their relative prices are falling. *The significance of all this should not be overlooked. Usually, people buy less of something as its price rises. The fact that demand for services keeps going up in the face of higher relative prices suggests the strength of consumers' preferences for services.*

The increasing demand for services shows up in statistics on how Americans at various income levels spend their money (Exhibit 8, Panel A). For consumers who spend \$12,500, less than half of the budget goes to buying services. For consumers who have more to spend, the proportion expands steadily until, at \$56,500, outlays for services rise to nearly 60 percent of consumption. What do these patterns say? They indicate that people first satisfy basic needs, like food and clothing, that are mainly commodities. After that, people begin to buy what makes life easier and more enjoyable. Necessities to wants, then to conveniences, to amusements and to luxuries—tastes evolve as people and societies grow wealthier.

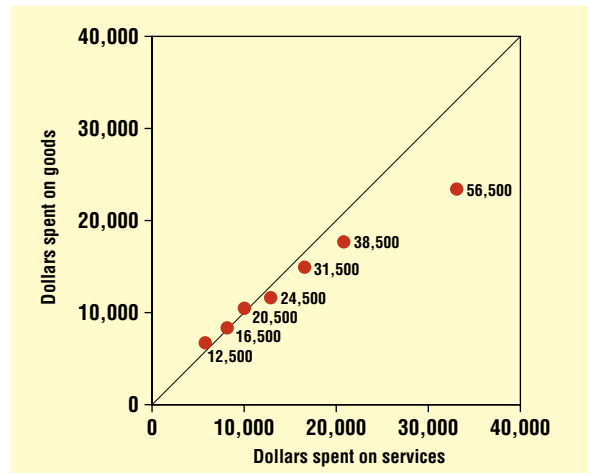


EXHIBIT 8, PANEL A
Household Expenditures on Goods and Services by Income, 1990–91

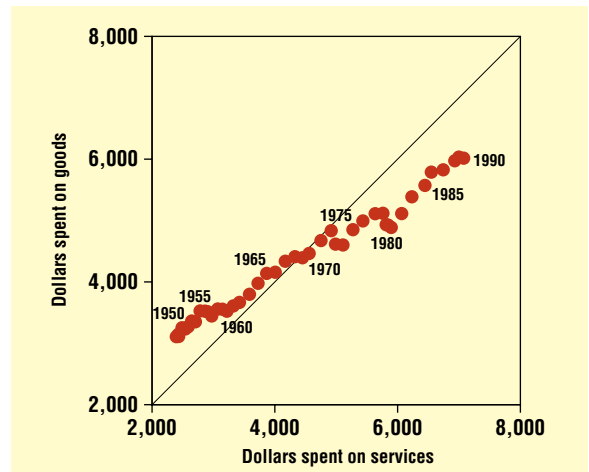


EXHIBIT 8, PANEL B
U.S. Per Capita Real Expenditures on Goods and Services, 1947–90

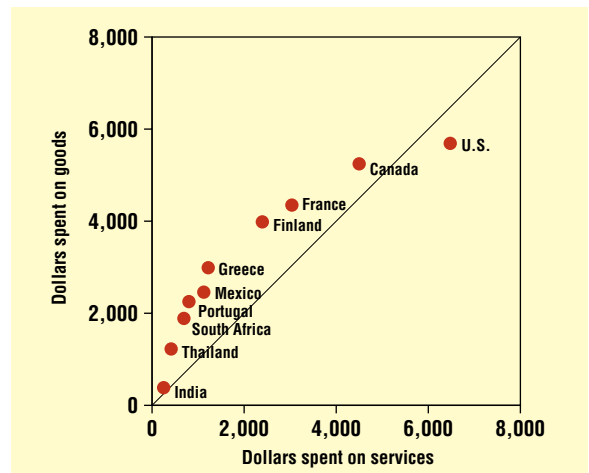


EXHIBIT 8, PANEL C
Per Capita Expenditures on Goods and Services by Country, 1987

To learn “is to harness Nature; to spare man all that is most physical, backbreaking, and brutish in the work of production; to make mind master over matter; to provide more and more....” – Frédéric Bastiat

The relationship between higher income and more services appears universal: it holds over time, and it holds across countries. Exhibit 8, Panel B illustrates the change in relative composition of per capita demand for goods and services in the United States from 1947 to 1990. Average income increased by 2½ times during that period, and so Americans indulged themselves with more services. And Exhibit 8, Panel C shows that this phenomenon isn't a quirk of the United States. It applies to other parts of the world as well. High-income countries, such as Canada, France and Finland, spend relatively more on services than poorer countries, such as India and Thailand.

The data on this are very clear. Higher income households consume relatively more services. Richer countries consume more services. And as America has progressed economically, we have sought more services.

The ripples spread throughout the economy. For example, there's been a rapid growth in *household services*, replacing work once done by members of the family. Restaurant meals are but one example. On a per person basis, there are no more meals being prepared today than in the past. It's just that a higher proportion were once cooked at home, which government statistics don't count. Other examples of household services are day-care centers, maid services, bakers, caterers and yard maintenance—all tasks that yesterday's economy performed largely in the home. In our age, these services are moving into the cash economy, due principally to the higher wages women can earn working outside the home.

Demand is up as well for *personal services*, including health care, transportation, grooming and entertainment.

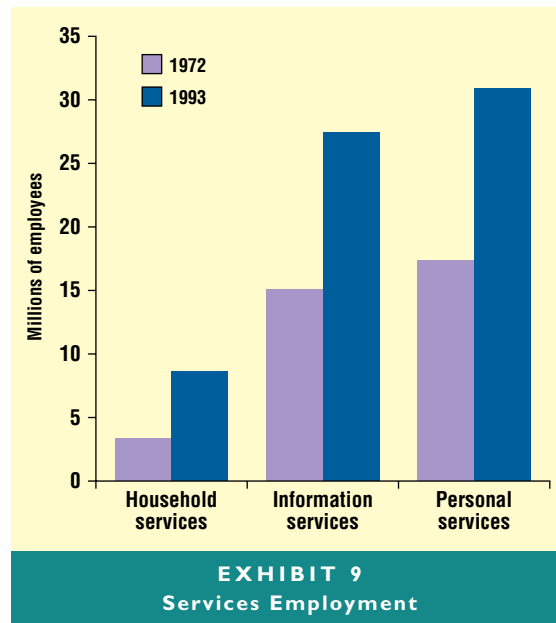
These primarily benefit individuals on a physical, psychological or emotional level. Often, they involve giving the customer a personal touch, a bit of pampering. On a flight from Dallas to London, both first-class and coach passengers arrive at the same time. The differences lie in the pleasure of the experience—and the price. Consumption of more personal services

is truly evidence of higher standards of living.

Lastly, there are *information services*—communication, education, retail and wholesale trade, financial services, legal advice, scientific research, engineering services, computing services and so on. These services have experienced rapid growth over the past two decades as a virtual explosion in information technology has connected all segments of society—households, businesses, academia, government, the news media. Not all that long ago, for example, investors needed a

ticker-tape machine to find out how their stocks were faring. Now, the information comes via a device small enough to carry in a pocket or purse. The personal computer, the facsimile machine, the Internet, the cellular phone, cable television, satellite dishes, even improved weather-forecasting radar—they all make information more expansive and more readily available. What's even better, many of these faster, more in-depth sources of information are becoming cheaper as they become more universal.

