Insights & Analysis in a Post-COVID World
GLOBAL HOUSTON

GREATER HOUSTON PARTNERSHIP. Making Houston Greater.

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The COVID-19 pandemic and its aftereffects will slow Houston's growth over the next two years. The region will experience a weaker demand for its exports, limited access to overseas markets, fewer foreign visitors, and a reduction in foreign direct investment (FDI).

GLOBAL OUTBREAK

As of noon, May 26, there were 5.5 million confirmed COVID-19 cases and nearly 350,000 deaths attributed to the virus worldwide. That's a near doubling of the 2.8 million cases and 193,000 deaths recorded on April 26.

Potential Losses From COVID-19 Pandemic

Global GDP	Payroll Jobs
$5.8 - $8.8 Trillion	158 – 242 Million

Source: Asian Development Bank

The pandemic has sent the world into the deepest slump since the Great Depression. The Asian Development Bank estimates the global economy will suffer $5.8 to $8.8 trillion in losses due to the virus. That's 6.4 to 9.7 percent of global gross domestic product (GDP). To put that in perspective, $5.8 trillion sums to the combined output of India ($3.2 trillion) and Brazil ($2.6 trillion) in '18. The $8.8 trillion sums to the output of India, Brazil and France ($2.9 trillion).

The Asian Development Bank estimates that 158 to 242 million full-time payroll jobs could be lost during the pandemic. To put that in perspective, that's roughly total U.S. payroll employment (160 million jobs) prior to the pandemic. The 242 million equates to all payroll jobs in the U.S. and Japan (66 million).

The International Labor Organization (ILO), a United Nations agency, estimates that some 1.6 billion people employed in the informal economy, nearly half the global workforce, could see their livelihoods destroyed from lockdowns to curb the spread of the virus.

The epidemic has caused stress for national governments as well. As of late May, 100 countries have requested emergency financial assistance from the International Monetary Fund (IMF). Sixty requests have been granted so far, most for countries in Africa, Central Asia and South America. The IMF has $1 trillion to lend, with one-fifth committed to date.

U.S IMPACT

The Bureau of Economic Analysis (BEA) estimates the U.S. economy shrank 4.8 percent in the first quarter, ending the longest economic expansion in U.S. history. Starting in Q3/09, the economy grew during 39 out of the past 42 quarters, with no back-to-back declines.

Now the nation is set for two consecutive quarters of shrinking GDP, the conventional definition of a recession. The drop in Q2 will be much worse than Q1. The consensus among 48 economists surveyed by *The Wall Street Journal* in early May is that the U.S. economy will shrink by nearly a third in Q2/20, with a recovery starting in Q3/20.

Forecast Percent Change, U.S. Gross Domestic Product

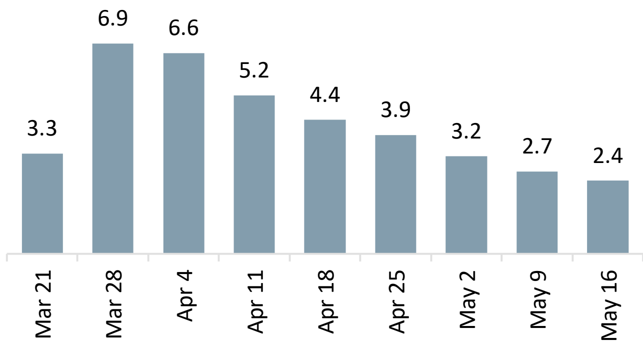
'20				'21			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
-4.8	-32.3	+9.0	+6.9	+6.9	+5.6	+4.3	+3.6

Source: *The Wall Street Journal* survey of U.S. economists

Layoffs will likely continue in the second half of the year as companies adapt to a post-COVID environment. The nation has already hemorrhaged 21.4 million jobs (March plus April losses), giving up nearly all the 22.1 million created over the past ten years. More than 38.6 million workers filed initial claims for unemployment insurance since the pandemic began, suggesting job losses may be greater than the Bureau of Labor Statistics (BLS) has reported.

