



ISSUE 5
SEPTEMBER/OCTOBER 2008

Southwest Economy

FEDERAL RESERVE BANK OF DALLAS

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President's Perspective



We should never discount the ability of American entrepreneurs to solve our most complex problems—even those that plague us today.

Paul Newman's recent passing at age 83 brought to mind the down-to-earth wisdom in something the great actor once said: "If you're playing a poker game and you look around the table and can't tell who the sucker is, it's you."

These days, it appears that financial market participants are spending more time looking around the table than looking for good investments. Their insecurity led to a freezing up of the credit markets, the lifeblood of capitalism. Our economy cannot operate when funds do not flow, and too many players are hoarding their chips, checking their bets and reducing the overall size of the pot.

Willingness to take on risk has effectively dried up, leading to significant liquidity squeezes and funding pressures. This distrust has hindered capital markets and, by extension, the whole economy.

The Federal Reserve is doing what a central bank is called to do at a time like this: We are acting as the lender of last resort, serving as a bridge to the time when confidence is restored and capital begins to flow again.

History has seen many booms propelled by greed and busts born of fear. But the U.S. economy has always risen above the turbulence and uncertainty.

At times like these, we would do well to heed the advice of the late Marcus Nadler—a renowned business adviser, professor and foreign division chief at the Federal Reserve Board:

- You're right if you bet that the U.S. economy will continue to expand.
- You're wrong if you bet that it is going to stand still or collapse.
- You're wrong if you bet that any one element of our society is going to run or wreck the country.
- You're right if you bet that those in business, labor and government are sane, reasonably well informed and decent people who can be counted on to find common ground among all their conflicting interests and work out a compromise solution to the big issues that confront them.

These four propositions—known as Old Doc Nadler's Remedy—were not written for a recent edition of the *New York Times*. They were crafted some 80 years ago to counter the pessimism that gripped our financial system following the crash of 1929. They serve as a reminder that we should never discount the ability of American entrepreneurs to solve our most complex problems—even those that plague us today.

A handwritten signature in dark ink that reads "Richard W. Fisher". The signature is written in a cursive, flowing style.

Richard W. Fisher
President and CEO
Federal Reserve Bank of Dallas



Retail sales can tell us a lot about what's going on in an economy, largely because consumer spending represents more than two-thirds of U.S. gross domestic product.

New Dallas Fed Indicator Tracks Texas Retail Sales

By Jesus Cañas and Keith R. Phillips

While many of the same forces shape the Texas and U.S. economies, important structural differences sometimes put the two on different paths. In the first eight months of 2008, for example, jobs grew at an annual pace of 2.1 percent in Texas but declined 0.6 percent in the U.S.

The employment data suggest Texas has been outperforming the nation this year. However, it's best to look at a variety of indicators to get a wider view of the economic landscape.

Retail sales can tell us a lot about what's going on in an economy, largely because consumer spending represents more than two-thirds of U.S. gross domestic product. At the state level, where broadly based economic data are harder to come by, retail sales can provide crucial information on economic conditions.

Analysts used to rely on monthly state retail sales data from the U.S. Department of Commerce, which based its estimates on a survey of retailers. But the federal agency stopped publishing the series in 1996.

Currently, the Texas Comptroller of Public Accounts generates retail sales estimates based on tax forms required for both taxable and nontaxable sales. The comptroller's data come out quarterly, limiting their usefulness as a barometer of current economic conditions. Using city tax rebates and other data, we attempt to improve the series by making it monthly. The Dallas Fed's Texas retail sales estimate suggests that consumer spending has held up better in Texas than in the rest of the nation.

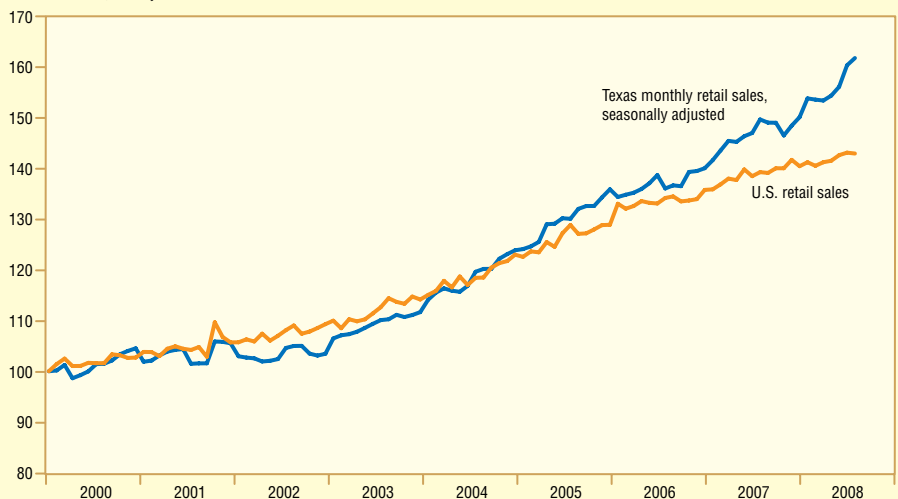
From December to August, estimated retail sales increased at an annual rate of 10.1 percent in the state, compared with 0.8 percent for the nation (*Chart 1*). Much of the growth for Texas and the U.S. took place in May, June and July, reflecting both the sharp rise in energy prices and the impact of government stimulus checks.

Looking at Retail Sales

Texas retail sales totaled \$371 billion in 2007, according to the comptroller. The two largest categories were general merchandise

Chart 1
Retail Sales Stronger in Texas Than Nation

Retail sales index, January 2000 = 100



SOURCES: Census bureau for U.S. retail sales; authors' calculations for Texas monthly retail sales.

stores at \$71.4 billion and motor vehicle sales at \$67.9 billion. Together, they made up about 38 percent of retail sales. Adding food and beverages, the third-largest category, gives us about half the state's retail sales (*Chart 2*).

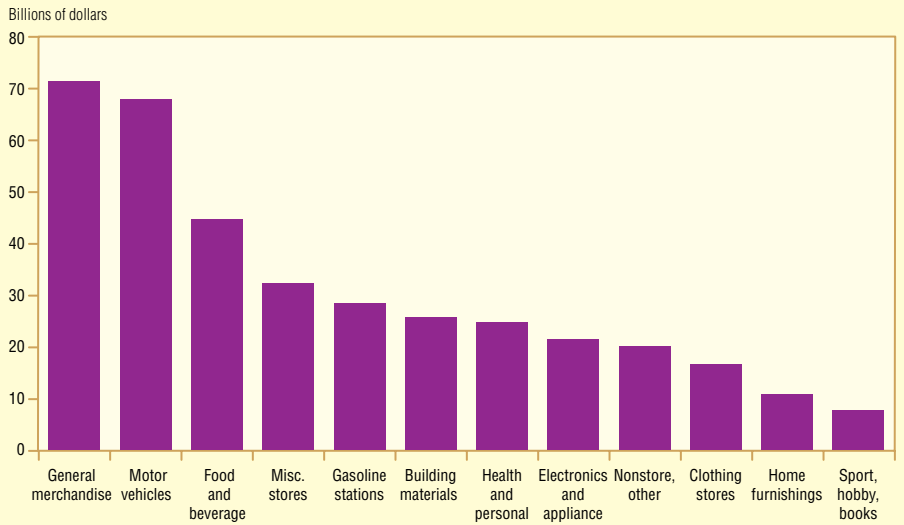
We use the existing retail sales data to construct a monthly indicator. To build a long-term, consistent database, we adjust for a shift in 1997 from the U.S. Standard Industrial Classification (SIC) to the North American Industry Classification System (NAICS). Most important, we restore the subcategory of eating and drinking places to retail sales for each quarter, giving us a continuous series since 1978.

We distribute quarterly retail sales among the months in each quarter by using monthly measures as a guide.¹ The best—and most direct—measure is sales tax rebates from the state to cities. Businesses send sales tax collections to the comptroller's office, which separates cities' sales taxes from the state's receipts and returns them to the cities.

The rebates are a product of retail sales and tax rates. We take into account tax changes to make sure our measure reflects variations in taxable sales, not rates. Rebates generally reflect sales with a two-month lag, so we adjust the data accordingly.

