

FEDERAL RESERVE BANK OF KANSAS CITY

# Economic Review



January/February 1991

The Tenth District Economy: Avoiding Recession?

A Turning Point in the Farm Recovery?

The Effect of U.S. Defense Cuts on the Standard of Living

Reform in Eastern Europe: Creating a Capital Market



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## *The Tenth District Economy: Avoiding Recession?*

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By Tim R. Smith

Economic growth in the Tenth Federal Reserve District slowed during 1990. The Missouri economy was especially weak because it depended heavily on manufacturing. Improvements in the energy sector and relatively strong farm incomes insulated most of the region from a more general downturn in economic activity late in the year. At issue, though, is whether the region can avoid recession in 1991.

Smith reviews the district's economic performance in 1990 and explores the outlook for 1991. He finds that most district states can probably avoid declining employment and income. A more stable energy sector and only slightly weaker farm incomes will likely offset weakness in other sectors of the district economy. Excluding Missouri, where the manufacturing downturn is expected to linger, the region stands a good chance of staying afloat in 1991 amid more difficult times for the U.S. economy.

## *A Turning Point in the Farm Recovery?*

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By Mark Drabenstott and Alan D. Barkema

U.S. agriculture began the 1990s with a bang. Net cash income hit another record high in 1990, thanks to big crops and high profits on livestock.

Yet concerns for the 1991 outlook began to accumulate in the last half of 1990. The jump in oil prices boosted farm costs and made many farmers cautious about making capital investments. Crop prices fell sharply as the harvest of large crops weighed heavily on crop markets. The breakdown of the GATT negotiations raised concerns about weaker farm trade in coming years. And as 1990 ended, fears of recession posed unknown consequences for agricultural markets.

Drabenstott and Barkema examine whether U.S. agriculture can keep its lengthy recovery going in 1991. They conclude the farm recovery will slow during the year but will still continue.

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## *The Effect of U.S. Defense Cuts on the Standard of Living*

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By C. Alan Garner

Before the Iraqi invasion of Kuwait, large cuts in U.S. defense spending seemed nearly inevitable. While recent events in the Middle East and the Soviet Union cast doubt on whether such cuts are imminent, large cuts are still possible over the next several years. As a result, the economic consequences of reduced defense spending should be evaluated carefully.

Newspaper and television reports have emphasized the short-run negative effects of defense cuts. Such a view is short-sighted. The negatives will likely be outweighed by less-visible long-run improvements in the standard of living.

Garner argues that defense cuts would raise the U.S. standard of living in the long run by encouraging more capital formation and increasing productivity growth in the private sector.

## *Reform in Eastern Europe: Creating a Capital Market*

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By Lawrence J. Brainard

What role should the reform of financial markets play in the economic transformation of Eastern Europe into market economies?

In this award-winning essay, Brainard argues that reviving economic growth in Eastern Europe requires creating a viable market for capital. Such a market is a key ingredient in successfully privatizing firms and increasing the efficiency of resource use.

Creating a viable capital market will not be easy, though. Brainard discusses why the necessary reforms will be very costly, and why the Eastern European governments must reduce budget deficits and establish clear priorities to achieve their goals.

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# The Tenth District Economy: Avoiding Recession?

By Tim R. Smith

**E**conomic growth in the Tenth Federal Reserve District slowed during 1990. Both employment and income growth subsided during the year due primarily to weak manufacturing and construction sectors. Other sectors, including agriculture and energy, continued to improve.

While the district slowed on average, a divergent pattern developed among district states in 1990. Differences in the mix of sectors led to differences in economic performance among district states in 1990. The Missouri economy was especially weak while the other six district states did better. Missouri's economy, heavily dependent on manufacturing, faltered along with the national economy. But improvements in the energy sector and relatively strong farm incomes insulated most of the region from a more general downturn in

economic activity late in 1990.

The district economy will likely slow further in 1991. At issue, though, is whether the region can avoid recession. Most district states probably can avoid declining employment and income. Excluding Missouri, where the manufacturing downturn is expected to linger, the region stands a good chance of staying afloat in 1991 amid more difficult times for the U.S. economy. A more stable energy sector and only slightly weaker farm incomes will likely offset weakness in other sectors of the district economy.

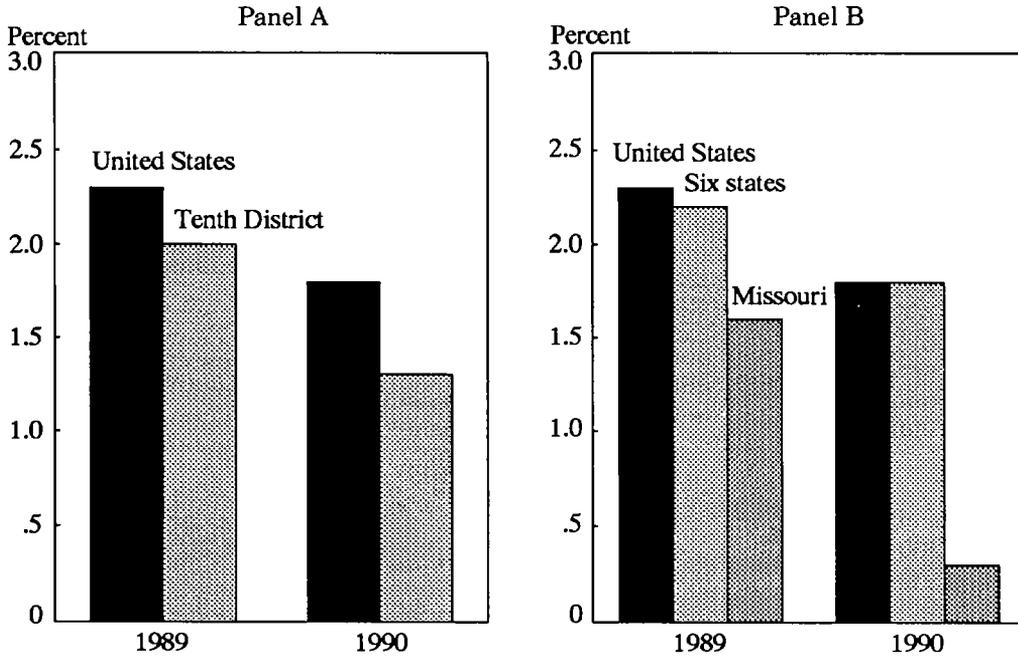
This article reviews the district's economic performance in 1990 and explores the outlook for 1991. The first section of the article reviews the 1990 economic performance of the district and its individual states. The second section discusses the district's major sectors and their employment outlook. The third section examines the recent and prospective economic performance of each of the district states.

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Chart 1

### Employment Growth, U.S. and Tenth District



Note: Employment growth rates are based on total nonagricultural employment. For 1990, annualized growth rates reflect only seasonally adjusted data through the first three quarters.

Source: Bureau of Labor Statistics.

### Recent Performance in the District

The district economy slowed during 1990 as evidenced by both employment and income growth. Most of the slowing can be traced to Missouri, which accounts for a very large share of district employment. Although economic growth also slowed in most other states, they continued to perform as well as the nation.

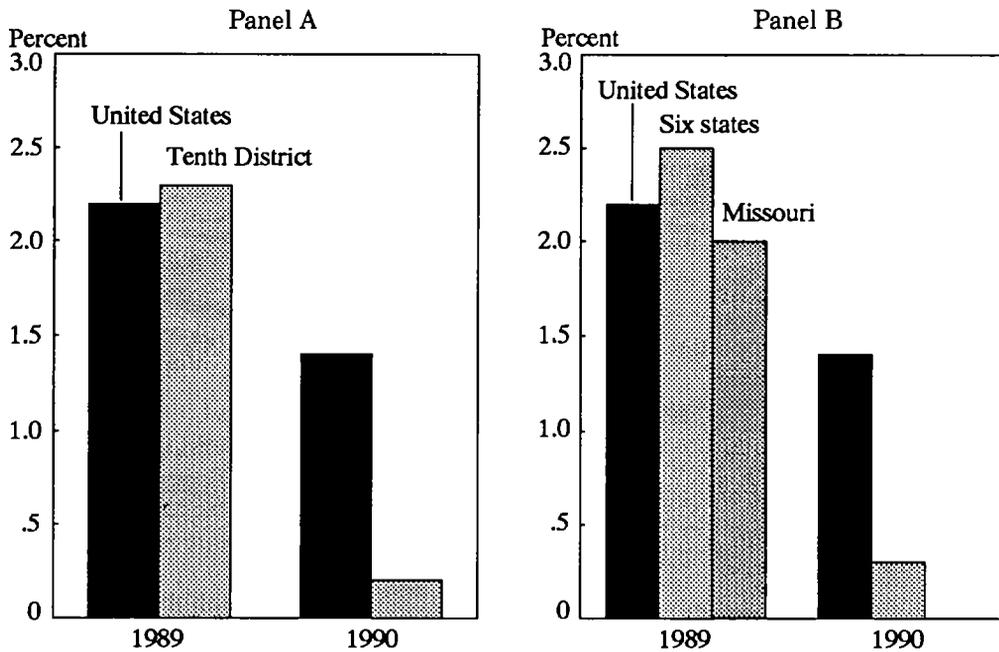
This article assesses the district's 1990 economic performance using the most recent data available. Employment growth in 1990 is based on data for the first three quarters of the year, and income growth in 1990 is based on data for the first half of the year.

Employment growth in the district slowed

during 1990. Average employment grew at an annual rate of about 1.3 percent, down from the 2.0 percent rate recorded in 1989 (Chart 1, Panel A).<sup>1</sup> Growth in the labor force slowed even more than growth in employment, however, causing the district's unemployment rate to fall from an average 5.2 percent in 1989 to 4.9 percent in 1990. The district continued to add jobs at a slower pace than the nation throughout most of the year. The district appeared to outperform the nation in the fourth quarter, although employment data are not yet available to confirm this.

Growth in real nonfarm personal income in the district was sharply lower in 1990. Income grew just 0.2 percent in 1990, compared to 2.3

Chart 2  
**Income Growth, U.S. and Tenth District**



Note: Income growth rates are based on real nonfarm personal income. For 1990, annualized growth rates reflect only seasonally adjusted data through the first two quarters.

Source: Data Resources, Inc.

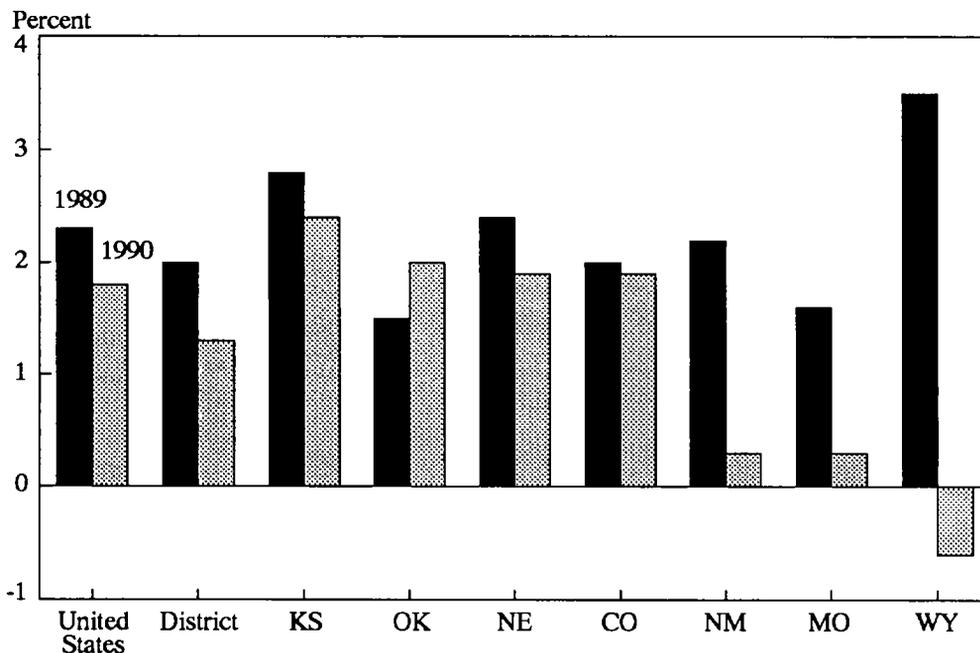
percent in 1989 (Chart 2, Panel A).<sup>2</sup> Nonfarm income growth in the district trailed income growth in the nation. Nevertheless, strong farm income helped offset the weakness in nonfarm income in several district states.

Although employment and income growth both slowed in 1990, district averages do not tell the whole story. A big drop in job growth in Missouri, where nearly a third of the district's workers are employed, pushed average employment growth in the district below national employment growth. Average employment growth slowed in the remaining six states, but actually outstripped the national average (Chart 1, Panel B). Employment growth in Kansas, Nebraska, Colorado, and New Mexico was

slower than in 1989 (Chart 3). Wyoming employment declined after growing strongly in 1989. Only Oklahoma showed faster employment growth in 1990 than in the previous year.

Real nonfarm income in the district grew slower in 1990 than in 1989 as weak growth in Missouri continued to drag down district averages (Chart 2, Panel B). Income growth slowed in Oklahoma, Nebraska, Colorado, New Mexico, and Wyoming; while income in Kansas fell slightly after growing in 1989 (Chart 4). In Missouri, income was flat following moderate growth in 1989. In all district states, farm income helped shore up poor performance in nonfarm income growth.

Chart 3  
**Employment Growth, Tenth District States**



Note: Employment growth rates are based on total nonagricultural employment. For 1990, annualized growth rates reflect only seasonally adjusted data through the first three quarters.

Source: Bureau of Labor Statistics.

## Review and Outlook by Sector

Most sectors of the district economy slowed in 1990, but the degree of slowing varied. Manufacturing and construction experienced net job losses during the year and are not expected to improve much in 1991. But agriculture and energy remained relatively strong in 1990 and are likely to bolster the region's economy again in 1991.

### Recent sector performance

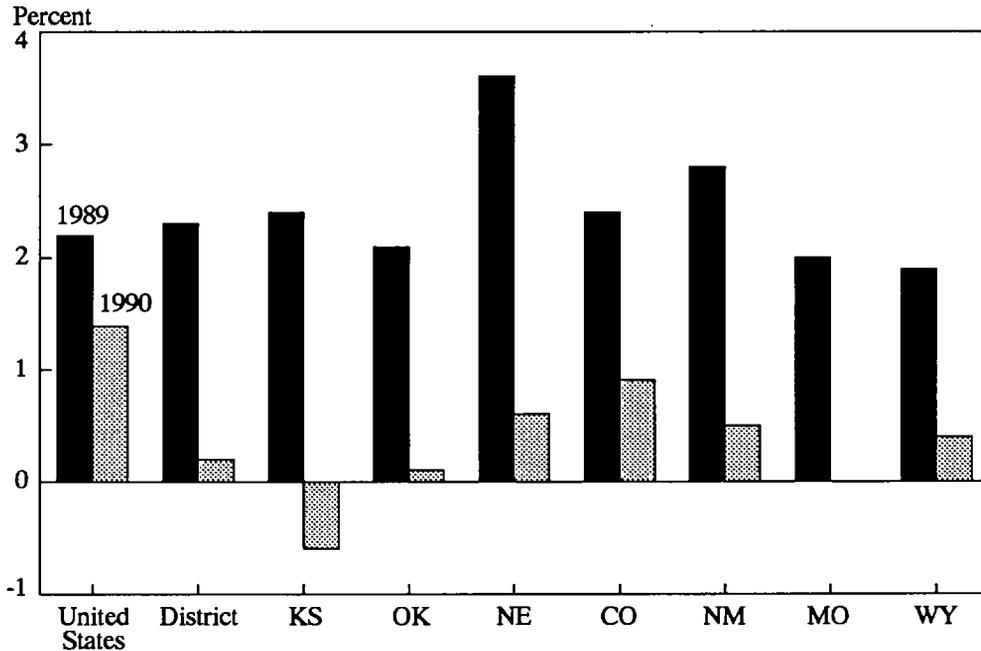
*District manufacturing* activity faltered in 1990 following a weak 1989. The regional

downturn paralleled a similar downturn nationwide, which was largely due to weaker consumer demand for manufactured goods. Manufacturing employment in the district fell slightly in 1990 after rising very slowly the year before (Table 1). The district lost factory jobs at a much slower rate than the nation in 1990.

The district's manufacturing employment downturn was rooted in the durable goods sector, where job losses were significant (Table 1). Among durable goods industries in the district, transportation equipment recorded the biggest job losses during 1990. Most of these losses occurred at automobile assembly plants in Missouri, Kansas, and Oklahoma, where

Chart 4

**Income Growth, Tenth District States**



Note: Income growth rates are based on total nonagricultural employment. For 1990, annualized growth rates reflect only seasonally adjusted data through the first two quarters.

Source: Data Resources, Inc.

layoffs became commonplace during the year. District plants produced about 17 percent fewer units in the 1990 model year than in the year before. Consequently, the district's share of total U.S. auto production fell from 14.5 percent in 1989 to 13.6 percent in 1990. In contrast to weakness in the auto industry, the general aviation industry improved somewhat during 1990. Although still hampered by high product liability costs, aircraft sales continued to advance, particularly in foreign markets.

Manufacturing of nondurables in the district was significantly stronger than durables in 1990 (Table 1). Food processing and printing and publishing, the two industries that make up over half of nondurables manufacturing employment

in the district, were both strong in 1990. Overall, employment growth in nondurables industries improved slightly compared with 1989, but food processors added jobs at twice the pace of the previous year. Job growth in printing and publishing remained little changed from the moderate pace set in 1989.

The district's *construction* sector weakened further in 1990 following a lackluster performance in 1989. Reflecting soft building activity across the region, construction employment fell.

District housing activity improved only modestly in 1990. Lower home mortgage rates in the second half of the year helped homebuilding activity very little. Housing permits authorized in the district rose only 3.2 percent

in the first three quarters of the year from the depressed levels during the same period in 1989. Moreover, the value of residential construction contracts awarded rose 1.2 percent. While these improvements were small, they compared favorably to big declines in residential construction activity nationwide.