Initial claims for unemployment insurance are trending downward but remain elevated. If not for the four stimulus packages totaling $2.6 trillion passed by the U.S. Congress, and U.S. Federal Reserve Chairman Jerome Powell's commitment "to using our full range of tools to support the economy in this challenging time," the nation's economy would be in even worse shape.

U.S. Initial Claims, Millions



Source: U.S. Employment and Training Administration

Houston's Struggles

As of this writing, the pandemic has cost Houston 330,100 jobs, according to the Texas Workforce Commission (TWC). By comparison, the region lost 221,000 during the '80s energy bust, or one in every seven jobs. Houston's economy is significantly larger now, so jobs lost to date represent a smaller share of total employment, about one every ten jobs. If Houston losses reach 420,000, however, the region would match the one-in-seven ratio of the '80s. Another 150,000 workers have filed for initial claims for unemployment benefits since the mid-April, so when May's jobs report is released, job losses could approach that one-in-seven level.

In April, Houston's unemployment rate stood at 14.2 percent, the highest point on record. That, too, may be an underestimate. BLS data indicate nearly 275,000 Houstonians have dropped out of the workforce since February and therefore are not counted as unemployed. If they were, Houston's unemployment rate would likely exceed 20 percent.

GRADUAL REOPENING

Though COVID-19 cases continues to rise, governments worldwide have begun reopening their economies. The *Wall Street Journal* reports that recovering air travel, hotel bookings and mortgage applications are among the early signs the U.S. economy is slowly creeping back to life.

Texas Governor Greg Abbott began reopening the Texas economy on May 1. So far, most businesses and consumers have dipped their toes in the water but few have done a cannonball off the diving board. Only 20 percent of the parking spaces in the public garages in downtown Houston are full during the workweek. Filings in Harris County for dbas ("doing business as"), a proxy for new business formations, are down 75 percent compared to this time last year. Restaurant reservations in Houston remain 70 percent below their pre-COVID levels, according to OpenTable. And METRO bus ridership in late-May is one-fifth the level it was in mid-March.

The post-COVID world will look different from the pre-COVID world. Some of the changes are obvious:

- Ten weeks of telecommuting has proven that employees can work from home and be as productive as when they worked in the office.
- The pandemic has hastened the demise of already struggling brick-and-mortar retailers.
- Broadband internet access is a necessity, like running water and electricity, not a luxury like cable television.
- Density creates risk, so open-space office concepts need to be redesigned.
- Global supply chains depend too heavily on inputs from China.
- Removing vehicles with internal combustion engines from the road improves air quality.

Other changes are less obvious, like what will happen to trade, investment and air travel, especially for Houston, in a post-COVID world.

HOUSTON'S POST-COVID FUTURE

Global trade, international travel and foreign investments have been key to Houston's growth. Trade has grown faster than GDP. International passenger traffic has outpaced domestic. And foreign-owned companies have invested billions in the local economy over the past ten years. All three, however, face post-COVID challenges.

The Partnership expects the pandemic to weaken export demand, limit Houston businesses' access to overseas markets, bring fewer foreign visitors to the city, and slow foreign investment (FDI) over the next two years. And this will occur while Houston's other growth engine, oil and gas, struggles with yet another round of bankruptcies, layoffs, and restructuring brought on by a collapse in oil prices.

FOREIGN DIRECT INVESTMENT

Over 1,700 foreign-owned firms operate in Houston. Some are household names like the Netherlands-based IKEA or Japan-based Mitsubishi. Others are less well known, like the Brazilian petrochemical giant Braskem or the Indian firm JSW Steel. And some are here because of the energy industry, like French-owned Schlumberger or Italian-owned ENI.

FDI is important because it infuses new capital into the region, expands the manufacturing base, helps underpin jobs, facilitates the exchange of ideas and best practices, increases trade, stimulates growth, and adds to the tax base. Without FDI, Houston's economy would be much smaller and local residents would have fewer employment, retail and entertainment opportunities.

Since '09, 439 foreign-owned firms have announced 669 projects in metro Houston, according to the Partnership's *New Business Announcements* database. The parent companies are from 37 countries. Those projects stretch across 63 industries and represent $35.6 billion in capital investments. That's likely an underestimate since many firms did not disclose the value of their investments.

