

TENNESSEE STATE FUNDING BOARD
MAY 27, 2020
AGENDA

1. Call Meeting to Order
2. Presentations to the State Funding Board

Presenters:

- Ms. Laurel Graefe, Regional Executive,
Federal Reserve Bank of Atlanta, Nashville Branch
- Dr. William Fox, Professor of Economics,
Boyd Center for Business and Economic Research,
University of Tennessee
- Dr. Jon L. Smith, Director, Bureau of Business and Economic Research,
East Tennessee State University
- Commissioner David Gerregano,
State of Tennessee, Department of Revenue
- Mr. Bojan Savic, Assistant Director,
State of Tennessee, Fiscal Review Committee

Interested members of the public may observe and listen to the meeting through electronic means on the Comptroller's website at the following link:

<https://comptroller.tn.gov/office-functions/sgf/oslf-calendar/2020/5/27/state-funding-board-meeting.html>



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TN State Funding Board: Perspectives on the state and national economies

Laurel Graefe

May 27, 2020

The views expressed are my own, and not necessarily those of the Atlanta Fed or the Federal Reserve System.

Overview

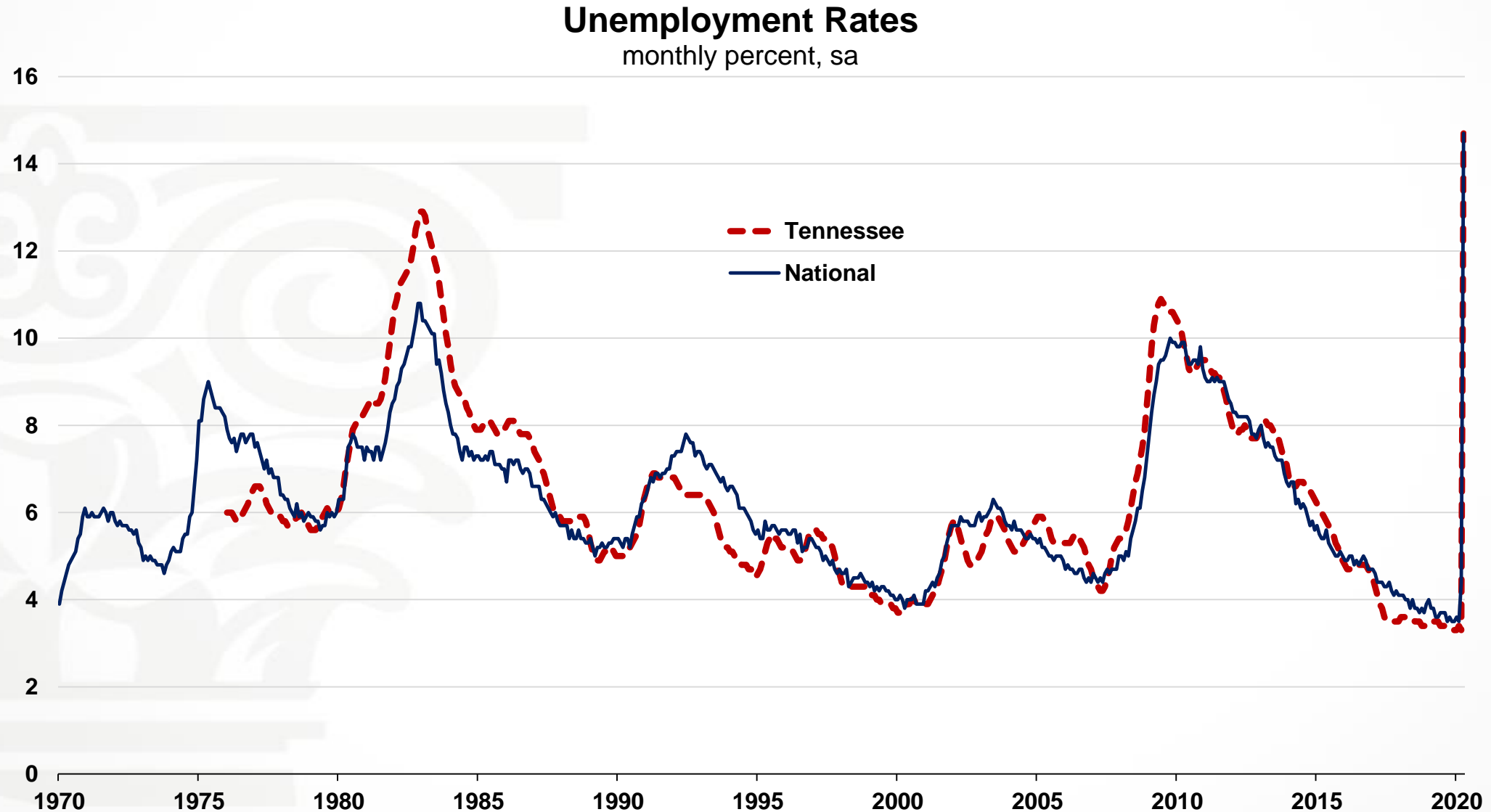
- Economic activity has slowed significantly in response to the coronavirus pandemic and actions taken by government officials to limit its spread
- Numerous government actions have been taken to provide some relief to businesses and households through the disruption
 - CARES Act
 - State and local responses
 - Federal Reserve responses
- Real GDP is expected to contract sharply in 2020 Q2
- The trajectory of the recovery is very unclear

The economy was doing very well before the virus arrived.

- A key point to remember is that this crisis is different from most economic slowdowns in that it did not result from excessive risk-taking or economic fundamentals deteriorating.
- Before the pandemic, labor markets were strong and consumers confident. Housing markets and the financial system were generally healthy.



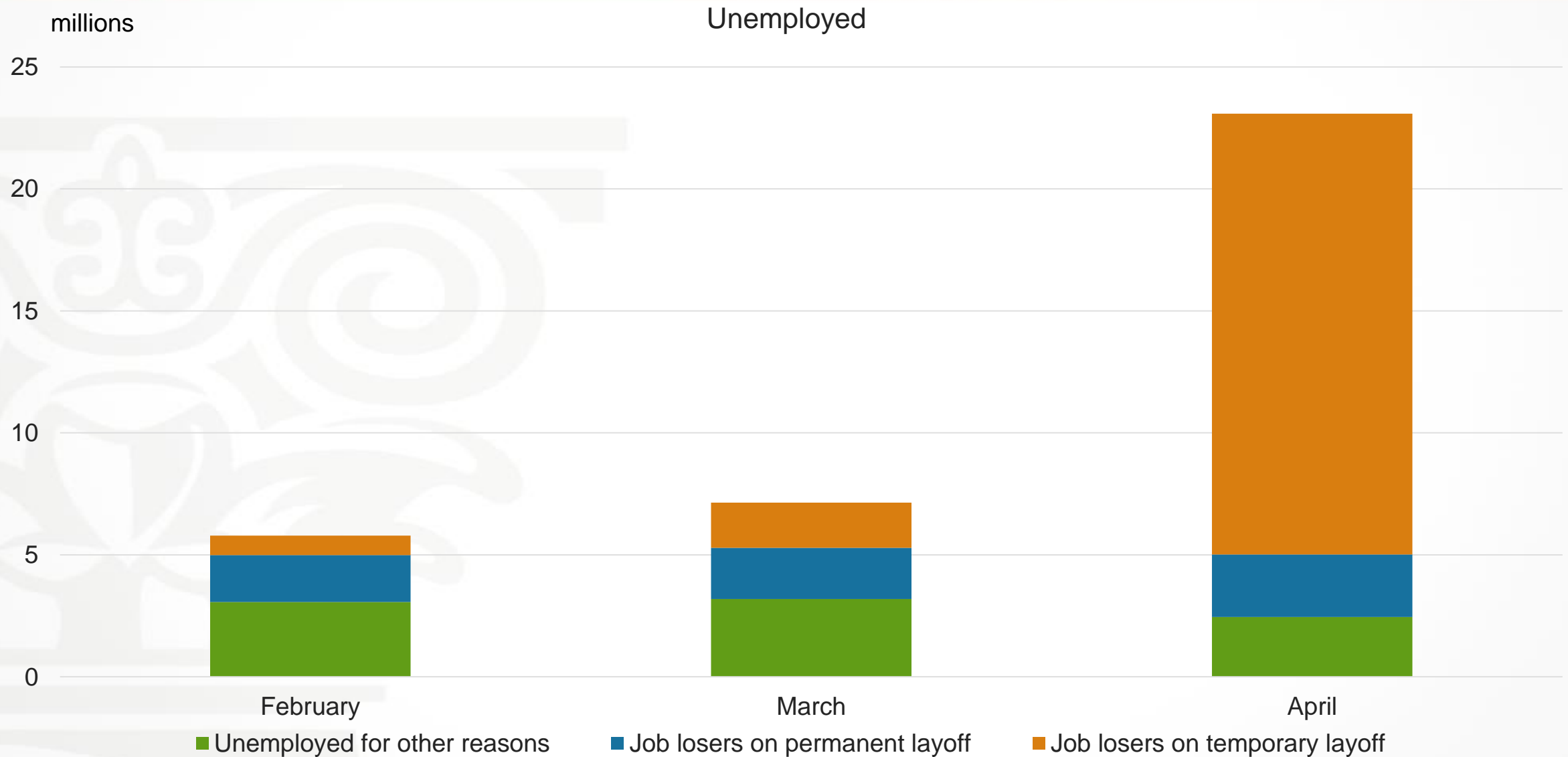
Unemployment has spiked to the highest levels in the series' history in both Tennessee and the US.



Sources: Bureau of Labor Statistics; Haver Analytics

data through April 2020

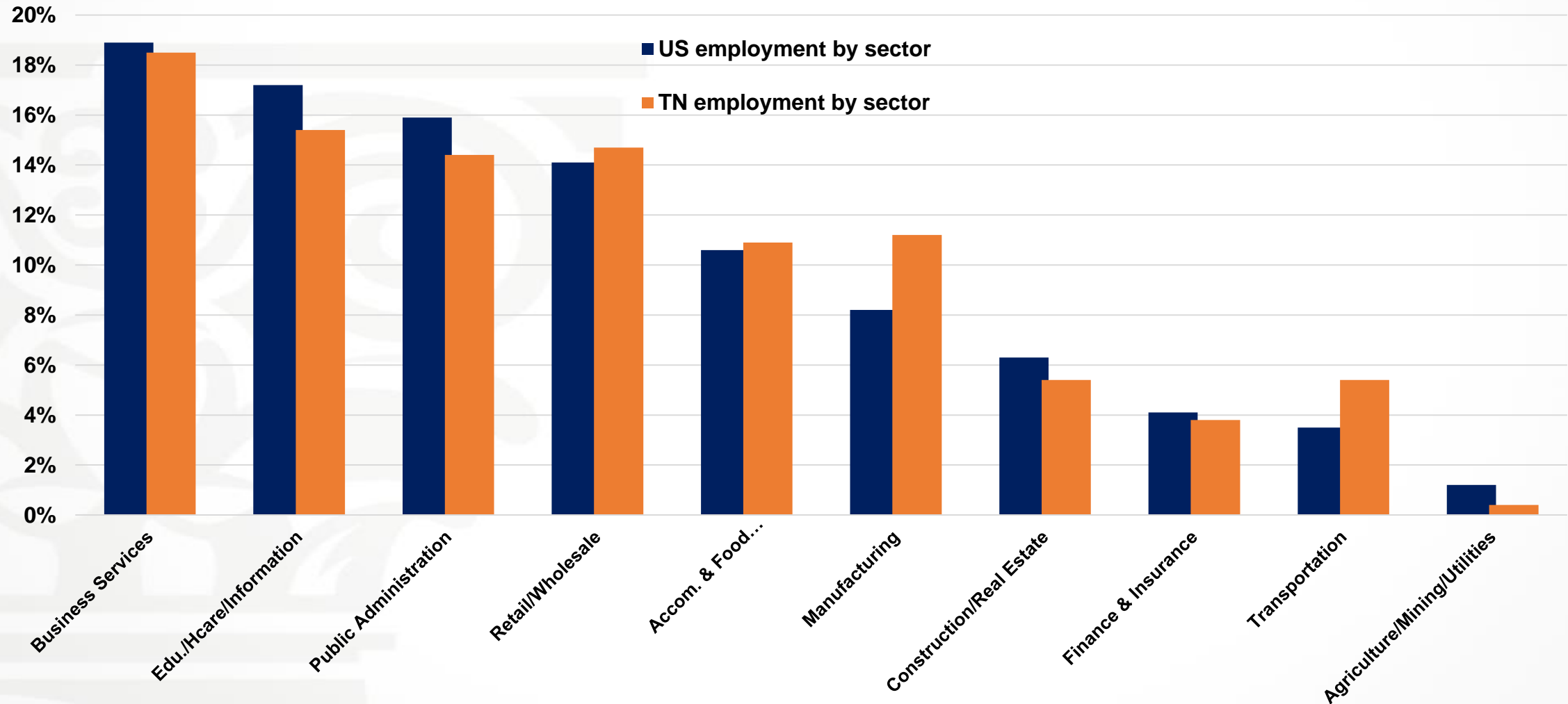
The vast majority of the unemployed indicate that they are on temporary layoff



Source: Current Population Survey (CPS), May 2020

The industry composition of employment in TN roughly matches that of the US overall

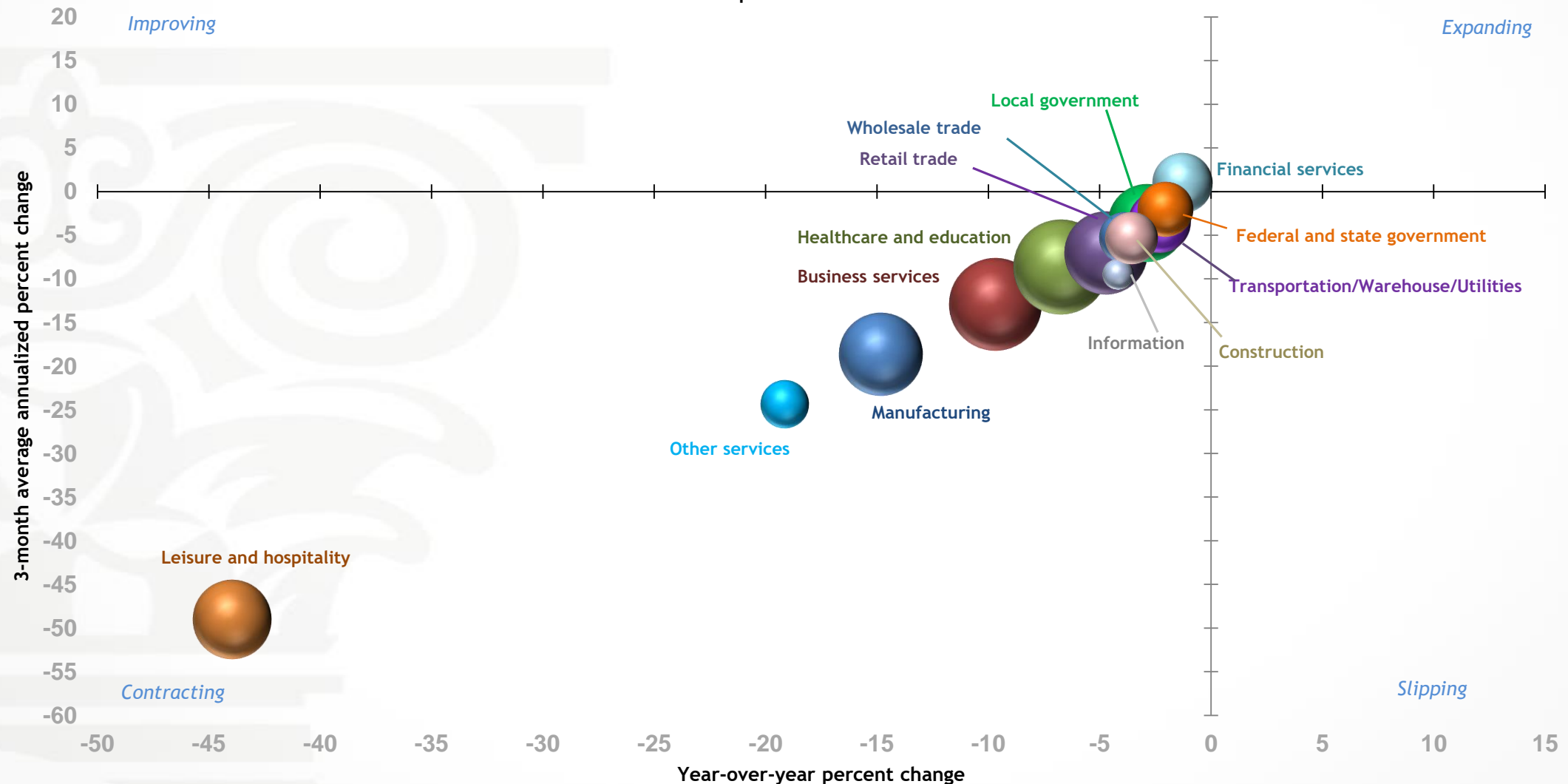
Employment by Sector



TN is seeing a contraction in employment across every industry

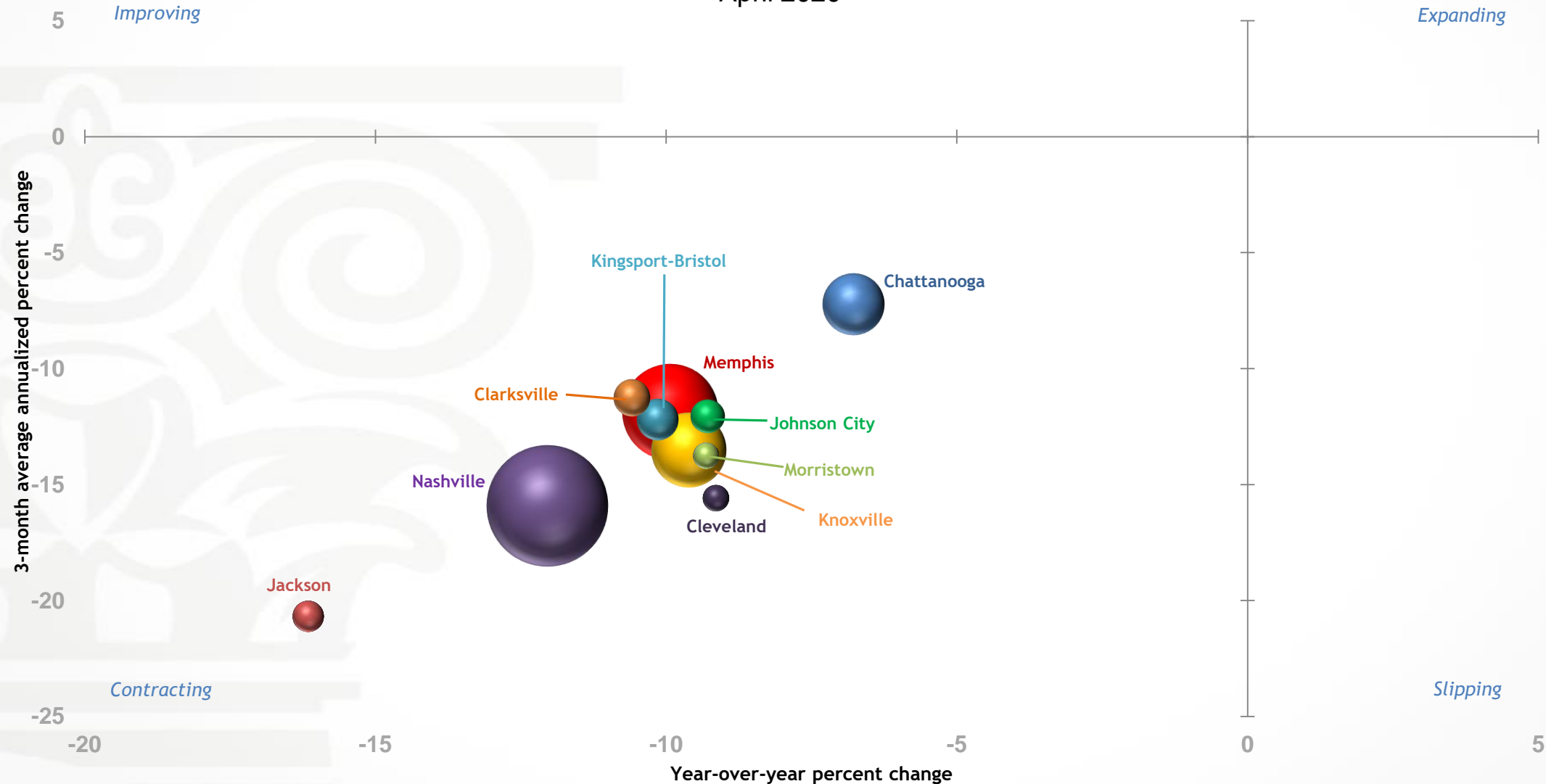
Employment Momentum by Industry: Tennessee