Nonresidential construction activity in the district weakened slightly in 1990. High office vacancy rates continued to limit nonresidential building in many district cities. Office vacancy rates remained especially high in Albuquerque, Denver, and Oklahoma City. The value of nonresidential building contracts awarded in the first three quarters of 1990 was 0.3 percent less than in the same period in 1989. Awards fell even more in the nation.

*Government* remained a source of moderate strength to the district economy in 1990. Growth in total government jobs more than doubled in 1990, with increases at the federal, state, and local levels. Despite a slowdown in defense spending, the federal government remained an important influence on the district economy. Federal employment in the district grew moderately in 1990, after declining slightly in 1989. State and local governments, a far more important source of district employment than the federal government, also added jobs at a faster pace in 1990.

Fiscal conditions of district states were mixed in 1990. The size of a state's yearend balance relative to its general fund spending the year before is viewed as a key indicator of fiscal condition. By this measure, fiscal condition improved in four district states and worsened in three district states.<sup>3</sup>

Growth of the district's *service* sector slowed in 1990 after rapid growth in 1989. This sector is comprised of such diverse industries as hotels and restaurants, personal services, business services, and health care. Employment growth in the district's service sector slowed despite some improvement in tourism (Table 1).

Table 1

**Growth in Nonagricultural Employment by Sector, Tenth District States**

	Percent change	
	1989*	1990†
Manufacturing	.8	-.4
Durable goods	.7	-1.5
Transportation equipment	2.2	-3.4
Nondurable goods	1.1	1.3
Food processing	.8	1.7
Printing and publishing	2.4	2.2
Mining	0	2.9
Construction	0	-1.2
Services	4.2	2.1
Wholesale trade	1.8	.4
Retail trade	1.7	1.1
Federal government	-.6	2.6
State and local government	2.3	3.9
Transportation	1.6	.5
Finance, insurance, real estate	.6	-1.3

\* From fourth-quarter 1988 to fourth-quarter 1989.  
† First three quarters, seasonally adjusted annual rate.  
Source: Bureau of Labor Statistics.

National growth of service employment also slowed in 1990 but remained considerably stronger than in the district.

Mirroring a slowdown in the nation's *trade* sector, retail and wholesale trade in the district also slowed during 1990. Employment growth in both sectors slowed significantly (Table 1). While growth in retail trade employment in the district nearly matched national growth, growth in wholesale trade employment was somewhat slower than national growth.

District *agriculture* had a good year in 1990. Above-normal crop yields led to big crops in the district. Livestock returns were also strong, especially for the district's important cattle industry. With big crops and strong livestock returns, farm income was at a record high

last year. Farmland values continued to rise, and farm financial conditions remained healthy.

The district's *mining* sector, led by the oil and gas industry, continued to improve in 1990. Jobs were added at a solid pace during the year, after no gains in 1989. Despite the improvement, mining employment growth in the district continued to trail growth in the nation.

The district's energy industry was influenced directly by swings in world oil prices. The Iraqi invasion of Kuwait resulted in much higher and more volatile oil prices in the second half of 1990. After falling in the second quarter, oil prices increased sharply after the invasion. The generally higher oil prices in the last half of the year brought increased oil and gas activity in the district's oilpatch. But oil price volatility and uncertainty about the future course of oil prices confined most of this activity to increasing the productivity of existing wells, not exploring for new reserves. Underscoring that trend, the average number of drilling rigs operating in district states in the first three quarters of 1990 was 277, up only moderately from 241 in the first three quarters of 1989.

## Sector outlook

District *manufacturing* activity will likely be weak again in 1991, mirroring a continuing slump in national manufacturing activity. Business fixed investment and purchases of consumer durable goods are expected to weaken further. Moreover, while the lower valued U.S. dollar should help spur growth in exports, slower economic growth abroad will limit export growth. The national manufacturing slump will be felt mostly in Missouri with its high concentration of transportation equipment industries. Defense contractors will be hurt by federal deficit reduction measures, while automobile producers will cut back further due to continued weakness in new car sales. While nondurables manufacturing activity is expected to decline

less than durables manufacturing, weaker national demand for district products may impede growth in such regional industries as food processing and printing and publishing.

*Construction* activity in the district will probably slump further in 1991. High vacancy rates in commercial buildings and the generally weak regional economy will continue to depress nonresidential construction. Lower mortgage interest rates toward the end of 1990 will likely do little to spur residential construction in parts of the region with sizable housing inventories.

The *government* sector cannot be counted on to offset weakness in other sectors of the district economy in 1990. The Omnibus Budget Reconciliation Act will limit growth in federal spending in the region. Moreover, state fiscal conditions are likely to come under stress as economic growth slows. Total balances as a percent of general fund spending are projected to be smaller in 1991 than in 1990 in all seven district states.

Weak economic conditions in the nation and the region will hamper growth in the district's *trade and service* sectors in 1991. Sluggish growth in personal income will further weaken retail trade in the district. And the slowdown in services should continue. Tourism, in particular, stands to suffer from sluggish economic conditions in the nation and the region.

District *agriculture* will remain strong in 1991, but farm program cuts and weak crop prices will likely reduce farm incomes somewhat. The outlook for livestock producers remains good, and profits will be helped by weak crop prices. Cautious increases in farm debt and modest gains in farmland values should keep farm financial conditions healthy.

Continued gains are possible in the district's *mining* sector in the year ahead, but the uncertainty now facing the oil and gas industry will keep the gains small. Many market analysts suggest a gradual decline in oil prices during 1991 as events in the Middle East unwind.

However, such a scenario is far from certain. A war in the Middle East would send oil prices soaring and add additional uncertainty about world supply conditions. On the other hand, a peaceful resolution could cause oil prices to plummet. Neither price scenario bodes well for the district energy industry because uncertainty about oil prices will discourage energy companies and their lenders from making large investments in explorative drilling.

## **Mixed Performance in District States**

The district economy slowed on average in 1990, but performance ranged widely across the district's seven states. Kansas was the strongest state, with growth surpassing the national average. Wyoming was the weakest state, with growth well under the national average. The range of performance was tied directly to the mix of industries found in individual states. States dependent on manufacturing fared poorly, while states that depend more on agriculture and energy generally did much better. Looking ahead, the mix of sectors will again be key to the 1991 outlook among district states.

### **Kansas**

Kansas job growth was the fastest among district states in 1990 and well above the national rate. Nevertheless, employment growth in the state slowed compared with 1989 (Chart 3). And nonfarm real personal income fell slightly in the first half of the year after posting moderate growth in 1989 (Chart 4).

The Kansas farm economy posted a strong performance in 1990. A good wheat crop and strong livestock profits contributed to high farm incomes in most areas. Strong farm income helped offset the weak income growth in other parts of the state's economy.

Manufacturing activity in Kansas faltered

somewhat in 1990. Durable goods manufacturing employment declined, while nondurable goods manufacturing employment continued to grow. Automobile production in Kansas City slowed, as the General Motors plant responded to weak orders from dealers. Manufacturers of general aviation aircraft in Wichita continued to increase billings in 1990, although fewer aircraft were produced.

The mining sector in Kansas turned around in 1990. Mining employment increased at an annual rate of 7.3 percent, up significantly from a decline of more than 5 percent in 1989. Higher average oil prices and an optimistic outlook for natural gas pushed up the number of drilling rigs operating in the state. And coal production in Kansas, although very small compared with coal production in neighboring states, increased 23 percent in the first ten months of the year from the same period in 1989.

The Kansas economy will likely slow further in 1990 but should continue to outperform other district states. The Kansas manufacturing sector will suffer from some of the same problems as the national manufacturing sector. For example, weak national business conditions will likely lead to a slowing in the state's food processing and printing and publishing industries. However, improving performance in aircraft production will bolster the state's manufacturing sector. Uncertainty about oil prices may limit improvement in the state's energy industry, but farm incomes will likely remain strong despite lower crop prices.

### **Oklahoma**

Economic conditions in Oklahoma held up relatively well in 1990. Employment grew faster than in 1989, and Oklahoma exceeded all other district states except Kansas in job growth (Chart 3). However, growth of real nonfarm personal income slowed substantially in 1990 (Chart 4).

Oklahoma's energy industry improved in 1990. Mining employment grew nearly 6.0 percent in 1990, four times the 1989 rate. The average number of drilling rigs operating in Oklahoma oil and gas fields in the first three quarters of the year was about 5 percent higher than in the same period a year earlier.

Manufacturing activity in Oklahoma weakened in 1990. Producers of both durable and nondurable goods turned in lackluster performances. Total manufacturing employment fell slightly in 1990 after increasing 1.1 percent in 1989. With declines in production and employment, automobile assembly was among the softest spots in Oklahoma's manufacturing sector.

Oklahoma's trade and service sectors were mixed in 1990. Trade employment grew faster than in 1989 and faster than the national trade sector. But employment growth in the service sector turned negative in 1990 after posting solid gains in 1989.

The Oklahoma economy will probably slow somewhat in 1991. The energy sector, while remaining stable, will likely not sustain the growth it experienced in 1990 due to an uncertain outlook for oil prices. Moreover, the state's manufacturing sector will continue to reflect ongoing weakness in the nation's manufacturing sector. A relatively strong agricultural sector will only partly balance the weakness in other sectors.

## **Nebraska**

Nebraska's economy remained relatively strong in 1990. The state's employment growth declined somewhat from 1989, but was well above the district average (Chart 3). Strong farm income and gains in nondurables manufacturing continued to support job growth. But growth in real nonfarm personal income fell three full percentage points in 1990 (Chart 4).

The Nebraska farm sector enjoyed another

strong year. Big crops and high livestock returns boosted farm incomes. Higher fuel costs and the prospect of lower government payments have only recently begun to dampen farmers' spending on farm equipment and other discretionary items.

Nebraska was the only district state where manufacturing grew significantly in 1990. Total manufacturing employment increased 1.3 percent, up from 1.0 percent in 1989. Continued strength in the state's food processing industry contributed to the growth in manufacturing.

Nebraska felt the districtwide slowdown in services last year, but the state's service sector still managed to expand at a moderate pace. Service sector employment increased 2.4 percent, down from 3.5 percent in 1989.

Nebraska's economy should continue to grow moderately in 1991, but the pace of economic activity in the state will likely slow with national demand for the goods and services produced in the state. The farm sector will remain a stabilizing force in the state, but the program reforms of the 1990 farm bill may cause some decline in farm income.

## **Colorado**

The Colorado economy maintained moderate economic growth in 1990. Employment growth stayed even with growth in 1989 (Chart 3). But real personal income growth was much slower than in the previous year (Chart 4). Solid performance in nondurable goods manufacturing, services, retail trade, and agriculture balanced weakness in most other sectors of the state's economy.

Although Colorado's manufacturing sector weakened overall, nondurable goods production improved. Manufacturing employment increased only 0.1 percent in 1990, down from 1.5 percent in 1989. However, employment growth in nondurable goods industries doubled to 4.3 percent. Food processing and printing and

publishing, in particular, contributed to the growth in nondurable goods industries.

Colorado's mining industry deteriorated somewhat in 1990. Mining employment fell despite improved oil and gas drilling activity and renewed optimism after the reopening of the Climax molybdenum mine was announced. Total mining employment fell 2.7 percent after declining 1.5 percent in 1989.

Colorado construction activity was mixed in 1990. Significant increases in both housing permits and residential construction contract awards during the first three quarters of the year signaled improvement in the residential building sector. In contrast, the nonresidential building sector continued to languish. But office vacancy rates in downtown and suburban Denver continued to fall throughout the year, suggesting the bottom in nonresidential building may have been reached. Total construction employment in Colorado fell slightly in 1990, at about the same rate as in 1989.

The trade and service sectors provided support for the continued overall expansion of the Colorado economy. Tourism—the ski industry in particular—continued to boost the service sector. Retail trade was also a positive factor in the Colorado economy in 1990.

The Colorado economy is likely to post moderate gains again in 1991. Manufacturing in the state may weaken further as defense contracts decline and as national demand for food products slows. But strong farm incomes and tourist dollars should maintain growth in trade and services. The ski industry is optimistic that skier visits will hold up well during the 1990-91 season, as higher oil prices boost incomes in Texas and Oklahoma, two important sources of skiers for Colorado slopes.

## **New Mexico**

The New Mexico economy turned in a weak performance in 1990. Growth in employment

declined markedly from growth in 1989 (Chart 3). And real nonfarm personal income growth weakened significantly (Chart 4).

The mining sector in New Mexico was soft in 1990. Mining employment fell 2.7 percent, after posting solid gains in 1989. The mining job losses occurred despite an increase in oil and gas drilling activity, suggesting continued sluggish conditions in the nonenergy component of the state's mining sector.

New Mexico's manufacturing sector languished in 1990 after healthy growth in 1989. Employment growth in both durable and nondurable goods industries slowed significantly. Some of the slowing occurred in the state's important defense-related industries.

Construction was the weakest segment of New Mexico's economy in 1990. Both residential and nonresidential construction activity declined markedly. For example, a large mixed-use commercial project and convention center expansion were completed in Albuquerque with no new projects to take up the slack. The weakness in building activity led to a significant reduction in the number of construction workers employed in the state.

The service sector continued to lend strength to the New Mexico economy in 1990, although not as much as the year before. Despite a vital tourism industry, which contributed much of the modest growth in services, the trade sector softened. Retail trade was especially anemic—much weaker than in other district states.

The New Mexico economy is expected to grow only slowly in 1991. Stable farm and tourism sectors could partly offset weak manufacturing to prevent further worsening of the state's economy. Moreover, several new building projects, including a large shopping mall in Albuquerque, should breathe some life into the state's sluggish construction sector.

## Missouri

Missouri turned in one of the weakest economic performances in the district. Economic performance in Missouri deteriorated markedly in 1990, as manufacturing activity slumped in step with manufacturing activity nationwide. Employment growth decelerated and nonfarm income growth came to a halt (Charts 3 and 4).

Manufacturing in Missouri, dominated by transportation equipment industries, declined in 1990. A downturn in defense-related manufacturing and automobile production contributed to a sizable drop in durable goods employment. Mirroring the nation, total manufacturing employment fell 1.6 percent. The biggest factory layoffs occurred in St. Louis, where much of the state's manufacturing activity is concentrated. Automobile assembly plants in Kansas City also slowed production considerably during the 1990 model year.

Construction across the state remained weak in 1990, both in the residential and non-residential sectors. Residential building activity softened further in 1990. Both housing permits and residential contract awards declined during the first three quarters. Moreover, sluggish non-residential building contributed little strength to the state's construction sector.

The decline in high-paying factory jobs took a toll on the service and trade sectors in Missouri. Service employment growth was substantially weaker in 1990 than in 1989. And employment in retail and wholesale trade declined after increasing moderately in 1989.

The outlook for the Missouri economy depends critically on the outlook for manufacturing. While some manufacturers may benefit from past declines in the value of the U.S. dollar, a rebound in the state's important automobile and defense-related industries is not expected. And without improvement in manufacturing, general business conditions in the state will

remain weak, postponing significant recovery in the construction sector. Therefore, overall economic performance in Missouri will likely not improve and could slow even further in 1991. Continued strength in the state's farm economy may cushion the state's slowdown, however, particularly in rural areas.

## Wyoming

Economic growth in Wyoming trailed other district states in 1990. The Wyoming economy turned down in 1990 after posting big gains in 1989. Wyoming employment fell slightly after increasing sharply in 1989 (Chart 3). Although somewhat surprising, such turnarounds can occur in less populous states where small changes in employment levels show up as large changes in growth rates. Strong income in the state's important ranching industry helped prop up weak growth in nonfarm personal income, which grew much more slowly in 1990 than in 1989 (Chart 4).

Mining and agriculture were both strong in 1990, helping to curb job losses in Wyoming. Mining employment, which showed no gains in 1989, surged nearly 5 percent in 1990. Oil and gas drilling activity and coal production increased. Output of soda ash reached a record high, and bentonite production, used as a lubricant for oil and gas drilling rigs, benefited from the increased drilling activity nationwide.

The construction sector turned in mixed results in 1990. But despite improvements in both residential and nonresidential building activity, construction employment fell. The decline in construction jobs was likely related to a decline in nonbuilding construction activity.

Wyoming's service and trade sectors slowed. A modest decline in service jobs in 1990 reversed some of the strong gains of the previous year. In addition, retail and wholesale trade employment leveled off after growing soundly in 1989.

Economic performance in Wyoming will likely remain flat in 1991. Continued strong incomes at the state's ranches and further improvement in the mining sector will balance potentially weak manufacturing and service sectors. Tourism, usually a source of stability in the state, may soften if a sluggish national economy reduces visits to the state's national parks.

## Summary

The slowing in economic growth in the Tenth Federal Reserve District during 1990 was spread unevenly across the seven district states. In particular, weakness in Missouri—the district's most populous state—dragged down average performance in the district. Most other states, although slowing, performed better than the national average in 1990. The relatively

strong regional performance was due to improvements in the energy sector and strong farm incomes.

In the year ahead, the district economy is expected to slow further, reflecting weakness in the national economy. However, the same factors that kept most of the district afloat in 1990 will continue bracing the region in 1991. A strong farm economy and a stable energy sector will likely help the region—excluding Missouri—outpace the nation. In Missouri, a lingering manufacturing downturn is expected to overwhelm strength in the farm economy to push economic performance below the average for the district and the nation. Thus, much of the district may suffer little from the downturn in the national economy. But Missouri, which is roughly a third of the district's economy, will probably share in a national recession.

## Endnotes

<sup>1</sup> Discussions of employment growth in this article are based on growth for 1989, calculated from the fourth quarter of 1988 to the fourth quarter of 1989; and growth for 1990, calculated as the annual rate of growth from the fourth quarter of 1989 through the third quarter of 1990. The employment data are from the Bureau of Labor Statistics, seasonally adjusted at the Federal Reserve Bank of Kansas City.