As societies get richer, consumers will demand more of all three kinds of services (*Exhibit 9*). Most of the hand-wringing over services involves the jobs that replace work once largely done in the home—the household services. Many of these are the low-paying occupations captured in the carica-





ture of fast-food restaurants. They have been growing faster than either personal or information services, with employment increasing by an average of almost 5 percent annually over the past 20 years. The growth, though, is largely benign: households with two wage earners require help with chores. In 1950, the average family had roughly one person over age 16 available for housework and errands. Now, the ratio has slipped to two for every three families, meaning private businesses have had to make up for the loss of as many as 30 million at-home workers. In the past decade, nearly all businesses that replace home production have shown strong gains in employment and sales.

Although household services are the fastest growing, they still aren't the biggest employers. Personal services provide nearly four times more jobs. Information services' employment is more than three times as big. Once again, the data belie the notion that service workers are predominately flipping burgers. What's more, the growth of household services is slowing. The movement into the market of work traditionally done by women in the home has largely run its course. Household services' employment rose by an annual average of 6.3 percent in the 1970s, 4 percent in the 1980s and barely 2 percent so far in the 1990s. As consumers satisfy their needs for restaurant meals and maids, growth in demand for household services almost surely will slow further. Personal and informational services, with their better jobs, will likely eclipse the growth rate of household services. The aging of the baby boomers and the lengthening of retirement years are likely to increase demand for nursing care and recreational services.

We are both producers and consumers. In one part of our lives we work; in the other, we buy. It is inconsistent for us to want mostly services as consumers yet produce mostly goods as workers. In the end, we're going to have the jobs that produce what we want. The tastes of consumers are a powerful guiding force for an economy.

GROWTH IN SERVICES: THE ROLE OF TOOLS

By themselves, the shifting tastes of a richer nation would drive an economy toward more and more services. The process gets much of its push, however, from improved methods of production. Jobs of the distant past often made human beings little more than beasts of burden—masters mainly of muscle power. The farmer trudged behind his plow; the pick-and-shovel laborer clawed at the earth; the stevedore on a loading dock slung cargo over his shoulder.

As the economy advanced from the Agrarian Age to the Industrial Age, the task of supplying energy transferred to steam power, internal-combustion engines and electric motors. Machines reshaped the role of workers in the production process. People learned how to use tractors, backhoes, forklifts, cranes, lathes, metal stampers and other labor-saving devices, and the economy grew more efficient. Industrial Age tools required less of people's muscle, but they required workers to apply their motor skills in operating the machines. The division of labor into separate small tasks yielded big gains in output and wages for Americans, but often by putting them to work in repetitive, mindless tasks.

With the next round of technological progress, machines themselves began taking over more of the chores in running factories. Employees feared the new processes would reduce the need for existing skills—and they were right. Motor skills were needed less for production. Once again, people adapted to the new technology by using different talents. Workers moved from the plant floor to the office and found jobs that used more of their mental faculties. They kept accounts, filled out forms and rubber-stamped decisions. For many employees, the tasks were routine and, in the end, unsatisfying because they used only a small portion of human potential.

Today's jobs rely even less on muscle power and motor skills. Repetitive, formulaic intelligence is on the way out, now being superseded by humankind's unceasing inventiveness. The signature technological advance of our era is the microprocessor, the tiny "brains" embedded in computers, industrial robots and all sorts of other tools. U.S. workplaces use literally billions of them. They crunch numbers faster and keep tabs on records more accurately than any human being ever could.

As the computer becomes the workhorse of modern society, it takes only a few employees to do what used to require dozens. The number of secretarial jobs, for example, has been declining since 1987 as computers and laser printers allow supervisors to produce their own correspondence. Law firms turn to on-line services, such as Lexis, to improve the productivity of legal assistants. Even in industrial settings, increasingly intelligent computers are taking on mundane tasks that once required workers' constant attention. A modern steel plant, for example, allows a handful of technicians at a computer console to accomplish what in days past took hundreds of workers to do. Within U.S. manufacturing, modern tools are pushing employment toward service-producing jobs. In 1976, 32 percent of manufacturing workers had manage-

EXHIBIT 10
Tools of the Ages

Agrarian Age	Industrial Age	Information Age
Plow (4000 B.C.)	Blast furnace (1300)	Telescope (1608)
Yoke (3000 B.C.)	Ball bearings (1794)	Stethoscope (1816)
Aqueducts (600–500 B.C.)	Lathe (1798)	Camera (1826)
Archimedes' screw (200 B.C.)	Battery (1800)	Telegraph (1843)
Saddle (200)	Steam engine (1800)	Precision clocks (1850)
Treadmill (200–300)	Conveyor belt (1804)	Typewriter (1867)
Wheelbarrow (300–400)	Circular saw (1810)	Telephone (1876)
Horse collar (500)	Hydraulic jack (1812)	Phonograph (1877)
Windmill (870)	Portland cement (1824)	Slide rule (1881)
Dredger (1540)	Standard nuts and bolts (1825)	X-ray machine (1895)
Pressure cooker (1680)	Sewing machine (1846)	Radio (1906)
Rifle (1730)	Electric loom (1846)	Cash register (1919)
Threshing machine (1732)	Bessemer steelmaking (1860)	Television (1926)
Swing plow (1780)	Internal combustion engine (1860)	Teletype machine (1931)
Cotton gin (1793)	Milling machine (1862)	Radar (1934)
All-iron plow (1808)	Drive chain (1864)	Tape recorder (1935)
Reaper (1826)	Dynamite (1866)	Electron microscope (1939)
Binder (1850)	Two-stroke engine (1878)	Computer (1946)
Sheep shears (1868)	Blow torch (1880)	Xerography (1946)
Barbed wire (1873)	Ace welder (1886)	Videotape recorder (1952)
Milking machine (1878)	Diesel engine (1892)	Satellites (1958)
	Electric motor (AC) (1892)	Laser (1960)
	Electric drill (1895)	Floppy disk (1965)
	Assembly line (1908)	Microprocessor (1971)
	Rocket (1926)	Personal computer (1975)
	Jet engine (1939)	Fiber optic cables (1977)
	Nuclear reactor (1942)	Facsimile machine (1981)
	Laser (1960)	Camcorder (1982)
	Industrial robots (1961)	Cellular phone (1983)
		Compact disc (1983)
		Internet (1991)

What's a Person to Do?

Agrarian Age	Industrial Age	Information Age
Muscle power	Motor skills, formulaic intelligence	Analytic reasoning, creativity, humor, personal touch

rial, professional, sales, technical or service jobs. By 1994, the white-collar contingent at a typical U.S. manufacturing facility had risen to over 40 percent.

