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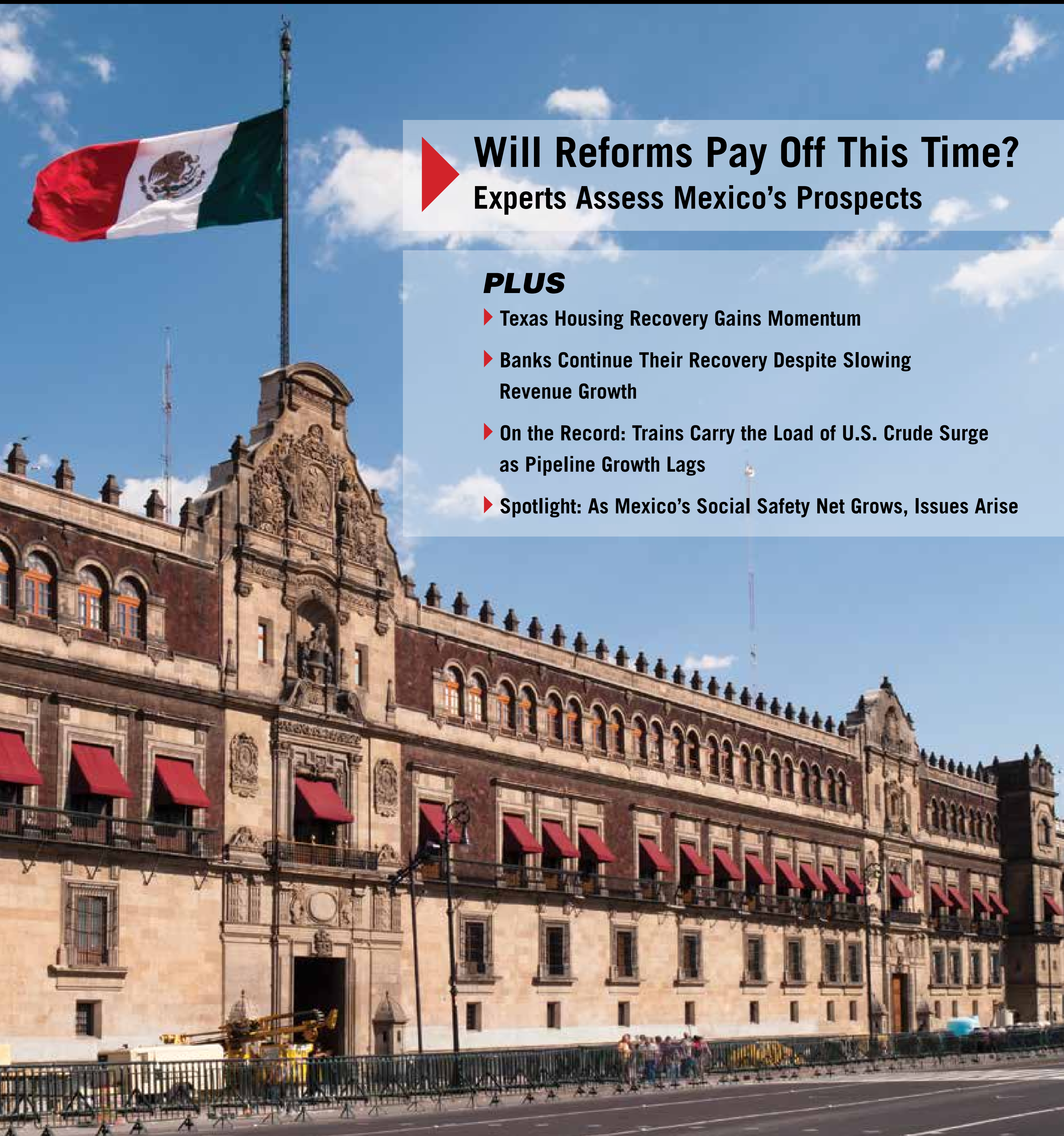
Southwest Economy

Will Reforms Pay Off This Time?
Experts Assess Mexico's Prospects

PLUS

- Texas Housing Recovery Gains Momentum
- Banks Continue Their Recovery Despite Slowing Revenue Growth
- On the Record: Trains Carry the Load of U.S. Crude Surge as Pipeline Growth Lags
- Spotlight: As Mexico's Social Safety Net Grows, Issues Arise



The Federal Reserve Bank of Dallas hosted a conference last fall that examined macroeconomic reform in Mexico and the challenges our southern neighbor faces as it seeks to become one of the world's leading emerging market economies. I encourage you to read more about themes presented at the conference—"México: How to Tap Progress"—in this edition of *Southwest Economy*.

Mexico has made significant progress and, in the process, demonstrated far greater fiscal discipline than the United States. The country's 2012 budget deficit was a respectable 2.6 percent of real gross domestic product (GDP), which compares with 7 percent in the United States. Its national debt is stable at 28 percent of GDP—a dramatic turnabout from the 1980s, when Mexico was a poster child for the Latin American debt crises—while here debt raced past $16 trillion in 2012, about 105 percent of GDP.

Mexico's banking industry is growing, and financial access, while still limited, is expanding quickly. In 2012, the number of banks increased 14.3 percent in Mexico while contracting 3.1 percent in the U.S. Inflation is trending down, and a steady peso has protected the purchasing power of the Mexican consumer. Reforms have resulted in the development of a peso-denominated bond market and falling interest rates on government debt.

Mexico has made significant progress and, in the process, demonstrated far greater fiscal discipline than the United States.

Admittedly, it's not all good news. Growth so far this year has been weaker than expected, and structural reforms have been slow to follow the macroeconomic reforms of the last 20 years. For example, regulatory changes in Mexico's energy sector could open ample natural resources to foreign investment and dispatch new technologies that could reverse declining oil production—much as hydraulic fracturing has done in the U.S. (To that end, I also encourage you to read this issue's "On the Record" interview with Greg L. Armstrong, chairman and chief executive officer of Houston-based Plains All American Pipeline LP and chairman pro tem of the Dallas Fed's Houston Branch).

With a macroeconomic foundation largely in place, the time is right to build. Additional structural reforms that include bringing more of Mexico's workforce into its formal economy and increasing competition in telecommunications and other key industries will take time to achieve but offer significant rewards. I look forward to the time when there will be another Dallas Fed conference—this one to assess Mexico's ascendancy.

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

Texas Housing Recovery Gains Momentum

By D'Ann Petersen and Christina Daly

The state's strength made it a magnet for those looking for work and contributed to Texas' No. 1 ranking for domestic in-migration for a seventh consecutive year.

The Texas housing market is swiftly recovering as rapidly rising sales approach pre-housing-boom levels and apartment rental demand remains strong. New home and apartment construction abounds, the product of a relatively strong regional economy generating jobs, drawing new residents and increasing consumer confidence.

The result: Texas home prices and rents have risen more rapidly than usual.

Further improvement is anticipated in the housing sector as the regional economy continues its expansion. Historically, lean home inventories and low apartment vacancy rates have spurred more building. Given the Texas construction sector's ability to respond quickly to strong demand, however, building activity will catch up to demand and the current rate of home price and rent increases will ease.

A healthier housing sector is not just a byproduct of economic growth; it also makes its own contributions to growth. In the past year or so, residential construction emerged as a major source of jobs—a sharp turnaround from the drag the sector applied during the state's recovery from the recession. Because of the housing expansion and uptick in home values, the proportion of Texas mortgages in trouble is well below the national average and declining.

Housing's gains spill over into other sectors of the economy, such as manufacturing and service-related industries. Wealth effects from higher housing values influence consumer spending and bolster a sense of financial well-being.

Texas' Economic Strength

Underpinning the housing sector's gains is a broad-based expansion of the overall Texas economy. The energy sector is providing a particularly large boost, as reflected in growing oil and gas production in the Eagle Ford Shale formation in south central Texas.[1] By late 2011, Texas had recovered all the jobs lost during the recession, and the job growth rate in 2012 was the nation's third fastest, trailing energy producers North Dakota and Alaska.[2]

The state's strength made it a magnet for those looking for work and contributed to Texas' No. 1 ranking for domestic in-migration for a seventh consecutive year (*Table 1; also see "Noteworthy," page 11*). Dallas, Austin and Houston were among the top five destinations for those new arrivals in 2012—each adding nearly 38,000 people on average in one year, exclusive of births or international migration.

The new residents led a strong demand for apartments—with occupancy rates exceeding 90 percent in major metropolitan areas—and laid the foundation for additional rental construction. Multifamily building permits at the end of 2012 rebounded to prerecession levels (*Chart 1*).

The single-family market's recovery lagged behind the apartment rebound, a function of lingering effects from the national housing crisis, reduced credit availability, still-elevated unemployment rates and uncertainty about the U.S. economic recovery. Many prospec-

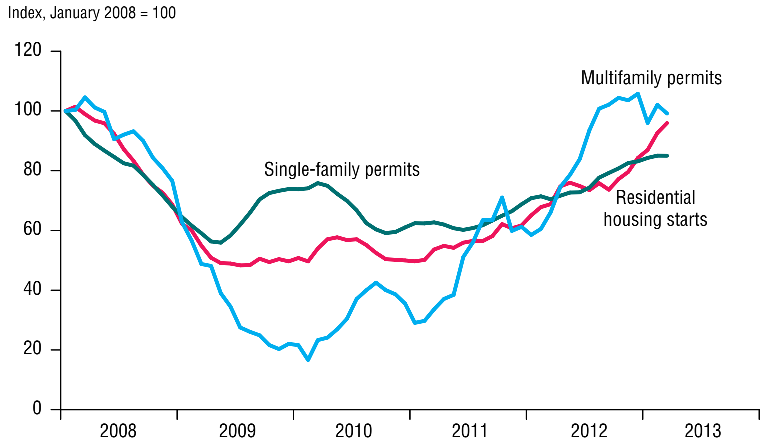
Table 1 Texas In-Migration Still No.1 (July 2011 to July 2012)

Ranking	State	Net domestic migrants
1	Texas	140,888
2	Florida	101,411
3	Arizona	34,456
4	North Carolina	33,641
5	Colorado	27,684
46	Ohio	–37,622
47	California	–44,541
48	New Jersey	–49,300
49	Illinois	–73,453
50	New York	–115,754

SOURCE: Population Estimates, U.S. Census Bureau.

Through April, Texas home sales rose at an annualized 23 percent, a rate of increase approaching levels seen just before the housing collapse.

Chart 1 Texas Construction Leads Rebounding Housing Sector



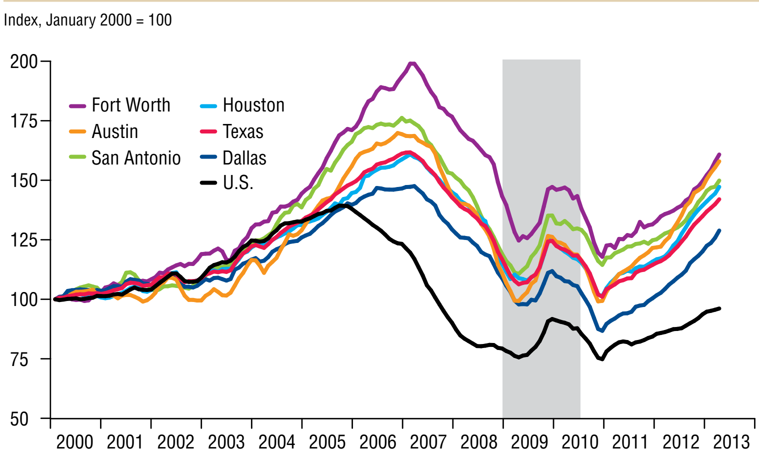
NOTES: Five-month moving average; residential starts include both single-family and multifamily starts.
SOURCE: U.S. Census Bureau; Bank of Tokyo-Mitsubishi.

tive homebuyers rented instead of buying while waiting for the housing market to bottom out and their own financial situation to improve. The housing market's subsequent rapid recovery is a product of this pent-up demand and some shifting from apartments to single-family homes.