The rebates have a strong but imperfect relationship with retail sales. One weakness is that food and prescription drugs aren't taxed, so city sales tax rebates

Chart 2
General Merchandise, Autos Represent Largest Share of Texas Retail Sales



SOURCE: Texas Comptroller of Public Accounts, 2007 data.

don't reflect this spending.

We find two other monthly measures useful in estimating monthly retail sales—employment in retail trade and the combined consumer price indexes for Houston and Dallas–Fort Worth. These series are seasonally adjusted to focus more directly on trend and business cycle relationships.

We find a strong relationship between movements in quarterly retail sales and adjusted sales tax rebates, retail employment and Houston/D–FW CPI. For example, all

four measures weakened in 2001 (*Chart 3*). Sales tax rebates and retail employment remained weak until early to mid-2003, when the Texas economy began to turn up. Retail sales followed a similar pattern, remaining soft until early 2003.

Texas Retail Sales

Texas entered 2008 with economic activity slowing to a pace below its long-term trend but well above the national average.² The housing sector was healthier than the national average, high-tech had held up fairly well over the previous 12 months and the Texas energy sector was booming.

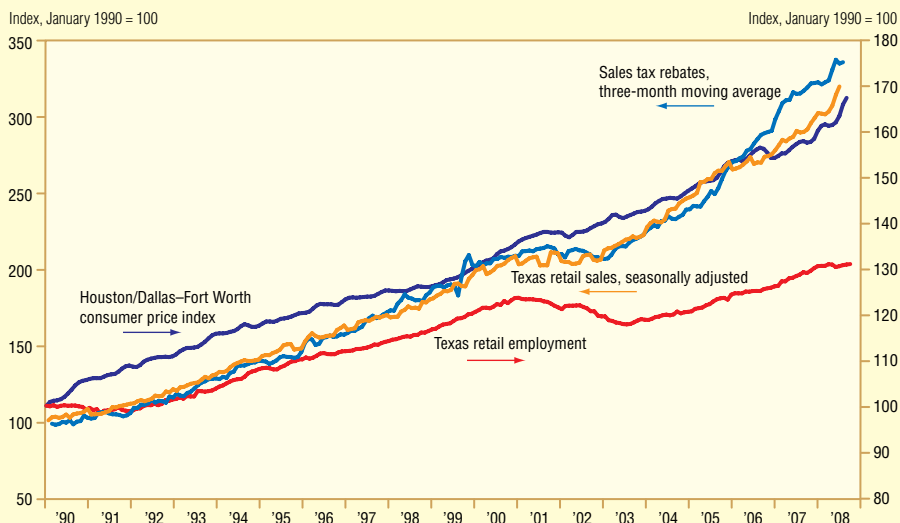
High energy prices are a net benefit to Texas' economy, so it's likely that the state's consumers, expecting growth to continue, spent more and saved less of their stimulus checks. The retail sales data we estimate not only support the notion that Texas is growing faster than the nation but also suggest Texas consumers feel confident enough to increase spending.

The data imply that consumer confidence in Texas likely hasn't fallen as much as official surveys indicate. The Conference Board Consumer Confidence Index for the west south central region, which includes Texas, Arkansas, Louisiana and Oklahoma, declined 21 percent in the first eight months of 2008.

Some of the strength in retail sales in Texas and the nation has been due to inflation. The U.S. price deflator for retail

(Continued on back page)

Chart 3
Several Monthly Indicators Correlated With Retail Sales



SOURCES: Bureau of Labor Statistics for retail employment and Houston/Dallas–Fort Worth CPI; Texas Comptroller of Public Accounts for rebates; authors' calculations for Texas monthly retail sales.

QUOTABLE: “While job losses have been widespread in the nation, they’ve so far been limited to manufacturing and information in Texas.”

—Anil Kumar, Senior Research Economist



HURRICANE SEASON: Ike Deals Severe Blow to Texas Economy

Hurricane Ike roared ashore at Galveston on Sept. 13 with winds of 110 mph. Initial estimates put insured damage at \$7 billion to \$12 billion, making Ike one of the costliest Atlantic storms in history.

Hardest hit were Galveston, Houston and the Beaumont–Port Arthur area, which represent 30 percent of the state’s output and 26 percent of its jobs. Many firms suffered property losses. Widespread power outages, phone disruptions, road closures and airport shutdowns curtailed business. Many Galveston companies remained closed a month after the storm.

The Texas Workforce Commission estimates that 34,756 Ike-related initial unemployment claims were filed

for the week ending Sept. 27, with 17,189 more filed by Oct. 4. About 65 percent of the Texans filing in these two weeks made Ike-related claims.

Ike-affected counties suffered substantial crop and livestock losses. About 4,000 cattle were killed. Many rice fields flooded. But the losses won’t have a big impact on Texas’ overall agricultural production.

As of Oct. 6, 46.2 percent of the Gulf of Mexico’s crude oil production and 40.6 percent of its natural gas production were still shut-in. However, the Gulf’s energy infrastructure remained intact after Ike, and the storm had minimal impact on energy prices.

—Mike Nicholson



VENTURE CAPITAL: Texas Investment Funding Slips in 2nd Quarter

Venture capital companies closed 36 Texas deals and provided \$257 million in financing during the second quarter. Funding activity was down 17 percent (\$54 million) from the second quarter of 2007 and 35 percent (\$140 million) from the first quarter of 2008.

In the first six months of the year, Texas firms received a total of \$654 million, slightly above the average for the past six years.

Texas received about 4 percent of the nation’s total venture capital funding from January through June, ranking third behind California’s 50 percent and Massachusetts’ 10 percent. Since 2000, Texas has averaged about 5 percent

of total U.S. venture capital investment.

Nearly 38 percent of Texas venture capital investment during the first half of 2008 was directed to the industrial and energy sector, up from only 6 percent in 2002. The sharp rise in energy prices has fueled alternative energy research, providing a promising outlet for venture capital firms during a time of economic uncertainty.

Formerly stalwart sectors for venture capital investing fell out of favor. Telecom, which received 20 percent of investment in the first half of 2007, declined to 4 percent in the first six months of 2008.

—Jackson Thies



EXPORTS: Latin America, China Lead Texas Surge in Overseas Sales

Texas exports rose more than 5 percent in the second quarter, led by sales to Latin America and China.

Year-over-year, the state’s exports are up almost 14 percent, accounting for 15 percent of total U.S. exports in the April-to-June period.

Real exports increased more than 17 percent to Latin America in the second quarter. Sales rose 21 percent to Brazil, which buys 3 percent of Texas’ exports. Chemicals were the top Texas export to Latin America, making up 42 percent of sales to Brazil and 35 percent to both Venezuela and Colombia.

Exports to China were up 8 percent in the second quarter, led by a 47 percent increase in shipments of agricultural products. Double-digit increases in chemicals and

modest growth in computer and electronic products contributed to the gains. These two industries accounted for half of Texas’ exports to China.

Sales to the European Union, Canada and Mexico, which represent 54 percent of Texas exports, rose modestly in the second quarter. Exports of petroleum and coal products to Mexico jumped 60 percent, driving the industry’s Texas exports up nearly 37 percent.

Second-quarter exports benefited from the dollar’s decline against the currencies of Texas’ trading partners. Over the summer, however, the dollar has strengthened and foreign economies have weakened, suggesting Texas’ export growth is likely to slow.

—Jessica J. Renier

As financial markets turned gloomy in August 2007, Dallas Fed business contacts began to note postponed commercial real estate deals, with scattered reports of lenders backing out, especially on larger transactions. Most of the executives expected credit disruptions would be brief and lending and investment would rebound in a short time.

Any hopes for transitory troubles in credit markets were dispelled as conditions worsened in 2008. The nation saw widening interest rate spreads and further reductions of liquidity in the securities market, which through 2007 had financed a growing share of the commercial real estate industry's investment in office, industrial, retail and apartment properties (*Chart 1*).

