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Immigrant Assimilation: Is the U.S. Still a Melting Pot?

The immigration debate is heating up in 2004 after a three-year hiatus. President Bush's temporary worker proposal, announced in January, prompted both pro- and anti-immigration camps to make their case in the media. The focus is increasingly on the long-term effects of mass immigration. This interest is to be expected with the country emerging from a decade of record immigration levels. A similar discourse ensued after earlier waves of immigration, such as in the 1850s and the decade 1900–10. The questions go to the heart of the immigration debate: Is the United States still a melting pot? Will immigrants assimilate and achieve the American dream?

In an earlier article, I focused on the important role immigrants play in the U.S. economy.[1] Immigration is key to current economic growth, and immigrants contributed over 40 percent of labor force growth in the mid- to late 1990s. But immigration is also central to future growth, not only because immigration will continue, but also because the children of today's immigrants are tomorrow's workers and investors.

Concerns about the children of immigrants

(Continued on page 2)

Monetary Policy Prospects

Federal Reserve Chairman Alan Greenspan and other Federal Reserve officials have publicly remarked that current monetary policy is highly accommodative and that short-term interest rates "will eventually need to rise toward a more neutral level." However, Federal Reserve pronouncements have also emphasized that with inflation low and resource use slack, "policy accommodation can be removed at a pace that is likely to be measured."[1]

This article looks at the Federal Reserve's policy stance and discusses why short-term interest rates will almost certainly have to increase at some point. The article also examines the historical relationship between Federal Reserve policy, inflation and resource slack for insights on future rate changes. The

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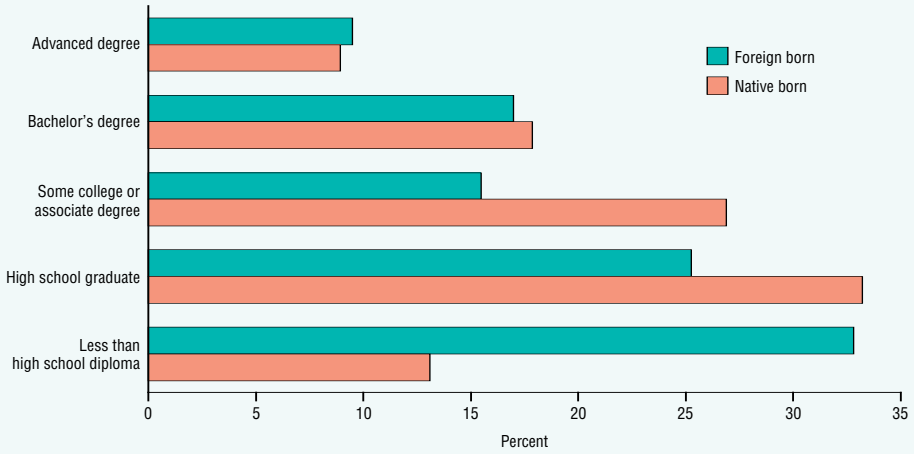
INSIDE:

Chart 1

Many Immigrants Are Low-Skilled

(Education distribution)



SOURCE: U.S. Census Bureau, Current Population Survey, March 2002.

The native–immigrant education distribution confirms that many immigrants are relatively low-skilled.

have arisen for many reasons. One factor is the rise of low-skilled immigration and the lack of full economic assimilation among low-skilled, first-generation immigrants. Researchers have long recognized the intergenerational links in measures such as education and income, so attention naturally falls on the second generation. If the parents cannot economically assimilate, will the children do so?

Immigrant Assimilation: Why Worry Now?

A confluence of factors has generated concerns about the assimilation of low-skilled immigrants and their children. First, immigration has reached record levels. The United States has surpassed the previous record inflows of immigrants at the turn of the 20th century, and the foreign-born now number more than 33 million. Immigrants are a rising share of the population, currently 11.5 percent, although this is still below the record set in 1890 (14.8 percent). More important for the discussion in this article, 20 percent of schoolchildren today are the children of immigrants. In California, over 50 percent of schoolchildren fall into this category, and in Texas, about 25 percent do.[2]

U.S. history is one of immigration, and all those original immigrants are now "Americans." Immigrants and their descendants have been assimilating for hundreds of years. Why then should we worry now? Mass immigration of low-skilled, non-English-speaking workers is hardly a new phenomenon. In the 19th and early 20th centuries, the shores teemed with German, Chinese, Irish, Italian and Polish immigrants. Natives worried aloud that most newcomers did not speak English and many could not read or write.

More compelling perhaps than the arguments about the volume and low-skilled nature of current immigration is the nature of the U.S. economy into which immigrants are expected to assimilate. Rapid rates of technological change and growing international trade have hurried the transition from a manufacturing-based to a service-based economy, and the wage premium on education has been rising steadily as a result. Immigrants and their children thus face a knowledge-based economy, where human capital—more than ever before—drives wages and job opportunities. Real wages of blue-collar work, a traditional gateway job for medium- and low-skilled immigrants, have been in decline since the 1970s.

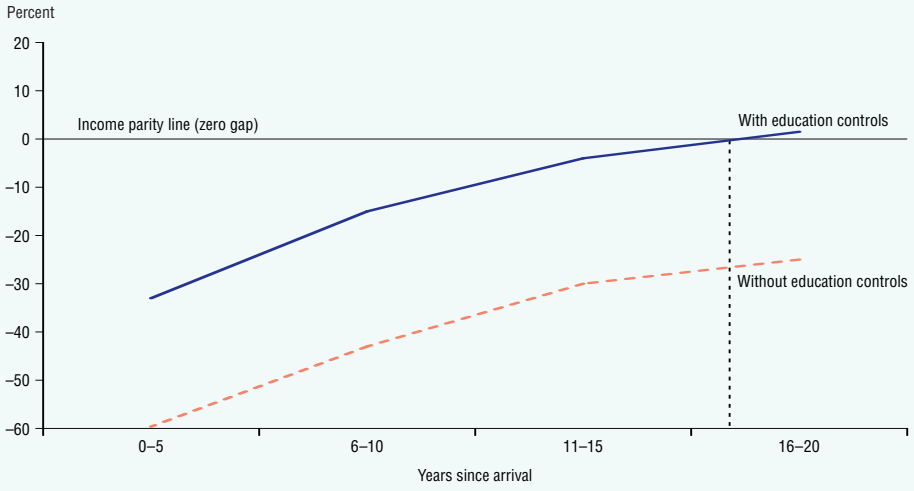
Low-Skilled Immigrants: How Do They Do?

The native–immigrant education distribution confirms that many immigrants are relatively low-skilled (*Chart 1*). Natives are concentrated in the middle of the education distribution, with an average of about 13 years of schooling. Immigrants are slightly more likely than natives to have an advanced degree but

Chart 2

Immigrants Assimilate to Comparable Natives

(Predicted native–immigrant earnings gap)



SOURCE: "Immigration Policy and the Skills of Immigrants to Australia, Canada and the United States," by Heather Antecol, Deborah Cobb-Clarke and Stephen Trejo, *Journal of Human Resources*, vol. 38, Winter 2003, pp. 192–218.

much more likely to lack a high school degree. One-third of immigrants are classified as high school dropouts, compared with only 13 percent of natives.

Interestingly, despite lacking a high school diploma, low-skilled immigrants still outperform native dropouts in the labor market. Low-skilled male immigrants are more likely to work, as seen in their higher labor force participation rates, and are less likely to be unemployed.

Because of this commitment to work—and despite other disadvantages such as lack of English fluency and familiarity with U.S. laws and institutions—immigrants assimilate and surpass earnings levels of like natives after about 16 to 20 years in the United States.[3] This is illustrated in Chart 2 by the solid line.

The earnings trajectory represents the wage gap between natives and immigrants by year of entry while controlling statistically for differences in education levels. This means that a high school dropout immigrant reaches the average earnings of a high school dropout native. It does not mean that low-skilled immigrants eventually reach average American income levels, which is what is typically meant by economic assimilation.

The dotted line shows the same earnings trajectory without statistically controlling for differences in the education level. As shown, low-skilled immigrants will not achieve average earnings levels of U.S. natives in their lifetimes. Their wages grow faster, but the growth tapers off before they reach income parity with average natives.

What About Intergenerational Assimilation?

The evidence from Chart 2 suggests that full economic assimilation will require educational assimilation. Although many first-generation immigrants go back to school once they are established in the United States, it is often to learn English and not to pursue degrees such as a GED. As a result, educational assimilation of low-skilled immigrants is more likely to happen not within generations but across generations.

Turning to the data in Chart 3, educational assimilation appears alive and well. High school dropout rates for immigrants improve across generations, dropping from 27 percent in the first generation to 8.6 percent in the third generation.[4] The first generation is made up of the foreign-born (the immigrant generation), while the second generation is made up of U.S.-born children of immigrants. The third (and higher) generation—or "native" generation—is composed of all U.S.-born individuals of U.S.-born parents.[5]

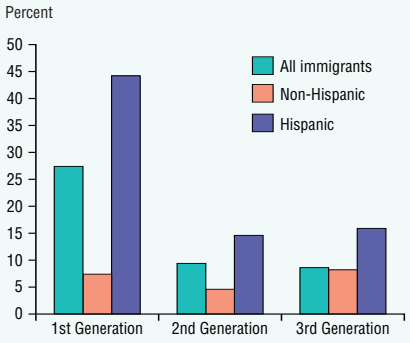
There are, however, large differences

Educational assimilation of low-skilled immigrants is more likely to happen not within generations but across generations.

Chart 3

Immigrant Dropout Rates Fall Across Generations

(16- to 24-year-olds)



SOURCE: "Dropout Rates in the United States: 2000," National Center for Education Statistics (2001).