Existing-home sales statewide and in major metropolitan areas have risen by more than 33 percent since the start of the housing recovery in early 2011 (*Chart 2*). As Texas' economic growth has strengthened, consumers have become more confident and financial conditions have improved. Through April, Texas home sales rose at an annualized 23 percent, a rate of increase approaching levels seen just before the housing collapse. Anecdotal reports from Dallas Fed industry contacts suggest a very competitive marketplace for buyers, with multiple offers on homes driving up prices.

Historically low interest rates, fewer lending restrictions and rising apartment rents have helped increase the attractiveness of buying over renting in some areas, which, in turn, strongly drove new home construction in early 2013 amid tight supplies.

Chart 2 Existing-Home Sales Continue Rising



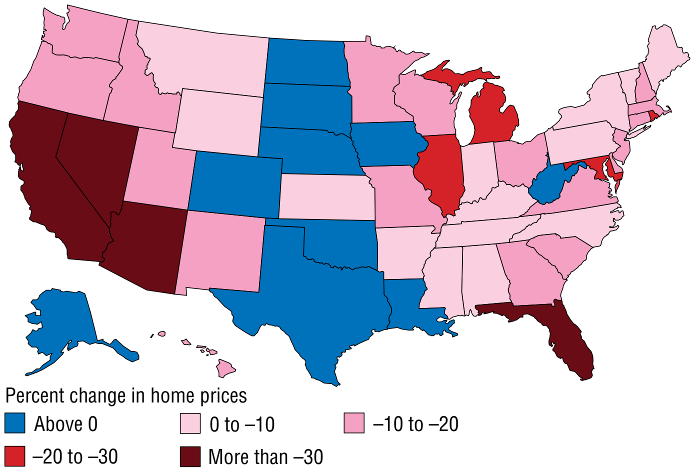
NOTES: Six-month moving average. Shading represents period of first-time homebuyer tax credit.
SOURCES: Multiple Listing Service; National Association of Realtors.

Rapidly Increasing Home Prices

Through first quarter 2013, Texas home prices exceeded by 7 percent the prerecession peak recorded in fourth quarter 2007.[3] Texas, one of just 10 states above its prerecession top, trails only North Dakota in the amount that current prices have surpassed the previous high (*Chart 3*). Nationally, prices remain 13.8 percent below their peak in first quarter 2007, with some of the states hardest hit by the housing bubble still well below those levels—Nevada prices remain 50 percent below their high after falling by as much as 60 percent.

Texas prices have especially improved since single-family demand began turning the corner in late 2011:

Chart 3 Existing-Home Prices Remain Below Peak in Most States



NOTE: Blue states are above peak as of first quarter 2013; states shaded from light pink to dark red are still below each individual state's prior high.
SOURCE: Federal Housing Finance Agency.

Prices rose 6.2 percent in the 12 months ended March 31, 2013, compared with 6.7 percent for the U.S. Even Nevada prices increased, gaining more than 20 percent over the same period.

Still, many U.S. markets retain a "shadow" inventory of homes with underwater mortgages—homes worth less than the amount owed. Just over 21 percent of U.S. homeowners hold such mortgages. Future price increases nationally will be subdued if these homes come to market, boosting supply—an unlikely scenario in Texas, which has relatively fewer distressed mortgages.

The holders of troubled mortgages typically hold out until housing prices recover. These homeowners are less likely to stretch themselves further by relocating to areas offering better employment opportunities and higher pay. Such an impact has been most acutely felt in Nevada, with a nation-leading 52.4 percent of mortgages under water, after reaching a high of 70 percent in 2010.

So, while the U.S has a 5.1-month supply of existing single-family homes and Texas has a 4.2-month inventory, the Texas housing market may be poised for continued short-term home-price strength, reflecting the relatively lower number of homes under water. Low foreclosure levels in Texas—1.5 percent of mortgages in foreclosure compared with 3.6 percent nationally in first quarter 2013 (and a U.S. high of 11.4 percent in Florida)—also tend to elevate prices. Conversely, once foreclosed units come to market, they depress overall home prices.

The housing recovery is inconsistent across several states—such as Virginia, Connecticut and Rhode Island—where there is no sign of a persistent price upturn.

Recent price increases in Texas have uncharacteristically resembled those in the nation as a whole. Texas home prices are normally less volatile than the U.S. average (*Chart 4*). The state has ample land and relatively few building restrictions and can add to inventory relatively quickly, unlike population centers along the east and west coasts. But new units haven't been added fast enough to meet demand from the state's economic expansion, as builders who cut operations during the downturn ramp up production. With growing supply, the rate of price increases should become more moderate, in line with historical averages. In first quarter 2013, the Texas pace eased slightly.

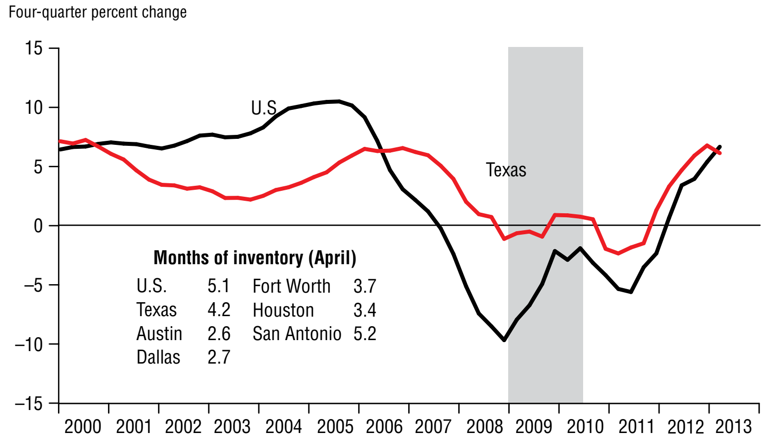
Driving Prices Higher

Historically, inventories below 6.5 months of supply at the current sales rate have coincided with rising home

The Texas housing market may be poised for continued short-term home-price strength, reflecting the relatively lower number of homes under water.

The share of seriously delinquent mortgages—loans 90 or more days delinquent or in the process of foreclosure—continues to decline in Texas, portending falling foreclosure rates in the future.

Chart 4 Home Prices Climbing in Texas and U.S.



NOTE: Shading represents period of first-time homebuyer tax credit.
SOURCE: Federal Housing Finance Agency purchase-only home price index.

prices because potential buyers bid up prices when supplies are tight. Inventories across the state slid below the 6.5-month threshold in January 2012 and were down to 2.6 months in Austin, 2.7 months in Dallas and 3.4 months in Houston in April 2013, while the months of inventory in the U.S. rose to 5.1 from 4.9 in March. Such inventory levels in Texas were not even achieved during the height of the housing boom in 2007 and were last noted in 2000.

The low inventories can also be measured in terms of total listings of homes on the market. After reaching a high in August 2010, in response to a first-time homebuyer tax credit, listings declined by more than one-third to levels not seen since 2002. Once on the market, houses sell briskly. From a low of 14,053 in July 2010, sales have increased to almost 23,000 a month, only 3,400 short of the monthly rate during the housing boom.

The share of seriously delinquent mortgages—loans 90 or more days delinquent or in the process of foreclosure—continues to decline in Texas, portending falling foreclosure rates in the future (*Chart 5*). At 3.8 percent, Texas' share of seriously delinquent mortgages compares with 6.6 percent nationally and with more than 15 percent in Florida. Many states remain significantly above their 2000–06 delinquency average, which was 2.1 percent nationally, suggesting increasing inventories of existing single-family homes in many other parts of the country for years to come.

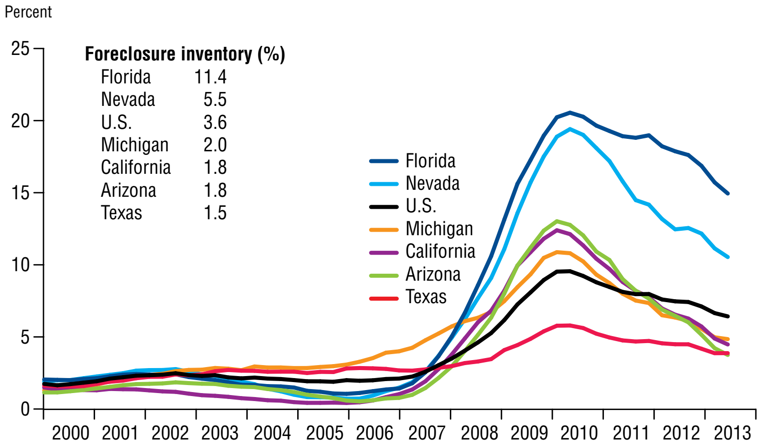
Housing Market and Jobs

The Texas housing market—notably new single-family and apartment construction—provides jobs for a significant share of the Texas labor force in building trades as well as in manufacturing and real estate-related services and sales.

The state's quick housing turnaround after prolonged weakness is reflected in construction employment, which totaled 611,900 jobs as of March 2013, 7.5 percent above its 2000 to 2006 long-term average of 569,100, but still below a peak of 679,200 in May 2008. As residential construction picked up, related sectors gained employment, particularly specialty trade contractors and construction-related manufacturing—including in wood, brick, stone and fabricated metals industries. Building materials suppliers and rental and leasing services are expanding (*Chart 6*).

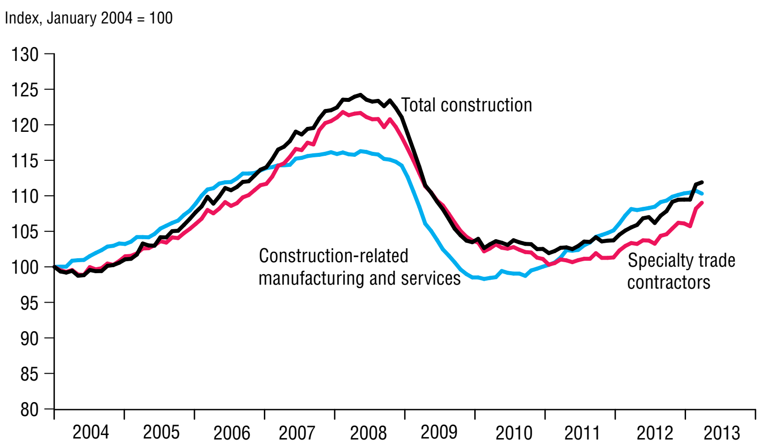
New home construction provides an important source of overall housing supply. Texas residential permits were roughly half their long-term average from December 2008 to December 2011, partly accounting for low new-home inventory

Chart 5
Seriously Delinquent Mortgages Declining



NOTES: States shown, excluding Texas, were some of the most affected by the housing bust. Seriously delinquent mortgages are those with payment 90 or more days past due or in the process of foreclosure.
SOURCES: Mortgage Bankers Association; Haver Analytics.

Chart 6
Texas Construction-Related Employment Picks Up



SOURCES: Texas Workforce Commission; seasonal and other adjustments by the Federal Reserve Bank of Dallas.

levels. Responding to higher prices, Texas contractors are planning to build about one-third more homes than a year ago.

Nationally, housing starts are up nearly 35 percent in the past year, bouncing back from the depth of the bust, when construction fell 68 percent from its long-term average. Yet even as U.S. and Texas housing construction declined during the downturn, Texas has accounted for an ever-larger percentage of the new units begun nationwide. Before the housing boom, Texas represented 9 percent of permits, roughly in line with its share of the U.S. population; Texas homebuilding now amounts to 14 percent of the total. Current U.S. home construction is half its long-term average, while Texas is 15 percent below the long-run figure.

