

Southwest Economy



Improving Public School Financing in Texas

The Texas Legislature will spend more than \$11 billion this year to fund public schools. Over the years, the state has helped educate millions of children, enhancing the productivity of the workforce and the vitality of the economy. Public education has been a good investment for the state. But disbursing \$11 billion is no easy task. Texas' finance formula has been subject to recurrent legal challenges. Recently, the state Legislature formed a special committee to evaluate the way funds are distributed and to possibly recommend improvements.

The state has an ambitious finance formula that distributes funds based on a school district's size, property wealth and other factors. Some districts receive substantial aid. Part of the formula—nicknamed Robin Hood—requires districts that are considered wealthy to give money to help other districts. Although it is intensely controversial, the Texas plan has bolstered many of the state's poorest schools and garnered national acclaim in so doing.

As the state takes a fresh look at public school financing, it is a good time to explore the economics

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Down but Not Out: The U.S. Economy after Sept. 11

The terrorist attacks of Sept. 11 have profoundly affected the well-being of U.S. citizens. Our sense of invulnerability is gone. Comparable events are the October 1973 Arab oil embargo, which challenged our assumptions about the continued availability of abundant, cheap energy, and the October 1957 Sputnik launch, which raised fears of intercontinental missile attack. Both of those shocks triggered important changes in spending priorities. Both hit a U.S. economy that had already been slowing. Both were accompanied or promptly followed by recessions.

We can never know with certainty how the economy would have evolved had the Sputnik launch, the oil embargo or the Sept. 11 attacks not occurred. Such events are rare, and each has unique aspects. Moreover, our

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*INSIDE:
Tough Decisions
for Argentina*

Down but Not Out: The U.S. Economy After Sept. 11

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understanding of the terrorist threat and the measures necessary to combat it are still developing. With this caveat in mind, it appears that the Sept. 11 terrorist attacks subtracted perhaps 1 percentage point from annualized third-quarter GDP growth, making what would have been a small, positive number small and negative. Spillover from the attacks makes a much more significant GDP decline likely in the current quarter. In contrast, the outlook for the first half of 2002 has been little affected. Unfortunately, that outlook calls for output growth so sluggish that jobs will shrink and the unemployment rate will continue to rise.

Preattack Trends

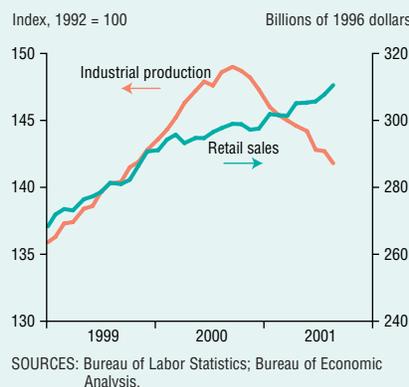
Chart 1 summarizes the economic situation we were facing leading up to the attacks. Consumer spending decelerated early last year but continued to increase right through August 2001. Industrial production rose unabated until September 2000 and has fallen more or less steadily since. Obviously, output cannot contract indefinitely in the face of rising consumer demand. Consumer demand cannot expand indefinitely if firms continue to cut production and jobs. One or the other of these trends was going to have to give way.

There were hints, at least, that industrial production might soon stop falling. In early August and early September surveys by the National Association of Purchasing Management, more manufacturers reported increases in orders than decreases. The Conference Board's composite leading index was also signaling improvement. Most analysts were calling for a modest pickup in GDP growth during the third quarter and a further increase in the fourth.

Monetary policy played an important role both in slowing demand growth in the second quarter of last year and in maintaining positive demand growth in the face of a rising unemployment rate in 2001. Judging by the inflation-adjusted, or real, federal funds rate, monetary policy

Chart 1

Trends in Industrial Production and Retail Sales Are Inconsistent



tightened from early 1999 through the middle of 2000 and has eased almost continually during 2001.

For evidence that monetary policy still packs a punch, one need only look at the construction materials and consumer durables manufacturing industries, two important interest-sensitive sectors. In both, new orders topped out in early

2000—less than a year after the Federal Reserve began to raise short-term interest rates and roughly coincident with the peak in real rates. In both sectors, demand growth resumed quickly once the Fed began easing in 2001 (Chart 2).

Was the policy tightening in 1999 and early 2000 a mistake? Inflation statistics released over the past two and one-half years suggest not. The GDP price index, for example, accelerated by a full percentage point during 1999 and 2000 before finally leveling off. While one can quibble over the exact timing of the Fed's interest-rate moves, these results suggest that policy was basically on the right track.¹

Supply-Side Impact of the Attacks

What was the likely impact of the Sept. 11 attacks on the economy's capacity to produce goods and services? A good place to start is with the effects of a natural disaster like the 1994 Northridge quake in Southern California.