The discrepancy in dropout rates in the third generation warrants some concern and possible action by policymakers.

among groups of immigrants. Non-Hispanic groups do the best. The first generation comes in at a 7.4 percent dropout rate, and then their dropout rates fall even lower in the second generation and continue below 10 percent in the third generation.

Hispanic immigrants do much worse in general but also improve the most. In the first generation, about 44 percent lack a high school diploma. This rate improves to 15 and 16 percent, respectively, in the second and third generations.

The discrepancy in dropout rates in the third generation warrants some concern and possible action by policymakers. By the time the immigrant population reaches the third generation, it should be no different from the native population in educational attainment; yet, the dropout rate among Hispanics is almost twice as high as the non-Hispanic rate.

Hispanic wages show a similar pattern. Mexican immigrants are both the largest group of Hispanic immigrants and the least educated. As shown in Chart 4, first-generation Mexican male immigrants make about 60 percent less than white (non-Hispanic) natives, and this improves to a 29 percent deficit by the third generation.[6]

The education gap explains most of the wage deficit of Mexican-Americans in the third generation. Research has shown that two-thirds of the wage discrepancy is accounted for by lower education levels among Mexicans. Once education is statistically controlled for, the wage gap between white natives and third-generation Mexican-Americans narrows to 11 percent (see *Chart 4*).

What Explains the Education Gap?

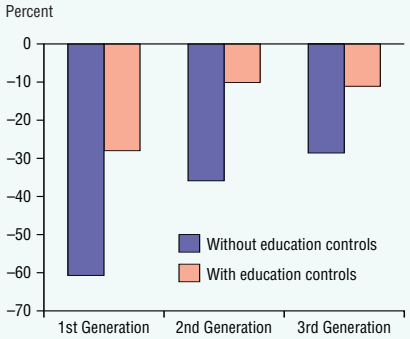
The education gap explains the wage gap, but what explains the education gap? The determinants of educational outcomes among Hispanic immigrants and their children may sound familiar. Lower household income, limited English proficiency, lower parental education and larger family size negatively influence educational attainment of immigrant children.[7] How should these statistics translate to policymaking? Among other things, immigrant children have limited resources, face more family obligations, contend with less-informed parents and move between schools more often.

Surveys also suggest that Hispanics have lower educational aspirations than some other ethnic groups. This could reflect a discouraged youth to whom economic opportunity may not seem within reach. In addition, ethnicity does matter. Even when researchers account for all measurable factors that determine education levels, the fact that an individual is Hispanic or black or Asian is statistically significant in a regression framework explaining the determinants of educational outcomes. Why ethnicity matters (in addition to economic and social variables) is not well understood.

Chart 4

Mexican Immigrant Wage Gap Improves But Persists

(Hourly wage differentials of Mexican immigrants)



SOURCE: "The Wage Structure of Latino Origin Groups Across Generations," by Richard Fry and Lindsay Lowell (2003).

Policy Implications of the Education Gap

Policy alternatives that are likely to help in dealing with the immigrant education gap are wide ranging. Implementing a legalization program for illegal immigrants, for example, would address the role that parents play in their children's educational outcomes. Legal status could open many doors, both lowering the costs of education and increasing avenues for financing a higher education through access to student loans. This would help prevent the education gap from being passed down from parents to children.

Some states, including Texas, California and New York, have taken a step in this direction by allowing undocumented children who graduate from state high schools to attend public colleges at in-state rates. Without this type of legislation, undocumented immigrants pay the much higher nonresident rate, putting a college education out of reach. A college education is not much help, however, if the graduate does not have legal permission to work. The Dream Act, complementary legislation pending in Congress, also provides a mechanism for certain undocumented immigrant students to apply for permanent residency.[8]

Educational outcomes can be impacted at an earlier stage by increasing spending on education and targeting at-risk kids in elementary and secondary schools. For example, despite a large number of immigrant schoolchildren, California and Texas spend below the national average on K–12 education. With state and local budgets under considerable strain, however, increased funding may not be forthcoming. Moreover, experience suggests that where and how funds are allocated can be more meaningful than the quantity allotted.

Other reforms may be more cost effective. For example, incentive pay for the best teachers would reward effort and reduce social promotion, which feeds low educational aspirations among immigrant children. Ending outmoded bilingual programs in favor of an English-only or dual-language approach might also help. California implemented English-only instruction after 1998. School districts across Texas have adopted innovative dual-language programs.

School districts could also do much more to accommodate immigrant students' special needs by translating information to parents, educating parents and keeping students at the same school when they move within districts.

Immigrants Assimilate: But to What?

The children of immigrants, including Mexican-Americans, outperform the first generation. Their progress is encouraging and indicative of the melting pot at work. But ethnic discrepancies emerge in the third generation, where Hispanic immigrants assimilate to an ethnic educational outcome below the national average.

Mexican immigrants are a good example of this. They make up the largest and least-educated immigrant group. While they make the biggest gains after coming to the United States, they lag behind the national average in education and wage outcomes after several generations because they assimilate not to the national schooling average but to the Hispanic average. In sum, worrying about immigrant assimilation boils down to worrying about ethnic differences in educational outcomes in the United States. When it comes to the economic melting pot, we need to make sure there is only one pot.

—Pia Orrenius

Orrenius is a senior economist in the Research Department of the Federal Reserve Bank of Dallas.

Notes

1 "U.S. Immigration and Economic Growth: Putting Policy on Hold," by Pia M. Orrenius, Federal Reserve Bank of Dallas *Southwest Economy*, November/December 2003.

2 "Commentary 5," in "Five Commentaries: Looking to the Future," by Layla P. Suleiman Gonzalez, *Children, Families, and Foster Care*, vol. 14, Winter 2004, pp. 184–89.

3 Predicted native–immigrant earnings gap since year of arrival (*Chart 2*) is based on "Immigration Policy and the Skills of Immigrants to Australia, Canada and the United States," by Heather Antecol, Deborah Cobb-Clarke and Stephen Trejo, *Journal of Human Resources*, vol. 38, Winter 2003, pp. 192–218.

4 "Dropout Rates in the United States: 2000," National Center for Education Statistics, 2001, www.nces.ed.gov.

5 Ideally this would be the grandchildren of immigrants, but such separate identification cannot be made in the data.

6 This analysis and the data in Chart 4 are based on "The Wage Structure of Latino Origin Groups Across Generations," by Richard Fry and Lindsay Lowell, paper presented at Population Association of America Annual Meeting, Minneapolis, May 2, 2003.

7 *How Immigrants Fare in U.S. Education*, by Georges Vernez and Allan Abrahamse, RAND, 1996.

8 The Development, Relief and Education for Alien Minors (DREAM) Act (S. 1545) also repeals a federal law that attempts to prevent states from granting in-state tuition to undocumented immigrants.

Do Energy Prices Threaten the Recovery?

Rising oil and natural gas prices have sparked concerns about the U.S. economic recovery now under way. Higher crude oil prices often squeeze refiners' margins, and increased prices for petroleum products such as gasoline, diesel and jet fuel raise transportation costs. Higher domestic natural gas prices pressure the U.S. petrochemicals industry—whose foreign competitors use crude oil or lower-priced foreign sources of natural gas—and raise costs for petrochemicals users. Increased natural gas prices boost the cost of producing fertilizer, which makes crop production more costly.

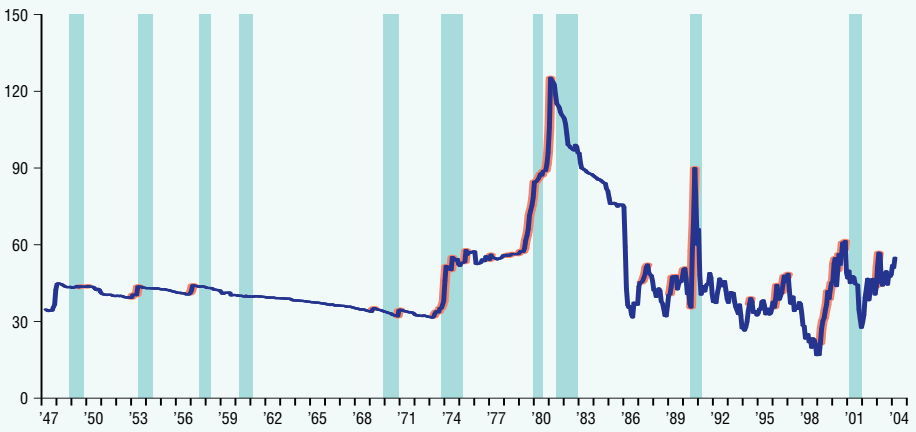
Climbing energy prices also raise costs for electric utilities and energy-intensive manufacturing sectors, such as aluminum, which can raise costs for other manufacturers. Of course, oil and natural gas producers are helped by higher prices, as are oilfield services and oilfield equipment manufacturers.

On balance, the U.S. economy has responded poorly to higher energy prices in the past. As Chart 1 shows, nine of the 10 post–World War II recessions were preceded by sharply rising oil prices. Oil prices yielded four false signals during the 1980s and '90s. So rising oil prices need not mean a recession, but the historical relationship still raises concerns about the current recovery.

In considering the effect of higher oil and natural gas prices on the economy, several questions arise. Why have oil prices risen, and what is the likelihood they will be sustained? Why have natural gas prices pulled away from their historical relationship with crude oil prices, and what is the likelihood they will remain decoupled? Do higher oil and natural gas prices threaten the U.S. recovery? And how do the economic effects differ by sector and region?

Chart 1

Oil Price Shocks and U.S. Recessions



NOTE: Bars indicate recessions. Oil prices highlighted in orange show gains that took prices higher than they had been the previous 12 months.