<sup>2</sup> Discussions of income growth in this article are based on growth for 1989, calculated from the fourth quarter of 1988

to the fourth quarter of 1989; and growth for 1990, calculated as the annual rate of growth from the fourth quarter of 1989 to the second quarter of 1990. The income data are seasonally adjusted real personal income data from Data Resources, Inc.

<sup>3</sup> Yearend total balances as a percentage of general fund spending is estimated to have increased in Missouri, New Mexico, Oklahoma, and Wyoming from fiscal year 1989 to fiscal year 1990 (Eckl and others).

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# A Turning Point in the Farm Recovery?

By Mark Drabentstott and Alan D. Barkema

U.S. agriculture began the 1990s with a bang. Net cash income hit a record high in 1990—the third record in four years—as crops were big and livestock profits high. The strong earnings extended the farm recovery through its fourth year. Throughout the recovery, farm incomes adjusted for inflation have been the best since the mid-1970s and have erased many of the financial problems that plagued the industry in the mid-1980s.

Although farm income was high, concerns for the 1991 outlook began to accumulate in the last half of 1990. The jump in oil prices boosted farm costs and made many farmers cautious about making capital investments. Crop prices fell sharply in the second half of the year as the harvest of large crops weighed heavily on crop markets. The breakdown of talks in the Uruguay Round of GATT (General Agreement on Tariffs

and Trade) negotiations raised concerns about weaker world farm trade in coming years. And as 1990 ended, fears of recession in the United States increased, posing unknown consequences for agricultural markets.

Can U.S. agriculture keep its lengthy recovery going in 1991? The answer appears to be, yes. Strong livestock prices and resilient demand will keep livestock profits high. Crop producers probably will not do as well in 1991 as in 1990, but prices may not drop much below current levels. Farm exports, which rose markedly the past three years, will moderate somewhat in the coming year, but will still be high compared with the slump of the mid-1980s. Overall, the farm recovery will slow in 1991 but will still continue.

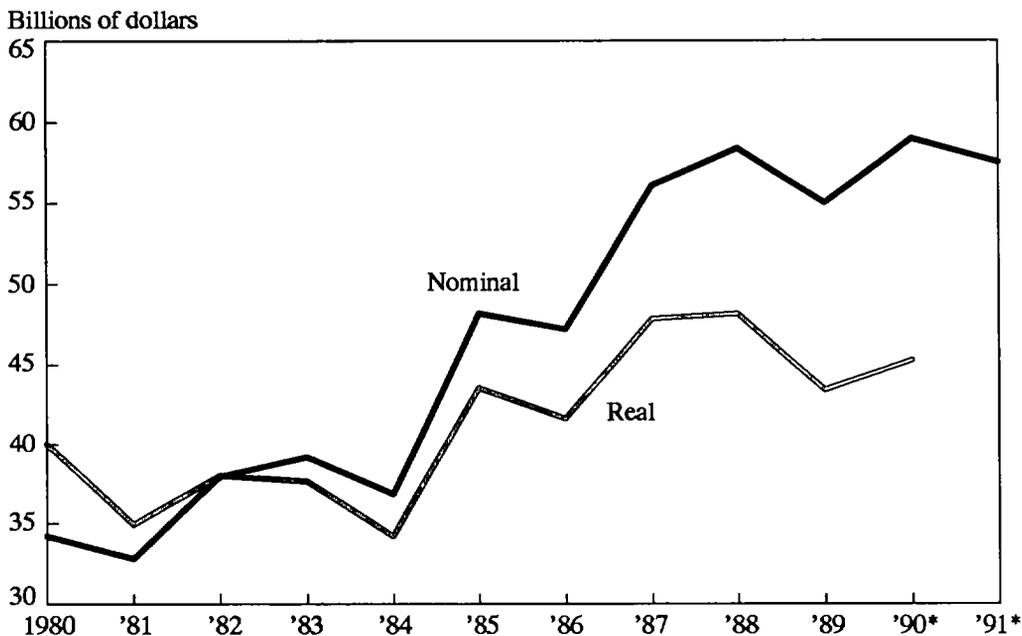
## 1990—A Good Year for Agriculture

The year 1990 was strong in nearly every respect for U.S. agriculture. Income reached a new record high, crops rebounded from two years of at least partial drought, and livestock

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Chart 1  
**Net Cash Farm Income**



\* Forecast.

Source: U.S. Department of Agriculture, *Agricultural Outlook*.

producers enjoyed continued high prices despite record meat production. The year's financial success, in turn, bolstered the industry's overall balance sheet.

### **Farm financial conditions**

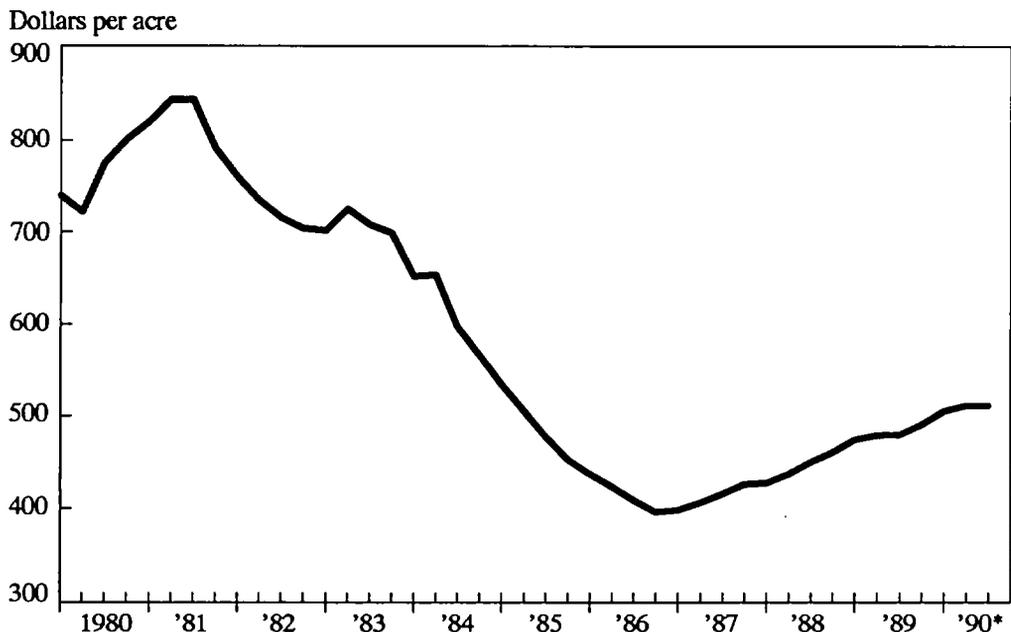
The leading farm story in 1990 was another record high for farm income. With record highs in 1987, 1988, and 1990, the farm recovery is proving to be one of the sharpest financial turn-arounds in U.S. agriculture's history. Net cash income—gross receipts for the sector less gross cash expenses—hit a forecast \$59 billion (Chart 1). Net farm income, which includes changes in farm inventories and capital depreciation, also set a new record at a forecast \$49 billion.

In a pattern that now characterizes this farm recovery, livestock profits led the way to record farm incomes. Cattle prices reached new record highs in 1990, and hog and poultry prices were strong.

Crop producers enjoyed big crops, a welcome switch from the previous two years when drought held down output. Crop prices generally fell throughout 1990, so crop profits hinged importantly on when farmers marketed their crops.

Farm asset values moved higher in 1990, but at a slower pace than the year before (Chart 2). Farmland values in the Tenth District increased 5 percent from the start of the year through the third quarter (the last quarter for which data are available). Gains in value slowed

Chart 2  
**Tenth District Farmland Values**



Sources: U.S. Department of Agriculture, *Agricultural Resources: Agricultural Land Values and Markets, Situation and Outlook Report*; Federal Reserve Bank of Kansas City, Agricultural Credit Survey.

throughout the year, however, and land values edged up only 0.6 percent in the third quarter. Nevertheless, at the end of the third quarter, values were 31 percent higher than when they bottomed out in the fourth quarter of 1986.

Despite the slowdown in asset value gains, the farm balance sheet remains strong. Nationwide, farm assets rose 3 percent, and farm debt declined slightly as farmers again avoided debt-financed expansion (Table 1). The industry's debt-asset ratio now stands at 15.7 percent, the lowest since the mid-1970s. Farm equity increased slightly, but fell slightly after adjusting for inflation. Notwithstanding the slight erosion in real farm equity, agriculture remains in better financial condition than in the past decade.

### Crops

U.S. farmers harvested big crops in 1990 due to favorable weather in most parts of the country. The large U.S. production met with big output from other major producing countries, resulting in record world grain production. Even though U.S. grain stocks were low when the year began, crop prices sank throughout the year as a big crop became more and more likely.

Wheat prices fell throughout 1990, as production rebounded sharply from the drought-reduced crop of 1989. With favorable weather, U.S. wheat production jumped more than a third to 2.7 billion bushels, the largest one-year boost in output in U.S. history (Table 2). The world's other main wheat producers

Table 1

**Farm Balance Sheet Excluding Operator Households and CCC Loans**

(Billions of dollars)

	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991*</u>
Assets	764	794	818	825-835
Liabilities	138	136	134	133-137
Proprietor's equity	626	658	684	695-705

\* Forecast.  
Source: U. S. Department of Agriculture, Economic Research Service, Agricultural Outlook Conference.

(Canada, the European Community, Argentina, and Australia) also had big crops. Wheat prices began to fall in the spring, in anticipation of larger supplies, and continued to fall through the remainder of the year. Average farm prices for the 1989-90 marketing year, which ended June 30, held up well at \$3.72 a bushel, equal to the previous year (Table 3). Prices in the 1990-91 marketing year, however, will be much lower due to the abundant 1990 crop.

Feedgrain production also was large in 1990 under almost ideal growing conditions. U.S. producers harvested nearly 8 billion bushels of corn, the first time in four years output approached that level. Foreign feedgrain production was record large in 1990. Export demand remained relatively strong, however, providing some support to prices. As with wheat, corn prices generally fell from late spring through the rest of the year. For the 1989-90 marketing year, ended August 31, farm-level corn prices averaged \$2.36 a bushel, down slightly from the year before.

Soybean production declined slightly in 1990, holding production below levels reached in the mid-1980s. High yields more than offset a slight drop in planted acres to bring production to 1.9 billion bushels, down 1 percent from the year before. Export demand remained fairly weak, and competing supplies were large. Apart from some seasonal strength in the spring,

soybean prices were much lower than the previous year. For the 1989-90 marketing year, ended August 31, farm prices averaged \$5.70 a bushel, down nearly a quarter from the year before.

### Livestock

Livestock was again the star performer in agriculture's lineup in 1990. Despite record meat supplies, livestock prices remained at high levels throughout the year. Cattle prices set record highs in 1990 and hog prices stayed near the record high, as producers kept a brake on expansion. Tight supplies of calves and yearlings kept feeder cattle prices exceptionally strong all year long. Robust meat demand in 1990 pushed per capita meat consumption to a new record of 220 pounds. Falling feedgrain prices in the second half widened profit margins for all livestock feeders.

Beef production fell 1 percent as cattle numbers stayed at a 30-year low. Despite the wide profit margins of recent years, cattle producers again resisted expansion. With more favorable weather and forage conditions in 1990 than in the year before, cattle producers shipped fewer cows to slaughter, resulting in a decline in non-fed beef production. But strong prices for finished cattle led to bigger fed-beef supplies.

Cattle prices were very strong in 1990.

Table 2

**U. S. Agricultural Supply and Demand Estimates on December 11, 1990**

(Millions of bushels, bales, or metric tons)

	<b>Corn (bu.)</b>			<b>Feedgrains (mt.)</b>		
	<b>(Sept. 1 - Aug. 31)</b>			<b>(June 1 - May 31)</b>		
	<u>1988-89</u>	<u>1989-90</u>	<u>1990-91</u>	<u>1988-89</u>	<u>1989-90</u>	<u>1990-91</u>
<i>Supply</i>						
Beginning stocks	4,259	1,930	1,344	133.6	65.9	45.5
Production and imports	4,932	7,529	7,937	150.5	222.5	231.3
Total supply	9,191	9,460	9,281	284.2	288.4	276.9
<i>Demand</i>						
Domestic	5,232	5,748	6,020	157.1	173.0	178.8
Exports	2,028	2,367	2,025	61.1	69.9	59.0
Total demand	7,260	8,115	8,045	218.3	242.9	237.9
<i>Ending stocks</i>	1,930	1,344	1,236	65.9	45.5	39.0
<i>Stocks-to-use ratio</i>	26.58	16.56	15.36	30.19	18.73	16.39
	<b>Soybeans (bu.)</b>			<b>Wheat (bu.)</b>		
	<b>(Sept. 1 - Aug. 31)</b>			<b>(June 1 - May 31)</b>		
	<u>1988-89</u>	<u>1989-90</u>	<u>1990-91</u>	<u>1988-89</u>	<u>1989-90</u>	<u>1990-91</u>
<i>Supply</i>						
Beginning stocks	302	182	239	1,261	702	536
Production and imports	1,553	1,927	1,906	1,812	2,037	2,744
Total supply	1,855	2,109	2,145	3,096	2,762	3,305
<i>Demand</i>						
Domestic	1,146	1,247	1,290	975	992	1,293
Exports	527	623	590	1,419	1,233	1,075
Total demand	1,673	1,870	1,880	2,394	2,225	2,368
<i>Ending stocks</i>	182	239	265	702	536	937
<i>Stocks-to-use ratio</i>	10.88	12.78	14.10	29.32	24.09	39.57

Source: U. S. Department of Agriculture, Foreign Agricultural Service, World Agricultural Supply and Demand Estimates.

Table 3  
**U. S. Farm Product Price Projections**

<i>Crops</i>	<b>Marketing Years</b>		
	<u>1989-90*</u>	<u>1990-91†</u>	<u>Percent change</u>
Wheat	\$3.72/bu.	\$2.50-2.70/bu.	-30.11
Corn	\$2.36/bu.	\$2.20-2.50/bu.	-.42
Soybeans	\$5.70/bu.	\$5.25-6.25/bu.	.88
<i>Livestock</i>	<b>Calendar Years</b>		
	<u>1990*</u>	<u>1991†</u>	<u>Percent change</u>
Choice Steers	\$77-78/cwt.	\$75-81/cwt.	.65
Barrows & Gilts	\$54-55/cwt.	\$50-56/cwt.	-2.75
Broilers	\$.54-.55/lb.	\$.51-.57/lb.	-.92
Turkeys	\$.63-.64/lb.	\$.61/.67/lb.	.79

\* Estimated.  
† Projected.

Prices for choice steers at Omaha averaged \$77 a hundredweight, up more than \$4 from the year before. Despite the high prices for finished cattle, cattle feeding profits were held down by record prices for feeder cattle. Cattle ranchers, meanwhile, had one of their best years ever in 1990. The low cattle inventory kept feeder cattle prices at record levels for most of the year. Prices for feeder steers at Kansas City averaged \$90 a hundredweight, up \$4 from 1989.

Pork production fell 3 percent in 1990 as producers retained some hogs for breeding stock rather than slaughtering them, a sign of cautious expansion in the pork industry. Producers began to retain breeding stock only in the past six months. Many analysts expected producers to increase output much earlier because pork profits have been wide for the past

couple of years. Pork producers again enjoyed healthy profits in 1990, with prices for barrows and gilts at the seven major markets averaging \$55 in 1990 compared with \$44 the year before.

Poultry production and consumption hit record highs in 1990, as U.S. consumers continued to show strong demand for the expanding array of poultry products. Total poultry production increased 7 percent, with broilers up 7 percent and turkeys up 9 percent. Despite the big increase in supplies, prices remained favorable due to the strong demand. Broiler prices averaged 54.5 cents a pound at the 12 city markets in 1990, down from 59.0 cents the year before. Even though prices fell, most producers still earned profits of about 8 cents a pound. Turkey prices averaged 64.0 cents in 1990, down modestly from the year

before. Most turkey producers broke even for the year as a whole.

Overall, agriculture closed out another excellent year in 1990. Livestock producers did somewhat better than crop producers, but crop income was high for those producers that marketed early in the year. Additional gains in agriculture's financial health underscored that the current farm recovery has been a dramatic reversal of the deep recession of the mid-1980s.

## **Another Good Year Ahead**

Agriculture stands at a turning point as 1991 begins. Grain stocks are headed higher after three years of drawdown. Following three years of exceptional strength, livestock prices could edge down under the pressure of larger supplies and weaker consumer demand. The new farm bill cuts farm payments from the generous levels of the previous legislation. And world grain exporters appear headed toward greater confrontation following unsuccessful efforts to sign a new accord to reduce trade-distorting agricultural subsidies. Despite the adverse effects these factors could have on the industry, U.S. agriculture appears likely to have another good year in 1991. But concerns for the longer run outlook will remain.

### **Farm income and financial conditions**

Farm income will probably decline in 1991, but will remain high by recent standards. Higher prices for oil-derived inputs could increase farm expenses as much as \$2 billion next year. Total expenses may increase 3 to 6 percent due to higher input costs generally. Farm receipts may increase slightly next year, with increased crop marketings and steady livestock sales. Implementation of the new farm bill will mean a cut of 10 to 15 percent in direct government payments to farmers. Altogether, higher expenses, only slightly higher farm receipts,

and reduced government payments will lead to a drop in net cash income of at least 5 percent.

Farm asset values may increase only modestly in the coming year. As 1990 ended, asset values were increasing at a very slow pace. Farmers appeared more cautious due to higher oil prices, smaller government payments, and a weakening economy generally. With farm incomes likely to fall in 1991, farmers will not be aggressive buyers of farmland. As a result, land values will trend higher, but may not keep pace with inflation.

Agricultural lenders appear to be in good shape, heading into 1991 with strong portfolios. Loanable funds will be readily available to creditworthy farm borrowers, as loan-deposit ratios remain low at agricultural banks. And farm loan interest rates may decline into the heavy spring borrowing season. Declining interest rates in national money markets in the fourth quarter suggest some parallel declines in farm loan rates in coming months.