There's nothing new in all this. Since the dawn of time, technology has been making some jobs obsolete. The benefit to society is that it liberates labor for other, more important tasks, creating new jobs, new industries and more output. And so it is today. Machines are taking over what people once did, with human beings finding their work in what machines can't do or can't do well. People are designing the hardware, developing the software and teaching cybernetics. They are creating the entertainment and enjoyment. They are providing the helping hand and human face. What many people bring to the workplace in a modern economy are analytic reasoning, creativity and a personal touch. These are the charac-

teristics of service producers.

The previous generations of tools mainly shaped the physical world. Tractors tilled the soil, and combines harvested the crops. Bulldozers moved the earth, and cranes helped build skyscrapers. Derricks drilled for oil, and pipelines carried it to the refinery. Saws cut wood, and lathes shaped it into furniture. Engines, motors, gears, pulleys, presses, molds, looms, shears, metal-forming machines, conveyors—all ultimately had to do with transforming or transporting material goods.

Today's bellwether inventions—computers, fiber optics, cellular technology, biogenetic engineering—are useful primarily for dealing, in some way, with ideas. They create, transform or move information (*Exhibit 10*). These tools help companies make more informed decisions, find wider mar-

EXHIBIT 11
It's Not the Industry; It's the Education

Percent with		Median weekly wages	Occupation	Primary industry	Projected growth 1992–2005 (percent)
High school diploma or less	Bachelor's degree or more				
7.0	75.8	\$682	Professional specialty: engineers, architects, surveyors, scientists, physicians, nurses, pharmacists, professors, teachers, librarians, economists, psychologists, therapists, social workers, clergy, lawyers, writers, entertainers, athletes, photographers.	Services	37.4
25.3	47.3	\$664	Executives, administrators, managers: managers—marketing, advertising, purchasing, public relations, personnel, lodging, health, food serving, real estate; administrators—public sector, education, protective services; accountants and auditors, underwriters, financial officers, management analysts.	Services	25.9
33.0	36.4	\$551	Sales (excluding retail): insurance, real estate, advertising, financial securities and commodities salespersons; sales supervisors and proprietors.	Services	20.2
23.5	29.6	\$528	Technicians and related support: Laboratory, radiology and health technicians; licensed practical nurses; electrical and electronic technicians; surveying technicians; biological and chemical technicians; airplane pilots and navigators; computer programmers; legal assistants.	Services	32.3
66.1	6.8	\$501	Precision production, craft, repair: mechanics—automobile, aircraft, industrial machinery, heating and refrigeration equipment; repairers—electronic equipment, data processing equipment, communications equipment; tool and die makers, machinists, plant operators, inspectors, carpenters, masons, electricians, painters, plumbers, roofers.	Goods and Services	13.3
75.4	4.6	\$447	Transportation and material moving: truck drivers, bus drivers, taxicab drivers and chauffeurs; rail and water transportation workers; crane and tower operators; grader, dozer and excavating machine operators; industrial truck and tractor equipment operators.	Goods and Services	21.8
47.5	15.0	\$392	Administrative support, including clerical: secretaries, stenographers, typists, computer operators, clerks, travel agents, ticket agents, receptionists, telephone operators, mail carriers, messengers, dispatchers, meter readers, investigators and adjusters, bill collectors, bank tellers.	Services	13.7
78.6	4.1	\$348	Machine operators, assemblers: stamping-press machine operators; grinding, abrading and polishing press operators; sewing machine operators; launderers and dry cleaners; packing and filling machine operators; furnace, kiln and oven operators; slicing and cutting machine operators; welders; assemblers; production inspectors, checkers and testers.	Goods	–3.4
64.4	8.4	\$313	Service (excluding food service): dental assistants, nursing and health aides, janitors and cleaners, household maids and servants, hairdressers and cosmetologists, child care workers, police and detectives, guards, correctional institution officers, firefighters, flight attendants.	Services	34.8
51.0	4.0	\$312	Handlers, equipment cleaners, helpers and laborers: construction laborers, baggage handlers, machine feeders and bearers, service station attendants, car washers and equipment cleaners, hand packers and packagers.	Services	17.4
40.4	9.4	\$269	Farming, forestry, fishing: farmworkers, groundskeepers and gardeners, animal caretakers, timber cutting and logging.	Goods	3.4

NOTE: Data on education, wages and projected growth are as of 1993.

kets, cut costs and increase quality; they enable entrepreneurs to offer whole new services. Computers, modems, phone lines and software, for example, make possible a proliferation of on-line databases on the Internet. Gene-splicing produces tomatoes that won't die in a hard freeze. Software, compact discs and laser printers can make almost any desktop a publishing house. Fax machines allow restaurants to increase accuracy and speed in filling take-out orders.

Tools for the mind are rejuvenating industries. They shape what Americans do at their jobs, today and in the future.

THE SERVICE SECTOR: THE EDUCATED DO BEST

There's abundant evidence to show that the U.S. economy's shift to services comes mainly from changes in our tastes and tools. It's an age-old story of economic forces at work, with little role for heroes or villains. What's going on

will someday, with the benefit of hindsight, be celebrated as progress—just as we today understand the switch from agriculture to factory work in the first half of the 20th century as a step forward in living standards.

As consumers push the economy toward producing more services, as computer-driven machines take on more of the manufacturing, leaving people to provide higher value services, employees will need different skills. A crackerjack drill-press operator can't transfer to a job as a computer repairer or a teacher, at least not without training. The challenge will be to give workers the service-oriented skills that are needed for today and the 21st century.

With their frequent conjuring of the image of hamburger flippers, those who fail to recognize the progress of American free enterprise portray the shift toward services as a downward spiral to low-skilled jobs, suitable only for the ill-educated. That's not the case. If anything, the service jobs of today, as well as those that will be created in the future, require higher skill levels and more education.

In the United States, the highest pay can be found in occupations that require the most years of schooling (*Exhibit 11*). Interestingly, they are predominantly service jobs: professionals, managers, nonretail sales, technicians. On average, pay in these pursuits exceeds what workers earn in construction and factory jobs.

There are, of course, lower paying service professions. They include such occupations as dental assistants and flight attendants, plus handlers, helpers, cleaners and laborers. These jobs differ from the top earners in services in one

crucial respect—education. When it comes to paychecks, *it's not the industry, it's the education* that matters most. The more highly educated will reap the rewards of the growth in services.

The returns to education are well-documented, and they are getting larger over time (*Exhibit 12*). Those with the least education and the lowest skills will, more often than not, have to settle for the least desirable jobs, whether producing goods or services. In short, a Third World education is going to command Third World wages, whether it's in North Korea or North Carolina.

Education will, if anything, become even more important as the shift to the service economy continues. The Department of Labor's latest projections through the year 2005 indicate that the fastest job growth will come in two high-wage categories—professionals and technicians, both of which project increases of more than 30 percent. Executives and nonretail sales and transportation will each rise by 20 percent or more (*Exhibit 11*). Another leader will be nonfood services, a lower wage grouping, which figures to increase by more than 30 percent. By contrast, there will be slower expansion in goods-producing jobs. Employment in core manufacturing occupations—machine operators and assemblers—is expected to fall 3.4 percent.