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

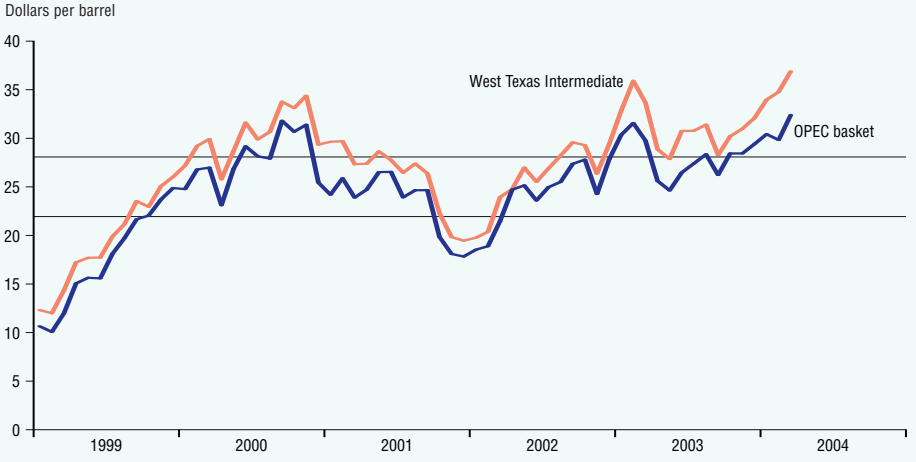
Why Oil Prices Are Higher

As Chart 2 shows, oil prices have risen sharply since mid-2003. OPEC has a target range of $22 to $28 per barrel for a market basket of the crude oils it produces but has let prices rise above that range. As a result, West Texas Intermediate (WTI) rose to nearly $40 per barrel in early May.

A number of factors account for the higher prices. World oil demand rose sharply in 2003, with the United States and China responsible for much of the gain. In the United States, oil demand typically accelerates during an economic recovery. China's increasing industrialization and income account for gains in its demand. In addition, strong demand has boosted tanker rates. OPEC has been

Chart 2

Crude Oil Prices Rise Above OPEC Target Range

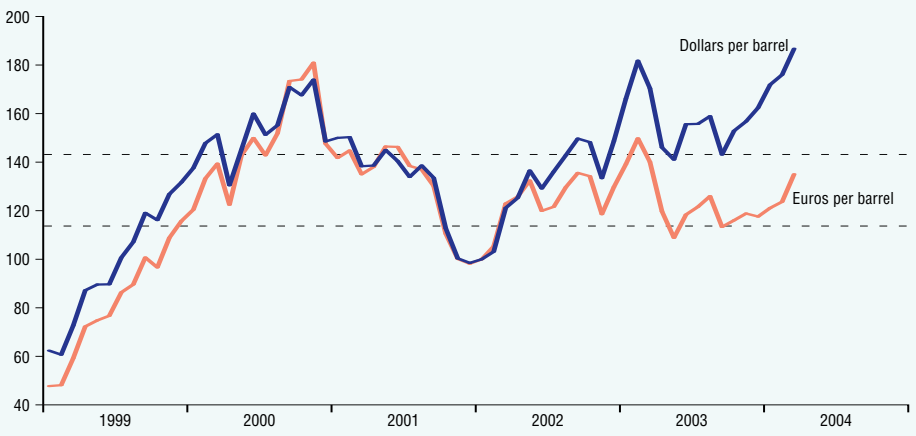


NOTE: 2004 data are through March.

SOURCES: *Wall Street Journal*; U.S. Department of Energy.

Chart 3

Euro Oil Prices Don't Look as High



NOTE: Prices are for West Texas Intermediate.
SOURCES: *Wall Street Journal*; *Financial Times*; author's calculations.

reluctant to increase its production sufficiently to lower prices, citing concerns about seasonal decreases in consumption and the possibility of increased supply from Iraq and non-OPEC sources.

A weaker U.S. dollar also has raised the dollar price of oil. Because the dollar has generally declined against other major currencies since early 2002, prices in other currencies have not risen by nearly as much. As Chart 3 shows, the euro price of oil closely tracked the dollar price until mid-2002 but now is about the same as it was in early 2002.

The weaker dollar affects oil prices two ways. A lower-valued dollar increases the ability of foreign buyers to pay dollars for oil. At the same time, OPEC attempts to maintain its international purchasing power by raising the dollar price of oil as the dollar declines in value. Research shows that a 10 percent reduction in the value of the dollar against the currencies of other oil-consuming countries leads to a 7.5 percent increase in the dollar price of oil.[1]

In mid-May, the futures market showed WTI falling from about $40 toward $30 to $32 per barrel over the next few years, which is about 35 percent higher than was expected in 2003. Given expectations of growing world demand, oil production and deliverability will need to increase to keep prices on the trajectory indicated by the futures market.

Why Natural Gas Prices Are Even Higher

As Chart 4 shows, natural gas and oil prices had a stable relationship until 2000, with natural gas adjusting to movements in crude oil.[2] Competition against residual fuel oil (a petroleum product) by the industrial and electric power sectors set the price of natural gas, as firms switched to whichever fuel was the cheapest.

In the past few years, however, natural gas prices have decoupled from oil prices, and the relationship between the two has become unstable. If the historical relationship had remained operable, the futures market would be expecting natural gas to fall toward about $4–$4.50 per million Btu. Instead, the market expects prices of nearly $6 per million Btu.

Growing demand, expectations of increased production costs and the slow development of new sources account for the upward pressure on natural gas prices. A recent National Petroleum Council (NPC) study shows North Americans becoming increasingly reliant on higher-cost sources of natural gas as demand continues to grow.[3] Chart 5 shows past and likely future U.S. and Canadian sources of natural gas, generally ranked from the lowest cost at the bottom of the chart to the highest cost at the top. As consumption grows, production in low-cost fields in the lower 48

Growing demand, expectations of increased costs and slow development of new sources explain the upward pressure on natural gas prices.

states will decline, and an increasing share of natural gas will come from higher-cost sources such as Alaska and imported liquefied natural gas (LNG).

According to the NPC study, the outlook for natural gas prices depends greatly on domestic policy. Natural gas prices will be $3–$5 per million Btu (in 2002 dollars) to the extent that public policy encourages natural gas conservation, the increased use of coal in electric power plants, the increased development of natural gas in the lower 48 and Alaska, and the development of LNG import facilities. To the extent that public policy does not encourage conservation, fuel switching and the development of additional natural gas resources, prices will be $5–$7.25 per million Btu.

Natural gas prices could remain elevated relative to their historical relationship with crude oil prices.

As the NPC study suggests, natural gas prices could remain elevated relative to their historical relationship with crude oil prices. The likely range is $3.50–$6.50 per million Btu, a range generally consistent with what experts see as technically feasible prices for LNG and natural gas from Alaska on the low end and with public policy not fostering sufficient conservation, fuel switching and natural gas development on the high end. Consistent with the futures market, the most likely range of natural gas prices in the near future is $5–$6 per million Btu, an outlook that is about 30 percent higher than the historical relationship with crude oil prices. Such an estimate is slightly above the middle of the range set in the NPC study, and it incorporates the judgment that energy markets will take time to adjust to higher prices. This outlook is higher than those foreseen in recent Energy Information Administration and Energy Modeling Forum analyses, which are dominated by technical feasibility.[4]

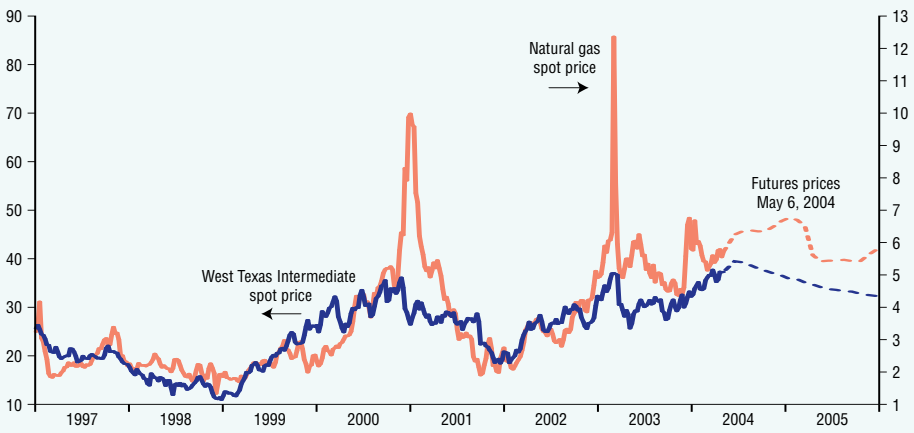
Looking forward to the next decade, a major expansion of U.S. capabilities to import LNG may be under way, a development spurred by improved liquefaction technology and growing U.S. demand for natural gas. There are also good prospects for bringing substantial quantities of natural gas to the lower 48 from Alaska. Such developments bode well for increased natural gas availability and lower prices by 2010. In the near term, however, deliverability constraints are likely to mean elevated natural gas prices.

Effects on U.S. Economy Likely to Be Mild

Although oil and natural gas prices have risen sharply, they will likely have only mild effects on overall economic activity. Energy price shocks have less effect on economic activity than in the past, and the economy is in a strong recovery.