Staying Strong in 2013

The Texas housing outlook is positive overall. Stronger-than-average employment growth and consistent in-migration should continue boosting demand for homes and apartments. Additionally, increased construction jobs and enhanced consumer wealth effects from improved financial conditions should add to economic growth, which in turn aids housing.

Headwinds remain, however. The nation's budget debate over fiscal issues and possible tax reform could slow growth in the national economy and affect housing demand. While the forecast for Texas suggests moderate expansion, Dallas Fed business contacts remain cautious.

Still, in the near-term, residential construction will continue contributing to growth in Texas. Pent-up demand coupled with a tight supply of inventory will propel single-family construction, while apartment construction in many Texas metropolitan areas is already at high levels.

Given the increased building activity, prices should eventually slow their ascent in both the apartment and single-family home sectors.

Petersen is a business economist and Daly is a research analyst in the Research Department of the Federal Reserve Bank of Dallas.

Notes

[1] See "The Oil Boom in Eagle Ford Shale" on the Dallas Fed website for more information on the role of Eagle Ford in the Texas economy, http://dallasfed.org/research/econdata/eagleford.cfm.

[2] See "Texas Likely to Continue to Lead Nation's Recovery," by Keith R. Phillips, Federal Reserve Bank of Dallas *Southwest Economy*, First Quarter, 2013.

[3] We use the Federal Housing Finance Agency (FHFA) purchase-only home price index to measure home price movements. The data are available for each state and the U.S. and cover repeat-sales purchases. Many other price indexes show results similar to the FHFA index, but are not as widely available at the same geographic level.

A Conversation with Greg L. Armstrong

Trains Carry the Load of U.S. Crude Surge as Pipeline Growth Lags

Greg L. Armstrong is chairman and CEO of Plains All American Pipeline LP, one of the nation's largest crude oil and energy transportation companies. The Houston-based firm handles more than 3.5 million barrels per day of crude oil and natural gas liquids (NGLs), much of it through pipeline, rail tanker car, trucking and terminal holdings. Armstrong is also a director and chairman pro tem on the board of the Federal Reserve Bank of Dallas, Houston Branch.

Q. When did you realize that the U.S. energy industry's recent growth was more than simply a burst of activity?

Crude oil production in the Bakken formation [in North Dakota and Montana] was in the neighborhood of 100,000 barrels of oil a day in 2007. It has increased recently to as high as 700,000. It was also about that same time that operators in the Eagle Ford Shale [in south central Texas], which was probably producing in the neighborhood of 30,000 barrels per day in 2009, started to apply the same technology. The early results were very encouraging; it was almost too good to believe. You stood back and looked at the vast nature of the resource and you said if this continues to work, it could be fairly large.

About 2009, we decided to start actively participating in the rail transport of crude oil. We did our calculations and realized quickly that the production of crude in areas such as the Bakken and in the Eagle Ford was going to ramp up more quickly than the industry was going to be able to install pipelines to transport it, and so rail provided the bridge that enabled us to move large volumes for a decent distance. We had been involved in the rail business for close to 15 years. We had the expertise in-house to know how to move petroleum products by rail, but our activities at the time were limited to NGLs or liquefied petroleum gas (LPG).

Pipelines are generally much more efficient and they're much cheaper. They require more upfront investment, but they have cheaper variable costs. So, if you know where you want to take crude oil on a routine basis, pipeline is the best method. Crude oil also is moved on [104-car-long] unit trains because pipelines are so difficult to build.

The change that's happened involves not just getting crude to a market, but getting it to the best market. That's the reason we believe rail will continue to be part of the longer-term solution. It'll certainly diminish in relevance five years from now, but it will still be a permanent part of the solution because it's difficult to get crude pipelines built to the East or the West coasts, which are highly populated areas, or areas that are just difficult environmentally. California permitting can take many, many years.

Q. Crude oil and natural gas producers traditionally relied on pipelines to reach refiners and other end users. How did rail transport become an alternative?

Trucking is a more immediate response, the first line of attack to a problem of moving crude oil from the wellhead to the markets. But it's limited in its capacity and volume. You can only put 180 barrels on a truck. A rail car will hold, on average, 650 barrels, and you can put as many as 100 of them on a train. So you move much larger volume for an extended distance at a lesser cost versus the truck.

If, let's say, you're going 500 miles, it may cost anywhere from $400 million to $700 million or $800 million [to build a pipeline] depending on what territory you're going through, and it may take two to three years from start to finish. If you're looking at rail and you have access to existing track, in some cases, you can build a rail loading facility for probably $30 million to $50 million. The difference is that once you complete construction, the transportation cost on a pipeline may be in the $1 to $3 range per barrel of incremental tariff. Rail is much cheaper to build, but transportation costs may be in the neighborhood of $12 to $15 a barrel.

In building a pipeline, in many cases, the pipeline owners—the people constructing it—will actually look for a 10-year commitment from the producer who wants the pipeline built. In the early stages of development of a play, producers may feel uncomfortable making that long-term commitment because they don't have enough knowledge of the size of the field or duration of production—whereas on the rail side, because you're dealing with a much smaller initial investment, you can deal with three- to five-year commitments.

Q. The sudden expansion must be straining resources. What shortages or bottlenecks place the most serious constraints on activity?

Sourcing rail cars has certainly become a bit more challenging. A car comparable to a crude oil tanker car in 2006–08 would probably cost an average of $600 per car per month to lease. Today, that cost is probably closer to $1,300 per car per month, dependent on the length of the lease. If you're looking for a very short-term lease, that number can be closer to $3,000. Another potential issue is rail congestion. The number of rail cars placed on the tracks for incremental business associated with crude oil is still a small percentage of the total for the rail companies. In certain areas, like in Philadelphia or in the Upper East Coast near Albany and New York, you

"There is such congestion in all these producing areas that rail is a volumetric solution to clearing the product from the source of production."

can run into congestion issues as tracks start to converge. So far, there's been some help on the track congestion by the fact that natural gas prices have declined to the point that they are pushing some portion of coal out of the power-generation market. Coal shipments are among the most intense uses of rail. As some of the coal cars are taken off the tracks, they have been replaced by crude oil.

To my knowledge, we have one of the largest rail-car fleets. By the end of 2013, our total fleet will reach 6,700—which includes NGLs, and about 3,000 are dedicated to crude. A year ago, our total holdings were probably in the 3,000-car range.

Skilled labor is a bit of a challenge for the energy industry in general, whether you're looking for field employees to be pumpers or drivers for trucks. It's also hard to find welders and other positions. We are just short on what you would call skilled field labor. It's a nuisance right now as opposed to a big problem, but there certainly is wage inflation in that part of the business.

Q. The Southwest has been a traditional center not only for oil and gas exploration, but also for refining and petrochemicals. How do you see that changing given the flexibility that rail tankers allow?

Much of what we are doing is taking the raw product to the refinery so that it can be refined into gasoline and diesel, etc. You really don't move the refineries around. What refiners are doing is diversifying their source of supply. When you combine the significant increase in domestic crude oil production and the Canadian crude oil production—we view those as one market, with some regulatory hurdles—we have been reducing our reliance on foreign imports of both refined products and crude oil. Around 2007, we were importing close to 10 million barrels of crude oil per day. Currently, we're importing 7.5 to 8 million barrels per day. We've had a net reduction in crude oil imports of 2.5 million barrels per day.

There is a similar trend with respect to refined products. U.S. refiners today have the benefit of being able to buy discounted crude. U.S. crude oil trades at a discount to the world benchmark of Brent. U.S. refiners also have access to cheap natural gas. They are competing against international refiners who have to buy LNG-indexed natural gas [to power their plants]. So they have a cheap feedstock and a cheap power source for the refineries. As a result, we have seen a significant increase in the export of refined products.

So, going back to that 2007 period, refined exports were about 1 million barrels a day, and refined-product imports were around 3.5 million barrels a day. Today, that number is closer to 3 million barrels a day of refined-product exports, and we've reduced our reliance on refined-product imports to about 2 million barrels a day. These refiners have an advantage over their world competitors to supply markets. They are buying cheap and selling high. That'll work every time.

Q. There is great demand for rail services. How do you keep things moving given the competitive environment?

This is where scale and scope come into play. We are one of the largest customers for both loading and unloading with the railroads. They're trying to make all their customers happy. But they want to make sure they keep their largest customers happy, for sure.

There's typically negotiation about rates, but as a practical matter, you're not going to be denied service—it's just a question what you're going to pay. If you're looking to ship crude one time in a spot transaction, your price is not going to be as favorable as if you're willing to commit to a certain number of rail cars for the next four or five years. There are discounts associated with higher volumes.

Q. How much of the price of a barrel of oil is attributable to transport and storage?

If you're in the Bakken and you want to go to Louisiana, it takes about five days' transit time, and the walk-up rate would be about $15 [per barrel]. If you're going to Yorktown, Va., which is on the East Coast, it would be closer to $17.50. Ultimately, we think we can get it to California for about the same cost.

Once the barrel gets to a particular location, it has a commodity value. If I put a barrel of WTI [West Texas Intermediate], a barrel of Bakken, a barrel of Light Louisiana Sweet and a barrel of Brent side by side, quality-wise there may not be a dollar difference between those barrels. Ultimately, the refiner is going to pay the same price for it. The question gets to be, how did I get it there? It's really a discount: So instead of saying how much of a barrel cost is transportation, it's how much did the producer have to give up to get it to the right market.

Q. How do environmental concerns play into your business plans?

Hydraulic fracturing has nothing to do with the mode of transport. In the future, if they were to restrict hydraulic fracturing, it could have a major impact on everything that's already occurring.

Without hydraulic fracturing, you couldn't have the significant volume of recoveries that we have in the Bakken or the Eagle Ford.

There's been a little more press attention recently because of the Keystone [pipeline planned between Canada and the Gulf Coast]. It appears that some who oppose Keystone are trying to keep the oil out of the U.S. altogether. If you don't put it in a pipeline, it's probably going to come in by rail. The question is how do you decrease the probability of an environmental event? Certainly, derailments do occur. With rail, access to wherever the derailment would occur is pretty easy. The volumes would be pretty limited, and you wouldn't have a continuous flow the way you would with a pipeline, perhaps, where they couldn't get a valve shut in time. It's unlikely that if you had a derailment, you would have all the cars rupture.

There are some mitigating checks and balances on the safety issue. I've read that the safety of pipelines is much better than the safety of rails. Now the push from some of the same people who opposed the Keystone pipeline is that rail is three times more likely to have an accident than a pipeline. So, there are pluses and minuses to both.

As an American who believes in the best for our country, I think Keystone should be approved. As a company, we might be in a position to make more money if it weren't. The simple fact is that if we aren't bringing in crude from Canada, we are going to countries less friendly to us, with higher uncertainty.

Q. Looking out a decade, how will the way oil and gas reach the market change?

There's going to be a high demand for rail in the next four or five years. We'll be looking to lease rail cars at cheaper rates after there are too many cars looking to find a home. Right now, there is such congestion in all these producing areas that rail is a volumetric solution to clearing the product from the source of production. Ultimately, we think rail will be used mostly to access markets that can't be accessed by pipeline—the ability to get to the East and West coasts and occasionally the Gulf Coast.

Rail will be a pressure-relief valve when there is a disconnect with a refinery that goes down or a pipeline has some shutdown time or a quality imbalance. We are going to end up with too much light sweet product in the system relative to what the refiners have designed their refineries to run. Years ago, they spent billions upon billions of dollars to run heavy sour crude. We need to clear the light crude out of the Gulf Coast and take it to the East and West coasts to balance things out because those refiners are captive to [light sweet] Brent.

Q. If production of oil and natural gas liquids continues to increase, do you think the U.S. will become an oil exporter?