April 2020

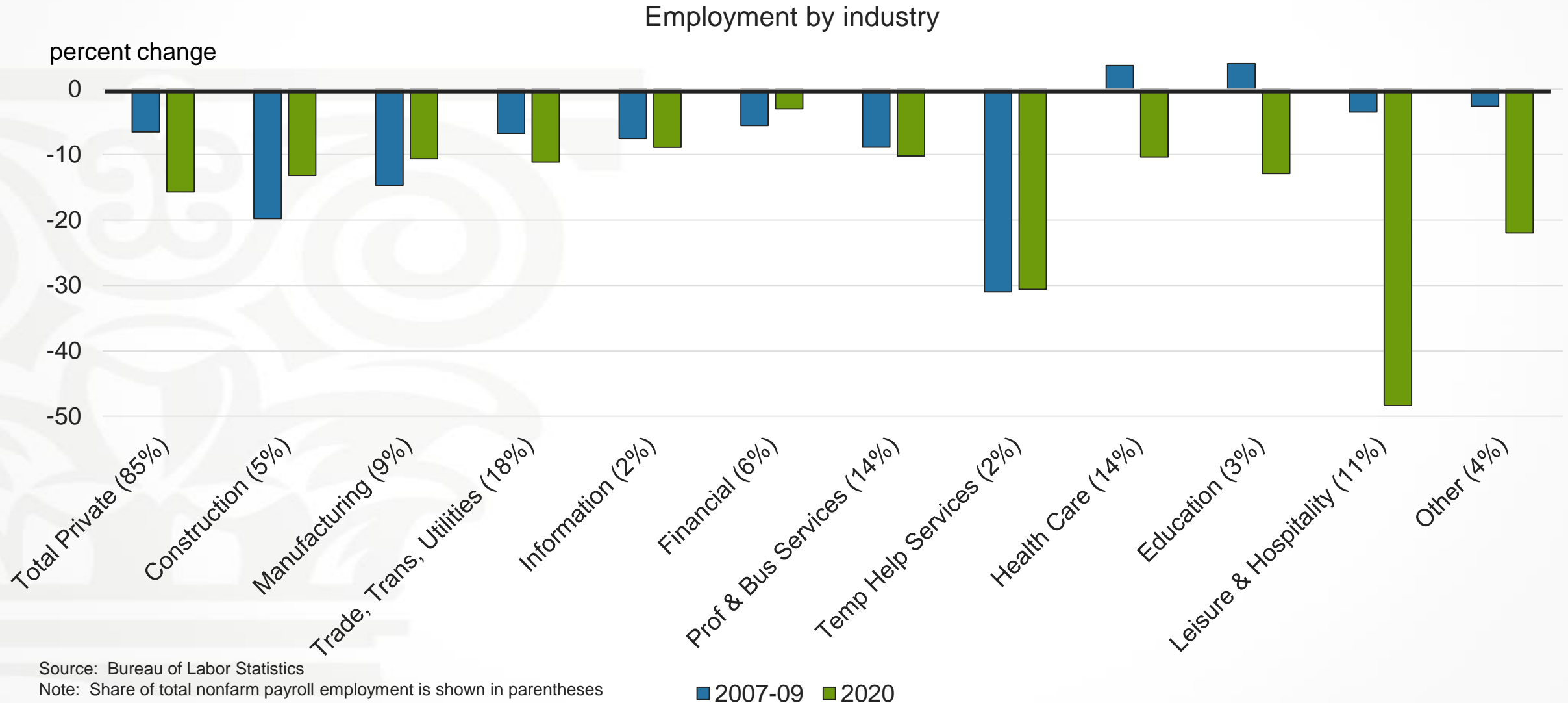


Every metro area in the state has employment in contractionary territory

Employment Momentum by Metro Area: Tennessee
April 2020

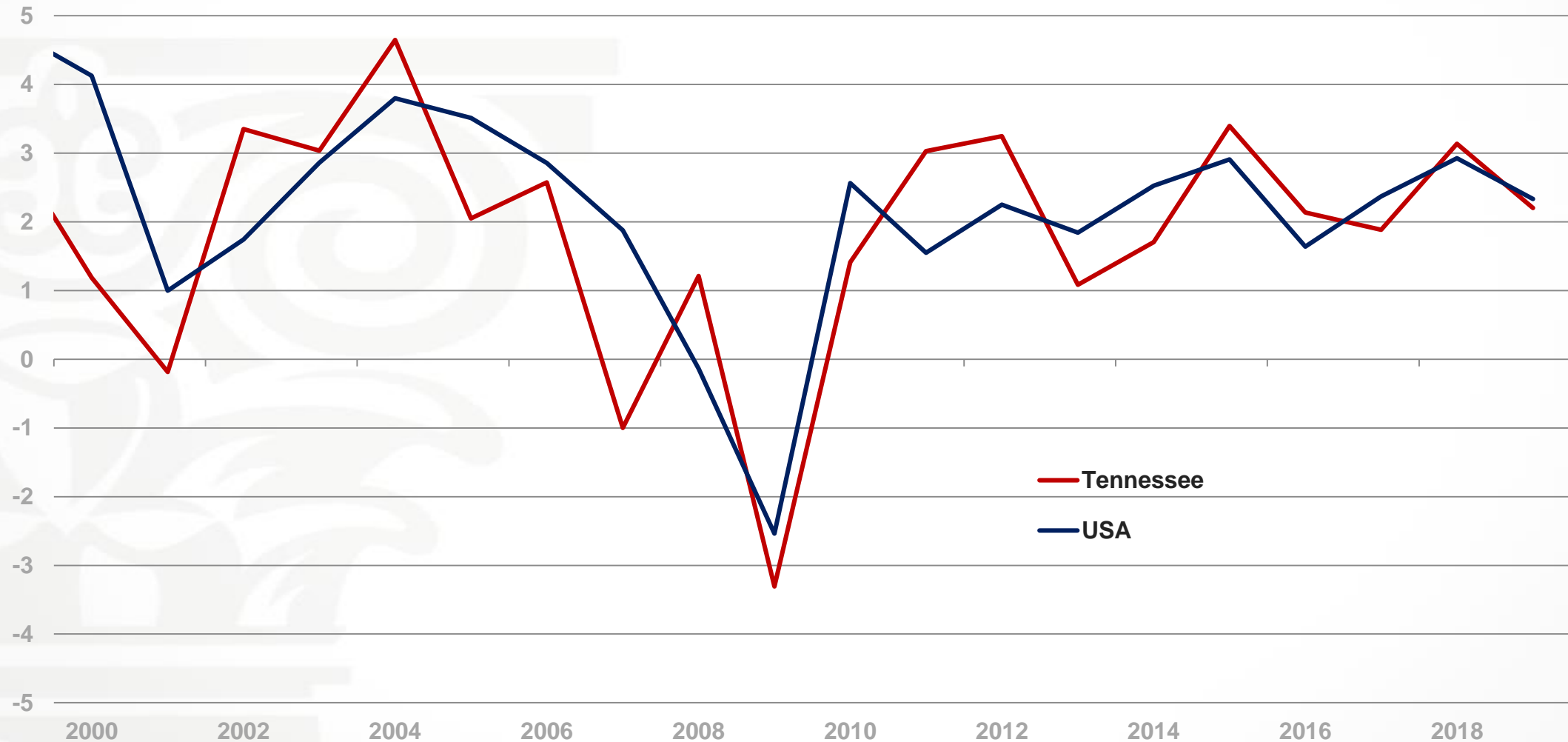


Nationally, the economy has shed nearly 16% of its workforce since February 2020, more than doubling the decline (6.5%) over the entirety of the last recession



More broadly, movements in the Tennessee economy have historically tracked closely with national developments.

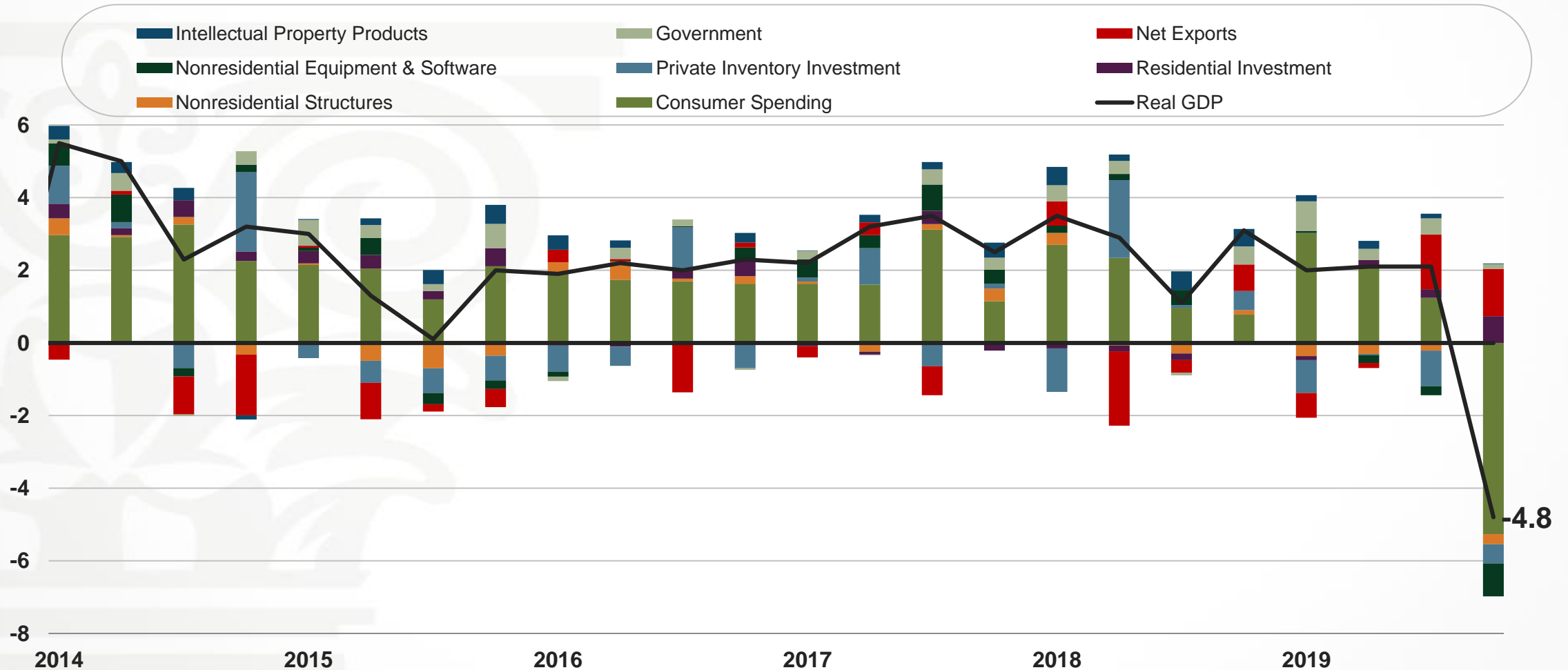
Economic Growth in Tennessee and the U.S., 2000-2019
year-over-year % change



Real gross domestic product declined 4.8 percent in the first quarter of 2020. Expectations are for a dramatic additional decline in Q2.

Contributions to Real GDP Growth

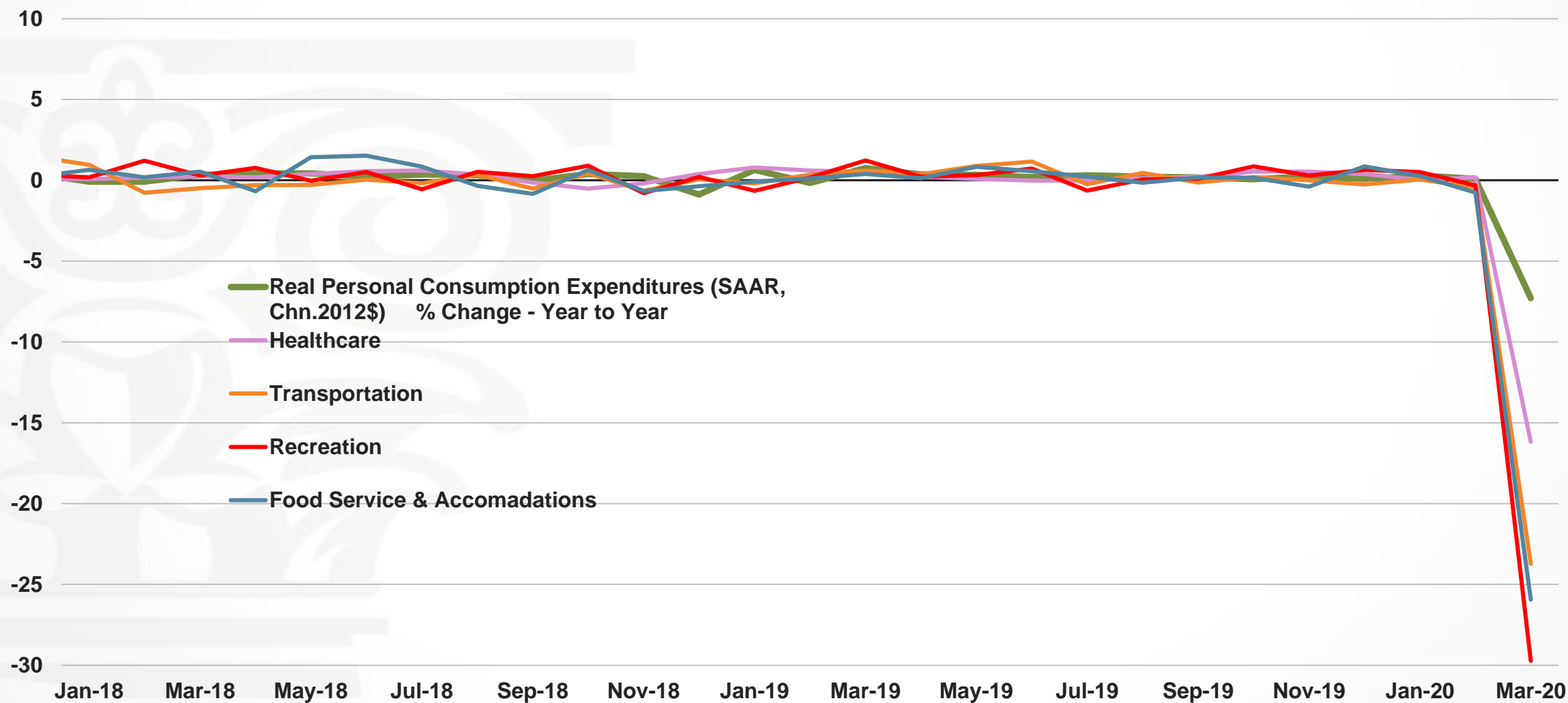
quarterly, percent, seasonally adjusted annualized rate



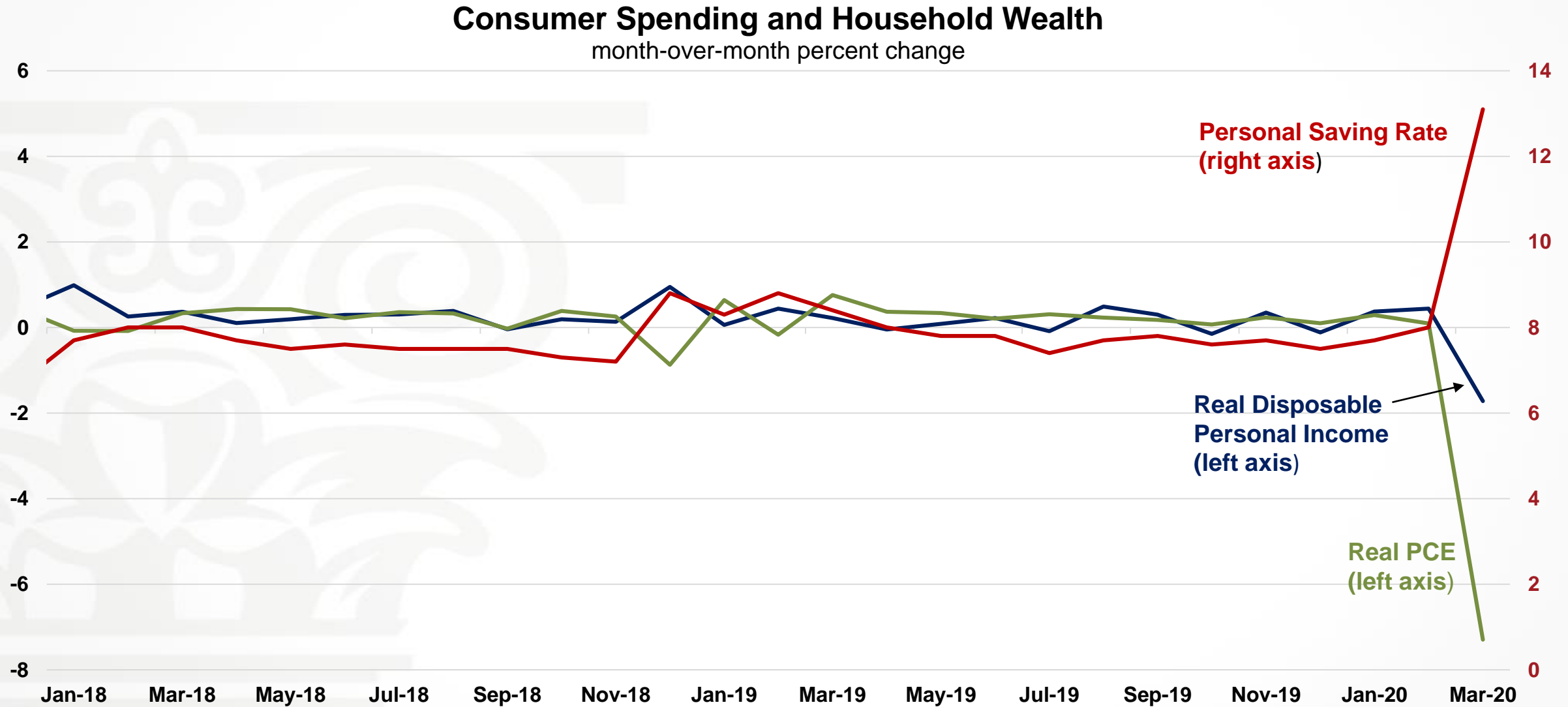
Real Personal Consumption Expenditures (PCE) declined 7.3 percent in March (non annualized), nearly tripling the previous record monthly decline. Much of the deterioration was concentrated in 15-to-30 percentage point declines in four services subcomponents: health care, transportation services, recreation services, and food services and accommodations.

Real Personal Consumption Expenditures

month-over-month percent change, SA

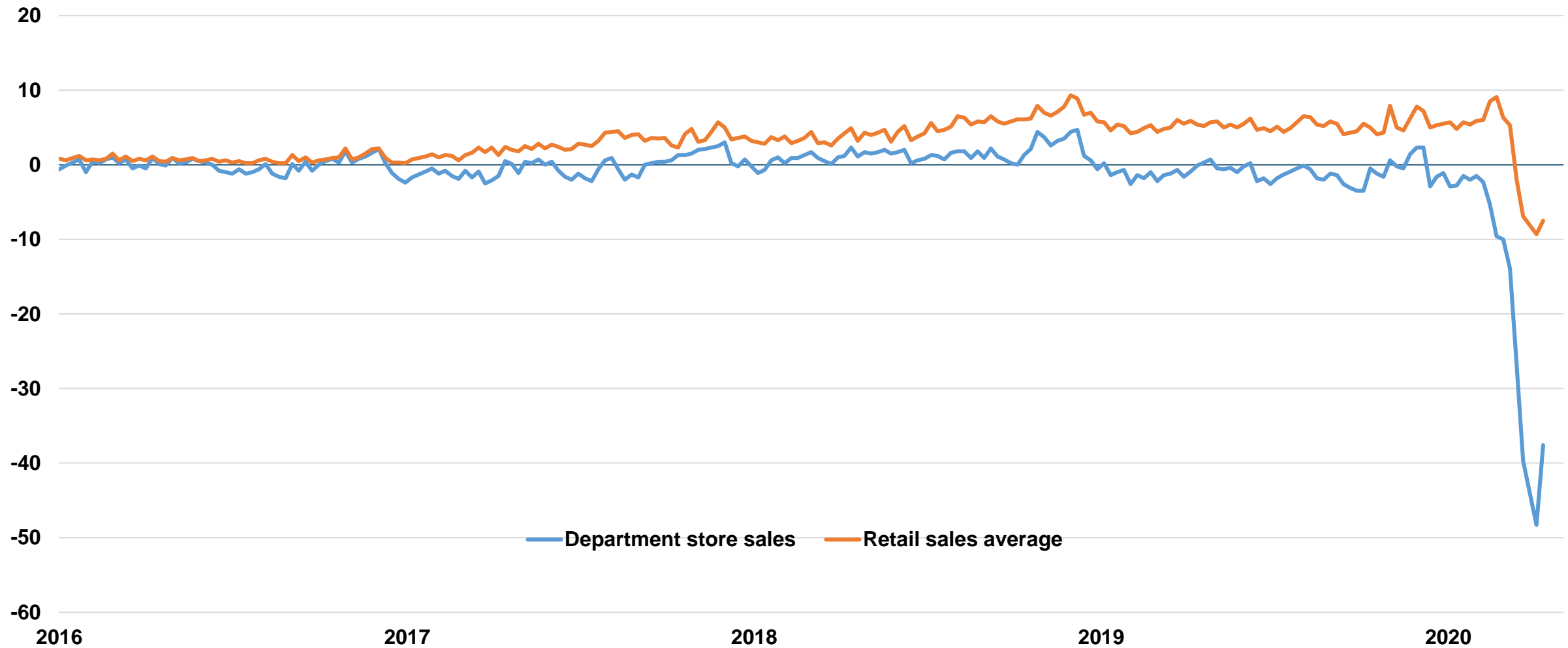


Estimates of real disposable personal income declined much less than real PCE in March (1.7 percent vs. 7.3 percent). Consequently, the personal saving rate spiked 5.1 percentage points to a 38-year high of 13.1 percent in March.



Declines in sales at brick and mortar retailers have been dramatic— with department stores seeing staggering dips in activity compared to a year ago.

