



FISCAL NOTES

COMPTROLLER WRAPS UP 2021 WITH STOPS AT TEXAS INDUSTRIES

THE GOOD FOR TEXAS TOUR:



Supply Chains

By David Green, Shannon Halbrook, Lisa Minton and Edda Pleitez

Global supply chains are the arteries of the highly connected and interdependent world trade system. They create value, contribute to lower consumer costs and increase economic efficiencies. In particular, supply chains facilitate the movement of intermediate goods — *parts and components* of final goods. This inter-industry trade helps reduce production costs and is a key feature of advanced manufacturing processes.

SUPPLY CHAIN RISKS AND RESILIENCE

The benefits of global supply chains are intertwined with risks. The COVID-19 pandemic painfully revealed some of those weaknesses, but even before the pandemic, industry experts were exploring ways to address them.

RISKS

Efficient, “just in time” manufacturing requires readily available intermediate goods and reliable shipping. Global industries are exposed to trade disputes and shipping backlogs. Regional operations can be vulnerable to weather events or other local disasters.

Diseases or health crises also can strike at any time, and cyberattacks are another growing threat.

RESILIENCE

Balancing efficiency with resilience can help mitigate certain risks. Many businesses are rediscovering the value in reshoring (bringing some operations back to the U.S.), holding extra inventory “just in case” and adding redundancy across regions. Advancements in technology can make supply chains more agile and adaptable to changes in availability or shipping conditions. Greater use of artificial intelligence and sensor-equipped cargo infrastructure can help businesses closely monitor their operations, quickly spot disruptions and reroute supply chains as needed. Furthermore, large companies that fortified their supply chains during the pandemic are preparing to sell extra cargo space as a service to other businesses.

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A Message from the Comptroller

Taking things for granted is easy to do. When we need to buy something, we drive to the store or go online and purchase it. Until recently, we might not have thought about the interdependent network of parts required to assemble final goods or how those goods are transported to market.



Before COVID-19, the global network of supply chains created efficiencies for companies, saved them time and money and generally performed well. The pandemic disrupted production and transportation lines, revealed supply chain vulnerabilities and made clear the global interdependence of our current supply chains.

Last fall, as part of my *Good for Texas Tour* that focused on supply chains, I visited several Texas companies connected to far-reaching networks, and I chatted with their employees about challenges they currently face in their industries. I visited General Motors in Arlington and USA Rare Earth LLC in Hudspeth County. I spoke with leaders at Dow in Lake Jackson and at Texas Instruments in Dallas. I also went to McAllen to visit the Anzalduas International Bridge, which connects Texas to Reynosa, Tamaulipas, Mexico — home to manufacturing plants of more than 150 international companies, all located within a 9-mile radius. In December, I visited the Houston plant for Sysco, a global leader in selling, marketing and distributing food and some non-food products to a variety of end markets.

You can read about my tour stops in this month's issue. You also can read about cybersecurity and why cybercriminals sometimes target supply chains. Disrupting those networks can affect multiple companies, and such "opportunities" attract bad actors looking to extort government and business entities. But as you'll learn in this edition, Texas lawmakers have taken meaningful steps to address potential cybercrime, and agencies such as the Texas Department of Information Resources are implementing those steps and are daily preventing attempted cyberattacks.

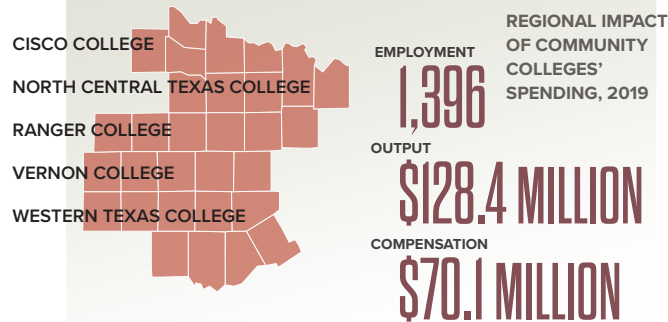
As we begin 2022, I wish you a happy new year. I also invite you to read every issue of *Fiscal Notes* to stay updated on topics related to the Texas economy.

GLENN HEGAR

Texas Comptroller of Public Accounts

TEXAS COMMUNITY COLLEGES

NORTHWEST REGION



Texans' community college districts serve a vital role in our economy by developing our workforce, preparing students for further academic study and meeting specific educational and vocational needs. The 30 counties in the Northwest region include five community college districts.

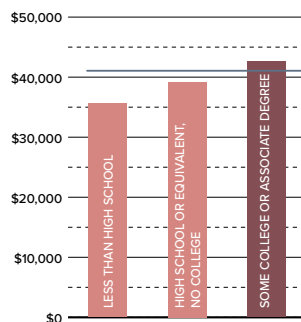
Note: Figures include direct, indirect and induced economic impacts.

Sources: JobsEQ, Texas Comptroller of Public Accounts, Texas Higher Education Coordinating Board and Texas community colleges.

NOTE: THESE ANALYSES PREDATED THE COVID-19 CRISIS AND THE ECONOMIC IMPACTS THAT FOLLOWED.

WAGES BY EDUCATIONAL ATTAINMENT

AVERAGE ANNUAL EARNINGS BY EDUCATIONAL ATTAINMENT, NORTHWEST REGION, 2018



AVERAGE OF ALL EARNINGS

Community colleges provide their students with a good return on investment.