Chart 4

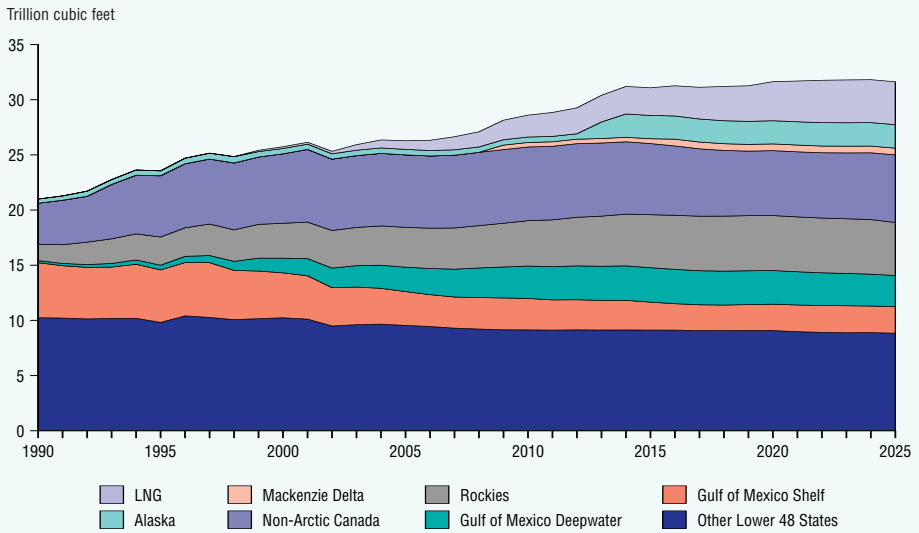
Natural Gas and Oil Prices Decouple



NOTE: Natural gas prices are for delivery at Henry Hub in Louisiana.
SOURCES: *Wall Street Journal*; Futuresource.com.

Chart 5

U.S. and Canadian Natural Gas Production



SOURCE: National Petroleum Council, *Balancing Natural Gas Policy—Fueling the Demands of a Growing Economy*, vol. 1, September 2003, Figure 2.

The sectoral and regional economic effects of higher oil and natural gas prices will be uneven.

If the longer-term outlook for oil prices is about 35 percent higher than previously expected and natural gas prices are 30 percent above their historical relationship with crude oil prices, real GDP will be 0.9 percent lower than it would otherwise be. Most of the reduction in GDP (0.7 percentage point) results from the joint movement of oil and natural gas prices. Some (0.2 percentage point) results from natural gas decoupling from its historical relationship with crude oil.[5] The price level (as measured by the GDP deflator) will be increased by about the same amount as GDP is reduced, and there will be slight upward pressure on short-term interest rates.[6]

The loss in GDP will take two to three years to fully materialize. In an economy growing at about 3.5 to 4 percent annually, a one-time reduction of 0.9 percent that is spread out over two to three years won't derail the recovery.

These are milder effects than economists have estimated for past increases in oil and natural gas prices, and several factors account for the difference.[7] The increase in oil prices is fairly moderate by historical standards. In today's dollars, the price of oil in 1981–82 would be about $75 to $80 per barrel. In addition, the energy-to-GDP ratio has declined by more than 50 percent since the early 1980s.

Firms also have more experience with energy price shocks. In the past, businesses might have understood how the shocks affected them directly, but they had difficulty understanding how the shocks affected the segments of the economy with which they interacted. The result was coordination problems across the economy that intensified the shocks' negative effects. With their experience with past shocks, today's firms can better predict how other segments of the economy will respond, reducing coordination problems.

The sectoral and regional economic effects of higher oil and natural gas prices will be uneven. Energy-intensive industries will incur higher costs and suffer reduced profit margins, while energy producers will be helped. Regions with the highest concentrations of energy-intensive industries will be hurt, and regions with energy-producing industries will be helped.

Research finds that 42 states and the District of Columbia are hurt by higher oil and natural gas prices. Eight states—Alaska, Louisiana, Colorado, New Mexico, North Dakota, Oklahoma, Texas and Wyoming—are helped.[8]

Looking Ahead

Oil prices are likely to remain elevated for the foreseeable future—about 35 percent higher than previously expected—and natural gas prices seem likely to remain about 30 percent above their historical relationship with crude oil prices. These prices are only a slight drag on economic activity and do not threaten the current recovery. The economic effects will be uneven across industries and regions. Energy-producing states with energy-intensive industries—such as Louisiana, New Mexico, Oklahoma and Texas—are likely to benefit slightly.

Higher energy prices are only a slight drag on economic activity and do not threaten the current recovery.

Although high energy prices do not threaten the recovery, Americans cannot be complacent about energy development. Many of the factors behind the recent surge in prices, such as China's rising oil demand and deliverability constraints for natural gas, will be with us for some time. Substantial worldwide investment in oil production, LNG facilities, pipelines and the electricity grid will be needed to keep energy prices from rising above their current course.

—Stephen P. A. Brown

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Notes

1 "Exchange Rates and World Oil Prices," by Stephen P. A. Brown and Keith R. Phillips, Federal Reserve Bank of Dallas *Economic Review*, March 1986.

2 "Have Oil and Natural Gas Prices Decoupled?" presented by Stephen P. A. Brown and Mine K. Yücel at a meeting of Energy Modeling Forum 20, Fuel Diversity, Natural Gas and North American Energy Markets, University of Maryland, July 2003.

3 *Balancing Natural Gas Policy—Fueling the Demands of a Growing Economy*, National Petroleum Council, Washington, D.C., September 2003. Other studies, including those conducted by the Energy Information Administration and a recent study by the Stanford Energy Modeling Forum, have also found the United States and Canada will become increasingly reliant on higher-cost sources of natural gas.

4 *Annual Energy Outlook 2004*, Energy Information Administration, Washington D.C., 2004; and *Fuel Diversity, Natural Gas and North American Energy Markets*, by Hillard G. Huntington, Energy Modeling Forum, Stanford University, 2003.

5 All previous empirical work on the economic effects of energy price shocks is based on the linked movements of oil and natural gas prices because historically these prices have moved together. To assess the economic effects of an independent natural gas price shock, I make use of the fact that natural gas represents 40 percent of combined U.S. consumption of oil and natural gas. The resulting estimates provide only an approximation because natural gas differs from oil in several respects. Most natural gas is produced domestically, and most oil is imported. In addition, natural gas is used primarily in the industrial and commercial sectors, and oil is used primarily in transportation. These differences may offset each other. See "U.S. Natural Gas Prices Heat Up," by Stephen P. A. Brown, Federal Reserve Bank of Dallas *Southwest Economy*, September/October 2003.

6 At the firm level, higher energy prices will lead to reduced energy use and lower output than was otherwise expected. The aggregate effect of an unfavorable supply shock on the economy is similar. An input scarcity, which is indicated (in this case) by higher energy prices, leads to a slowing of GDP growth and productivity, which leads to slower wage growth and an increase in the unemployment rate. If monetary policy remains neutral (which it has done historically), the price level will rise by about the same as GDP falls. Because consumers expect the near-term effects to be greater than the longer-term effects, they will attempt to smooth consumption by borrowing or saving less, which will boost short-term rates.

This analysis uses Robert Gordon's definition of neutral monetary policy, in which nominal GDP is held constant. See "Oil Prices and U.S. Aggregate Economic Activity: A Question of Neutrality," by Stephen P. A. Brown and Mine K. Yücel, Federal Reserve Bank of Dallas *Economic and Financial Review*, Second Quarter 1999.

7 See "Business Cycles: The Role of Energy Prices," by Stephen P. A. Brown, Mine K. Yücel and John Thompson, in *Encyclopedia of Energy*, vol. 1, Cutler J. Cleveland, editor, San Diego, Calif.: Elsevier, 2004, pp. 265–76.

8 See "Energy Prices and State Economic Performance," by Stephen P. A. Brown and Mine Yücel, Federal Reserve Bank of Dallas *Economic Review*, Second Quarter 1995.

Monetary Policy Prospects

(Continued from front page)

examination suggests that a wide range of policy outcomes are plausible over the next two years, depending on the strength of the recovery, the economy's growth potential and the sustainable unemployment rate—variables that economists can't, unfortunately, pin down with much confidence.

The Current Stance of U.S. Monetary Policy

The Federal Funds Rate. The Federal Reserve's principal policy tool is the interest rate on overnight loans between banks—the federal funds rate. The Federal Reserve's Federal Open Market Committee (FOMC) meets eight times each year to set a target for the funds rate. The Domestic Trading Desk at the Federal Reserve Bank of New York then adds or withdraws reserves from the banking system, as needed, to keep the actual funds rate near the agreed target level.

At 1 percent, the current funds-rate target is the lowest in over 45 years. However, the Great Depression and 1990s Japan teach us that low interest rates need not signal that policy is accommodative. To determine how much stimulus policy is providing, we must have a reference against which to compare the funds rate. To this end, we compare the funds rate with the yield on 10-year Treasury bonds and then with expected inflation.

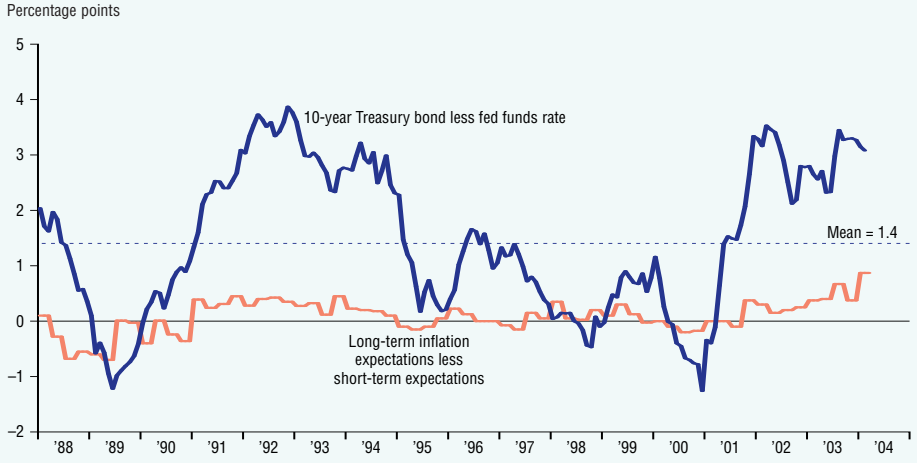
The Yield Curve. The real yield on 10-year bonds—the market yield less expected inflation—varies mostly for nonmonetary reasons (such as changes in long-term productivity trends). However, monetary policy actions *can* have a temporary impact on short-term real interest rates. A policy that drives short-term real rates down relative to the 10-year real rate encourages current investment and consumer-durables spending, stimulating real activity. Conversely, a policy that drives short-term interest rates up relative to 10-year real rates discourages current spending and restrains real activity.