Redbook Research: Same Store
nsa, weekly, year-over-year percent change

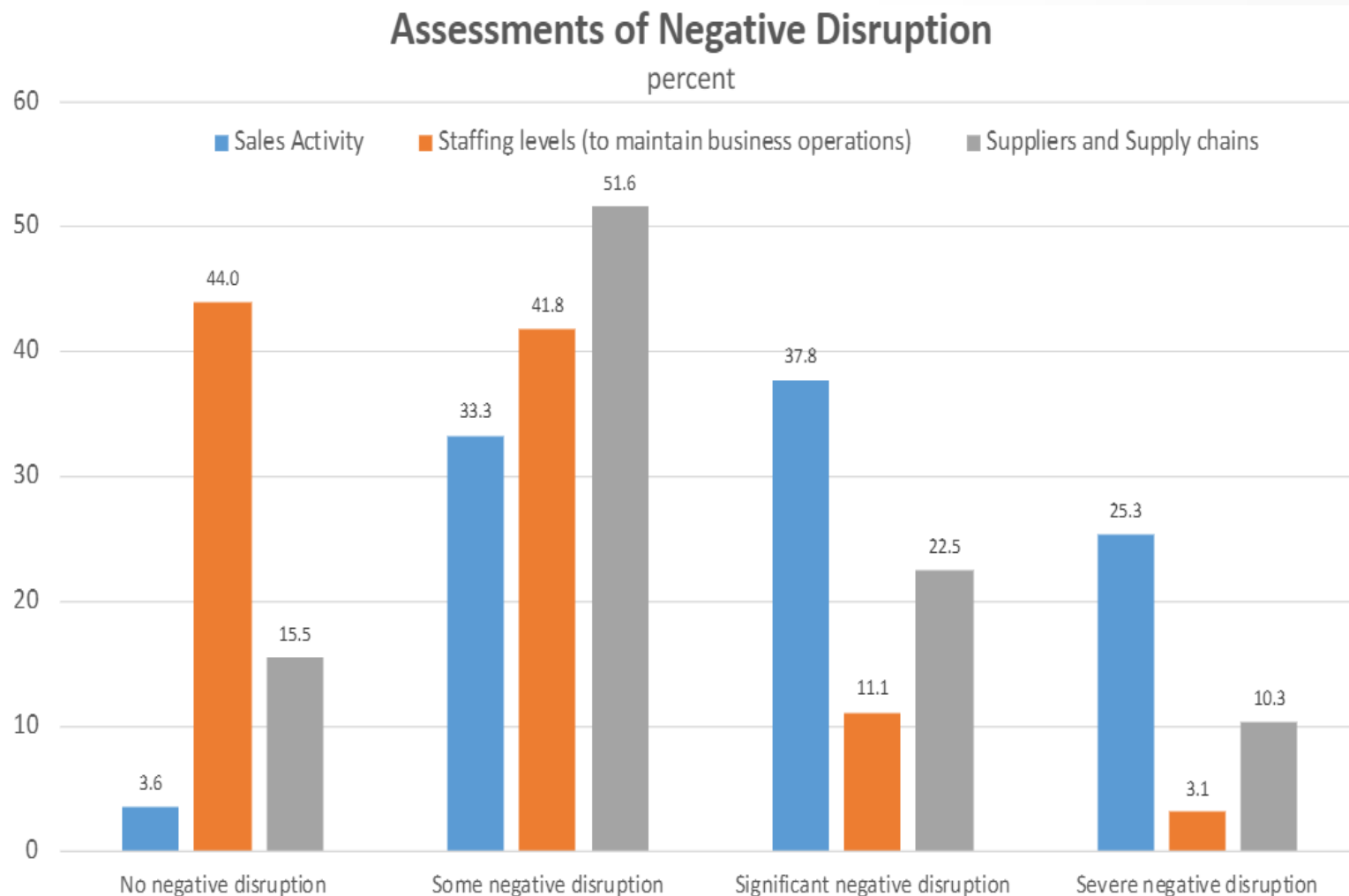


Sources: Redbook Research; Haver Analytics

data through May 9, 2020

The disruption to business activity has been severe.

- We asked our business contacts to assess disruption to their sales activity, staffing levels and suppliers and supply chains.
- A majority of firms in our panel have experienced significant or severe disruption to their sales activity.

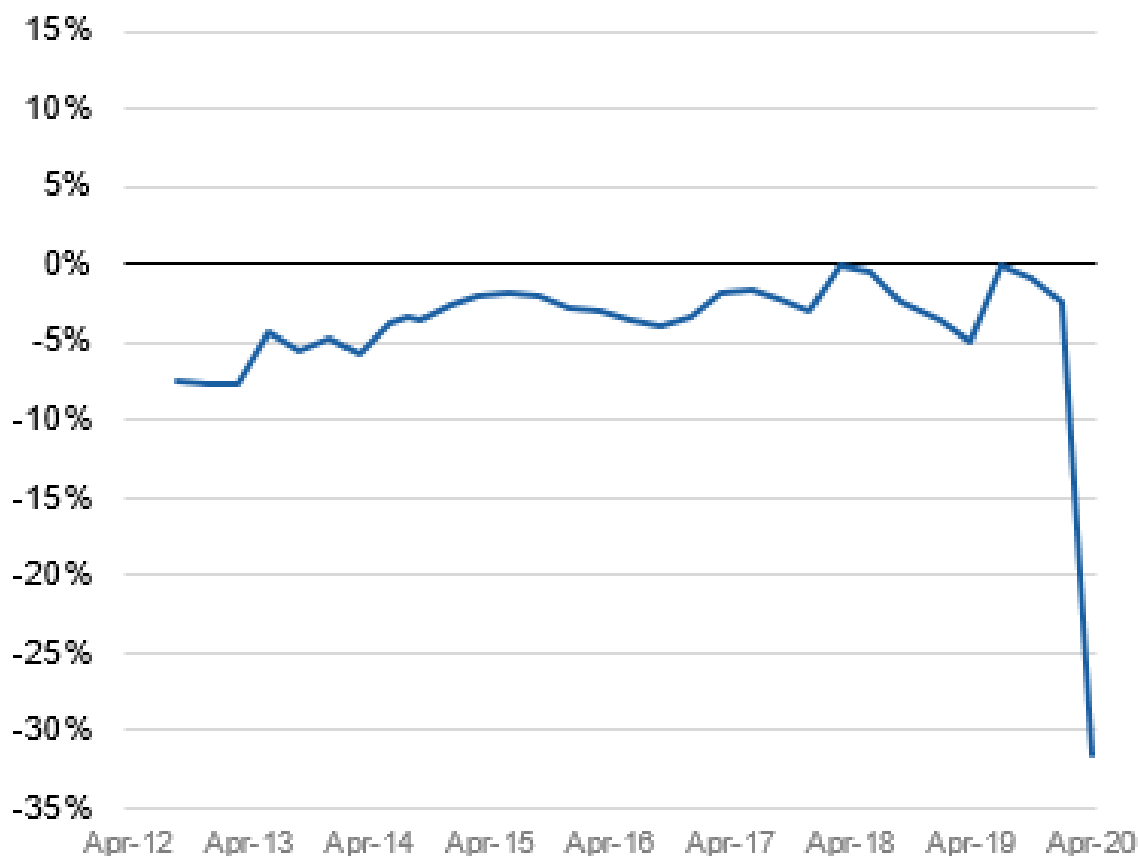


Note: There were 225 responses to both the sales activity and Staffing levels assessments of disruption, and 213 respondents who gave an assessment of disruption to suppliers and supply chains.

Source: Federal Reserve Bank of Atlanta's *Business Inflation Expectations Survey*, May 2020

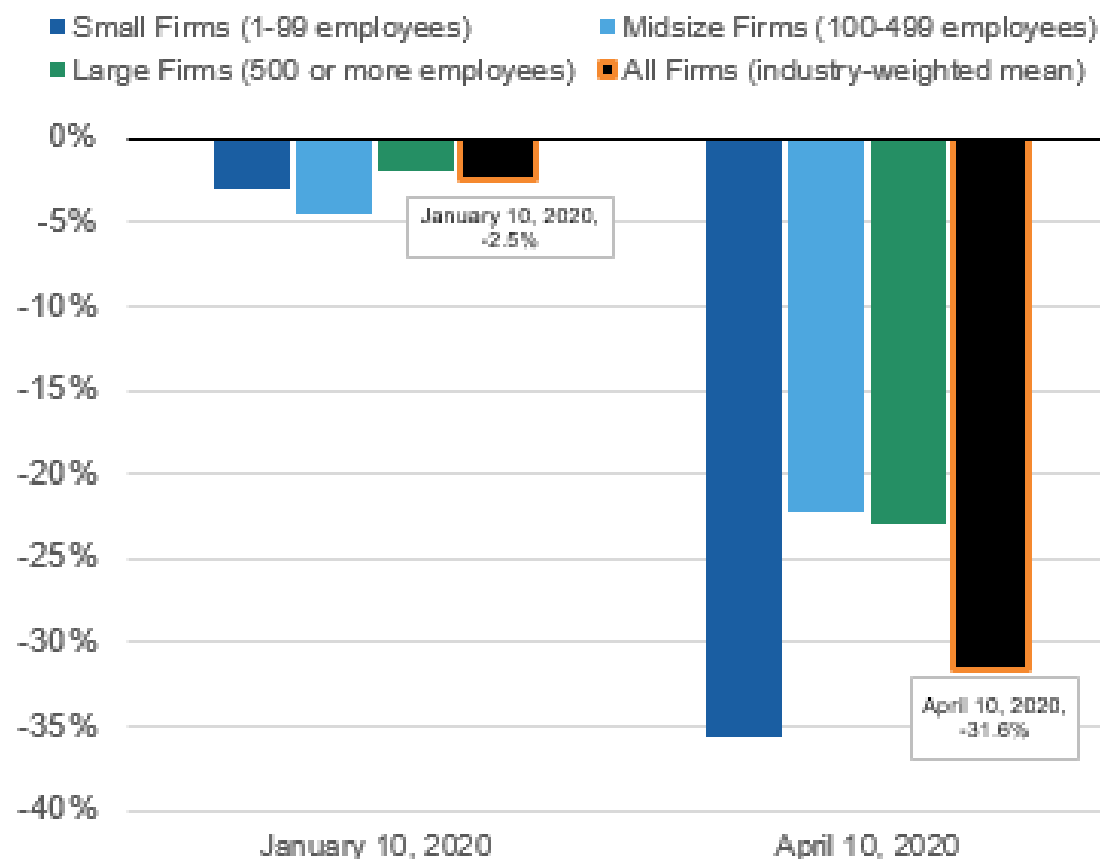
The decline in sales levels relative to what contacts reported as “normal” has been extraordinary —from 2.5 percent below normal in the first quarter to 32 percent in April. The decline in sales had an impact on firms of all sizes, but smaller firms reported a much larger decline than did firms with more than 100 employees.

Percentage below “Normal” Sales Levels
percent



Source: Atlanta Fed Business Inflation Expectations Survey, April 2020

Percentage below “Normal” Sales Levels
percent



Source: Atlanta Fed Business Inflation Expectations Survey, April 2020

Businesses are anticipating sales levels to remain down a year from now, though those expectations come with a great deal of uncertainty.

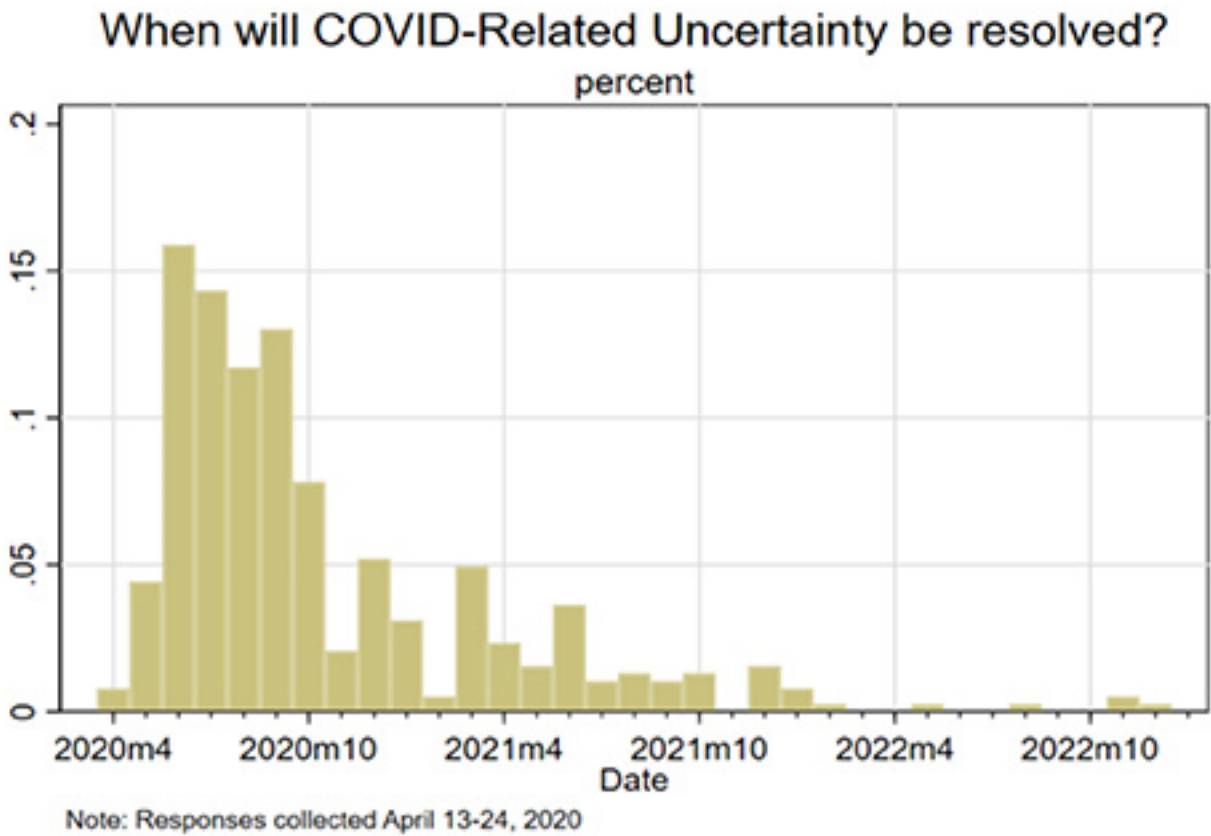
Survey of Business Uncertainty (January 2017 – April 2020)



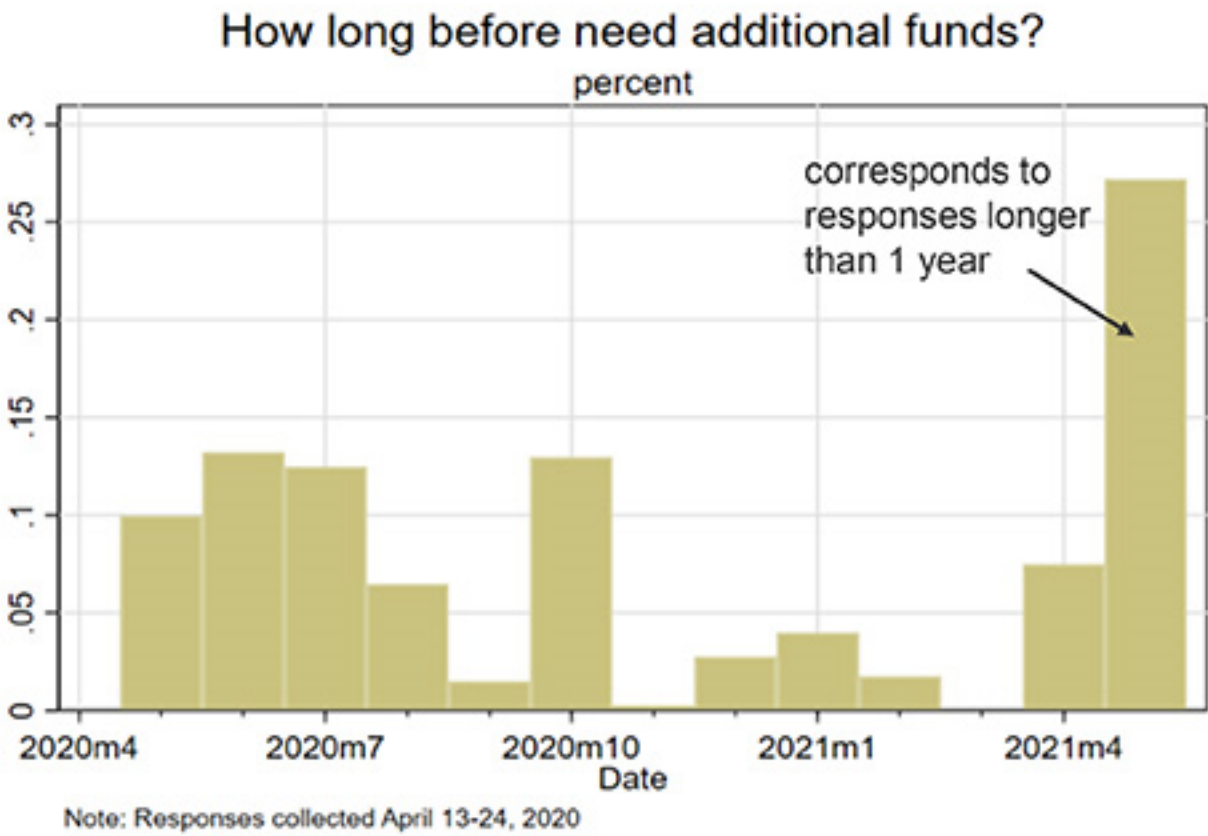
Source: Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University, and the University of Chicago Booth School of Business. For more information, see "Surveying Business Uncertainty" by David Altig, Jose Maria Barrero, Nick Bloom, Steven J. Davis, Brent Meyer, and Nick Parker, NBER Working Paper No. 25956, February 2020.

Firms' expectations for the dissipation of covid-related uncertainty were fairly optimistic in a recent survey. However, many indicated that they would need new sources of funding to continue operating through the end of the year.

Question: *When do you think it is most likely that the coronavirus-related uncertainty facing your firm will be largely resolved?*

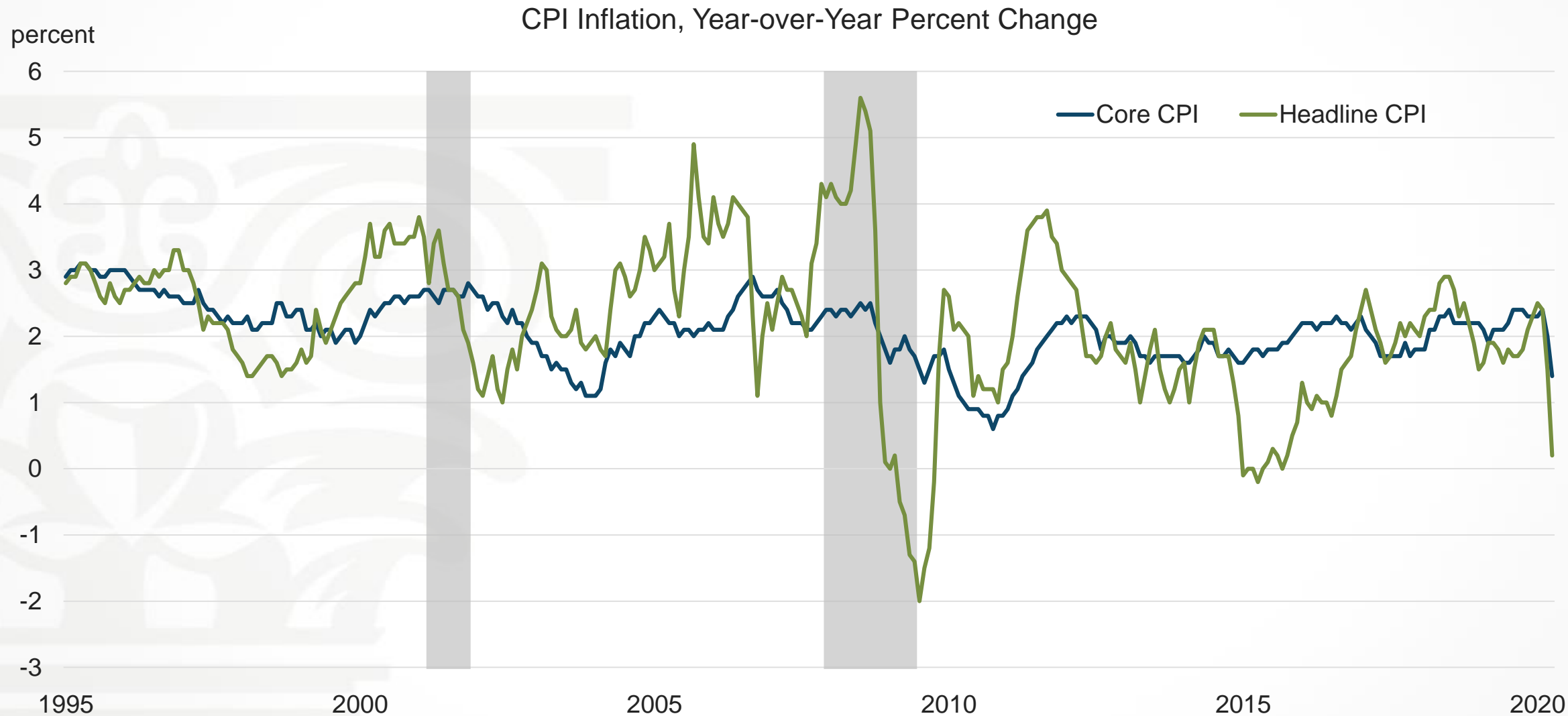


Question: *In light of current conditions, for how many months can your firm continue to operate without tapping new sources of funding (credit lines, emergency loans, debt markets, etc.)?*



Source: Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University, and the University of Chicago Booth School of Business.