Yesterday's core jobs were held by factory workers. Tomorrow's will be held by technicians. Estimates are that the number of jobs for technicians—clinical lab technologists, radiologic technologists, licensed practical nurses, health paraprofessionals, engineering technicians and technologists, sci-

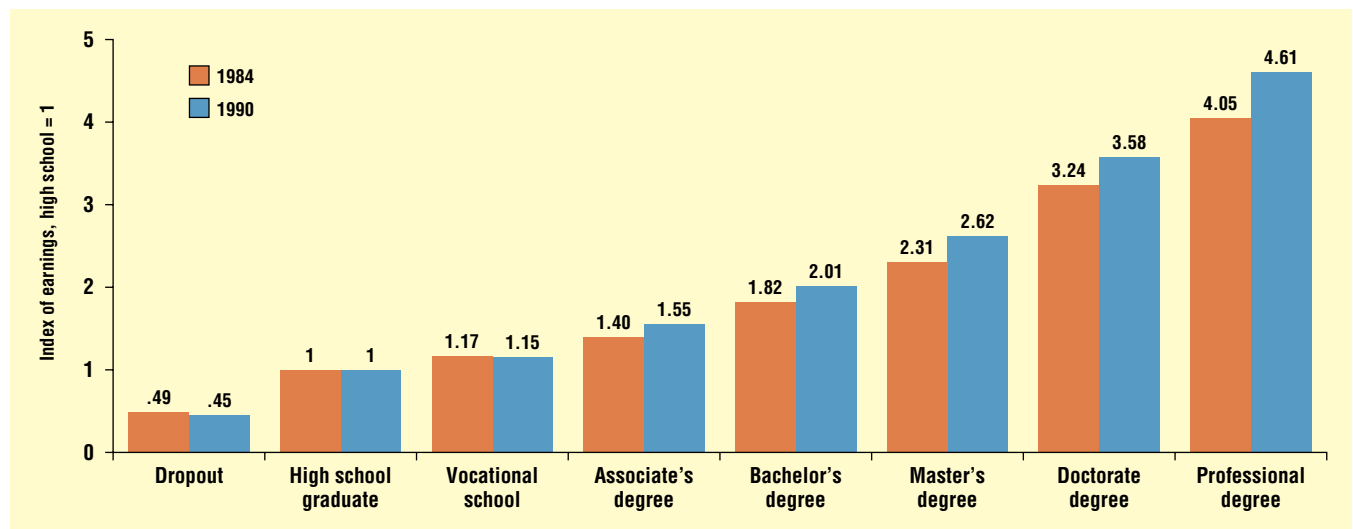


EXHIBIT 12
The Education Earnings Premium: Even Better than It Used to Be

“What is education...if not the transmission from generation to generation of the knowledge acquired by society...of a treasure that is refined and increased every day?” – Frédéric Bastiat

ence and mathematics technicians, computer programmers, paralegals and so on—will grow by more than 4 million by 2005. The hallmark of these jobs is education. Even in goods-producing sectors, advances in technology will put a premium on education. The factory worker of tomorrow will have to be more computer savvy, more analytical and better at handling words and numbers.

Modern machines are tools for the mind rather than for the muscle, producers of services rather than goods. To fully grasp how the rise of services is changing our economy, we need to rethink our notions of capital. Traditionally, capital is simply machinery, land and structures. As services become more important, though, productive assets are shifting away from physical capital and toward *intellectual capital*, the term for what workers know that allows them to create value for consumers, including abilities to communicate, research, analyze, market, solve problems, teach, comfort, serve and entertain. In the past, we used manufacturing labor to build “hard” capital goods, the output of which was largely tangible products. Today, we use service labor, such as teachers, to build “soft” capital, the output of which is largely services.

The Industrial Age required *horsepower*.

The Information Age requires *brainpower*.

The United States became the world’s leading economic power by efficiently providing a steady flow of physical capital. Our country’s free market system erected relatively few barriers to building the capital required for the Industrial Age. Through the magic of the market, capitalists and entrepreneurs, directed by an incentive for profits, gave America the machines to produce the goods consumers wanted.

The creation of intellectual capital isn’t as automatic. Brainpower cannot be separated from the human beings who embody it. As a result, it enters the production process differently, coming through the front door rather than the loading dock. Human capital is complex. It can’t be separated from humans’ passions and insecurities. It has to eat, and it has to sleep. It socializes. It can motivate itself. It can shirk, sulk and get depressed and even destroy itself with drugs or alcohol. It

chooses. It votes.

Intellectual capital emerges out of its own volition in a way that’s far different from physical capital. It isn’t assembled on a factory floor or built on a vacant lot. A productive worker emerges only after long years of nurturing, including schooling, work experience and socializing in an environment that steadfastly rewards long-term investment in learning.

Physical capital has no natural investment barrier. Human capital often does. The cost of building physical capital is typically borne by businesses. Firms invest in new plants and equipment, hoping to benefit from lower costs and higher profits. The burdens of building intellectual capital, on the other hand, fall to parents, taxpayers, employers and individual workers. There’s a separation between who pays and who benefits. Although investment in education has a high return (*Exhibits 11 and 12*) and billions of dollars flow into education, some segments of society don’t have access to the financial resources and good schools needed to develop skills for today’s jobs. As a result, too many Americans are underinvested in education. In the United States, the quality of intellectual capital varies widely—from world-class theoretical physicists to high school dropouts who can’t read.

Improving America’s brainpower is crucial. Today, as in the past, the economy’s progress depends on accumulating additional capital. In the age of brainpower, there’s no guarantee of economic growth, especially at the pace of yesterday. Progress could slow—indeed, it likely will slow—unless we find ways of creating the human capital demanded by the Information Age.

To get the most out of the new economy, the country must pay attention to the quality of its workers. The spotlight will be on education, including retraining. It should be embraced broadly. Education is not just sending more young people to college. It’s on-the-job training, vocational schools, career retraining, professional enrichment and postgraduate work. It’s learning from parents, grandparents and friends, reading and studying independently. Even television, radio and newspapers can widen our horizons.





“Let men labor, exchange, learn, band together, act, and react upon one another, since in this way, according to the laws of Providence, there can result from their free and intelligent activity only order, harmony, progress, and all things that are good, and increasingly good, and still better, and better yet, to infinite degree.” – Frédéric Bastiat

Education is not just studying hard. It's studying the right subjects, adapting the curriculum to meet the needs of business and industry, paying attention to market signals on what knowledge society values.

Education is not just accumulating knowledge and cognitive skills. It includes developing personal skills and sensitivities to others' needs, learning how to give and take and embrace the idea of customer service.

We're no longer in the fields or on the factory floors, where work was largely impersonal as we planted crops or shaped metal. More than ever before, today's work rewards us more for interpersonal skills, which must also be cultivated. In a very meaningful sense, we're all in the people business now.

In all modern nations, education involves public institutions, especially schools. Citizens and governments in nearly all parts of the United States are working on initiatives to improve the country's education from kindergarten through high school. That's all to the good, but incentives are indispensable, just as they are in the accumulation of physical capital.

Harnessing the power of consumer choice might be one of the best ways of improving the quality and efficiency of education. One proposal, popular among free market economists, involves distributing vouchers for school expenses to parents and letting them shop around for the education they want for their children. If schools have to compete for students, they are more likely to improve the teaching of basic skills and offer curriculums that pay off in better qualified workers.