AVERAGE WAGE INCREASE OVER HIGH SCHOOL OR EQUIVALENT

\$3,401

NUMBER OF WORKERS, SOME COLLEGE OR ASSOCIATE DEGREE

58,694

TOTAL REGIONAL ADDITIONAL WAGES

\$199.6 MILLION

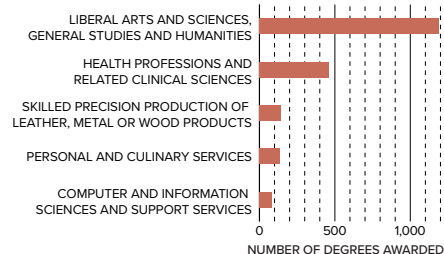
Source: JobsEQ

Sources: U.S. Census Bureau, JobsEQ and Texas Comptroller of Public Accounts

CERTIFICATES AND DEGREES

TOP CERTIFICATES AND DEGREES, NORTHWEST REGION, 2017-2018 SCHOOL YEAR

Source: JobsEQ



SUMMARY

The Northwest region's five community college districts work to address local skills gaps and meet the specific needs of area employers. They support nearly 1,400 jobs and add more than \$128 million in economic output annually. The higher pay of those with some college or an associate degree helps raise total wages in the region by nearly \$200 million per year.

TO SEE INFORMATION ON COMMUNITY COLLEGES AND THE TEXAS ECONOMY: comptroller.texas.gov/economy/economic-data/colleges

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TEXAS SUPPLY CHAINS AND THE COMPTROLLER'S TOUR

With its 19.4 percent share of U.S. exports, Texas's economy greatly depends on international trade and stable supply chains. State exports largely have recovered from the pandemic and have increased more than 10 percent from 2019. Leading the way is a surge in oil, gas and petrochemical exports to China and other countries, up 41 percent since 2019. With especially robust trade in intermediate goods, Mexico remains our state's largest export destination.

Texas business leaders are reporting much stronger demand for goods and services this year, but supply chain issues remain a concern.

This fall, as part of his ongoing *Good for Texas* series of statewide tours, Comptroller Glenn Hegar visited several Texas businesses with strong trade relations and supply chains that exemplify the risks and resilience of

“As the nation’s top state for international trade and the 9th largest economy in the world, limiting supply chain disruptions is critical to the Texas economy.”

— Comptroller Glenn Hegar

their respective industries. He also visited a Texas port of entry that serves more than 150 manufacturing plants in Mexico.

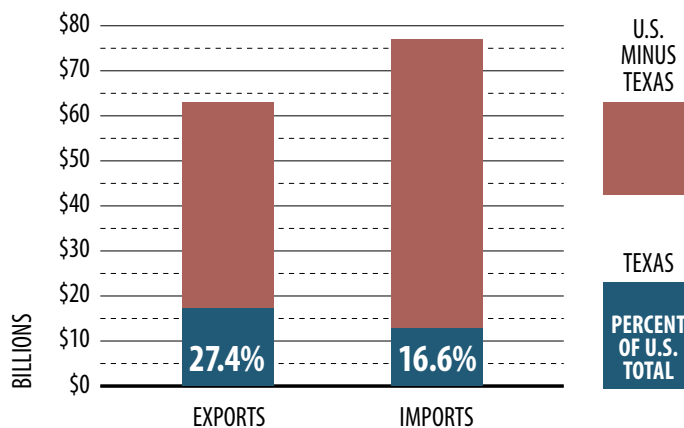
“As the nation’s top state for international trade and the 9th largest economy in the world,” Hegar stated, “limiting supply chain disruptions is critical to the Texas economy.”

TOUR STOP: SEMICONDUCTORS — TEXAS INSTRUMENTS (TI)

In 2020, the semiconductor industry in Texas produced more than one-quarter of the country's \$63 billion in semiconductor exports (**Exhibit 1**).

EXHIBIT 1

SEMICONDUCTOR MANUFACTURING IN TEXAS AND U.S., 2020



Note: Data reflect North American Industry Classification System Code (NAICS) 3344, Semiconductor and Other Electronic Components Manufacturing.
Source: U.S. Census Bureau, USA Trade Online

At the onset of the pandemic, semiconductor supply was curtailed by factory shutdowns in Asia. Meanwhile, the need for chips rose faster than expected, driven by sales of high-tech products used in remote work and school environments and followed by a surging demand by automobile makers. In May 2021, a typical wait time for chip orders was 18 weeks, affecting nearly 170 industries. Chip production is lengthy and highly

complex — taking up to six months for more advanced units — so shortages are expected to last well into 2022. Moreover, the U.S. accounts for only 12 percent of global chip manufacturing, which limits its capacity to ease the shortage.

A global semiconductor company, TI manufactures, tests and sells analog and embedded processing chips that are key components for a variety of end-market products. TI is currently expanding its Texas presence by building a new 300-mm wafer fabrication facility in Richardson as part of the company's long-term capacity planning. The facility should be ready to support production in the second half of 2022, increasing domestic production and the U.S. share of global production.