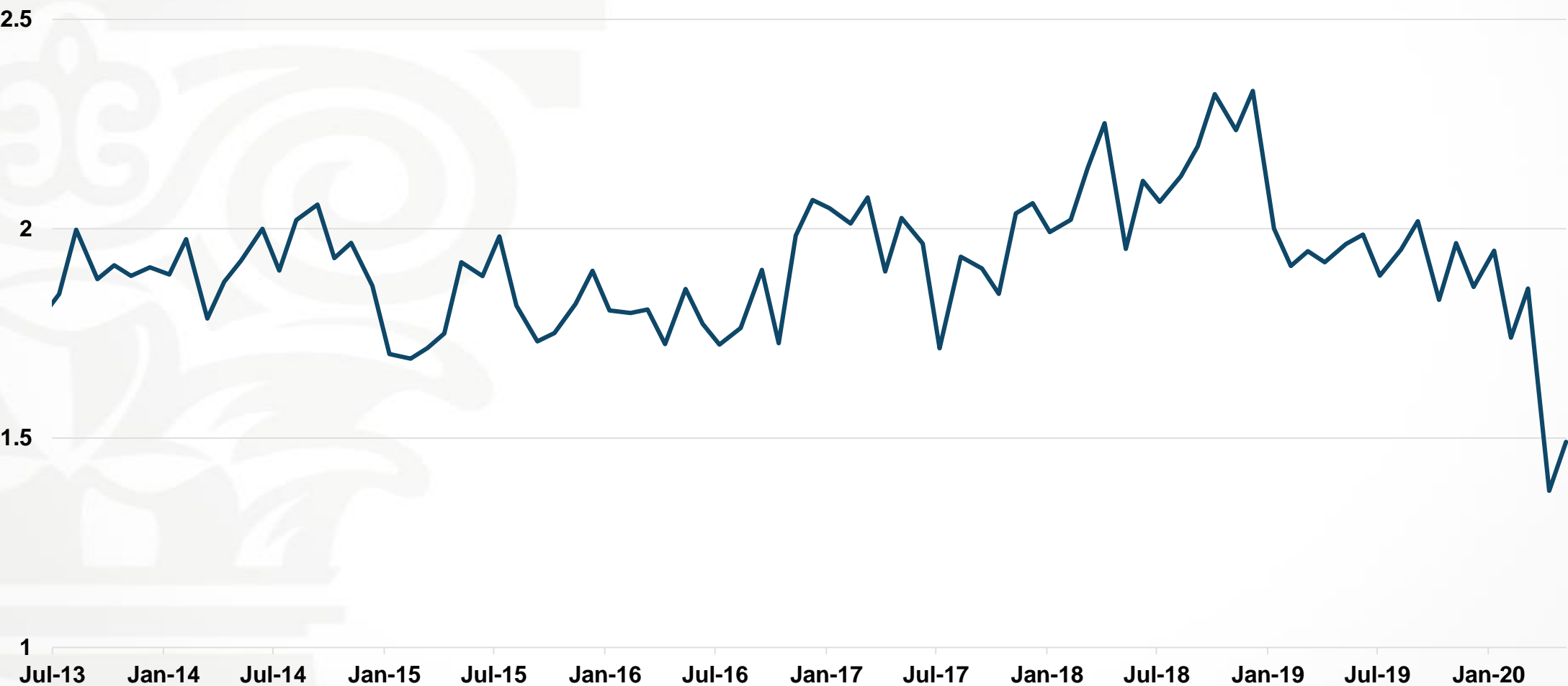
Consumer inflation decelerated sharply in April



Source: Bureau of Labor Statistics., May 2020

Business inflation expectations declined to the lowest level in the survey's 7-year history in April, only ticking up slightly in May.

Atlanta Fed's Business Inflation Expectations Survey
year-ahead unit cost expectations
percent, monthly



Economic fundamentals can support a strong recovery.

- In a sense, the pre-pandemic economic conditions offer hope. If we weather the crisis without lasting damage to those economic fundamentals, then the fundamentals can support a strong recovery.



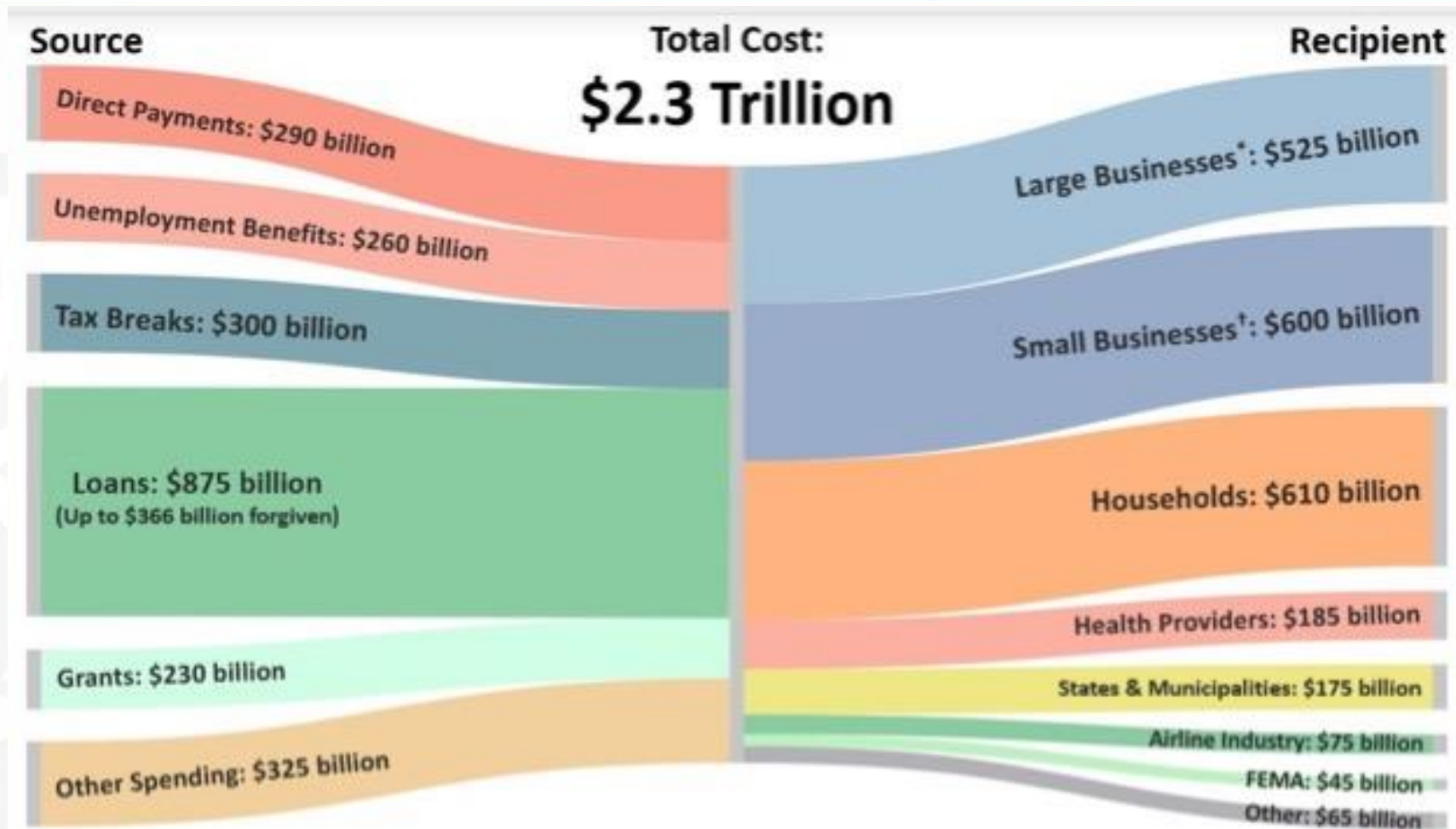
Key issues for the outlook

- Temporary vs. permanent job losses
- Future of labor income and credit to support consumer spending
- Structural changes that might have been triggered and/or accelerated
- Employment and spending response in June/July when CARES Act support for businesses and households runs out
- Next steps for fiscal and monetary policy

Appendix



CARES Act



Source: Legislative Offices, JCT, bill text, CRFB estimates.

† This includes \$170 billion of tax cuts for businesses other than corporations, some of which are large companies.

* This includes \$454 billion to set up a \$4.5 trillion Fed facility which could support state and local governments as well as companies.

CRFB.org



The Fed's efforts to support the economy and financial system during the crisis are designed to minimize long-term financial and economic damage.



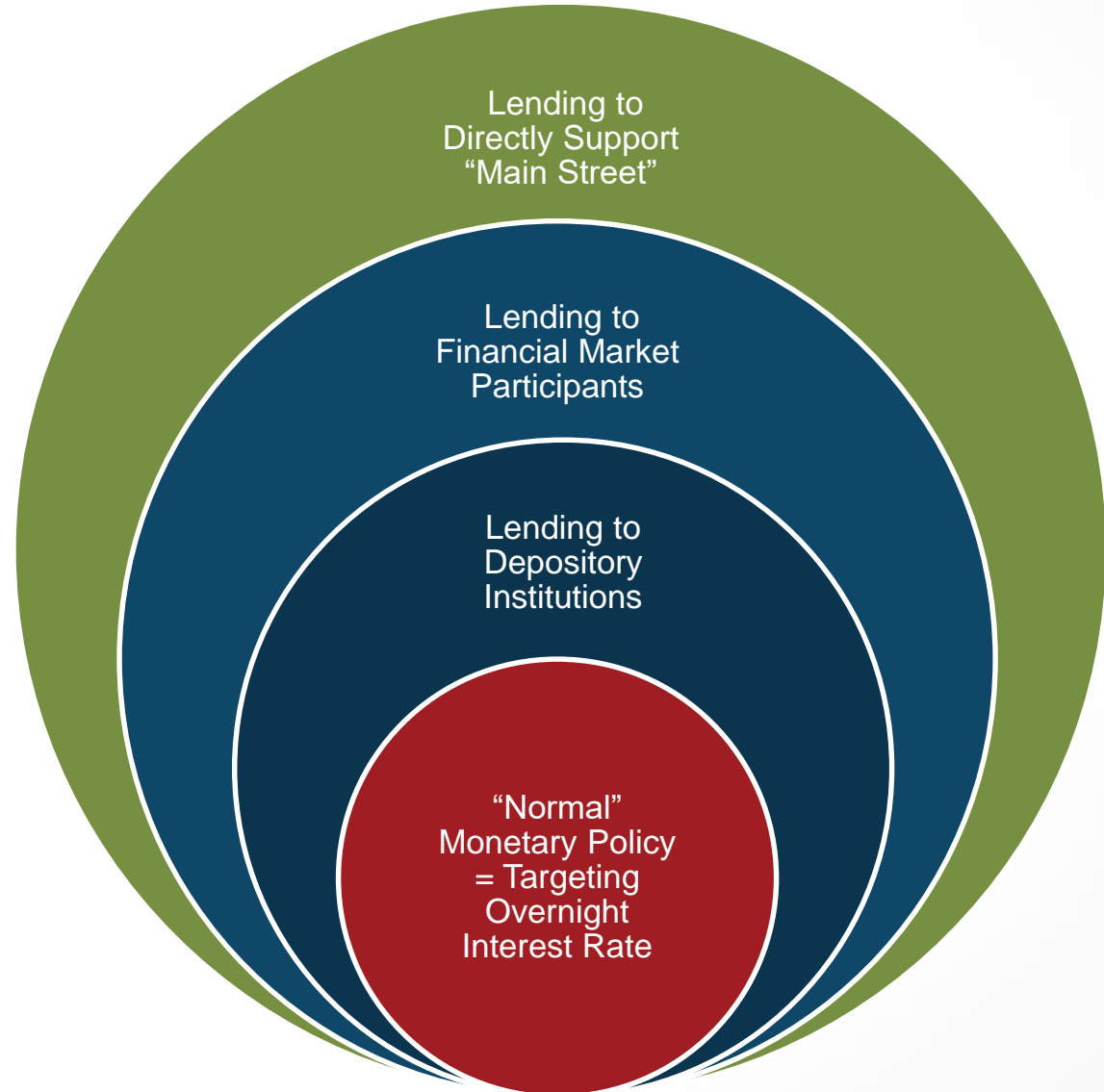
During the financial crisis of 2008, we learned that threats to economic and financial stability demand bold and swift action.

With those lessons in hand, we are once again taking actions necessary to support the financial health of households and businesses.

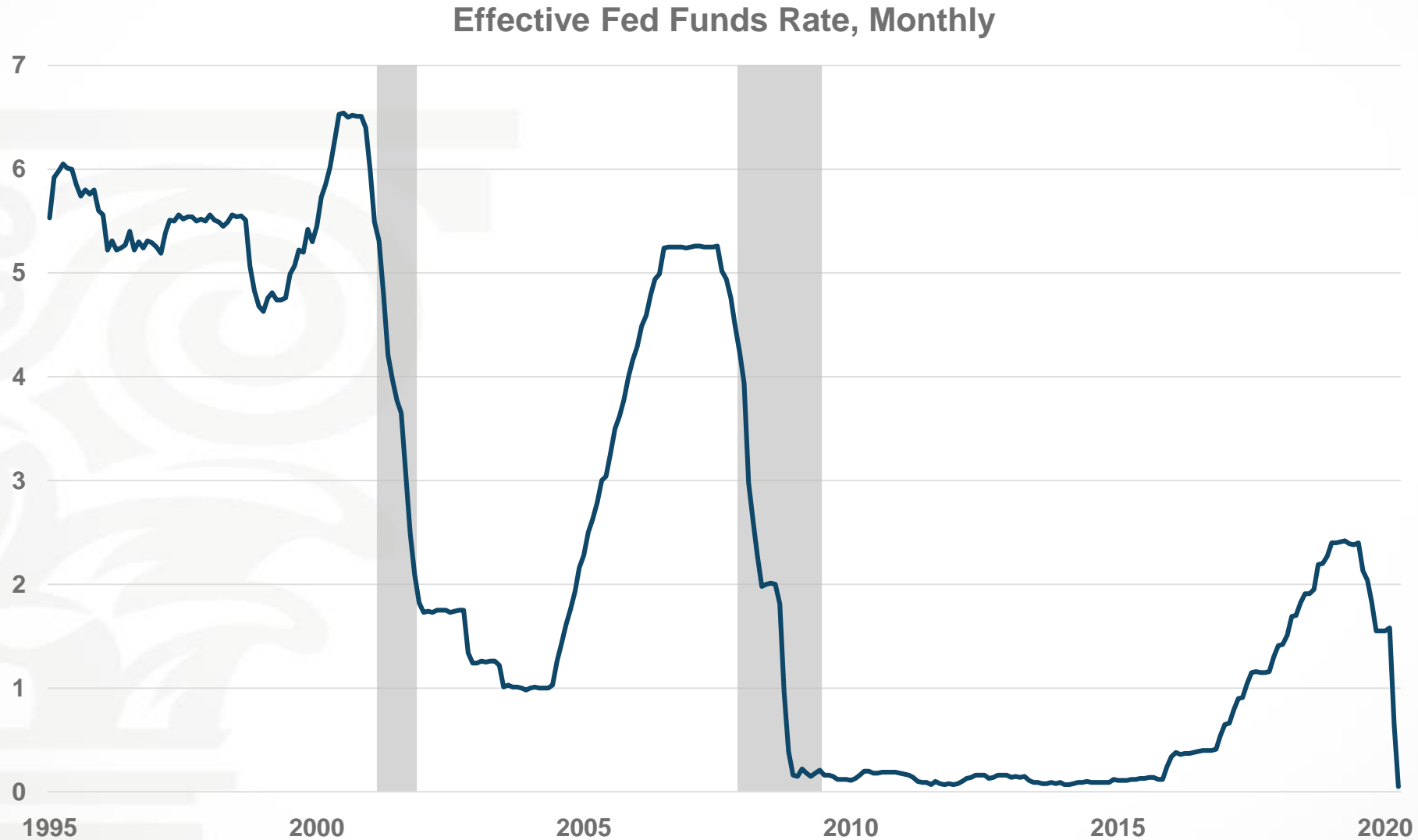
The Federal Reserve's Response

Funding, Credit, Liquidity and Loan Facilities

- Main Street Lending Program
- Paycheck Protection Program Liquidity Facility
- Municipal Liquidity Facility
- Commercial Paper Funding Facility
- Term Asset-Backed Securities Loan Facility
- Primary and Secondary Market Corporate Credit Facilities
- Money Market Mutual Fund Liquidity Facility
- Primary Dealer Liquidity Facility



The FOMC lowered the federal funds target range to near zero in March



Source: Board of Governors of the Federal Reserve System, May 2020

Federal Reserve actions to support economic activity during the coronavirus pandemic

- Commercial Paper Funding Facility(CPFF)
- Primary Dealer Credit Facility (PDCF)
- Money Market Mutual Fund Liquidity Facility (MMLF)
- Primary Market Corporate Credit Facility (PMCCF): new bond and loan issuance
- Secondary Market Corporate Credit Facility (SMCCF): provide liquidity for outstanding corporate bonds credit card loans, loans guaranteed by the Small Business Administration (SBA), and certain other assets

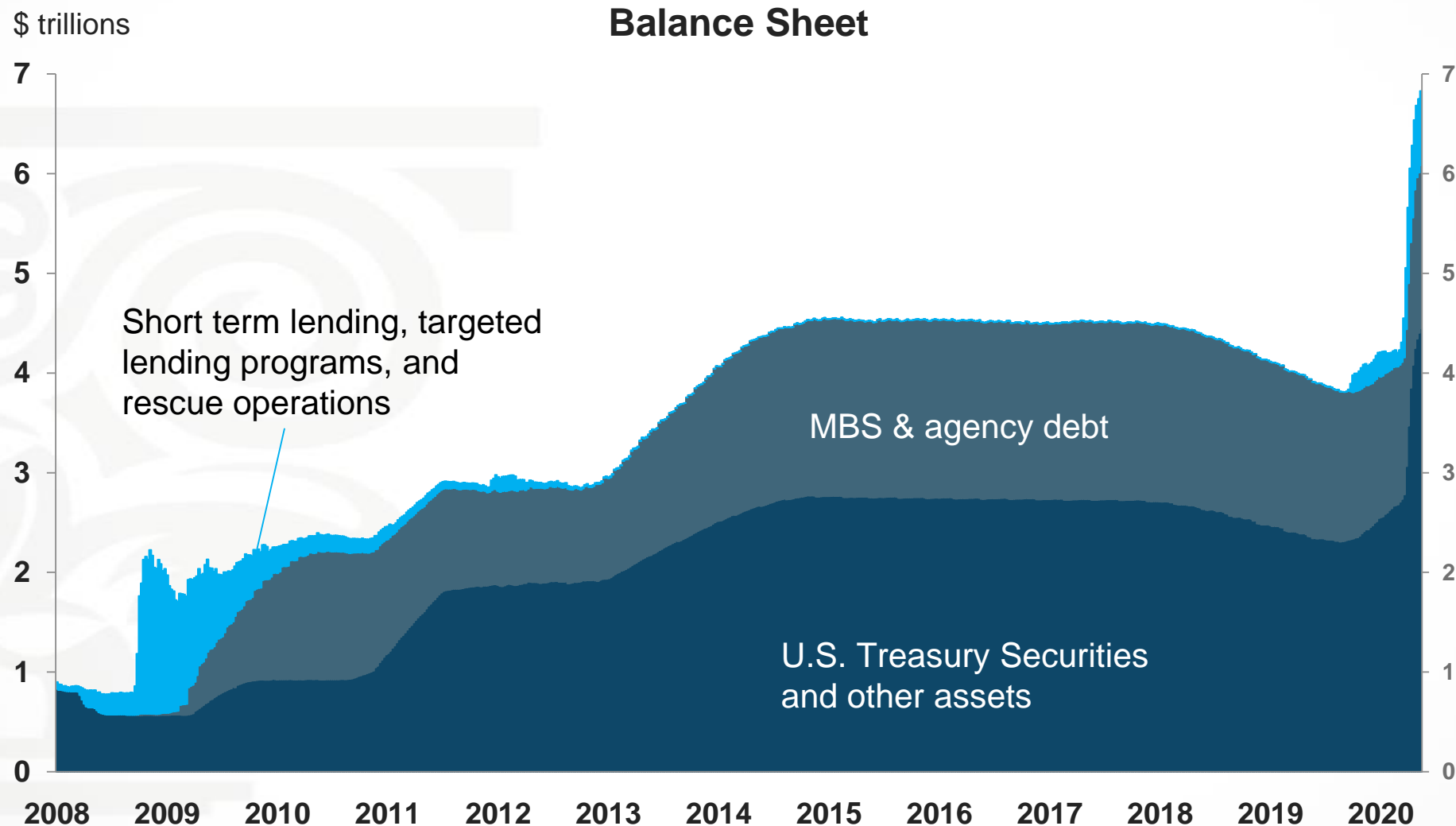
Federal Reserve actions to support economic activity during the coronavirus pandemic

- Term Asset-Backed Securities Loan Facility (TALF): enable the issuance of asset-backed securities (ABS) backed by student loans, auto loans, credit card loans, loans guaranteed by the Small Business Administration (SBA), and certain other assets
- Paycheck Protection Program Lending Facility: provide term financing backed by PPP loans
- Municipal Liquidity Facility: offer up to \$500 billion in lending to states and municipalities

Main Street Business Lending Program

- Support for small and mid-sized businesses that were in good financial standing before the crisis by offering 4-year loans to companies employing up to 10,000 workers or with revenues of less than \$2.5 billion
- Principal and interest payments will be deferred for one year.
- Eligible banks may originate new Main Street loans or use Main Street loans to increase the size of existing loans to businesses.
- Banks will retain a 5 percent share, selling the remaining 95 percent to the Main Street facility, which will purchase up to \$600 billion of loans.
- Firms seeking Main Street loans must commit to make reasonable efforts to maintain payroll and retain workers.

The Fed's balance sheet has expanded to approximately \$7 trillion



Source: Board of Governors of the Federal Reserve System. "Factors Affecting Reserve Balances of Depository Institutions and Condition Statements of Federal Reserve Banks." H.4.1 (Table 1), May 2020

This is an unprecedented time for us — socially and economically.