In short, the farm recovery may slow down in financial terms in 1991. But with considerable financial strength amassed over the past four years of recovery, farmers will remain in strong condition.

### **Food prices outlook**

A combination of weaker consumer demand and larger food supplies will push down food price inflation in 1991. Consumer food demand could be dampened by slower growth in consumer incomes in a sluggish national economy. At the same time, supplies of the foods most responsible for faster food inflation in recent years will be larger. Fruit and vegetable production has recovered from the December 1989 freeze that drove fruit and vegetable prices skyward. The recent harvest of large grain crops will ease pressure on cereal and bakery product prices. And larger supplies of red meat, poultry, and dairy products will limit price increases at

the meat and dairy counters. In sum, food price inflation could ease to a range of 2 to 5 percent in 1991, down from about 6 percent per year the past two years.

## **Farm policy outlook**

Two extraordinary farm policy events in late 1990 could set the stage for farm policy debate in the coming decade. In a White House ceremony on November 28, President Bush signed into law the Food, Agriculture, Conservation, and Trade Act of 1990—the nation's farm policy for the next five years. And in Brussels on December 6, the Uruguay Round of the GATT collapsed, leaving only a glimmer of hope that an agreement can be salvaged after more than four years of negotiation. These two events are tightly linked, because the United States has made reducing global farm subsidies a key goal of the Uruguay Round.

***The Food, Agriculture, Conservation, and Trade Act of 1990.*** The last farm bill, the Food Security Act of 1985, is credited with spurring a rebound in the U.S. farm economy from the depths of the mid-1980s farm recession. But that feat did not come cheap. The 1985 farm bill cost taxpayers about \$80 billion during its five-year life.

The new farm bill was written in an entirely new setting. The 1985 bill was written when agriculture was near the bottom of its deep recession. The new bill was written when agriculture was back on its feet. In the new policy setting, Congress identified two primary objectives: 1) to control the costs of farm spending, consistent with efforts to reduce the federal budget deficit, and 2) to make farmers' planting decisions more responsive to market forces rather than government subsidies.

At first blush, reducing the costs of farm spending appeared to be a cinch. Due to the marked improvement in agricultural markets, simply maintaining the 1985 law would cost less

than before. Accordingly, Congress's initial blueprint for the new five-year farm bill, which kept most of the provisions of the expiring law in place, was projected to cost \$54 billion, one-third less than the 1985 farm law.

But the status quo was not a viable option for lawmakers. The Agricultural Reconciliation Act of 1990, part of the effort to reduce the federal budget deficit, required that farm policymakers trim \$13.6 billion from the projected cost of the new farm bill. Thus, after the required cuts, the 1990 farm bill is expected to cost taxpayers \$41 billion during its five-year life, about half the cost of the 1985 farm bill.

To achieve the budget cuts, lawmakers turned to a new, ingenious method of cutting spending. In many respects, the 1990 farm bill resembles the 1985 farm bill, but with an important twist. The new twist is called "triple base," a change that reduces the acreage covered by a crop price guarantee by at least 15 percent. The loss of the crop price guarantee is partially offset by allowing farmers to earn income by growing new crops on the affected acres. In short, the change met both of Congress's objectives: cut costs and allow market forces to have more effect.

Under the 1985 farm bill, farmers who chose to participate in the government's program received a minimum crop-price guarantee called the "target price." Whenever the market price fell below the target price—as was the case in much of the 1980s—the government simply made up the difference with a cash payment. In exchange for the price guarantee, farmers were required to leave a portion of their land unplanted, curtailing excess production.

Under the 1990 farm bill, the target-price program is retained and, in a move favored by both farmers and lawmakers, target prices are frozen at current levels. But the number of acres eligible for target price protection is cut 15 percent. In the technical language of the bill, that 15 percent is called the triple base. As in the

1985 bill, farmers are required to leave a portion of their land unplanted in the "Acreage Reduction Program." Removing the target-price guarantee from an extra 15 percent of each farmer's land reduces the exposure of the federal budget to farm spending.

The virtue of the triple base scheme for farmers is that they can grow other crops on the 15 percent triple base. As a result, more planting decisions will be made on the basis of market price signals rather than government subsidies. Many corn and wheat farmers may shift land previously planted to corn or wheat into soybean or sunflower production, depending on growing conditions and price relationships among the crops. Current estimates suggest soybean plantings could increase nearly 2 million acres in 1991. By allowing market forces to guide planting decisions, therefore, the new program will help restore oilseed production, which has been crowded out in recent years by heavily subsidized corn and wheat production.

In sum, the 1990 farm bill simultaneously cuts farm program spending while reducing the influence of subsidies on planting decisions. In addition, the budget-induced cuts in farm spending projected in the 1990 farm bill provide a model for the subsidy reductions the United States has asked the rest of the world to make in the Uruguay Round of negotiations on international trade issues.

***The Uruguay Round.*** The Uruguay Round, named after the country where the current round of negotiations was launched more than four years ago, is widely regarded as the most ambitious negotiation in the 40-year history of the GATT. The Round assembled representatives from 107 nations to pry open trade in 15 key areas, including agriculture, textiles, services, and intellectual property, such as copyrights and patents.

Before the Uruguay Round, agriculture was largely excluded from the GATT negotiations. In early rounds after World War II, the United

States wanted no interference with its domestic farm policy. Later, the United States winked at the development of the EC's farm subsidy scheme, choosing to subordinate free trade in agriculture to a broader geopolitical goal of promoting stability in Europe. With almost no discipline under the GATT, farm subsidies around the world proliferated and now stand at more than \$200 billion per year. Huge subsidies and steady gains in farm productivity through advancing technology, in turn, encouraged waves of excess farm production.

At the opening of the Uruguay Round four years ago, the United States led the call for an end to subsidized farm surpluses. The United States initially proposed a global phase-out of all trade-distorting farm subsidies by the year 2000. Before entering the final week of negotiations in Brussels, however, the United States toned down its proposal, calling for a 90 percent reduction in export subsidies and a 75 percent reduction in domestic price supports. In response, the EC reluctantly proposed to effectively cut farm price supports by 15 percent, with no cuts in export subsidies.

The U.S. position was strongly supported by the Cairns Group of nations, a loose confederation of 13 agricultural producing nations including Canada, Australia, New Zealand, Brazil, Argentina, and several developing countries. These nations provide little or no support to their farmers, thus leaving them frequent victims in the farm trade war between the EC and the United States. The support of the Cairns nations was critical to the overall success of the Uruguay Round, because they refused to make concessions on trade in services and intellectual property unless they received relief in farm trade.

The final round of farm trade negotiations was convened on December 6 by Mats Hellstrom, the Swedish Agricultural Minister. In an attempt to strike a compromise between the United States and the EC, Hellstrom

proposed a 30 percent cut in both domestic price supports and export subsidies. But the EC rejected the compromise. With progress in farm trade reform stymied by the EC's position, the Cairns Group walked out of talks in all 15 subject areas. Thus, failure in the farm arena triggered the collapse of the entire Uruguay Round.

At this writing, two outcomes appear possible. The Uruguay Round may be reconvened after a brief cooling-off period. Arthur Dunkel, Director General of the GATT, has scheduled a January 15 meeting in Geneva. Even if the Round is revived, however, time is rapidly running out. The expiration of "fast-track" authority in June 1991 may be the most serious time constraint. When the Uruguay Round began, Congress agreed to limit itself to a thumbs-up or thumbs-down vote on any GATT agreement that the trade representative negotiated. In short, the fast-track authority prevents Congress from adding numerous amendments that might kill the overall package. Any further negotiations in the Uruguay Round probably would have to be concluded by February if Congress is to approve the new accord before the expiration of fast-track authority.

Alternatively, the Uruguay Round may fail. In that case, the door would be open for additional protectionist measures. Such failure also may encourage more regional trade accords that could damage global trade in agriculture and other goods. In that event, the farm trade war between the EC and the United States could escalate again, much to the chagrin of other producing nations.

Congress seems prepared to combat agricultural subsidies in Europe. The new farm bill includes a "GATT trigger" that would reverse the farm spending cuts included in the 1990 farm bill. The GATT trigger would boost U.S. farm production and export subsidies one notch if no GATT agreement is signed by June

30, 1992, and another notch if no agreement is signed by June 30, 1993. In the absence of a GATT accord, the United States and the world appear to be girding for yet another round in a very costly farm trade war.

## **Export outlook**

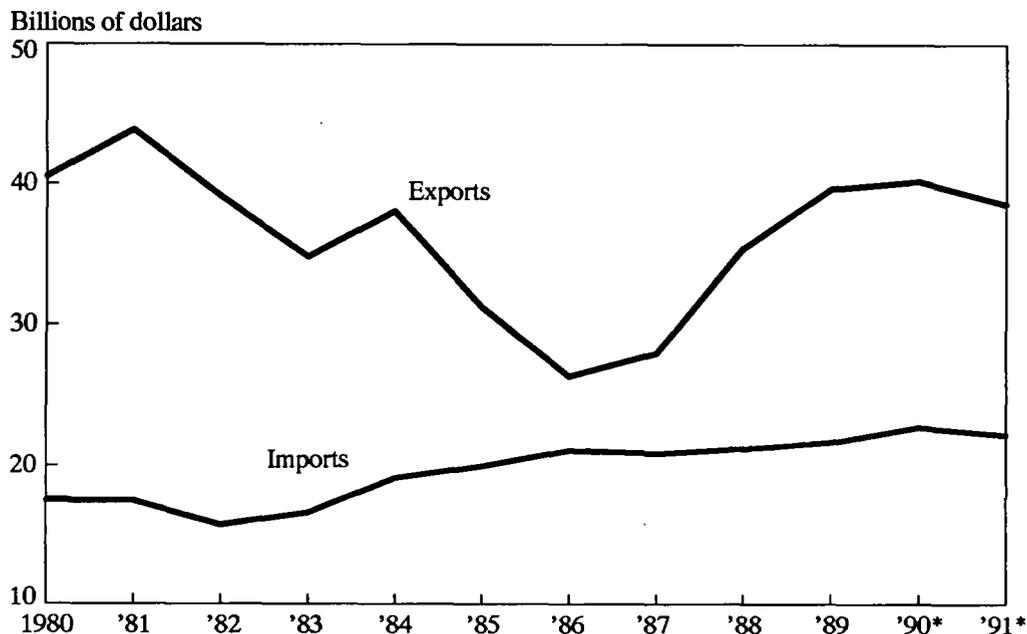
U.S. agricultural exports may decline in both volume and value in 1991 after surprising strength in 1990. Big crops in traditional importing countries, especially the Soviet Union and China, will curtail their grain imports. Moreover, other exporters, especially Canada and the EC, also had big crops in 1990 that will compete directly with U.S. farm exports.

The ongoing economic changes in the Soviet Union and the crisis in the Persian Gulf may reduce U.S. grain exports. The uncertain financial environment in the Soviet Union, usually the leading buyer of U.S. grain, could constrain its purchases of U.S. grain. The United States recently extended \$1 billion in credit guarantees to the Soviet Union. But that step will probably boost U.S. sales only modestly, given the ready availability of both grain and credit from other exporters.

Allied trade sanctions have shut off the flow of U.S. farm products to Iraq. Iraq was previously the largest buyer of U.S. rice and a large buyer of U.S. wheat. Prior to the invasion of Kuwait, Iraq was generally expected to import about \$800 to \$900 million of U.S. farm products in 1990.

Despite a weak outlook for grain exports, record-setting exports of livestock, dairy, poultry, and horticultural products will help shore up the U.S. farm trade balance in 1991. Still, a forecast 6 percent decline in export volume to 139.5 million tons and a forecast 4 percent decline in export value to \$38.5 billion reflect fairly weak grain sales. After subtracting expected farm imports of \$22 billion, the U.S. farm trade balance is projected to be \$16.5

Chart 3  
**Agricultural Trade Balance**



\* Forecast.

Source: U.S. Department of Agriculture, *Agricultural Outlook*.

billion in 1991, down about \$1.1 billion from a year ago (Chart 3).

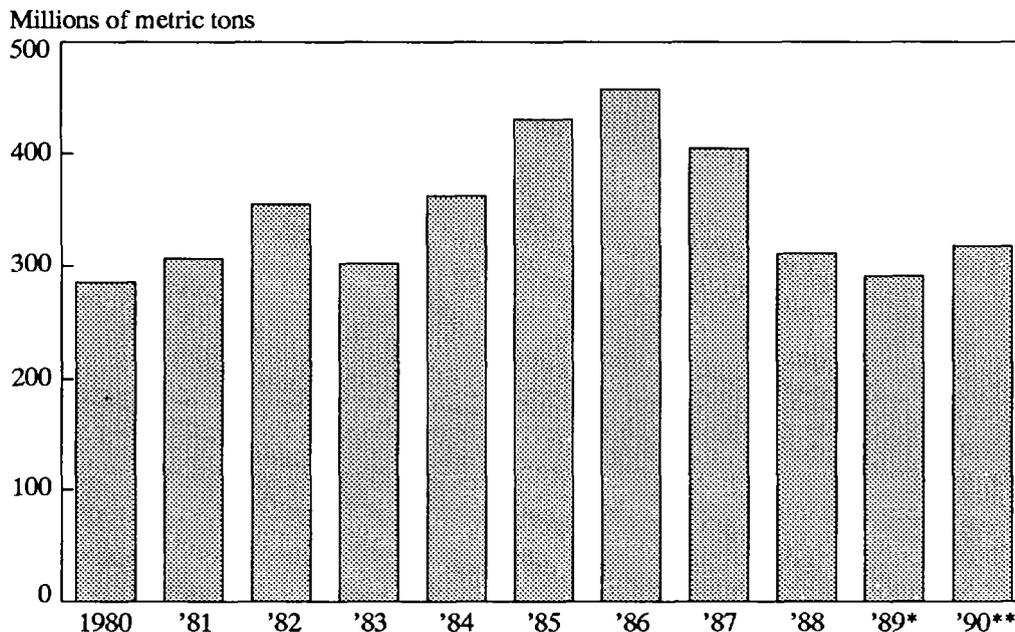
### Crop outlook

The crop outlook is for big supplies and weak prices, although adverse weather could move prices higher. A sharp rebound in world grain production from the ravages of the 1988-89 drought has begun to replenish the world's granaries (Chart 4). As a result, exporting nations will compete aggressively to sell their huge crops. But importing nations also harvested large crops and will buy smaller amounts of the exporters' surplus. Economic problems in the Soviet Union, the best grain customer of the United States, and the worldwide boycott of Iraq

will reduce world grain trade further. Feed demand from large domestic livestock herds and poultry flocks will increase in 1991, but will not be large enough to fully offset sluggish export sales. As a result, larger inventories will keep crop prices weak. Still, inventories will remain far smaller than in the mid-1980s, and thus adverse weather could drive prices higher than expected.

The wheat outlook for the year ahead differs dramatically from the experience over the past few years. A record world wheat crop promises to exceed wheat consumption during the remainder of the 1990-91 marketing year, boosting world wheat inventories. In the United States, the huge 1990 crop (the second-largest on record) will swamp a surge in domestic feed

Chart 4  
**World Grain Inventory**



\* Estimated.  
 \*\* Projected.

Source: U.S. Department of Agriculture, *World Agricultural Supply and Demand Estimates*.

use. Plentiful wheat supplies promise to hold prices relatively low compared with feedgrain prices. As a result, wheat fed to livestock could nearly triple, boosting total domestic wheat use to 1.3 billion bushels (Table 2).

Wheat export prospects, however, are bleak. Large crops in both exporting and importing countries have intensified export competition and flattened demand. Both Canada and the EC harvested near-record crops. The EC is marketing its large crop very aggressively, using the generous export subsidies of its Common Agricultural Policy to stimulate sales. At the same time, large crops in such traditional importing nations as the Soviet Union and China have shrunk the world wheat market. Thus, stiff

competition in a much smaller market will shrink U.S. wheat exports to less than 1.1 billion bushels, down a fourth from two years ago.

With big supplies and weak demand, wheat inventories at the end of the marketing year will increase sharply. At the current rate of use, the projected ending inventory of 937 million bushels is nearly a five-month supply. Larger stocks, in turn, will weigh heavily on wheat prices. The average farm price during the 1990-91 marketing year is expected to be \$2.50 to \$2.70 a bushel, down nearly a third from a year ago and well below the \$4.00 target price (Table 3).

The outlook is somewhat better for corn. Strong domestic demand will absorb much of

the larger U.S. crop of corn. The nation's expanding livestock herds and poultry flocks will consume about 4.7 billion bushels—up 5 percent from a year ago. The gradual expansion in food and industrial uses of corn, primarily in the production of high-fructose corn syrup and alcohol, will continue. Total domestic corn use, at more than 6 billion bushels, will be nearly 5 percent larger than a year ago.

A drop in U.S. corn exports will partly offset gains in domestic corn use. Although the United States is expected to maintain its present share of the world corn market, corn exports could be down nearly 15 percent in a sluggish world market. The sluggish world corn market is caused by competition from plentiful supplies of low-cost wheat and a sharp decline in the Soviet Union's feedgrain imports. Soviet imports of corn and other coarse grains could fall by nearly a third.

But strong domestic corn use will more than offset sluggish corn exports, resulting in a modest further drawdown in the U.S. corn inventory. The corn inventory is expected to shrink about 8 percent to 1.2 billion bushels, less than a two-month supply. The inventory drawdown, however, will not be large enough to push prices higher unless adverse weather threatens the 1991 crop. With normal weather, the average farm price of corn during the 1990-91 marketing year is expected to range from \$2.20 to \$2.50, roughly matching last year's average price of \$2.36 and falling well short of the \$2.75 target price.

The soybean outlook also includes large supplies and fairly weak demand. World supplies of soybeans and other oilseeds are especially large; world oilseed production, led by rapeseed and cottonseed production, rose to a new record in 1990. The steady rise in world oilseed production limits exports of U.S. soybeans, the dominant oilseed grown in the nation.