Surveys of professional forecasters suggest that long-term and short-term inflation expectations have tended to move together over the past 20 years (*Chart 1*). Consequently, the gap between the market yields on 10-year bonds and federal funds—the slope of the market yield curve—has been a reliable indicator of the difference between real long-term and short-term interest rates and, by the

A wide range of policy outcomes are plausible over the next two years, depending on the strength of the recovery, the economy's growth potential and the sustainable unemployment rate.

Chart 1

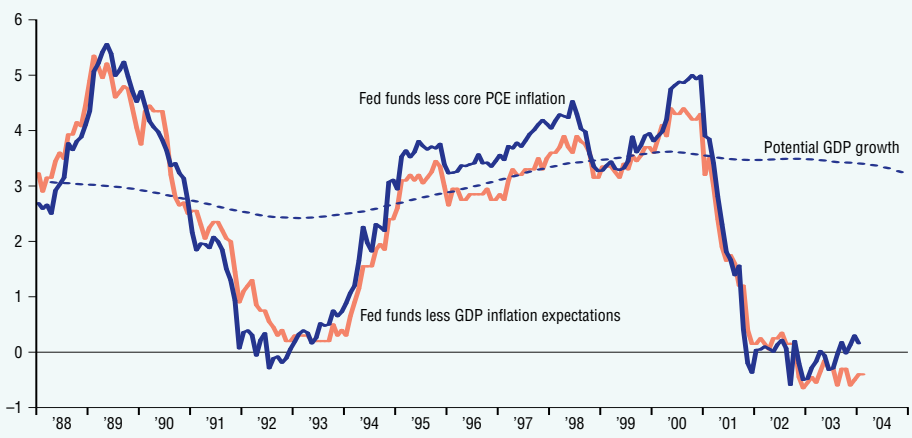
The Yield Curve Signals Highly Accommodative Policy



SOURCES: Federal Reserve Board; Federal Reserve Bank of Philadelphia.

Chart 2

The Real Funds Rate Signals Highly Accommodative Policy



SOURCES: Federal Reserve Board; Bureau of Economic Analysis; *Blue Chip Economic Indicators*; Congressional Budget Office.

The gap between the market yields on 10-year bonds and federal funds has been a good guide to the stance of monetary policy and a useful indicator of the economy's future strength.

arguments given above, has also been a good guide to the stance of monetary policy and a useful indicator of the economy's future strength.[2]

The dividing line between policy accommodation and policy restraint isn't always clear-cut and varies over time, but a negatively sloped yield curve (when the 10-year bond yield is below the federal funds rate) is a reliable signal of restraint and a precursor of sluggish output growth, if not outright recession. The yield curve was negatively sloped in 1989, 1998 and 2000 and almost turned negative in 1995. Currently, in contrast, the yield curve is far steeper than average, reflecting that the federal funds rate is unusually low relative to the 10-year Treasury rate. According to the yield curve, then, policy is highly accommodative.

The Real Funds Rate. It was argued above that by comparing the federal funds rate with a long-term bond rate, analysts approximate a comparison between the real federal funds rate and a real long-term interest rate. The approximation works well provided long-term and short-term inflation expectations move together. An alternative approach is to focus on the real federal funds rate alone, calculated as the difference between the market funds rate and a measure of short-term inflation expectations. Little is lost by excluding the long-term real interest rate from consideration provided it is fairly stable.

To calculate the real federal funds rate, we need a measure of inflation expectations. This article uses, first, actual core personal consumption expenditure (PCE) inflation over the prior 12 months and, second, consensus one-quarter-ahead gross domestic product (GDP) price inflation forecasts from the monthly Blue Chip survey of professional forecasters. The two resulting series for the real federal funds rate, plotted in Chart 2, are very much alike.

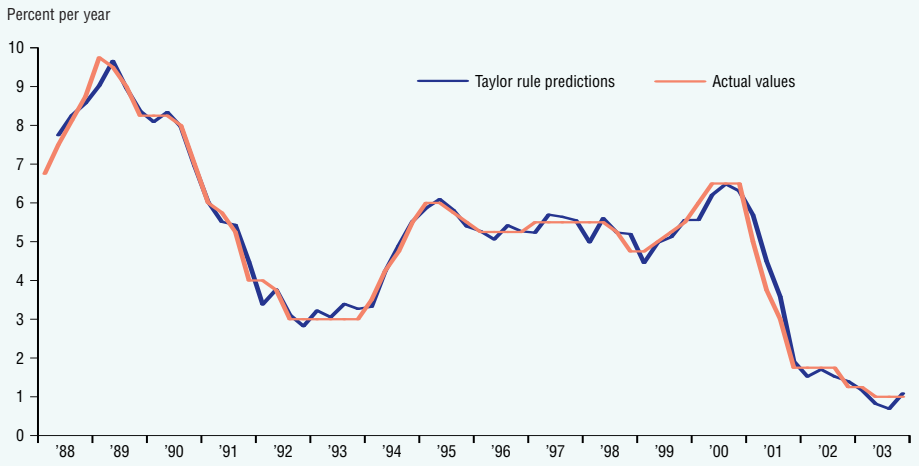
Chart 2 also includes Congressional Budget Office estimates of potential real GDP growth. A real funds rate below this level is probably not sustainable over the long term and signals accommodative policy.[3] Conversely, the further the real funds rate exceeds this level, the more likely it is that policy is restrictive. By this standard, the real funds rate was notably high in 1989 and at least somewhat elevated in 1995, 1998 and 2000. On the other hand, the real funds rate was exceptionally low in 1992–93. Similarly, after a sharp drop in 2001, the real funds rate was highly accommodative in 2002 and 2003.

Three Determinants of Fed Policy

Policymakers recognize that current policy is unsustainably accommodative but have argued that the Fed can afford to be patient in moving toward a more neutral policy stance. Without drawing conclusions on the merits of this posi-

Chart 3

The Taylor Rule Explains Fed Policy Fairly Well



SOURCES: Haver Analytics Inc.; author's calculations.

tion, we might hope to assess whether patience is consistent with the Federal Reserve's past behavior and to determine which economic variables are most likely to drive future policy changes. Of course, any such analysis will only be as accurate as our characterization of past actions. A good starting point for this characterization is the Taylor rule.

The Taylor Rule. The Federal Reserve has a dual mandate to seek full employment and price stability. Work done by Stanford professor John Taylor suggests that Fed policymakers take this dual mandate seriously. Taylor showed that a simple formula relating the federal funds rate to recent inflation and current economic slack does a fairly good job of explaining Fed policy decisions.[4] This formula has come to be known as the Taylor rule.

A number of researchers have found that the Taylor rule's performance improves if it is made forward-looking.[5] For example, the version of the Taylor rule estimated for this article explains policy using forecasted inflation instead of inflation in the recent past. Current slack—measured by the unemployment rate—is included in the funds-rate formula, but so is forecasted growth in the ratio of actual to potential real GDP, which determines future *changes* in slack.[6]

Just how important are each of the three funds-rate determinants? Suppose inflation forecasts for the coming year are revised upward by a full percentage point. The track record of the Greenspan Fed suggests the FOMC would respond initially with a 1-percentage-point tightening move, all else constant. If the inflation forecast remains elevated, the FOMC eventually hikes the funds rate by nearly 2 percentage points (*Table 1*). Similarly, a 1-percentage-point increase in the unemployment rate would initially be met

Policy is determined by economic time—the pace at which slack resources are put back to work and inflation pressures rise—rather than chronological time.

Table 1

Fed Funds-Rate Response to a 1-Percentage-Point Increase in Each of Three Determinants

	Fed Funds-Rate Response	
Determinant	Initial (percentage points)	Eventual (percentage points)
Expected inflation	+1.0	+1.9
Unemployment rate	–1.0	–2.1
Expected GDP growth	+0.4	+0.7

Even if policymakers followed a mechanical rule, small differences in forecasts and assumptions might produce strong differences of opinion about current and future policy.

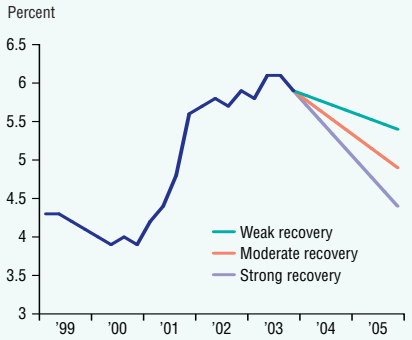
with a 1-percentage-point funds-rate cut, and eventually with just over a 2-percentage-point decline. Real growth prospects appear to play a smaller role in the policy process. Thus, a 1-percentage-point increase in expected GDP growth, relative to potential-GDP growth, triggers only a 40-basis-point immediate rate hike and a 70-basis-point long-run response. However, this last figure is misleading because it ignores potentially important indirect effects. Thus, if faster growth materializes, it will put gradual downward pressure on the unemployment rate and may eventually put upward pressure on inflation. The fall in unemployment and the rise in inflation trigger a second round of interest-rate hikes that are not captured in the table. A good portion of the remainder of this article will be devoted to correcting this omission.