- As long as the novel coronavirus is spreading quickly, it will be difficult for the economy to stabilize and then recover.
- Therefore, a swift, responsible public health response is critical.
- As Fed Chair Jerome Powell said, the virus will dictate the timeline for an economic rebound.



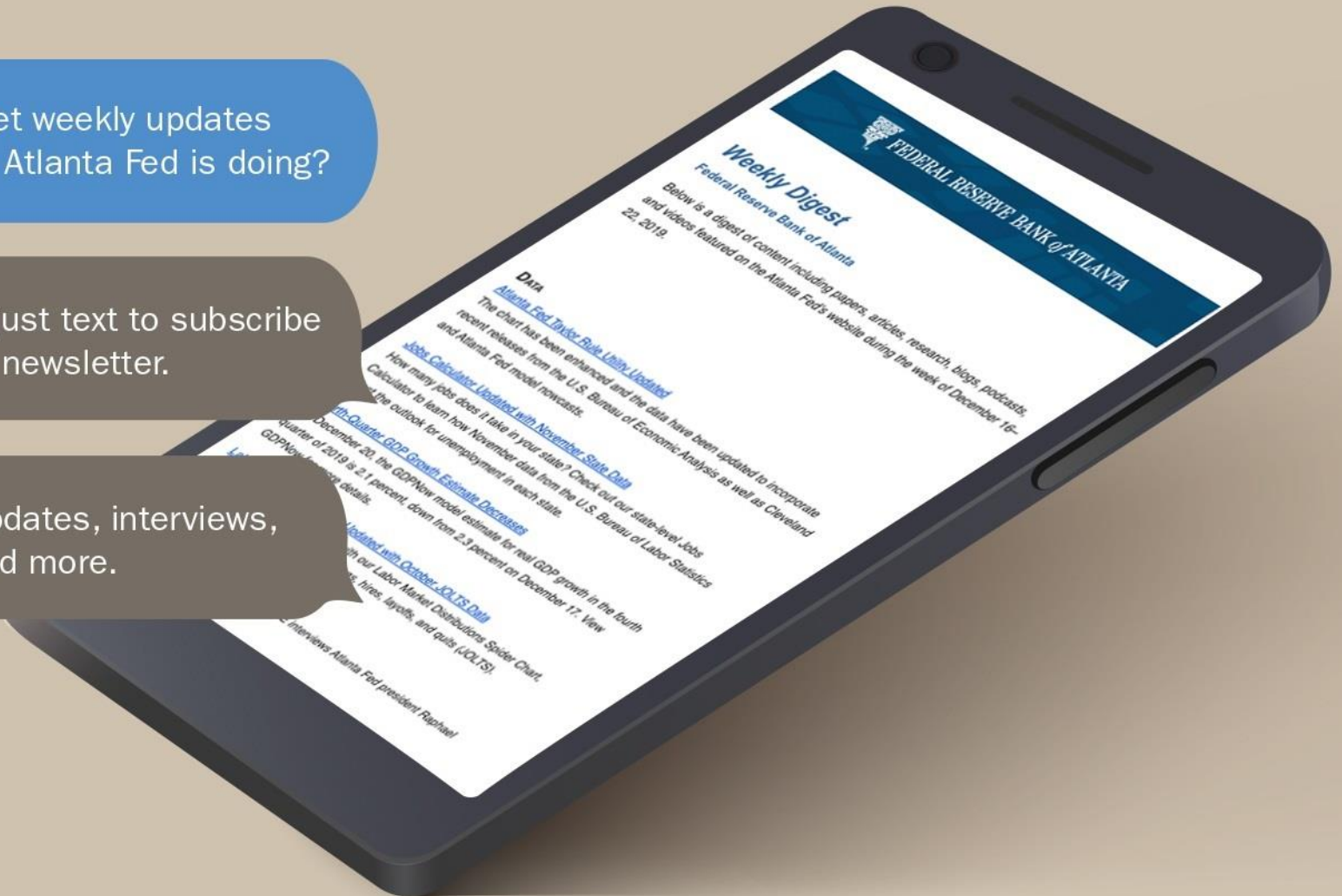
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Tennessee Economic Outlook and Tax Revenues

William F. Fox, Director
May 27, 2020

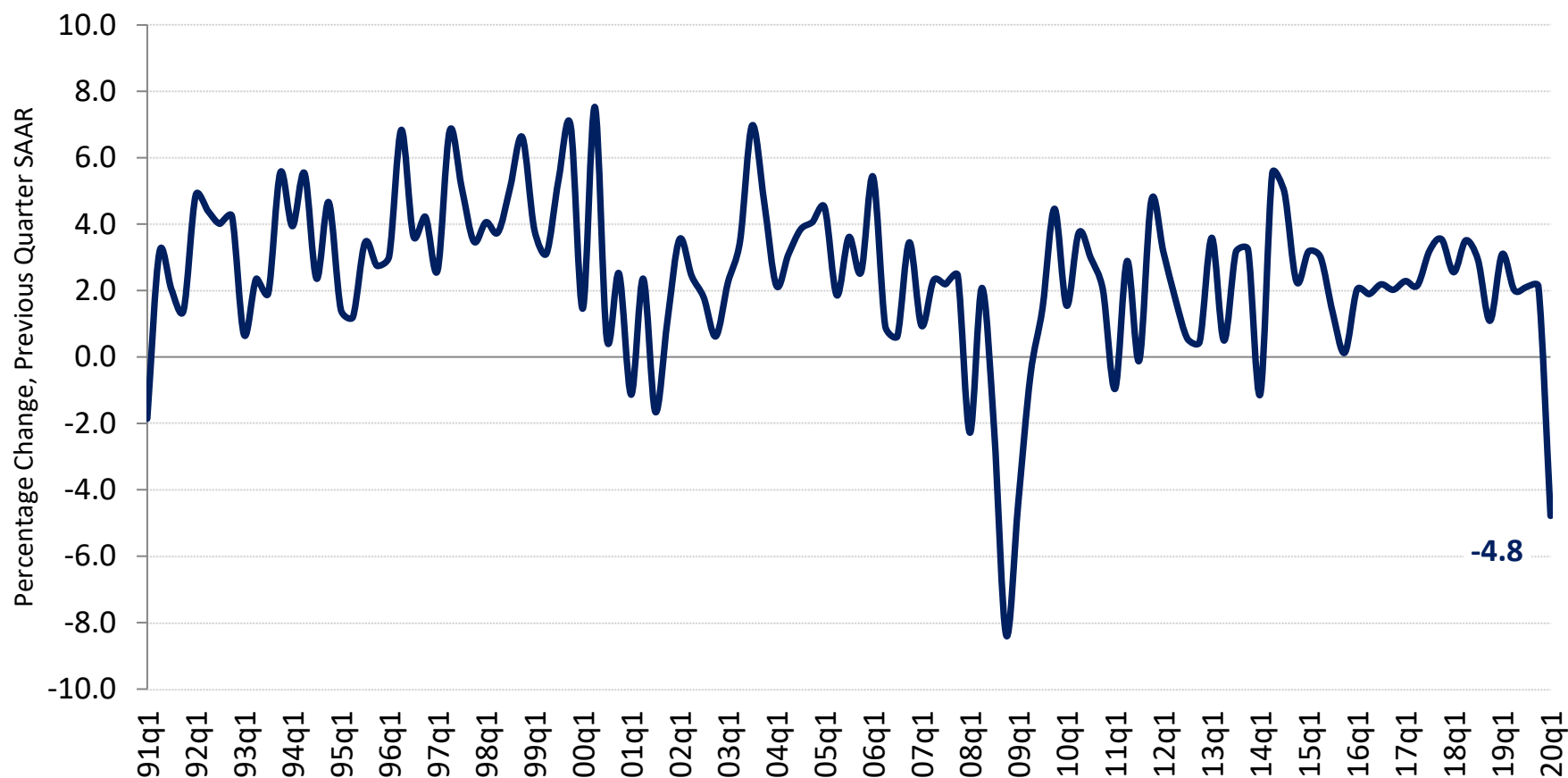


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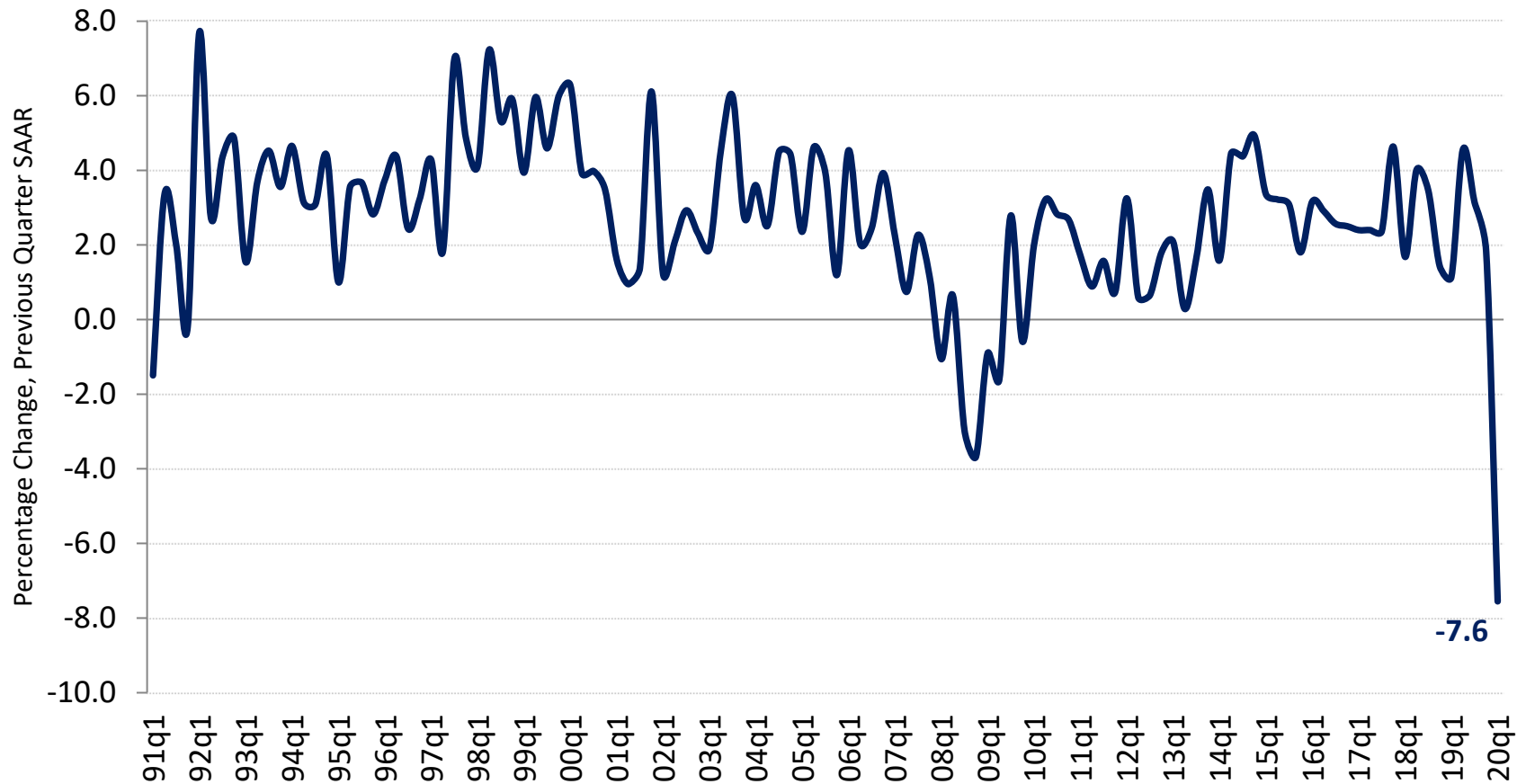
BOYD CENTER FOR BUSINESS
AND ECONOMIC RESEARCH

GDP fell in Q1 and will fall much more in Q2

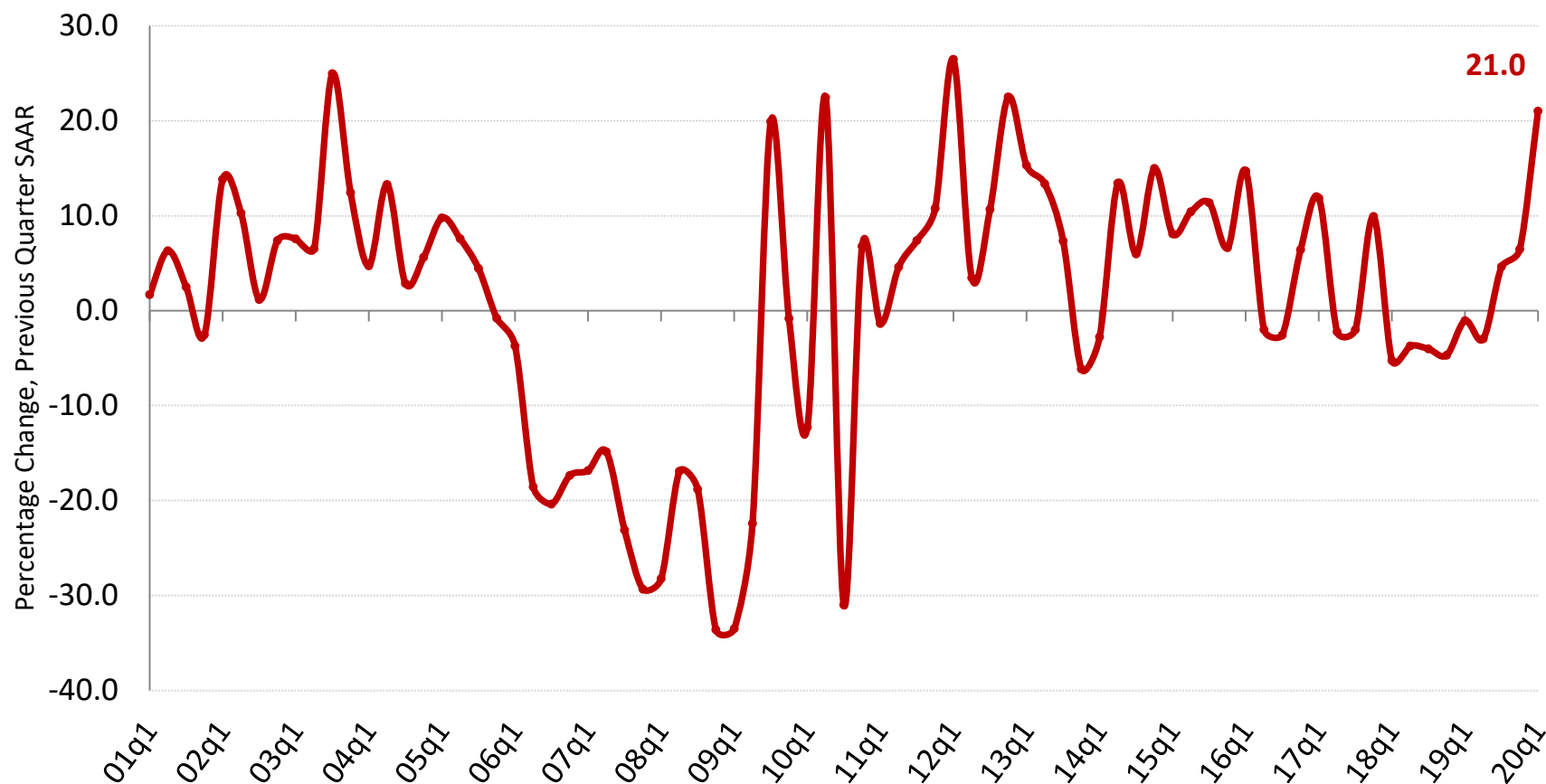
(chained 2012 dollars)



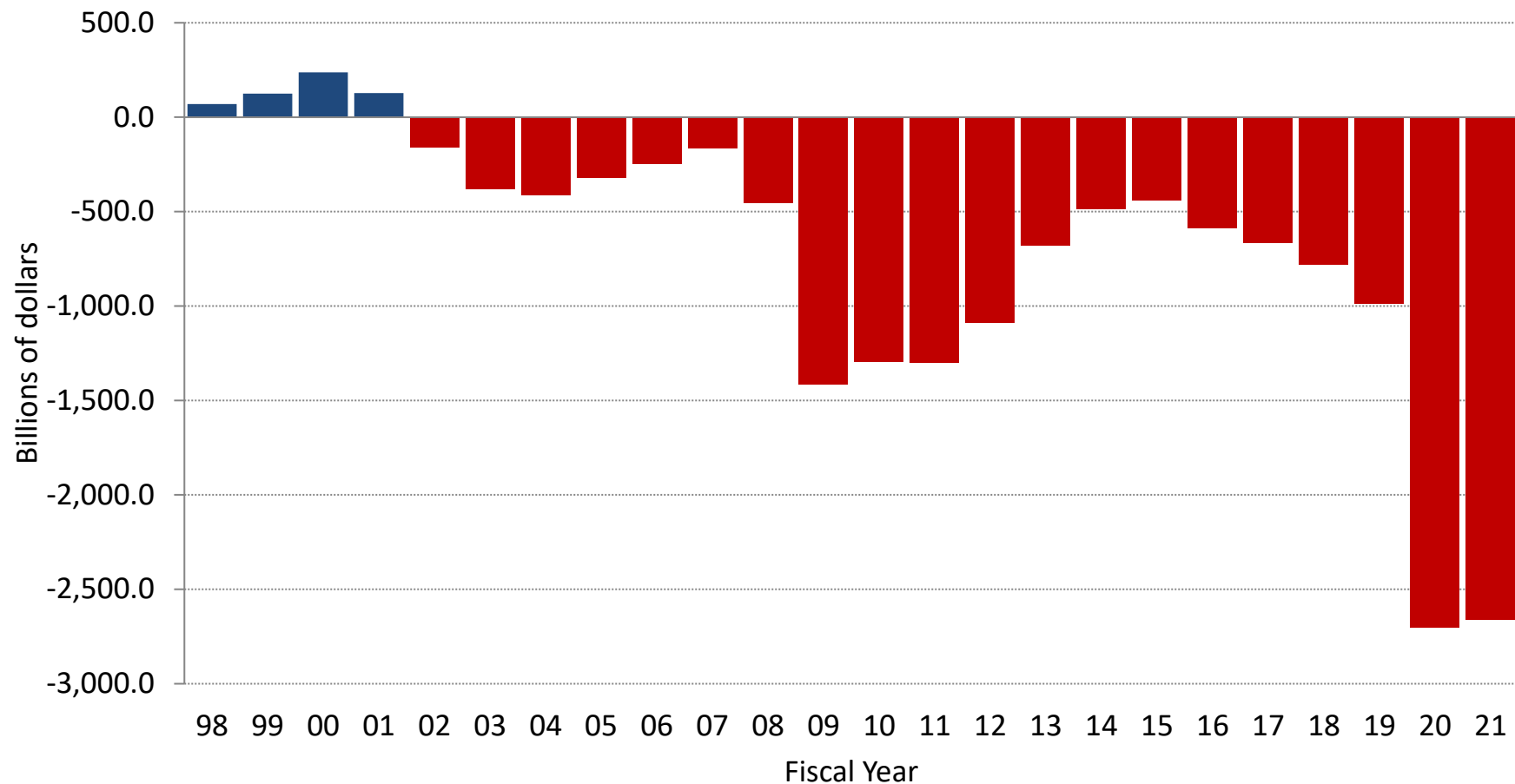
Personal Consumption Expenditures Fell Faster than GDP (chained 2012 dollars)



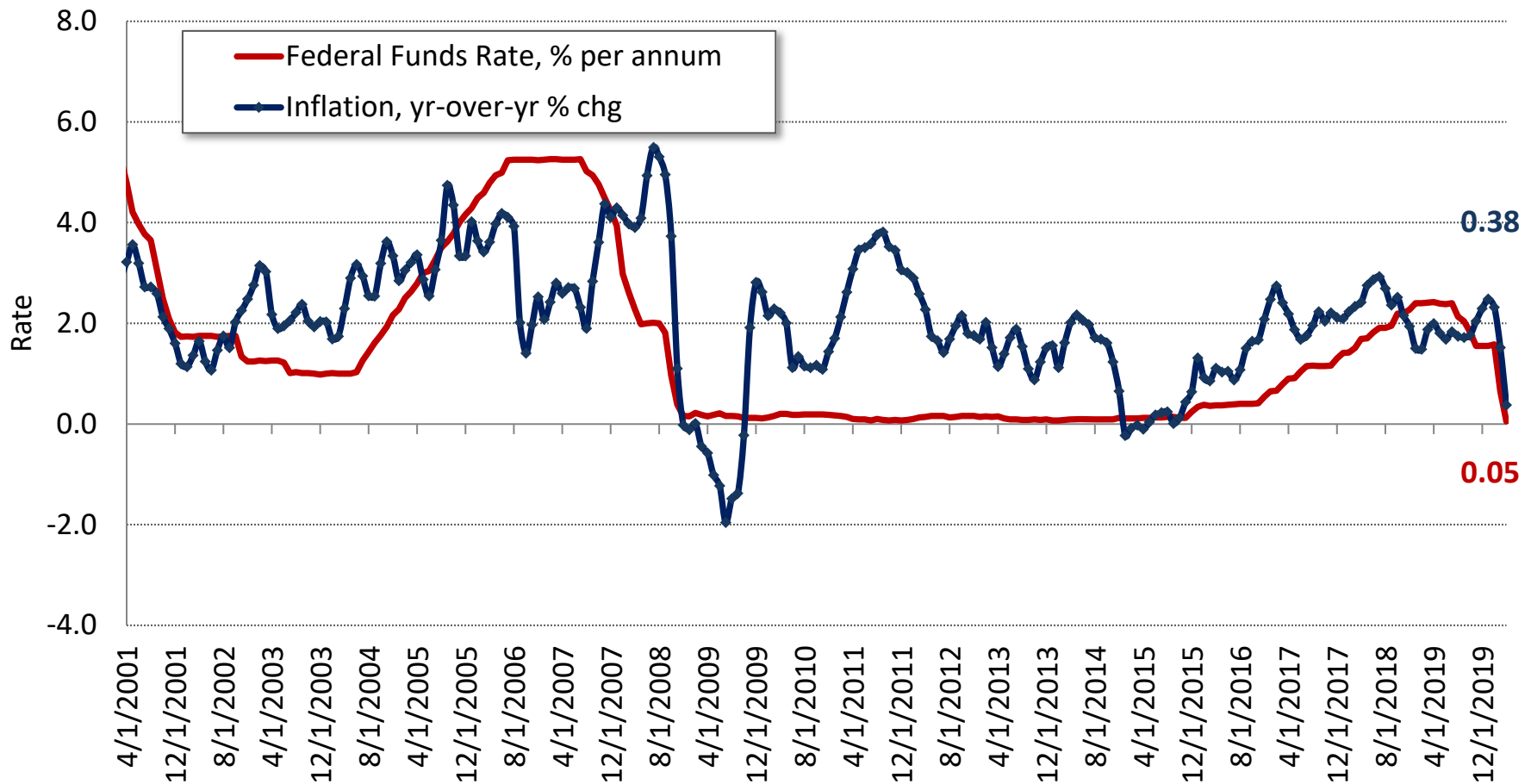
Private Residential Fixed Investment Rose Rapidly in Q1



