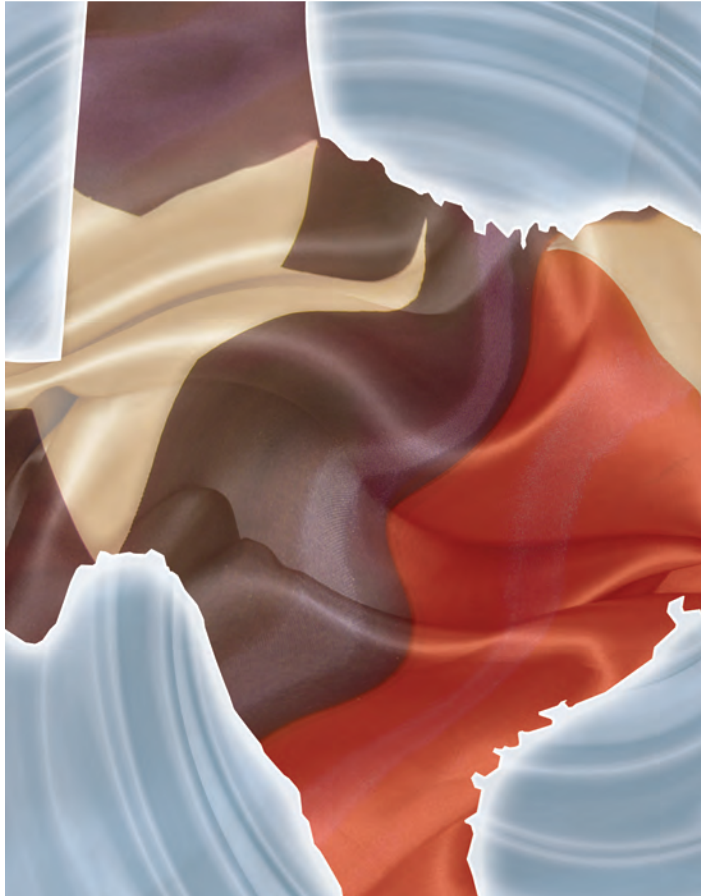


Southwest Economy



Don't Mess with Texas

Texas' economic recovery has been a little underwhelming. For two years, the state's employment and output have grown more slowly than the rest of the country's. Lagging behind is somewhat unusual for Texas, which for a half century has run ahead of the nation in job growth for all but three periods.¹

Texas pulled out of such sluggish periods in the past by letting economic forces play out. After restructuring, the state emerged stronger and better equipped to ride the next wave of expansion. There's no reason to think that won't happen again.

Domestic and global forces are now reshaping the Texas economy, and that process is restraining growth. Competitive pressures are spurring companies to reduce costs. Low interest rates and an investment tax incentive have encouraged companies to put money into productivity-enhancing technologies and equipment. At the same time, an increasingly global economy is helping producers cut costs by importing goods and services, freeing up resources that can be invested in other operations.

These changes will yield widespread benefits. Businesses and consumers will be able to purchase

(Continued on page 2)

*INSIDE:
Where IT's @:
Technology and the
Economy*

*Russia's Churn:
So Far Along,
So Far to Go*

Social Security and Medicare: No Free Lunch

Public attention has recently focused on the federal budget outlook for the coming decade.¹ But as Alan Greenspan and other observers have noted, the real budget challenge is the long-run growth of Social Security and Medicare.

These programs are big and getting bigger, outpacing the growth of revenue. Large tax increases or benefit cuts will occur to address this shortfall, no matter how much we might wish they could be avoided.

In their current form, Social Security and Medicare involve transfer payments from the young to the elderly rather than actual saving. Scaling back these transfer payments would increase national saving and give future

(Continued on page 8)

The economic revival in the 1990s occurred because Texas maintained a friendly business climate that relied on free enterprise to shape the future.

goods and services that might not otherwise be available or available only at higher prices. Resources no longer needed in one industry will be freed up for more profitable enterprises. Ultimately, restructuring will lead to economic growth, more jobs and higher living standards.

Such changes will mean painful adjustments for some companies and workers. But with the pain comes gain. Texas' history of adapting to economic change in part explains the state's favorable business climate and persistent strong growth. Efforts to manage reorganization would only create a drag on economic activity.

Economic Evolution in Texas

Free enterprise generates its power from a clash between new and old industries, a process economists call creative destruction.² Economies move forward as new competitors arise to offer new, better or cheaper goods and services. Old industries lose their markets because their products are now less desirable or more expensive. Real estate, labor, capital and other resources freed from shrinking industries are used to help build industries that offer new products and services consumers find more attractive. A flexible economy allows this process to occur, resulting in faster growth and higher living standards over the long run.³

Creative destruction has been important in shaping the Texas economy. In the 1970s, for example, the state prospered largely on its natural wealth, its resources focused on extracting and processing oil. By the early 1980s, a steep drop in oil prices and dwindling reserves had reduced the energy industry's profitability, and sluggish job and output growth resulted.⁴ Oil and gas extraction companies suffered sizable job losses, which sent shock waves through other industries, particularly real estate. The state underperformed the rest of the country while workers and other resources lay idle—a drag on the economy, but also a lure for new business.

At the time, few could see the high-tech boom just ahead. But as the 1990s began, telecommunications and semiconductor companies located jobs and factories at a faster pace in the state than

in the rest of the country. Texas provided fertile ground for the high-tech expansion, thanks to resources that were readily available—and cheap—as a result of the previous decade's punishing restructuring in the energy sector.

The economic revival in the 1990s occurred because Texas maintained a friendly business climate that relied on free enterprise to shape the future. The state largely rejected the use of intervention to stem job losses. Governments can undermine the business climate by trying to influence the allocation of resources to industries, subsidizing investment in certain activities, and protecting companies with subsidies and tax abatements.

It is painful to watch well-known companies shrink because they no longer produce a valued product at a competitive price. But efforts to protect failing industries ultimately raise the tax burden, increase the cost of living and restrain economic growth.

Since the high-tech boom went bust in 2001, the Texas economy has faced another bout of sluggishness. The state must now deal with both the damage in the tech sector and other economic forces pushing companies to restructure. Some of these factors arise from the domestic economy. Others are more global.

Domestic Forces for Change. The defining characteristic of Texas' recent economic performance has been the relatively slow pace of job creation. The explanation for that starts with what's happened since the nation slipped into recession in 2001.

The first downturn in a decade intensified the competition that drives creative destruction. To survive, companies looked for ways to introduce new products, lower costs and increase productivity. Many industries found the solution in technology. Low interest rates and a temporary change in federal tax law cut the cost of capital relative to labor, adding incentives to upgrade equipment and technology.⁵

Competition and cheap credit provide powerful inducements to invest in the latest technologies and adopt the organizational changes they make possible. For example, computers, software and scanners allow retailers to manage inventory more efficiently, help compa-

nies monitor their operations, and speed the delivery of information and products.

Innovations in computers, information management and communications have come rapidly over the past decade, allowing companies to make impressive increases in output without adding workers. The full costs of new production methods are often paid before the full benefits are received, so Texas' adjustment is still under way. Research suggests it can take years for the productivity produced by new technologies to fully emerge.

While the cost of capital fell, employers faced increased labor costs, mostly for benefits. Workers' compensation taxes are up for many businesses, but the largest increases have been for health insurance. Higher labor costs discourage hiring additional workers.

Economic uncertainty also slowed job creation. It is expensive to hire and fire workers, and companies prefer to make these decisions when they're more sure of the economic outlook. Over the past few years, business leaders have expressed concern about global terrorism, war and, in 2004, the presidential election's short-term impact on the economy.

Global Forces for Change. Trade has increased greatly over the past several decades as international agreements have opened markets and eliminated tariffs and other barriers. Recent gains in trade have intensified competition.

Without trade, however, Americans would be unable to purchase German beer or Japanese cars. Residents of Alaska would have lots of salmon to eat but none of the melons or chili peppers Texans enjoy. Texans would have fewer people purchasing their chemicals, plastics and computers, reducing employment in those sectors.

Trade allows more producers to specialize in what they do best. Some countries, like China, are efficient at making standardized products that are inexpensive to ship. Texas is shifting away from the production of these types of goods. The state's advantages lie in other endeavors, such as providing the energy industry with equipment and technical support, facilitating wholesale trade and developing innovations in electronic components.

It would be costly and inefficient for every country to maintain the skills and knowledge to make everything their citizens consume. By allowing each country to specialize, consumers can buy less expensive products. As a result, living standards rise directly by lowering import prices and indirectly by giving consumers more disposable income to spend on other goods and services.

Trade makes consumers better off, but how they spend their money determines winners and losers in the marketplace. Through billions of individual decisions, consumers cause the restructuring that roils economies and leaves them stronger.

Global competition forces existing companies to be innovative and efficient. Businesses can obtain inputs at a lower cost, import new technologies and expand production as they find new markets overseas. It allows the economy to shed less productive companies and industries, freeing resources to meet other consumer needs.

When it comes to business, the benefits of freer trade lie in new customers and new tools to compete. For economies, they lie in what protectionists decry—the increased competition that is at the heart of creative destruction. Trade not only destroys jobs, it creates them.

Texas Restructures in 2004

The forces of domestic and global competition have been reshaping the Texas economy. After emerging from recession in mid-2003, the state's recovery gained momentum in 2004, although activity was relatively weak overall. Some industries added jobs at a rapid clip, but restructuring—particularly in manufacturing and the airline industry—restrained total employment. Job growth was up 1.3 percent in 2004, well below the roughly 3 percent average of the past 30 years (*Chart 1*).

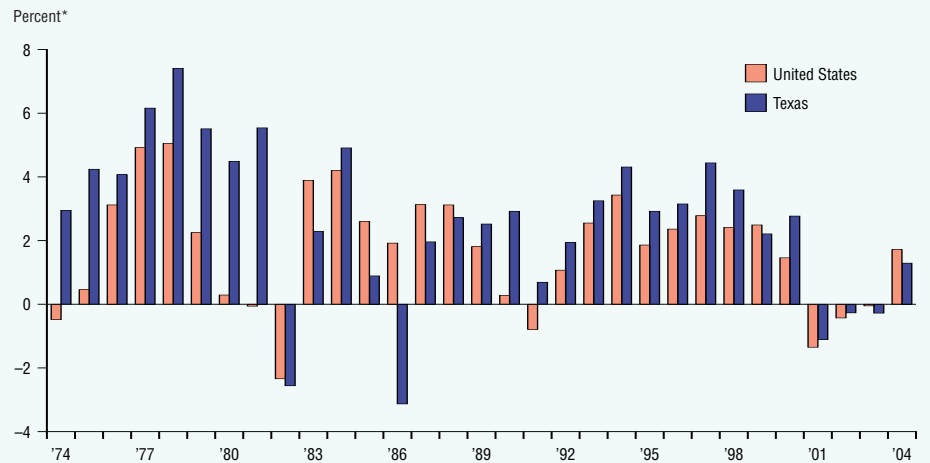
Creative destruction is apparent in a more detailed look at employment (*Chart 2*). Nearly all 2004 job growth was in the service sector, expanding its share of the economy. Jobs were added in finance, insurance, education and health care. All told, services gained more than 120,000 workers in 2004. With Texas' favorable business climate, com-

Trade makes consumers better off, but how they spend their money determines winners and losers in the marketplace.