Assessing the Modified Taylor Rule. First, though, let's put the modified Taylor rule to the test. As shown in Chart 3, the rule has done a good job, with errors generally a quarter point or less. However, the funds rate fell significantly faster than predicted in early 2001. From published FOMC minutes, it appears that policy was unusually aggressive during this period out of concerns that the stock market might act as a drag on consumer spending and that a large capital overhang might reduce the interest-rate sensitivity of investment spending. Since 2001, the rule has done fairly well. For example, the predicted value for the end of 2003 is 1.09 percent—quite close to the actual target value of 1 percent.

Clearly, the modified Taylor rule oversimplifies policymaking. It omits considerations that are, from time to time, important in policy discussions. More generally, the fact that the rule has done a good job of tracking the Federal Reserve's policy stance to date is no guarantee that it will continue to do so in the future. With the federal funds rate so near its zero lower bound, for example, it may be that policymakers would respond especially quickly or forcefully to any sign that the recovery might be weakening or that inflation might be falling. Moreover, the relationship between the unemployment rate and other measures of slack, such as manufacturing capacity utilization, appears to have shifted—partly, perhaps, because labor-force participation rates have become more sensitive to economic conditions.[7] These factors are not captured by the analysis that follows.

Chart 4

Strength of the Recovery Determines How Quickly the Unemployment Rate Declines



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

Alternative Unemployment-Rate and Inflation Paths

As noted above, the prospective growth in GDP relative to potential GDP may have important indirect effects on policy through future changes in the unemployment rate and inflation. Before we can get very far in our policy analysis, we must explore these indirect channels of influence.

The Unemployment Channel. As shown in Chart 4, the unemployment rate reached a cyclical peak of just over 6.1 percent in second quarter 2003 and averaged 5.9 percent in the fourth quarter. Contingent forecasts of the unemployment rate's future path are straightforward using Okun's law, which says we can expect to see the unemployment rate decline by about 0.5 percentage points per year for each 1 percentage point that real GDP growth exceeds potential-GDP growth.[8] If we have a weak recovery during 2004 and 2005, for example, with GDP growth only 0.5 percentage points above potential-GDP growth, then the unemployment rate will likely fall to 5.4 percent in fourth quarter 2005. If we have a strong recovery, with GDP growth 1.5 percentage points in excess of potential-GDP growth, the unemployment rate will fall to 4.4 percent. Finally, a moderate recovery, with

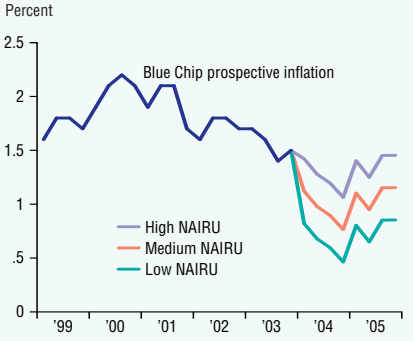
GDP growth 1 percentage point above potential-GDP growth, should produce a 4.9 percent average unemployment rate in fourth quarter 2005.

The Inflation Channel. Most empirical studies suggest that the unemployment rate is an important determinant of future changes in inflation. Unfortunately, the unemployment rate that is consistent with stable inflation is not constant over time, and shifts in this critical unemployment rate—called the non-accelerating inflation rate of unemployment, or NAIRU—are imperfectly understood and often not recognized until well after the fact.[9] Thus, policymakers' inflation expectations depend on their beliefs about the NAIRU as well as on their beliefs about the future path of the unemployment rate.

Chart 5 shows four-quarter-ahead GDP price inflation forecasts from the Blue Chip survey of professional forecasters. For example, the plot shows that at the end of 2003, Blue Chip forecasters were expecting 1.5 percent inflation in 2004. The chart also contains three alternative inflation simulations, which are contingent on the strength of the economic recovery (and, hence, the path of the unemployment rate) in a manner consistent with historical experience.[10] Each simulation assumes a 5.0 percent NAIRU. Each shows a V-shaped pattern, with prospective inflation first dipping and then turning upward. In no case does forecasted inflation ever drop below 0.5 percent per year or rise above 1.5 percent per year.

Chart 6

Inflation Prospects and the NAIRU



SOURCES: *Blue Chip Economic Indicators*; author's calculations.

Chart 6 shows the sensitivity of prospective inflation to the value of the NAIRU. The simulated inflation paths labeled "high NAIRU," "medium NAIRU" and "low NAIRU" assume 5.5 percent, 5.0 percent and 4.5 percent NAIRUs, respectively, beginning in 2004.[11] In each case, the strength of the recovery is "moderate." According to the simulations, a 0.5-percentage-point difference in the NAIRU translates into a 0.3-percentage-point difference in inflation that remains constant throughout the simulation period. (If the simulated paths were extended further, gaps between them would begin to widen.) Comparing Charts 5 and 6, prospective inflation is more sensitive, in the near term, to the NAIRU assumption than to the strength-of-recovery assumption. Even so, inflation stays between 0.5 and 1.5 percent during the entire simulation period, regardless of the NAIRU. Moreover, the range of inflation forecasts in fourth quarter 2005 is equally wide in the two charts.

Policy Implications

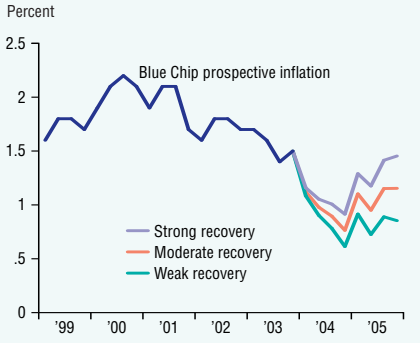
The Strength of the Recovery and the Funds Rate. We've looked at how the unemployment rate and inflation might behave, depending on whether the recovery is weak, moderate or strong. What does the modified Taylor rule say about the federal funds rate? Chart 7 shows the wide range of funds-rate paths implied by the rule, depending on the strength of the GDP growth relative to potential-GDP growth in 2004 and 2005. (All three simulations assume a 5.0 percent NAIRU.) We've seen that a weak recovery produces only a very modest decline in the unemployment rate (see *Chart 4*), while prospective inflation drops initially and then partially rebounds (see *Chart 5*). Fed policymakers respond by lowering the target funds rate to zero by the end of 2004 and then gradually increasing the funds rate to just under 75 basis points in fourth quarter 2005. In contrast, the strong recovery scenario produces an immediate 25-basis-point funds rate hike, followed by a series of additional rate increases. By the end of 2005, the funds rate is over 4 percent. Finally, with a moderate recovery the Fed holds the funds rate steady through the end of 2004, then gradually raises rates to about 2.5 percent in fourth quarter 2005.

Comparing the weak recovery and strong recovery scenarios, a 1-percentage-point difference in output growth relative to potential output growth produces roughly a 3.5-percentage-point difference in the funds rate over two years. Thus, indirect effects quintuple the "eventual" impact of a change in expected output growth, as listed in Table 1.

The NAIRU and the Federal Funds Rate. Finally, Chart 8 examines the sensitivity of the modified Taylor rule's prescriptions to the value of the NAIRU, given a moderate recovery. Results depend very much on whether policymakers are aware that a NAIRU shift has occurred. An increase in the NAIRU from 5.0 to 5.5 percent produces the "high

Chart 5

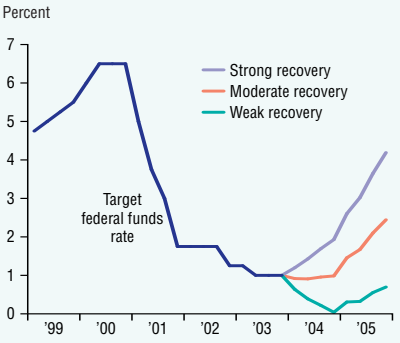
Inflation Prospects and the Strength of the Recovery



SOURCES: *Blue Chip Economic Indicators*; author's calculations.

Chart 7

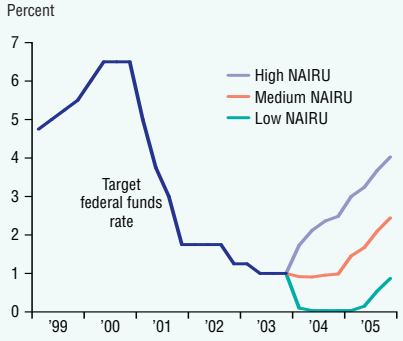
Policy Impact of the Recovery's Strength Builds Over Time



SOURCES: Haver Analytics Inc.; author's calculations.

Chart 8

Perceived NAIRU Has a Powerful, Immediate Impact on Policy



SOURCES: Haver Analytics Inc.; author's calculations.

NAIRU" policy response in the chart, assuming that Fed policymakers are immediately aware of what's happened. The funds rate is given an immediate 75-basis-point boost, and then rises steadily to 4.0 percent in fourth quarter 2005. Conversely, a sudden decrease in the NAIRU to 4.5 percent (the "low NAIRU" scenario) causes the Fed to slash the funds rate to zero and hold it there through first quarter 2005. Even at the close of 2005, the funds rate is less than 1 percent. Finally, if policymakers believe the NAIRU is 5.0 percent—regardless of whether that view is correct—the funds rate follows the middle path in Chart 8, which is identical to the path labeled "moderate recovery" in Chart 7.

Looking at Charts 7 and 8, it's easy to understand why the FOMC revised its policy directive to eliminate language that suggested policymakers were unconditionally committed to a 1 percent federal funds rate "for a considerable period." There are clearly plausible scenarios under which policymakers would not want to have their hands tied. Policy is determined by economic time—the pace at which slack resources are put back to work and inflation pressures rise—rather than chronological time.