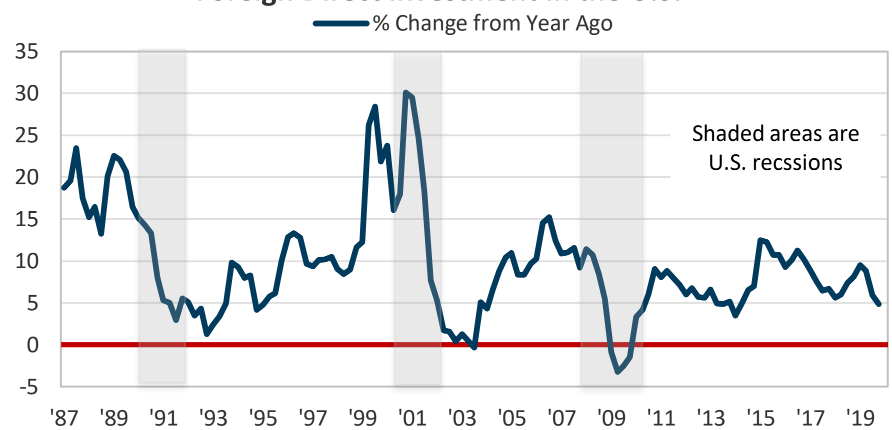
Last year, three dozen foreign-owned firms announced plans to expand in Houston. A few examples:

- Air Partner, a London-based international air services firm, opened an office in The Woodlands.
- Denso North America, a subsidiary of London-based Winn & Coals International, which specializes a pipe coating, opened a manufacturing, warehousing and research and development facility in northwest Houston.
- Stavanger-based Competentia, a global recruiting and benefits consulting firm, established offices in the Energy Corridor.
- The Voith Group, a mechanical engineering firm based in Germany, opened a facility in north Houston to focus on industrial equipment repair.
- Salzburg-based Pimcore, which provide open-source software solutions and database management, expanded its operations in Sugar Land.
- China-based Hailiang Group announced plans to build a plant to manufacture copper tubing in Sealy.
- Ashtead Technology, based in Scotland, recently opened operations in Houston to serve clients working in the Gulf of Mexico.

Foreign investment is expected to decline worldwide over the next few years. The United Nations Conference on Trade and Development (UNCTAD) expects global FDI to contract 30 to 40 percent in the near term because of the coronavirus. FDI had already fallen 13 percent from '17 to '18, according to Geneva-based World Economic Forum.

FDI always slumps in a recession. Firms must deal with weak demand, falling share prices, reduced cash flow, potential difficulties servicing debt, mounting layoffs, reductions in R&D spending, and the need to conserve cash. A recession is a poor time to take on additional debt, especially with a new overseas venture.

Foreign Direct Investment in the U.S.



Source: Board of Governors of the Federal Reserve System

New foreign investment in the U.S. has fallen in each of the last three recessions. (See chart "Foreign Direct Investment in the U.S." above.) While comparable data is unavailable, the pattern likely holds for Houston as well.

Houston has an additional obstacle. Much of the region's most recent FDI has been in the energy sector, either manufacturing oil field equipment, providing consulting services, or directly supporting operations in the field. With the industry now shrinking, there's little need for new investment.

GLOBAL TRADE

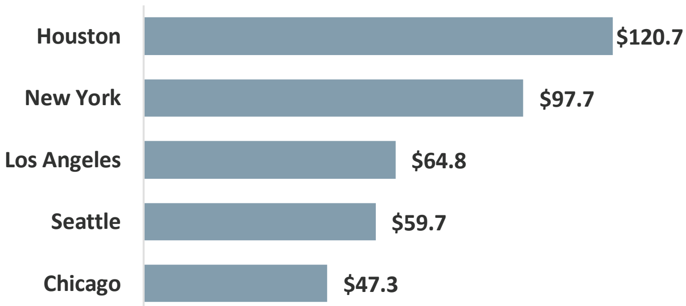
Exports are as important to Houston as the price of oil or the health of the U.S. economy. Consider the following:

- Nearly 5,000 Houston-area firms are engaged in global commerce, including more than 2,300 local manufacturers.