In the absence of a regulatory prohibition on exporting, we are not that far away from it making sense for us to export even though we are not totally

self-sufficient on crude oil. What should happen? We ought to be able to start exporting light sweet crude and continue to import the heavy sour crude that the refineries are designed to run. That's what would happen in a normal market, free of restrictions.

If Congress would just remove that prohibition, I think we would balance the market by letting the crude go where it had the best price advantage. In the absence of that, we will see light sweet discounted. That should cause somebody in Washington to focus on the fact that we should let free markets work. The big danger of changing the rules is if gasoline prices were to go up 50 cents a barrel and you're the politician who permitted exports, someone's going to draw a correlation. It may have nothing to do with cause and effect, but it's not politically real savvy. Sometimes people do the political thing and not the right thing.

Photo courtesy of Plains All American Pipeline LP

Unit trains stretching over 1.25 miles bring crude oil from the Bakken formation in North Dakota and Montana to refineries on the Gulf Coast.

POPULATION: Texas Top Destination for Cross-State Moves

Texas was the No. 1 destination for domestic migrants from July 2011 to July 2012, according to Census Bureau estimates of net population movements.

Over two-thirds of people relocating to Texas were from elsewhere in the U.S. rather than outside the country, a switch from the early 2000s, when 80 percent of net in-migration was international. Total migration in the 2011–12 period accounted for roughly half of the 400,000 increase in Texas' population, which totals 26 million. (Net births accounted for the rest.)

California and New York were the top two originating states for Texas arrivals, according to the 2011 American Community Survey. Nearly 22,000 more people moved from California to Texas than went the other direction. The figure was 17,000 more from New York.

Many of these migrants relocated to growing Texas cities. Dallas was again the No. 1 destination city for domestic migrants in the U.S. Houston was second and Austin fourth, with San Antonio eighth.

The energy boom helped speed population growth in Texas and other areas, particularly across the Great Plains. On a percentage basis, Midland was the nation's fastest-growing metropolitan area (4.6 percent), while adjacent Odessa ranked fifth (3.4 percent).

—Christina Daly

NATURAL GAS: Mexican Imports from U.S. Reach Record High

Mexico imported a record amount of natural gas from the United States in 2012, according to the U.S. Energy Information Administration (EIA). The 1.7 billion cubic feet per day (Bcf/d) was 24 percent more than the prior year and the highest since the EIA began collecting the data on Mexico in 1973. Energy analytics firm Bentek Energy expects imports from the U.S. to reach 3 Bcf/d by year-end 2015.

Mexico's natural gas imports are expected to continue rising on the strength of growing electricity demand. Mexican natural gas consumption rose an average of 6 percent annually from 2000 to 2011, while production increased 4 percent per year, according to the International Energy Agency (IEA). Imports overall accounted for almost 30 percent of Mexico's natural gas supply in 2011.

Greater Mexican production could be supported by development of shale gas, mainly in northeast and east-central parts of the country, the EIA said. Mexico potentially has one of the world's most significant shale gas resources, but development is encumbered by environmental, financial and other obstacles.

The U.S. provided 80 percent of Mexico's gas imports last year. Natural gas from Texas—transported via pipeline—accounted for about 75 percent of those imports. Most imports likely came from the Eagle Ford formation of south central Texas, the EIA said.

—Amy Jordan

BIRTH RATES: Texas Leads U.S. in Teens Having Multiple Children

Texas, whose teenage birth rate ranked fifth in the U.S. in 2011, has the highest share of "repeat births" to mothers under age 20 of any state, according to the Centers for Disease Control and Prevention. Repeat births—a second child or more—occurred in 22 percent of all teen births in Texas.

Having multiple children at such a young age generally leads to lower educational attainment and, with that, lower earnings potential, economists say.

Louisiana, Arkansas and Oklahoma were also among eight states with rates of 20 percent or greater. The national low was 10 percent in New Hampshire. Of 66,800 repeat births nationally in 2010, 86 percent were second children, 13 percent third children and 2 percent fourth or more.

Hispanics experienced one of the highest rates nationally, 20.9 percent, followed by non-Hispanic blacks at 20.4 percent. Non-Hispanic whites had the lowest rate (14.8 percent).

Some studies have surmised that teenage pregnancy, rather than a cause of lower incomes, reflects an implicit economic assessment by many young mothers that they would face limited financial prospects even in the absence of early parenthood and that costs of childrearing are relatively low.

—Michael Weiss

As Mexico's Social Safety Net Grows, Issues Arise

By Melissa LoPalo and Pia Orrenius

Mexico is realizing its commitment to building a social safety net, after developing innovative programs over the past two decades that target universal health care, poverty reduction and food security. Macroeconomic stability and democratic rule since 2000 have accelerated progress, and social spending as a percentage of GDP has increased from 8.6 percent in 2000 to 11.3 percent in 2010, according to the Economic Commission for Latin America and the Caribbean.

Social programs cover more than half of Mexico's population, even as critics contend that a lack of resources has led to poor quality of services as well as to unintended social and economic consequences.

Seguro Popular, begun in 2002, has brought health insurance to 52.6 million low-income, informal-sector or unemployed workers and their families. With recent appropriations, officials believe they are closing in on their goal of achieving universal health care. *Oportunidades*, which started in 1997 as *Progresa*, requires that children attend school in return for twice-monthly cash assistance as well as health care and food support for their families. In 2010, 5.8 million households were covered.

70 y Más, introduced in 2007, seeks to improve the quality of life for the rural elderly lacking pensions by providing monthly financial support. It covered 2 million seniors in 2010.

Procampo, which pays grants to land-holding farmers during each agricultural cycle, was initiated in the fall–winter planting cycle of 1993–94 in anticipation of Mexico's entry into the North American Free Trade Agreement. Although the program, intended to offset the impacts of increased foreign competition, was meant to last 15 years, it still covered 2.5 million farmers in 2010.

Independent and government-commissioned studies have shown the initiatives meet many of their goals and serve their intended populations. For example, *Seguro Popular* has reduced catastrophic health-care spending, while *Oportunidades* has boosted students' performance and health.

Still, there are concerns the programs distort labor market incentives while at times providing substandard services. Critics worry that *Seguro Popular*, by giving informal workers benefits usually reserved for those employed on the books, makes formal sector jobs less attractive.

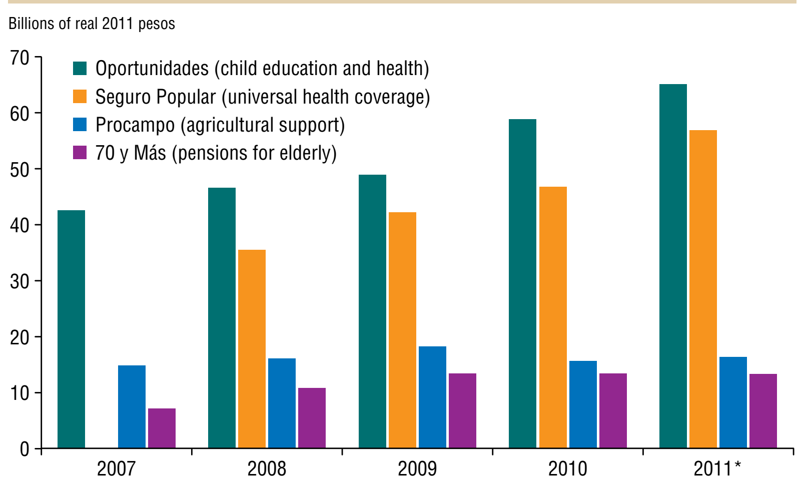
Seguro Popular is tied to a significant reduction in the flow of workers into the formal sector, decreasing the size of the sector by 0.4–0.7 percentage points, according to the World Bank. Much of that decline came during the program's first two years. Although beneficiaries are supposed to make payments based on their income, in practice only 2 percent of them do, raising questions about the sustainability of *Seguro Popular*. It lacked accreditation for one-third of the medical services it offered in 2011 and provides only a fraction of promised drugs and services. The flow of resources from the federal government to state and local authorities remains slow, with little transparency and accountability. Gaps in facility quality persist; rural locations in particular, often staffed by medical students instead of physicians, are hampered by poor infrastructure.

Oportunidades' goal of improving school attendance doesn't address school quality; Mexico ranks last among Organization for Economic Cooperation and Development (OECD) countries for education in the OECD's Better Life Index. A government report found that 30 percent of *Oportunidades* students lack basic language competency after primary school and 55 percent have insufficient language and reading comprehension skills after secondary school.

The future of these programs depends on the government's ability to fund them. Their introduction and expansion—particularly *Seguro Popular* and *Oportunidades*—have rapidly boosted social spending (*see chart*). These increases are sure to continue as the programs grow to capture more of their target populations while improving service quality.

Despite the considerable list of current and future challenges, Mexico has emerged as a pioneer of creative social programs in the developing world, with many millions of its citizens benefiting.

Spending on Major Social Programs Increases



*2011 numbers are original budget numbers.

SOURCE: Consejo Nacional de Evaluación de la Política de Desarrollo Social.

Banks Continue Their Recovery Despite Slowing Revenue Growth

By Kenneth J. Robinson

Questions persist about how long bank profits can continue increasing because a core revenue measure for banks—net interest margin, or the difference between interest earned and interest paid—remains in a long-run decline.

The banking industry continues its recovery from the financial crisis, with profitability and some measures of lending robustly increasing and asset-quality problems abating. Moreover, Eleventh Federal Reserve District-based banks are still outperforming their counterparts nationwide, although the gap between the two groups is narrowing.[1]

Questions persist, however, about how long bank profits can continue increasing because a core revenue measure for banks—net interest margin, or the difference between interest earned and interest paid—remains in a long-run decline. Additionally, a broader revenue measure, pre-provision net revenue, which strips out the effect of improving loan quality from top-line results, has been unusually weak during the industry's recovery.

Profitability Remains Strong

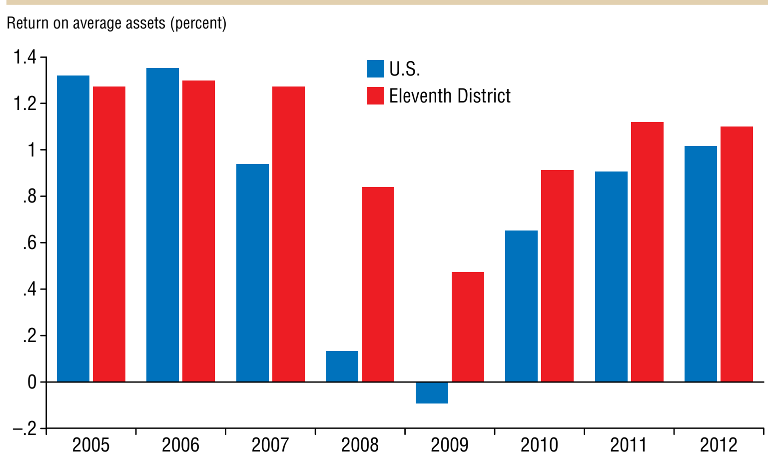
In 2012, U.S. banks' profitability, as measured by return on average assets (ROAA), exceeded 1 percent for the first time since 2006 and marked a third consecutive annual increase (*Chart 1*). Eleventh District institutions' ROAA exceeded 1 percent for a second straight year. At 1.1 percent, the 2012 district performance was down only two basis points (100 basis points equal one percentage point) from 2011.

Nationally, banks set aside less for bad loans—their provision expense—and incurred lower noninterest expenses, such as salaries and office space and furniture costs. Within the district, profitability narrowed as declining provision and noninterest expenses didn't offset a combination of lower net interest income and reduced earnings from fees (reflected in lower noninterest income).