Summary and Conclusions

By several measures, U.S. monetary policy is currently highly accommodative. Short-term interest rates will have to rise substantially at some point because a federal funds rate held permanently at 1 percent is inconsistent with the current level of inflation. The interesting question isn't *whether* interest rates are going to rise but how soon they'll rise and how fast they'll go up once they start. Policy simulations presented here suggest the answers depend strongly on how much slack is thought to remain in the economy and on how quickly slack is eliminated in coming quarters. The fact that short-term interest rates must eventually rise does not necessarily mean that they should increase immediately or sharply. By imposing various simplifying assumptions, this article has, if anything, understated uncertainty about the future course of policy.

An important corollary is that even if Fed policymakers followed a mechanical rule—which they emphatically do not—small differences in economic forecasts and assumptions might produce strong differences of opinion about current policy and about how policy ought to evolve in the future.

—Evan F. Koenig

Koenig is a senior economist and vice president in the Research Department of the Federal Reserve Bank of Dallas.

Notes

[1] See Alan Greenspan's testimony before the Committee on Financial Services, U.S. House of Representatives, February 11, 2004, and the public statement released by the FOMC following its May 2004 meeting, www.federalreserve.gov.

[2] The Conference Board, for example, includes the slope of the market yield curve in its Composite Leading Index.

[3] Under standard technology assumptions, capital income should equal a constant fraction of GDP. Hence, the present discounted value of the future stream of capital income would be infinite if the real interest rate were expected to remain below the economy's real growth rate. The usefulness of the interest-rate–growth-rate comparison is less clear in an economy subject to uncertainty. See "Assessing Dynamic Efficiency: Theory and Evidence," by Andrew B. Abel, N. Gregory Mankiw, Lawrence H. Summers and Richard J. Zeckhauser, *Review of Economic Studies*, vol. 56, January 1989, pp. 1–20.

[4] "Discretion Versus Policy Rules in Practice," by John B. Taylor, Carnegie-Rochester Conference Series on Public Policy, vol. 39, December 1993, pp. 195–214.

[5] Early examples of the forward-looking approach are "Modeling the Fed: A Forward-Looking Monetary Policy Reaction Function," by Stephen K. McNees, Federal Reserve Bank of Boston *New England Economic Review*, November/December 1986, pp. 3–8, and "A Forward-Looking Monetary Policy Reaction Function: Continuity and Change," by Stephen K. McNees, Federal Reserve Bank of Boston *New England Economic Review*, November/December 1992, pp. 3–13.

[6] Details are given in the forthcoming "Monetary Policy Prospects," by Evan F. Koenig, Federal Reserve Bank of Dallas *Economic and Financial Policy Review*, www.dallasfedreview.org.

[7] See "New Economy, New Recession?" by Evan F. Koenig, Thomas F. Siems and Mark A. Wynne, Federal Reserve Bank of Dallas *In Depth*, March 2002, www.dallasfed.org/research/indepth/2002/id0203.pdf.

[8] See the intermediate macroeconomics textbook *Macroeconomics*, 9th edition, by Robert J. Gordon, Boston: Addison Wesley, 2003.

[9] The NAIRU is often associated with the accelerationist-Phillips-curve inflation model, which assumes that monetary policy affects inflation only indirectly, by creating or removing economic slack. This article interprets the NAIRU more broadly and, in particular, does not rule out a direct, inflation-expectations channel for monetary policy. For example, an inflation scare (fear that the Fed's commitment to a low long-run average inflation rate might be wavering) would have the same effects as a high NAIRU in the simulations presented here.

[10] Koenig (forthcoming) gives details of the inflation equation used in the simulations.

[11] The NAIRU is assumed to equal 5.0 percent in 2002 and 2003—an estimate taken from Gordon (2003).

The 'Curse' of Venezuela

Since being elected president of Venezuela in 1998, populist Hugo Chavez has evoked strong feelings, many of them negative. Chavez's detractors charge that he has maneuvered the country into autocracy, but instead of waiting to beat him in the next election, they attempted to oust him in a military coup. Since the coup's failure, Venezuela has reeled from economic downturns in the wake of national strikes and, it is widely complained, Chavez's counterproductive meddling in the national oil company. Stories about political standoffs over recent opposition efforts to organize a recall election fill the country's newspapers.

Most media coverage characterizes Venezuela's political strife as either a situation that would not have materialized had someone other than Chavez been elected or as a struggle between rich and poor. Individual players certainly shape Venezuela's political battles. And struggles between the rich and poor are a crucial issue. However, these factors are symptoms of a larger phenomenon that the technical economics literature calls the "resource curse."

The resource curse literature conflicts with the conventional idea that natural resource wealth contributes to economic expansion. According to this literature, abundant natural resources impose economic and political distortions that retard economic growth in the long run, even though they can produce short-run booms. In Venezuela's case, the resource is oil.

An important observation by resource curse economists is that a positive relationship generally does not exist between a nation's natural resources and other forms of economic wealth. Much more telling, resource-rich countries grow slower on average than resource-poor countries. The term *on average* is a conservative one. In fact, very few resource-rich countries grow as fast as the average resource-poor country.

How It Works

If all this means that a large natural resource base is somehow a curse, how does the curse work? In the simplest, purely economic version of the curse story, a boom in natural resources generates inrushes of financial capital. When the money comes in, prices for nontradable goods and services—ranging from office buildings to farmland to haircuts—go up and stay there.[1]

When the prices of these goods and services are bid up beyond a certain point, types of production that use them can no longer compete internationally. Export-based agricultural production falls off. Export-based manufacturing—the growth engine of the Asian tigers—never buds and certainly never blooms. Governments often try to "sow" their oil gains in subsidies to manufacturing and create other market distortions to offset the cost disadvantages infant industries face. The infants never grow up, although with continued government subsidies, they can grow very fat.

Price distortions are not the only deterrents to broad economic development in resource curse countries. Thorvaldur Gylfason, a professor at the University of Iceland, finds that a nation's educational attainment is negatively related to the share of natural resources in national wealth.[2] Education levels have important implications for future industry mix and so, for growth. Workers with more education learn faster on the job. Education shifts comparative advantage away from resource production, where learning by doing is less important, toward manufacturing and services, where it is very important.

Partly as a result of these factors—the crowding out of nonresource industries, the discouragement of education that could allow advancement in manufacturing and services—players in resource-based countries focus more on fighting over pieces of the nation's economic pie and less on efforts to make the pie bigger.

In a book on Venezuela published before Chavez became president, Stanford University professor Terry Karl argues that "the skewed development produced by petroleum fosters the belief of state managers that market mechanisms do not function in a manner compatible with socially approved goals." This contributes, she says, to a psychology that "admires and rewards those who can 'milk the cow' without effort rather than those…in less remunerative but more productive activities."[3]

Moreover, the government focuses its tax collection on energy, because such efforts are politically easier and cheaper, rather than on the economy as a whole. So when oil prices fall, significant fiscal problems emerge. When oil prices boom, resource curse countries spend even more than their increased revenues in hopes of establishing a non-oil production base that will save them when the oil runs out.

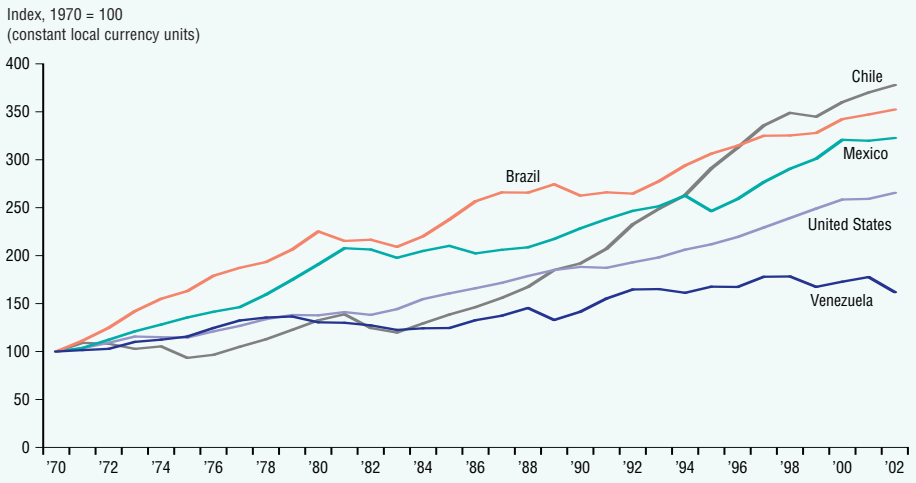
How Venezuela Stacks Up

Consistent with the resource curse literature, Venezuela has grown slowly compared with other Western Hemisphere countries. Chart 1 shows indexes of real gross domestic product for Brazil, Chile, Mexico, the United States and Venezuela. Note the uptick in Venezuelan GDP after 1973 with the first major oil price jump under the Organization of the Petroleum Exporting Countries and the brief growth following the 1979 oil price shock.

Notice, however, that over the longer run Venezuela's economy has experienced slower growth than the other economies. Even though Mexico, like Venezuela, is one of the world's 10 largest petroleum exporters, Mexican petroleum exports are typically about two-thirds of Venezuela's. Moreover, Mexico's population is nearly four times Venezuela's, and manufacturing exports have long played a more important role for Mexico.