The United States can promote intellectual capital in other ways, too. It might grant investment in human capital the same tax deductions as spending on physical capital, giving families greater incentive to invest more in education. It might treat the depreciation of human capital the same as physical capital, perhaps by allowing workers tax exemptions to retrain for new occupations. Individual Retraining Accounts might replace direct payments to the unemployed and provide badly

needed funding for polishing job skills. They would also give individuals more control over their own lives.

CONCLUSION

Service-sector phobia is misplaced. The question is not, Will there be any good jobs? It's whether our educational system will prepare workers to fill them. Moving from goods production to services doesn't mean that wages and living standards will fall. It doesn't mean that productivity will be forever constrained. It doesn't mean that most Americans can't have good jobs, if they obtain the skills and education the new economy needs. Indeed, more services will mean a richer, easier and more enjoyable life for most consumers.

A great deal of the anxiety about the service economy undoubtedly comes from the shift in the country's economic base. When in bygone days farmers left the fields for the factories, they had to refit themselves to produce different products. In time, they learned quite well. As today's Americans continue to move from manufacturing to services, many will find new employment opportunities that are as good or better than what they leave behind.

We shouldn't forget that the transition to a more service-oriented economy reflects rising incomes. And America's free enterprise system will continue to raise our living standards as long as we build the necessary capital—not just physical capital but intellectual capital as well.

Hand-wringing over the nation's growth in services amounts to brooding over a blessing. It's a boon, not a bane. Far from signifying failure, America's transition to a service economy is further bounty from our nation's free enterprise system.

It's time to stop putting down the service sector: give it some respect, for *servicing each other is everybody's business*.

ACKNOWLEDGMENT

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DATA SOURCES AND NOTES FOR EXHIBITS

Exhibit 1

Fast-Food Restaurant Employees, 1948–94

U.S. Department of Commerce (*Census of Business: Retail Trade and Census of Retail Trade*, Geographic Area Series, United States, various years).

Exhibit 2

A Snapshot of Where America Works

U.S. Department of Labor (*Employment and Earnings*, December 1994, Table A–19, "Employed Persons by Industry and Occupation").

Exhibit 3

Employment: Americans Move to Services

U.S. Department of Commerce (*Historical Statistics of the United States: 1789–1945; Historical Statistics of the United States: Colonial Times to 1970*) and U.S. Department of Labor (*Employment and Earnings*).

Exhibit 4

Gross Domestic Product

U.S. Department of Commerce (*Survey of Current Business*).

Exhibit 5

Increase in Per Capita GDP by Industry, 1947–92

U.S. Department of Commerce (*Survey of Current Business*).

Exhibit 6

Hourly Earnings

U.S. Department of Labor (*Employment and Earnings*).

Exhibit 7

Relative Prices: Services vs. Goods

U.S. Department of Commerce (*Survey of Current Business*, Table 2.2, various issues).

Exhibit 8

Panel A

Household Expenditures on Goods and Services by Income, 1990–91

U.S. Department of Labor (*Consumer Expenditure Survey, 1990–91*).

NOTE: Data are for consumer units of one person, 1990–91.

Panel B

U.S. Per Capita Real Expenditures on Goods and Services, 1947–90

U.S. Department of Commerce (*Survey of Current Business*, Table 2.2, various issues, and *Current Population Reports*).

Panel C

Per Capita Expenditures on Goods and Services by Country, 1987

Organization for Economic Cooperation and Development and United Nations.

Exhibit 9

Services Employment

U.S. Department of Commerce (*Survey of Current Business*).

NOTES: As constructed, household services consist of residential care; child care services; eating and drinking places; retail bakeries; retail nurseries and garden stores; electric, gas and sanitary services; landscape and horticultural services; and car washes. Information services are communications; security and commodity brokers; holding and investment offices; nondepository institutions; insurance; real estate; business services; legal services; educational services; membership organizations; engineering and management services; job training and related services; general merchandise stores; building materials and garden supplies (less retail nurseries and garden stores); automotive dealers and service stations (less gasoline service stations); apparel and accessory stores; furniture and home furnishings; and miscellaneous retail establishments. Personal services are health services; amusement and recreation services; motion pictures; hotels and other lodging places; transportation; auto repair, service and parking (less car washes); depository institutions; food stores (less retail bakeries); wholesale trade; agricultural services (less landscape and horticultural services); social services; personal services; miscellaneous repair services; and services not otherwise classified.

Exhibit 10

Tools of the Ages

De Bono, *Information Please Almanac*, North, Smithsonian Institution and Usher.

Exhibit 11

It's Not the Industry; It's the Education

Silvestri and U.S. Department of Labor (*Monthly Labor Review* and unpublished data).

Exhibit 12

The Education Earnings Premium: Even Better than It Used to Be

U.S. Department of Commerce (*Current Population Reports*).

BASTIAT QUOTATIONS

Inside cover—*Selected Essays on Political Economy*, pp. 169, 162–63, 174; *Economic Harmonies*, p. 131; *Selected Essays*, p. 185.

Page 3—*Economic Sophisms*, p. 140.

Page 4—*Economic Harmonies*, pp. 152, 150, 149.

Page 9—*Economic Harmonies*, pp. 45, 39–40.

Page 12—*Economic Harmonies*, p. 197.

Page 18—*Selected Essays*, p. 240.

Page 21—*Economic Harmonies*, p. xxx (front matter).

In 1994, the Federal Reserve Bank of Dallas focused on integrating its activities with the dramatic changes taking place in the financial industry. The Dallas Fed introduced a quality initiative program to enhance customer service, continued efforts to streamline operations and developed new services and products to provide more benefits to customers. These efforts reflect the Dallas Fed's ongoing commitment to ensuring efficient, reliable financial services, sound banking and economic growth in the Eleventh District.

ECONOMIC OVERVIEW

The Eleventh District continued its strong economic growth in 1994, outperforming the national economy for the fifth consecutive year. A robust construction sector, a strong national economy and growing trade with Mexico drove economic prosperity in Texas, Louisiana and New Mexico. In 1994, New Mexico and Louisiana outperformed the nation, while Texas grew at about the same pace. Nonfarm employment in Texas, Louisiana and New Mexico rose 3.6 percent last year, compared with 3 percent for the nation.

The implementation of the North American Free Trade Agreement was an important source of strength for Texas. Despite political turmoil in Mexico, trade and investment increased, and during the first six months of 1994, Texas exports to Mexico increased 13 percent, compared with the same period in 1993. Moreover, in the District as a whole, gains in construction-related sectors helped offset continued weakness in defense- and energy-related employment.

Despite a relatively weak energy sector, the Louisiana economy was bolstered in 1994 by rapid growth in the gaming industry that resulted in strong employment growth in the construction, tourism and hotel industries. New Mexico, meanwhile, continued to benefit from increased electric and electronic equipment manufacturing and a stable defense industry.