Asset Quality Improves

The proportion of loans with payment 90 days or more past due plus those no longer accruing interest—the noncurrent loan rate—stood at 3.5 percent at banks nationwide at the end of

Chart 1 Bank Profits Continue to Recover

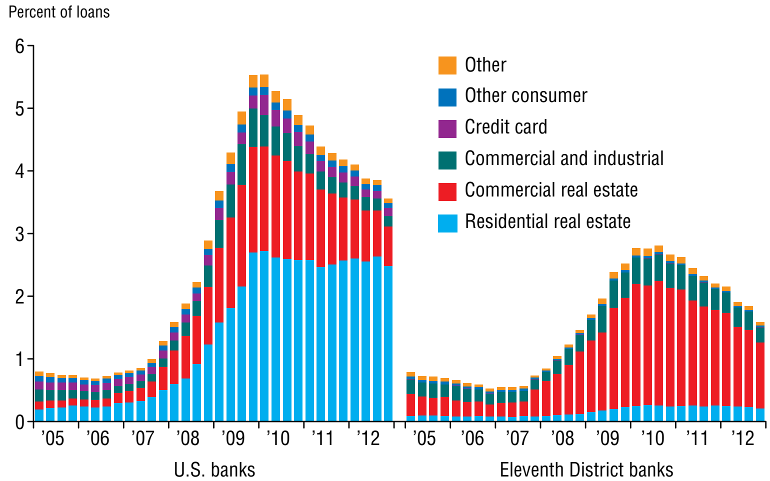


SOURCE: Report of Condition and Income from the Federal Financial Institutions Examination Council.

last year, down from a record high that exceeded 5.5 percent in 2010 (*Chart 2*).[2] Noncurrent loans—with the largest component in residential real estate—remain far off their precrisis level of less than 1 percent. In the Eleventh District, where the noncurrent loan rate topped out at 2.8 percent in 2010 and has yet to fall below its precrisis 1 percent level, loan difficulties have been concentrated in commercial real estate.

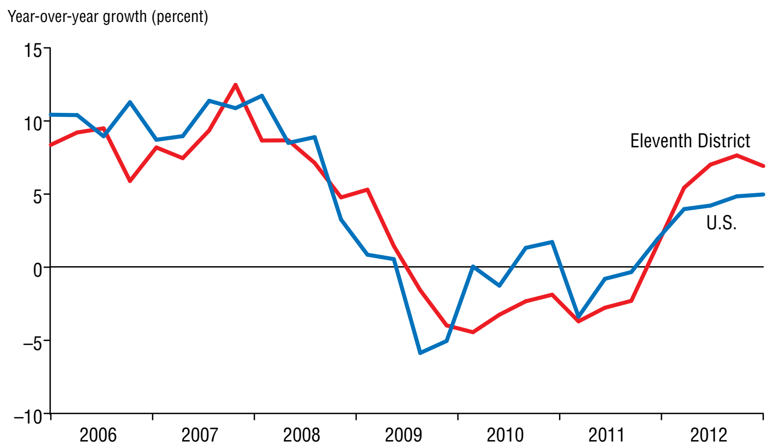
Losses on loans also continue improving, with loans charged off, net of any recoveries, totaling 1.1 percent of average loans at U.S. banks in 2012 and 0.4 percent at district banks. Losses reached 2.7 percent nationally and 1.2 percent in the district in 2009 and are now closing in on precrisis levels.

Chart 2 Noncurrent Loan Rate Steadily Improves



SOURCE: Report of Condition and Income from the Federal Financial Institutions Examination Council.

Chart 3 Growth in Total Lending Continues



SOURCE: Report of Condition and Income from the Federal Financial Institutions Examination Council.

Lending Rebounds

Weak profitability and asset quality problems during the crisis affected lending. Despite an economic recovery beginning in mid-2009, sustained bank lending increases did not appear until year-end 2011. Growth has since occurred for five consecutive quarters in the nation and in the district (*Chart 3*). Total loans outstanding rose 4.9 percent among all institutions, 6.9 percent in the district, where the result was off slightly from a recent peak increase of 7.6 percent in third quarter 2012.

Unfortunately, not all lending categories experienced robust activity. While the 9 percent business loan growth rate at U.S. banks in 2012 exceeded the district's 6.3 percent expansion, small business lending fell 1 percent nationally.[3] Overall, small business loans outstanding at year-end 2012 remained below 2006 levels, before the crisis. Meanwhile, district small business lending expanded 0.7 percent last year.

Small business loan growth varied among banks of differing sizes.[4] Such lending increased 0.2 percent at U.S. banks with assets of less than $500 million, but declined 0.4 percent at institutions with assets between $500 million and $1 billion, and fell 2.5 percent among banks with more than $1 billion in assets. In the Eleventh District, banks of all sizes increased small business loans—up more than 2.7 percent at the smallest institutions and at mid-sized banks, rising 0.4 percent among the largest lenders. The pattern confirms the significance of community banks as sources of credit to small businesses.

Revenue Pressures Growing

Amid the good news regarding profits, asset quality and lending, concerns linger about banks' future ability to earn sufficient revenue to maintain profitability. A traditional measure of banks' revenue is net interest margin (NIM), or income from interest earned on loans less the interest payments made on deposits, expressed as a percentage of average earning assets (*Chart 4*). Nationally, NIM plummeted to a record low of 3.15 percent in 2008 during the crisis, then appeared to recover before declining again. Similarly, NIM fell to a record low of 3.1 percent at Eleventh District-based banks during the regional financial crisis of the late 1980s and subsequently recovered. While NIM can steeply decline during periods of distress, it has been slipping nationally and regionally recently. After NIM peaked at 4.5 percent in 1992 for all banks and at 4.7 percent in 2000 for district institutions, it stood at 3.4 percent nationally and at 3.5 percent regionally at year-end 2012.

Moreover, this decline is evident across different sizes of banks (*Chart 5*). For the smallest-sized banks, NIM peaked in 1994; for banks with assets between $1 billion and $10 billion and $10 billion to $50 billion, the high occurred in 1997; among the largest institutions, NIM held fairly steady, peaking in 2002. Such sustained interest-margin declines suggest increased competitive pressure, especially for smaller-sized banks. Some of the competition is attributable to relaxed interstate branching restrictions with the Riegle–Neal Act of 1994, increasing popularity of money market mutual funds and growth of the shadow banking sector—including hedge funds and private equity—that accelerated in the late1990s.

Another important measure of revenue, pre-provision net revenue (PPNR), is the sum of net interest income and noninterest income subtracted from noninterest expense. It is a more comprehensive measure of revenue than NIM and, like NIM, is unaffected by the amount banks set aside to cover potential bad loans. That makes it particularly informative around turning points.

In times of difficulties, increases in provision expense often lead to declining profitability.[5] Conversely, when the industry begins to recover, lower provision expense presages greater profitability. For instance, when looking at the 111-basis-point improvement in ROAA from 2009 to 2012, declining provision expense contributed 153 basis points to improved profitability, more than offsetting a combined 29-basis-point reduction in net interest income and noninterest income (*Table 1*). PPNR provides a sense of the industry's core revenue unaffected by sometimes large swings in provision expense.

Chart 4 Net Interest Margins Decline in District and U.S.

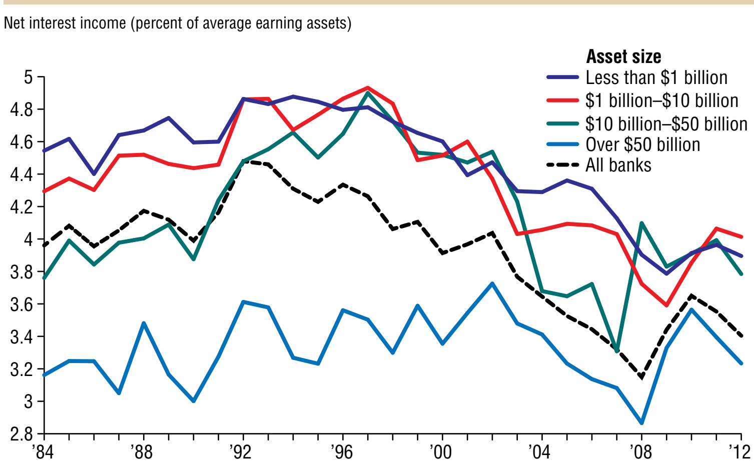
SOURCE: Report of Condition and Income from the Federal Financial Institutions Examination Council.

PPNR peaked in 2002 at 2.64 percent of average assets, falling to 1.58 percent in 2008 (*Chart 6*), led by decreases in both net interest income and noninterest income that more than offset declining noninterest expense. PPNR's subsequent recovery from 2008 to 2010 reflected favorable movements in net interest income and noninterest income that more than compensated for increased noninterest expense. The recovery, however, proved short lived; PPNR declined in 2011 and 2012.

For 1984–2012, PPNR as a percentage of average assets has exceeded ROAA by an average of 108 basis points. After this gap peaked in 2009 at 203 basis points, it narrowed steadily and stands at a record low of 76 basis points. Varying provision expense is the biggest contributor to this gap over time.[6] This current relationship between an improving ROAA and a declining PPNR is unusual. Lower provision expense would continue to increase ROAA while leaving PPNR unchanged, thus narrowing the gap further. However, provision expense has just about returned to its precrisis level. Bolstering ROAA requires new sources of revenue, overhead expense reductions or some combination.

Achieving this combination might be more difficult for small community banks than for larger institutions. Larger banks can use their size to realize

Chart 5 Net Interest Margins Decline Across Bank Size



SOURCE: Report of Condition and Income from the Federal Financial Institutions Examination Council.

Table 1

Gauging the Contributions to U.S. Bank Profitability

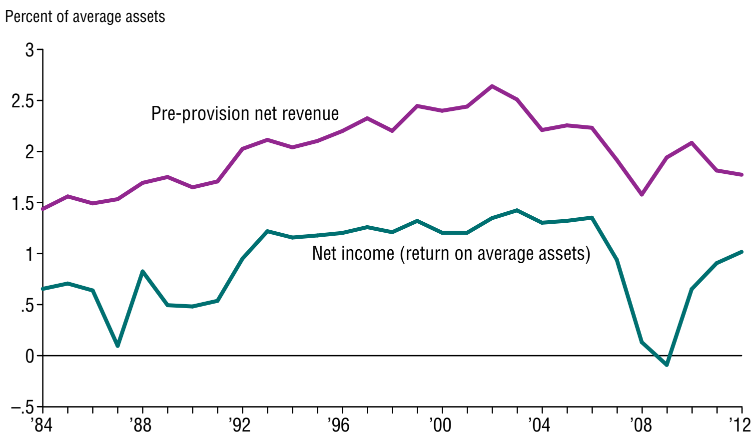
	Percent of average assets		Difference (basis points)	Effect on return on average assets
	2009	2012		
Revenue				
Net interest income	3.04	3.02	–2	–
Noninterest income	2.05	1.78	–27	–
Expenses				
Noninterest expense	3.15	3.02	–13	+
Provision expense	1.94	0.41	–153	+
Taxes	0.04	0.41	37	–
Other items*	–0.05	0.06	11	+
Net income (return on average assets)	–0.09	1.02	111	

*The "other items" category includes securities gains/losses and extraordinary items.

SOURCE: Report of Condition and Income from the Federal Financial Institutions Examination Council.

Chart 6

Pre-Provision Net Revenue Weakens



SOURCE: Report of Condition and Income from the Federal Financial Institutions Examination Council.

opportunities in activities such as venture capital and investment banking and may more easily increase revenues. Cost cutting at a time of new regulations is especially difficult for community banks and their relatively more-labor-intensive operations.[7]

Moreover, since the financial crisis, the largest declines in net interest margins have occurred in banks with assets of less than $1 billion. Today's low-interest-rate environment may have helped depress margins at community banks, which heavily rely on time deposits for funding. They are constrained by competitive pressures that result in an effective floor on the rates paid on interest-bearing deposits.[8]

Revenue Challenges

The banking industry's recovery from the financial crisis proceeds amid encouraging profitability increases, asset quality improvement and sustained lending growth. Still, revenue growth seems to be especially weak—despite three years of solidly advancing profitability—partly attributable to declining provision expense that has just about played itself out. Future profitability will depend on how the industry responds to the revenue challenges it faces.