Federal Budget Deficits are Expanding Quickly

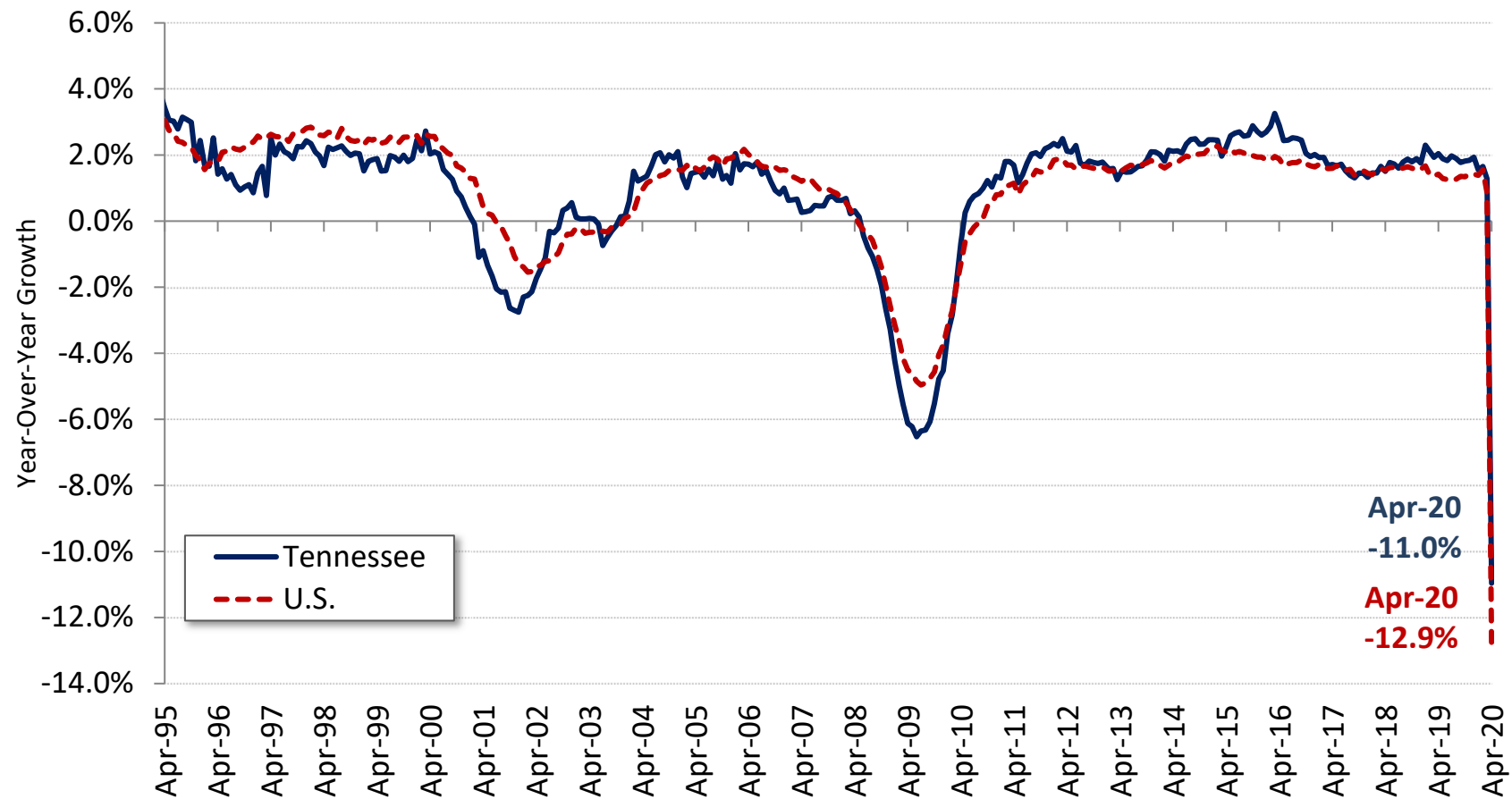


Interest Rates and Inflation Plummeted with Covid 19

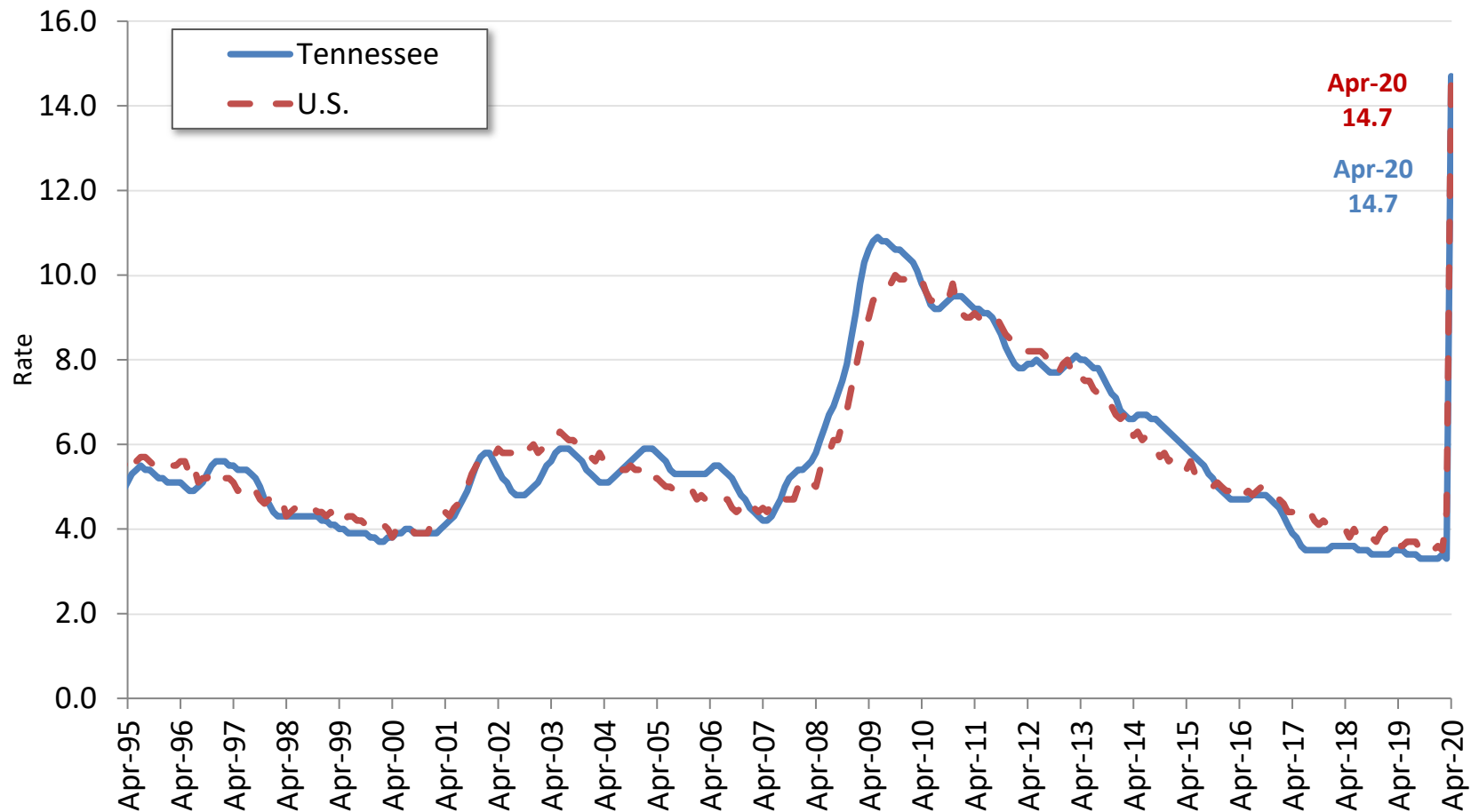


Tennessee and U.S. Nonfarm Jobs Fell Dramatically in April

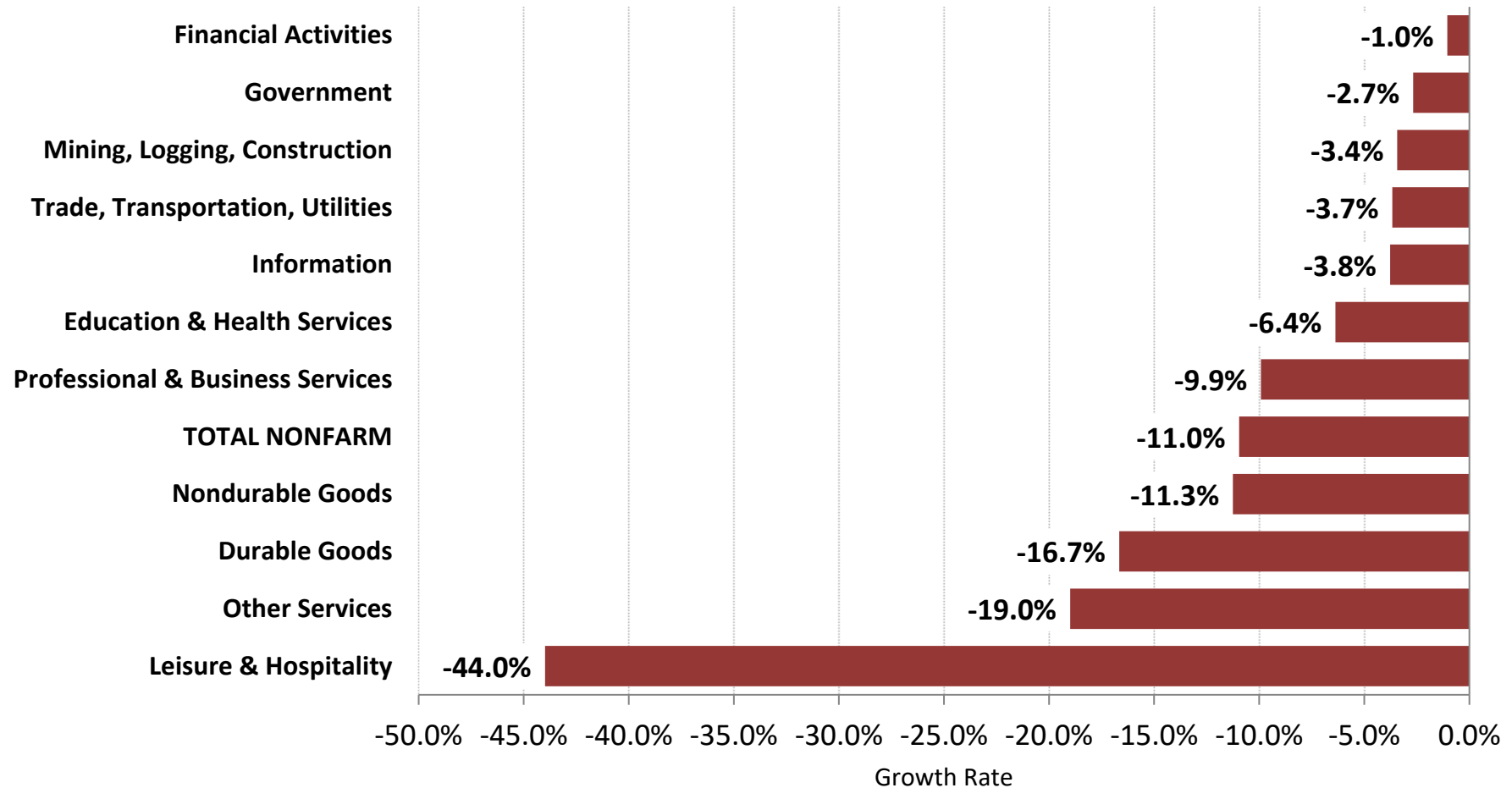
(year-over-year growth)



Tennessee and U.S. Unemployment Rates Rose with the Employment Declines (seasonally adjusted)

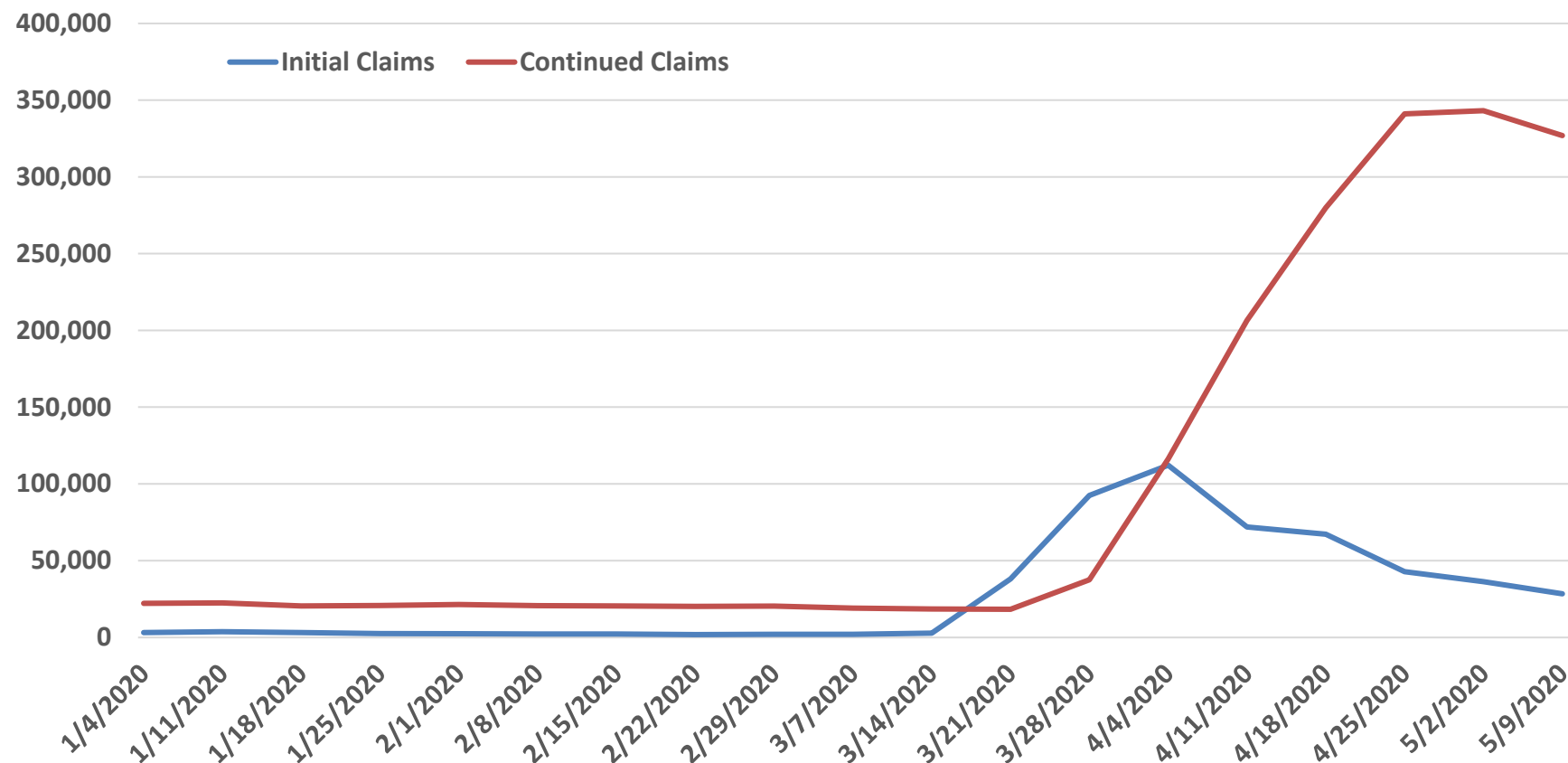


Every Sector in Tennessee Lost Jobs in April (April Year over Year Change)



Tennessee Unemployment Claims Remain Very High

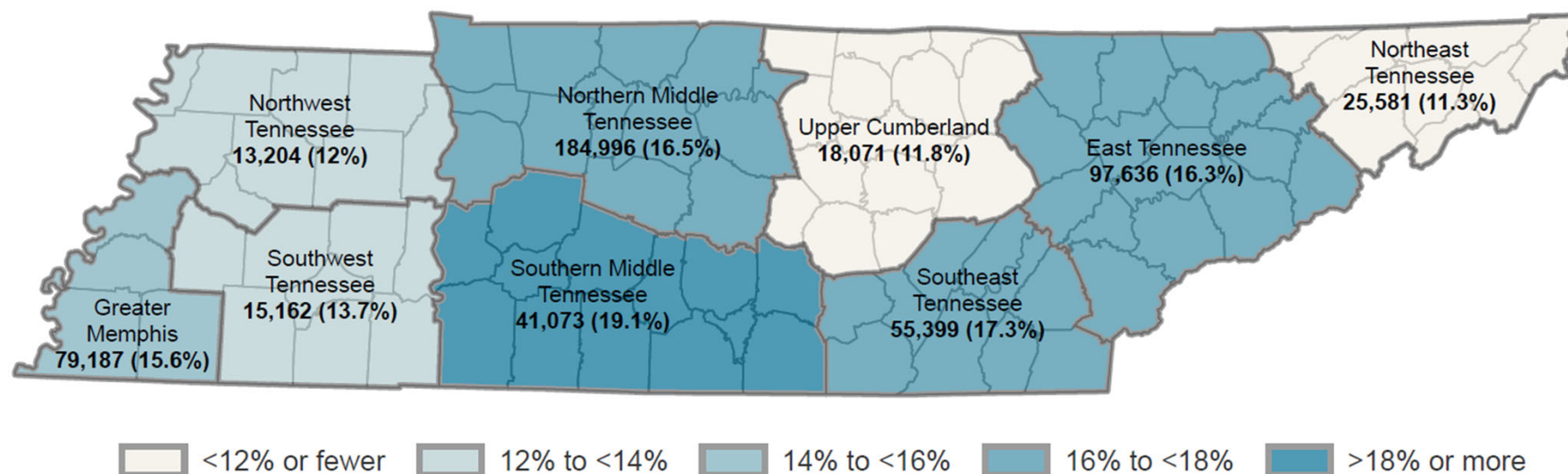
Updated weekly; last revision 5/21/20



Source: Tennessee Department of Labor and Workforce Development

Total UI Claims since 3/21 and Percent of Workforce Filing Claims, Week Ending 5/16/2020

Updated weekly; last revision 5/21/20

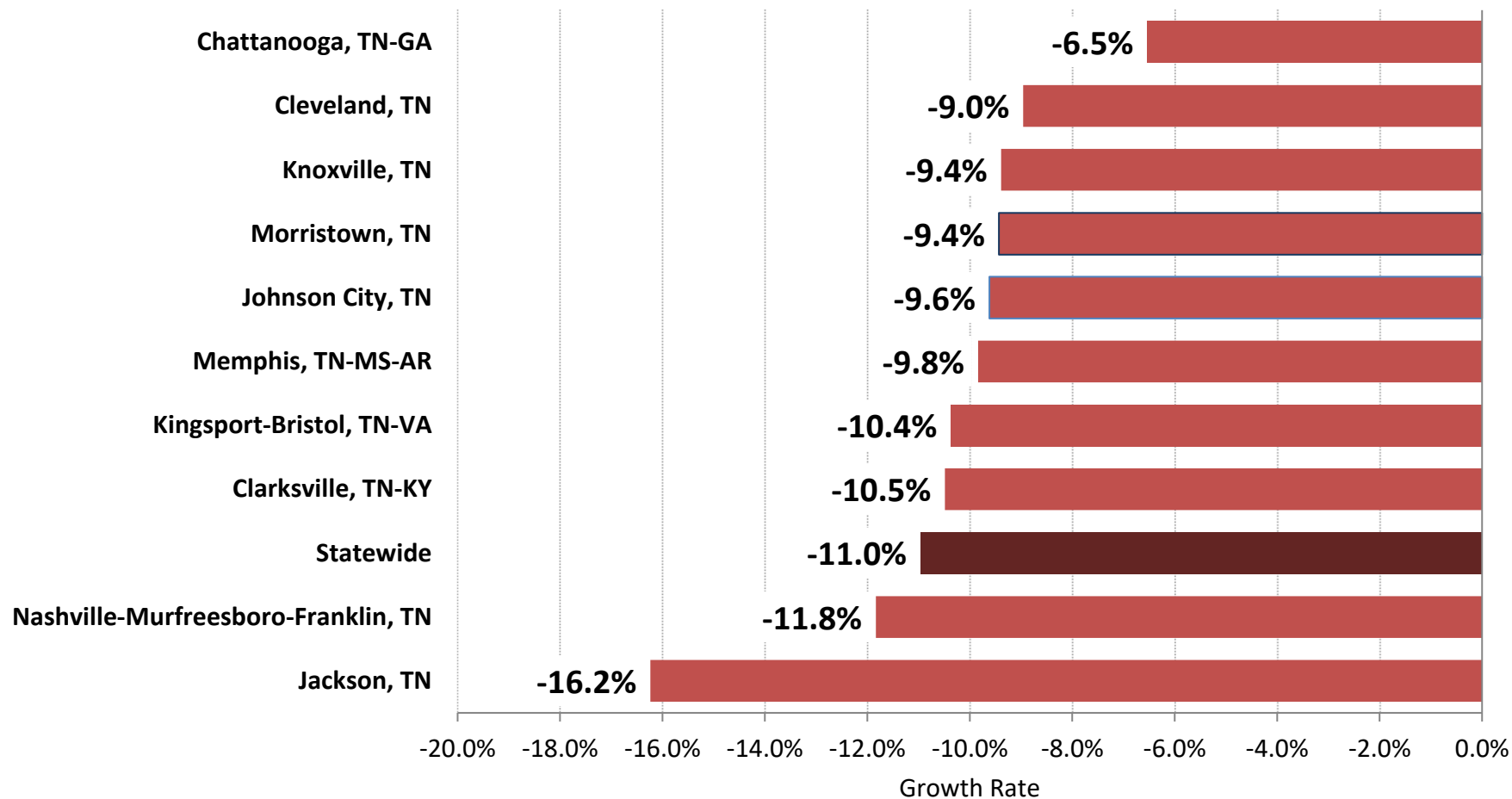


Note: Weekly new UI claims at the LWDA regions are scaled to the statewide total new claims filed as reported by the Tennessee Department of Labor & Workforce Development