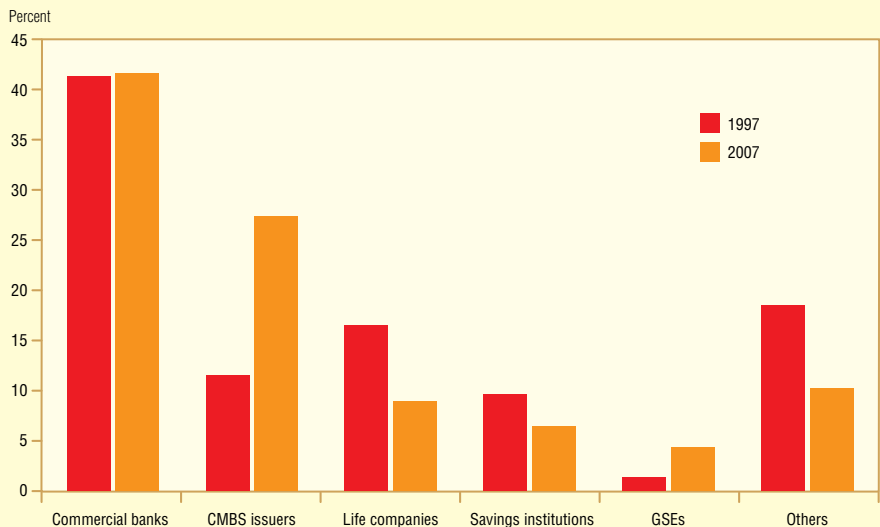
The commercial-mortgage-backed securities (CMBS) debt market has virtually dried up in 2008, creating a difficult situation for real estate investment activity. Global CMBS issuance fell to \$28.1 billion through mid-October, compared with \$315.4 billion for all of last year. Meanwhile, U.S. CMBS volumes shrank to \$12.1 billion from \$230.2 billion.¹

Other lenders took up some of the slack in the first half of 2008, with commercial real estate loan volumes rising 4.7 percent for commercial banks and 3 percent for life insurance companies. More recently, however, banks have become wary of adding real estate to their books, and life insurance companies have approached predetermined annual investment limits.

With credit much more difficult to obtain and investors of all types demanding higher risk premiums, transactions have slowed significantly. Through August, annualized sales of commercial properties in Texas plunged to \$14 billion, down from \$31.6 billion in 2007.²

The recent falloff in the state's investment activity is broad-based across sectors and major metros. Office, retail and industrial property purchases are nearly a third of their 2007 levels, while multifamily sales have declined 38 percent. In San Antonio and Houston, year-to-date investment in commercial real estate is running 58 percent behind last year's pace (*Chart 2*). Austin and Dallas are down 54 percent.

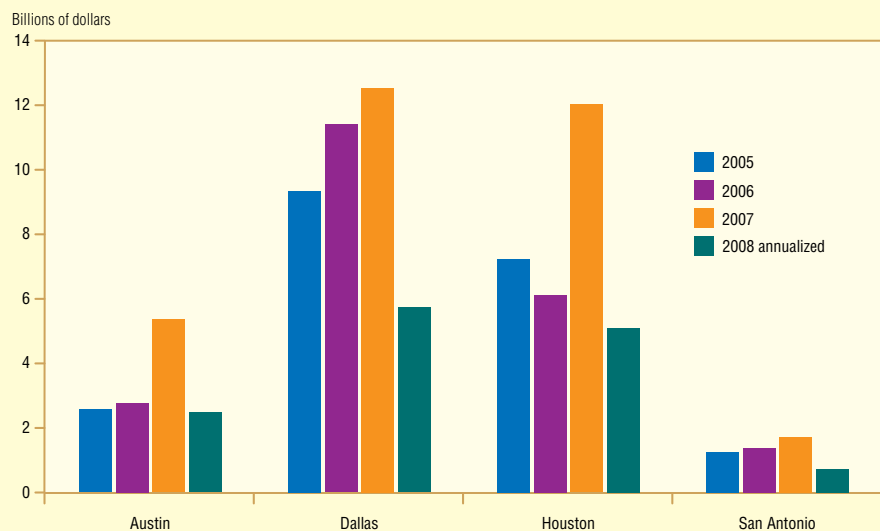
Chart 1
Sources of Commercial Mortgage Funding Shift to Securities Markets



NOTES: CMBS stands for commercial-mortgage-backed securities; GSEs are government-sponsored enterprises. Data include office, industrial, retail and apartment transactions.

SOURCES: Flow of funds data, Federal Reserve Board; Compendium of Statistics, Commercial Mortgage Securities Association.

Chart 2
Commercial Real Estate Investment Plunges in 2008



NOTES: Data include office, industrial, retail and apartment investment. Data for 2008 are through August and have been annualized for comparison purposes.

SOURCE: Real Capital Analytics.

With credit much more difficult to obtain and investors of all types demanding higher risk premiums, transactions have slowed significantly.

The Dallas Fed's October Beige Book, an anecdotal report on regional economic trends, found continued strain in commercial real estate. Investors and financial institutions are beginning to reevaluate their real estate holdings. Property values are difficult to determine as buyers grow more cautious and sellers find bids too low.

Even with this year's reversals, markets appear to be in better shape in Texas than in other areas of the country. Real Capital Analytics data suggest Houston and Dallas were still among the best-performing commercial investment markets nationwide through August.

Moreover, the recently released "Emerging Trends in Real Estate" report from the Urban Land Institute and PricewaterhouseCoopers ranked Houston and Dallas-Fort Worth real estate markets in the top 10. Indeed, Dallas Fed business contacts report that values for well-located, quality properties are holding up better in Texas than in the rest of the nation.

The Good Times

The recent slowdown comes after several strong years for commercial real estate in Texas. The state's fast-growing economy helped fuel the boom.

Trade and transportation sector job growth averaged a bit less than 3 percent in 2006 and 2007, spurring demand for industrial space. Service sector jobs grew slightly more than 3 percent, boosting office space absorption. In addition, the state's strong population growth supported demand for retail and apartment space.

Office vacancies in Houston declined from 17.1 percent in 2005 to 11.6 percent in 2007, buoyed by strong job creation in the metro's booming energy sector.³ Over the same period, industrial vacancy rates in the Dallas-Fort Worth area—the state's trade nexus—fell from 12.5 percent to 10.7 percent as trade and transportation payrolls expanded 2.5 percent.

With strong demand and falling vacancies, office and industrial rents began to climb across the state. Among Texas' major metros, Austin recorded the largest percentage and

nominal increases in office rents between 2005 and 2007—29.2 percent, or \$5.49 per square foot. Office rates rose 21 percent in Houston, 14.8 percent in Dallas-Fort Worth and 5.3 percent in San Antonio.

Texas added 1 million residents between July 2005 and July 2007, more than doubling the pace of U.S. growth. Multifamily vacancy rates in Austin, Dallas and San Antonio declined from 2005 to 2007, while an influx of new supply led to slightly higher vacancy levels in Houston in 2007.⁴ At the same time, rents rose, with Austin outpacing other metros, in part due to its rapid population growth—the fastest in the state.

The retail market saw healthy rent appreciation, spurred by robust growth in retail sales. Between 2005 and 2007, rents rose 11.4 percent in Austin, 6.1 percent in Dallas and 5 percent in Houston.⁵

With rental market fundamentals positive, investors took note. Commercial property sales held up well in 2006, rising 6.2 percent from the prior year, compared with the nation's 7.5 percent increase.⁶ The next year, Texas investment activity surged 46 percent as price increases in coastal markets made the state and its healthy markets attractive.

For instance, the state's office properties averaged \$132 per square foot in 2007, half the price for comparable investments in California and less than a third of the going rate in New York.⁷

Dallas led the pack in investment, accounting for 40 percent of the state's total. Activity grew 96 percent in Houston and 94 percent in Austin. The surge was largely due to expansion in the two cities' office markets, which saw sales triple from 2006. Increases were more modest in San Antonio at 25 percent.

What Lies Ahead?

The current credit market turmoil is adversely impacting Texas' commercial real estate markets. The buying and selling of commercial properties is likely to remain subdued for some time.

The rental market will be sluggish as well. Beige Book respondents note that

leasing activity for office and industrial properties has recently dropped off as businesses reevaluate their plans in light of the uncertain financial and economic environment.

Demand for retail space began to slow in 2008 as the Texas housing market weakened. Apartment leasing benefited from the housing downturn, but tight credit conditions are likely to diminish prospects for purchases and project starts.

At the same time, worries about overbuilding are subsiding as fewer development deals are funded.

