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Economics Group

Special Commentary

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Impact of Hurricane Harvey

A Category 4 Hurricane Slams the Texas Coast then Stays a While

Hurricane Harvey made landfall on the Texas Gulf Coast as a category 4 hurricane late in the evening of Friday, Aug. 24 and hovered in the region for five days, dumping as much as 51 inches of rain in some neighborhoods. Bayous and reservoirs built to shield downtown Houston overflowed as a storm that prompted the national weather service to add a color to rain accumulation scales submerged the nation's fourth-largest city. The storm was unprecedented, and the amount of damage it inflicted on structures that had never before flooded translates to a significant degree of uninsured losses, which will eventually be shouldered out of pocket or by taxpayers. CoreLogic estimated less than half of the properties in the affected area that have a moderate/high risk of flooding were not in special flood zones that are required to have flood insurance. The cluster of issues resulting from Harvey and the emotional and economic losses are staggering, and we endeavor to provide some economic context to frame decisions until official final loss estimates are available.

Hurricane Harvey dumped as much as 51 inches of rain in some places

A complete accounting of the losses associated with Hurricane Harvey will likely take months or even years. Early assessments suggest the storm will be one of the costliest on record in terms of property damage, with large swaths of damages uninsured. While it is still too soon to compile a precise estimate, total losses are likely to be in the ballpark of $90 billion. Damages to homes will likely total close to $40 billion and losses of automobiles other household items will be in the neighborhood of $5 billion. With an economy of more than $550 billion annually, business interruption will likely total at least $28 billion. Adding in damages to commercial property and public infrastructure, the total rises to around $90 billion.

Figure 1

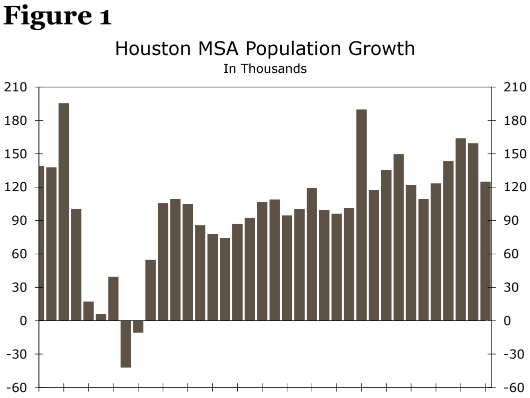
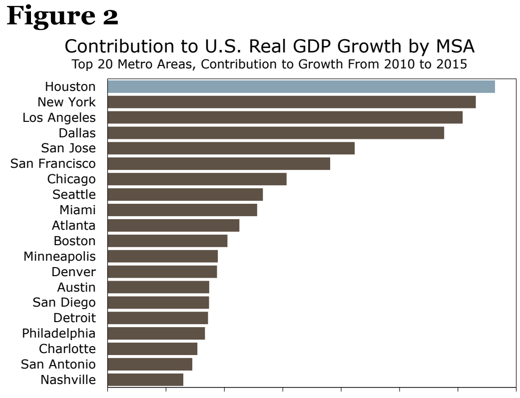


Figure 2



Total losses are likely to be in the ballpark of $90 billion

Source: Census Bureau, U.S. Department of Commerce and Wells Fargo Securities

Houston's Economic Buoyancy to Be Proven Once Again

Houston's economy is enormous. The greater region, which includes Houston, Corpus Christi and Beaumont-Port Arthur, is home to nearly 7.8 million people and has added 824,000 people since 2010. That gain eclipses the entire population of Charleston, S.C. (Figure 1). The Greater Houston GDP tops $550 billion, which equates to about 3 percent of the nation's GDP. Moreover, the region has accounted for 6.6 percent of the nation's GDP growth since 2010 (Figure 2). Houston is the number one market for new single-family home building and also accounts for about 3 percent of existing home sales. Hurricane Harvey has largely shut down the city, and the loss of that activity will certainly be apparent in national economic indicators in the near term. However, much of Houston's capital intensive economy is already back online and service-providing businesses are rapidly reopening their doors. Still, the storm hit Houston just as the region's key energy sector was rebounding from the oil price collapse of a few years ago and its vital petrochemical industry was seeing strong growth.