Chart 3 illustrates how the level of output is typically affected by a Northridge-style event. The chart assumes that output has been rising at a more or less steady pace and is expected to continue to do so in the future (as indicated by the dotted line). Instead, disaster strikes, causing output to drop sharply. The level of output remains depressed for a time, but as damaged homes and factories are

Chart 2

Construction and Consumer Durables Sectors Show Effects of Fed Policy

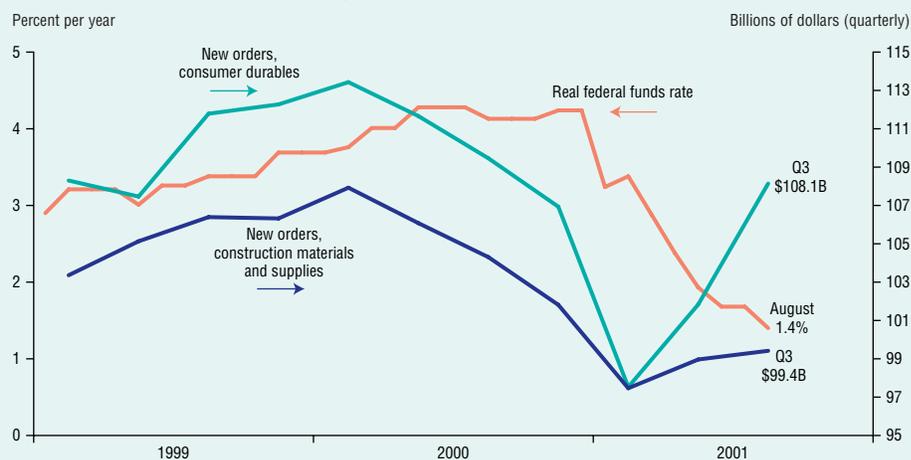
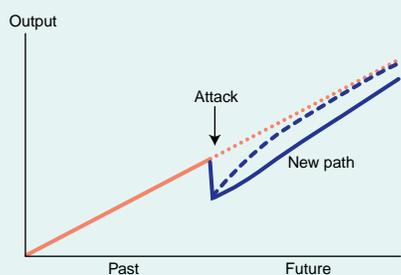


Chart 3

Security Measures Impact Productivity, Reduce Wealth



SOURCE: Author's calculations.

rebuilt and damaged furnishings and equipment are replaced, output growth is elevated (dashed line). The economy is soon back on its predisaster path.

Although the events of Sept. 11 fit the natural disaster mold in many ways, they are also reminiscent of the 1973 Arab oil embargo and the 1957 Sputnik launch. Like these earlier events, the attacks brought previously unappreciated, continuing risks to the public's attention. It's as if we not only experienced a damaging earthquake on Sept. 11, but also discovered a whole network of fault lines beneath our major cities.

Consequently, we are likely to see a larger and more sustained shift of resources than would typically follow a natural disaster: instead of simply rebuilding, we must build anew—differently from before. Unfortunately, it takes time to plan new factories and train workers in new skills, so layoffs, plant closings and bankruptcies will initially dominate the headlines and the statistics. Instead of the immediate, strong boost to growth that occurs during the recovery from an earthquake or hurricane, we end up with an output trajectory resembling the solid line labeled “new path” in Chart 3.

Note that output never quite makes it all the way back to its original path. That's because going forward we will have to sacrifice efficiency gains for the sake of enhanced security. For example, firms may hesitate to consolidate their operations or rely on foreign parts suppliers. A larger military budget will take resources away from the private sector. Despite our efforts, some future terrorist attacks may succeed.

The actual and prospective destruc-

tion of capital, the disruption associated with resource reallocation, and the prospect of higher military and security spending all make households financially worse off by lowering asset values and reducing future after-tax earnings.

The evidence suggests that, given a constant real interest rate, consumption shifts sharply downward in response to a decline in wealth or earnings prospects (Lettau and Ludvigson 2001). There's the rub. For in the wake of Sept. 11, new investment projects will not get under way immediately, and military and security spending will take time to ramp up to their new, higher levels. Any sudden decline in consumer spending may consequently cause a shortfall in aggregate demand.

To mitigate this potential problem, the Fed can lower real, short-term interest rates by enough to induce households to scale back their spending plans gradually, rather than all at once.² As military, security and investment spending pick up, monetary policy will need to reverse course and raise short-term real interest rates to normal or even above-normal levels. Getting the timing of this switch right will be the major monetary policy challenge in the year ahead.

The Outlook

Just how big a hit is the U.S. economy likely to take from the September attacks? When will their impact begin to fade and growth resume? Two forecasting tools developed at the Dallas Fed can help answer these questions.