Export demand for U.S. soybeans will be weak in 1991. In recent years, growth in world soybean demand has been fueled by increased use in the Soviet Union and the EC. While protein meal use continues to climb in both areas, the Soviet Union's ongoing economic difficulties may limit its soybean imports. And in the EC, internally produced sunflower and rapeseed are gradually displacing soybean imports from the United States. As a result, U.S. soybean exports could dip to only 590 million bushels next year, down more than 5 percent from a year ago and more than a fourth since 1987-88.

One bright spot in the overall picture of soybean demand is the continued, gradual expansion in domestic demand. Strong profit margins in the livestock and poultry industries will continue to boost demand for soybean meal and, in turn, boost the domestic crush to nearly 1.2 billion bushels. Soybean meal stocks will be drawn down slightly. Stocks of soybean oil will increase slightly, due to relatively sluggish domestic use and exports.

Total domestic and export demand will fall short of using all of 1990's large soybean harvest. As a result, soybean inventories at the end of the marketing year will increase about 10 percent to 265 million bushels, slightly more than a 1.5 month supply. Because the inventory increase will be small, soybean prices will be similar to last year's. The farm-level soybean price is expected to average between \$5.25 and \$6.25 a bushel, bracketing last year's average of \$5.70 a bushel. Similarly, the price of soybean meal is expected to average \$160 to \$185 a ton, bracketing last year's average of \$173.25 a ton. Slightly larger supplies of soybean oil, however, could push the average price of soybean oil down to 20 to 23 cents a pound, compared with an average of 22.3 cents a pound last year.

## Livestock outlook

Livestock and poultry production will probably set another record in 1991. Despite the big supply, fairly resilient consumer demand and low feed costs will result in another year of relatively high prices and solid returns for the industry. The performance of the national economy in the year ahead is a key caveat in an otherwise optimistic livestock outlook. If the downturn in the national economy cuts consumer incomes sharply, consumers may reduce meat purchases just as larger meat supplies arrive at the grocery store. Still, downsized breeding herds and several years of strong net returns have left the livestock industry well-positioned to ride out a temporary economic downturn.

Livestock producers probably will have another year of solid returns in 1991, extending the industry's roll of the past three years. Cattle supplies should remain relatively scarce, keeping prices relatively high. At only 100 million head, the nation's cattle herd is a fourth smaller than in the mid-1970s, limiting the industry's capacity for expansion.

The long decline in the cattle herd, however, may have ended. Cow-calf operators have logged solid profits in recent years, setting in motion the slow process of rebuilding the cattle herd. At 40.5 million head, the 1991 calf-crop will be 500,000 bigger than a year ago, boosting the number of calves available for retention in breeding herds or for placement in feedlots. Still, strong feeder cattle prices will discourage breeding herd placements, holding the industry's expansion in check. Overall, beef production could increase 1.5 percent.

Strong consumer meat demand should maintain relatively high retail beef prices. At about 68 pounds, per capita beef consumption in 1991 is projected to be slightly larger than in 1990. The strength in demand is expected to keep retail beef prices nearly unchanged from

last year's average of \$2.79 a pound. Strong retail demand will, in turn, support cattle prices in the feedlot and on the range. The price of choice steers in Omaha could average \$75 to \$81 a hundredweight, little changed from \$77 a hundredweight in 1990. Strong fed cattle prices will be bid into feeder steer prices, maintaining the average price of yearling feeder steers at or slightly above last year's record \$90 a hundredweight.

The hog industry may expand in 1991 after a recent period of strong profits, but the increase probably will be modest. Due to lingering memories of the financial washout of the mid-1980s, pork producers and their lenders approach expansion with caution. Thus, the increase in pork production in 1991 is expected to be only 3.5 percent, a small gain compared with previous swings in the pork cycle.

Retail pork prices should be supported by slightly higher per capita pork consumption of 61.8 pounds, up about 2.5 percent from a year ago. Still, pork prices may gradually decline as more pork becomes available during the year. The average retail price of pork in 1991 may match the 1990 average of \$2.11 a pound, although prices will decline through the year as larger supplies come to market. Farm-level prices could average \$50 to \$56 a hundredweight, compared with \$54 to \$55 in 1990.

Expansion in the poultry industry is also in prospect in 1991, continuing the industry's almost relentless growth since the early 1980s. A long string of profits, dating from the mid-1980s, is fueling further expansion by broiler producers. Broiler production could increase 5.5 percent in 1991, equal to the average rate of growth during the past ten years but below last year's 7 percent growth.

Turkey output also will rise in 1991. Turkey profits have been considerably more variable than broiler profits in recent years. But turkey returns improved to break even in 1990 and may improve slightly more in the year ahead. Even

such limited optimism will probably be sufficient to coax turkey producers to boost output another 5 to 6 percent.

The seemingly perpetual expansion in the poultry industry is based on the industry's success in offering products that consumers want at prices they are willing to pay. In 1991, per capita poultry consumption could increase nearly 5 percent. That growth in consumption will bolster poultry prices despite the industry's ongoing expansion. Wholesale broiler prices are expected to average 51 to 57 cents a pound, and wholesale turkey prices are expected to average 61 to 67 cents a pound.

## **Conclusions**

Following another year of record income in 1990, the farm economy faces several important hazards in the year ahead. Higher fuel and petrochemical prices could push up farm production costs. Weaker grain prices and smaller government payments promise to limit crop receipts. And a sluggish national economy could discourage consumer meat purchases, just as meat and poultry production rises to a new

record. Taken together, these hazards pose a threat to the strong farm recovery now entering its fifth year.

Nonetheless, U.S. agriculture appears well-prepared to cope with the hazards that lie ahead and thus sustain the farm recovery. Agriculture's solid performance in recent years has shored up the industry's balance sheet, restoring its financial resilience. Livestock producers have expanded very cautiously, limiting their vulnerability to a downturn in the economy. And world grain inventories remain well below the burdensome levels of the mid-1980s.

Longer term, the hazards loom more ominous. The recent surge in world grain production sounds an early warning of possible surpluses in coming years. A new provision in the 1990 farm bill will make U.S. crop production more responsive to market signals, an important first step toward ensuring a balance between supply and demand. But the potential collapse of the Uruguay Round may reverse that provision. In that case, additional farm subsidies could result in a costly renewal of the farm trade war.



# The Effect of U.S. Defense Cuts on the Standard of Living

By C. Alan Garner

**B**efore the Iraqi invasion of Kuwait, large cuts in U.S. defense spending seemed nearly inevitable. The opportunity for such cuts arose primarily from political changes in Eastern Europe, which were widely viewed as reducing the military threat to the United States and Western Europe. As a result, large defense cuts were included in the budget agreement for fiscal year 1991, and additional cuts were expected in the years ahead.

Recent events in the Persian Gulf and the Soviet Union cast doubt on whether large defense cuts are imminent. The U.S. military response to the Iraqi invasion is substantially increasing military outlays in the short run. And political turmoil in the Soviet Union is reducing Western feelings of euphoria over the prospects for political and economic reform in

Eastern Europe.

Nevertheless, a large decline in U.S. defense spending is still possible over the next several years. Much of the current increase in defense outlays is probably temporary. Many experts feel that only part of the military ordnance used up in the Persian Gulf will be replaced after the current conflict is resolved (Murray). And despite uncertainty about political developments in the Soviet Union, the reunification of Germany and the fall of Communist governments in other East European nations have diminished the threat to Western Europe.<sup>1</sup> Consequently, the trend in defense spending may remain downward.

Because large defense cuts are still possible over the next several years, the economic consequences of reduced defense spending should be evaluated carefully. Newspaper and television reports have emphasized the short-run negative effects of defense cuts—for example, layoffs caused by base closings and reduced weapons purchases. Such a view is shortsighted. These negatives could be outweighed

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by less visible long-run improvements in the standard of living.

This article argues that defense cuts would raise the U.S. living standard in the long run. Postwar U.S. history shows the economy can adjust successfully to a large decline in defense spending. Indeed, defense cuts would raise the living standard in the long run by encouraging more capital formation. Defense cuts would probably also raise the living standard by increasing productivity growth in the private sector.

### **Postwar Changes in Defense Spending: Short-Run Effects**

Recent discussion of defense spending has focused on the short-run negative effects of defense cuts on employment and household income. Some areas with a high concentration of defense industries may experience severe economic dislocations.<sup>2</sup> However, the national economy has shown a remarkable ability to absorb large defense cuts without severe short-run declines in the living standard. This resilience can be demonstrated by reviewing changes in military spending and the living standard since 1950.

### **Defining the living standard**

The living standard is defined in this article as the average level of goods and services a nation can provide its citizens. A common measure of the living standard is real, or inflation-adjusted, gross national product (GNP) per person.<sup>3</sup> About two-thirds of GNP is consumer purchases of goods and services. Consumer purchases of nondurable goods and services are used entirely within the current period to meet household wants. Consumer purchases of durable goods, such as a car or refrigerator, may meet household wants for years after the initial purchase.

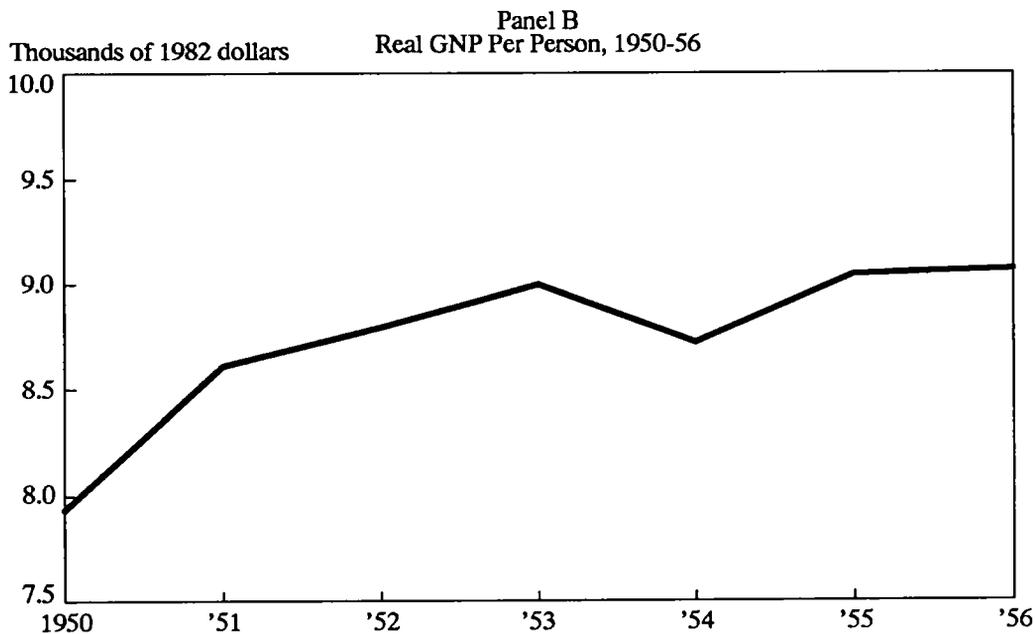
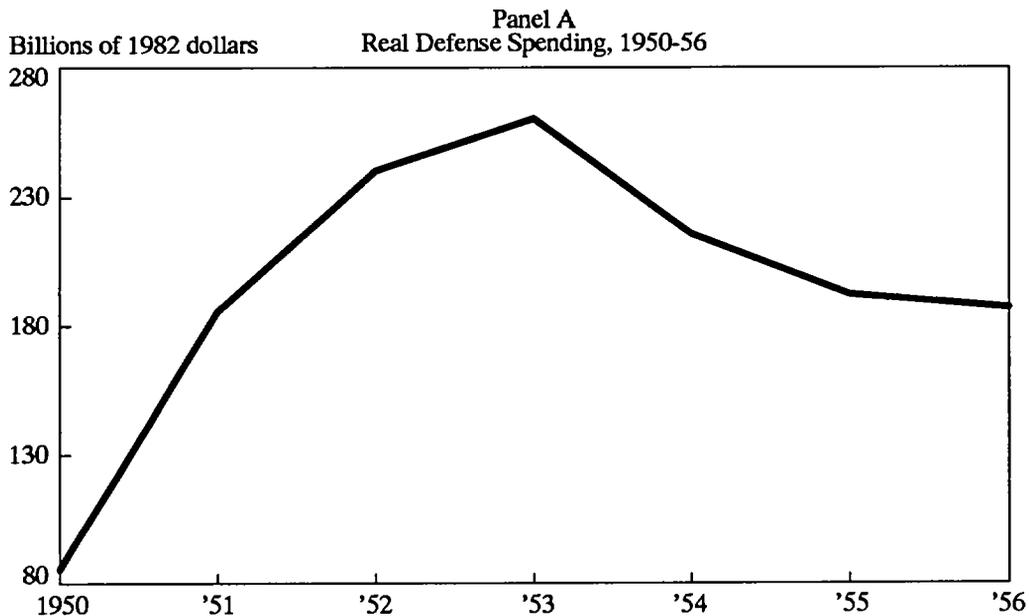
The other components of GNP also affect the living standard because each component affects current or future consumption. In addition to consumer spending, real GNP includes investment spending, government spending, and net purchases of foreign goods and services. Such goods and services help meet household wants in either the present or the future even though households do not buy them directly. For example, government spending to house the poor adds to the living standard in the same way as consumer spending on housing. Business purchases of plant and equipment raise the nation's future ability to consume by increasing productive capacity. And imports can be consumed directly or invested for future consumption, while exports provide the means for purchasing imports.

### **The postwar record**

The U.S. economy has successfully adjusted to two large military demobilizations since 1950.<sup>4</sup> The first, following the Korean War, hurt the living standard temporarily but did not have severe effects (Chart 1). After rising sharply at the beginning of the war, real defense spending fell about \$73 billion—measured in 1982 dollars—from 1953 to 1956. This sudden demobilization probably caused the recession in 1953-54. As a result, real GNP per person declined \$275—about 3.1 percent—from 1953 to 1954. Real GNP per person increased in 1955 and 1956, though, quickly surpassing its highest previous value. Thus, defense cuts after the Korean War did not seriously harm the living standard.

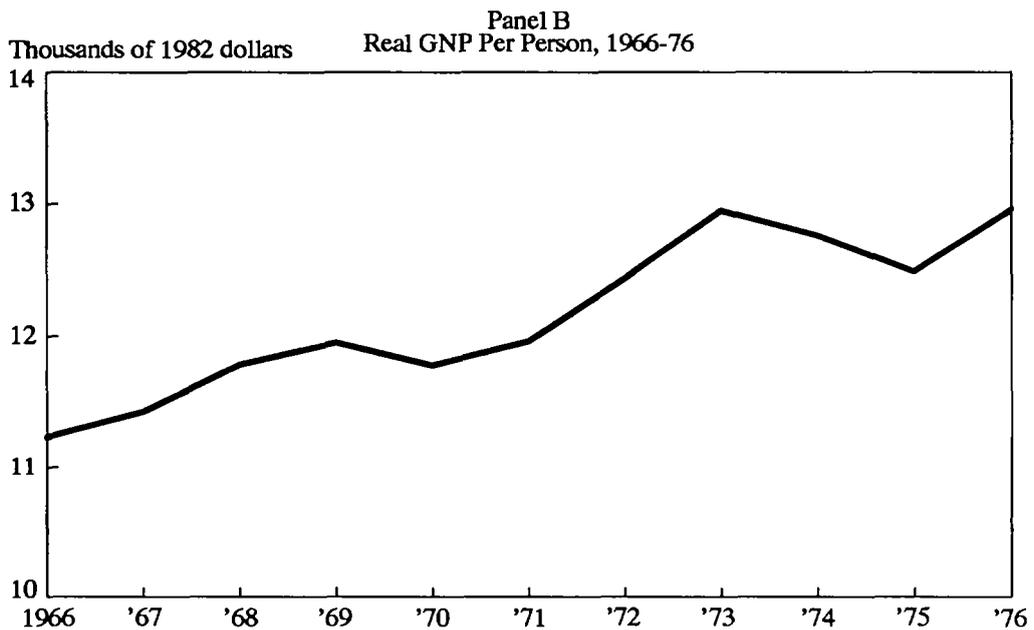
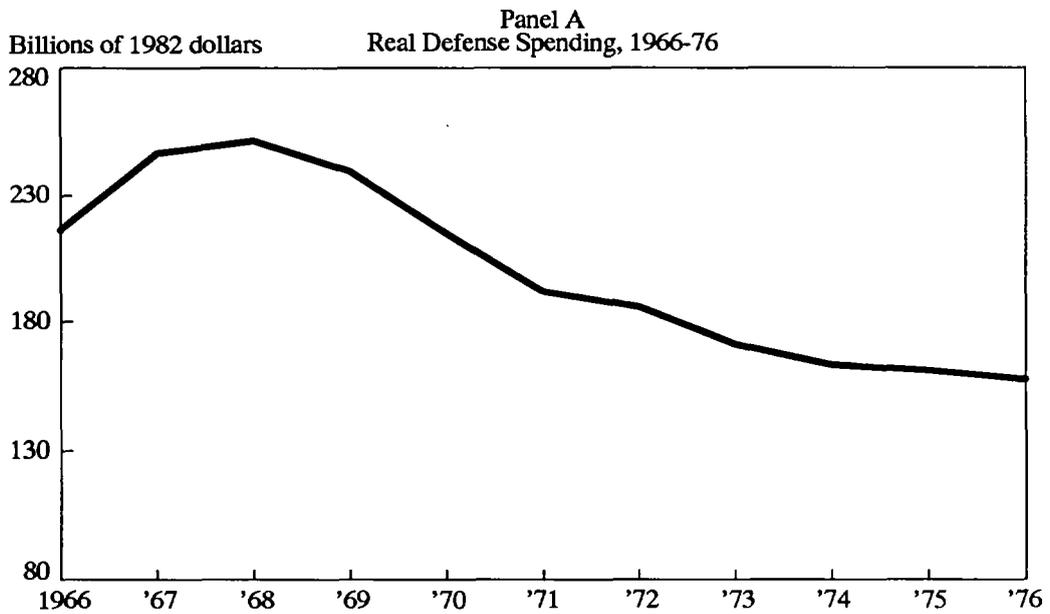
A second large demobilization at the end of the Vietnam War also had no severe effects on the living standard. Real defense spending decreased steadily after the United States began to withdraw from Southeast Asia, falling about \$90 billion from 1968 to 1975 (Chart 2). Partly for this reason, the economy underwent

Chart 1  
**The Korean War Demobilization**



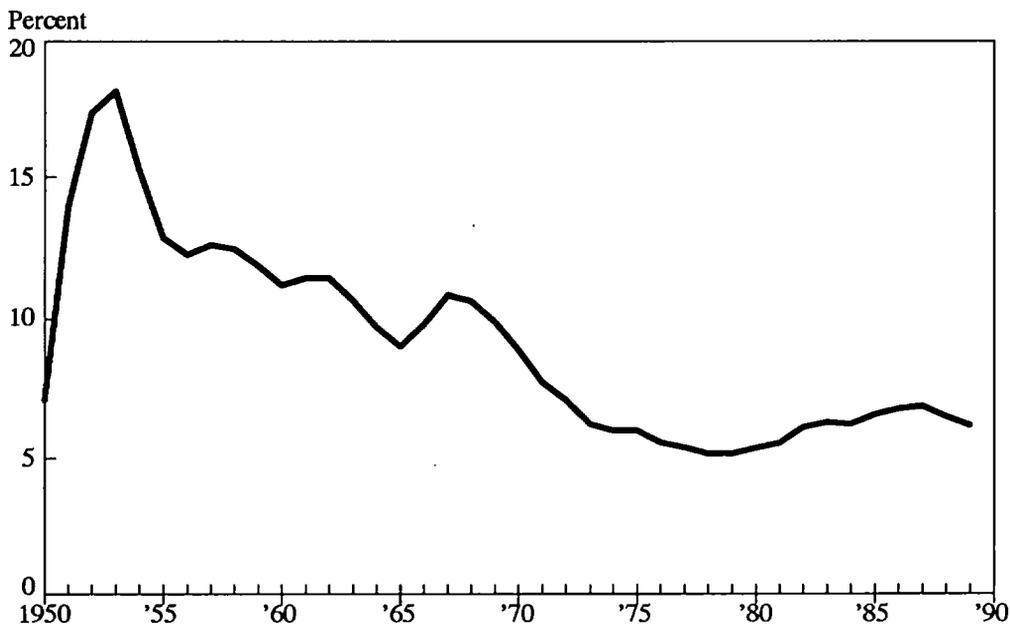
Source: Bureau of Economic Analysis, U.S. Department of Commerce.