Chart 1

Venezuela Trails Other Countries in Real GDP Growth



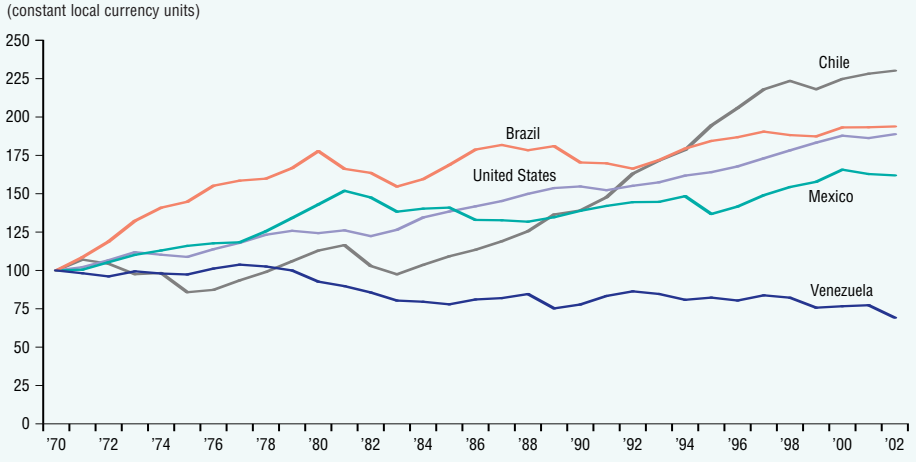
SOURCE: World Bank.

While contrasts between Venezuelan and other nations' GDP growth are striking, Venezuela's absolute declines in real GDP per capita are grimmer still (*Chart 2*). Between 1980 and 1999, the year Chavez took office, real income per capita fell about 18 percent. From 1980 to 2002, income per capita dropped 25 percent. In 1988, the percentage of Venezuelans with 12 years of schooling living below the poverty line was 2.4. By 1998, when Chavez was elected president, the percentage had risen to 18.5.

How much was oil to blame for slow Venezuelan growth and declining per capita income? While with the Center for International Development at Harvard University, Jeffrey Sachs and Andrew Warner estimated that during 1970–90, Venezuela's real GDP would have grown an average 0.77 percent faster per year without oil than with it.[4] By the end of this period, GDP would have been 14 percent higher if Venezuela had not been an oil-exporting country.

Chart 2

Growth in Real GDP per Capita Even Worse



SOURCE: World Bank.

Trapped in a Feedback Loop

In sum, Venezuela has been caught in a feedback loop for decades. The economic peculiarities of a natural-resource-based economy—in which not only price relationships but even educational incentives keep the country from moving in a more productive direction—result in a political system that perpetuates the economic system. The political system then feeds back into the resource-based economic focus. Until the late 1990s, revenue and spending were organized to distribute the pie with a minimum of conflict rather than make the overall system ultimately more competitive.

For 40 years, Venezuela's principal political parties had a formal accord—the Plan de Punto Fijo—to share power and economic largesse. As the country's economy worsened and opportunities for accommodation eroded with the decline in per capita income, the old arrangement collapsed. Chavez's election was an important manifestation of this breakdown; he did not run as a candidate of the Plan de Punto Fijo parties.

Compromise has been replaced by struggle, but the struggle involves the same issues accommodation did when economic circumstances were better—the same political focus, just new ways of expressing it. The current polarization differs from the old accommodation, but it is the old feedback loop that created it, much more than any one, two or 100 individuals.

—William C. Gruben
Sarah Darley

Gruben is a vice president and senior economist and Darley a research assistant in the Research Department of the Federal Reserve Bank of Dallas.

Notes

[1] Jeffrey D. Sachs and Andrew M. Warner provide strong econometric evidence that after adjusting for other relevant factors, prices are significantly higher in resource-dominated economies. See "The Curse of Natural Resources," *European Economic Review*, vol. 45, May 2001, pp. 827–38.

[2] "Natural Resources, Education, and Economic Development," by Thorvaldur Gylfason, *European Economic Review*, vol. 45, May 2001, pp. 847–59.

[3] *The Paradox of Plenty: Oil Booms and Petro-States*, by Terry Lynn Karl, Berkeley: University of California Press, 1997.

[4] "The Big Push, Natural Resource Booms and Growth," by Sachs and Warner, *Journal of Development Economics*, vol. 59, June 1999, pp. 43–76.

Regional Update

The state's economic recovery remains on track as employment continues to post gains. While the unemployment rate increased and the Texas Leading Index weakened, these indicators don't cast doubt on the state's continuing recovery.

Since the beginning of the year, Texas' labor market has added 21,500 jobs. Driving these gains is the trade, transportation and utilities sector, which alone contributed 11,300 jobs. The information sector appears to have finally turned the corner; it experienced no job losses in January and February and grew 2 percent in March.

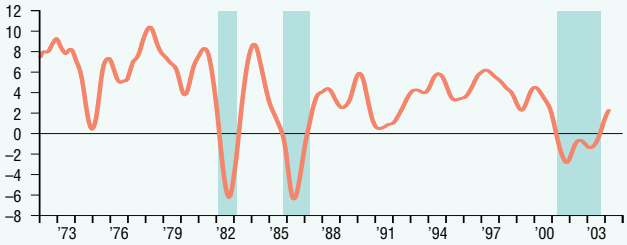
The Texas Coincident Index has remained in positive territory since October 2003 and has picked up pace, growing 2.2 percent in March. Because the index is constructed using payroll employment, gross state product and the unemployment rate, it provides an overall assessment of how the Texas economy is faring. The direction and momentum of the index strongly suggest the region's economy is improving.

Although the Texas unemployment rate increased in March from 6.1 percent to 6.2 percent, it is overshadowed by more encouraging evidence in initial unemployment claims, which declined by 24.3 percent.

Improvements in new unemployment claims and the help wanted index also lessen concern about the downswing in average weekly hours, which is mainly responsible for the recent weakening of the leading index. Given that losses in the leading index are not broad based, the weakening does not pose a serious threat to an ongoing recovery.

—Priscilla Caputo

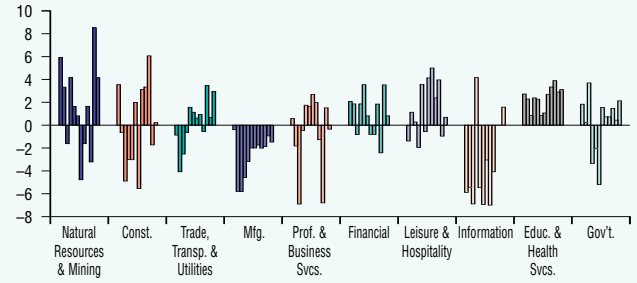
Texas Coincident Index



*Month-over-month, seasonally adjusted, annualized rate.

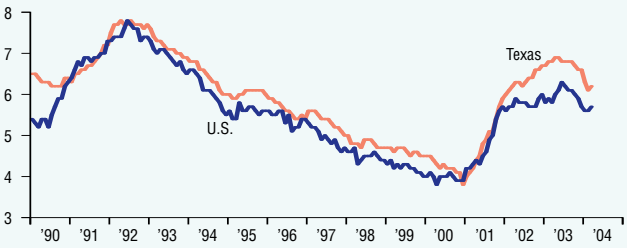
NOTE: Shaded areas indicate recession.

Texas Industry Employment



*Month-over-month, seasonally adjusted, annualized rate, through March 2004.

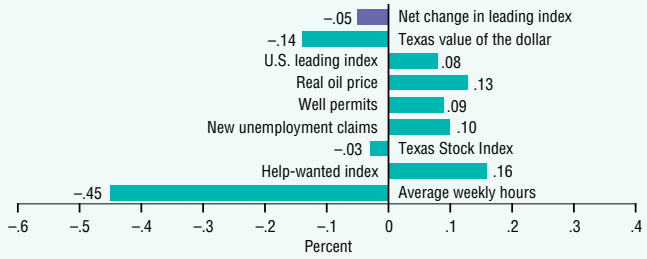
Texas and U.S. Unemployment Rate



*Seasonally adjusted.

Net Contributions of Components to Change in Leading Index

January–March 2004



Regional Economic Indicators

	Texas Leading Index	TIPI† total	TEXAS EMPLOYMENT* Mining	Construction	Manufacturing	Government	Private service-producing	TOTAL NONFARM EMPLOYMENT* Texas	Louisiana	New Mexico
3/04	117.1	127.2	146.2	550.3	884.3	1,650.5	6,157.9	9,390.8	1,909.2	784.9
2/04	117.2	127.6	145.7	550.2	885.4	1,647.6	6,151.7	9,382.2	1,909.7	782.2
1/04	117.2	127.6	144.5	551.0	886.1	1,647.0	6,143.0	9,373.4	1,910.5	780.4
12/03	118.0	127.2	144.8	548.3	887.5	1,645.0	6,141.8	9,369.3	1,900.7	782.4
11/03	117.0	127.2	144.7	546.8	889.0	1,644.0	6,135.6	9,361.9	1,904.7	779.8
10/03	116.1	127.8	145.0	545.4	890.3	1,643.0	6,127.6	9,353.0	1,905.9	778.1
9/03	114.8	127.8	145.4	548.0	891.8	1,640.9	6,116.4	9,344.4	1,900.0	776.3
8/03	114.5	127.4	145.3	547.1	893.3	1,648.2	6,113.2	9,349.0	1,894.7	776.7
7/03	114.8	127.5	145.1	548.5	895.7	1,651.0	6,111.0	9,353.2	1,894.3	775.7
6/03	113.8	127.2	144.4	549.9	899.2	1,655.7	6,108.2	9,359.5	1,903.7	773.2
5/03	114.1	127.6	144.6	552.2	903.7	1,650.7	6,120.2	9,373.5	1,905.5	773.2
4/03	112.7	127.5	144.3	552.5	908.2	1,650.4	6,124.3	9,381.7	1,904.2	772.7

* In thousands. † Texas Industrial Production Index.

For more information on employment data, see "Reassessing Texas Employment Growth" (*Southwest Economy*, July/August 1993). For TIPI, see "The Texas Industrial Production Index" (Dallas Fed *Economic Review*, November 1989). For the Texas Leading Index and its components, see "The Texas Index of Leading Indicators: A Revision and Further Evaluation" (Dallas Fed *Economic Review*, July 1990). Online economic data and articles are available on the Dallas Fed's Internet web site, www.dallasfed.org.

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