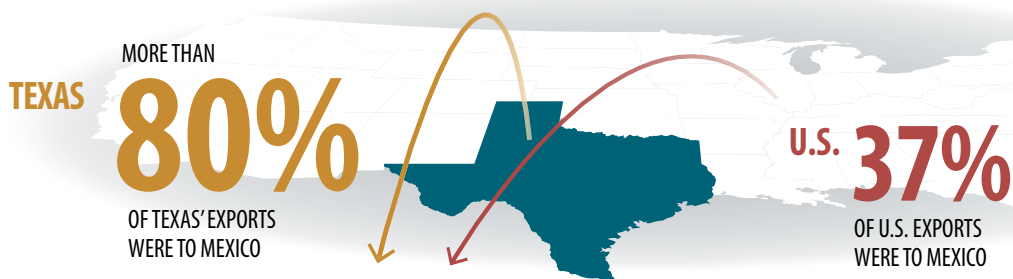
TOUR STOP: AUTOMOBILES — GENERAL MOTORS (GM)

In 2020, Texas imported \$38.3 billion worth of automobile manufacturing products and exported \$11.7 billion. Motor vehicle parts represented the bulk — \$8.3 billion or 71 percent — of the state's automobile-related exports. That compares with a nearly 40 percent share nationwide, reflecting the importance of those products to Texas. More than 80 percent of Texas auto parts exports went to Mexico in 2020 (**Exhibit 2**).

Texas is home to 13 GM facilities, employing more than 13,500 Texans who earn more than \$1.3 billion in wages annually.

EXHIBIT 2

MOTOR VEHICLE PARTS, EXPORTS TO MEXICO, 2020



Sources: U.S. Census Bureau, USA Trade Online; Texas Comptroller of Public Accounts analysis

The automobile industry is particularly burdened by the semiconductor shortage. In April 2021, chip shortages caused General Motors and Ford to pause production at several of their North American plants, affecting 10,000 GM workers. Global automotive manufacturers were expected to produce 1.5 million to 5 million fewer cars than planned in 2021.

Texas is home to 13 GM facilities, employing more than 13,500 Texans who earn more than \$1.3 billion in wages annually. The GM Arlington Assembly Plant builds 1,300 vehicles each day. In response to supply chain challenges, automotive leaders have planned several strategies to build greater resilience in their supply chains, including dual sourcing of raw materials, increasing inventory of critical products, reshoring, regionalizing supply chains and investing in digital technologies to improve supply chain visibility.

Global automotive manufacturers were expected to produce 1.5 million to 5 million fewer cars than planned in 2021.



Comptroller Glenn Hegar (right) visits the assembly line during his tour of the GM plant in Arlington.

TOUR STOP: CHEMICAL MANUFACTURING — DOW CHEMICAL

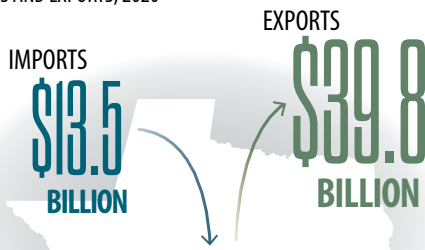
The chemical manufacturing industry in Texas contributes \$52.7 billion annually to the state's GDP. Wages in the industry average \$113,372 annually, with more than 83,500 jobs statewide (primarily in Harris County). Texas is the country's top chemical producer and exporter. In 2020, chemicals were the third-largest export, with a value of about \$40 billion, or 14.3 percent of the state's total exports (**Exhibit 3**).

The chemical industry, made up largely of multinational businesses with suppliers of all sizes around the world, faces an array of local and global risks.

EXHIBIT 3

TEXAS' CHEMICAL MANUFACTURING INDUSTRY ECONOMIC DATA

ALL TEXAS CHEMICAL MANUFACTURING,
IMPORTS AND EXPORTS, 2020



Sources: JobsEQ; U.S. Census Bureau, USA Trade Online

COUNTY	NUMBER OF EMPLOYEES, BASIC CHEMICAL MANUFACTURING	INDUSTRY CONCENTRATION, BASIC CHEMICAL MANUFACTURING	NUMBER OF EMPLOYEES, ALL CHEMICAL MANUFACTURING	INDUSTRY CONCENTRATION, ALL CHEMICAL MANUFACTURING
HARRIS	12,129	5.13	24,832	1.82
BRAZORIA	6,780	55.72	7,481	10.64
DALLAS	1,383	0.79	6,901	0.68
TARRANT	269	0.28	5,601	1.01
JEFFERSON	2,286	19.16	3,747	5.44

Note: Data are for NAICS 325 (Chemical Manufacturing) and a subset, 3215 (Basic Chemical manufacturing).
Source: JobsEQ

Dow is one of the state's leading chemical manufacturers, with 10 locations in Texas. Its products are found in many end-use items such as office supplies, pharmaceuticals, cleaning supplies and food. The chemical industry, made up largely of multinational businesses with suppliers of all sizes around the world, faces an array of local and global risks. In a 2020 report, McKinsey & Company found the chemical supply chain to be most vulnerable to natural disasters, cyberattacks and trade disputes. Industry insiders cite other risks as well, including chemical supply chains' volatility, interdependence and complex regulation. Technology, digitization and circularity — the recycling or reuse of chemical building blocks — are risk mitigation strategies that are being promoted by leaders in the industry to help circumvent supply chain issues.



Dow equipment in Lake Jackson.