Robinson is an assistant vice president in the Financial Industry Studies Department at the Federal Reserve Bank of Dallas.

Notes

[1] The Eleventh Federal Reserve District is composed of all of Texas, the northern portion of Louisiana and the southern portion of New Mexico. Data for the Eleventh District banking industry have been adjusted for structural changes involving recent relocations of banks into the district. For more on the robust performance of banks based in the Eleventh District, see "Eleventh District Banking Industry Weathers Financial Storms," by Kenneth J. Robinson, Federal Reserve Bank of Dallas *Southwest Economy,* Second Quarter 2010.

[2] Banking data are generally available on a consistent basis beginning in 1984. References to record levels of various measures therefore cover the period beginning in 1984.

[3] Business loans are defined as commercial and industrial loans plus loans secured by nonfarm, nonresidential properties. Small business loans are defined as business loans less than $1 million.

[4] Lending data by size are based on a panel of banks and are adjusted for mergers.

[5] See "Bank Profits Rebound as Loss Set-Asides Ease," by Kelly Klemme and Kenneth J. Robinson, Federal Reserve Bank of Dallas *Southwest Economy*, Second Quarter 2011.

[6] This gap between PPNR and ROAA consists mostly of provision expense plus taxes minus gains on securities sold. Historically, of the average gap of 108 basis points, provision expense accounts for 68 basis points, taxes 44 basis points and gains on securities (minus) 4 basis points.

[7] See "Regulatory Burden Rising," by Christoffer Koch, Federal Reserve Bank of Dallas *Financial Stability: Traditional Banks Pave the Way*, www.dallasfed.org/microsites/fed/annual/2012/ar12d/index.cfm.

[8] See "Community Banking Study," Federal Deposit Insurance Corp., December 2012, Chapter 4.

Will Reforms Pay Off This Time? Experts Assess Mexico's Prospects

By Jesús Cañas, Roberto Coronado and Pia Orrenius

The current environment appears pivotal. Economic crises that gripped Mexico in the 1970s, '80s and early '90s wiped out much of the progress previously achieved.

Mexico's sharp first-quarter slowdown isn't entirely surprising. While the country has made considerable economic advances in recent years, its growth is closely tied to that of its northern neighbor, and the U.S. economy stalled at year-end. Some Mexico indicators, such as industrial production, have been flat since mid-2012.

The lackluster performance, although a cause for concern, gives impetus to the efforts of Mexico's new president, Enrique Peña Nieto, who in his first months has worked with the nation's major political parties to achieve labor, education and telecommunications reforms. Judicial, banking and energy industry changes are in the works.

The Pact for Mexico represents the latest attempt over a three-decade span to achieve reforms and propel the nation forward.

The challenges Mexico confronts as it seeks to become a leader among emerging economies were considered at a Federal Reserve Bank of Dallas conference, "México: How to Tap Progress," last fall in Houston.[1] The meeting explored why economic expansion in Mexico has barely kept up with population growth and why the nation's per capita income growth has trailed that of emerging-market economies such as Brazil and Chile.

The current environment appears pivotal. Economic crises that gripped Mexico in the 1970s, '80s and early '90s wiped out much of the progress previously achieved. Punishing inflation stole purchasing power and savings from citizens and eroded trust in the government and its institutions. Some reforms succeeded, some failed and some fell short of their promise.

Over time, macroeconomic reforms achieved notable progress as measured by openness to trade, low inflation and fiscal discipline. In a dramatic turnaround, Mexico has become by far the biggest exporter in Latin America. The transformation stems from changes dating back 20 years or more that include removal of trade barriers, establishment of central bank independence, economic diversification, transparency of government, and lawmakers' commitment to fiscal restraint.

The Dallas Fed conference examined the global competition Mexico faces from China, the legacy of Mexico's early institutions, and the nation's hopeful democracy that still benefits the wealthy few over the emerging middle class and its entrepreneurs. Also on the agenda were the informal economy, which employs the majority of Mexico's labor force but lacks investment, and national energy monopoly Pemex, whose oil production has dwindled in recent years. Other topics were the rule of law and the drug cartels' impact, particularly along the border.

Standing Next to China

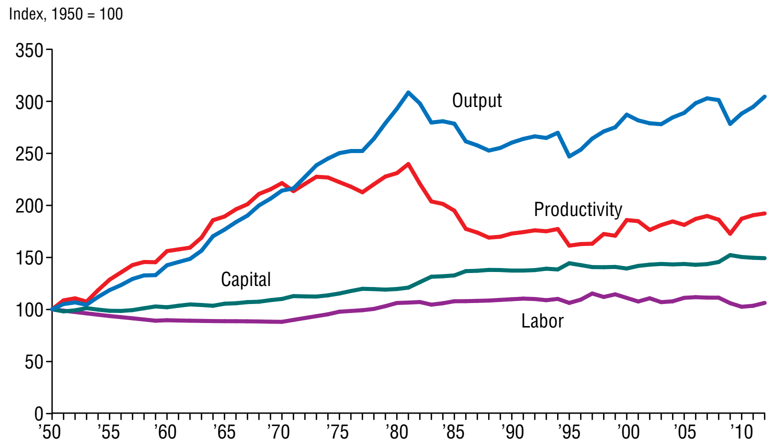
In his opening address, "What Does Mexico Need to Do to Roar Like a Latin American Puma?" University of Minnesota professor Timothy Kehoe investigated why Mexico's growth hasn't matched China's in recent years, even as both countries emerged as major global traders.

Mexico opened itself to trade as part of impressive economic reforms enacted from 1984 to 1995, becoming a major exporter and experiencing massive capital inflows. Nevertheless, Mexico's output growth has been sluggish, primarily due to poor productivity growth, especially in the nonmanufacturing sector (*Chart 1A*). China's output growth, by comparison, has shot up (*Chart 1B*).

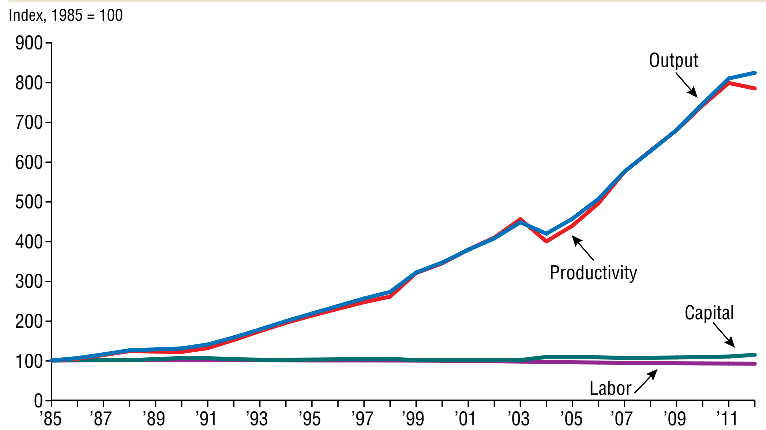
Four institutional factors hold back Mexico: risk-averse banks that restrain lending, a lack of contract enforcement, inflexible labor markets and "pirates."

Chart 1 Erratic Productivity Growth Limits Mexico's Gains from Free Trade

A. Growth Accounting for Mexico



B. Growth Accounting for China



SOURCE: "Why Have Economic Reforms in Mexico Not Generated Growth?" by Timothy J. Kehoe and Kim J. Ruhl, Federal Reserve Bank of Minneapolis *Staff Report* no. 453, November 2010; updates by Kehoe and Ruhl.

Poor business practices, rather than standard trade theory, account for Mexico's performance, Kehoe said. The World Bank ranks Mexico 48th on its list of best places to do business (by comparison, the U.S. is fourth). Four institutional factors hold back Mexico: risk-averse banks that restrain lending, a lack of contract enforcement, inflexible labor markets and "pirates."[2]

"By pirates, I mean all inefficient companies and businesses that are an impediment to the implementation of best business practices," Kehoe said, citing Mexico's telecommunications, transportation, electricity and energy industries.

Although China's barriers to growth are identical to Mexico's, China is developing rapidly for the same reasons Mexico did from 1950 to 1980: urbanization, industrialization and the spread of basic education, Kehoe said. When this catch-up growth wanes—in as soon as five to 10 years—China's rapid growth will also stop, Kehoe said.[3]

Assessing "Mexico's Competitive Position in the New Global Economy," professor Gordon Hanson of the University of California at San Diego concurred with Kehoe that Mexico's performance has been lackluster over the last 25 years.[4] Real per capita (GDP) growth averaged only 1.1 percent annually during the period, and Mexico's share of global GDP fell from 2.5 percent to 2 percent, Hanson said. However, Mexico significantly reduced poverty—the share of the population living on less than $2 per day dropped from 20 percent in the mid-1990s to 5 percent today.

Imperfect credit markets, a large informal sector, a telecommunications monopoly, and energy sector inefficiency are underlying problems, Hanson said. Domestic credit to the private sector is less than 30 percent in Mexico, compared with 50 percent in India and more than 60 percent in Brazil. The informal (mostly unregulated) sector traps labor in small, low-productivity firms. A lack of competition in input markets has led to high input costs, such as expensive electricity, harming manufacturing. Additionally, he said, increased Chinese competition provides an economic headwind for Mexico because it has the misfortune of "producing what China produces and not what China buys." China's global share of manufacturing exports has risen since 1990 from 2 percent to 14 percent.

The good news is that Mexico has survived China's rise and, looking ahead, the China threat is waning, Hanson said. Mexico retains a comparative advantage in transportation equipment, electrical machinery and electronics. Moreover, Mexico's terms of trade in labor-intensive manufacturing have improved amid cost increases in China. In 1996, average per capita annual manufacturing sector earnings were $3,000 per year in Mexico and $1,000 in China. By 2008, China's costs had risen threefold, shrinking the cost differential between the two countries from 3:1 to 1.3:1.

Two other factors boost the Mexican outlook—educational attainment is keeping up with other developing countries such as China and the Philippines, and while Mexico is highly urbanized, its proportion of city dwellers is relatively small. Mexico's share of population in cities of more than 1 million inhabitants is 35 percent, compared with 45 percent in the U.S. Education and urbanization go hand-in-hand with economic growth, Hanson said.

Weak Institutions

Stanford University professor Stephen Haber's presentation, "Mexico: The Long Reach of Inequality and Authoritarianism," explored the historical roots of the country's problem with pirates.

He traced the evolution of anticompetitive practices to deep, long-standing inequality. Only 2 percent of rural Mexican households owned land in 1900, compared with 90 percent in Canada and 70 percent in the U.S. Income inequality breeds authoritarianism because, in a functioning democracy, voters favor redistribution of income, Haber said. Mexico, based on its inequality measure, has been authoritarian for most of its history, becoming a democracy only after 2000 (*Chart 2*).[5]

Income inequality and authoritarianism adversely affected economic development. Investors were reluctant to invest and banks to lend, given a lack of property rights and high expropriation risk. Banks, confronting an inability to enforce the terms of loans, limited their transactions, stymieing financial development. The government, attempting to induce investment, limited competition and kept taxes low on income and capital. The combination of meager government revenue and nondemocratic rule yielded relatively little public investment in human capital, such as basic education, constraining labor productivity. Access to capital became a barrier to entry, and a handful of large companies dominated most industries—a situation that persists.