Legislation and other restrictions that limit competition between carriers raise the cost of living in Texas and slow long-term economic growth.

Chart 1

Texas 2004 Job Growth Dips Below 30-Year Average and Trails U.S. Performance



*Seasonally adjusted, annualized rate.
 NOTE: Data are for nonfarm jobs only.
 SOURCES: Bureau of Labor Statistics; Federal Reserve Bank of Dallas.

panies took advantage of increasing demand, often in markets with less foreign competition.

The state's railroad industry has done well over the past year, but the airline industry remains in the throes of a major restructuring.

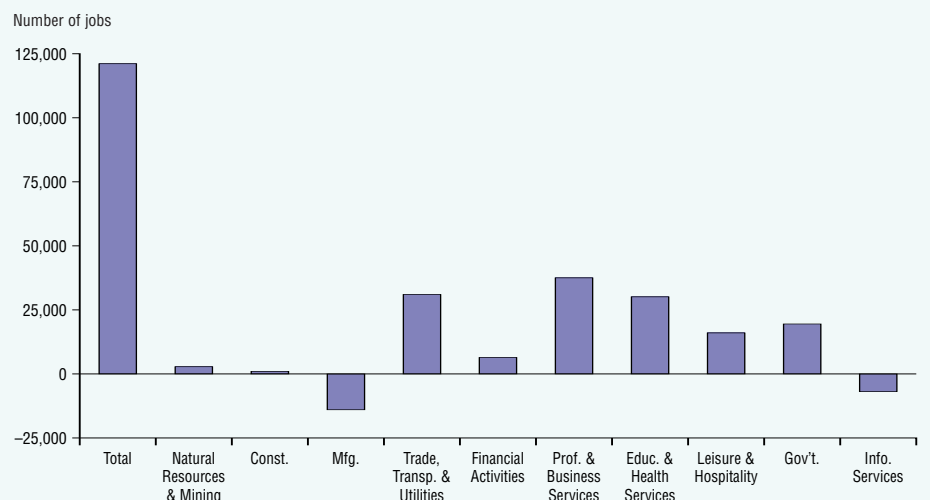
U.S. airlines face increased pressure to reduce costs, stemming from Internet pricing competition, a drastic drop in demand following the September 11

attacks, new security regulations and higher fuel costs.

Air transportation employment has been falling since 2001, with 2,300 jobs cut in 2004 alone (Chart 3). In the past year, Continental, American and Delta airlines have announced layoffs and wage cuts in Texas. The only carrier that has been expanding is Dallas-based Southwest Airlines, which has a much lower cost structure than its competitors.

Chart 2

Service Sector Drives 2004 Texas Job Growth

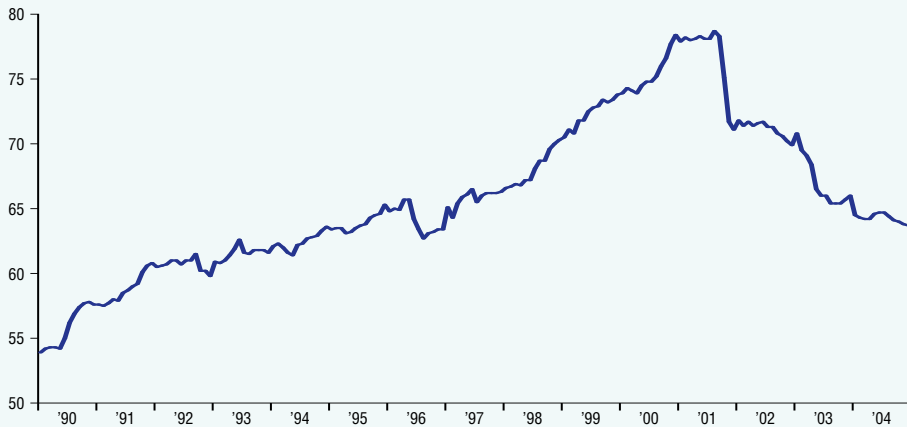


SOURCES: Bureau of Labor Statistics; Federal Reserve Bank of Dallas.

Chart 3

Texas Air Transportation Employment Continues to Fall

Number of workers (in thousands)*



*Seasonally adjusted.

SOURCES: Bureau of Labor Statistics; Federal Reserve Bank of Dallas.

Industry cost-cutting is unlikely to let up in the foreseeable future. Legislation or other restrictions that limit competition between carriers will only raise the cost of living in Texas and slow long-term economic growth.

Like air transportation, Texas manufacturing is struggling with a major restructuring. In 2004, 14,000 jobs were lost, continuing a decline that started in the late 1990s (*Chart 4*). The shrinking of manufacturing relative to the service sector

has been a long-run trend in this country. It is also a global trend experienced by most of our trading partners.

In Texas, the trend has affected all manufacturing industries. Some companies are investing in technology and making other changes to increase output using fewer workers. Others are losing out to foreign competitors, particularly in low-wage industries.

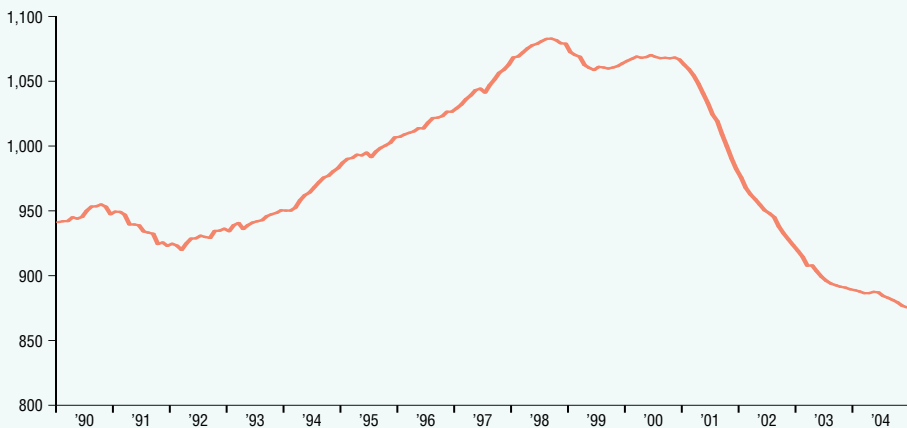
All Texas manufacturing industries reduced employment between 2000 and

Globalization gets a lot of attention, but domestic factors have been the overwhelming driver of restructuring in manufacturing.

Chart 4

Texas Manufacturing Employment Slides Dramatically

Number of workers (in thousands)*



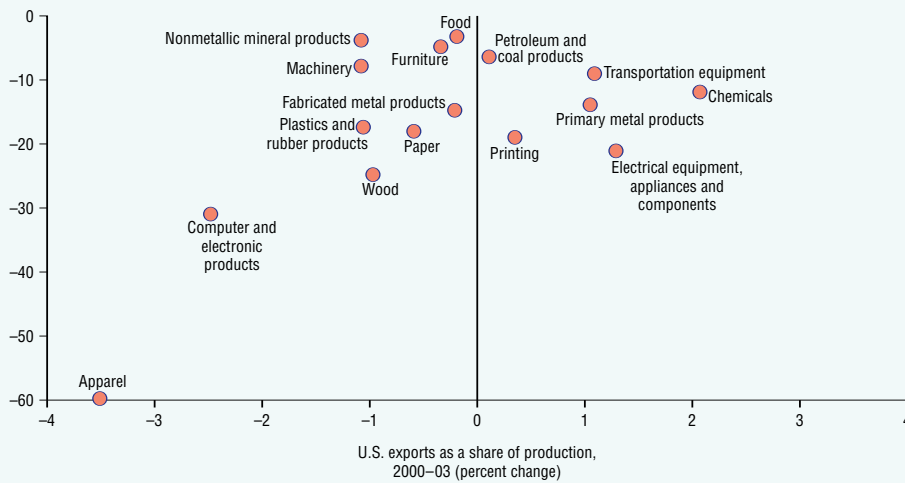
*Seasonally adjusted.

SOURCES: Bureau of Labor Statistics; Federal Reserve Bank of Dallas.

Chart 5

Trade Saves Jobs

Texas manufacturing employment, 2000–03 (percent change)



NOTE: X axis measures exports divided by gross output.

SOURCES: Bureau of Labor Statistics; U.S. International Trade Commission; Federal Reserve Bank of Dallas.

2003, but some producers did better than others meeting the challenge from foreign trade.

Chart 5 shows whether there’s a correlation between manufacturing job losses in Texas and exports.

Industries on the right side of the chart increased their share of U.S. production exported over the three-year period. Increasing their participation in global export markets reduced the need for these industries to cut jobs in Texas.

Industries on the left side of the chart exported a smaller share of domestic production, suggesting these U.S. producers may have lost some of their comparative advantage in the global market. The relationship between the change in the share of production exported and the change in employment is statistically significant and suggests that industries with the smaller job losses are those that have increased exports as a share of production over the three years.

Chart 6 looks at the change in the percentage of U.S. consumption imported from 2000 to 2003, by sector. For industries on the right side, an increasing proportion of U.S. consumption has come from imports, suggesting that domestic consumers are getting lower prices or greater variety through global trade.

Unlike exports, no statistically significant relationship exists between losses

in Texas manufacturing jobs and increased foreign competition. Employment declines have been primarily driven by other factors, such as investment in productivity-enhancing technology.

Globalization gets a lot of attention, but domestic factors have been the overwhelming driver of restructuring in manufacturing.⁶ It’s incorrect to infer that glo-

balization does not matter at all. Clearly, some industries, such as apparel, have been bleeding jobs as the result of stiff global competition. These competitive forces are expected to continue—and in some cases intensify—in 2005 and beyond.