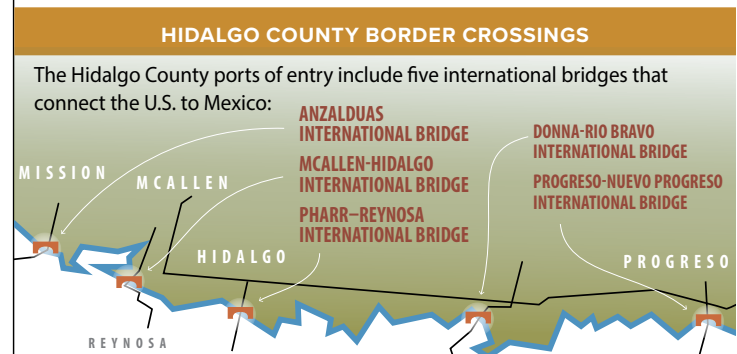
TOUR STOP: INTERNATIONAL TRADE — ANZALDUAS INTERNATIONAL BRIDGE

Efficient border crossings facilitate the movement of people and goods between countries and are a key ingredient in the reliability of supply chains. Trade between Texas and Mexico represents a significant contribution to the state economy, and the cross-border trade of intermediate goods is an integral part of many industries' supply chains. Likewise, Hidalgo County, with five of the state's 11 border crossings, is an important center of trade (**Exhibit 4**).

The Anzalduas International Bridge connects Mission, in Hidalgo County, to Reynosa, Tamaulipas, Mexico. Reynosa is home to the manufacturing plants of more than 150 international companies, all situated within a 9-mile radius. The bridge opened in 2010 and is owned and operated by the city of McAllen in partnership with the cities of Hidalgo and Mission.

Although electronics, machinery and petroleum lead the way in trade value, the five Hidalgo County border crossings also are gateways for fresh produce

EXHIBIT 4



The Hidalgo County ports of entry include five international bridges that connect the U.S. to Mexico:

- ANZALDUAS INTERNATIONAL BRIDGE
- MCCALLEN-HIDALGO INTERNATIONAL BRIDGE
- PHARR-REYNOSA INTERNATIONAL BRIDGE
- DONNA-RIO BRAVO INTERNATIONAL BRIDGE
- PROGRESO-NUOVO PROGRESO INTERNATIONAL BRIDGE

724,000 trucks made official northbound border crossings through Hidalgo County in 2020.

Source: U.S. Census Bureau, USA Trade Online; U.S. Bureau of Transportation Services

into the U.S. In 2020, \$4.5 billion in fruits and vegetables were imported into Texas from Mexico for personal and commercial consumption.

TOUR STOP: FOOD — SYSCO

Overall, food supply chain-related industries contributed a total of \$85.6 billion to the Texas GDP in 2020, representing 4.9 percent of the state's total GDP.

The Texas food supply chain links several industrial sectors: agriculture, manufacturing, warehousing, transportation, wholesale trade and retail trade. Sysco, a global company serving more than 650,000 customer locations worldwide, is a major distributor of food and kitchen products to Texas restaurants, hotels, schools and more. Overall, food supply chain-related industries contributed a total of \$85.6 billion to the Texas GDP in 2020, representing 4.9 percent of the state's total GDP. Of these industries, food services contributed the most, representing nearly 2 percent of the total.

But the state's food supply chain recently has had its challenges. The start of the COVID-19 pandemic led to grocery shortages; a year later, Winter Storm Uri along with the resulting power outages almost brought the state's food supply chain to a halt.

Cyberattacks have been another threat to the complex food supply chain. In May 2021, Brazilian meat processor JBS S.A. fell victim to a ransomware attack, forcing production to shut down for a few days in its beef and pork processing plants around the world,

including several facilities in Texas. The attack was one of approximately 40 cyberattacks on food producers in the 12 months preceding the JBS incident.

Agriculture plays a major role in the state's economy (**Exhibit 5**), and overall, the food-related sectors of these industries employ 1.5 million Texans and provide \$40.5 billion in annual wages. Sysco alone employs more than 6,000 workers in Texas.

EXHIBIT 5

TEXAS AGRICULTURE

Agricultural business plays a major role in the Texas economy, and its food and fiber system comprises all economic activities linked to the production of agriculture including manufacturing, retail sales, transportation and wholesale distribution.

TEXAS RANKS FOURTH NATIONALLY IN AGRICULTURAL CASH RECEIPTS, WHICH TOTALED \$20 BILLION IN 2020.

Texas' top five agricultural commodities in 2020 were:

- 1. CATTLE AND CALVES** (\$8.5 BILLION, RANKED NO. 2 AMONG ALL STATES)
- 2. DAIRY PRODUCTS, MILK** (\$2.8 BILLION, NO. 4)
- 3. BROILERS** (\$1.7 BILLION, NO. 5)
- 4. COTTON LINT, UPLAND** (\$1.6 BILLION, NO. 1)
- 5. CORN** (\$948.7 MILLION, NO. 12)

Source: U.S. Department of Agriculture

TOUR STOP: MINERAL RESOURCES — USA RARE EARTH LLC

Rare earth elements (rare earths) are a group of minerals crucial to the manufacture of products ranging from cell phones to wind turbines and fighter jets. The United States relies almost exclusively on foreign sources of rare earths. In 2020, the United States imported 100 percent of its usable rare earth compounds and metals, with 80 percent coming from China.