DALLAS FED FINANCIAL SERVICES

In the financial services area, the Dallas Fed focused on developing more efficient products, improving the quality of service and implementing a cost-containment program to better serve the Bank's customers. In check collection, the Bank offered several new products to align its services with same-day settlement requirements. By late 1994, an image pilot project was completed and financial institutions were able to take advantage of full-image

check delivery and provide image statements to their customers. The Bank also completed a number of programs to streamline operations in the checks area, including an upgrade in software that provides a base for future check product development. As part of the Bank's quality initiative program, an automated adjustments system was implemented in 1994 to allow the Bank to research and resolve more adjustment cases on a same-day basis.

In the currency and coin area, the Bank prepared for the installation of new high-speed currency processing machines. In 1994, the Dallas Office installed, tested and began using the new high-speed currency processing machines. The Branch offices in El Paso, Houston and San Antonio will receive the machines in 1995. The machines possess quicker

processing and more advanced counterfeit detection capabilities. At the request of the Federal Reserve Board of Governors, the Bank prepared a proposal to increase the number of storage locations in its currency vault in 1995. The increased capacity is necessary to accommodate the storage of new, security-enhanced currency planned for distribution in 1996. The Dallas Fed will serve as a repository for the new currency and dispense the notes to other Reserve Banks.

In late 1994, the Dallas Fed formed an alliance with the Southwestern Automated Clearinghouse Association and several financial institutions to promote automated clearinghouse originations during the next few years. The alliance will enable the Bank



to strengthen its working relationship with financial institutions while also strengthening the role of financial institutions in electronic payments.

A rise in interest rates resulted in an increase in the number of Treasury securities transactions handled by the Bank. Transactions more than tripled from the beginning of the year to the final months of 1994. Consolidation continued to impact securities operations, with the Dallas Office assuming the book-entry responsibility of the Branch offices in preparation for the introduction of a new national book-entry securities system.

BANKING SUPERVISION; DISCOUNT AND CREDIT

In 1994, the banking industry experienced a rebound in lending that had been missing in the industry recovery that began in 1990. Consolidation also continued to play a part in the industry. Strong profits, improved asset quality and increased capital were also hallmarks during the year. However, in 1994, the return on District banking assets fell below the previous year's, when accounting rules changes resulted in unusually large earnings. The return on assets in 1994 was approximately 1.03 percent, compared with the 1.4-percent return of 1993. Reflecting the strength of the industry, the District had no bank failures in 1994.

As the supervisor of state member banks and bank holding companies in the Eleventh District, the Dallas Fed is responsible for conducting examinations for safety and soundness and for compliance with consumer protection laws, as well as with the Community Reinvestment Act. Due to the improving conditions, the Bank conducted fewer examinations in 1994—366 exams, compared with 432 in 1993. Of the 366 examinations, 51 were reviews for compliance with consumer and civil rights legislation. During six forums around the District sponsored by the Dallas Fed, Bank representatives met with financial institution leaders to discuss concerns about regulatory burden, changing legislation and fair lending issues.

Consolidation within the industry continued, with fewer and larger financial institutions as a result. The Dallas Fed processed 245 applications—compared with 207 in 1993—for mergers and acquisitions, changes in control and management, and other actions requiring regulatory approval.

Because of increased use of seasonal lending to meet the temporary liquidity needs of financial institutions throughout the District, the number of loans extended by the Dallas Fed's discount window increased from 210 in 1993 to 400 in 1994, with total credit extended increasing to \$884 million in 1994, compared with \$380 million in 1993.

The 54 state-chartered banks under the Dallas Fed's supervision in 1994 represented 5 percent of all insured commercial banks in the District and held 2.5 percent of insured commercial bank assets. The 523 bank holding companies under Dallas Fed supervision last year controlled 670 insured commercial banks that held approximately 38 percent of all insured commercial bank assets in the District. Thirty-five foreign banks from 14 countries operated 20 state-licensed agencies and 23 representative offices.

RESEARCH AND PUBLIC AFFAIRS

During 1994, the economic research and public affairs areas continued to serve as a center for free enterprise research and economic education in the Southwest. The expansion of trade and the increasing economic integration among countries was an important focus of the Dallas Fed's research and outreach efforts. As part of this focus, the Bank sponsored a major international conference to examine the importance of long-term investment capital and increased domestic saving to economic growth and development. Research on the impact of the North American Free Trade Agreement and the General Agreement on Tariffs and Trade was also at the forefront. Other issues studied included home equity loans, financial derivatives, the recovery in lending and the changing nature and usefulness of our measures of money.

A number of publications were produced in support of the Bank's economic education and research efforts. In addition to *Economic Review*, *The Southwest Economy*, *Financial Industry Studies*, *Financial Industry Issues* and *Houston Business*, two new publications, *Financial Industry Trends* and *Business Frontier*, were introduced. *Financial Industry Trends* focuses on changes in the financial industry, while *Business Frontier* explores U.S.–Mexican border economic issues. Efforts to educate teachers, students and the general public about free enterprise, monetary policy and the role of the Federal Reserve were supplemented by other outreach programs such as the Bank's tour program, which completed its first year in the new headquarters.

As part of its efforts to encourage and promote community development in the Eleventh District, the Bank hosted a community investment conference and workshops on economic development and community reinvestment policy issues.

All this reflects a year of significant activity for the Dallas Fed and the banking industry. As banking continues to evolve, the Federal Reserve Bank of Dallas will continue to endeavor to provide the most efficient and cost-effective financial services available, while fostering safe and sound banking throughout the Eleventh District.



Federal Reserve Bank of Dallas

Seated (from left): J. B. Cooper, Jr., Farmer, Roscoe, Texas; Roger R. Hemminghaus (Deputy Chairman), Chairman of the Board, President and Chief Executive Officer, Diamond Shamrock, Inc., San Antonio, Texas; Cece Smith (Chairman), General Partner, Phillips-Smith Specialty Retail Group, Dallas, Texas; James A. Martin, Third General Vice President, International Association of Bridge, Structural and Ornamental Iron Workers, Austin, Texas.

Standing (from left): Gayle M. Earls, President and Chief Executive Officer, Texas Independent Bank, Dallas, Texas; Peyton Yates, President, Yates Drilling Co., Artesia, New Mexico; Milton Carroll, Chairman of the Board and Chief Executive Officer, Instrument Products, Inc., Houston, Texas; Eugene M. Phillips, Chairman of the Board and President, The First National Bank of Panhandle, Panhandle, Texas.



El Paso Branch

Seated (from left): Veronica K. Callaghan, Vice President and Principal, KASCO Ventures, Inc., El Paso, Texas; Alvin T. Johnson (Chairman), President, Management Assistance Corp. of America, El Paso, Texas; Patricia Z. Holland-Branch, President/Director of Design, PZH Contract Design, Inc., El Paso, Texas.

Standing (from left): Hugo Bustamante, Jr., Owner and Chief Executive Officer, CarLube, Inc., ProntoLube, Inc., El Paso, Texas; Wayne Merritt, Chairman of the Board and President, Texas National Bank of Midland, Midland, Texas; W. Thomas Beard, III (Chairman Pro Tem), President, Leoncita Cattle Co., Alpine, Texas; Ben H. Haines, Jr., President and Chief Executive Officer, First National Bank of Dona Ana County, Las Cruces, New Mexico.