Employment in Texas apparel manufacturing has fallen 60 percent since 2000. The United States is losing market share, and domestic production has fallen rapidly along with apparel prices, benefiting consumers. In 1994, the World Trade Organization voted to eliminate all textile and apparel quotas by January 2005. Textile prices and domestic production will probably continue to fall.

Companies faced some unusual stresses in 2000–03. Competition was intense and demand was subdued, with both the U.S. and Texas economies in recession at least part of the time. What’s more, the value of the dollar was higher than it is today, encouraging domestic consumption of foreign goods. Changing economic conditions might produce very different results for Texas manufacturing in 2005 and beyond.

Outlook for 2005

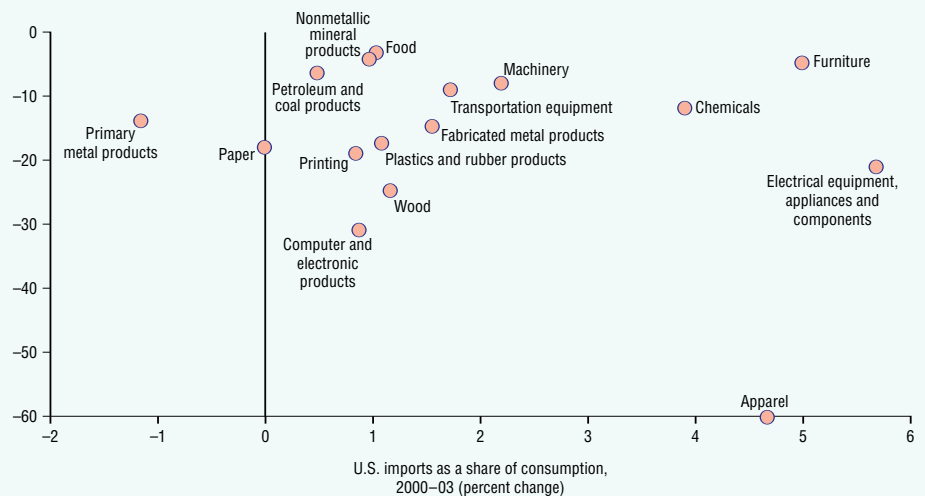
The restructuring of the Texas economy likely has further to go before its growth shifts into high gear.

The Texas recovery began modestly

Chart 6

Domestic Factors, Not Foreign Competition, Driving Texas Job Losses

Texas manufacturing employment, 2000–03 (percent change)



NOTE: X axis measures U.S. imports divided by the sum of gross output and imports.

SOURCES: Bureau of Labor Statistics; U.S. International Trade Commission; Federal Reserve Bank of Dallas.

Education and the Texas Economy

Education stimulates strong economic growth by boosting worker productivity and making the labor market more flexible. Today's workers are more likely than their parents to change employers and careers during their lifetime. Research shows that education smoothes the transition between careers and jobs.

The performance and funding of Texas' public education system have been under fire for decades.¹ Critics cite a dropout rate above the national average, as well as data showing that Texas trails the rest of the country in SAT scores and per pupil spending on K–12 education.

In early December, a state district judge issued a final order saying the maximum amount of funding available under the school finance formula is inadequate. He gave the Texas Legislature until October 2005 to fix what he ruled were constitutional deficiencies in the system. Lawmakers have pledged to raise taxes to fund increased spending for schools.

If the Legislature decides the solution is more money, the type of tax could affect long-run economic performance. A stable, broad-based tax structure, with the fewest distortions possible, would be best for the business climate. A neutral tax treats all business endeavors the same. Breaks or incentives given to one firm or individual must be paid for by others, introducing distortions into the economy. Distortions create an inefficient allocation of resources that slows overall growth.

Taxes work best when they're paid by those who will use the services they fund. So although income redistribution may be necessary in some instances, there are benefits to retaining as much local control as possible. If the local share of school funding falls, residents have less incentive to make sure their education dollars are used wisely. A 2000 study suggests that the larger the state share in educational finance, the less efficient the public schools.²

Higher spending won't necessarily improve educational quality. While more money can lead to educational improvements, better schools are also possible without increased funding—if other changes are made.

Public schools are largely untouched by the competition that drives innovation and efficiency in the private sector. Markets work best when consumers—in this case, parents—possess the information they need to make decisions. Reforms that bring transparency, disclosure, accountability and market forces to schools can be powerful stimulants to improved educational outcomes.

Bigger education budgets that don't improve school quality run the risk of slowing economic growth.

Notes

¹ For more about the state's school finance system, see "Improving Public School Financing in Texas," by Lori Taylor, Jason Saving and Fiona Sigalla, Federal Reserve Bank of Dallas *Southwest Economy*, November/December 2001.

² "Evidence on the Impact of State Government on Primary and Secondary Education and the Equity–Efficiency Trade-Off," by Thomas A. Husted and Lawrence W. Kenny, *Journal of Law & Economics*, vol. 43, April 2000, pp. 285–308.

accelerating toward the end of 2004, partly the result of energy producers responding to high prices. The state's economy should continue to slowly accelerate in 2005, growing at a pace roughly the same as the nation's or slightly faster.

The strengthening energy industry may help the state catch up to the national growth rate, but it probably won't drive the expansion forward at a rapid clip. Headwinds from restructuring will keep Texas job growth below its long-run trend. Pending issues—notably, education financing—are creating uncertainty and may change the business climate. (See the box on this page.)

Over the past 30 years, Texas has

surpassed the nation in employment growth by an average of slightly over 1 percent a year. Whether the state regains its historical edge depends on what emerges from the current restructuring. What will the next fast-growing industry be? When will it arrive? No one can answer these questions with certainty.

While it is difficult to know what's next, Texas has done well in the past by improving an already good business climate and allowing economic forces to play out.

When the economy hits a rough patch, there's a temptation to tinker. But Texas stands a better chance of regaining its economic vigor by sticking with a strategy that works. The slogan of the

state's antilitter campaign might apply: Don't mess with Texas.

—Fiona Sigalla

Sigalla is an economist in the Research Department of the Federal Reserve Bank of Dallas.

Notes

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¹ Over the past 50 years, Texas employment was weaker than U.S. employment in 11 years: 1959–60, 1962, 1983, 1985–88, 1999, 2003 and 2004.

² In 1942, Joseph Schumpeter coined the term *creative destruction* in his book *Capitalism, Socialism, and Democracy* to denote a process of industrial mutation that incessantly revolutionizes the economic structure from within, continuously destroying the old one while creating a new one.

³ The Dallas Fed has discussed the importance of free trade, creative destruction and productivity in a number of annual report essays. Among them are "A Better Way: Productivity and Reorganization in the American Economy" (2003 Annual Report), "The Fruits of Free Trade" (2002) and "The Churn: The Paradox of Progress" (1992). The essays, written by W. Michael Cox and Richard Alm, can be found at www.dallasfed.org.

⁴ The causes of the energy bust were more complicated than this. For a more detailed explanation of what led to overinvestment in the energy and construction industries, see "The Energy Industry: Past, Present and Future," by Stephen P. A. Brown and Mine K. Yücel, Federal Reserve Bank of Dallas *Southwest Economy*, July/August 1995, and "The Texas Construction Sector: The Tail That Wagged the Dog," by D'Ann M. Petersen, Keith R. Phillips and Mine K. Yücel, Federal Reserve Bank of Dallas *Economic Review*, Second Quarter 1994.

⁵ Between Sept. 11, 2001, and Dec. 31, 2004, the federal government gave companies a "bonus depreciation" that allowed them to immediately deduct (rather than depreciate over time) a part of the cost of equipment and software investment.

⁶ There is a statistically significant relationship between U.S. manufacturing employment and the change in the share of production exported. There is no statistically significant relationship between losses in U.S. manufacturing jobs and increased foreign competition. These findings show the strength of the Texas results.

Social Security and Medicare: No Free Lunch

(Continued from front page)

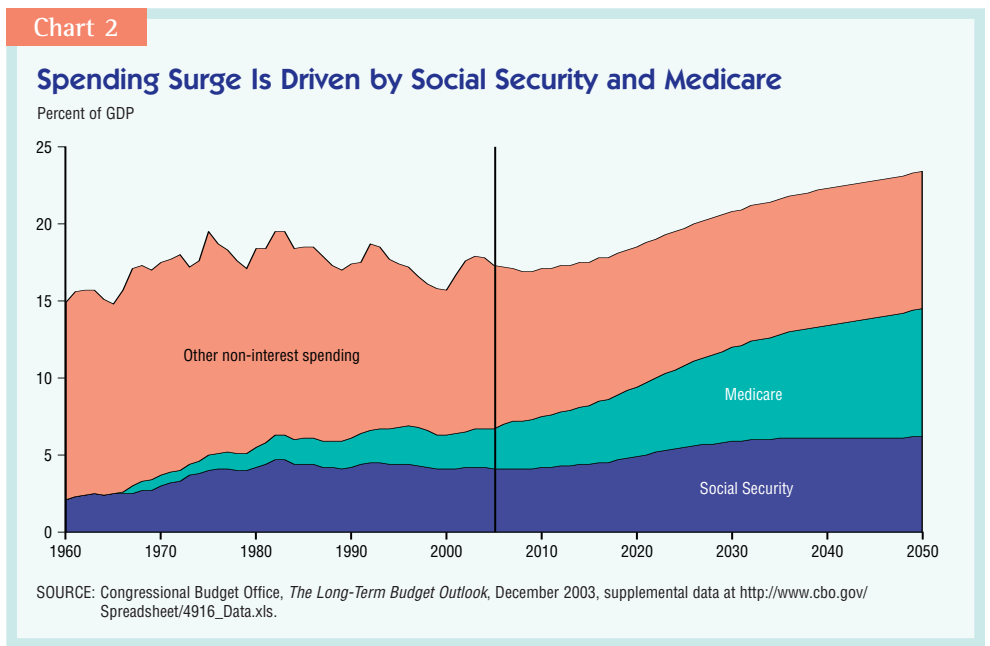
generations a better standard of living. However, it would also impose a transition cost on current generations.

Many people hope for, and some promise, a free lunch that avoids this transition cost. Unfortunately, there is none. It is possible to shift the burden from one group of people to another, but no policy proposal—including privatization—offers an escape from that burden. If future generations are to be made better off, the transition cost must be paid.

Programs Are Big—And Getting Bigger

Chart 1 shows federal spending, other than interest on the debt, as a share of GDP. From 1960 through 2004, such spending fluctuated around an average value of 17.3 percent of GDP. But the Congressional Budget Office (CBO) paints a much different picture for the future in its December 2003 long-run budget projection. Under CBO's intermediate assumptions, non-interest spending is projected to rise relentlessly, to 23.4 percent of GDP by 2050, with no letup in sight.