Chart 2  
**The Vietnam War Demobilization**



Source: Bureau of Economic Analysis, U.S. Department of Commerce.

Chart 3  
**Defense as a Share of Real GNP**



Source: Bureau of Economic Analysis, U.S. Department of Commerce.

recessions in 1969-70 and 1973-75. However, higher oil prices and tight credit conditions were probably more important than defense cuts in causing these contractions. Moreover, real GNP per person increased nearly \$700—about 5.9 percent—from 1968 to 1975 and also grew steadily in the late 1970s. Consequently, large defense cuts at the end of the Vietnam War did not prevent gradual improvement in the living standard.

The prospective defense cuts of the 1990s should hurt the living standard even less than the demobilizations following the Korean and Vietnam wars. Defense spending currently is a smaller proportion of economic activity than when the previous two demobilizations began. Real defense spending increased substantially

during the Reagan Administration, rising from \$171 billion in 1980 to \$265 billion in 1987. Yet even at the peak of the Reagan buildup, defense spending was only 7 percent of GNP, well below the 18 percent share reached during the Korean conflict and the 11 percent share during the Vietnam War (Chart 3). Moreover, defense spending declined slightly after 1987, falling to about 6 percent of real GNP in 1989.

The defense cuts of the 1990s are also likely to be gradual. As a result, some defense firms may be able to lessen the effects of reduced military procurement on their revenues by diversifying into the production of civilian goods and services. In addition, the gradualness of the cuts may give some defense workers who expect to lose their jobs more time to look for

employment in expanding civilian industries. Although defense spending cuts in the 1990s might cause dislocations in some areas and slow overall business activity temporarily, such cuts are unlikely to have severe short-run negative effects on the living standard.

## **Long-Run Effects on Private Capital Formation**

Any short-run negative effects from large defense cuts must be weighed against the positive long-run effects on the standard of living. In the long run, the economy operates at full capacity because wages, prices, and interest rates adjust to correct economic imbalances. The living standard improves in the long run if capacity growth permits the economy to produce higher real GNP per person. Such long-run improvements in capacity come from two main sources: increases in the private capital stock and increases in total factor productivity.

The private capital stock includes all structures and equipment used by workers to produce real output. Capital formation occurs when business investment in new structures and equipment exceeds the depreciation of the existing capital stock. The resulting increase in the private capital stock raises labor productivity, or output per hour worked, because workers have more capital with which to perform their tasks.

Total factor productivity differs from labor productivity, being the amount of output produced by a fixed combination of capital and labor. Measures of total factor productivity hold the amount of capital per worker constant in order to focus on other sources of productive efficiency. Total factor productivity grows because of improvements in the public infrastructure, education, and technology. This section assumes total factor productivity growth is constant and analyzes the long-run effects of defense cuts on private capital formation. The following section will consider whether defense

cuts are likely to change total factor productivity.<sup>5</sup>

The long-run effects of reduced defense spending on capital formation, and hence the living standard, depend on how fiscal policymakers use the “peace dividend,” the budgetary savings from defense cuts. Fiscal policymakers have three alternatives: increase nondefense spending, cut taxes, or reduce the budget deficit by leaving nondefense spending and taxes unchanged.

## **Effects of higher nondefense spending**

Faced with a growing demand for government services, fiscal policymakers might use the peace dividend to expand government purchases of civilian goods and services. Private capital formation would be little affected by a shift from defense spending to nondefense government spending. Although firms producing goods and services for the defense sector would probably invest less, firms producing for the nondefense government sector would invest more to expand their output. Such changes in investment spending would tend to offset each other, making the overall change in investment spending relatively small.<sup>6</sup> Moreover, firms producing goods and services for consumers would have little reason to change their investment spending because any change in consumption would be temporary. In the long run, the economy would operate at full capacity, restoring household income and consumption to previous levels.<sup>7</sup>

## **Effects of a matching tax cut**

An alternative for fiscal policymakers would be to use the peace dividend to reduce taxes. A decrease in taxes would increase private capital formation and cause the future living standard to rise.

Fiscal policymakers might decide to reduce

taxes without changing tax rates. For example, policymakers might enact a tax credit by reducing each household's tax bill \$50 regardless of household income. Households would then have more income left after taxes and be able to consume more. The labor and capital released by the defense industry could be employed to produce the additional consumer goods and services.<sup>8</sup> In addition, a small part of the additional after-tax income would be saved. The increased savings would make a larger fraction of current output available for capital formation, increasing future productive capacity and the living standard.<sup>9</sup> Real GNP per person would increase only slightly in the long run, however, because only a small part of the tax cut would be saved.<sup>10</sup>

Alternatively, policymakers could cut marginal tax rates—the rates paid on an additional dollar of income. Reductions in corporate and personal income tax rates are examples of cuts in marginal tax rates. Such a cut in marginal tax rates would have larger effects on private capital formation and the future living standard.

Lower corporate tax rates would stimulate private capital formation by increasing the after-tax returns to business investment in new plant and equipment. Higher business investment would gradually build the nation's productive capacity above its initial level, allowing higher real GNP per person.

Some economists believe lower personal income tax rates would also raise real GNP per person by increasing the incentives for households to save and work (Lindsey; Ture). Supply-side economists argue that lower personal tax rates would increase the after-tax return from personal investments, such as stocks and bonds, causing households to save more of their income. Higher saving would stimulate private capital formation and increase future productive capacity. Also, a higher after-tax wage rate would cause workers to work more hours and possibly increase their effort.

According to supply-side economists, such increases in capital formation and the labor supply would raise the U.S. living standard.

It is not certain how greatly cuts in corporate and personal tax rates would increase private capital formation and the future living standard. A wide range of statistical evidence supports the view that cuts in business tax rates would stimulate investment in plant and equipment. Still, economists disagree about whether there would be sizable supply-side effects on future productive capacity. In particular, many economists are skeptical about supply-side effects on saving because large cuts of personal tax rates in the 1980s failed to raise the household saving rate. Moreover, the statistical evidence on how tax cuts affect the saving rate and the labor supply are inconclusive.<sup>11</sup>

### **Effects of deficit reduction**

A third alternative for fiscal policymakers would be to use the peace dividend to reduce the federal budget deficit. By leaving taxes and nondefense spending unchanged, reduced defense spending would directly lower the budget deficit. Such a policy would raise the living standard in the long run by increasing private capital formation and enhancing the nation's ability to produce goods and services.<sup>12</sup>

A large federal deficit reduces future living standards by lowering national saving and raising real interest rates. National saving, which is private saving minus the federal deficit, measures the funds available for private capital formation. In the 1980s, the large federal deficit and low household saving rates reduced national saving. As a result, competition by borrowers for these scarce funds bid real interest rates—interest rates adjusted for expected inflation—to historically high levels. The high real interest rates encouraged foreign lending to U.S. firms and the federal government, helping to alleviate the domestic shortage of funds. Nevertheless,

the high real interest rates discouraged capital formation by domestic firms. Moreover, the U.S. foreign debt grew, raising future interest payments to foreigners.

If fiscal policymakers used the peace dividend to reduce the budget deficit, the decreased federal borrowing would improve the living standard by increasing the private capital stock. A decline in real interest rates would stimulate private capital formation. As a result, the nation's capacity to produce goods and services—and thus real GNP per worker—would be larger in the future.

Reducing the federal deficit would also raise the future living standard by decreasing U.S. dependence on foreign capital. With a lower budget deficit, a larger share of U.S. investment needs could be financed out of domestic saving. As a result, the nation would build up less foreign debt, lowering future interest payments. Consequently, the United States would have to export less future output to make its interest payments, leaving more goods and services for domestic consumption.

Recent empirical studies support the view that deficit reduction would improve the living standard in the long run. A midrange estimate by the Congressional Budget Office (1989) suggests that a 1.0 percent reduction in the budget deficit as a share of GNP would raise the living standard 3.5 percent by the middle of the next century. With the federal deficit averaging around 3.0 percent of GNP in the late 1980s, balancing the federal budget could raise the future living standard by over 10.0 percent.

Simulations with a macroeconomic model by Throop also show large government deficits reduce the future living standard. Throop finds deficit spending in 1981-88 imposed a burden of \$390 billion on future generations in the form of a lower private capital stock and higher interest payments to foreigners. By implication, reducing the budget deficit from current levels would increase the future living standard by

encouraging capital formation and decreasing foreign interest payments.<sup>13</sup>

In summary, the effect on private capital formation depends critically on how fiscal policymakers use the peace dividend—increasing nondefense government spending, decreasing taxes, or reducing the budget deficit. The first would do little to raise private capital formation, while the second and third would be much more effective.

## **Long-Run Effects on Productivity Growth**

Reduced defense spending is also likely to raise the future living standard by increasing total factor productivity. This section discusses three major avenues by which total factor productivity could increase—public infrastructure, education, and technological progress. Defense cuts would affect public infrastructure and education only if fiscal policymakers used the peace dividend to increase nondefense government spending. Technological progress might increase under any of the three fiscal policy alternatives.

### **Public infrastructure and education**

Although not part of the private capital stock, public infrastructure and education combine with capital and labor in producing real GNP. Thus, government spending on these items increases the amount of real output that can be produced with fixed amounts of capital and labor—that is, such government spending increases total factor productivity.

**Infrastructure.** Government spending on roads and highways provides a clear example of how infrastructure spending raises total factor productivity and improves the living standard. Better highways speed deliveries of raw materials and finished products. Faster and more reliable deliveries also encourage

manufacturers to adopt more efficient production techniques, such as just-in-time inventory management.<sup>14</sup> And better roads reduce congestion and travel delays.

Declining spending on U.S. infrastructure over the last 20 years has been associated with poor productivity growth. Government outlays for infrastructure projects fell from around 2.3 percent of GNP in the late 1960s to around 1.0 percent of GNP in the late 1980s. Meanwhile, improvements in total factor productivity have slowed dramatically. Private nonfarm business productivity fell from a 1.5 percent annual growth rate in the 1960s to only 0.3 percent in the 1970s and 0.8 percent in the 1980s.<sup>15</sup>

Economic research by Aschauer (1989, 1990) supports the view that government infrastructure spending benefits private sector productivity. Aschauer finds government spending on military capital goods, including both structures and equipment, has little effect on productivity growth. Yet government spending on such civilian infrastructure as roads, airports, water and sewage systems increases total factor productivity in the private sector. If fiscal policymakers were to shift government funds from defense spending to civilian infrastructure spending, total factor productivity and the U.S. living standard would be higher in the future.

**Education.** Higher government spending on education also raises the future living standard by increasing total factor productivity. More educated workers tend to be more productive. Such workers learn new tasks more quickly, reducing training costs and allowing the firm to respond more rapidly to new market opportunities. Educated workers can also perform more complex tasks and thus add greater value to the firm's revenues with given labor hours and given amounts of private capital.

Economists and business executives have expressed concern that inadequate education harms productivity growth and reduces U.S.

international competitiveness. Many observers cite a prolonged decline over the last two decades in average scores on college entrance exams as evidence of poorer educational performance.<sup>16</sup> This apparent decline in educational quality was associated with sluggish productivity growth in the 1970s and 1980s.

Recent economic research supports the view that higher educational spending would increase future productivity and the living standard. Card and Krueger find that men educated in states with higher quality schools earned more throughout their working lives. Because economic theory implies more productive workers earn higher wages, these results suggest that men attending better schools really were more productive. Educational quality was measured by the pupil-teacher ratio, the length of the school term, and the average pay of teachers. Increasing school quality along any of these dimensions would likely require greater educational spending per pupil. Shifting government funds from defense spending to educational spending could be expected to raise productivity growth and future living standards.<sup>17</sup>

## Technological progress

Living standards also improve over time because technological progress raises total factor productivity. The pace of technological progress might be slowed by cuts in defense research, which has dominated federal spending on research and development (R&D) in the postwar era.<sup>18</sup> However, large defense cuts also might increase the rate of technological progress by encouraging civilian R&D spending. Would an increase in civilian R&D spending offset—or more than offset—the effect of reduced defense R&D spending on the rate of technological change?

Two issues must be weighed in considering the effects of defense cuts on technological progress. First, is defense R&D or civilian

R&D more effective in improving civilian technology and, therefore, the living standard? Second, if civilian R&D is more effective, will defense cuts actually lead to greater civilian R&D spending?

**Defense R&D versus civilian R&D.** How well defense R&D stimulates total factor productivity growth depends on whether advances in defense technology can be adapted for civilian use. Advocates of defense R&D often argue defense-related research has produced technological breakthroughs with substantial benefits to civilian technology and the living standard. For example, military technologies, such as radar and jet aircraft, were commercialized and ultimately increased the living standard. Other technologies, such as semiconductors, were civilian inventions that received a boost from large military purchases early in the product life.

But while past defense research has produced some civilian benefits, the technological transfers from the military to the civilian economy are often overstated (Rosenberg; Weston and Gummett). Modern military hardware is highly specialized and has few applications to the civilian sector. For example, jet fighters are engineered for maximum performance with little consideration of maintenance costs or fuel economy. In contrast, commercial airlines are greatly concerned about such operating costs. Moreover, many technological advances attributed to defense spending probably would have occurred anyway. Semiconductors would almost certainly have been incorporated into civilian products without large military purchases. As a result, technological progress in civilian industries would probably not suffer greatly if defense R&D spending and defense procurement were reduced.

Moreover, economic research finds that government-funded R&D increases productivity growth less than privately sponsored R&D (Griliches; Lichtenberg). Government

R&D may be less effective because government-funded research “crowds out” private R&D. Such crowding out might occur if higher federal R&D spending increases the salaries of technical personnel and drives up corporate research costs. Deutsch and Schopp found a 1.0 percent increase in the military share of R&D spending would slow U.S. productivity growth nearly 0.1 percent annually. Greater civilian R&D spending could potentially offset the effects of any reduction in defense R&D spending on the rate of technological change.

**Effects of the peace dividend on civilian R&D.** Will defense cuts actually lead to greater civilian R&D spending? Reduced defense spending would encourage civilian R&D spending in different ways depending on how fiscal policymakers use the peace dividend.

Fiscal policymakers might use the peace dividend to increase nondefense government spending rather than to cut taxes or reduce the budget deficit. Higher government spending on basic research—research devoted to advancing scientific knowledge—would probably be more effective than defense R&D in raising the future living standard. Basic research appears to be a more important determinant of productivity growth than other kinds of research (Griliches; Mansfield). Despite federal spending on such projects as interplanetary exploration and particle accelerators, federal R&D spending is primarily for applied research—research that develops products or manufacturing processes with existing scientific knowledge. Federal R&D is usually applied because defense research dominates federal R&D outlays and the military spends little on basic research. Greater federal spending on basic research at universities and firms, therefore, might offset any negative effects of reduced defense R&D even with no change in private R&D spending.

If policymakers decided instead to use the peace dividend to cut taxes or the budget deficit, privately sponsored R&D spending would

likely increase. Tax cuts or deficit reduction would encourage private R&D by lowering the after-tax cost of corporate capital. Corporate R&D is an investment similar to building a new factory. The company incurs expenses, such as the cost of a laboratory and the salaries of technical personnel, in the hope of obtaining an uncertain future return, such as profits from a new product. A lower after-tax cost of capital would encourage companies to invest in new research projects as well as new factories.

Tax cuts would encourage corporate R&D spending by increasing the expected after-tax return from research projects. Companies often choose investment projects by setting required after-tax rates of return based on the riskiness of the project. With lower corporate tax rates, more research projects would be undertaken because a smaller before-tax return would be needed to achieve the required after-tax return. The same objective could be achieved by providing more generous tax credits for civilian R&D spending or by cutting capital gains tax rates.