A cloud of uncertainty hangs over the real estate investment market. However, the economic drivers that attracted investors to Texas' commercial real estate markets in the past several years remain in place and should benefit the state when the credit situation stabilizes and economic activity rebounds.

—D'Ann Petersen and Laila Assanie

Notes

¹ CMBS issuance data are from Commercial Mortgage Alert and the Compendium of Statistics, Commercial Mortgage Securities Association.

² Texas data are the sum of four cities: Austin, Dallas, Houston and San Antonio.

³ Office and industrial vacancy and rent data are from Torto Wheaton Research, a unit of CB Richard Ellis.

⁴ Multifamily vacancy and rent data are from M/PF YieldStar and Torto Wheaton Research.

⁵ Retail rent data are from Torto Wheaton Research.

⁶ Investment data are from Real Capital Analytics.

⁷ Property price data are from Real Capital Analytics.

Making Sense of Today's Globalized Economy

A discussion with University of Wisconsin economics professor Charles Engel, a senior fellow of the Dallas Fed's Globalization and Monetary Policy Institute, ranges from the current financial crisis to the unpredictability of exchange rates.

Q. What are some important themes of globalization?

A. One of them is that global trade is increasing. If you look at importing and exporting as a percentage of world gross domestic product, it's grown by leaps and bounds over the past 20 or 30 years. That's been true not only for the U.S. but also for just about everyone else.

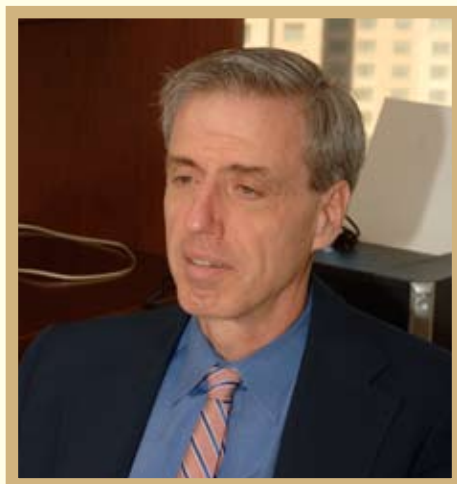
From the U.S. perspective, one of the most striking things is how much our trade with China has increased. A lot of that has come at the expense of trade with Korea and Japan, so it's not just that we're buying goods from China that we used to make at home.

The other thing is financial markets. They're much more intertwined than they ever have been. Part of this is because governments have allowed their residents to do more foreign investing and allowed foreign investors to buy more of their countries' assets. That's a trend that started in the early 1960s. For the U.S., Western Europe and Canada, most of that liberalization was completed by the end of the 1970s. In Asia, it continued to happen in the 1980s and 1990s.

The trend more recently hasn't been governments relaxing regulations but just the amount of innovation in financial markets and the willingness of people to invest in financial assets around the globe.

Q. How does this globalization impact the current financial crisis?

A. In general, well-working financial markets perform better if they're globalized. It's better to be able to spread risk across a number of countries. It's better to be able to channel savings to their most productive uses anywhere in the world. If capital markets mess up, if they're misallocating resources or if there's something wrong with the financial system, it's going to be magnified if financial markets are globalized.



Certainly, we're very aware of the international aspects of this financial catastrophe. We can't build a wall around American banks. For example, in the current crisis, there's no way to "rescue" only U.S. banks. If we successfully shore up the balance sheets of U.S. banks, this is good for the global banking system. This highlights why we need international cooperation. There's a big incentive for each country to sit on the sidelines and let other countries take the risk and incur the expense of a financial rescue. We need some way to get all the major countries committed to a mutually agreed upon scheme to regulate international capital markets and ensure that they function smoothly in the future.

Q. What challenges does this financial crisis present for globalized financial markets?

A. It's clear we needed more oversight of financial markets. A general worry is that we'll impose too much, that we'll throw too much sand in the wheels. Part of that would be stifling globalization. We don't want to lose the benefits of a globalized financial system.

A separate but related worry is that there's going to be some kind of economic nationalism, with countries treating domestic

and foreign-owned institutions differently. I worry that without international cooperation, each country will try to devise schemes that favor its own banks and citizens at the expense of foreign investors. For example, countries might provide deposit insurance—but only for their own citizens. We could end up taking a giant step backward in the globalization of capital markets.

The thing we have to realize is that our financial system is intertwined with the rest of the world. The failure of a large international banking concern could harm our economy, just as financial troubles in the U.S. spill over into the rest of the world. We need to address this problem systematically, not in the ad hoc way we're forced to during a crisis.

Q. What are your current research interests?

A. There are two main threads to my research. One is trying to understand exchange rate movements—why they behave the way they do. My work in that area has involved thinking hard about the implications of exchange rates as asset prices, which spills over into the way asset prices in general behave.

Currency values don't depend only on current economic fundamentals, such as trade balances, money supply and national income. The asset-price approach pays attention not only to current data but also to expectations of what the fundamentals will be in the future.

One of the key things that comes out of the work is the observation that asset prices, including exchange rates, are unpredictable under much more general circumstances than many economists have believed. Simply put, we can't do a good job of forecasting changes in exchange rates. That has implications for policymakers. It has implications for international business.

Q. So the time and effort investors and companies spend trying to forecast exchange rates is just a waste?

A. I do think there are times when currency prices get out of line, and we can forecast an

“It’s clear we needed more oversight of financial markets. A general worry is that we’ll impose too much, that we’ll throw too much sand in the wheels.”



eventual return to more sustainable levels. When the euro cost \$1.60 earlier this year, I was pretty sure it would come down, just as I was pretty sure it would rise when it was down around 85 cents several years ago.

But I am talking in these cases about a forecast over a long horizon. I sure wouldn’t want to try to predict which way exchange rates are going to go over the next couple of months or even the next couple of quarters.

Asset-price forecasters have a high propensity to fool themselves about how successful their prediction schemes are. A lot of models might look good with hindsight. But there isn’t much rigorous, peer-reviewed evidence that we can forecast exchange rates over short periods.

Q. And the other thread in your research?

A. I’ve been looking at aspects of open economies for monetary policy. The study of monetary policy is really dominated by this closed-economy framework, which is kind of crazy. What economy in the world is closed? Openness matters for monetary policy in a lot of different ways. To what extent, for example, should monetary policy worry about exchange rate misalignments?

I like to use the example of the recent rise in the price of oil from below \$20 a barrel to up to \$147. In the early part of that pe-

riod, when it went from the \$20s to about \$45 a barrel, the price didn’t go up at all in Europe. How is that possible? How could it be nearly doubling for us and not going up in Europe?

The answer is that the dollar was losing value against the euro at a rate equal to the price increase of oil. There’s no economic reason in the world that oil should have gotten more expensive for Americans and not gotten more expensive for Europeans. That’s purely a result of exchange rate misalignments. It leads to an inefficient allocation of resources. There’s no reason Americans should have had to cut back on oil consumption more than Europeans.

It’s exactly because of situations like this that monetary policy ought to worry about exchange rates. Moreover, the exchange rate is something monetary policy can influence—the value of the dollar in terms of the euro, for example.

The focus of monetary policy has been almost completely on reducing inflation, which is important. A credible monetary policymaker has to keep inflation low, but another part of credible monetary policy is keeping the currency strong.

Q. Why should a strong dollar be a goal of monetary policy?

A. I wouldn’t say a strong dollar. I would say that a goal of monetary policy is to prevent large dollar misalignments. We don’t want it too strong or too weak. Remember, in the early part of this decade, the dollar was very strong, and our manufacturing sector was getting hammered. We had a hard time competing in world markets, even in sectors in which the U.S. is a world leader, like aircraft, sophisticated industrial equipment and high tech.

Our economy adapted—resources got shifted into construction and services—but in retrospect maybe the reallocation

wasn’t such a great use of our resources. If we had more actively tried to prevent the appreciation of the dollar, that shift in workers and investment away from manufacturing would have been slowed down.

Q. What contribution can the Dallas Fed’s Globalization and Monetary Policy Institute make?

A. As you know, the institute is focused on how monetary policy is influenced by international forces. A great thing about the Federal Reserve System is that it has 12 independent research staffs that provide a portfolio of research skills and policy insights. I agreed to join the Dallas Fed’s efforts on globalization because I think this subject is crucial, its importance is growing, and there wasn’t enough attention to these issues in the System.