Source: Tennessee Department of Labor and Workforce Development, U.S. Bureau of Labor Statistics

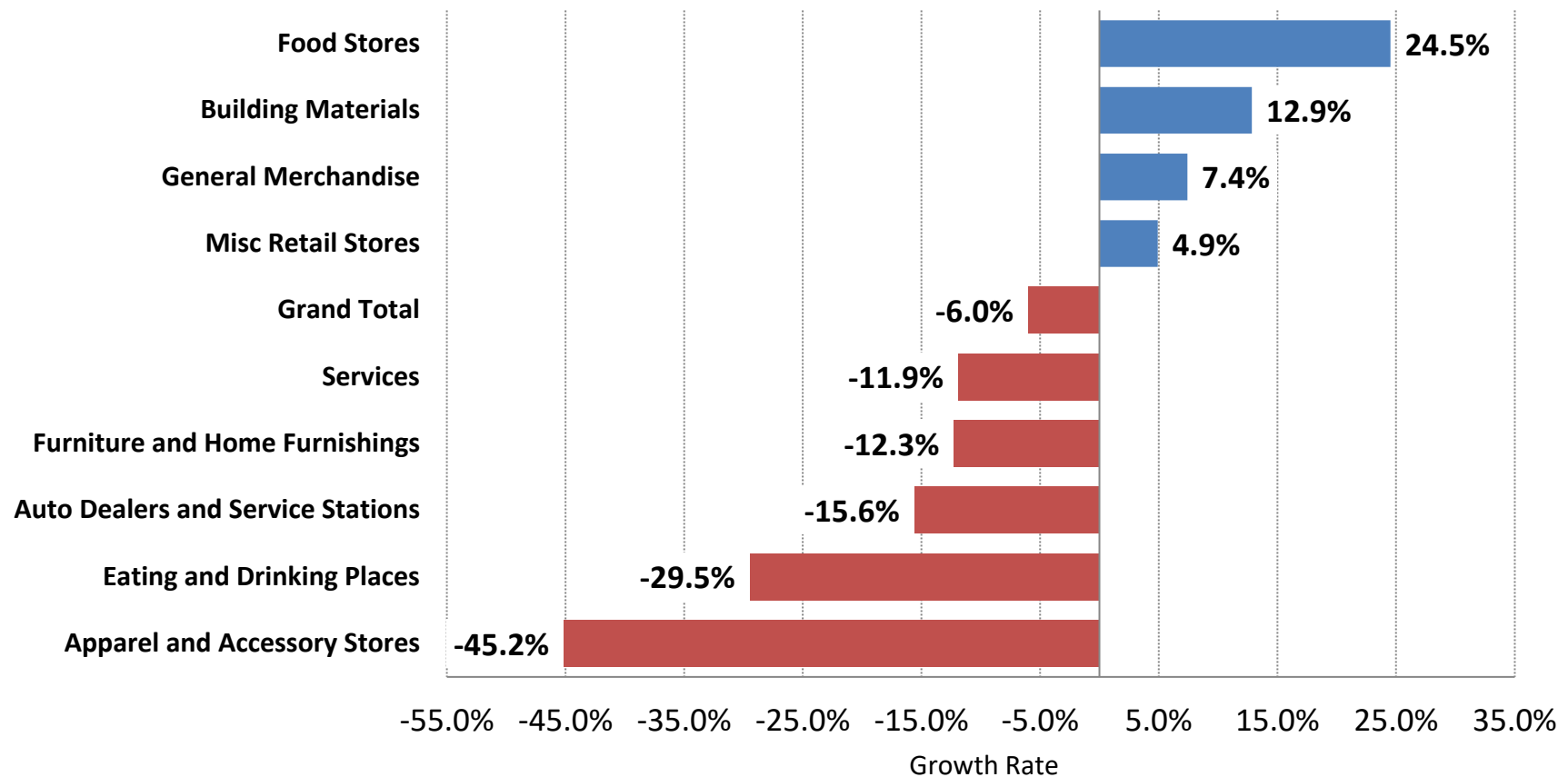
All MSAs Experienced Large Nonfarm Employment Losses

(April Year over Year Change)



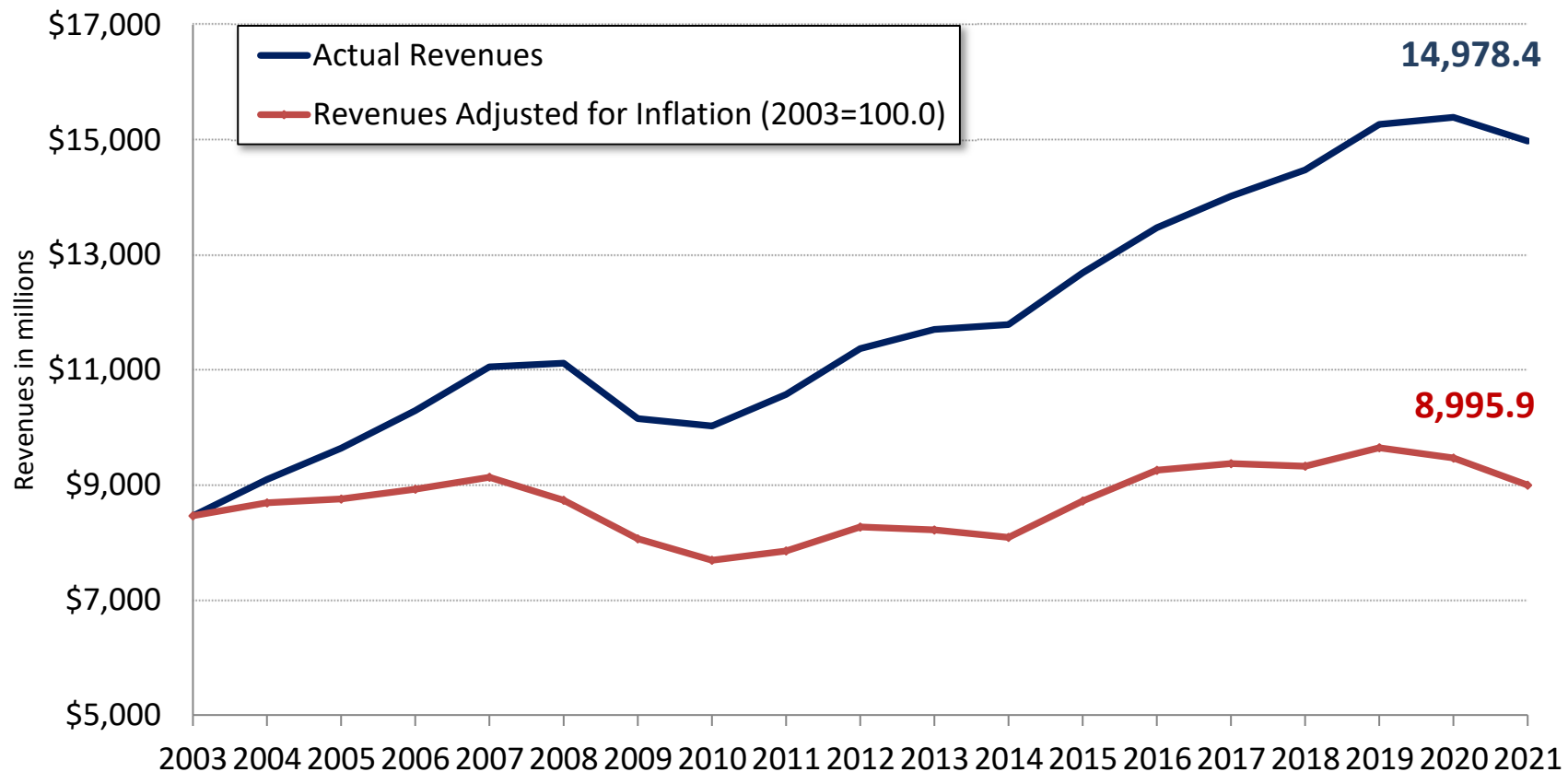
Sales Tax Collections Fell in Many Categories but Rose in Many Others

(April Year over Year Change)



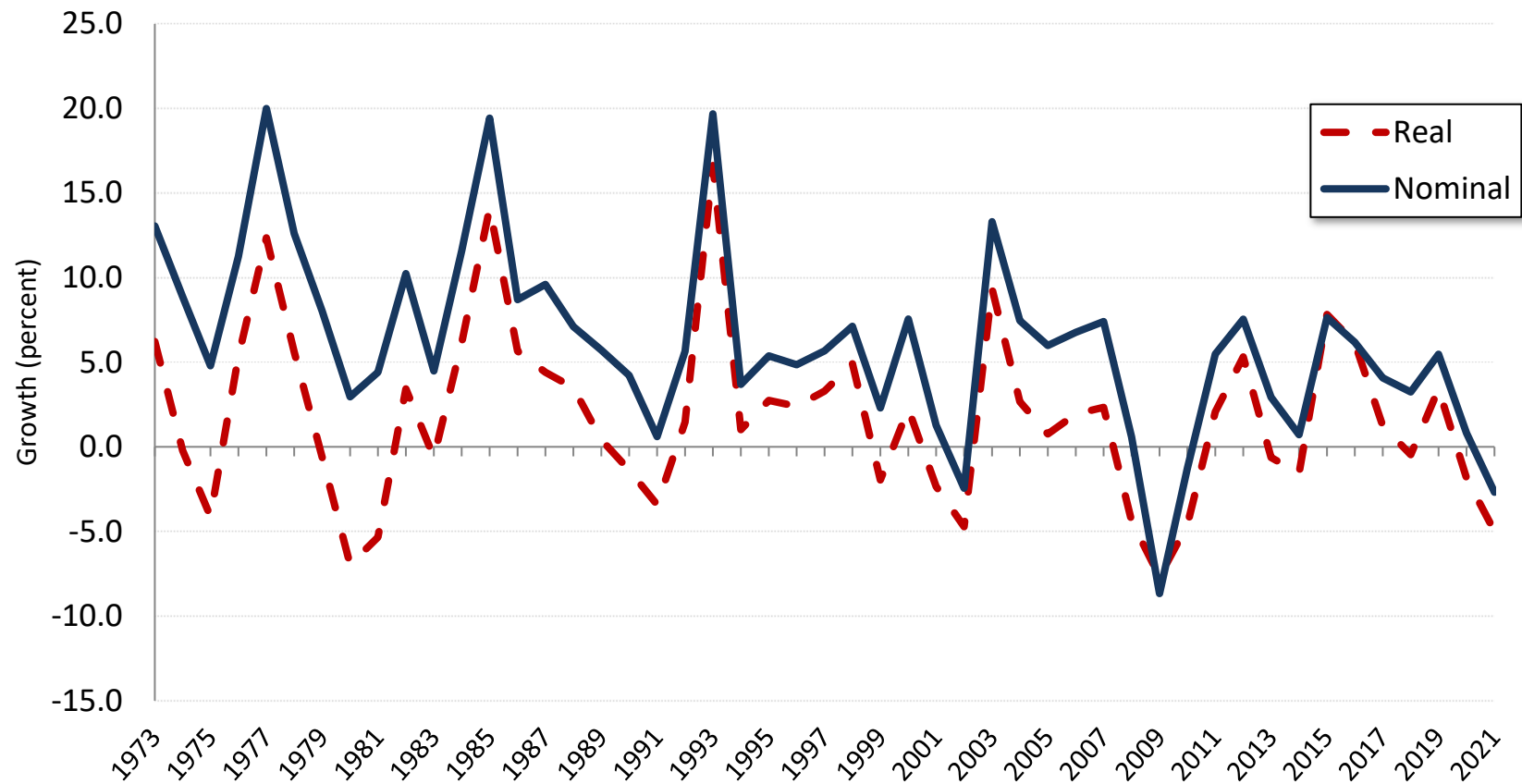
Tennessee Department of Revenue Collections (Millions of Dollars)									
	2019			2020			2021		
	Amount	Percent Change	General Fund	Amount	Percent Change	General Fund	Amount	Percent Change	General Fund
Sales and Use	9,337.8	5.7	8,758.2	9,418.1	0.9	8,821.1	9,360.2	-0.6	8,771.1
Gasoline	843.4	4.4	12.9	831.3	-1.4	13.1	838.9	0.9	13.3
Motor Fuel	257.7	15.7	2.1	320.1	24.2	2.8	327.5	2.3	2.9
Gasoline Inspection	69.8	1.2	20.3	67.8	-2.9	20.0	68.8	1.4	20.4
Motor Vehicle Registration	337.9	3.2	52.4	332.0	-1.7	52.4	327.5	-1.3	51.7
Income	203.8	-17.2	130.9	134.5	-34.0	86.3	80.7	-40.0	51.8
Privilege	376.8	4.6	370.2	384.6	2.1	378.2	393.6	2.3	387.1
Gross Receipts	393.2	6.7	225.4	391.0	-0.6	224.2	393.0	0.5	225.0
Gross Receipts - TVA	361.9	5.3	199.2	365.5	1.0	200.5	365.0	-0.1	199.8
Gross Receipts - Other	31.3	26.2	26.2	25.5	-18.5	21.9	28.0	9.8	24.1
Beer	17.0	1.8	11.4	17.2	1.4	11.6	17.6	2.0	11.8
Alcoholic Beverage	70.2	5.2	58.0	75.1	7.0	62.1	78.1	4.0	64.6
Franchise & Excise	2,752.0	7.1	2,514.9	2,833.9	3.0	2,619.0	2,487.9	-12.2	2,315.1
Inheritance & Estate	2.2	-414.3	2.2	-1.8		-1.8	0.0		0.0
Tobacco	241.8	-2.6	241.8	237.8	-1.7	237.8	233.0	-2.0	233.0
Motor Vehicle Title	23.6	-6.3	20.9	23.1	-2.3	20.5	23.1	-0.1	20.5
Mixed Drink	136.1	14.0	68.1	135.0	-0.8	67.5	146.7	8.6	73.3
Business	203.4	5.8	203.4	191.2	-6.0	191.2	200.8	5.0	200.8
Severance	1.0	0.0	0.5	0.8	-20.0	0.2	0.8	0.0	0.2
Coin Amusement	0.3	0.0	0.3	0.2	0.0	0.2	0.2	0.0	0.2
Unauthorized Substance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	15,268.0	5.5	12,693.9	15,391.8	0.8	12,804.5	14,978.4	-2.7	12,441.8
May 15, 2020 William F. Fox Boyd Center for Business and Economic Research University of Tennessee, Knoxville									

Tax Revenues will Fall, but Much Less than During the 2008-09 Recession



Tax Collections will Decline in 2021

1973–2021



Sales Tax Revenue Grew in Most Counties during April 2020

Updated monthly; last revision 5/14/20

Area	April-19 \$	April-20 \$	Change (%)	Area	April-19 \$	April-20 \$	Change (%)	Area	April-19 \$	April-20 \$	Change (%)	Area	April-19 \$	April-20 \$	Change (%)
Anderson	2,656,294	3,152,374	18.7	Franklin	738,848	836,568	13.2	Lewis	279,410	325,554	16.5	Scott	329,696	362,280	9.9
Bedford	1,210,569	1,348,727	11.4	Gibson	1,035,866	1,234,415	19.2	Lincoln	638,332	704,646	10.4	Sequatchie	281,558	323,490	14.9
Benton	362,385	425,280	17.4	Giles	721,941	816,882	13.2	Loudon	1,036,378	1,171,947	13.1	Sevier	9,651,000	6,351,352	-34.2
Bledsoe	95,096	110,142	15.8	Grainger	214,940	272,748	26.9	McMinn	1,042,116	1,323,580	27.0	Shelby	28,953,278	33,738,787	16.5
Blount	4,196,689	4,468,592	6.5	Greene	1,591,928	1,767,154	11.0	McNairy	332,667	363,519	9.3	Smith	394,315	436,477	10.7
Bradley	3,174,453	3,295,721	3.8	Grundy	132,381	151,576	14.5	Macon	412,366	486,716	18.0	Stewart	159,790	208,807	30.7
Campbell	678,657	733,467	8.1	Hamblen	2,225,237	2,280,653	2.5	Madison	4,708,378	4,820,633	2.4	Sullivan	4,639,071	4,883,187	5.3
Cannon	125,279	143,220	14.3	Hamilton	12,581,611	13,292,866	5.7	Marion	835,197	868,581	4.0	Sumner	4,263,819	4,652,829	9.1
Carroll	452,479	531,870	17.5	Hancock	40,007	47,946	19.8	Marshall	685,772	739,875	7.9	Tipton	950,817	1,117,193	17.5
Carter	1,038,203	1,206,817	16.2	Hardeman	403,010	409,310	1.6	Mauzy	2,592,302	2,804,337	8.2	Trousdale	106,793	123,308	15.5
Cheatham	755,377	940,935	24.6	Hardin	834,285	848,505	1.7	Meigs	102,508	116,699	13.8	Unicoi	296,866	355,595	19.8
Chester	226,156	265,390	17.3	Hawkins	829,736	1,044,523	25.9	Monroe	923,213	1,037,795	12.4	Union	169,789	200,457	18.1
Claiborne	372,877	419,097	12.4	Haywood	283,736	327,512	15.4	Montgomery	6,187,805	6,402,917	3.5	Van Buren	45,333	55,439	22.3
Clay	106,570	101,677	-4.6	Henderson	637,316	715,190	12.2	Moore	107,688	75,002	-30.4	Warren	945,534	1,054,406	11.5
Cocke	800,053	890,958	11.4	Henry	943,056	968,594	2.7	Morgan	121,102	147,883	22.1	Washington	4,365,790	4,444,463	1.8
Coffee	1,960,432	2,140,914	9.2	Hickman	251,761	300,840	19.5	Obion	798,697	861,168	7.8	Wayne	184,743	210,077	13.7
Crockett	172,508	214,063	24.1	Houston	95,402	113,450	18.9	Overton	362,442	384,460	6.1	Weakley	642,774	698,119	8.6
Cumberland	1,630,638	1,789,599	9.7	Humphreys	367,904	474,098	28.9	Perry	120,167	113,141	-5.8	White	399,153	517,228	29.6
Davidson	37,773,114	36,432,972	-3.5	Jackson	79,159	101,161	27.8	Pickett	65,937	80,375	21.9	Williamson	11,567,614	12,229,810	5.7
Decatur	185,608	210,009	13.1	Jefferson	1,053,450	1,211,459	15.0	Polk	152,891	182,957	19.7	Wilson	4,176,180	4,437,680	6.3
De Kalb	379,785	415,310	9.4	Johnson	122,013	147,974	21.3	Putnam	3,421,269	3,404,076	-0.5	Out-of-state collections	23,646,939	9,960,480	-57.9
Dickson	1,795,457	1,885,219	5.0	Knox	17,187,079	17,802,203	3.6	Rhea	767,093	857,291	11.8	Telecomm collections	2,477,369	2,750,037	11.0
Dyer	1,120,564	1,182,902	5.6	Lake	63,325	72,432	14.4	Roane	1,428,692	1,663,678	16.4	Total Local Sales	245,584,431	243,558,925	-0.8
Fayette	631,406	866,677	37.3	Lauderdale	330,373	379,490	14.9	Robertson	1,869,884	2,202,444	17.8				
Fentress	291,633	323,830	11.0	Lawrence	977,101	1,081,115	10.6	Rutherford	12,010,154	13,113,729	9.2				

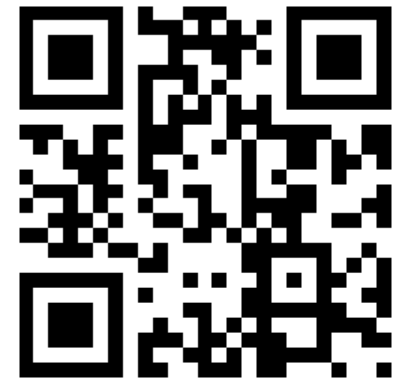
Source: Tennessee Department of Revenue, *Monthly Revenue Collections*.