Houston Branch

Seated (from left): I. H. Kempner, III (Chairman Pro Tem), Chairman of the Board, Imperial Holly Corp., Sugar Land, Texas; Judy Ley Allen (Chairman), Partner and Administrator, Allen Investments, Houston, Texas; Judith Craven, President, United Way of the Texas Gulf Coast, Houston, Texas.

Standing (from left): Walter E. Johnson, President and Chief Executive Officer, Southwest Bank of Texas, Houston, Texas; Robert C. McNair, Chairman and Chief Executive Officer, Cogen Technologies, Inc., Houston, Texas; J. Michael Solar, Managing Partner, Solar & Ellis L.L.P., Houston, Texas; T. H. Dippel, Jr., Chairman of the Board and President, Brenham Bancshares, Inc., Brenham, Texas.



San Antonio Branch

Seated (from left): Juliet V. Garcia, President, University of Texas at Brownsville, Brownsville, Texas; Erich Wendl (Chairman), President and Chief Executive Officer, Maverick Markets, Inc., Corpus Christi, Texas; Carol L. Thompson (Chairman Pro Tem), President, The Thompson Group, Austin, Texas.

Standing (from left): Jack Moore, Owner/Manager, T. J. Moore Lumber, Inc., Ingram, Texas; Gregory W. Crane, President and Chief Executive Officer, Broadway National Bank, San Antonio, Texas; Douglas G. Macdonald, President, South Texas National Bank, Laredo, Texas; H. B. Zachry, Jr., Chairman of the Board and Chief Executive Officer, H. B. Zachry Company, San Antonio, Texas.

Effective December 31, 1994

Financial Institutions

James A. Altick

President and Chief Executive Officer
Central Bank
Monroe, Louisiana

Jack Antonini

President and Chief Executive Officer
USAA Federal Savings Bank
San Antonio, Texas

John H. Arnold

President and Chief Executive Officer
Southwest Corporate Federal Credit Union
Dallas, Texas

Robert G. Greer

Chairman
Tanglewood Bank, N.A.
Houston, Texas

Ron Humphreys

Senior Vice President
Marketing and Operations
First Savings Bank FSB
Clovis, New Mexico

Don Powell

Chairman, President and Chief Executive Officer
The First National Bank of Amarillo
Amarillo, Texas

Jimmy Seay

President and Chief Executive Officer
The City National Bank
Mineral Wells, Texas

Sandra M. Smith

President and Chief Executive Officer
Texas Federal Credit Union
Dallas, Texas

Hayden D. Watson

Executive Vice President
First Interstate Bank of Texas, N.A.
Houston, Texas

Small Business and Agriculture

Patrick E. Boyt

Managing Partner
P. E. Boyt Farms
Devers, Texas

Ron Davenport

Owner
Davenport Cattle Co.
Friona, Texas

Robert D. Dooley

Partner
KPMG Peat Marwick
Dallas, Texas

T. Mike Field

Agriculture and Real Estate
Lubbock, Texas

Annette Bailey Hamilton

Chairman of the Board
Annette 2 Cosmetiques, Inc.
Dallas, Texas

J. Jay O'Brien

Cattleman
Amarillo, Texas

Lois Farfel Stark

President
Stark Productions, Inc.
Houston, Texas

Charles R. Tharp

Partner/Manager
Tharp Farms
Las Cruces, New Mexico

L. C. Unfred

Farmer
L.C. Unfred Farms
New Home, Texas

Jeffrey W. Wilson

President
Cattle Baron Restaurant, Inc.
Roswell, New Mexico

Federal Advisory Council Member

Charles R. Hrdlicka

Chairman and Chief Executive Officer
Victoria Bankshares, Inc.
Victoria, Texas

Effective December 31, 1994

Statement of Condition

	December 30, 1994 (Thousands)	December 31, 1993 (Thousands)
ASSETS		
Gold certificate account *	\$ 453,000	\$ 510,000
Special drawing rights certificate account **	377,000	377,000
Coin	27,997	41,648
Loans to depository institutions	0	0
Securities:		
Federal agency obligations	137,539	198,648
U.S. government securities	13,786,009	14,219,076
Total securities	<u>\$ 13,923,548</u>	<u>\$ 14,417,724</u>
Items in process of collection	512,950	511,231
Bank premises (net)	157,398	158,195
Other assets	1,938,691	1,930,269
Interdistrict settlement account	(1,303,041)	(2,830,800)
TOTAL ASSETS	<u><u>\$ 16,087,543</u></u>	<u><u>\$ 15,115,267</u></u>
LIABILITIES		
Federal Reserve notes	\$ 12,916,808	\$ 12,096,542
Deposits:		
Depository institutions	2,139,587	2,020,501
Foreign	10,200	9,646
Other	28,466	3,767
Total deposits	<u>\$ 2,178,253</u>	<u>\$ 2,033,914</u>
Deferred credit items	331,862	380,451
Other liabilities	166,958	112,290
TOTAL LIABILITIES	<u>\$ 15,593,881</u>	<u>\$ 14,623,197</u>
CAPITAL ACCOUNTS		
Capital paid in	\$ 246,831	\$ 246,035
Surplus	246,831	246,035
TOTAL CAPITAL ACCOUNTS	<u>\$ 493,662</u>	<u>\$ 492,070</u>
TOTAL LIABILITIES AND CAPITAL ACCOUNTS	<u><u>\$ 16,087,543</u></u>	<u><u>\$ 15,115,267</u></u>

* This Bank's share of gold certificates deposited by the U.S. Treasury with the Federal Reserve System.

** This Bank's share of special drawing rights certificates deposited by the U.S. Treasury with the Federal Reserve Bank of New York.

Statement of Operations

	<i>For the year ended December 30, 1994 (Thousands)</i>	<i>For the year ended December 31, 1993 (Thousands)</i>
CURRENT INCOME		
Interest on loans	\$ 298	\$ 97
Interest on government securities	749,205	687,482
Income on foreign currency	64,548	87,713
Income from priced services	49,451	54,171
Other income	306	236
Total current income	\$ 863,808	\$ 829,699
CURRENT EXPENSES		
Current operating expenses	\$ 116,091	\$ 115,241
Less expenses reimbursed	8,164	9,317
Current net operating expenses	\$ 107,927	\$ 105,924
Cost of earnings credits	10,151	7,932
Current net expenses	\$ 118,078	\$ 113,856
CURRENT NET INCOME	\$ 745,730	\$ 715,843
PROFIT AND LOSS		
Additions to current net income:		
Profit on sales of government securities (net)	\$ 0	\$ 1,583
Profit on foreign exchange transactions (net)	175,247	18,426
Other additions	28	10
Total additions	\$ 175,275	\$ 20,019
Deductions from current net income:		
Loss on sales of government securities (net)	\$ 893	\$ 0
Loss on foreign exchange transactions (net)	0	0
Other deductions	11	29,448
Total deductions	\$ 904	\$ 29,448
Net additions (deductions)	\$ 174,371	\$ (9,429)
Cost of unreimbursable Treasury services	\$ 2,111	\$ 2,371
Assessment by Board of Governors:		
Expenditures	\$ 10,490	\$ 9,932
Federal Reserve currency costs	12,950	16,564
NET INCOME AVAILABLE FOR DISTRIBUTION	\$ 894,550	\$ 677,547