Richard Fisher, the Dallas Fed’s president, has talked a lot about trying to understand how openness feeds into domestic inflation. That’s an important question with obvious relevance to central bankers, but I think there are other important questions that we should be thinking about.

The exchange rate itself, should we worry about that? In thinking about unemployment, do we have to worry about the effects of foreign competition? Beyond those issues, the big thing we need to think about right now is the Fed’s other role—not in setting monetary policy but in keeping a well-functioning financial system intact. There, I think the impact of globalization is enormous.



Labor Markets in Turbulent Times: Some Evidence from Mexico

By Sangeeta Prata and Erwan Quintin

Financial shocks increase the need to shift workers among employers, industries and occupations. These disruptions, in turn, can have adverse impacts on productivity.

Shock waves from falling housing prices and faltering mortgages are making the destructive effects of financial turmoil all too evident to industrialized nations. In the past year, the U.S. and other countries have seen billion-dollar write-offs, troubled firms and households, and tightening lending standards—all of which are taking a toll on economic activity.

For Mexico and other emerging economies, however, financial panics have been commonplace. Massive currency devaluations, debt defaults and banking crises have crippled Mexico's economy several times during the past 30 years, with prolonged and deep consequences. The supply of domestic finance slowed to a trickle after Mexico's most recent banking crisis in the mid-1990s, and it took more than a decade for the financial sector to begin to recover.

Emerging economies are less prepared than industrialized ones to weather the impacts of financial turmoil. Such basic institutions as contract enforcement don't function well in the emerging nations, and safety

nets are generally inadequate. Despite the development gaps, emerging nations' experiences can provide valuable insights into the effects of financial difficulties.

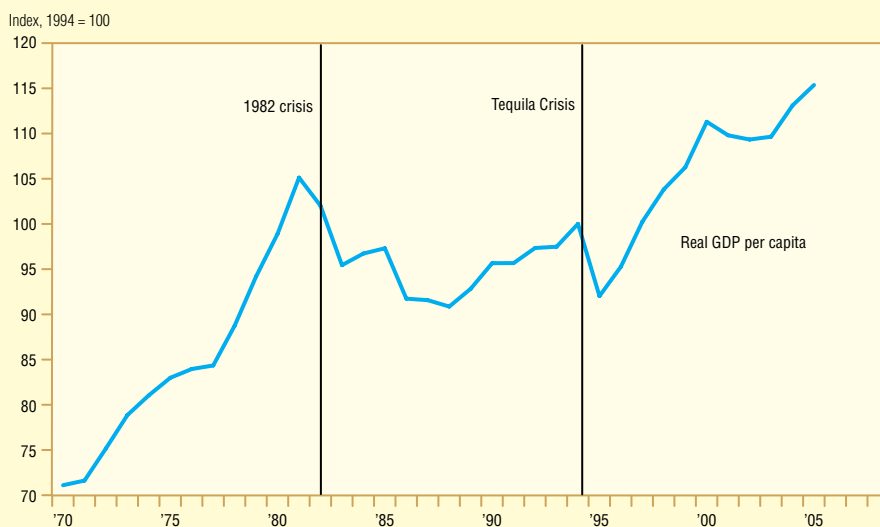
For instance, we can see how abrupt disruptions play out in labor markets. Financial shocks increase the need to shift workers among employers, industries and occupations. These disruptions, in turn, can have adverse impacts on productivity as workers devote time and resources to learning new skills and new tasks. This has important implications for how financial turmoil spreads to economic activity, not just in emerging nations but in industrial ones as well.

Productivity Plunge

Mexico's real GDP per capita declined sharply as a result of the two major crises that hit the country in the past three decades (*Chart 1*). The 1982 crisis signaled the end of two decades of miraculous growth. Real output per capita fell by more than 6 percent in the year after the crisis,

Chart 1

Financial Crises Take Toll on Mexico's Economy



NOTE: Vertical lines mark the onset of each crisis.

SOURCE: Organization for Economic Cooperation and Development.

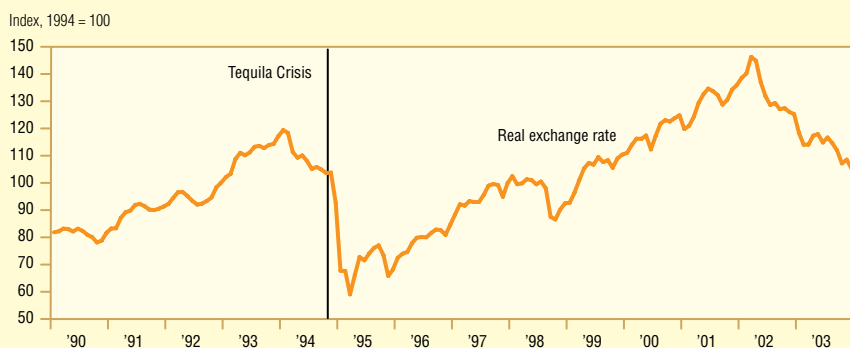
Chart 2 Shocks Accompany Tequila Crisis

A. Borrowing Costs Shoot Higher



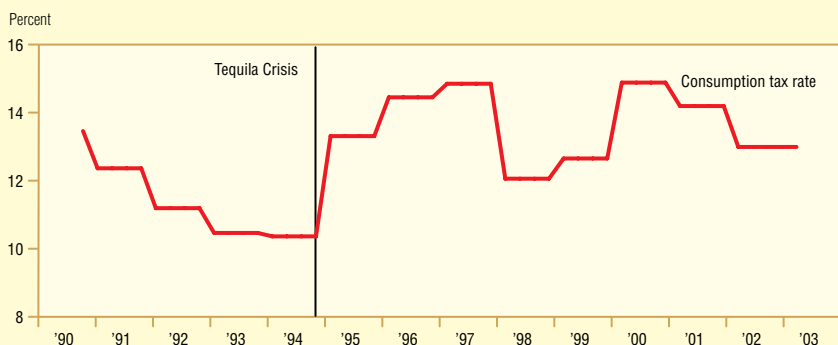
SOURCE: "Factor Utilization and the Real Impact of Financial Crises," by Felipe Meza and Erwan Quintin, in *B.E. Journal of Macroeconomics*, vol. 7, no. 1, 2007, article 33.

B. Imports Cost More, Exports Cost Less



SOURCES: International Financial Statistics, International Monetary Fund; Banco de México.

C. Government Raises Taxes



SOURCE: "Factor Utilization and the Real Impact of Financial Crises," by Felipe Meza and Erwan Quintin, in *B.E. Journal of Macroeconomics*, vol. 7, no. 1, 2007, article 33.

and ripple effects caused Mexico to experience a decade of economic stagnation. During the 1994–95 Tequila Crisis, GDP per capita fell almost 10 percent.

Our understanding of what causes financial collapses in emerging economies has improved markedly in recent years. A heavy reliance on short-term debt denominated in foreign currencies, lax credit

conditions and fixed exchange rates all contribute to making these nations financially vulnerable.¹

Avoiding these pitfalls helps promote financial stability. In recent years, improved debt management and steadfast commitment to monetary and fiscal discipline and flexible exchange rates have helped Mexico reduce its exposure to financial shocks.

However, several aspects of financial crises remain mysterious. For instance, it's now well documented that real GDP falls much more than standard measures of aggregate capital use and hours worked.² More simply, an economy's overall productivity declines drastically during crises, much more than at any other time.

Economists have offered several explanations for the productivity collapse. They've argued that the fall of the ratio of measured input use to aggregate output might result from drops in factor utilization, declines in the use of imported intermediate goods and barriers to the movement of resources across sectors.³

We examine another potential explanation—increased labor market mobility. Using data from a broad survey of Mexican households, we show that financial turmoil speeds up worker movement across jobs.

This acceleration, in turn, likely leads to a temporary drop in the effective supply of labor as worker displacement makes job-specific skills and accumulated experience less valuable. This, we argue, could account for part of the fall of measured productivity that typically follows financial collapses.⁴

The Perfect Storm

Financial crises generate a variety of shocks that accelerate resource movements. They ripple out from the initial financial troubles, amounting to a perfect storm of sorts that spreads the damage into the general economy.