The federal budget includes thousands of spending programs, but the



spending surge is primarily driven by just two—Social Security and Medicare (*Chart 2*). In fact, CBO projects that non-interest programs other than Social Security and Medicare will shrink from 11.1 percent of GDP in 2004 to 9.0 percent in 2050. (The federal portion of Medicaid will grow from 1.5 percent to 3.3 percent, while all other non-interest pro-

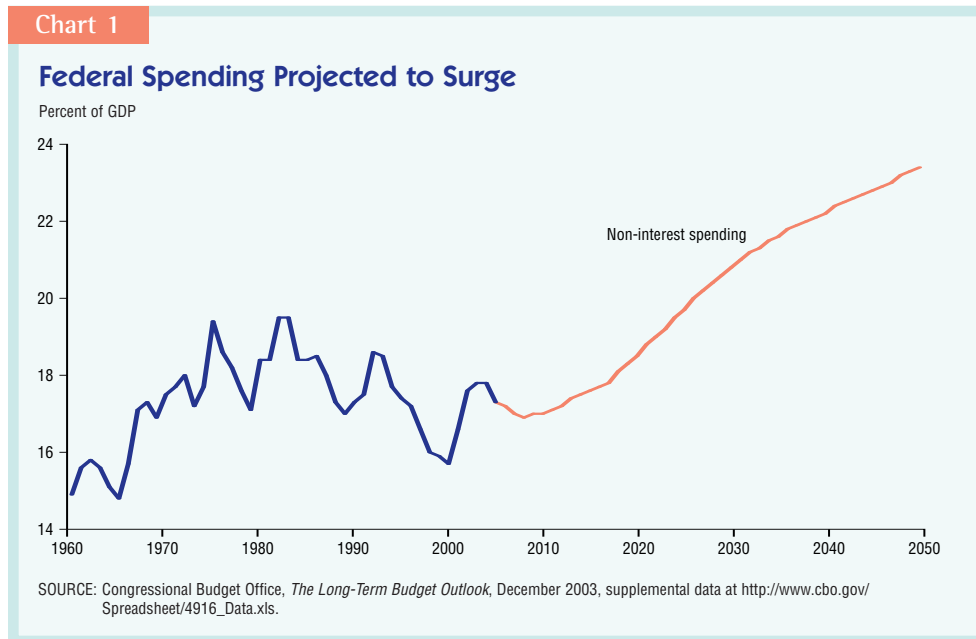
grams will shrink from 9.6 percent to 5.7 percent.) If these other programs don't shrink, the total spending growth will be even more dramatic.

How large will Social Security and Medicare become? From 2004 to 2050, Social Security spending will rise from 4.2 percent of GDP to 6.2 percent. Over the same period, Medicare will grow explosively, from 2.5 percent of GDP to 8.3 percent.

A variety of factors contribute to this growth. One factor is the retirement of the baby boom generation, which will swell the ranks of retirees for the next few decades. That's a temporary phenomenon, though. The Medicare prescription drug benefit that takes effect in 2006 will also raise costs, but it is a secondary factor.

The two forces that account for most of the long-run spending surge are longer life spans and rising medical costs.

Under the Social Security trustees' intermediate projection, life expectancy at age 65, which is now about 17 years, will steadily rise by almost half a year per decade (*Chart 3*). CBO uses this same assumption in its long-run budget projections mentioned above. The Cen-



sus Bureau, like many private demographers, projects increases about twice as rapid—nearly one year per decade.² And the faster life spans rise, the more Social Security and Medicare must pay.

The second force driving up program spending is the ongoing rise in medical costs. Under the Medicare trustees' intermediate projection, spending per beneficiary in Medicare Part A (the hospital part of the program) will quintuple over the next 75 years, even after adjusting for overall inflation (*Chart 4*). Of course, medical costs are hard to predict, but some experts believe that costs will rise even more rapidly, as they have done in the past, which would place an even greater strain on Medicare.³

Costs Will Outpace Revenue

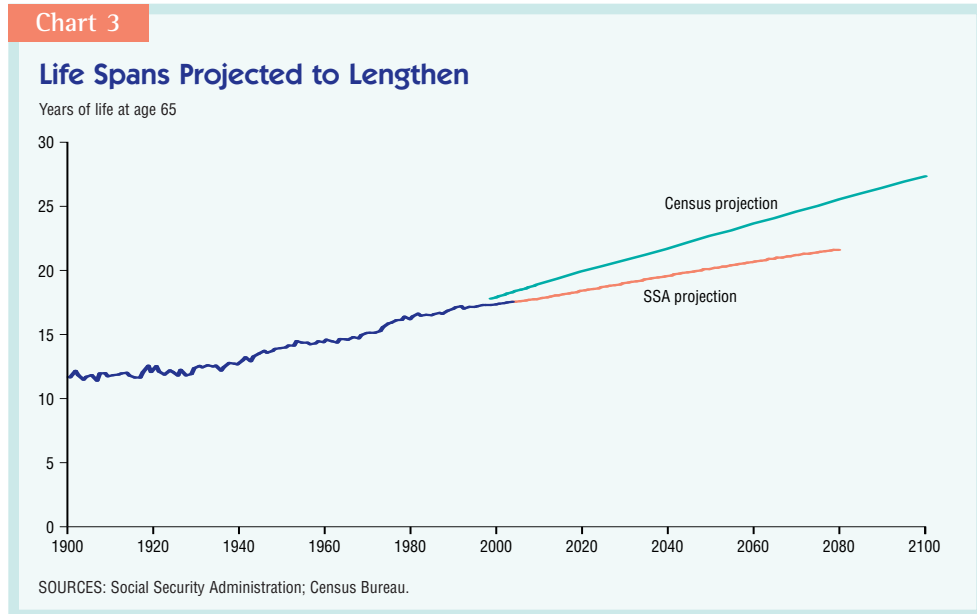
Although spending is scheduled to grow sharply under current law, revenue is not scheduled to keep pace.

Social Security and Medicare Part A are financed by earmarked taxes—primarily a payroll tax on employee compensation and an accompanying tax on self-employment income.⁴ The combined tax rate is 15.3 percent up to a threshold (\$90,000 in 2005) linked to national average wages, and is 2.9 percent thereafter.

This tax rate is not automatically adjusted for increases in life span or medical costs, even though these factors do automatically increase spending. As a result, future payroll tax revenue will not be sufficient to cover future benefit costs. The trustees estimate that Medicare Part A will be unable to pay full benefits after 2019 and that Social Security will be unable to do so after 2042. Of course, the exact years depend on various assumptions, but the day will come when revenue no longer covers costs.

How can this financial shortfall be addressed? To maintain promised benefits, we will have to come up with more money. How much more? If we continue to rely on the payroll tax and we keep revenue and spending in balance each year, the tax rate would need to rise ever higher to keep up with rising costs. By 2080, the tax rate would have to roughly double, to 31 percent, to cover that year's Social Security and Medicare Part A benefits.⁵

Or, the shortfall could be addressed through income tax hikes and discre-

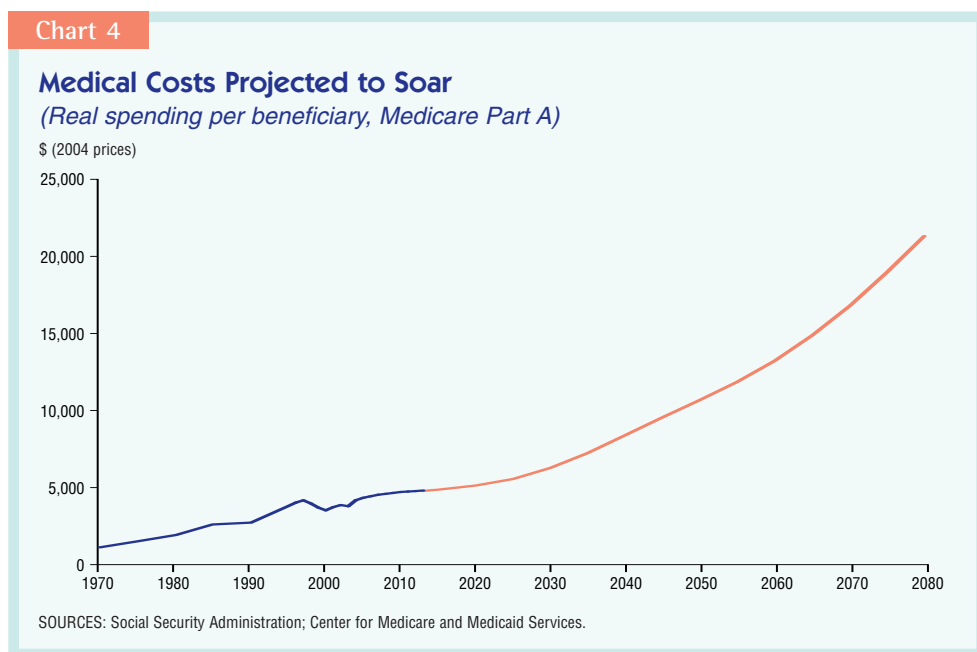


tionary spending cuts. For example, we could raise income tax revenue by about one-third, but such a large tax increase would likely reduce economic output and have other undesirable consequences. On the spending side, even the complete elimination of spending other than Social Security, Medicare, Medicaid and interest wouldn't be enough to cover the shortfall. But substantial tax hikes could be combined with substantial spending cuts to raise the required amount of money.

The alternative is to reduce prom-

ised benefits, and there are many ways to do this. Eligibility ages for Social Security and Medicare could be raised by several years in line with longer life spans. Means tests could be imposed on either or both of these programs, making them more like welfare. Social Security cost-of-living adjustments could be trimmed by using a more conservative measure of inflation, as Alan Greenspan and others have proposed.

Two other possibilities would change the rate at which future benefits rise. Social Security benefits for each



Preserving Social Protections

Many people believe that scaling back the pay-as-you-go system would force individuals to fend for themselves in retirement. But asking each *generation* to save for itself does not mean that each *individual* must save for himself with no assistance from other members of his generation. The current system provides various social protections to low-wage workers, including more generous benefits relative to the taxes they pay. A restructured system could improve returns for future generations without sacrificing these protections.

One way (certainly not the only way) to preserve social protections while providing better returns for future generations is a *partial* privatization. Individuals would invest in IRA-like accounts some of the money that would otherwise have been transferred to their parents. All workers would be required to contribute, would be limited to diversified investments and would be required to spread withdrawals over the course of their retirement years. The government would make additional contributions into accounts held by low-wage workers.