The first tool is a forecasting equation for current-quarter GDP growth. Official GDP growth estimates don't come out until a full month after the end of each quarter. Our forecasting equation provides us with a GDP prediction a month and a half earlier than these estimates. The forecast is based on monthly employment, industrial production and retail sales figures for the first two months of the quarter. The forecasting equation's unique feature is that it uses only data that were actually available at the time, instead of data that have gone through many rounds of revisions. The resulting performance is superior to that of the average professional in the Blue Chip survey of forecasters (Koenig, Dolmas and Piger 2001).

Based on monthly data through August, our model forecast 0.7 percent GDP growth in the third quarter.³ Actual third-quarter GDP growth came in at -0.4 percent, according to the Commerce Department's “advance” estimate. So, our best estimate is that the Sept. 11 attacks subtracted about 1 percentage point from third-quarter growth, turning a small, positive number into a small, negative number.

The impact of the terrorist attacks on third-quarter GDP growth would have been even larger had the attacks taken place in July or August instead of September. An extreme example illustrates the point. Suppose the attacks had occurred on the very last day of September. Then the average level of output in the third quarter would hardly have been affected, and third-quarter GDP growth—which compares the average third-quarter level of output with the average second-quarter level—would also hardly have been affected. Instead, we would have seen weak *fourth*-quarter GDP growth.

Well, the 11th of September isn't at the very end of the quarter, but it's pretty close. So if the direct impact of the attacks subtracts 1 percentage point from third-quarter growth, it is likely to subtract roughly 3.5 percentage points from fourth-quarter growth.⁴ This timing story helps explain why most private forecasters are calling for a moderate decline in fourth-quarter GDP instead of a moderate increase.

Our second tool is an equation that forecasts future employment growth using financial-asset and oil prices. (Details are given in the box titled “Forecasting Employment Growth.”) Financial-asset prices are available daily and are not subject to revision. Because they reflect investors' expectations, they often provide the earliest warnings of changes in the economy's direction. Although they are often individually unreliable, false signals often cancel one another out when several indicators are considered as a group.

The first indicator we use to forecast employment growth is the junk-bond spread, equal to the difference between the returns on high-yield and aaa-rated corporate bonds. It measures the risk that marginal borrowers will default on their loans. The spread widened markedly in

September and rose further in October, to its highest level since the end of last year. Bond investors are clearly concerned that the economy will be weak in the months ahead.

Stock prices are another important (but not very reliable) indicator of future employment growth. As of Sept. 10, the Standard & Poor's 500 index was down 28 percent from its all-time high in March 2000. At its postattack low, it was down almost 37 percent. However, as of this writing the index has recovered to its Sept. 10 level. So the stock market's signals, although not encouraging, are no worse than before the attacks.

Oil-price increases both disrupt the economy and act much like a tax hike imposed by oil exporters (Brown and Yücel 2000). Oil prices initially rose following September's attacks but have since fallen substantially. Unfortunately, because the economy responds to oil prices with a long lag, the residual effects of the relatively high prices of 2000 and early 2001 will remain a drag on growth in 2002.

The only indicator that is giving us a positive signal about future employment growth is the real short-term interest rate. It fell sharply in the first half of the year as the Fed aggressively eased monetary policy and fell sharply again following Sept. 11.

Chart 4 shows actual employment growth along with a forecast made nine months earlier. Forecasts are calculated using the four indicators discussed above. You can see that earlier this year,

Forecasting Employment Growth

The forecasting equation that underlies Chart 4 is estimated using jobs, money, Consumer Price Index (CPI) and Producer Price Index¹ (PPI) data from the last month of each quarter, and financial and oil-price data from the 15th of the following month (reflecting the fact that jobs, money, CPI and PPI data are released with a lag). Once the equation has been estimated, real-time monthly data are substituted into its right-hand side to generate a monthly sequence of forecasts. The last two and one-half years of forecasts displayed in Chart 4 are generated recursively (that is, estimated coefficients are updated from quarter to quarter) to accurately depict the equation's recent real-time forecasting performance.