Haber offered two recommendations for reform: Mexico should tax property—such taxes are virtually nonexistent in the country—and use the revenue for investment in public goods, and it should end term limits for state and local politicians. This would encourage officials, who could run for reelection, to invest in education, courts and police. "You can sign a trade agreement with a stroke of a pen, but reforming institutions is a glacial process," Haber cautioned.

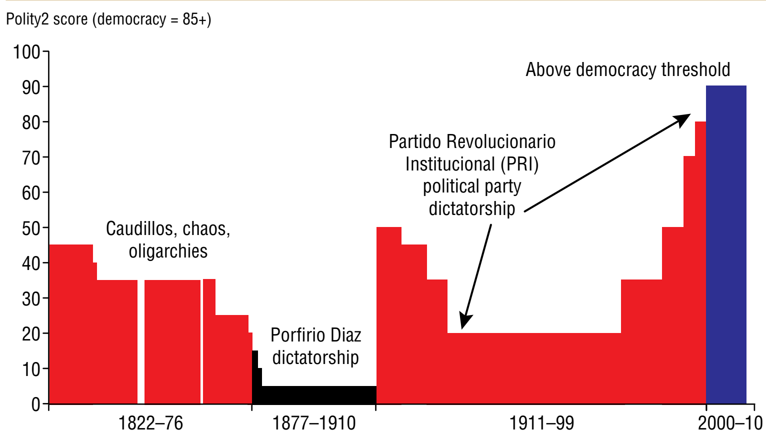
Labor Market Informality

Fausto Hernandez Trillo, a professor at Centro de Investigación y Docencia Económicas in Mexico City, addressed the question "Why Don't Reforms Deliver Growth in Mexico?" The main reason for Mexico's tepid economic growth over the last 30 years has been diminishing total factor productivity (TFP) (*Chart 3*) despite more than 400 reforms since 1988, he said.[6]

Only one-fifth of the 3.7 million firms in Mexico are in the tax-paying formal sector.[7] The remainder makes up the informal economy, which accounts for 72 percent of private sector employment. "There are two Mexicos," Hernandez Trillo said, "a modern, productive formal sector with large firms, and a poor informal sector dominated by small, unproductive firms."

Highly anticipated fiscal reform will be insufficient to lift TFP if it is not

Chart 2 Mexico Barely Out of Authoritarianism



NOTE: Polity2 normalized to run from 0 to 100.
SOURCE: Polity IV Project, 2010 update, www.systemicpeace.org/polity/polity4.htm.

combined with social security improvements, Hernandez Trillo said.[8] Under the current system, formal sector workers and employers pay for bundled health and pension benefits; informal sector participants benefit from unbundled parallel programs paid for by the government (*see "Spotlight," page 12*). Hernandez Trillo proposed universal social insurance funded by a broad-based, value-added tax rather than by employers. This could help end informality and increase TFP 2 percent, he estimated.

While Hernandez Trillo argued that providing social insurance to the informal sector may be detrimental to formality, Oliver Azuara, an economist with the Inter-American Development Bank, offered contrary evidence in his presentation, "Informality and the Expansion of Social Protection Programs: The Case of Mexico." Seguro Popular, the government program providing health care for informal sector workers, increased its coverage from 200,000 people in 2002 to 53 million people in 2012. The program's expansion didn't significantly increase informality in urban areas, though informality did rise among certain subgroups, such as urban workers with nine or fewer years of education, Azuara found.[9] Health benefits are likely not the key reason people choose to work formally or informally, he said, but the program has a positive economic impact because healthier workers have greater labor productivity.[10]

Benjamin Temkin, a professor at Facultad Latinoamericana de Ciencias Sociales in Mexico City, noted in his paper, "Understanding Informal Employment in Mexico," that the much-maligned informal sector is large and ubiquitous but has advantages. In the typical Latin American country, 70 percent of the labor force is in the informal sector; in Mexico, 61 percent of the 44-million-person labor force is in the sector. Informal sector jobs are characterized by low wages that result in cheap goods and services and low unemployment. Such jobs also prevent social unrest and reduce criminality.

Temkin asked whether people choose informal employment or are forced into it and, relatedly, whether informal self-employment reflects entrepreneurship or is a survival strategy. Informal economy workers tend to be older, less educated and female and earn less than formal sector workers, he said. Opinion survey results suggest they are also less likely to be happy, and they have a diminished assessment of their health status.[11] These findings suggest informal sector employment is not the preferred choice of workers but one in which they are forced, Temkin said. Rather than shut down informality, he advocated reforming the formal sector by boosting its flexibility, removing barriers to entry and providing incentives for formalization of occupations such as domestic service.

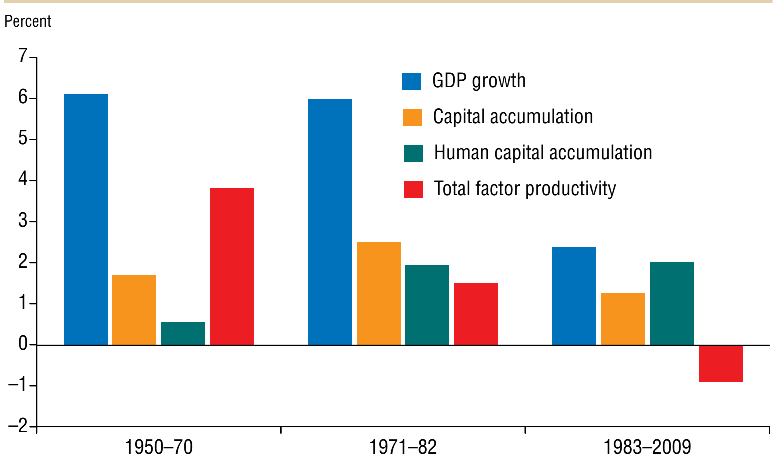
Limited Oil Competition

Rice University economist Kenneth B. Medlock discussed Mexico's declining oil production and the possibility that the country could become a net oil importer by 2027 if present trends continue.[12] In his paper, "Mexico's Unfulfilled Potential: Scenarios for Oil Supply, Demand and Net Exports for Mexico," Medlock argued that Mexico can continue as an important oil supplier only if it can log reserve replacements from more cost-efficient development of existing holdings, locate new discoveries and realize lower growth of domestic demand.

Mexico, with large proven and potential oil and gas resources, requires investment at a time when the state-owned oil company, Petroleos Mexicanos (Pemex), lacks resources and technology for exploration. Pemex is relatively inefficient on the average revenue-efficiency scale (*Chart 4*). Unlike most major international oil producers, Pemex's earnings aren't reinvested but rather are diverted to other government revenue objectives.[13] So while there is an urgent need for investment in upstream production of oil and gas, the Pemex monopoly doesn't respond, and regulations prevent foreign firms from booking Mexican reserves. Without that ability, outside investors will invest elsewhere, Medlock said.

The Eagle Ford Shale oil boom in south central Texas exemplifies regulatory differences—even as activity accelerates north of the border, there is no drilling or production in northern Mexico despite the contiguous geology. Independent investors lacking the hefty capital required for projects abroad or for deepwater exploration operate the vast majority of Eagle Ford projects. The key driver for investment has been the ability to book reserves on balance sheets. The result: sharply rising oil production in the Eagle Ford, from nothing four years ago to more than 700,000 barrels per day currently.

Chart 3 Mexico Operates in Low-Productivity Growth Environment



SOURCES: "Demographics, Human Capital and Economic Growth in Mexico: 1950–2005," by Rodrigo García-Verdú, Poverty Reduction and Economic Management unit, Latin American and the Caribbean region, World Bank, June 2007; data updates from Fausto Hernandez Trillo, Centro de Investigación y Docencia Económicas.

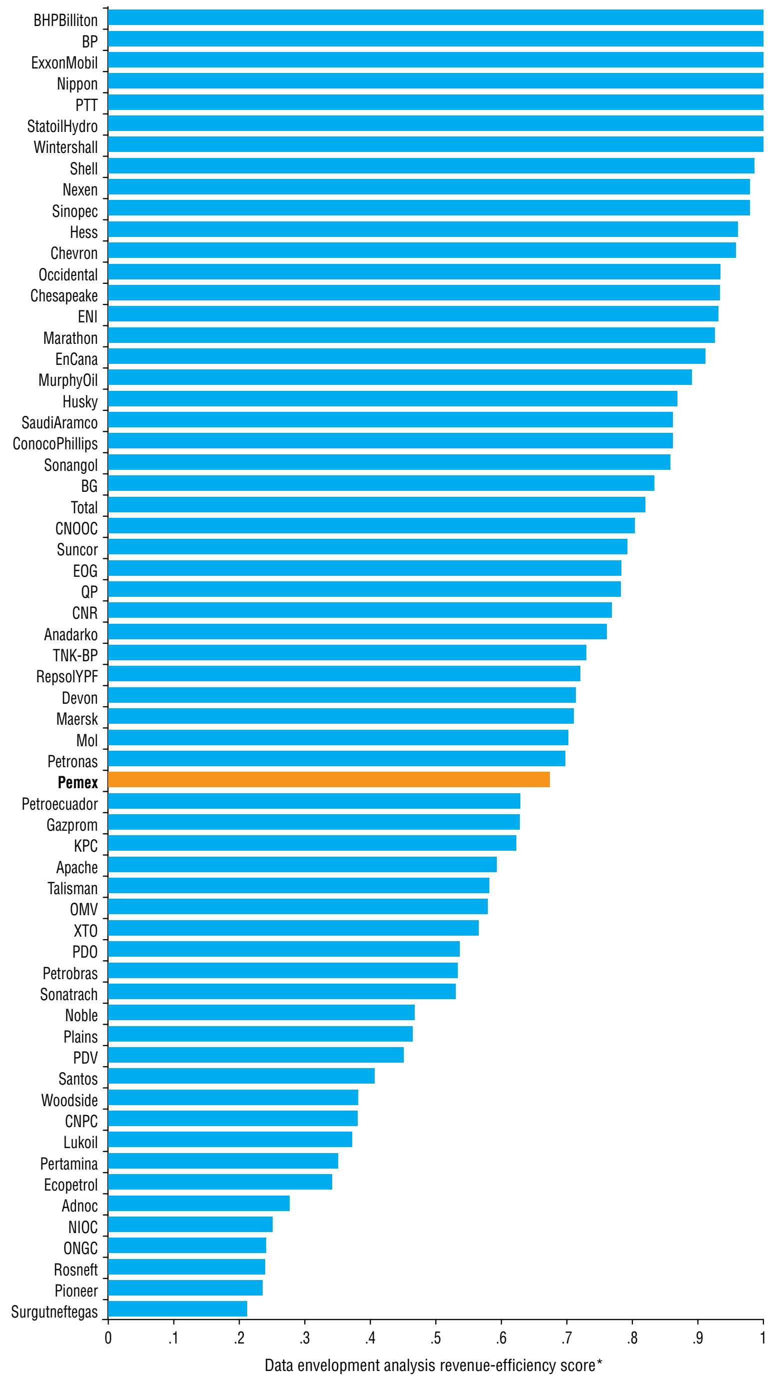
In “Mexico’s Meandering Telecommunications Sector,” Ernesto Flores-Roux, a professor at Centro de Investigación y Docencia Económicas, cited an Organization for Economic Cooperation and Development study that calculated annual welfare loss of 1.8 percent of GDP attributable to excessive prices for telecommunications services.[14] Mexico’s telecommunications sector lacks competition; a sole provider (Telmex) accounts for more than 70 percent of the market. Mexican consumers overpay by an amount equal to Mexican government gasoline subsidies, Flores-Roux said. Moreover, mobile phone penetration is uneven among income groups, with the gap between the rich and the poor steadily widening. Mexico’s mobile system trails every Latin American country except Cuba and Bolivia.