To the extent that social protections impose some efficiency costs, such as discouraging work, the partial privatization described above would not eliminate those costs. But it would spare future generations the below-market returns of the pay-as-you-go system. These below-market returns do not occur because of the social protections, but because each generation pays for its parents' retirement rather than saving for its own.

cohort of retirees are currently tied to average wages in the economy at the time the cohort attains age 60. Since prices generally rise more slowly than wages, we could reduce future spending by tying those benefit levels to prices rather than wages. This "price indexation" was a leading option discussed by the presidential commission on Social Security.⁶

A similar proposal could be applied to Medicare. Under current law, Medicare benefits are tied to rapidly rising medical costs. We could reduce future spending by linking those benefits to wages or even to prices.⁷

Reducing promised benefits doesn't necessarily mean future retirees would receive smaller benefit checks than current retirees do. But it does mean they'd receive less than current law now promises them—about 50 percent less in 2080, if the books are to balance in that year.

Reform plans can be simple or complicated, can raise taxes or cut promised benefits, can build up a trust fund or privatize the system—there are at least as many plans as there are economists. But the major economic effect of any reform plan depends on one simple feature: whether the plan reduces transfer payments from the young to the old. Permanently reducing these transfers helps every future generation enjoy a better standard of living but requires current generations to bear a transition cost. Maintaining the transfers helps current

generations avoid sacrifice but requires every future generation to pay the tab in the form of a permanently lower standard of living. The impact of a plan on these transfers, and only that impact, determines the gains to future generations and the transition cost imposed on current generations.

To understand these conclusions, let's look at how Social Security and Medicare operate.

Pay-as-You-Go Retirement Programs

Social Security and Medicare are pay-as-you-go retirement programs. This means contributions by workers are not saved or invested, but are immediately consumed by the elderly.

Members of any working generation could receive substantially greater retirement income if they could save the money rather than transfer it to their parents. Economists have shown that a pay-as-you-go system offers a long-run below-market rate of return equal to the growth rate of national labor income, which has averaged 3.4 percent over the past 75 years. If each generation saves for itself, it can earn a market return equal to the pretax marginal product of capital, which has averaged about 6 percent. Over a working lifetime, the latter return offers about twice as large a pay-off.⁸

For this reason, future generations would be better off if they could put less money into the pay-as-you-go system and

invest more. Each generation would receive less money from its children but would come out ahead because it could earn market returns on the money it would otherwise transfer to its parents. This would permanently increase national saving and enlarge the nation's capital stock, which would ensure those generations a better standard of living. Furthermore, the social protections provided by the current system could be maintained. (See the box titled "Preserving Social Protections.")

Transition Cost

As just discussed, future generations would greatly benefit if we reduce transfer payments from the young to the elderly rather than compel the young to finance ever-higher transfers in perpetuity. Future generations would earn a higher rate of return than they can at present, without undermining social protections.

But there is an elephant in the room: the benefits owed to current retirees.

Simply put, current retirees have been promised benefits for which they did not save. (Although they paid taxes into the system during their working years, their taxes were transferred to their parents rather than saved.) A severe reduction in benefits would inflict a catastrophic transition cost on those retirees, who are depending on their children to fund their retirement. And indeed, even the most ardent advocates of reform would leave those in or near retirement largely untouched. For this reason, reforms would likely target current workers rather than current retirees. Those workers would then bear the transition cost, making full transfers to their parents while working but receiving reduced transfers from their children upon retirement.

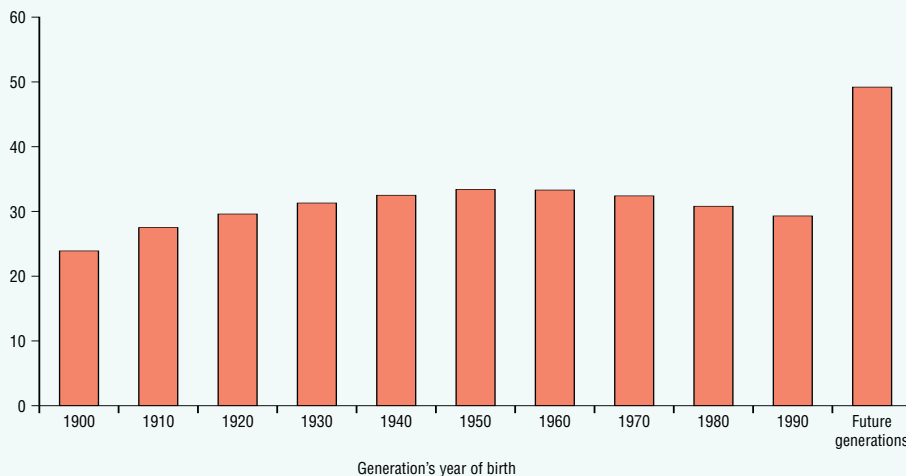
Of course, the cuts could be delayed by another generation and even another. But eventually, some generation has to bear the transition cost if the system is to be reformed. That generation pays full benefits to its parents but does not receive full benefits from its children. In effect, that generation pays twice. Reform reduces that generation's rate of return even as it raises future generations' returns.

If future generations are forced to

Chart 5

Future Generations Face Heavy Burden

Net tax rate (percent)



NOTE: Calculations assume the fiscal gap is closed by imposing a uniform lifetime net tax rate on all future generations (those born after 1995).

SOURCE: "Generational Accounts for the United States: An Update," by Jagadeesh Gokhale, Benjamin R. Page, and John R. Sturrock, in *Generational Accounting Around the World*, ed. Alan J. Auerbach, Laurence J. Kotlikoff and Willi Leibfritz, Chicago: University of Chicago Press, 1999, p. 497.

bear the full cost of correcting the fiscal imbalance, they will face a heavy burden indeed. Chart 5 shows the lifetime net tax rate faced by current and future generations. The lifetime net tax rate is the present value of federal, state and local taxes minus the present value of federal, state and local transfer payments (including Social Security and Medicare), divided by the present value of labor income. While current generations face lifetime net tax rates between 25 and 32 percent, those generations born after 1995 face a lifetime net tax rate of almost 50 percent. That's high by almost any standard and is largely due to the current entitlement system. Unfortunately, we can reduce their load only by shouldering some of the burden ourselves.

No Free Lunch

It's important to understand there is no free lunch. The only way to consume more in the future is to save more in the present, which requires a sacrifice of consumption today. A formal mathematical analysis reveals that the transition cost imposed on current generations must equal in present discounted value (when discounted at the pretax marginal product of capital) the gains enjoyed by subsequent generations.⁹ In layman's terms, someone must pay, and the only

question is who that someone will be. The following discussion explains why various proposals for avoiding this burden fail to do so.

No Free Lunch from General Government Revenue. Some reform plans call for the use of general government revenue during the transition. Under this approach, benefits would be reduced one generation after a reduction in payroll taxes, with general revenues covering the financing shortfall. For example, today's workers might receive a reduction in payroll taxes while today's retirees would still receive full benefits (financed from general revenue rather than from payroll taxes). Benefit reductions would be deferred until today's workers retire.

At first glance, this might seem to avoid saddling any generation with a transition cost. Today's retirees would be protected. Although today's workers would receive lower benefits when they retire, that burden would be more than offset by the lower payroll taxes they would pay while working.

But the transition cost would still be present. The revenue used to pay benefits to today's retirees would not appear from nowhere. Like all government revenue, it would come from the American people. One or more generations would

There is no free lunch. The only way to consume more in the future is to save more in the present, which requires a sacrifice of consumption today.

have to bear tax increases or spending cuts to provide the general revenue, thereby paying the transition cost. The *size* of the transfers between young and elderly is what matters, not whether they are financed with payroll taxes or general government revenue.

No Free Lunch from Debt Issuance.

While the above discussion assumes that general revenue would be obtained from tax increases or spending cuts, some plans call for the revenue to instead be obtained through borrowing. Debt issuance would offer no free lunch, however, because the debt would have to be serviced or retired.

If the debt were retired, national saving would increase and future generations would gain. However, one or more generations would have to bear tax increases or spending cuts to finance the debt repayment, thereby paying the transition cost.

If the debt were not retired, it would have to be permanently serviced. Every future generation would bear tax increases or spending cuts to pay the interest, which would (it turns out) impose the same burden as they would bear from continuing the pay-as-you-go system. And national saving wouldn't rise because the extra debt would exactly offset the increase in personal saving. This policy would not reduce transfers from the young to the elderly; it would merely relabel those transfers as interest payments rather than retirement benefits. Because the burden imposed by a pay-as-you-go retirement system is economically equivalent to the burden of government debt, replacing the one burden by the other would have no real effects, either good or ill.¹⁰

No Free Lunch from Privatization.

Some people think the transition cost can be avoided through mandatory individual accounts. It can't be, however, because the money invested in the accounts would have to come from somewhere. If the money would otherwise have been transferred to the elderly, national saving would increase and future generations would gain—but those generations receiving the smaller transfers after paying the larger ones would bear the transition cost. If the money were obtained by issuing government debt, then (as explained above)

servicing that debt would cause the hoped-for gains to evaporate because the additional government borrowing would exactly offset the additional personal saving.

By themselves, individual accounts do nothing to increase national saving or increase rates of return—those effects occur only if transfers from young to elderly are reduced.¹¹ The partial privatization discussed in the box “Preserving Social Protections” could raise returns for future generations while maintaining social protections for those generations, but it would not and could not avoid the transition cost.

Inescapable Reality. The inescapable reality is that the pay-as-you-go system has promised benefits without accumulating assets to pay them. Someone must pay—the only question is who. If the system is maintained in its present form, every future generation must bear below-market returns to service this liability—just as you would do if you maxed out a credit card and made minimum monthly payments from now to eternity. If the transfers from young to elderly are scaled back, on the other hand, current generations must bear a large transition cost as the burden is repaid—just as you would do if you paid off the balance on your maxed-out credit card.

While we might wish it were possible to pay current benefits in perpetuity without raising taxes, it is impossible to do so. This is the reality that must be faced.

“Why should I care about posterity?” comedian Groucho Marx once asked. “What's posterity ever done for me?” While obviously meant in jest, Groucho's question captured the essence of the tough choice we face today. Simply put, we must decide whether to sacrifice for the sake of posterity. Time will tell how we respond to this challenge.

The only certainty is that there is no free lunch.

—Jason L. Saving
Alan D. Viard

Saving is a senior economist and Viard is a senior economist and research officer in the Research Department of the Federal Reserve Bank of Dallas.