Statement of Surplus

	<i>For the year ended December 30, 1994 (Thousands)</i>	<i>For the year ended December 31, 1993 (Thousands)</i>
Surplus, January 1	\$ 246,035	\$ 211,943
Net income available for distribution	894,550	677,547
LESS:		
Dividends paid	14,638	14,334
Payments to the U.S. Treasury	879,116	629,121
Net Amount Transferred to (from) surplus	\$ 796	\$ 34,092
Surplus, December 30/31	\$ 246,831	\$ 246,035

DISTRICT SUMMARY

	Number of Pieces Handled		Dollar Amount (Millions)	
	1994	1993	1994	1993
Currency received and counted	1,214,654,518	1,137,737,587	17,668	17,207
Coin received and counted	1,321,577,319	1,333,702,015	192	197
Food stamps redeemed	451,927,577	464,601,664	2,383	2,397
Transfers of funds	6,581,229	6,434,362	9,207,058	10,636,233
CHECKS HANDLED				
Commercial—processed*	1,134,603,637	1,146,543,615	650,455	671,187
Commercial—fine sorted	341,575,945	503,800,889	97,246	139,944
U.S. government checks	29,969,944	29,740,142	29,524	31,609
ACH ITEMS HANDLED				
Commercial	179,424,428	151,236,263	614,637	576,709
U.S. government	46,931,597	50,652,442	67,692	60,724
COLLECTION ITEMS HANDLED**				
U.S. government coupons paid	6,642	8,841	6	9
ISSUES, REDEMPTIONS, EXCHANGES OF U.S. GOVERNMENT SECURITIES***				
	356,623	2,954,922	2,529,673	2,877,908
LOANS				
Advances made	400	210	885	389

* Exclusive of checks drawn on Federal Reserve Banks.

** Noncash Collection Service was discontinued in the Eleventh District.

*** Data reflect the discontinuance of the Savings Bond Service in the Eleventh District.

Federal Reserve Bank of Dallas

Dallas

Robert D. McTeer, Jr.
President and
Chief Executive Officer

Tony J. Salvaggio
First Vice President and
Chief Operating Officer

J. Tyrone Gholson
Senior Vice President

Robert D. Hankins
Senior Vice President

Helen E. Holcomb
Senior Vice President

Larry J. Reck
Senior Vice President

Harvey Rosenblum
Senior Vice President and
Director of Research

Millard E. Sweatt
Senior Vice President, General Counsel,
Ethics Officer and Secretary

Earl Anderson
Vice President

Basil J. Asaro
Vice President

Lyne H. Carter
Vice President

W. Michael Cox
Vice President and
Economic Advisor

Billy J. Dusek
Vice President

Kermit S. Harmon, Jr.
Vice President

Joel L. Koonce, Jr.
Vice President

Robert F. Langlinais
Vice President and
General Auditor

Rebecca W. Meinzer
Vice President and
Administrative Officer

Genie D. Short
Vice President

Larry M. Snell
Vice President

W. Arthur Tribble
Vice President

Gloria V. Brown
Assistant Vice President and
Community Affairs Officer

Stephen P. A. Brown
Assistant Vice President and
Senior Economist

Terry B. Campbell
Assistant Vice President

Robert G. Feil
Assistant Vice President

Johnny L. Johnson
Assistant Vice President

Joanna O. Kolson
Assistant Vice President

C. LaVor Lym
Assistant Vice President

James R. McCullin
Assistant Vice President

Dean A. Pankonien
Assistant Vice President

John R. Phillips
Assistant Vice President

Larry C. Ripley
Assistant Vice President

Gayle Teague
Assistant Vice President

Michael N. Turner
Assistant Vice President

Stephen M. Welch
Assistant Vice President

Marion E. White
Assistant Vice President

Bob W. Williams
Assistant Vice President

Emilie S. Worthy
Assistant Vice President

Meredith N. Black
Supervisory Information Officer

John V. Duca
Research Officer

KaSandra M. Goulding
Public Affairs Officer

William C. Gruben
Research Officer

Evan F. Koenig
Research Officer

William C. Morse, Jr.
Operations Officer

Sharon A. Sweeney
Associate Counsel and
Associate Secretary

Evelyn LV. Watkins
Accounting Officer

El Paso

Sam C. Clay
Vice President in Charge

J. Eloise Guinn
Assistant Vice President

Javier R. Jimenez
Assistant Vice President

Houston

Robert Smith, III
Senior Vice President in Charge

Vernon L. Bartee
Vice President

Richard J. Burda
Assistant Vice President

René G. Gonzales
Assistant Vice President

Luther E. Richards
Assistant Vice President

Robert W. Gilmer
Research Officer

Kenneth V. McKee
Audit Officer

San Antonio

James L. Stull
Senior Vice President in Charge

Taylor H. Barbee
Assistant Vice President

Richard A. Gutierrez
Assistant Vice President

D. Karen Salisbury
Operations Officer

Effective January 1, 1995

THE FEDERAL RESERVE BANK OF DALLAS

IS ONE OF 12 REGIONAL FEDERAL RESERVE BANKS IN THE UNITED STATES. TOGETHER WITH THE BOARD OF GOVERNORS IN WASHINGTON, D.C., THESE ORGANIZATIONS FORM THE FEDERAL RESERVE SYSTEM AND FUNCTION AS THE NATION'S CENTRAL BANK. THE SYSTEM'S BASIC PURPOSE IS TO PROVIDE A FLOW OF MONEY AND CREDIT THAT WILL FOSTER ORDERLY ECONOMIC GROWTH AND A STABLE DOLLAR. IN ADDITION, FEDERAL RESERVE BANKS SUPERVISE BANKS AND BANK HOLDING COMPANIES AND PROVIDE CERTAIN FINANCIAL SERVICES TO THE BANKING INDUSTRY, THE FEDERAL GOVERNMENT AND THE PUBLIC.

SINCE 1914, THE FEDERAL RESERVE BANK OF DALLAS HAS SERVED THE FINANCIAL INSTITUTIONS IN THE ELEVENTH DISTRICT. THE ELEVENTH DISTRICT ENCOMPASSES 350,000 SQUARE MILES AND COMPRISES THE STATE OF TEXAS, NORTHERN LOUISIANA AND SOUTHERN NEW MEXICO. THE THREE BRANCH OFFICES OF THE FEDERAL RESERVE BANK OF DALLAS ARE IN EL PASO, HOUSTON AND SAN ANTONIO.

FEDERAL RESERVE BANK OF DALLAS

2200 NORTH PEARL STREET

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EL PASO BRANCH

301 EAST MAIN STREET

EL PASO, TEXAS 79901

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HOUSTON BRANCH

1701 SAN JACINTO STREET

HOUSTON, TEXAS 77002

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SAN ANTONIO BRANCH

126 EAST NUEVA STREET

SAN ANTONIO, TEXAS 78204

(210) 978-1200