- The Brookings Institution estimates that in ’17, the latest data available, 17.3 percent of Houston’s economy was tied to exports, and that exports supported 330,340 jobs (indirect and direct).
- Export growth has outpaced economic growth over the past 14 years. From ’05 to ’18, exports grew at a 7.9 percent compound annual rate. Houston’s GDP grew at a 2.3 percent annual rate over the same period.

Houston led the nation in exports last year, ahead of New York, Los Angeles, Seattle and Chicago, according to the U.S. International Trade Administration (ITA). The Bayou City has led the nation seven out of the past eight years and has ranked among the top three exporters since ’05.

TOP EXPORTING METROS, '19, BILLIONS



Source: U.S. International Trade Administration

The Houston/Galveston Customs District led the nation in export tonnage in ’19. The 236.9 million metric tons were a 22.0 percent increase over ’18, according to WISERTrade. Exports accounted for 73.8 percent of all tonnage handled via the district last year. The value of exports exceeded $151.8 billion; the value of imports amounted to $85.1 billion.

Cargoes handled by the district tends to mirror the region’s industrial base, (*e.g.,* crude, refined products, chemicals, plastics, and industrial equipment), so trends in district data follow trends in metro Houston exports. Detailed statistics on Houston customs district traffic can be found at https://www.houston.org/global.

FIVE BUSIEST U.S. CUSTOMS DISTRICTS – ’19

Rank	District	Million Metric Tons (imports + Exports)
1	Houston/Galveston	320.9
2	New Orleans	238.8
3	Los Angeles	115.0
4	Port Arthur	92.5
5	New York	81.4

Source: WISERTrade

The demand for Houston’s exports, not surprisingly, is linked to global growth. As regional economies struggle, businesses reduce their purchase of goods and raw materials from abroad. As consumers suffer layoffs or pay cuts, they cut back on non-essential purchases. This often includes imports.

The World Trade Organization (WTO) warned back in October that trade growth would slow in ’20. The WTO cited rising trade tensions and a lagging global economy as reasons for the decline. The pandemic has made the expected drop even more acute. The WTO now estimates world merchandise trade will decline 13 to 32 percent this year with the downturn possibly lingering into next year.

Houston customs district traffic had started to slow prior to the downturn. The district enjoyed double-digit growth in ’17 and ’18 (18.9 percent and 21.9 percent, respectively) only to see growth flatten (1.3 percent) in ’19.

HOUSTON’S TOP TRADING PARTNERS
IMPORTS + EXPORTS, 2019

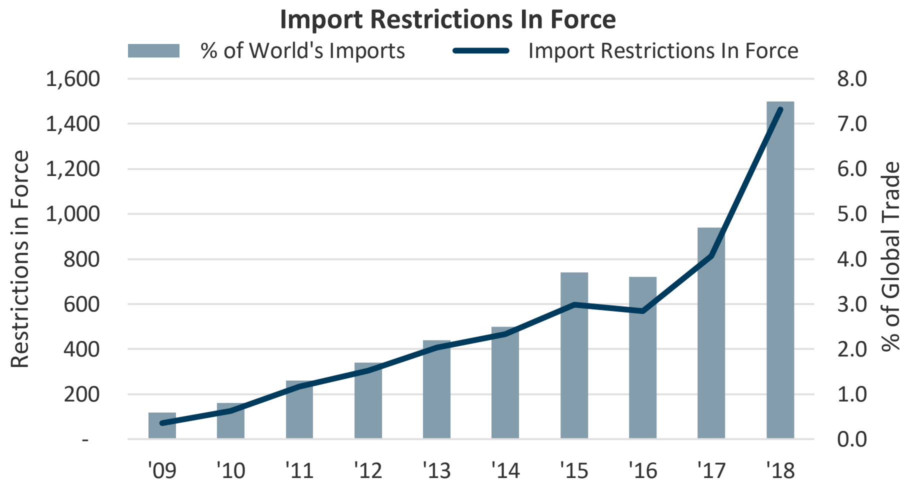
Country	Total Trade $ Billion		% Change, ’18 to ’19
Mexico	24.9	21.7	-13.1
Brazil	12.7	15.4	20.7
China	19.9	14.7	-25.9
South Korea	10.4	13.5	29.5
India	7.2	10.1	41.1
Germany	9.7	10.0	3.8
United Kingdom	7.4	9.3	25.2
Japan	9.7	9.2	-4.5
Colombia	6.4	7.0	9.6
Total Top 10	118.4	122.7	3.7
All Others	115.7	114.3	-1.2
Total	**234.0**	**237.0**	**1.3**