Notes

¹ For a discussion, see “The Federal Budget: Developments and Outlook,” by Alan D. Viard, Federal Reserve Bank of Dallas *Southwest Economy*, July/August 2004.

² For a recent discussion of longevity projections, see “Social Security Underestimates Future Life Spans, Critics Say,” by Robert Pear, *New York Times*, December 31, 2004, p. A1.

³ “The Truth About Social Security and Medicare,” by Henry Aaron, *Challenge*, vol. 47, May/June 2004, pp. 27–41. On p. 36, Aaron suggests that costs may rise more rapidly than assumed. The trustees assume, as does CBO, that Medicare spending per beneficiary eventually grows 1 percentage point per year faster than per capita GDP. From 1970 to 2003, the actual rate of “excess” spending growth was 3 percentage points per year, according to CBO, *The Long-Term Budget Outlook*, December 2003, p. 5.

⁴ The nonhospital part of Medicare is financed from general revenue.

⁵ 2004 *Social Security Trustees Report*, p. 165.

⁶ *Strengthening Social Security and Creating Personal Wealth for All Americans*, by the President's Commission to Preserve and Strengthen Social Security, December 2001, p. 15.

⁷ See *The Coming Generational Storm: What You Need to Know About America's Economic Future*, by Laurence J. Kotlikoff and Scott Burns, Cambridge, Mass.: MIT Press, 2004. On p. 169, authors Kotlikoff and Burns propose linking Medicare benefits to wages.

⁸ For a more detailed discussion, see “Social Security Restructuring: Tough Decisions Ahead,” by Jason L. Saving and Alan D. Viard, Federal Reserve Bank of Dallas *Southwest Economy*, September/October 2003.

⁹ See *How Pension Financing Affects Returns to Different Generations*, Congressional Budget Office Long-Range Fiscal Policy Brief No. 12, September 22, 2004, p. 4, and “Generational Policy,” by Laurence J. Kotlikoff, in *Handbook of Public Economics*, vol. 4, ed. Alan J. Auerbach and Martin S. Feldstein, Amsterdam: Elsevier Science, 2002, pp. 1884–85.

¹⁰ Many economists have noted the equivalence of government debt and pay-as-you-go retirement systems. For a recent discussion, see Kotlikoff 2002, pp. 1887–90.

¹¹ The fact that privatization does not offer a free lunch has been noted by many observers, including Alan Greenspan. See his statement to the Senate Budget Committee, reprinted in *Federal Reserve Bulletin*, January 1998, pp. 32–35. He also explained that shifting between debt and equity offers little or no real economic gain, even when equity has higher expected returns than debt.

Where IT's @: Technology and the Economy

Since 1995, productivity in the United States has surged, with output per hour rising an average of more than 3 percent annually. Information technology (IT) is getting credit for much of this increase. But should it?

IT has brought significant enhancements. It has streamlined supply chains, automated routine workflows and given firms greater insight into customers. Companies taking advantage of these productivity enhancements have gotten a leg up on the competition. But now, with the dust beginning to settle, some see IT as just another commodity, another input necessary to compete but insufficient to ensure competitive advantage.

On September 10, 2004, the Federal Reserve Bank of Dallas hosted a conference on technology and the economy, cosponsored by the Technology Roundtable of the National Association for Business Economics (NABE). This article summarizes the ideas presented at the conference on how to assess technology and its potential impact on economic growth and productivity.

Productivity and IT

U.S. productivity growth has taken off in recent years to more than double the growth rate experienced from 1973 to 1995 (*Chart 1*). Michael Cox, senior vice president and chief economist of the Dallas Fed, argued that technology and globalization are providing the nation with unusually strong productivity growth.¹ The era of Solow's paradox—the observation that computers are everywhere except in the productivity statistics—appears to have ended.² The United States has a dynamic, flexible and open economy that continues to reorganize work and expand markets through technological innovation and change. Cox emphasized the importance of upgrading one's skills and knowledge to take advantage of the new and better jobs created by these changes. He noted that occupations using people skills, emo-

tional intelligence, creativity and imagination point the way to the jobs of the future.

Hal Varian, professor in the School of Information Management and Systems at the University of California at Berkeley, brought the issue of productivity to a more micro level. Varian described *combinatorial innovation* as one of the building blocks of productivity. Combinatorial innovation is where a set of component technologies can be combined and recombined to create new products. Eli Whitney's use of standardized interchangeable parts in the early 1800s was one such example; the development of the gasoline engine in the early 1900s was another.

Today, combinatorial innovation is taking place with the Internet and associated information technologies. The component parts are bits of information—digital strings of zeros and ones—that have many productivity-enhancing characteristics. With bits, there are no time-to-manufacture, inventory or delivery problems. Varian noted that bits can be shipped in seconds to many places in

the world, where innovators can work in parallel.

Lacking physical constraints, the Internet has provided a platform for rapid innovation and change. Moreover, relatively open technologies and low barriers to entry have created an intensely competitive environment, which has led to overcapacity in some instances. While this is good news for consumers, it can be difficult for companies to manage.

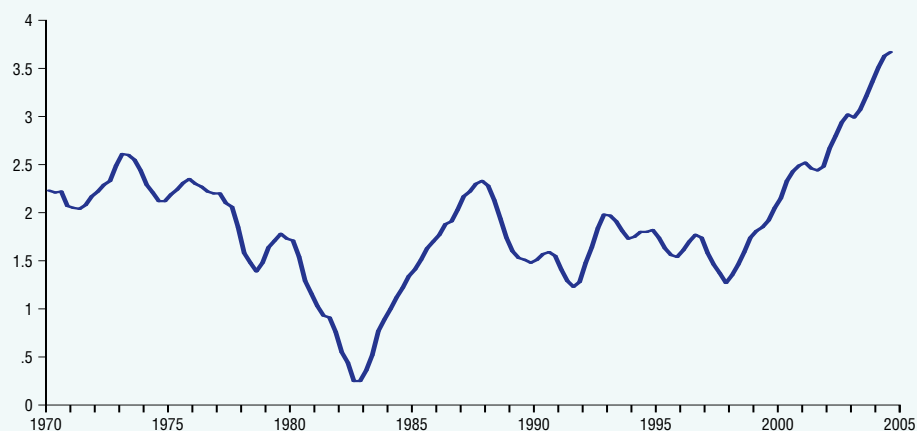
Another caveat is that new ideas and technologies created through combinatorial innovation can capture the public's imagination, leading to potential financial speculation and overinvestment. This happened in the past with railroads and automobiles and recently with the high-tech boom in information technology companies. Although it will take some time to work through the excess capacity created during the dot-com investment boom of the late 1990s, Varian is optimistic about the future.

Varian said that businesses—particularly small and medium-sized enterprises—are learning how to use IT cap-

Chart 1

Productivity Growth Surges (Output per hour, nonfarm business)

5-year annualized growth rate (percent)



SOURCE: Bureau of Labor Statistics.

Productivity growth results not only from new technology, but also from new business organization around that technology.

ital effectively. The resulting effects on aggregate productivity are clear, but the impact on profitability is trickier due to lack of entry barriers. The focus today is on information management, that is, how information flows through an organization and how it can be changed to improve decisionmaking. Finally, business survival depends on understanding how the new network (or information) economy differs from the past. Technology changes, but economic laws do not.³

Productivity growth results not only from new technology, but also from new business organization around that technology. Erik Brynjolfsson, professor of management at Massachusetts Institute of Technology, acknowledged that computers are associated with greater productivity and that IT is the catalyst behind the recent productivity surge. However, he suggested that modern businesses need to be reorganized to take advantage of IT and rethink the way their work is done. On average, productivity improves as IT capital stock increases.

Not all firms with similar new technologies are equally productive, though. In trying to understand the variation across firms, Brynjolfsson analyzed whether business productivity was related to a firm's corporate culture and organizational practices or related more to a firm's investment in IT. His conclusion was that business performance depends on both IT and organizational capital. Direct IT capital costs are often only 10 to 20 percent of total IT project costs. Far more important in the information economy are intangible assets: how the organization structures its people and processes, how it manages risk and how it integrates knowledge and ideas.

Digital organizations, as termed by Brynjolfsson, are heavy users of information technology, with distinctly different corporate cultures and organizational practices formed into a coherent system. He identified some key practices of digital organizations: moving from analog to digital business processes, distributing decision rights, fostering open information access, linking incentives to performance, maintaining focus, communicating goals, hiring the best people and investing in human capital.

Brynjolfsson illustrated that digital organizations perform better and have higher productivity and higher market valuation than traditional organizations.⁴ He stressed that market values rise disproportionately for firms that follow the digital organization practices *and* invest heavily in IT capital.

Industry Applications

Entertainment is one example of an industry in which new technology has immeasurably increased productivity and greatly lowered costs. Chris Anderson, editor in chief of *Wired* magazine, focused on the nearly unlimited supply of music, books and films available through online retailers.⁵ Before the digital age, the entertainment industry was limited by broadcasting technology. It needed local audiences for movies and was physically limited by the 24 hours in a day and the radio and TV spectra. Suddenly, we are no longer as bound by the shelf space, seating capacities and distribution constraints of the physical world. In the new digital economy, scarcity can be replaced by abundance.

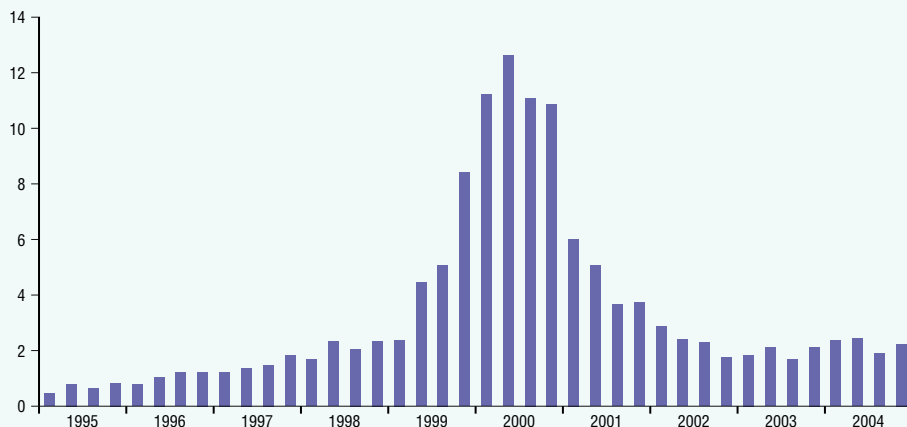
Anderson argued that the emerging digital entertainment economy is going to be radically different from today's mass market. The 20th century entertainment industry was about hits; the 21st century will be equally about misses. Misses (80 percent of the market) are just as profitable as hits (the other 20 percent). That is, with no physical constraints to limit availability, profit margins on hits and misses are roughly equal, and the greatest profits will likely come from the less familiar titles that fall in the long tail of the demand distribution. "Long-tail" businesses can treat customers as individuals and offer mass customization rather than mass-market fare. Anderson pointed to the success of online movie retailer Netflix and online music retailers such as Rhapsody.