Deficit reduction would lower the after-tax cost of capital by reducing real interest rates. As discussed earlier in this article, many economists believe the federal deficit raised average real interest rates over the last decade and discouraged business investment, including corporate R&D spending. Reduced federal borrowing would allow interest rates to decline, encouraging companies to undertake new research projects.

A lower cost of capital also might increase productivity by encouraging companies to devote a larger share of their research budgets to long-term projects. Although the determinants of productivity growth are not completely understood, Mansfield found that industries doing more long-term research had faster productivity growth. The managements of U.S. companies are sometimes criticized for focusing on short-term results and ignoring

promising technologies with long-term paybacks.<sup>19</sup> A high cost of capital encourages this behavior because firms incur high costs waiting for profits in the distant future. Cutting tax rates or reducing the federal deficit would lower the cost of capital, encouraging firms to invest more in long-term R&D projects.

Reduced government R&D spending would also encourage private research efforts by making technical personnel more readily available. High wages paid by defense companies to skilled scientists and engineers may increase the costs of company-sponsored R&D and discourage innovation in the private sector. Large defense cuts would reduce the overall demand for such personnel, decreasing the wage rates of scientists and engineers. However, lower wage rates would encourage companies to hire more technical personnel and increase their civilian R&D projects.

In summary, large defense cuts could raise the future living standard by increasing the rate of technological progress and thus total factor productivity in the years ahead. Any improvement in the rate of technological progress would depend on how fiscal policymakers used the peace dividend. An increase in nondefense spending would promote technological progress if the federal government increased funding for basic research. Tax cuts or deficit reduction also would raise productivity growth by lowering the cost of capital and encouraging private R&D expenditures.

## Conclusion

Despite recent developments in the Persian Gulf and Eastern Europe, the United States may be able to reduce defense spending substantially over the next several years. Although many recent discussions of defense cuts have stressed the short-run negative effects, this article has shown such cuts actually create an opportunity to raise the U.S. living standard in the long run.

The future living standard depends primarily on the amount of private capital formation and the rate of improvement in total factor productivity. In deciding how to use the peace dividend, fiscal policymakers face three alternatives—higher nondefense spending, tax cuts, and deficit reduction. Although each alternative would raise the living standard in the long run, the alternatives would affect the future living standard in differing ways. An increase in non-defense government spending would have little

effect on the private capital stock but would raise productivity growth through higher spending on infrastructure, education, and basic research. In contrast, tax cuts and deficit reduction would stimulate private capital formation by lowering the after-tax cost of capital. A lower cost of capital would also raise productivity growth by encouraging private spending on research and development. Fiscal policymakers should weigh these differing effects when deciding what to do with any future peace dividend.

## Endnotes

<sup>1</sup> The reduced military threat from the Warsaw Pact countries and its implications for U.S. defense spending are discussed in Carpenter and Fiscarelli; Kaufmann; and Nunn. According to Kaufmann, about 54 percent of current defense spending serves primarily to deter an attack by the Warsaw Pact nations on Western Europe.

<sup>2</sup> This article focuses on the national economic effects of large defense cuts. Martin and Taylor discuss possible impacts on U.S. cities and states.

<sup>3</sup> Another common measure of the living standard is real consumer spending per person. Neither real GNP per person nor real consumer spending per person is a complete measure of economic welfare because neither takes account of the income distribution or environmental quality. For further discussion of these measures and a cross-country comparison of living standards, see Garner.

<sup>4</sup> A major military demobilization also occurred after World War II. Because the defense effort dominated economic activity to an unprecedented degree during the war, this demobilization does not provide a good basis for assessing the economic effects of the more gradual defense cuts likely in the 1990s.

<sup>5</sup> Some economists do not believe a large cut in defense spending could increase future growth of real GNP per person. As an example, see Wynne.

<sup>6</sup> Firms producing for the defense sector and firms producing for the nondefense government sector generally have similar inclinations to invest because such firms use capital and labor in similar proportions (Congressional Budget Office 1983). However, the changes in private capital formation might not be perfectly offsetting if the defense cuts were concentrated in industries using substantially more or less capital than the average defense industry.

<sup>7</sup> A shift in the government budget from defense to nondefense spending might have other effects on economic welfare that are not captured by the private capital stock. For example, higher nondefense spending might provide U.S. citizens with cleaner national parks, faster tax refunds, and more reliable economic statistics. If better nondefense services can be provided without reducing national security, economic welfare is clearly improved. However, private capital formation would be unchanged.

<sup>8</sup> Such sectoral shifts of demand could cause unemployment to increase temporarily. Lilien argues that sectoral demand shifts are responsible for a large part of cyclical changes in the unemployment rate. However, Abraham and Katz dispute this view. Regardless of which position is correct, a one-time shift of demand from defense goods to civilian goods would have only short-term effects on the

unemployment rate. In the long run, capital and labor would move from the defense sector to civilian industries.

<sup>9</sup> In the standard Keynesian analysis, matching cuts in government spending and lump-sum taxes decrease aggregate spending because households save part of the tax cut. However, the economy eventually returns to the natural level of output because a decline in the price level increases real money balances and reduces the interest rate. This decline in the interest rate stimulates private investment and raises the future capital stock.

<sup>10</sup> An increase in transfer payments, such as Social Security payments and unemployment compensation, would have similar effects on private capital formation and the living standard. If fiscal policymakers used the peace dividend to increase transfer payments, household spendable income would rise. Although most of the additional transfer payments would be consumed in the current period, saving would also rise slightly. The higher level of saving would raise private capital formation and the future living standard.

<sup>11</sup> Gault reports that cuts in business tax rates increased business investment in simulations with the Data Resources, Inc. quarterly model of the U.S. economy. However, the increase in investment depends on which business tax is changed—for example, raising the investment tax credit has more impact on business investment than cutting corporate income tax rates. Bosworth summarizes a wide range of theoretical arguments and empirical evidence on how marginal tax rates affect personal saving and the labor supply.

<sup>12</sup> Some economists believe private capital formation is unaffected by how government spending is financed. In this view—called Ricardian equivalence—the future capital stock would be the same whether the government finances its spending by taxes or borrowing. This article assumes Ricardian equivalence does not hold. However, even Ricardians believe changes in the level of government spending caused by large defense cuts could have real economic effects. Barro develops a theoretical model in which Ricardian equivalence holds. Tobin criticizes this viewpoint.

<sup>13</sup> Simulations by the author with the Data Resources, Inc. quarterly model also showed deficit reduction would improve the living standard in the long run. Two simulations were conducted over the period from 1990 to 2015. Real defense spending grew at about the same rate as real GNP in the baseline simulation. But in the defense cuts simulation, real defense spending declined 20 percent between 1990 and 1995 before resuming moderate growth.

Real GNP per person was initially lower in the defense cuts simulation than in the baseline simulation. However, real GNP per person was slightly higher in the defense cuts simulation by 2005 and 3.3 percent higher by 2015.

<sup>14</sup> Just-in-time inventory management is the practice where firms schedule deliveries of parts or raw materials immediately before production takes place. This practice can improve business profitability because scarce company funds are not tied up in inventories and the facilities to store them. However, just-in-time inventory management requires timely delivery of parts and materials to avoid production delays. Better roads—and other improvements in the transportation infrastructure—make such deliveries faster and more dependable.

<sup>15</sup> The statistics on infrastructure investment are from Koretz. The statistics on total factor productivity growth were computed from data in Bureau of Labor Statistics, *Monthly Labor Review*. The growth rate of total factor productivity for the 1980s covers 1980-87. Productivity growth has been more favorable in the manufacturing sector where total factor productivity grew at a 3.3 percent rate in the 1980s.

<sup>16</sup> The verbal score on the Scholastic Aptitude Test (SAT) declined to 424 in 1990 from 463 in 1969. Likewise, the mathematics score fell to 476 in 1990 from 493. The SAT is the primary college entrance exam in 22 states and is

taken each year by more than 1 million candidates for college admission (Cohen; Gordon).

<sup>17</sup> Bishop also presents evidence that declining educational quality was a cause of sluggish productivity growth in the late 1970s and the 1980s.

<sup>18</sup> Research by the Defense Department has typically accounted for more than half of total federal R&D spending since 1960 (Rosenberg). If defense-related spending by the Energy Department and the National Aeronautics and Space Administration is included, defense R&D has totally dominated the federal R&D budget. For example, defense-related projects accounted for 97 percent of federal R&D funds going to industrial concerns in 1982.

<sup>19</sup> In contrast, Japanese managers are said to be more willing to undertake long-term R&D projects. However, such differences between U.S. and Japanese managers may reflect lower capital costs for Japanese companies in the past. Because of their lower cost of capital, Japanese managements discounted expected profits in the distant future less heavily when evaluating long-term R&D projects (Hatsopoulos, Krugman, and Summers). This point may have less force now than in the 1970s and 1980s because recent increases in Japanese interest rates and decreases in U.S. rates have brought capital costs in the two countries closer together.

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# Reform in Eastern Europe: Creating a Capital Market

By Lawrence J. Brainard

**W**hat role should the reform of financial markets play in the economic transformation of Eastern Europe into market economies?

This essay argues that the revival of economic growth in Eastern Europe requires the creation of a viable market for capital. A capital market is an essential prerequisite for successful privatization and increased efficiency of resource use.

The introduction of a capital market requires that the balance sheets of the enterprises and banks be cleaned up. Unrealized

losses on enterprise balance sheets should be addressed through bankruptcy, rehabilitation of viable enterprises, and privatization. The balance sheet losses of the state-owned commercial banks should be solved by means of recapitalization of the banks. The recapitalization of the banks is also an essential requirement to enforcing "hard budget" constraints on enterprises.

Because these reforms come with significant fiscal costs, governments should employ a comprehensive fiscal framework and clear priorities in order to prevent a hemorrhaging of the fiscal accounts.

What role should the reform of financial markets play in the economic transformation of Eastern Europe into market economic systems? Two perspectives are essential in addressing this question: 1) What is the fundamental goal of the transformation process and how does financial market reform contribute to achieving that goal? 2) Where are we today in the reform process and what has to be done in order to move toward that goal?

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## **Where Economic Transformation Should Lead**

It may be commonplace to remark that economic growth is the goal of the transformation process, but many seem to forget that the marketization of these economies is not an end unto itself. The challenge is to create economic systems in Eastern Europe that will generate self-sustaining economic growth under conditions of stable prices. Growth is central to the political legitimacy of the reform efforts; a failure to boost growth, and with it personal incomes, would seriously undermine popular support for the new democratic regimes. Furthermore, growth should be the yardstick against which alternative adjustment strategies are evaluated. Any viable adjustment strategy must spell out a feasible process that leads to the revival of growth and investment in these economies.

The creation of a real market for capital, where resources are allocated efficiently, is an essential component of the economic transformation. The payoff from stabilization and economic reform will not be forthcoming unless capital is allocated efficiently. The most important institutional element of the capital market is the banking system. Markets for equities and government bonds could play an increasingly important role in the development of capital markets in Eastern Europe, but in the near term and the medium term, the bulk of savings will flow through the banking system. The issue of banking system reform, therefore, is central to efforts to improve the efficiency of resource use.

A second requirement for ensuring efficient allocation of resources is that the users of investment capital should be responsible for its effective application. This implies the privatization of ownership of much of the capital in these countries, and effective disciplines on those firms remaining under state management. In other words, privatization, improved financial

discipline and banking reform are related aspects of the same resource efficiency goal.

Enterprise restructuring, privatization, and banking reform must go forward together. Privatization without banking reform would fail to ensure that capital is allocated to the firms that can use the resources most effectively. This will only hamper the hoped-for supply-side response essential for increased economic growth. Furthermore, firms will not face effective financial disciplines until the banking system can refuse to provide additional credit to given borrowers, i.e. banks must be able to enforce the "hard budget" constraint. A banking reform without enterprise restructuring and privatization, in turn, would only perpetuate the accumulation of bad loans in the portfolios of the banks.

The success of privatization and financial disciplines for state firms, therefore, is tied to the creation of banks that are capable of exercising independent credit judgments. This is not going to happen unless banks are forced to protect their own capital position against credit losses. Banks cannot defend their own capital until their existing balance sheets are cleaned up to identify what those capital positions are. Banking reform, therefore, should focus on the restructuring of the existing commercial banks to achieve this end.

This point is also relevant to western efforts to increase flows of new credits to support reform efforts in Eastern Europe. Unless the existing banks are restructured, the new western resources going into the country will likely be misused, thus perpetuating the power of the nomenclature and the influence of the existing economic structure over resource allocation.

A second goal of banking reform is to create the institutional framework for effective control of the money supply by the central bank. This is more than a technical question of reserve requirements or instruments for open-market operations. One necessary change is to free the banks—both the central bank and the commercial

banks—from their traditional roles as financiers of the fiscal deficit and of the losses of the state-owned enterprises. This change is obviously closely related to the reforms discussed in the preceding paragraph.

A further aspect of monetary control involves bringing Eastern Europe's burgeoning informal credit markets under effective supervision. Inter-enterprise credit markets have emerged in recent years in response to central bank efforts to tighten credit conditions. Such disintermediation of credit flows is a major factor acting to weaken the effectiveness of monetary policy.

### **Where Does the Reform Effort Stand Today?**

Many efforts to reform Eastern European economies have been launched over the past decade, but most have shown little in the way of results. A relevant question, therefore, is why effective reform has been so hard to achieve.

It is obvious that economic structures in Eastern European countries are seriously distorted, giving rise to the wastage of economic resources on a massive scale. Some of these resource losses are easily identified; for example, irrational relative prices and budget subsidies to loss-making enterprises. The sensible policy here is to introduce economic stabilization policies, such as balancing the budget, freeing prices, and increasing competitive forces in the economy.

If economic stabilization were the only concern, the task of economic transformation would at least be clearly outlined, even if still hard to achieve. But the evidence suggests otherwise. Efforts at economic stabilization over the past decade in Yugoslavia, Poland, and Hungary have not been successful largely because these efforts have neglected serious economic imbalances imbedded in the structure of these economic systems. In order to address

these problems, countries must move beyond conventional stabilization programs to implement comprehensive structural reforms.

Serious structural imbalances in these countries today are lodged in their banks, which have been the repository of decades of accumulated losses of state-owned firms. Socialist banks are engaged in a misallocation of resources of massive proportions, and most of these losses do not find reflection in conventional measures of the government's fiscal deficit.

Some data will serve to highlight the dimensions of the problem. In 1987 in Yugoslavia, for example, the government's fiscal accounts showed a small surplus, but losses recorded by the National Bank of Yugoslavia (NBY) amounted to a staggering 8.5 percent of GDP. The NBY losses resulted from the redistribution of resources to loss-making enterprises through the banking system by means of negative real rates of interest on outstanding loans.<sup>1</sup> In Poland, the World Bank estimated that interest rate subsidies provided to state enterprises through the banking system totaled 10 percent of GDP in 1988.<sup>2</sup>

Another less-than-evident source of such resource wastage through the banking system derives from the massive portfolio of bad loans held by commercial banks in Eastern European countries. Faced by the refusal and inability of loss-making enterprises to service existing credits, the banks have simply refinanced such loans and provided new ones on top of the old ones in order to pay the interest. Neither the banks nor the government have been willing to push companies into bankruptcy.

In Yugoslavia, for example, the National Bank estimates that troubled loans account for over 40 percent of the loan portfolio of the commercial banks, with potential losses totaling as much as 25 percent of loans (\$7-9 billion), far in excess of the banks' capital.<sup>3</sup> Accurate data on bad loans in other countries is unavailable, but potential losses are of similar magnitude.

Questionable accounting and supervisory practices have also helped obscure these hidden losses. In Hungary, for example, the three major commercial banks inherited a substantial portfolio of troubled loans when they were set up by the National Bank in 1987. These banks have capitalized interest due payments and accrued interest as income on nonperforming loans, with the result that the banks' published income statements depart substantially from generally accepted accounting procedures (GAAP) in the West. Although the banks have consistently reported profitable operations, their loan portfolios have, until recently, not been audited for collectibility and reserve funds for doubtful loans are inadequate.<sup>4</sup>

### **Stabilization and Structural Reform—the Polish Model**

Experience with failed reform programs in Eastern Europe since 1980 suggests that economic stabilization and structural reform are both essential components of a viable economic transformation strategy. The key issue is the sequencing of stabilization and structural reforms. Should stabilization efforts move forward, while the ground is being prepared for structural reforms? Or do stabilization and structural reform need to be synchronized in some way? A discussion of the recent Polish economic shock program will serve to highlight the dimensions of the sequencing issue.

The Polish economic program introduced on January 1, 1990, is predicated on decisive and rapid change in economic policy. The initial policy shock is focused on economic stabilization measures such as:

1. a balanced fiscal budget, tight credit ceilings and controls on wage-setting in state enterprises;
2. the freeing of most prices to find their market-clearing levels;

3. removal of bureaucratic restrictions on the private sector; and
4. increased competition by means of a sharp devaluation followed by the pegging of the zloty at a competitive rate.

The Polish shock program foresees a phased introduction of structural changes, though the importance of a rapid introduction of such changes is clearly recognized. Jeffrey Sachs, who advised the Poles drawing up the program, explained that "Poland's goal is to establish the economic, legal, and institutional basis for a private-sector market economy in just one year."<sup>5</sup> But the introduction of comprehensive stabilization measures was not held up pending the introduction of structural reforms. The basic Polish strategy, therefore, is rapid and severe economic stabilization, followed by a phased introduction of structural changes.

In assessing the Polish Program, several concerns deserve emphasis. One is that the stabilization measures imply a severe, immediate reduction of real incomes, but without a clear identification of where or how the hoped-for supply response is to be achieved. There are certainly efficiencies to be gained through the creation of unregulated markets, but most potential market participants lack the resources to respond to the opportunities such unfettered markets offer. The hoped-for supply response depends primarily on structural reforms of the markets for labor and capital, not on stabilization. The Polish Program has little to say on how factor markets are to be created.<sup>6</sup>

The sequencing of the Polish Program—harsh stabilization, followed by phased reform—also introduced a volatile element of political instability into the reform effort. Workers are unlikely to accept substantial reductions in real incomes without going on strike, unless tangible benefits of their sacrifices become evident in fairly short order. In the first four months of the shock program the average Polish standard of living declined over 30

percent in real terms.<sup>7</sup> The policymakers' political vulnerability to workers' protests, in turn, puts at risk the delayed structural reforms.