The region has accounted for 6.6 percent of the nation's GDP growth since 2010

Houston's economy was largely stalled in 2015-16 as the downturn in energy exploration hit the heart of the nation's energy sector. Houston's economy was a key support to the nation's recovery from the Great Recession, benefitting from the shale revolution and a significant increase in investment in refineries and petrochemical plants. Houston was the top job creator in the first half of the decade, before oil prices began to slide in the back half of 2014. December 2014 marked the peak of Houston's growth, with nonfarm employment up 4 percent (Figure 3). Total nonfarm employment was essentially flat for the next two years, which is a notable achievement considering the loss of over 100,000 jobs in mining, manufacturing, construction and professional services—those closely tied to the energy sector. All of those sectors had turned around by the start of 2017 and were rebuilding their workforces in Houston through July. Total employment was already up by 2 percent over the year.

Houstonians had endured a period of rising unemployment, as the region's jobless rate increased from 4.4 percent in December 2014 to 5.5 percent at the end of 2016—which equated to around 180,000 unemployed Houstonians, and increase of 40,000 from 2014 (Figure 4). Though metro area labor force data is subject to revisions, preliminary data indicate unemployment was about half way back to pre-downturn levels in July, as workers had either found work or left the labor force. Houston's unemployment rate had already drifted below 5 percent prior to the storm.

What makes Harvey unique is its sheer size and the extraordinary amount of rain the slow-moving storm produced

Harvey is certainly not Houston's first rodeo. Devastating storms to hit the region include Ike in 2008, Rita in 2005, Allison in 2001 and Allen in 1980. What made Harvey unique is the sheer size of the storm and the extraordinary amount of rain the slow-moving storm produced. Moreover, the Houston region has grown so much since the last major storm hit the area, adding 824,000 people just since 2010.

Figure 3

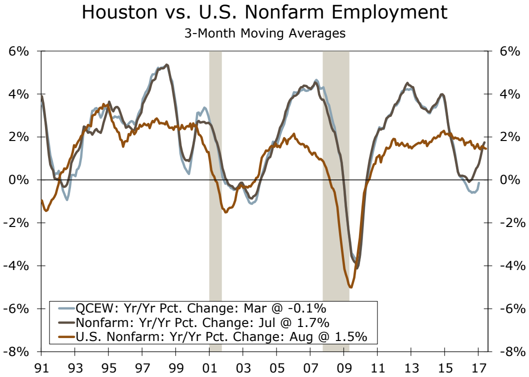
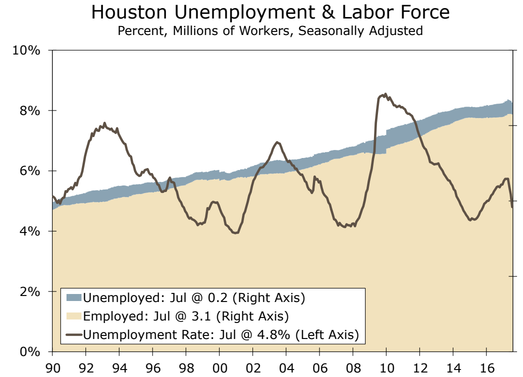


Figure 4



Source: U.S. Department of Labor and Wells Fargo Securities

Waterlogged Flood Insurance

Private insurance typically only covers wind and water damages from storms. Damages from flooding are covered separately, with over 90 percent of all flood insurance being covered by the National Flood Insurance Program (NFIP). The program was created to insure existing homes built in areas deemed to be at-risk for flooding, while dis-incentivizing new homes to be built in floodplains. Typically, lenders require homeowners to purchase flood insurance if located in a 100-year floodplain. However, many of the homes damaged in Houston were not in floodplains, thus were not required to buy flood insurance, and owners often chose to forego it.