The power of the long tail is that the market is so much larger but just as profitable on the margin. As a result, Anderson said, three new rules apply for the new entertainment economy. First, because offering misses increases the market's potential size, online retailers should not be selective in what they offer, but should instead make everything available. Second, online retailers

Chart 2

U.S. Venture Capital Investment in Information Technology

Billions of dollars



NOTE: IT includes semiconductors, telecommunications, software, and computer and peripherals sectors.

SOURCE: MoneyTree Survey, PricewaterhouseCoopers.

should price items according to digital costs, not physical ones. And finally, online retailers should make recommendations to customers and drive demand down the long tail.

Many other industries have also benefited from the effective implementation of information technology. Jeff Donnellan, chief information officer of Landmark Graphics, presented evidence that new information technologies are being used to help find drilling locations for oil and gas exploration firms, thereby reducing planning and production cycle times. Rik Heller, president of FreshLoc Technologies, noted the productivity achievements gained in food distribution and storage through the use of radio frequency identification devices, or RFIDs. In addition to providing real-time information on inventory levels, these devices can monitor temperatures to increase shelf life and improve the safety of foods being transported in truck trailers to restaurants and grocery stores.

Does IT Matter?

In a seemingly divergent vein, Nicholas G. Carr, former editor of the *Harvard Business Review*, argued that IT's strategic importance has dissipated as its core functions have become available and affordable to all.⁶ Carr views IT as an infrastructural technology, like railroads and electric power, shared broadly by all firms in an industry. He argued

that IT has moved from being a proprietary resource that helps firms generate profits to being a commodity with vanishing advantages.

As such, Carr sees IT's strategic importance diminishing even as it has become more powerful, more affordable and more commoditized. While this position at first seems contradictory, the argument is that IT is necessary to compete but is insufficient to ensure competitive advantage. Thus, as IT becomes less expensive, more accessible and better understood, its beneficial and valuable uses can be easily replicated by competing firms. The managerial implications of this shift in thinking can be important.

Carr concluded by offering the following, somewhat controversial, guidelines for IT investment and management: Spend less; follow, don't lead; innovate when risks are low; and focus more on vulnerabilities than opportunities.

IT and Financial and Human Capital

All new technologies require investments in venture and human capital. Ron Harris, founder and general partner of the venture capital firm Southwest Capital Partners, and Robert Helms, professor and dean of the School of Engineering and Computer Science at the University of Texas at Dallas, provided perspectives on the role of financial and human capital in today's IT-enabled economy.

Harris chronicled venture capital investments in IT beginning with the early 1980s, around the time the first personal computers were introduced. He explained that the Internet emerged as a viable business platform with the creation of the World Wide Web in the early 1990s, and an IT renaissance began as capital spending on IT equipment and software soared.

This incredible boom, however, was followed by an almost equally incredible bust and an IT recession that began in early 2000 (*Chart 2*). IT investments came to a halt as the century date change (Y2K) passed almost without notice and as business valuations of Internet firms were scrutinized and reevaluated. As global growth slowed, firms realized the harsh realities of maintaining a competitive web presence and implementing and integrating business process technologies into an efficient and effective system.

In the aftermath, it became clear that a different IT strategy was required: one that made information available to those who need it in real time. Harris concluded by describing the "intelligent real-time enterprise" as one that focuses its IT efforts on security, business integration, real-time monitoring, wireless connectivity, systems management and disaster recovery. In his view, the winners will be those firms that recognize and adapt to the new realities created by information technology.

Helms acknowledged the key role IT has played in boosting productivity, mainly by improving cycle times. New technologies allow large quantities of information to be moved rapidly to those who need it anywhere in the world. This, in turn, requires deeper and broader strategic partnerships between educational institutions and technology firms to accelerate learning and speed the flow of information.

Looking ahead, Helms is concerned about how the United States' competitive advantages—knowledge, relationship management and innovation—can be maintained and nurtured. He asserted that academic-engineering power drives regional excellence and economic development. Other nations are already outpacing the United States in graduating engineers. In the United States only 1.8

The effective integration of IT into an organization's culture and the reorganization of work are what create competitive advantages.

percent of 24-year-old graduating seniors have engineering degrees, while the share is 2.7 percent in Europe and 5.8 percent in Japan. Moreover, federally funded research and development initiatives have been on the decline since the mid-1960s. Helms stressed that a commitment to education and the development of human capital is required for the United States to be able to keep its competitive edge over the rest of the world.

Future Trends

The final panel of the conference engaged in a lively discussion of future trends in technology. What new technologies (or industries) might be on the horizon that could impact business productivity? What pitfalls and dangers lurk in the shadows? What kinds of disruptions to accepted societal norms might result?

Douglas S. Rasor, vice president and manager of worldwide strategic marketing at Texas Instruments, opened the discussion by sharing technology ideas for the future. In a world that requires more real-time monitoring and sharing of information, Rasor stressed the importance of bandwidth for high-speed digital communications.

Dennis Wilson, chief technology officer, chairman and founder of Nanotechnologies, explained the future importance of nanotechnology to business. Wilson defined nanotechnology as the commercial development of materials, tools, processes and devices that exploit new properties occurring at dimensions of only a few nanometers. Wilson argued that nanotech is a disruptive technology with the potential to significantly enhance business productivity by creating powerful new materials with great strength and less weight and size.

But the benefits of new technologies are not without potential problems and concerns. John South, director of information security at Alcatel North America, warned that economic espionage is alive and well—and thriving. South stressed that security of information flows and communication networks cannot be overlooked or underestimated. In today's increasingly global economy, hackers and computer viruses present a real and present danger.

Similarly, G. Anthony Gorry, profes-

sor of management and computer science at Rice University, warned of technology's impact on societal norms. For example, technology has made intellectual property theft easier and may be changing the moral attitudes of the public about such theft. The students he has observed are more cavalier about downloading copyrighted material from the Internet than they would be about stealing a book or record from a retailer.

Conclusion

Information technology is everywhere in today's global economy. In the past, IT helped firms become more productive and competitive. However, future gains will likely come through improved information management and distinctly different corporate cultures that focus on improving organizational capital. IT remains important, but the effective integration of IT into an organization's culture and the reorganization of work are what create competitive advantages.

—Thomas F. Siems
Mine K. Yücel

Siems is a senior economist and policy advisor and Yücel is a senior economist and vice president in the Research Department of the Federal Reserve Bank of Dallas.

Notes

- ¹ See "A Better Way: Productivity and Reorganization in the American Economy," by W. Michael Cox and Richard Alm, Federal Reserve Bank of Dallas 2003 Annual Report, pp. 3–24.
- ² See "We'd Better Watch Out," by Robert M. Solow, *New York Times*, July 12, 1987, p. BR36.
- ³ See *Information Rules: A Strategic Guide to the Network Economy*, by Carl Shapiro and Hal R. Varian, Boston: Harvard Business School Press, 1999.
- ⁴ See "Beyond Computation: Information Technology, Organizational Transformation and Business Performance," by Erik Brynjolfsson and Lorin Hitt, *Journal of Economic Perspectives*, vol. 14, Fall 2000, pp. 23–48.
- ⁵ See "The Long Tail," by Chris Anderson, *Wired*, vol. 12, October 2004, pp. 170–77.
- ⁶ See *Does IT Matter? Information Technology and the Corrosion of Competitive Advantage*, by Nicholas G. Carr, Boston: Harvard Business School Press, 2004.

Information about the conference and speakers and copies of most presentations are available on the Dallas Fed web site, www.dallasfed.org, in the News & Events section.

Russia's Churn: So Far Along, So Far to Go

The 1991 breakup of the Soviet Union threw 150 million Russians into an uncertain future. Nobody really knew how a country that had suffered through three generations under communism could find its way to the prosperity promised by capitalism.

Russia walked away from communism bruised and battered. Economic output contracted, inflation and unemployment increased, birth rates plummeted and death rates rose. The scarcity of basic necessities approached what Russians faced in World War II. Daily life meant long lines—sometimes even elbowing and shoving—to get rationed bread, milk, cheese and other staples.

Russia's transition to a market economy remains very much a work in progress, one that may take decades to complete. Even so, the country has begun to respond to the touch of capitalism's "invisible hand."

Real GDP per capita has grown an average of 7 percent a year since 1999. Adjusted for purchasing power, it reached nearly \$9,600 in 2004, putting Russia on a par with Mexico and Malaysia. (Comparisons with Soviet-era GDP, unemployment and inflation are pointless because arbitrary prices and unproductive employment plagued the state-run system.) Private investment has revived to 18 percent of GDP. Unemployment has fallen to 8 percent and inflation to 10 percent, its lowest level since 1991.

Living standards have slowly but steadily begun to rise above their Soviet-era benchmarks. More households have access to consumer goods, ranging from cars and TV sets to cell phones (*Table 1*). The most progress has occurred in the sectors of the Russian economy that have embraced free enterprise. Visitors to Moscow, St. Petersburg and other major Russian cities compare them to traditionally capitalist parts of Europe—clean streets, well-dressed people, a multitude of foreign-made cars, elaborate malls and shops, and a variety of restau-

rants, cafes, cultural events and entertainment.

After the fall of the Soviet Union, government-planned economic output had little market value and had to be restructured, an immense task that involved overcoming entrenched interests. With economic freedom, the informal sector emerged quickly in response to domestic market forces and growing competition from abroad. Income from underground economic activity as a share of total personal income rose in the early 1990s, peaking at 28 percent in 1997 before dropping off slightly as the more formal business sector developed.

Private Companies, Jobs

As of last year, the government fully owned 10 percent and partially owned 3 percent of all registered business organizations (*Table 2*). The government still dominates only education and forestry. Such industries as retail trade, chemicals and pharmaceuticals are overwhelmingly private. Russia has also developed the most capitalist of capitalist tools—a stock market. The country's 214 publicly traded companies had a market capitalization of 53 percent of GDP in 2004.

New jobs in private industry are replacing old ones in the state sector. Private domestic and foreign enterprises now employ 55 percent of the labor force. The largest job growth has occurred in wholesale, retail and international trade; food services; IT services; communications; marketing and procurement; finance; insurance; real estate; and tourism.