The latest estimate, for the sample period running from 1986:Q1 through 2001:Q3, is as follows:

$$\begin{aligned} \Delta\text{Jobs} = & 3.936 - .994\text{Dum90Q3} - 1.997\text{Dum90Q4} - 2.737\text{Dum91Q1} + .315\Delta\text{Jobs}(-3) \\ & (.522) (.167) \quad (.160) \quad (.212) \quad (.111) \\ & + .025\Delta\text{Money}(-3) + .155\Delta\text{Stocks}(-3) - .338\text{Spread}(-3) - 5.577\text{Oil}(-6) \\ & (.030) \quad (.103) \quad (.095) \quad (2.312) \\ & - 2.561\text{Oil}(-7) - 7.059\text{Oil}(-8) - .530\text{Tbill}(-3) \quad \text{Adj. } R^2 = .849 \\ & (1.615) \quad (1.843) \quad (.092) \quad \text{S.E.} = .579 \end{aligned}$$

The standard errors (in parentheses) are corrected for heteroskedasticity and a moving-average error term. The variables entering the equation are defined as follows:

ΔJobs: Annualized six-month growth rate of private nonfarm employment

ΔMoney: Annualized six-month growth in M2 – annualized six-month growth in CPI

ΔStocks: 100 × 12-month change in S&P 500 / nominal GDP lagged four quarters

Spread: Merrill Lynch yield on low-grade corporate bonds – Moody's yield on seasoned aaa-rated corporate bonds

Oil: Max[0, (WTI spot price / PPI) – (three-year average of WTI spot price / PPI)] × (preceding year's oil refinery inputs / preceding year's real GDP)

Tbill: Yield on three-month Treasury bills – one-year inflation expectations, GDP price index, from the most recent Survey of Professional Forecasters

In addition, three dummy variables are used to eliminate the effects of the Gulf War, on the grounds that this shock to employment growth could not have been anticipated. (Similar treatment will have to be given to the Sept. 11 terrorist attacks in future estimations as the sample period is extended.)

I include money in the forecasting equation for the sake of consistency because in other research (not reported here) I have found that it helps forecast changes in the unemployment rate. I don't discuss money in the main text because it is unimportant for forecasting employment growth. Another financial variable often touted for its forecasting power, the slope of the yield curve, has no marginal predictive power for either employment growth or unemployment-rate changes at the horizon considered here.

Note

¹ Finished goods excluding food and energy.

Chart 4

Employment Growth Outlook Stays Weak

Percent per year



SOURCES: Bureau of Labor Statistics; author's calculations.

the forecasting model was predicting essentially zero job growth in late 2001 and early 2002. However, in July, well before the terrorist attacks, forecasted employment growth turned sharply negative. Employment growth forecasts calculated in August and September were also negative. The most recent (October) forecast indicates that jobs are likely to decline at a 0.7 percent annual rate over the first six months of 2002. So, the terrorist attacks didn't make the early 2002 outlook any worse than before, but that outlook wasn't bright to begin with. Although job cuts will not be so great as to keep GDP growth negative, they will drive the unemployment rate up to about 6 percent by June.

Conclusion

There were conflicting trends in production and sales prior to Sept. 11, with production falling despite rising consumer demand. Sooner or later, one of these trends had to give way, and there were encouraging signs that production might soon bottom out. The attacks had a mild, negative effect on third-quarter GDP, turning a weak increase into a small decline. We'll see a bigger negative impact in the fourth-quarter statistics. The already bleak growth outlook for the first half of 2002 hasn't really changed very much, however. We're likely to see output rising, but too slowly to prevent further increases in the unemployment rate.

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Down but Not Out

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There are several risks to these forecasts. For example, we may see major new terrorist attempts or political upheaval abroad. A less obvious risk is that the Fed will “get behind the curve,” much as the Japanese central bank did in the 1990s, and lower interest rates too slowly to keep up with declining inflation expectations. The October University of Michigan survey of households shows a sharp fall in expected inflation that bears watching.

On the plus side, the Fed has demonstrated a willingness to act quickly and boldly when economic developments warrant it. Policy has proven itself to be effective, first by slowing consumer spending growth in 2000 and then by sustaining it in the face of rising unemployment during the first eight months of 2001. By the spring of 2002, the economy will benefit from the additional stimulus the Fed has added to the pipeline since Sept. 11. Tax incentives designed to kick start investment spending are likely. Finally, no other economy can so quickly shift resources from shrinking to expanding industries.

We're down, but not out. Brighter days lie ahead.

—Evan F. Koenig

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Notes

- ¹ For discussions of the shifting economic environment in which the Fed was operating over this period, see Koenig (2000a, b).
- ² At the same time, fiscal policy can provide temporary favorable tax treatment for investment, encouraging firms to accelerate their plant and equipment spending.
- ³ All growth rates in this paper are annualized.
- ⁴ Counting only weekdays, Sept. 11 is 78 percent of the way through the third quarter. Assuming that the terrorist attacks shift the level of output downward from Sept. 11 through the end of 2001 without affecting the day-to-day growth rate of output (except on the 11th), the attacks' impact on fourth-quarter GDP growth will be approximately $78/22 = 3.5$ times their impact on third-quarter GDP growth.

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