In this regard, the announcement by the Polish government in mid-1990 of an easing of the austerity program appears to suggest that Polish leaders were having second thoughts about the viability of the original strategy.<sup>8</sup> The official press release announced that the switch to a free market economy was completed in just five months, but this cannot be seen as credible. None of the critical structural reforms promised in January have been achieved; indeed, the new law on privatization, which had been promised by no later than March, was not passed by the Parliament until the end of July.

It is too early to say how much the easing of austerity will slow down efforts to introduce structural reforms. It does suggest, however, that the over-riding, initial emphasis on radical stabilization moves was misplaced. It acted to slow progress on the different structural reform measures by focusing the attention of key policymakers elsewhere. The shock program also reflected a naive optimism about the reinvigoration of growth through the free play of market forces, while missing the fact that structural impediments in the markets for labor and capital remained largely untouched.

An initial judgment about shock programs, such as the Polish one, is that it is a mistake to launch a radical economic stabilization until key structural reforms are ready to be implemented. Stabilization efforts are obviously unavoidable in the context of hyperinflation and serious price distortions: greater priority, however, must be accorded efforts to accelerate the structural reforms and to achieve a closer synchronization between reform and stabilization.

A second concern about the Polish Program is that its agenda of structural reforms seems to be limited to privatization. In his lengthy exposition of the Polish model in *The Economist*, Sachs devotes considerable attention to problems of

privatization, but he ignores problems of the banking system and the need to create a real capital market in Poland.<sup>9</sup>

There are two key reasons why banking reforms are essential to strategies of economies transformation in Eastern Europe. One is that privatization cannot succeed without a capital market. And a capital market cannot be created unless a thorough reform of the banking system is enacted. Privatization and banking system reform, therefore, must go together.

The second reason is that the banking system is a serious source of economic disequilibrium in each of these countries. As the Yugoslav case cited earlier illustrated, it is possible for the government's fiscal budget to be in balance at the same time that huge deficits are piling up in the banks.

As we will explore in more detail in the next section, there are two distinct aspects to banking reform. Banks must not be allowed to continue making bad loans; enterprise restructuring through privatization and moving loss-making firms into bankruptcy and tighter prudential supervision on the banks' loan portfolios are essential steps here. But reforms must go beyond such measures. For banks to make a positive contribution to the efficient allocation of capital resources, it will be necessary to clean up the banks' balance sheets by writing off troubled loans and by injecting new capital. We turn now to a detailed look at the state of Eastern Europe's banking systems.

## **The Condition of Socialist Banking and Finance**

The traditional banking model in Eastern Europe consisted of a central bank and several special-purpose banks, one dealing with individuals' savings and other banking needs and the other focused on foreign financial activities. The central bank provided most of the commercial banking needs of enterprises in addition to

the usual functions of a central bank.

In recent years, Eastern European countries have modified this structure by carving out all of the commercial banking activities of the central bank and transferring them to new commercial banks. In most countries the new banks were set up along industry lines, while in Poland the banks were set up on a regional basis. The creation of these new banks is relatively recent:

<u>Country</u>	<u>Date</u>	<u>New state-owned banks</u>
Bulgaria	1987	7
Czechoslovakia	1990	2
GDR	1990	1
Hungary	1987	3
Poland	1988	9

Although a number of small *de novo* banks were also allowed, mainly in Poland and Hungary, the new state-owned commercial banks controlled the bulk of the financial transactions of the enterprise sector.<sup>10</sup>

What is important to understand about these banks is that they were created by transferring existing loans from the portfolio of the central bank to the new institutions. The banks, thus, started life with an inherited overhang of troubled assets, in most cases highly concentrated by enterprise and industry. Furthermore, competition was restricted because the banks were not allowed to deal with enterprises other than those assigned to them.

Hobbled with such handicaps, these new banks simply cannot play a role in the allocation of capital that is similar to the role played by sound banking institutions active in western capital markets. They do not have their own capital resources because their loan assets are not carried on their balance sheets at realistic values. In extending new loans, therefore, the bank is not putting its own capital resources at risk, since any potential losses will accrue in one way or another to the central bank or Ministry of Finance—either the government must inject

new capital from the budget to cover such losses, or, more probably, the losses will be covered up by the authorities agreeing with the bank not to recognize such bad loans. The fact that the losses are not recognized, implies an accumulation of contingent liabilities on the account of the government's fiscal budget, since the government will have to cover such losses sooner or later out of budgetary resources.<sup>11</sup>

The new state-owned commercial banks should be viewed more as fiscal agents of the Treasury than as banks in their own right. They collect a large part of the government's inflation tax on enterprise cash balances and redistribute resources to enterprises through interest rate subsidies (i.e. negative real rates) and additional loans to cover interest due.<sup>12</sup> Furthermore, the banks have limited leverage over their borrowers. If the firm does not have the money, it simply refuses to pay. The bank is forced to extend a new loan to recognize the nonpayment. Unless the government is willing to throw a firm into bankruptcy—so far a very rare occurrence—the bank cannot pursue an active credit policy. The existing banking structure, therefore, is acting as a fiscal “black hole,” misallocating capital to cover the losses of the state-owned enterprises.

A substantial volume of losses is also booked on the balance sheets of the central banks of these countries. These losses have resulted from the periodic devaluations of each country's currency. In most countries the foreign debt is carried as a liability on the central bank's books.<sup>13</sup> Devaluation increases the local currency value of total liabilities; to balance this rise in liabilities, a corresponding asset entry is made, usually identified as a “valuation adjustment.” In reality, of course, there are no resources behind such an “asset,” since the enterprises have been relieved of any exchange rate risk.

The size of valuation losses carried by central banks from devaluations is staggering.

In Hungary, recent estimates put the stock of National Bank losses at about 30 percent of GDP, or about \$7 billion.<sup>14</sup> In Yugoslavia, the valuation losses carried on the consolidated balance sheet of the National Bank are over 60 percent of total assets.<sup>15</sup>

## **Approaches to Financial Market Reforms**

Attempts to improve financial sector performance have been included in all Eastern European country programs of the IMF and World Bank in recent years. The meager results of such reform efforts serve to highlight why financial reforms are so difficult to implement.

Starting with Yugoslavia in 1983, financial reform has focused on eliminating financial losses associated with credit flows. The primary policy measures included the introduction of positive real rates of interest on deposits and loans and the tightening of credit conditions by imposing credit ceilings.

The typical result of such tight credit policies was a rapid growth in payment arrears between firms. In the context of relatively monopolized market structures, few firms could afford to cut off an important buyer of a given product, so they tolerated such arrears. In any case, the country's legal systems did not furnish the creditor enterprises strong legal means to force repayment. As a result the practice of inter-enterprise credit spread throughout the economy.

The disintermediation of credit flows through the growth in inter-enterprise credit has now reached significant proportions. In Yugoslavia, the share of inter-enterprise credits in total credit increased from 26 percent in 1980 to 39 percent in 1987.<sup>16</sup> In Hungary, the so-called "credit queues" rose dramatically in 1988-89, when the National Bank implemented a tight monetary policy as part of its IMF standby. Information on inter-enterprise

payment arrears in Poland is sketchy, but it appears that such arrears have risen dramatically since the implementation of the shock program in January.

There are reasons to believe that the disintermediation of credit flows has increased since the implementation in 1990 of stabilization programs in Poland, Hungary, and Yugoslavia. These developments are worrisome because they act to reduce the effectiveness of restrictive monetary policies on aggregate demand—the growth of inter-enterprise credits has so far escaped such controls. And since such credits are inadequately captured in the credit data, the central bank's ability to gauge the tightness of monetary policy is hampered. The danger is that monetary policy will appear much more restrictive than it really is.

## **New Perspectives on Financial Reforms**

The stock answer in every reform proposal to Eastern Europe's financial market ills has always been the same—to increase the financial disciplines in the system. The reason why such efforts have so far failed to produce acceptable results is that none of these reform efforts has yet addressed the balance sheet losses which lie at the heart of the problem. Banks and governments have been unwilling to push firms into bankruptcy—the banks fear the financial impact on their balance sheets, and the governments fear the unemployment consequences. As a result, firms have never had to pay the ultimate price for their misdeeds.

The only effective way to implement financial discipline is to go beyond the current measures, which focus on subsidies and credit flows, to clean up the balance sheets of enterprises and banks. The reform must seek to allocate the unrealized losses on the balance sheets of enterprises and banks. Financial discipline (hard budget constraints) must be translated into balance sheet realities for each firm.

The issue for policymakers, therefore, is how to allocate such losses among the workers, the creditors, and the government's budget (i.e. society at large).

For enterprises, the mechanisms for sanitizing balance sheets include bankruptcy, rehabilitation, and/or privatization. Bankruptcy implies losses for the workers—through unemployment—and the liquidation of financial claims on the enterprise, i.e. losses for the creditors, which may in turn be covered out of the fiscal budget. The rehabilitation of enterprises with reasonable prospects of profitable operation would likely require wage sacrifices from workers and partial debt relief from creditor banks. Privatization, properly managed and implemented, may be viewed as an alternative way for the state to translate firms' balance sheets to current values, since any sale should yield a cash benefit to the government's fiscal budget equal to the firm's net worth.<sup>17</sup>

Viewing the issue of financial discipline in such a balance sheet perspective serves to underscore the need for a comprehensive fiscal framework and a set of clear priorities for action as a prerequisite for structural reform. The restructuring will undoubtedly be costly, and the authorities need to monitor costs carefully. Otherwise, the natural tendency to push most of these losses in an unplanned and piecemeal fashion onto the account of the fiscal budget will quickly swamp the ability of the government to balance the fiscal accounts, thus reigniting inflationary pressures. This perspective also highlights the urgent need for credible balance sheet valuations, which require the implementation of western accounting principles and practices. Finally, privatization may be seen as the logical outcome of a set of comprehensive measures to clean up enterprise balance sheets; it is not the sole structural goal of the reform. Many discussions focus exclusively on the techniques of privatization, without adequate attention to broader fiscal reform goals.

Cleaning up the balance sheets of the banks poses a separate set of issues. It should be obvious that a thorough restructuring of enterprise balance sheets will contribute much to eliminating bank losses from ongoing credit activities. Restructuring of enterprises and banks should, therefore, proceed together. But the losses in the banks' loan portfolios raise a slightly different set of problems. There is little social value in pushing any of the state-owned banks into bankruptcy, given their pivotal role in the financial system. The only viable option is to restructure the banks.

The best way to do this is to recapitalize the banks by first lifting the bad loans out of their portfolios and then providing a mechanism for injecting new capital. One approach used in Chile in the mid-1980s and now being implemented in Yugoslavia is for the government to "purchase" the banks' bad loans (identified by means of a special portfolio audit) with long-term bonds paying a positive interest spread over the banks' cost of funds. The capital of the banks would grow over time, thanks to the elimination of problem loans and the positive net income flow from the government bonds.

Given improved accounting practices and effective prudential supervision, the banks could be transformed into profitable institutions, hopefully in a relatively short time. Such institutions could then form the core of an emergent capital market structure. The persistent foreign exchange losses of the central banks should be controlled by holding the enterprises accountable for the foreign risk on new external borrowings.

The government would have to absorb the losses on the bad loans and transfer new resources to the banks via interest payments on the bonds. These actions could prove costly to the fiscal budget, but removing such losses in a one-step operation with fiscal costs spread over the life of the bonds is likely to be less costly than doing nothing.<sup>18</sup> This action is essential to

eliminate the misallocation of resources by the banks and to facilitate the creation of a capital market. It should also discourage the disintermediation of credit flows outside the banking system, thus improving the central bank's ability to control monetary conditions.

An alternative approach would be for the government to assist in spinning off a bank's bad loans into a separate entity, managed by a special work-out team from the bank. This would create a "good" bank and a "bad" bank; special incentives could be provided to the management team to help maximize value from the work-out process. The "good" bank would then provide the focus of new capital market activity.<sup>19</sup>

Whatever structure is chosen, the important goal is to create viable institutions quickly to provide the impetus for the development of a real capital market. This can only be done if the existing overhang of bad loans is removed from the banks' portfolios.

### **Strategies for Economic Transformation—a Summing Up**

It is time to bring together the various elements touched on in this paper that outline a possible strategy for the economic transformation of Eastern European economies:

1. The revival of economic growth in Eastern Europe requires the creation of factor markets, especially a market for capital.
2. Financial market reform is central to efforts to improve the efficiency of resource allocation; successful privatization requires a functioning capital market.
3. The introduction of structural reforms should be synchronized as much as possible with major economic stabilization efforts; it is a mistake to undertake radical economic stabilization until key structural reforms are ready to be implemented.
4. The key structural reforms involve cleaning up the balance sheets of the enterprises and

banks; these reforms must go forward together.

5. The unrealized enterprise balance sheet losses should be addressed through bankruptcy, rehabilitation of viable enterprises, and privatization; the balance sheet losses of the commercial banks should be addressed by means of a recapitalization of the banks.
6. The recapitalization of the commercial banks is an essential step in the creation of a capital market and in the improvement of the effectiveness of monetary policy.
7. The above-mentioned reforms come with significant fiscal costs; governments should employ a comprehensive fiscal framework and clear priorities to prevent a hemorrhaging of the fiscal accounts.

A final consideration is the potential contribution that foreign capital may make to the success of the above strategy, especially in accelerating the creation of new capital market institutions.

Western banks opening new branches or subsidiaries in Eastern Europe are likely to perceive substantial risks in any domestic lending activity during the transition to market-based economies. The banks' caution could rule out a substantial near-term role for foreign private banks in efforts to recast the existing banking system. Although the new financial sector investments undertaken by western banks will have clear positive benefits, these ventures will not come close in the aggregate to matching the existing scope of the state-owned commercial banking system.

The rapid creation of a modern commercial banking system is feasible only if human skills and knowhow can be transferred quickly and on a significant scale. This seems unlikely unless countries are willing to grant interested foreign banks a significant domestic banking franchise without the legacy of past bad corporate debts.

This suggests that financial market restruc-

turing in Eastern Europe could be viewed as a necessary precondition for the successful and rapid transfer of western capital into commercial banking in these economies.

Whether such a role for foreign capital in

the banking industry is desirable or not is up to the individual countries to decide. What is important is that East European authorities initiate the restructuring process as soon as clear priorities can be determined.

## Endnotes

<sup>1</sup> Roberto de Rezende Rocha, "Structural Adjustment and Inflation in Yugoslavia," World Bank, EMTTF Division, May 26, 1989, p. 6.

<sup>2</sup> Fernando Saldanha, "Interest Rate Subsidies and Monetization in Poland," World Bank, EMTTF Division, April 1989, p. 2.

<sup>3</sup> Data cited by Mitja Gaspari, Deputy Governor, National Bank of Yugoslavia in a private meeting with commercial bankers in New York.

<sup>4</sup> The National Bank of Hungary is currently addressing these problems in the context of a financial sector modernization loan from the World Bank. The NBH is conducting audits of all the commercial banks according to GAAP and there are plans to send a new banking law to Parliament by the end of 1990.

<sup>5</sup> Jeffrey Sachs, "What Is to Be Done?" *The Economist*, January 13, 1990.

<sup>6</sup> In his article Sachs does not even address the problem of setting up functioning markets for labor and capital.

<sup>7</sup> Statement by the Polish Finance Minister Leszek Balcerowicz at The Council of Foreign Relations, New York, September 28, 1990.

<sup>8</sup> "Poland Says Free Market Reached, Austerity to Ease," *Reuters*, June 6, 1990.

<sup>9</sup> Sachs, "What Is to Be Done?" pp. 21-25.

<sup>10</sup> The Hungarian government reduced its share holding in its three large commercial banks to just over 50 percent by selling off bank shares to enterprises. The banks in other countries remain wholly state-owned.

<sup>11</sup> There is a close parallel in this regard with the savings and loan crisis in the United States. It was possible for the Reagan administration to paper over such losses for quite a long time. But when a decision was made by President Bush to deal with the problem, the accumulated losses had to be covered with real resources from the budget. Most

experts believe the U. S. Treasury paid a much higher price because a solution to the problem was deferred for so long. It is also true that it is very difficult to estimate the scope of potential losses in such a situation until the assets in question are sold off or written down to actual value. There is a strong political inclination to understate the actual losses likely to be realized.

<sup>12</sup> I fully agree with this characterization of the banks outlined by Manuel Hinds in his paper, "Issues in the Introduction of Market Forces in Eastern European Socialist Economies," World Bank, EMTTF Division, March 1990, p. 11.

<sup>13</sup> In Poland, the debt is carried on the books of the Bank Handlowy, while in Yugoslavia, the debt is carried both by the commercial banks and the National Bank. In Bulgaria, most of the debt is carried by the Bulgarian Foreign Trade Bank.

<sup>14</sup> Hinds, "Issues," p. 14.

<sup>15</sup> Rocha, "Structural Adjustment," p. 6.

<sup>16</sup> Rocha, "Structural Adjustment," p. 31.

<sup>17</sup> Any decision to socialize a portion of a firm's losses prior to privatization should be transparent in the sense that the social costs and benefits of such actions should be made public and be subject to review by competent authorities.

<sup>18</sup> Hinds, "Issues," p. 57. Hinds provides an excellent discussion of the reasons why bank recapitalizations are desirable.

<sup>19</sup> This option was recommended by the Blue Ribbon Commission, which prepared an "Action Program" for Hungary's new democratic government: *Hungary—In Transformation to Freedom and Prosperity: Economic Program Proposals of the Joint Hungarian-International Blue Ribbon Commission*, Indianapolis: Hudson Institute, Inc., April 1990, pp. 28-29.

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