Source: WISERTRADE

The weakness was mainly due to the U.S. trade war with China and the uncertainty over the fate of the U.S. Mexico Canada Agreement (USMCA), the replacement for the North American Free Trade Agreement (NAFTA). Luckily, trade with the region’s other major partners grew enough to offset those declines.

But trade tensions extend beyond the feuds the White House has picked with so many U.S. trading partners. The WTO warns that more governments are enacting tariffs, quotas and other limitations on imports, which have stymied export growth worldwide. The number of re-strictions on imports has risen from 73 in ’09, affecting less than one percent of global trade, to 1,463 in ’18, affecting

7.5 percent of global trade. The restrictions are likely higher today. None of this bodes well for Houston and its ties to the global economy.



Source: World Trade Organization

INTERNATIONAL ACCESS

The Houston Airport System (HAS) handled nearly 12 million international passengers last year. That's like moving the entire populations of Paris, France or Lahore, Pakistan through the terminals at IAH or HOU. Prior to COVID-19, one in five HAS passengers traveled internationally.

International passenger growth has outpaced domestic passenger growth over the past 20 years. International counts are up 136.2 percent since '00; domestic counts are up 28.8 percent over the same period.

Twenty-three carriers offer air service to 67 destinations in 37 countries. Bush Intercontinental ranks fifth among U.S. airports in international flights per week.

INTERNATIONAL FLIGHTS PER WEEK PRIOR TO COVID-19

Rank	Airport	Flights
1	New York – JFK	1,526
2	Miami – MIA	1,424
3	Los Angeles – LAX	1,111
4	Newark – EWR	880
5	Houston – IAH	851
6	Chicago – ORD	768
7	Atlanta – ATL	697
8	San Francisco – SFO	684
9	Fort Lauderdale – FLL	648
10	Dallas/Fort Worth - DFW	628

Source: Houston Airport System

International air service has been essential for Houston's growth as a global city. Without it, Houston firms would find it more difficult connecting with clients abroad, fewer multinational firms would have selected Space City, U.S.A. for their North American operations, and the region's sizable expat community would have settled somewhere with better connections to their home country. In some ways, it's a chicken-or-the-egg scenario. Is Houston a global city because of extensive international air service, or does Houston have extensive international air services because it's a global city?

But the skies are nearly empty of airplanes. The U.S. Transportation Safety Administration (TSA) handled 95 percent fewer passengers in April '20 than it did the same month a year ago. The International Air Travel Association (IATA) estimates that more than 4.5 million flights will be cancelled across the world by June 30.

The COVID-19 recession has slashed demand for air travel, but fear of contagion plays a greater role. Unless one is flying First or Business Class, air travel is a cramped, noisy, unpleasant experience. Layer on top of that the fear of catching the coronavirus from a fellow passenger, and many consumers have chosen to avoid air travel. In a recent IATA survey, 69 percent of respondents indicated they would reconsider travel if it might result in a 14-day quarantine at their destination.

And in a May interview on NBC's *Today* show, Boeing CEO David L. Calhoun said he expects it will take "three to five years for the airline industry to return from this 'apocalyptic' state." That suggests an equal amount of time before Houston's international air connections are fully restored. What might this mean for Houston:

- *Slower export growth*: Local firms will find it difficult calling on clients abroad.
- *Challenges in attracting foreign firms:* Companies are less likely to invest in Houston if they can't visit the city.
- *Difficulties in attracting talent:* Lack of air service between home and Houston is another obstacle to surmount when recruiting foreign nationals.
- *Reduced tourism:* The more difficult the trip, the more likely the leisure traveler will select an easier-to-reach destination.
- *Slower tech transfers:* The internet facilitates the exchange of information, but face-to-face meetings often seal the deal.