First, domestic credit costs rise sharply, which saps the profitability of firms that rely on outside financing. These companies shrink to pay off increased debt or, in some cases, shut down.

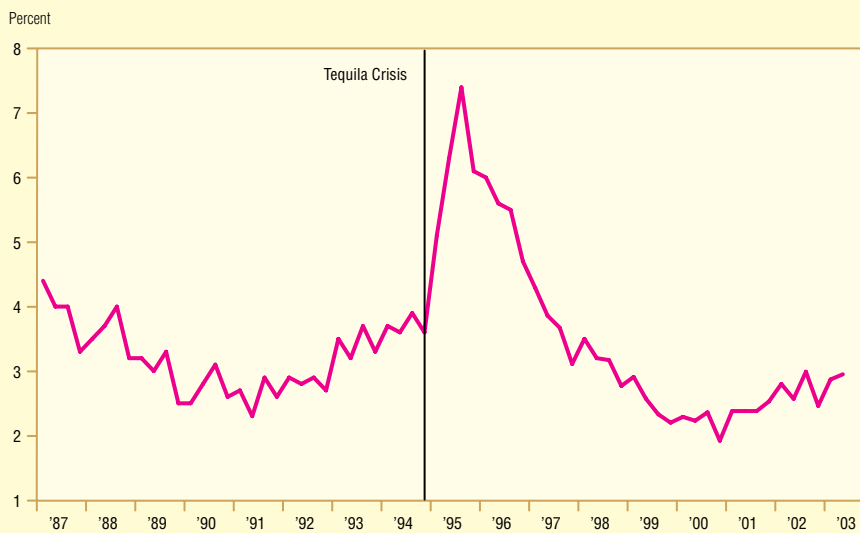
Second, the ratio of export prices to import prices usually rises, leading over time to a reallocation of production toward exports and away from goods and services for domestic use. This shift is facilitated by the fact that export-oriented sectors typically benefit from a privileged access to foreign investment at a time when domestic lending is scarce.

Third, nations in crisis often experience deep fiscal shocks as part of the government's effort to boost tax revenues. Tax rate hikes have an adverse impact on formal employment by giving employers incentives to operate outside the tax-paying fold.

All these shocks are visible in Mexico's Tequila Crisis (*Chart 2*). The quarterly interest rate on dollar-denominated debt

Shifts across sectors and occupations caused by layoffs, bankruptcies and downsizing are likely to be associated with significant declines in productivity and real wages.

Chart 3
Mexico's Unemployment Rate Spikes



SOURCE: Encuesta Nacional de Empleo Urbano.

soared during the first two quarters of 1995, while the real exchange rate collapsed. In an effort to reduce budget deficits, Mexico increased the consumption tax rate in the first quarter of 1995 as well as the regulated price of various energy products.

Labor Market Impacts

The shocks that follow from financial crises induce worker movements across employers, occupations and sectors. As

employers in capital-intensive sectors scale back their operations, for instance, many employees are forced to seek work in sectors less dependent on finance.

In countries such as Mexico, adjustments are delayed by notoriously stringent labor market restrictions. Despite these barriers, labor mobility does pick up significantly during crises, a fact demonstrated by quarterly data from Mexico's Encuesta Nacional de Empleo Urbano, a broad urban household survey.

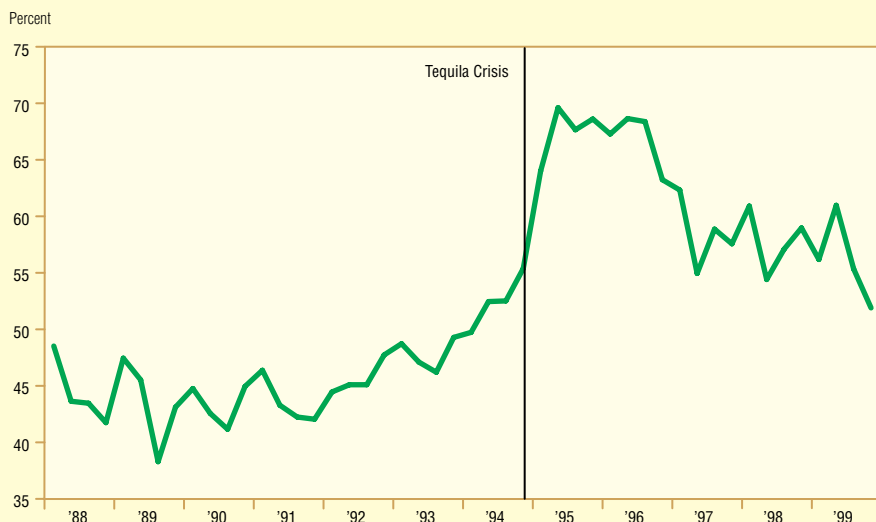
The survey reveals that the unemployment rate doubled to more than 7 percent as the Tequila Crisis roiled Mexico's economy during the first two quarters of 1995 (Chart 3).

In addition, involuntary separations increased significantly in 1995. The household survey contains a question that can be used to determine whether employees or employers initiated recent separations. The share of terminations coming from the employer side rose almost 20 percent during the crisis (Chart 4).

Spells of inactivity, whether voluntary or involuntary, are only part of the reallocation story, however. Many workers who remained employed during the crisis reported significant changes in their employment conditions.

For example, the 1995 crisis saw marked increases in the fraction of self-employed workers and those who work for establishments with five or fewer employees (Charts 5A, B). These facts suggest that,

Chart 4
Involuntary Separations Rise
(Employer-initiated separations as a share of total separations)



SOURCES: Encuesta Nacional de Empleo Urbano; authors' calculations.

among survey respondents, the fraction employed in the informal sector increased significantly in 1995.

The informal sector accounts for a large portion of production and employment in Mexico and other emerging economies. The sector includes all establishments and self-employed individuals not complying with government regulations, such as labor laws and the tax code.

Informal employees typically fail to receive government-mandated benefits and may earn less than the minimum wage. The fraction of workers who fail to receive the benefits mandated by labor laws did in fact spike up in 1995 (*Chart 5C*).

Finally, the household survey reveals that many of these worker transitions involved occupational and industry changes. For example, the fraction of industrial workers drops drastically at the onset of the crisis, accompanied by increases in workers who say they are merchants—a prominent occupation among informal workers.

We use a measure called the Kolmogorov–Smirnov test statistic to compare the quarter-to-quarter distributions of employment for industries at the Mexican classification system’s three-digit level. The higher the test statistic, the more likely significant changes occurred in the distributions. For the 1995 crisis, the Kolmogorov–Smirnov test statistic shows that certain sectors and occupations shrank significantly, making it necessary for many workers age 16 to 65 to find new employment (*Chart 6*).

Wage Impacts

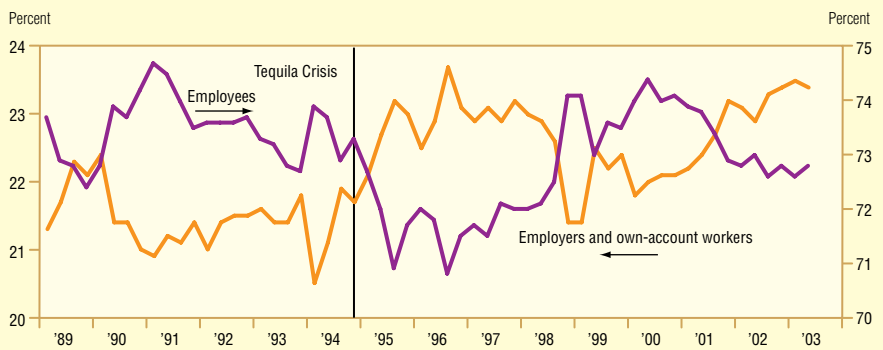
It matters who initiates job changes—employees or employers. Shifts across sectors and occupations initiated by employees—often to pursue higher-paying opportunities—are probably going to be associated with an eventual rise in productivity and real wages, even if accompanied by transitional productivity losses as workers adapt to their new jobs.

Shifts across sectors and occupations caused by layoffs, bankruptcies and downsizing are likely to be associated with significant declines in productivity and real wages. Workers forced to seek new jobs may find their old skills are ill-suited for their new jobs, and new skills will have to be learned.