A U.S. supply chain of rare earth metals is increasingly important to national security, but it must be built from the ground up. USA Rare Earth LLC, a critical mineral supply chain company, is building facilities to produce American-made rare earth magnets along with its joint venture partner, Texas Mineral Resources Corp. In 2023, USA Rare Earth will begin mining 950 state-owned acres that are expected to yield more than 300,000 metric tons of rare earth oxides. Combined with USA Rare Earth operations elsewhere,

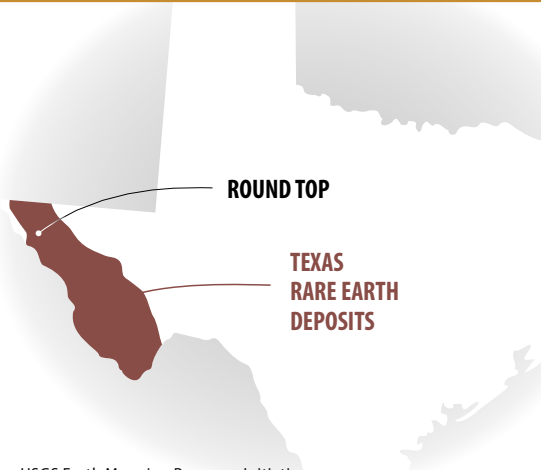


Area near USA Rare Earth facilities.

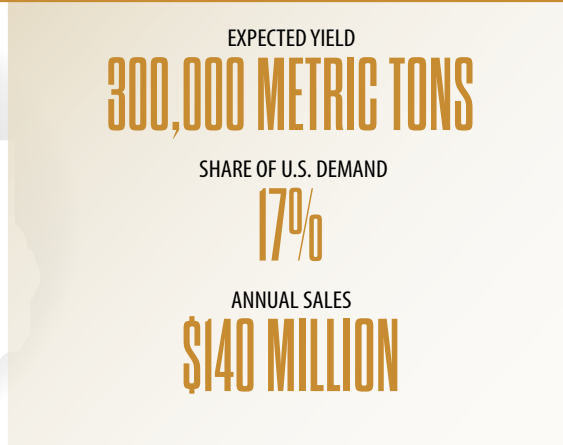
this domestic supply chain of rare earths would meet 17 percent of projected demand in the United States (**Exhibit 6**).

EXHIBIT 6

RARE EARTH PROJECTIONS FOR ROUND TOP DEPOSIT, SIERRA BLANCA, STARTING 2023



Source: USGS Earth Mapping Resource Initiative



CONCLUSION

The difficult lessons learned during the past two years can help businesses strengthen their supply chains.

Existing vulnerabilities in global supply chains, compounded by the pandemic, led to a mismatch between supply and demand that is likely to persist through 2022. The good news is that the difficult lessons

learned during the past two years can help businesses strengthen their supply chains and better prepare for the future.

"I have seen an incredible amount of innovation during my tour of the state and in discussions with industry leaders committed to creating a stable, strong and dynamic supply system," Hegar says. **FN**

Further information on the Comptroller's supply chain tour, media materials and CPA's pre-tour research on these industries can be found on our website at **Comptroller.Texas.Gov**.

Cybersecurity and Texas

By Spencer Grubbs

**TEXAS
LEADERS
BUILD
DEFENSES
TO OUTSTRIP
SURGE IN
CYBERATTACKS**



Businesses, government entities and people must rely on interconnected digital technologies to fully function in today's global economy. But the necessity and the advantages of modern technology, such as lightning-fast communication and unmatched efficiencies, pose inherent risks. As technology becomes more sophisticated, so do cyberattacks. Recent large-scale cyberattacks, including those targeting supply chains, have had costly and potentially disastrous effects. They also have mobilized Texas leaders and drawn strong responses.



**JAMES
MCQUIGGAN**
KNOWBE4

WHAT ARE CYBERATTACKS?

A hooded person working on a laptop in a dark, secret basement is not an accurate representation of today's cybercriminal. Cybercrime is more likely to be the work of a global, organized business operation than a single hacker, says James McQuiggan, security awareness advocate at KnowBe4, a Florida-based security awareness training and simulated phishing platform.

A *cyberattack* is any "deliberate and malicious attempt by an individual or organization to breach the information system of another individual or organization," according to Infocyte. Cybercriminals often target employees to breach the computer networks of companies, government agencies or other organizations.

Some high-profile cyberattacks involve rogue nation-states and have national security implications, such as the SolarWinds cyberattacks perpetrated in 2020 by the Russian Foreign Intelligence Service. Other cyberattacks come from "hacktivists," cybercriminals motivated by social or political issues. In most cases, however, economic gain is what drives cybercriminals, and that can lead to major financial ramifications for victims.

CYBERATTACKS ON THE RISE

The COVID-19 pandemic boosted demand for high-speed internet when many aspects of daily life — notably work, education and health care — shifted to the virtual world in response to "shelter-in-place" guidelines and restrictions on in-person gatherings (see February 2021 *Fiscal Notes*). That sudden shift prompted more opportunities for cyberattacks, particularly on small- and medium-sized businesses, government entities and other organizations operating without adequate levels of cybersecurity.

At the onset of the pandemic in early 2020, many organizations had to quickly pivot to video conferencing services to stay connected and continue operations. It was a rough start for some video conference users, who experienced cyberattacks that compromised personal data, such as email addresses and passwords.

After Congress passed the Coronavirus Aid, Relief, and Economic Security (CARES) Act, cybercriminals launched financial fraud schemes and phishing campaigns that targeted unemployment insurance, Paycheck Protection Program loans and other provisions under the CARES Act. Moreover, phishing campaigns baited email recipients into clicking malicious links or opening attachments disguised as coronavirus-related news, such as vaccine developments.