Few Words about Oil and *Gas*

The world consumed approximately 100 million barrels of crude per day prior to the outbreak of COVID-19. That quickly fell to around 70 million barrels as the global economy shut down to contain the spread of the virus. Producers kept pumping, though, flooding the world with crude. Markets responded by slashing the prices to under $20 per barrel.

Initially, the surplus went into storage, but as pipelines, tanks, tankers and tank cars filled up, prices fell even further. At one point, with options contracts expiring and no place to store the crude, U.S. crude prices fell below zero. In other words, traders were willing to pay someone to take the oil off their hands.

The industry has responded to the glut by cutting exploration budgets, shutting production, and laying off employees. Capex budgets have been slashed by 30 to 70 percent according to various news reports. The North American rig count has fallen from 796 in early January to 318 in mid-May. There are fewer rigs working today than at the depth of the ’15-’16 fracking bust. U.S. and Canadian firms have already shut in two to three million barrels per day of production. OPEC and its allies have agreed to reduce output by almost 10 million barrels a day to help drain the glut. And the latest reports from the Texas Workforce Commission indicates the industry has cut 26,100 jobs in Texas since February, with half of those cuts occurring in Houston.

The situation is made worse by the heavy debt burdens in the industry, over $10 billon due in ’21 and $15 billion in ’22. At current crude prices, the producer earns just enough to cover an existing well’s operating costs, but not enough to drill any new wells, cover corporate overhead, or service debt. If prices don’t improve, the industry is poised for a wave or bankruptcies.

Unfortunately, prices aren’t expected to rise for some time. The U.S. Energy Information Administration expects West Texas Intermediate to average $30.10 per barrel this year and $43.31 next year. The futures market supports that forecast, with WTI for December ’20 delivery currently trading at $35.92 and for June ’21 delivery at $37.51. What the energy industry needs is a quick recovery and strong economic growth that sops up the glut and drives demand. That’s not likely to happen for another year to 18 months.

Recovery in the Works?

The Tuesday after Memorial Day, *The Wall Street Journal* ran a front-page story with the headline “Economy Displays Nascent Signs of Activity.” The article noted that even as layoffs rise, some industries are seeing their first improvement since the virus lockdown. So there’s hope.

The pandemic knocked the U.S. economy into a deep hole. It will take a while to climb out. Jerome Powell, Chairman of the U.S. Federal Reserve, worries that the recovery could linger into ’21. The Congressional Budget Office forecasts the U.S. unemployment rate will remain a stubbornly high 9.5 percent through the end of ’21. And the World Health Organization recently warned of an immediate second peak if areas reopen too soon. And the population has not fully embraced the need for social distancing and wearing face masks in public. Perhaps financier George Soros summed it up best when he said, ““We will not go back to where we were when the pandemic started. That is pretty certain. But that is the only thing that is certain.”

SOURCES (listed in the order first cited): Coronavirus Resource Center, Johns Hopkins University; Coronavirus disease (COVID-2019) situation reports, World Health Organization; Updated Assessment of the Potential Economic Impact of COVID-19, Asian Development Bank; The World Factbook, U.S. Central Intelligence Agency; *International Labor Organization Monitor*, United Nations; Updated Assessment of the Potential Economic Impact of COVID-19, Asian Development Bank; Employment Status Survey, Japanese Ministry of Internal Affairs and Communications; Employment Situation Summary, U.S. Bureau of Labor Statistics; Gross Domestic Product, 1st Quarter 2020 (Advance Estimate), U.S. Bureau of Economic Analysis; Current Employment Statistics, Texas Labor Market Information; Local Area Unemployment Statistics, Texas Labor Market Information; For The Economy, The Worst of the Coronavirus Shutdowns May Be Over, The Wall Street Journal; State and Metropolitan Area Trade Data, U.S. Census Bureau; Reopen Houston Safely – Monitoring Dashboard, Greater Houston Partnership; New Business Announcements, Greater Houston Partnership; Global Investment and Trade Monitor, United Nations Conference on Trade and Development; World Economic Forum; Overview of Developments in the International Trading Environment, The World Trade Organization; HAS Statistics Dashboard, Houston Airport System; Short-Term Energy Outlook and various web-pages U.S. Energy Information Administration.

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