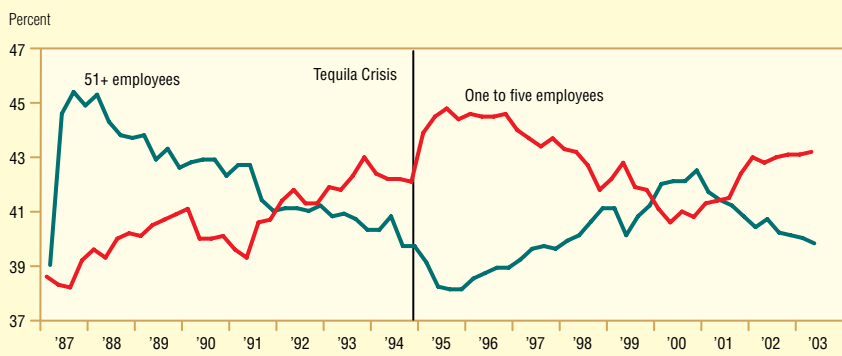
We’ve seen that a crisis can trigger a marked rise in the portion of involuntary labor force movements, making these movements a potential explanation for the

Chart 5 Employment Shifts Accompany Tequila Crisis

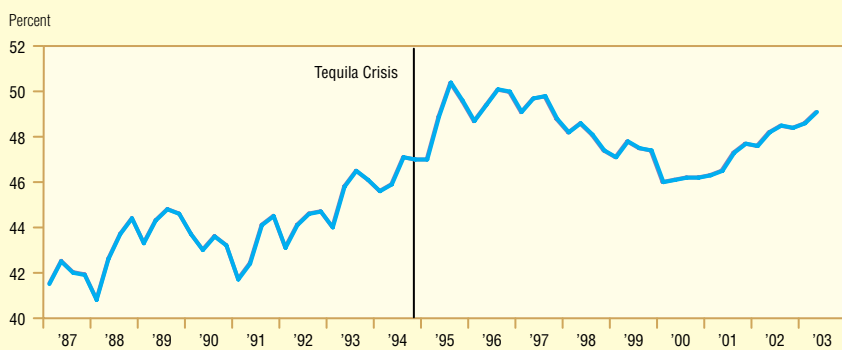
A. Employment Status



B. Establishment Size



C. Workers With No Employment Benefits



SOURCES: Encuesta Nacional de Empleo Urbano; authors' calculations.

productivity collapses that accompany financial disruptions.

A formal test of our hypothesis involves a comparison of the earnings of workers who stay in the same sector or occupation with the earnings of those whose occupational status changes, both in normal times and crises. If movers tend to become less productive than workers who stay put, we would expect them to have lower earnings, even after controlling for other characteristics that affect earnings. These differences should be particularly large dur-

ing crisis periods.

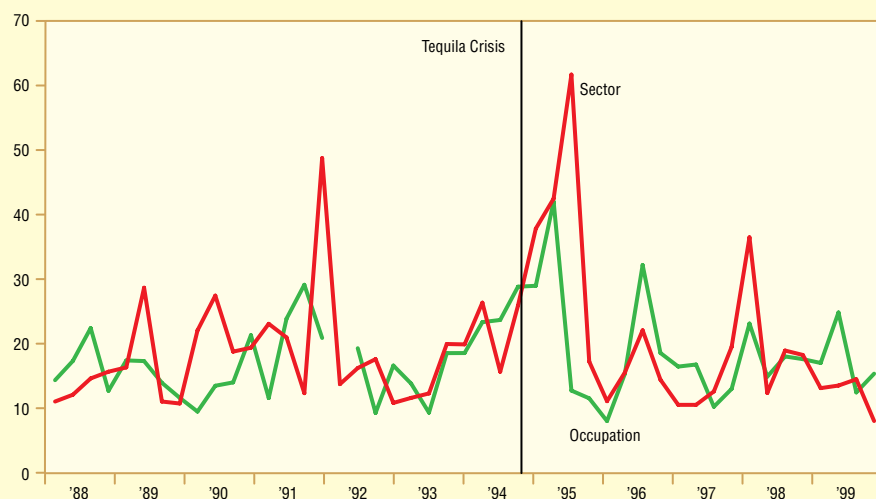
The Encuesta Nacional de Empleo Urbano gives us more than 3 million observations on individual workers between 1988 and 1999. Looking outside the Tequila Crisis period—and controlling for gender, age and education—we find that workers who remained in the same sector had real hourly wages 1.4 percent higher than those who moved.⁵ During the crisis, the wage gap between movers and nonmovers rose to 2.4 percent for sectors.

Outside the Tequila Crisis, workers

Chart 6

Crisis Brings Sharp Changes in Where Employees Work

(Kolmogorov–Smirnov test statistic)



NOTE: Statistic is computed at the three-digit level in the Mexican classifications of occupations and sectors. Due to a classification change, the occupation statistics cannot be computed in the second quarter of 1992.

SOURCES: Encuesta Nacional de Empleo Urbano; authors' calculations.

who stayed in the same occupation earned about 1 percent more than individuals who changed occupations. During the crisis, the gap grew to 2.5 percent.

What if workers who change employment status are systematically different from individuals who stay in the same sector or occupation? For instance, lower wages for movers could reflect differences in inherent ability, rather than differences in accumulated skills.

The fact that each individual appears up to five times in the household survey enables us to control for these fixed individual differences, whether observed or unobserved. Doing so reduces the wage impact of changing sector or occupation during normal times to essentially zero, suggesting that labor market flows in and of themselves have little effect on average labor productivity outside crises periods.

During the Tequila Crisis, however, the wages of individuals who changed occupations fell by an added 3.3 percent compared with the wages of similar workers who didn't move. Individuals who changed sectors saw wages fall about 3 percent more than those who stayed in the same sectors.

Adding it up, real wages fell an additional 6 percent during the Tequila Crisis for individuals who changed both sector

and occupation, compared with similar individuals who stayed put. This constitutes evidence that labor market flows cause deep drops in worker productivity during financial crises.

Mexico's experience suggests that labor market adjustments are an important aspect of how financial turmoil ripples through economies. The large gaps between emerging and industrial economies may lead to differences in timing, magnitude and duration, but both are likely to experience significant labor market spillovers from financial distress.

The reduced availability of credit may result in a pick-up in job destruction, increased worker mobility and temporary losses in productivity as workers devote time to learning new skills. Whether in emerging markets or mature economies, these disruptions are reminders of the critical importance of maintaining well-functioning financial markets for economic growth.

Pratap is an associate professor at Hunter College and the Graduate Center at the City University of New York. Quintin is a senior research economist and advisor in the Research Department of the Federal Reserve Bank of Dallas.

Notes

¹ While the two crises share similarities, they also differ in important ways. For more on these issues, see "Mexico's Financial Vulnerability: Then and Now," by Erwan Quintin and José Joaquín López, Federal Reserve Bank of Dallas *Economic Letter*, no. 6, 2006.

² See, for instance, "Factor Utilization and the Real Impact of Financial Crises," by Felipe Meza and Erwan Quintin, in *B.E. Journal of Macroeconomics*, vol. 7, no. 1, 2007, article 33, www.bepress.com/bejm/vol7/iss1/art33.

³ See, among many other papers, "External Constraints on Monetary Policy and the Financial Accelerator," by Mark Gertler, Simon Gilchrist and Fabio Natalucci, NBER Working Paper Series, no. 10128, December 2003; "Sudden Stops, Sectoral Reallocations and the Real Exchange Rate," by Timothy J. Kehoe and Kim J. Ruhl, University of Texas, unpublished paper, 2007; and "Financial Frictions and Total Factor Productivity: Accounting for the Real Effects of Financial Crises," by Sangeeta Pratap and Carlos Urrutia, Instituto Tecnológico Autónomo de México (ITAM), unpublished paper, 2008.

⁴ This confirms with different data the outcome of some recent studies of labor market dynamics in Latin America. See, in particular, "Sudden Stops and Reallocation: Evidence from Labor Market Flows in Latin America," by Francisco Gallego and Jose Tessada, Massachusetts Institute of Technology, unpublished paper, 2008.