According to the nonprofit Identity Theft Resource Center, which tracks publicly reported data breaches in the U.S., the amount of data compromised from cyberattacks in the first three quarters of 2021 exceeded the total reported in all of 2020 by 27 percent. Ransomware attacks especially are surging. Publicly reported incidents related to ransomware in the first three quarters of 2021 surpassed totals reported in 2019 and 2020.

COMMON CYBERATTACKS

PHISHING is the gateway to cyberattacks, says McQuiggan, and it is one of the most common and effective methods for breaching an organization's network. In a phishing attack, an attacker gains access to a device by tricking an unsuspecting recipient to click on a fake link or open a malicious attachment sent via email.

RANSOMWARE is malicious software that locks and prevents access to personal information or critical data on a computer or network. As the name suggests, the attackers do not release the system until they receive a specified payment, usually in cryptocurrency. Ransomware is one of the costliest classes of cyberattacks. According to the Unit 42 security consulting group, the average ransomware payment in the first half of 2021 was \$570,000, 82 percent higher than the average payment in 2020. The research company Cybersecurity Ventures predicts that ransomware costs could reach \$265 billion by 2031, with a new attack happening every two seconds.

Sources: Cybersecurity Ventures, "Global Ransomware Damage Costs Predicted to Exceed \$265 Billion by 2031"; Financial Crimes Enforcement Network, "Financial Trend Analysis"; Infocyte, "Cybersecurity 101: Intro to the Top 10 Common Types of Cybersecurity Attacks"; and Palo Alto Networks, "Extortion Payments Hit New Records as Ransomware Crisis Intensifies"

THE COSTS OF CYBERATTACKS

The 2020 Internet Crime Report, published by the FBI’s Internet Crime Complaint Center (IC3), suggests that the frequency of cyberattacks and resulting financial losses in the United States have skyrocketed in recent years. The IC3 recorded more than 790,000 public complaints of internet crime in 2020, up 69 percent from 2019. The report estimates that the financial losses from cybercrimes in the U.S. were as high as \$4.2 billion in 2020, a 20 percent increase from 2019 (**Exhibit 1**).

In Texas, more than 38,000 victims of cybercrime reported an estimated \$313.6 million in financial losses in 2020 — an increase in losses of 42 percent from 2019 and 307 percent from 2016 (**Exhibit 2**).

STATE AGENCIES AND LOCAL GOVERNMENTS

Cybercriminals have discovered it may be more profitable to target large organizations using highly automated data theft methods (e.g., phishing campaigns and ransomware attacks) than to steal people’s personally identifiable information — and it takes less time. Those organizations often include government entities.

Part of this alarming trend targets local government groups, including many Texas school districts that reported ransomware attacks in recent years. A San Antonio-area school district with about 23,000 students paid more than \$500,000 to cybercriminals who froze its computer networks in June 2020. Cyberthreats have only exacerbated the financial burdens that school districts have suffered from the COVID-19 pandemic.

State agencies in Texas are also seeing more attack attempts by cybercriminals. “The tools on the state of Texas network block millions of connection attempts a day from known bad actors,” says Nancy Rainosek, chief information security officer for the state of Texas. She adds that phishing is widespread, and cybercriminals are getting better at disguising malicious emails as legitimate. When much of the state’s workforce started

working from home during the COVID-19 pandemic, Rainosek says there was an increase in “distributed denial of service” attack attempts, which can “affect an employee’s ability to connect remotely and limit access to public services.”

CYBERSECURITY IN TEXAS

Cybersecurity initiatives at the state level began in earnest in 2011 when the Legislature created the temporary Cybersecurity, Education and Economic Development Council to study Texas’ cybersecurity infrastructure and make recommendations to the executive director of the Texas Department of Information Resources (DIR).

In 2017, a pivotal year for cybersecurity in Texas, the 85th Legislature enhanced the protection of state agency information resources with the Texas Cybersecurity Act. One promising outcome of this legislation is the Texas Information Sharing and Analysis Organization (TxISAO), a membership program under DIR that serves as a centralized forum for public and private sector groups in Texas to exchange pertinent information about cyberthreats and security strategies.

“TxISAO provided critical intelligence to members across the state during high-profile security incidents, including the SolarWinds attack,” says Rainosek.

TxISAO now has more than 1,500 members and partners with four major organizations:

- The University of Texas at San Antonio.
- The University of Texas at Austin.
- DIR’s Network Security Operations Center.
- Texas A&M University System Security Operations Center.

Most recently, the 87th Legislature passed Senate Bill 475, which created several additional cybersecurity programs under DIR (**Exhibit 3**). It also funded Endpoint Detection and Response (EDR) technology for state agencies, says Rainosek. EDR is an emerging technology

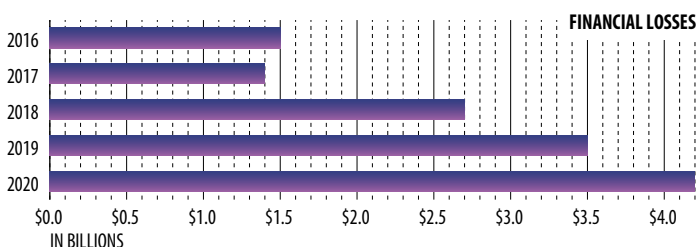


NANCY RAINOSEK

DEPARTMENT OF INFORMATION RESOURCES

EXHIBIT 1

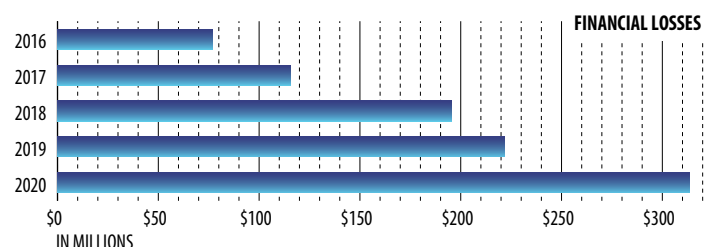
TOTAL CYBERCRIME FINANCIAL LOSSES IN U.S., 2016-2020