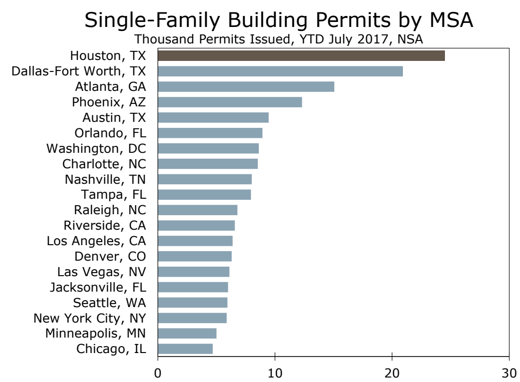
The Insurance Information Institute (III) reports that just 15 percent of the 1.6 million housing units in Harris County are covered by the NFIP (Figure 5). To put this into context, in the devastation wreaked by Hurricane Katrina that forced the NFIP to borrow $18 billion from the federal government, roughly half of the flooded homes in New Orleans were covered by flood insurance. With so many more uninsured homes in Houston, a city roughly four times the size of New Orleans' pre-Katrina population, the out-of-pocket repair costs to personal property will likely be astronomical on an aggregate basis.

The out-of-pocket repair costs to personal property will likely be astronomical on an aggregate basis

Figure 5

Houston Flood Insurance		
County	**Share with NFIP Insurance**	**Total Housing Units**
Aransas	42	15,355
Galveston	41	132,492
Brazoria	26	118,336
Orange	24	35,313
Calhoun	21	13,291
Chambers	21	11,410
Nueces	20	141,033
Jefferson	18	104,424
Harris	*15*	*1,598,698*
Cameron	12	141,924

Figure 6



Source: National Flood Insurance Program, Insurance Information Institute, U.S. Department of Commerce and Wells Fargo Securities

Homeowners without flood insurance can apply for federal disaster relief, but the funds received are typically only low interest rate loans from the government. This essentially is taking out a second, lower-cost mortgage on your home, which could create issues for those who already have large mortgage balances or have already tapped into home equity lines during times of financial hardship. After applying for federal grants or loans, assuming the request is approved, the funds could be delayed, leaving families without a permanent home for an extended amount of time. Following Hurricane Katrina, many homes were abandoned due to the inability of homeowners to repair damages, especially those with large mortgages.

In addition, those with flood insurance are not quite out of the water yet. The NFIP is currently around $24 billion in debt stemming from hurricanes Katrina, Rita and Sandy. Before Katrina, the NFIP was charging premiums in the Gulf of Mexico that were consistent with a low probability of floods, which clearly turned out to be off base. With the lower premiums being paid, the program ran out of money. Risk Management Solutions, a risk modeling company, estimates between $7 billion and $10 billion in insurance claims from the NFIP, which equates to about $65,000 per claim and approximately 100,000 to 150,000 claims. The U.S. Treasury Department extended the program a line of credit following Katrina and the availability on that line is now just $5.8 billion—well short of the estimated damages that will be realized by Hurricane Harvey. This means claims will most likely be delayed from the NFIP as well, and the federal government will need to extend more funds to the program.

NFIP claims are estimated to be between $7 billion and $10 billion

This week, a bipartisan deal was struck to approve additional funding to the Federal Emergency Management Agency (FEMA) and suspend the debt ceiling issue until Dec. 8. The separate bills essentially will fund the federal government for the next three months and provide $15.3 billion to FEMA in preparation for aid that will be necessary for damages associated with Hurricane Harvey, as well as Irma, which, as of this writing, is threatening South Florida.

Houston should get up and running fairly quickly. Rebuilding will take much longer.

Ultimately, the small percentage of homes covered by the NFIP in Houston and the financial shortcomings of the program means taxpayers and impacted households will likely end up paying the majority of repair bills. Those who cannot or will not repair their own homes could be forced to abandon them. This may result in reduced population growth in Houston, which had been one of the nation's fastest growing major metropolitan areas. A drag on personal spending in the area is likely as well, and we could see stricter building codes and tighter zoning requirements put in place to reduce the risk of future storms. With much of its economy tied to the capital-intensive energy business, Houston should get up and running fairly quickly but output will not be back at full strength for some time. Rebuilding will take much longer, as is typical following a large-scale flood. Insurance and federal aid will need to be sorted out before structures can begin to be repaired. Moreover, the extent of damages inflicted on the area may cause some businesses to reexamine their supply chain and push some investment that would have gone to Houston to other parts of the country.

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