Communism tried to maintain zero unemployment, but capitalism requires job mobility so that labor resources can shift to more productive uses. Job-turnover numbers show that while Russia lost about 12 million jobs in 2003, companies in its evolving economy hired an equal number of workers.

While developing a new economic system, Russians learned some tough

Table 1

Russia Making Progress

	Early 1990s	Early 2000s
Residential space per person	172 sq. ft.	217 sq. ft.
Percentage of housing with:		
Running water	66	73
Hot water	51	59
Central heat	64	73
Percentage of people with:		
Private-sector jobs	20	55
Television sets	37	64
VCRs and video cameras	0	20
Telephones	14	24
Cell phones	0	12
Personal computers	3	10
Internet service (at home)	0	4
Passenger cars	7	14
Russian tourists traveling abroad	1.6 million	4.6 million
Listed domestic companies	0	214
As percentage of GDP:		
Market capitalization of listed companies	0	53
Value of publicly traded stocks	0	10
Bank credit to private sector	0	21

SOURCES: World Development Indicators database, World Bank; *The World Factbook 2004*, U.S. Central Intelligence Agency; *Russia in Figures*, Russian Federal Service of State Statistics, various years; "A Normal Country: Russia After Communism," by Andrei Shleifer and Daniel Treisman, *Journal of Economic Perspectives*, forthcoming.

Table 2

Government Ownership Declining in Russia

	Government owned (percent)	Mixed ownership (percent)
All organizations	9.6	3.0
Highest government ownership		
Education	80.8	2.2
Forestry	60.0	4.0
Arts and culture	41.1	3.6
Electric power generation	32.1	16.1
Health care and welfare	30.8	4.3
Housing and public utilities	21.9	3.6
Communications	19.0	7.7
Geological services and research	17.6	8.2
Finance, lending, state insurance, social security	13.0	17.5
Printing	11.9	3.2
Lowest government ownership		
Microbiological manufacturing	0	12.5
Chemicals and petrochemicals manufacturing (nonpharmaceutical)	.9	3.7
Retail trade and food services	1.3	1.4
Ferrous and nonferrous metallurgy	1.9	7.3
Medical and pharmaceutical manufacturing	2.1	6.3
Timber processing, paper and pulp manufacturing	2.4	4.1
Food processing	2.5	6.2
Commercial marketing and distribution	2.7	3.9
Construction material manufacturing	2.7	6.4
Machinery and equipment manufacturing	3.0	4.8

NOTE: Data are for 2004.

SOURCE: Goskomstat database, Russian Federal Service of State Statistics.

lessons the hard way. In 1998, after years of ineffective fiscal and monetary reforms, the government defaulted on its debt and the ruble's value plunged. Individuals lost savings and jobs, but the economy righted itself with adjustments set in motion by market forces.

The crisis passed as rising world energy prices and a cheap ruble invigorated growth. Given a fresh start, the government restructured its domestic and foreign debt and introduced fiscal discipline by reducing government spending and paying off debt. Total public debt hit a low of 32 percent of GDP in 2003. As the ruble appreciated, it lessened the impact higher oil, natural gas and metals prices had on economic growth.

Other developments contributed to Russia's growth as well. Enforcement of property rights and business contracts strengthened. In 2001, Russia decreased the individual tax rate to a flat 13 percent and the corporate rate to a flat 24 percent.

As economists Andrei Shleifer and Daniel Treisman point out in an upcoming article, various measures of

Russian economic activity suggest a smoother transition to a market-based system than the official GDP numbers would indicate (*Chart 1*). Because even

the underground economy uses electricity, electrical consumption reveals that overall economic activity slowed less dramatically than official GDP. Moreover, household consumption and retail sales indicate that Russia emerged from the transition in just 10 years—impressive given that the whole economy had to reorganize after 75 years of communism and catch up on technological innovations and new business processes.

The Road Ahead

Despite the hopeful signs, Russia has a long way to go in its march from communism to capitalism.

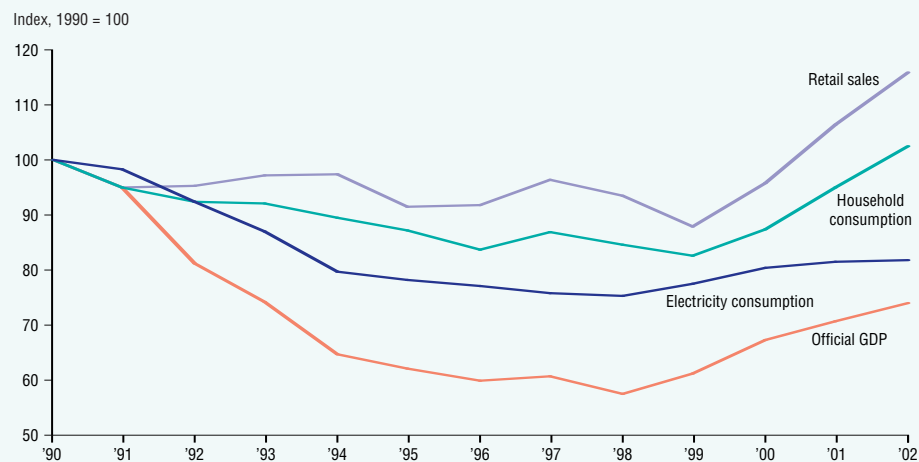
Inequality in income and consumption has increased since 1991. In 2003, 20 percent of Russians got by on below-subsistence-level incomes. Population growth continues to be negative.

The infrastructure is ill-suited to a modern economy. The manufacturing base is dilapidated. Trade barriers are high. Complex regulations still impose burdensome costs. Legally establishing a business takes an average of 12 procedures and 30 days, compared with five procedures and four days in the United States.

Russia's financial sector is developing slowly. The system for assessing the credit risk of firms and individuals remains weak and can be very subjective. Some companies are seeking financing abroad, using exports as collateral. Ven-

Chart 1

Measuring Economic Activity in Russia



NOTE: GDP, household consumption and retail sales are adjusted for inflation.

SOURCE: "A Normal Country: Russia After Communism," by Andrei Shleifer and Daniel Treisman, *Journal of Economic Perspectives*, forthcoming.

Table 3

Russian Exports

	Percentage of total exports
Fuel products	57.8
Oil and oil products	40.3
Natural gas	15.3
Other	2.2
Metals	13.8
Machines, equipment and instruments	8.6
Other	19.8
Total	100

SOURCE: International Monetary Fund, *Russian Federation: Statistical Appendix*, September 2004.

ture capital for start-ups remains scarce because locals invest mostly short term and foreigners consider geopolitical risks too high for funding Russian-based firms.

An underdeveloped legal system exacerbates the uncertainties and risks of business, especially when companies become large and politically important. The year-long saga of Yukos—a giant oil company accused of owing back taxes—included arrests, asset seizures, a U.S. bankruptcy filing and December's mysterious auction that put valuable petroleum properties back under government control.

Political developments only add to questions about Russia's commitment to building a well-ordered market economy. "Freedom in the World 2005," a study by the international organization Freedom House, grades Russia as "not free" for the first time since the fall of the Soviet Union; it criticizes President Vladimir Putin's government for centralizing power, harassing the media and politicizing law enforcement. Press censorship ranks among the highest in Europe. Distrusting their own justice system, Russians are seeking help abroad. Over the past seven years they have filed 25,000 cases with the European Court of Human Rights.

Russian trade remains overly dependent on natural resources. Petroleum products and metals make up almost 72 percent of exports and more than 30 percent of government revenues (*Table 3*). While rising prices for energy and other raw materials add to growth, Russia

could encounter what economists call the "resource curse," a tendency for countries with natural wealth to pursue lopsided development strategies that neglect education, investment and other fundamentals.¹

Other postcommunist economies on the road to capitalism are moving ahead as exporters, concentrating on manufacturing and performing low-cost services outsourced from other countries. Russia has lagged as a destination for foreign capital, while several other former Soviet bloc countries, India and China have grown fast by attracting outside investment (*Table 4*).

Economic Systems Matter

In the Soviet era, Russia tried to run its economy with bureaucracy and central planning. The country is now marching, however imperfectly, toward communism's antithesis. Capitalism generates economic progress through competition and continual change, all in response to supply and demand. These forces foster efficiency in production and benefit consumers with better products at lower prices.

For capitalism to work, people must be free to pursue their own self-interest. They must accept that some companies and jobs will die so new ones can start and grow. For this reason, economists call capitalism's somewhat messy engine of progress "creative destruction," or "the churn."

Russia is finally experiencing this churn. After a disappointing first few postcommunist years, the country did better as it started to let markets work. The return of economic growth and

improving living standards will help build momentum for the country's fledgling capitalist system.

Vestiges of Russia's old order remain, and the country still has a long way to go. Measures of economic freedom bear this out. The Fraser Institute's Economic Freedom of the World index shows that Russia has made significant improvement over its communist past but still ranks 114th out of 123 nations. Russia's score and ranking have shown little progress in recent years.

The Heritage Foundation still rates Russia as "mostly unfree," along with such countries as Bulgaria, Romania and Ukraine. Meanwhile, Hungary, Poland, the Czech and Slovak republics, and the Baltic states have made the transition from communism to "mostly free."

To finish making enterprise truly free, Russia needs to embrace the churn. It has little choice. China, India, Eastern Europe and other parts of the world are moving faster than Russia in an increasingly global marketplace. In economic matters, the competition sets the pace. Russia will find itself left behind if it doesn't do a better job of keeping up as the world marches toward capitalism.

—Julia Kedrova

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¹ Additional discussion of how and why heavy resource concentration in a nation's exports can discourage economic growth can be found in *The Paradox of Plenty: Oil Booms and Petro-States*, by Terry Lynn Karl, Berkeley: University of California Press, 1997; "Natural Resources, Education and Economic Development," by Thorvaldur Gylfason, *European Economic Review*, vol. 45, May 2001, pp. 847–59; "The Big Push, Natural Resource Booms and Growth," by Jeffrey D. Sachs and Andrew M. Warner, *Journal of Development Economics*, vol. 59, June 1999, pp. 43–76; "The Curse of Natural Resources," by Sachs and Warner, *European Economic Review*, May 2001, vol. 45, pp. 827–38.

Table 4

Foreign Direct Investment in 2003
(Billions of U.S. dollars)

	Inflows	Outflows
China	53.5	1.8
Hong Kong	13.6	3.8
India	4.3	.9
Kazakhstan	2.1	–.1
Ukraine	1.4	0
Russia	1.1	4.1

SOURCE: Foreign Direct Investment database, United Nations Conference on Trade and Development.

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