Notes: Financial loss data are self-reported by complainants. Financial losses are rounded to the nearest million.
Source: FBI, Internet Crime Complaint Center

EXHIBIT 2

CYBERCRIME FINANCIAL LOSSES IN TEXAS, 2016-2020



Notes: Financial loss data are self-reported by complainants. Financial losses are rounded to the nearest million.
Source: FBI, Internet Crime Complaint Center, Annual Reports

CYBERSECURITY AND SUPPLY CHAINS

CYBERCRIMINALS increasingly are targeting supply chains, because a single attack on a supplier can disrupt multiple companies across an entire network.

In early May 2021, an organized extortion group attacked the Colonial Pipeline Company, which operates a 5,500-mile-long pipeline moving more than 100 million gallons of fuel daily between New York and Texas. The group held corporate data hostage and demanded the company pay \$4.4 million in cryptocurrency. The company shut down its pipeline for several days (the first shutdown in its 57-year history), causing massive fuel shortages up and down the East Coast. Colonial paid the ransom to restore pipeline service.

Later that month, criminals hit the world’s biggest meat processing company, JBS Foods, in a ransomware attack that forced the company to shut down certain operations at 13 of its plants in the U.S. as well as others in Australia and Canada. JBS Foods paid \$11 million in cryptocurrency to prevent more plants from shutting down and further disrupting the global food supply chain.

But it isn’t all bad news. In August 2021, the Port of Houston — a major economic driver for Texas and the U.S. — successfully averted a cyberattack. According to a statement released on Sept. 23, the port followed its security plan and prevented cybercriminals from compromising its network. The statement did not disclose the type of cyberattack.

EXHIBIT 3

NEW CYBERSECURITY PROGRAMS, 87TH LEGISLATURE

PROGRAM	PURPOSE
Texas Risk and Authorization Management Program (TX-RAMP)	Provide a standardized approach for security assessment, authorization and monitoring of cloud computing services and products used by state agencies. State agencies may only contract with TX-RAMP-compliant vendors for cloud computing services starting on Jan. 1, 2022.
Volunteer incident response team	Provide rapid assistance to participating entities during cybersecurity events. This team can be deployed by the governor during a cybersecurity disaster declaration.
Regional cybersecurity working groups	Establish a framework for mutual aid agreements to assist in responding to cybersecurity events.
Regional security operations center	Assist in providing cybersecurity support and network security for local entities, in partnership with a university.

Notes: programs were established by Senate Bill 475 (87R); this does not represent an exhaustive list.

Sources: Texas DIR; Texas Legislature Online

recognized as a major protection against ransomware. All told, the 87th Legislature “passed some of the most significant cybersecurity legislation to date and appropriated more than \$700 million for cybersecurity and legacy and modernization projects,” says Rainosek.

CYBERTHREAT AWARENESS

“People are a critical layer within the fabric of [cyber] security programs,” says McQuiggan. Awareness of how cybercriminals breach information systems is an effective and necessary component of cybersecurity.

In July 2021, the Texas Office of the Governor partnered with the R.E.A.L. Friends Don’t, a nationwide awareness campaign to educate parents, caregivers and teens about cyberthreats. The campaign used digital billboards in more than 70 Texas cities to educate the public about online safety practices and resources.

Texas First Lady Cecilia Abbott, who spoke at the campaign’s launch in San Antonio, said, “as our children spend more time on the internet, the crime of online enticement continues to grow” and that addressing the issue “begins with raising awareness and educating parents and caregivers on the danger signs, and then giving them the tools to fight back.” Beginning this year, the newly formed Texas Broadband Development Office, which operates within the Comptroller’s office, will partner with the First Lady to continue promoting the R.E.A.L. Friends Don’t initiative.

The 86th and 87th Legislatures passed cybersecurity training requirements for state agency and local government employees and elected or appointed officials who use computers or access databases for at least 25 percent of their duties. The DIR annually must certify at least five cybersecurity training programs that “focus on forming information security habits and procedures that protect information resources and teach best practices for detecting, assessing, reporting and addressing information security threats.”

The legislation means that many, if not most, government employees in Texas must complete one of the five available DIR-certified cybersecurity training programs each year. The training will increase awareness of cyberthreats and help reduce the security risk to Texas’ computer networks and data systems.

Cybercriminals never stop looking for ways to exploit people and organizations (including government agencies) for economic gain — and the COVID-19 pandemic has created more opportunities for these bad actors. Over the past decade, the Texas Legislature has taken meaningful steps to defend state agencies and local governments against rampant cyberattacks. But as cyberthreats evolve, so, too, must cybersecurity in Texas. **FN**

Cybersecurity is crucial as Texas expands broadband internet access and connects more Texans to the virtual world. Read about the state’s broadband expansion efforts at [Comptroller.Texas.Gov/economy/fiscal-notes/2021/feb/broadband.php](https://comptroller.texas.gov/economy/fiscal-notes/2021/feb/broadband.php).