Inadequate regulation and enforcement are behind Mexico’s monopolistic telecommunications sector. To improve competition, Flores-Roux said, the government should eliminate regulatory agencies’ overlapping functions. Independent regulators must be able to fine firms and set prices only when needed, and government officials should be unable to interfere in company operations. Foreign direct investment in the sector should be allowed without restrictions, he said.

Trade Liberalization’s Range

Raymond Robertson, a professor at Macalester College, argued that Mexico has fully embraced trade liberalization. His paper, “How to Tap Progress: The Role of Trade Openness,” noted major milestones that include joining the General Agreement on Tariffs and Trade in 1986, the North American Free Trade Agreement (NAFTA) in 1994 and the World Trade Organization (WTO) in 1996. As Mexico grew increasingly open, trade diversity increased and the share of U.S.-related trade decreased. Mexico not only lowered tariffs, but also decreased its reliance on temporary trade barriers such as antidumping duties. Since 2009, Mexico has imposed temporary barriers when they have been justifiable (against the U.S.) while dismantling discriminatory ones (against China), Robertson found.

Chart 4 Pemex Ranks 37th in Revenue Efficiency



* Data envelopment analysis (DEA) uses a sample of firms to define a “frontier” of maximum outputs that can be obtained by combining the different inputs. Firms that determine the frontier of maximum outputs are assigned a DEA score of 1. All other firms are then given a score between zero and 1 that represents their distance from the frontier.

SOURCE: “The Revenue Efficiency of Pemex: A Comparative Approach,” by Peter R. Hartley and Kenneth B. Medlock III, James A. Baker III Institute for Public Policy and Mexican Studies Programme at Nuffield College, Oxford University, April 29, 2011.

Mexico’s recent trade policy cannot be blamed for its lackluster economic performance, Robertson said. Mexico has been “doing everything right” when it comes to trade and has paid a price when facing competition from low-wage

> Mexico's challenges are continued diversification of trading and production partners and development of policies that encourage production of higher-value-added goods.

countries such as China; certain sectors simply could not compete. Apparel exports, which boomed after NAFTA, plummeted between 2000 and 2012 as China, Vietnam and Indonesia became major U.S. suppliers.[15]

Mexico's outlook depends on its future role as part of a North American production unit, he said. Since NAFTA, Mexican and U.S. production workers have become complements. But U.S. manufacturing employment is in long-run decline. Mexico's challenges are continued diversification of trading and production partners and development of policies that encourage production of higher-value-added goods.

Daniel Chiquiar, director of economic measurement at Banco de México, analyzed the labor market consequences of Mexico's trade liberalization with the U.S. since NAFTA in 1994 and with China's WTO entry in 2001 in his presentation "Labor Market Consequences of Trade Liberalization and Competition in Foreign Markets: The Case of Mexico." Mexico specialized in low-skilled, labor-intensive processes under NAFTA. Wages rose for workers at maquiladora plants, whose output reflected NAFTA-motivated production-sharing arrangements between Mexico and the U.S.

Unfortunately for Mexico, the products in which it and China specialized overlapped significantly. An increase in Chinese exports after 2001 negatively affected Mexico's U.S. market share. Chiquiar found that NAFTA positively impacted Mexico's labor market indicators (reducing unemployment and raising wages), while increased Chinese competition was a net negative for labor markets. Border cities such as Ciudad Juárez, Matamoros and Tijuana were most sensitive to NAFTA and to China's WTO entry.

Crime and Violence

Samuel Gonzalez Ruiz, a professor at Universidad Nacional Autónoma de México, argued in his presentation, "Public Safety in Mexico and Strengthening the Rule of Law," that Mexico's drug-related violence is rooted in its political system. While there has been "alternation" between political parties with the end of Partido Revolucionario Institucional (PRI) one-party rule in 2000, a true political transition has not taken place, he said. Lack of consensus has stalled passage of important reforms.

Criminality is a function of poor governance in three ways, he said. First, taxes make up only 9.5 percent of GDP, but business costs include the price of extortion payments to criminal organizations in the absence of consistent law enforcement. Second, Pemex revenues heavily finance the government, which creates regional imbalances because poor, oil-rich states subsidize wealthy industrial states in the north. Third, social programs are sometimes used in political campaigns to buy votes.

Surprisingly, perhaps, crime in Mexico is positively correlated with increased law enforcement spending, Gonzalez Ruiz said. Some of it reflects corruption; after police, prosecutors and judges are trained to fight and prosecute crime, many accept offers to work for or abet the drug gangs.

Liliana Meza González, a professor at Universidad Iberoamericana, asked whether violence and insecurity in Mexico have become factors driving emigration to the U.S. during her presentation, "Violence and International Migration in Mexico." Employment opportunities and family reunification have traditionally motivated migrants. Migration has decreased since 2007 due largely to the recession and depressed construction industry in the U.S., she said. Nevertheless, the number of people fleeing Mexico for security reasons has increased, particularly from northern border states where drug-related violence is concentrated.

People may flee the violence or hunker down, reluctant to leave the relative safety of their homes. After reviewing existing research, Meza González found what appears to be a threshold effect of violence on migration. Low levels of violence reduce migration; high levels increase it.

Violence has depressed migration for the country as a whole, except in the northern border states, where violence is positively correlated to emigration, Meza González said. Violence also appears to increase remittances home and reduce circular migration—rather than return home, migrants extend their stays abroad. Meza González also found that migrants motivated by personal safety concerns—kidnapping and extortion, for example—are typically drawn from higher education or income levels. Receiving communities in the U.S. stand to benefit from this stream of migrants—a significant human capital loss for Mexico.

After the Conference

Since last November's conference, President Peña has put Mexico squarely on the path of change. With the support of the major political parties, he has passed significant labor, education and telecommunications reforms. Banking and judicial measures are progressing. These positive turns have surprised many Mexicans, including several experts who spoke at the Dallas Fed conference.

In response to the question "Is the return of the PRI a return to the autocratic governments of the past?" former U.S. Ambassador to Mexico and keynote speaker Tony Garza said: "There is no way to return to the past in a new Mexico." The growth of the middle class, the modernization of the Mexican media and the rise of independent institutions will act to hold the political class accountable, he said.

"But isn't there a risk to doing business in Mexico?" he was then asked. Garza reflected on the shortcomings of other emerging-market nations—Brazil's relatively closed economy, corruption in Russia, for example—and noted how far Mexico has come. "There is a greater risk," he said, "to not doing business in Mexico."

Cañas is a business economist and Orrenius is an assistant vice president and senior economist in the Research Department at the Federal Reserve Bank of Dallas. Coronado is assistant vice president in charge of the El Paso Branch.

Notes

[1] Conference presentations may be viewed at www.dallasfed.org/research/events/2012/12mexico.cfm.

(*Continued on back page*)

A Mexican Central Banker's View of How to Tap Progress

Banco de México Deputy Governor Manuel Sánchez noted Mexico's disappointing long-term economic performance during the conference's opening address. The country has significantly progressed based on several indicators of human development, yet its long-term per capita income growth has been less impressive, he said.

Sánchez, an economist by training who came to the central bank in May 2009 after working in private equity, outlined his observations about Mexico's challenges:

On Mexico's transformative economic history:

"In the last 100 years, the country transformed itself primarily from an agrarian to an urban, service-oriented economy while undergoing an extensive industrialization process."

Regarding Mexico's average annual growth in real per capita gross domestic product (GDP) of 2 percent from 1950 to 2010:

"It is similar to that registered during the same period by some mature economies, such as the United States. Since Mexico is a developing country, presumably exhibiting a wider set of basic unexploited investment opportunities, output growth should have been higher. . . .

"Furthermore, Mexico's economic evolution compares unfavorably with leading emerging economies, which five decades ago were either below or at its own level of income. For instance, while in 1960 Mexico had roughly the same per capita GDP as Singapore and more than double that of South Korea, now, some 50 years later, this indicator for Mexico is only one-fifth that of Singapore and less than one-half that of South Korea."

Why labor productivity declined from 1980 to 2005:

"Aggregate labor productivity fell because, relative to total labor in the economy, production dropped in agriculture and nonmanufacturing more than it grew in manufacturing and services. . . . [Meanwhile,] sectoral labor productivity increased only in the least- and in the most-productive sectors: agriculture, mainly because of labor emigration, and manufacturing.

The impact of informality on the labor productivity decline:

"A large part of both construction and services exhibits a high degree of informality. It is well-known that informality is linked to small-scale production, low investment in new technologies and poor incentives for human capital accumulation [increasing worker skills]."

Importance of credible economic measurement and policy evaluation:

"Structural reforms should . . . be focused on removing the root causes of impediments. A major task is one of measurement, as shown by the fact that statistical studies quantifying the effects of previous structural changes are relatively scarce."

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Will Reforms Pay Off This Time? Experts Assess Mexico's Prospects

(*Continued from page 23*)

[2] He also noted the adverse growth effects of widespread crime and violence in recent years.

[3] See "Why Have Economic Reforms in Mexico Not Generated Growth?" by Timothy J. Kehoe and Kim J. Ruhl, Federal Reserve Bank of Minneapolis Research Department Staff Report no. 453, November 2010.

[4] See "Why Isn't Mexico Rich?" by Gordon H. Hanson, *Journal of Economic Literature*, vol. 48, no. 4, 2010, pp. 987–1,004.

[5] For more information about the democracy score, visit the Polity IV Project at www.systemicpeace.org/polity/polity4.htm.

[6] Total factor productivity (TFP) accounts for changes in total output due to technological progress involving the efficiency of such inputs as labor, natural resources and capital. The growth rate of TFP is the amount by which output would increase as a result of improved methods of production.

[7] Registered in Instituto Mexicano del Seguro Social.

[8] See "The End of Informality in Mexico? Fiscal Reform for Universal Social Insurance," by Arturo Anton, Fausto Hernandez and Santiago Levy, Interamerican Development Bank, 2012.

[9] For an extensive discussion of the results, see "Policies to Promote Growth and Economic Efficiency in Mexico," by Javier Arias, Oliver Azuara, Pedro Bernal, James Heckman and Cajeme Villarreal, Munich Personal RePEc Archive Paper no. 20414, University Library of Munich, Germany.

[10] Azuara agreed with Haber that the key to ending informality is to create incentives for state and local politicians to tax firms by letting them keep some of the revenue for local provision of public goods and allowing them to run for reelection.

[11] See "Informal Self-Employment in Developing Countries: Entrepreneurship or Survivalist Strategy? Some Implications for Public Policy," *Analyses of Social Issues and Public Policy*, vol. 9, no. 1, 2009, pp. 135–56.

[12] For more details, see "Scenarios for Oil Supply, Demand and Net Exports for Mexico," by Kenneth B. Medlock III and Ronald Soligo, in the study "The Future of Oil in Mexico," James A. Baker III Institute for Public Policy, Rice University, and Mexican Studies Programme at Nuffield College, Oxford University, April 29, 2011.

[13] Pemex revenue makes up one-third of federal government revenue.

[14] OECD *Review of Telecommunication Policy and Regulation in Mexico*, Organization for Economic Cooperation and Development, Paris: OECD Publishing, 2012.

[15] See *Sewing Success? Employment, Wages, and Poverty Following the End of the Multi-Fibre Arrangement*," Gladys Lopez-Acevedo and Raymond Robertson, ed., Washington, D.C.: World Bank, 2012.

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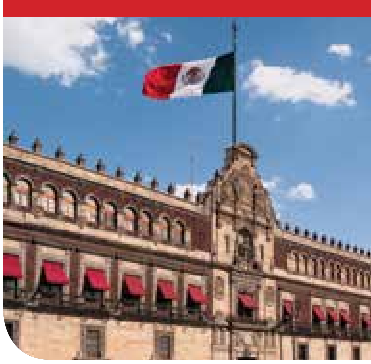

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