⁵ Details of our estimation approach are available upon request. Real hourly earnings are deflated using Mexico's quarterly consumer price index and multiplied by 13/12 for workers who receive an *aguinaldo*, or Christmas bonus. Mexican labor laws specify that all employees should receive a year-end bonus equivalent to at least two weeks worth of earnings in December. In practice, roughly half of workers report that they receive an *aguinaldo*. Among employers that do comply with the *aguinaldo* requirement, the majority make the year-end bonus one extra month of earnings.

Outside Forces Still Sapping Texas Economy's Vitality

A sluggish national economy, the global credit crunch and Hurricane Ike have taken some steam out of Texas' growth.

State employment rose at a tepid 0.6 percent annualized rate in September, adding 5,500 jobs (*Chart 1*). Nationally, jobs have been declining for most of the past year.

Texas manufacturing—which accounts for about half of goods-producing employment—continued to shed jobs. Construction employment fell 2.4 percent, its first contraction since March.

Texas unemployment increased 0.1 percentage point to 5.1 percent in September. Perhaps more significant, the rate was up 0.7 percentage point, or nearly 16 percent, in the third quarter. October's Dallas Beige Book, the Dallas Fed's anecdotal survey of business conditions, found that some firms are laying off employees, reducing hours or cutting overtime.

Energy and commodity prices have decreased significantly, easing cost pressures for many industries. Forty-three percent of firms responding to the Dallas Fed's Texas Manufacturing Outlook Survey reported raw

materials price increases in September, down from 58 percent in August.

The pullback in home construction hasn't subsided. Compared with year-ago levels, single-family permits in Texas were down 32.9 percent in August and housing starts had dropped 30.4 percent.

New and existing home sales fell 12.1 percent year-over-year in the state, although they rose 3.9 percent in August.

Texas home prices continue to buck the U.S. trend. The Office of Federal Housing Enterprise Oversight index shows the state's home prices rose 3.6 percent year over year, compared with a 1.7 percent decline for the nation (*Chart 2*).

Exports and Energy

Export growth and a healthy energy sector continue to be sources of strength for the Texas economy.

Aided by the dollar's decline, real exports rose more than 5 percent in the second quarter. The increase was broad-based across the state's major trading partners. Exports were up 17 percent to Latin America and

8 percent to China. Sales to the EU, Canada and Mexico also increased (*Chart 3*).

Texas' energy sector is still doing well despite recent declines in oil and natural gas prices and temporary refinery disruptions due to Hurricane Ike (*for more on Ike's impact, see page 5*).

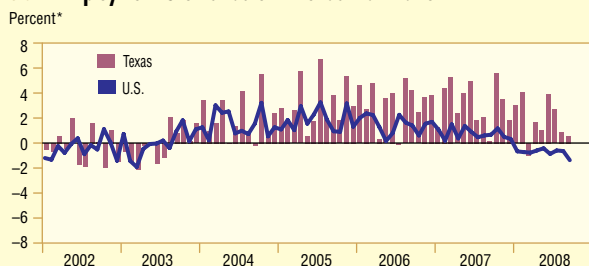
Prices are still high enough to encourage drilling and other industry activity. The Texas rig count stood at 925 as of Oct. 17, up 8.8 percent over the previous year (*Chart 4*). Energy-related hiring was strong, but job growth could weaken if prices continue to decline.

Although the Texas economy is slowing, it's still doing better than the national economy. Through September, Texas added 150,400 jobs, a 1.9 percent annualized gain. The growth rate is below the state's historical trend of 3 percent but looks good compared with the nation's employment decline.

Movements in the Dallas Fed's Texas Leading Index over the past several months point to positive—but below trend—employment growth for the rest of 2008. The labor market is likely to remain weak into early 2009.

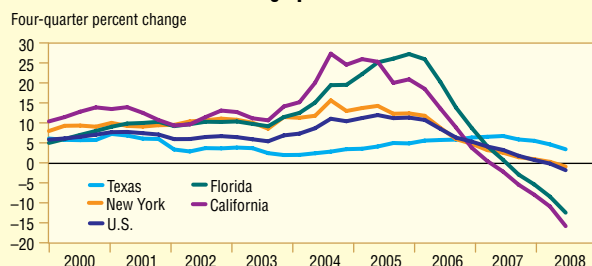
—Mike Nicholson

Chart 1 Employment Grows Faster in Texas than Nation



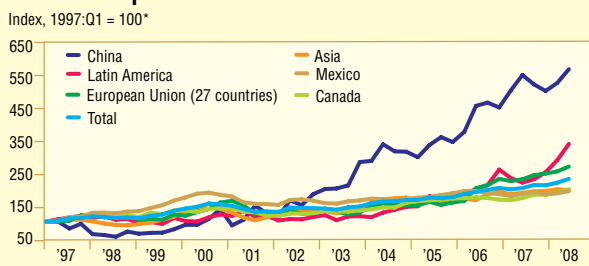
* Month-over-month, seasonally adjusted annualized rate.
SOURCES: Bureau of Labor Statistics; Texas Workforce Commission; seasonal and other adjustments by the Federal Reserve Bank of Dallas.

Chart 2 Texas Home Prices Holding Up



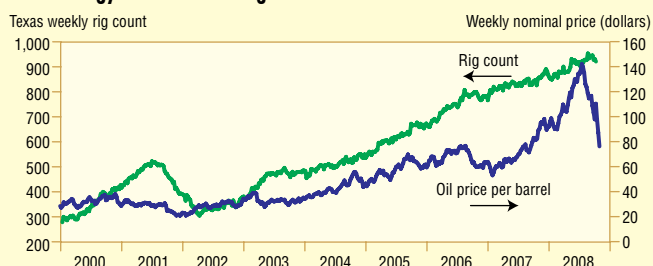
SOURCE: Office of Federal Housing Enterprise Oversight.

Chart 3 Texas Exports Remain Robust



* Real dollars, seasonally adjusted.
NOTES: Asia excludes China; Latin America excludes Mexico.
SOURCES: WISERTrade; seasonal and other adjustments by the Federal Reserve Bank of Dallas.

Chart 4 Energy Sector Still Strong



SOURCES: Wall Street Journal; Baker Hughes; adjustments by the Federal Reserve Bank of Dallas.

New Dallas Fed Indicator Tracks Texas Retail Sales

(Continued from page 4)

goods rose at an annual pace of 3.3 percent though August. Taking inflation into account, annualized growth in real retail sales was 6.6 percent in Texas and -2.5 percent nationally.

This overview suggests that a monthly estimate of Texas retail sales should prove highly useful in analyses of the state economy. Our new measure fills a void that has existed since the Commerce Department ended its monthly estimates 12 years ago.

The Texas comptroller's retail sales figures couldn't fully replace the Commerce data because of their quarterly release and significant lag. For example, the Dallas Fed's Texas Leading Index, which includes retail sales, had to be adjusted to account for the loss of the Commerce indicator.

Up-to-date data are necessary to make better decisions in business and policymaking. As of mid-October, our monthly retail sales estimates were available through August, while the comptroller's quarterly series ended in the first quarter.

Producing current economic indicators often requires substantial capital and human investment. Our model minimizes the burden by making projections based on available quarterly retail sales and other measures.

For the first eight months of 2008, Texas' monthly retail sales were healthy, especially compared with U.S. economic trends. More recently, the nation has felt the impact of a severe financial crisis.

How will Texas fare in the final months of 2008 and into 2009? Analysts interested in the Texas economy and where it's headed can now monitor retail sales activity monthly. Our Texas retail sales estimate will be available on the Dallas Fed website under Regional Data Resources at www.dallasfed.org/data/resources.html.

Cañas is an associate economist based in the El Paso Branch of the Federal Reserve Bank of Dallas and Phillips is a senior research economist and advisor in the San Antonio Branch.

Notes

We thank Mack Lindsey at the Texas Comptroller of Public Accounts for providing retail sales data on eating and drinking places in Texas and its major markets and for answering questions about Texas quarterly retail sales.

¹ The procedure we used is called best linear unbiased interpolation and extrapolation. See "Best Linear Unbiased Interpolation, Distribution, and Extrapolation of Time Series by Related Series," by Gregory C. Chow and An-loh Lin, *The Review of Economics and Statistics*, vol. 53, no. 4, 1971, pp. 372-75.

² See "Texas Economy Feels National Pinch," by Laila Assanie and Raghav Virmani, Federal Reserve Bank of Dallas *Southwest Economy*, no. 4, 2008.



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