NET STATE REVENUE — All Funds Excluding Trust

(AMOUNTS IN THOUSANDS)

Monthly and Year-to-Date Collections: Percent Change From Previous Year

This table presents data on net state revenue collections by source. It includes most recent monthly collections, year-to-date (YTD) totals for the current fiscal year and a comparison of current YTD totals with those in the equivalent period of the previous fiscal year.

These numbers were current at press time. For the most current data as well as downloadable files, visit comptroller.texas.gov/transparency.

Note: Texas' fiscal year begins on Sept. 1 and ends on Aug. 31.

Tax Collections by Major Tax	DECEMBER 2021	YEAR TO DATE: TOTAL	YEAR TO DATE: CHANGE FROM PREVIOUS YEAR
SALES TAX	\$3,558,969	\$13,672,801	22.77%
PERCENT CHANGE FROM DECEMBER 2020	24.42%		
MOTOR VEHICLE SALES AND RENTAL TAXES	531,002	2,138,948	21.36%
PERCENT CHANGE FROM DECEMBER 2020	20.97%		
MOTOR FUEL TAXES	311,628	1,288,452	8.92%
PERCENT CHANGE FROM DECEMBER 2020	12.23%		
FRANCHISE TAX	-72,518	53,663	2980.81%
PERCENT CHANGE FROM DECEMBER 2020	36.24%		
OIL PRODUCTION TAX	449,630	1,731,169	110.09%
PERCENT CHANGE FROM DECEMBER 2020	127.70%		
INSURANCE TAXES	31,946	108,257	-0.43%
PERCENT CHANGE FROM DECEMBER 2020	-2.64%		
CIGARETTE AND TOBACCO TAXES	110,135	391,315	-16.52%
PERCENT CHANGE FROM DECEMBER 2020	-12.61%		
NATURAL GAS PRODUCTION TAX	383,831	1,184,687	309.58%
PERCENT CHANGE FROM DECEMBER 2020	348.70%		
ALCOHOLIC BEVERAGES TAXES	123,983	516,078	49.03%
PERCENT CHANGE FROM DECEMBER 2020	47.41%		
HOTEL OCCUPANCY TAX	40,250	203,931	62.39%
PERCENT CHANGE FROM DECEMBER 2020	57.41%		
UTILITY TAXES¹	528	135,633	10.56%
PERCENT CHANGE FROM DECEMBER 2020	-67.02%		
OTHER TAXES²	14,136	-44,613	-211.57%
PERCENT CHANGE FROM DECEMBER 2020	44.36%		
TOTAL TAX COLLECTIONS	\$5,483,521	\$21,380,321	30.30%
PERCENT CHANGE FROM DECEMBER 2020	34.18%		
Revenue By Source	DECEMBER 2021	YEAR TO DATE: TOTAL	YEAR TO DATE: CHANGE FROM PREVIOUS YEAR
TOTAL TAX COLLECTIONS	\$5,483,521	\$21,380,321	30.30%
PERCENT CHANGE FROM DECEMBER 2020	34.18%		
FEDERAL INCOME	4,766,538	21,737,815	11.06%
PERCENT CHANGE FROM DECEMBER 2020	6.89%		
LICENSES, FEES, FINES AND PENALTIES	451,537	2,133,802	2.87%
PERCENT CHANGE FROM DECEMBER 2020	2.97%		
STATE HEALTH SERVICE FEES AND REBATES³	515,946	2,371,259	43.15%
PERCENT CHANGE FROM DECEMBER 2020	57.55%		
NET LOTTERY PROCEEDS⁴	271,349	987,847	10.07%
PERCENT CHANGE FROM DECEMBER 2020	7.66%		
LAND INCOME	385,581	1,313,958	154.40%
PERCENT CHANGE FROM DECEMBER 2020	183.67%		
INTEREST AND INVESTMENT INCOME	96,849	380,879	-18.26%
PERCENT CHANGE FROM DECEMBER 2020	65.39%		
SETTLEMENTS OF CLAIMS	462,727	479,623	5.98%
PERCENT CHANGE FROM DECEMBER 2020	9.63%		
ESCHEATED ESTATES	23,471	73,080	-33.34%
PERCENT CHANGE FROM DECEMBER 2020	29.63%		
SALES OF GOODS AND SERVICES	32,405	112,484	17.78%
PERCENT CHANGE FROM DECEMBER 2020	47.66%		
OTHER REVENUE	123,306	967,647	9.30%
PERCENT CHANGE FROM DECEMBER 2020	-43.17%		
TOTAL NET REVENUE	\$12,613,230	\$51,938,716	20.41%
PERCENT CHANGE FROM DECEMBER 2020	20.85%		

¹ Includes public utility gross receipts assessment, gas, electric and water utility tax and gas utility pipeline tax.

² Includes taxes not separately listed, such as taxes on oil well services, coin-operated amusement machines, cement and combative sports admissions as well as refunds to employers of certain welfare recipients.

³ Includes various health-related service fees and rebates that were previously in "license, fees, fines and penalties" or in other non-tax revenue categories.

⁴ Gross sales less retailer commission and the smaller prizes paid by retailers.

Notes: Totals may not add due to rounding. Excludes local funds and deposits by certain semi-independent agencies.

Includes certain state revenues that are deposited in the State Treasury but not appropriated.



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