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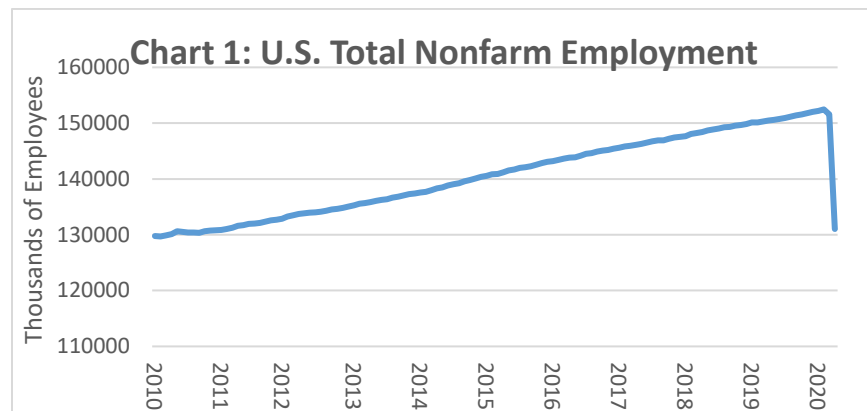
The Impact of Covid 19 on Tennessee's Economic Outlook: Revised Revenue Forecasts FY20 and FY21



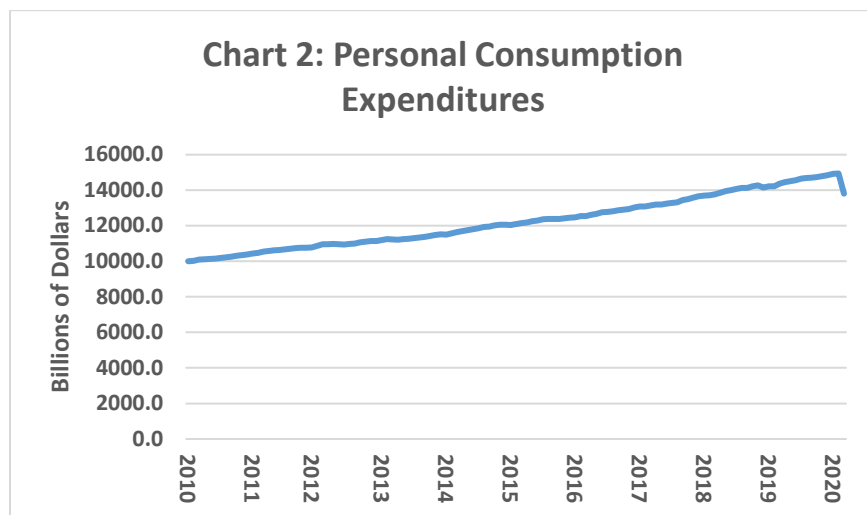
**Jon L. Smith, Director
Bureau of Business and Economic Research**

I. Covid 19 Impact on the National Economy:

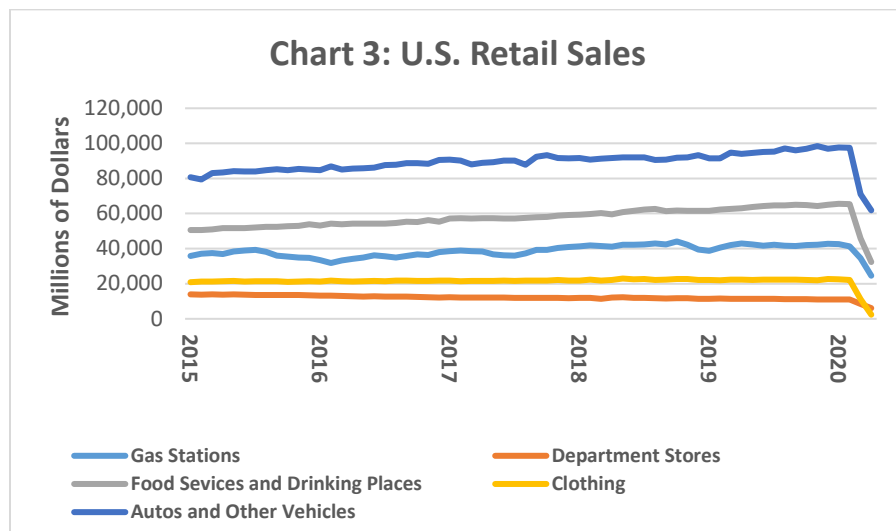
The spread of the Covid 19 virus to the United States and the subsequent measures to impose measures to limit the spread of the virus have had profound effects upon the national and state economic outlooks for the foreseeable future. By any measure, there has been a tremendous shock to the national economy. As the chart below demonstrates, the impact upon national employment has been unprecedented.



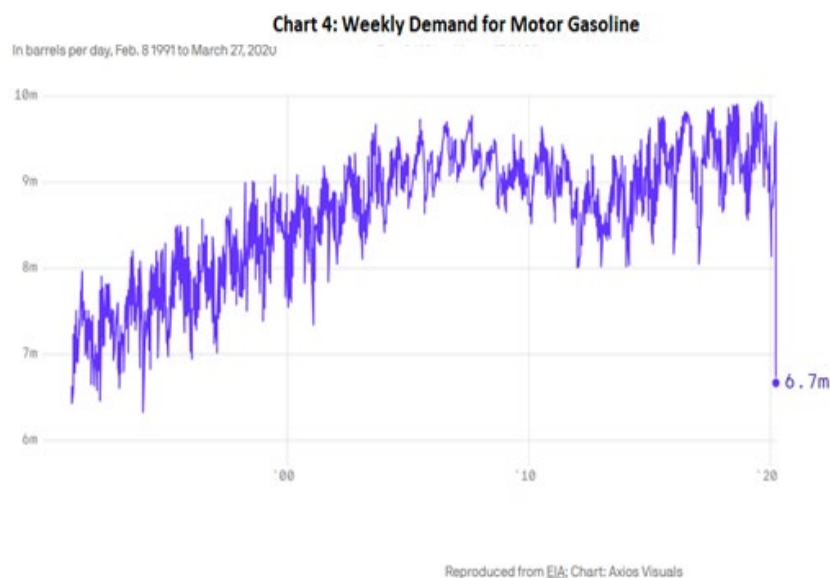
The drop in employment coupled with social distancing measures that have been imposed have also had a tremendous impact upon consumption spending as shown in Chart 2.



The most recent data from the U.S. Census Bureau's Census of Retail Trade advance monthly sales report demonstrates that some sectors of the economy have been disproportionately impacted by the decline in consumption spending as is shown in Chart 3.

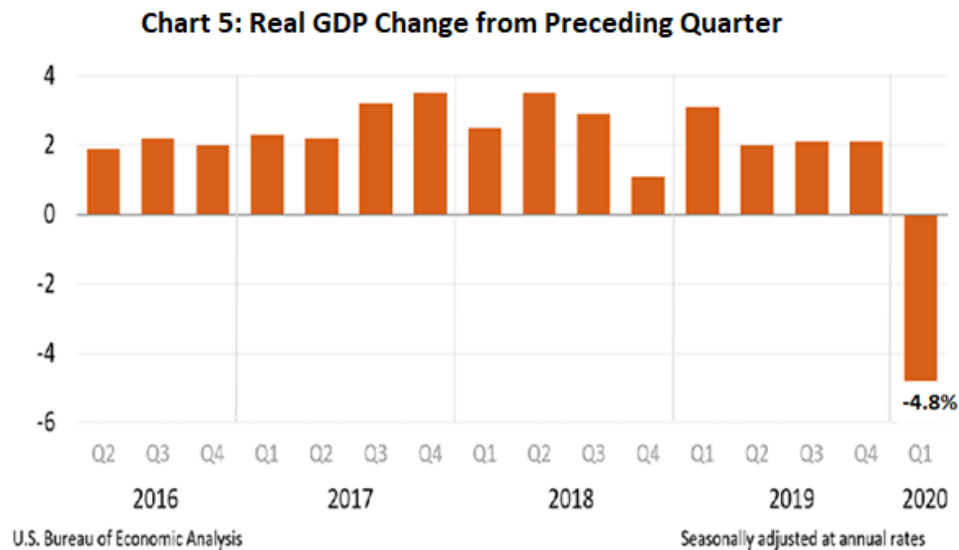


The hospitality industry has been severely affected both in terms of the demand for hotel accommodations sales of food and drinking places. Restrictions placed upon travel implicit in social distancing requirements have severely affected gasoline sales as shown in Chart 4



Department store and clothing sales have also been severely impacted. Several major department stores have indicated that they will not be able to sustain operations if the “lock down” continues.

Given that consumption spending accounts for almost 70% of economic output, it is clear that the effect of the virus upon the national economy will be profound. Indeed, as Chart 5 shown, real GDP for the first quarter of the next fiscal year recorded a 4.8% decrease over the preceding quarter.



II. Covid 19 Impact on State Economies:

While the virus has had a significant impact upon the national economy, its impact upon state economies has been even more severe. States are typically required by state law to present annual balanced budgets. This severely limits their ability to react to events such as the Covid 19 pandemic. The available options for dealing with severe reductions in state revenues are most often, cutting budgets, using “rainy day funds”, or if possible, imposing state tax increases. The more severe the revenue reductions, the more limited are the options open to state legislatures.

Table 1, taken from a report by the National Conference of State Legislatures, shows the impact upon various state revenue projections. These revenue changes reflect the size of annual state budgets and the sources of state revenues. States typically depend upon state personal and corporate income tax collection, state sales and use tax collections, and a variety of other revenue sources. States, such as Tennessee, that rely heavily on sales and use taxes are particularly vulnerable to events that have significant negative impacts upon personal consumption expenditures.

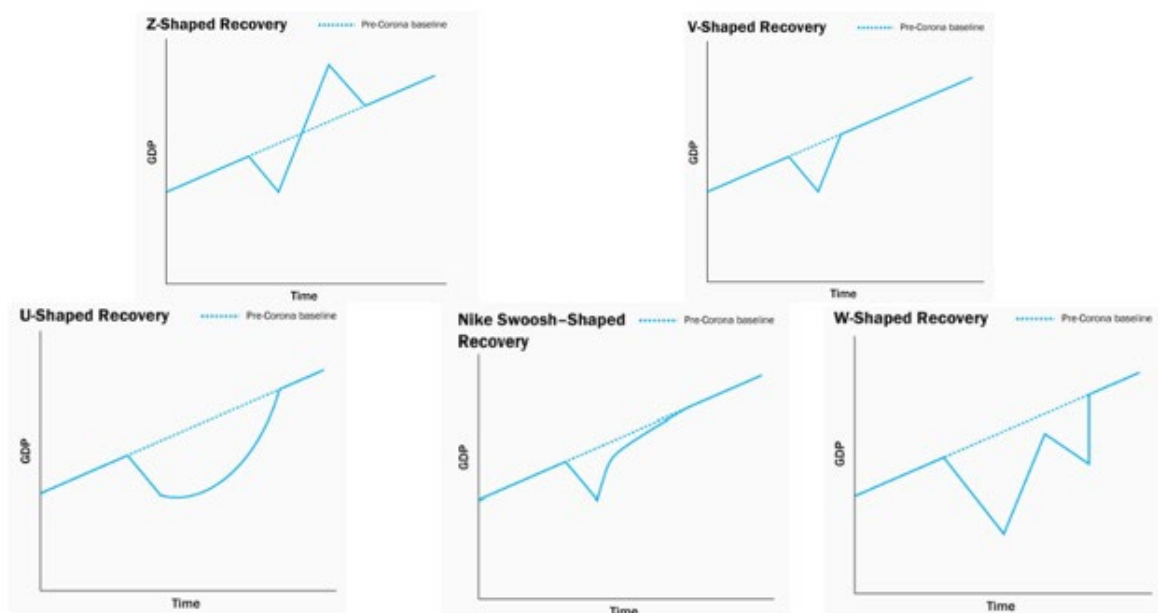
It is important to realize that all of these estimates are preliminary. It is also important to realize that this event is what is often referred to as a “Classic Black Swan” event, one that is unpredictable and

Table 1: State Budget Modifications of Previous Revenue Projections		
State	FY20	FY21
Alaska	General Fund Shortfall of \$527 Million	General Fund decline of \$815 Million
Arizona		\$600 Million to \$1.6 Billion revenue shortfall
Colorado	Reduced General Fund Expectations \$179.6 Million	General Down by \$749.9 Million
Connecticut	Expected end of year General Fund Deficit of \$170 Million	Decrease in General Fund revenues by \$2.2 Billion
Illinois		General Fund state source revenues revised down by \$4.6 Billion
Kansas	Decreased Estimates of Total Taxes \$826.9 Million	Decreased Estimates of Total Tax Collections by \$445 Million
Maryland	Comptroller Estimated shortfall of \$2.8 billion - nearly 15% of annual General Fund	
Minnesota	Current biennium General Fund revenue projected to be \$2.61 Billion below previous forecast	
New York	Estimated tax revenue decrease of between \$ billion and \$7 Billion	Estimated \$13.3 Billion shortfall
Oregon	Revenues projected to be down by \$2.7 Billion for 2019-2010 biennium	
Pennsylvania	Estimated revenue decrease \$2.7 billion to \$3.9 Billion for FY20 and FY21	
South Carolina	Estimated tax revenue decline of \$507 Million	General Fund revenues \$643 Million below estimates
Wyoming	Estimated revenues could fall by \$254.6 Million to \$1.4 billion over next 27 months.	
Source: National Conference of State Legislatures accessed May 24, 2020		

almost without precedent. In this case, this means that the models usually used to forecast revenue outcomes are unlikely to produce reliable estimates of future revenues. For this reason, it is necessary to develop an alternative method for estimating the impact of the virus upon anticipated revenues.

III. Estimating the Impact of Covid 19 on Tennessee's Revenue Collections

There has been considerable discussion among economists regarding various scenarios regarding how the pandemic will affect the economy's growth path. Dr. Louise Scheiner of the Brookings Institute has summarized the general consensus regarding what path the will take over the next few years. In broad strokes, it is anticipated that employment and national output will follow the general pattern of an economic contraction, a sharp decline in employment and output followed by a return to the pre-contraction growth path. The two features of this pattern that are of note are the depth of the contraction, how far the below previous growth path the economy falls and the recovery period, how long it takes to return to the pre-contraction growth path. Below are five of the possible recovery scenarios discussed by Dr. Scheiner.



The top two are the most optimistic recovery scenarios. At the top left, the Z shaped recovery scenario postulates a sharp decline in economic activity followed by a robust recovery that rebounds over the previous growth path, returning quickly to the previous path. V shaped recovery assumes a similar

scenario, but without the extreme recovery prior to returning to the growth path. Both of these scenarios are very optimistic, and in the opinion of most economists rather unrealistic. The U shaped and “Swoosh” shaped recovery scenarios are considered the most likely recovery scenarios, with the W shaped scenario modified to admit the possibility of a virus rebound next year. Although we cannot use our usual forecasting tools to model the impact of the virus upon Tennessee’s revenues, it is possible to select a scenario that, based upon past experience, may roughly approximate a state recovery scenario that can be used to estimate the virus’ impact of state revenue collections.

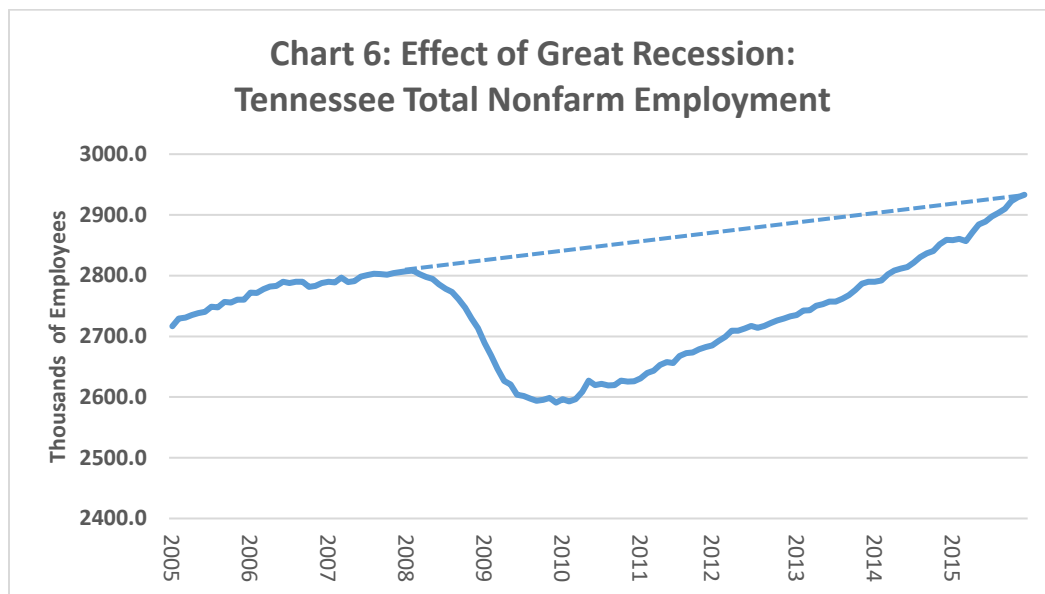
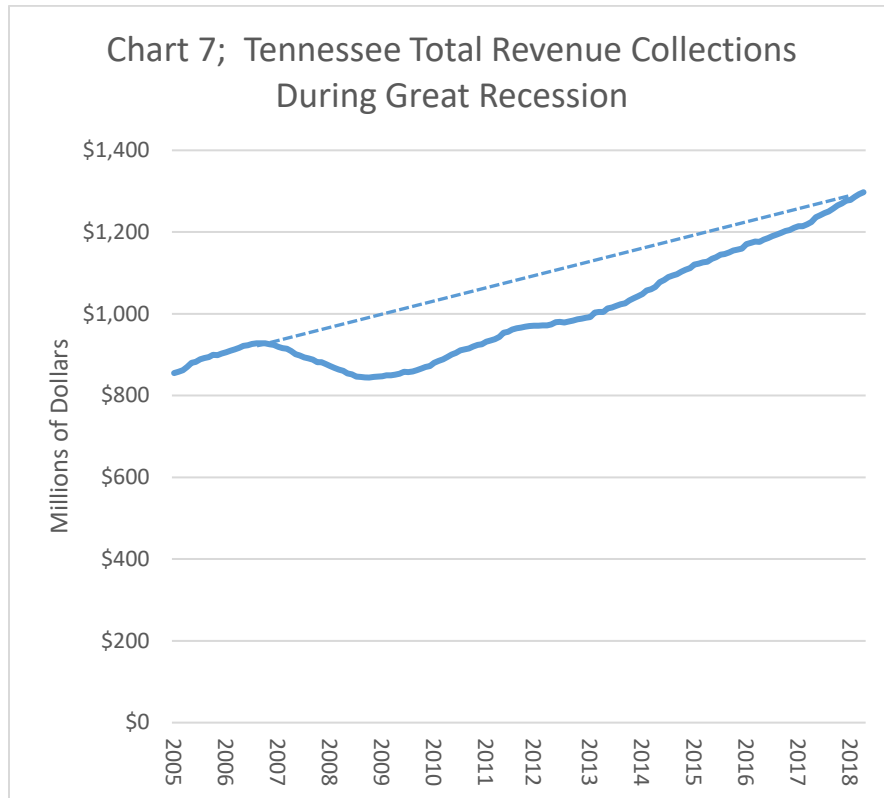


Chart 6 shows the path that total nonfarm employment in Tennessee followed during the Great Recession of 2008. Chart 7 shows how Tennessee revenue collections fared during the recession. While these patterns may not be repeated during the current pandemic, it is reasonable to assume that the state’s economy will likely follow something akin to the “Swoosh” recovery pattern. This is the scenario that a number of economists have indicated is the most likely recovery pattern for the national economy. By extension, it is reasonable to assume that the state’s recovery pattern will be similar.

Accordingly, I have adopted this scenario as a possible pattern to suggest how state revenues will react for the remainder of FY20 and FY 21 with respect to the depth and duration of the current contraction. If this scenario does indeed play out, the consequences will be severe in terms of the impact upon state revenues. Tennessee’s largest contributors revenue to total revenue collections are the finance and excise taxes, the sales and use tax, and the gasoline tax. Tennessee’s heavily reliance upon sales tax

collections makes it extremely vulnerable to the reduction in in consumption expenditures. Likewise, the sharp reductions in auto travel and gasoline consumption imply that this revenue source will be heavily impacted.



The following attachments show the revised revenue collections and allocations by fund for the current and next fiscal years. It is extremely important to realize that these estimates are based solely on the scenario selected and, given that there is very little hard data to rely on, they are very speculative. The FY20 revenue revisions were computed using actual collections through May which were provided by the Department of Revenue. The FY21 revisions are based upon the assumption that revenue collections will respond similar to the pattern followed during the recovery from the Great Recession.

Source of Revenue	Fy19	Fy20	% Change Over Previous Year	FY21	% Change Over Previous Year
Sale & Use Tax	\$9,337,817,700	\$9,593,294,435	2.74%	\$9,132,690,158	-4.80%
Gasoline Tax	\$843,361,000	\$793,949,187	-5.86%	\$766,417,637	-3.47%
Motor Fuel Tax	\$257,667,600	\$322,210,970	25.05%	\$277,641,524	-13.83%
Petro Special Tax	\$69,800,800	\$69,656,984	-0.21%	\$68,404,892	-1.80%
Motor Regis. Tax	\$337,862,900	\$324,426,453	-3.98%	\$309,012,483	-4.75%
Income Tax	\$203,817,800	\$50,778,845	-75.09%	\$55,528,089	9.35%
Privilege Tax	\$376,758,200	\$352,136,382	-6.54%	\$268,856,235	-23.65%
Gross Receipts - TVA	\$361,934,700	\$373,616,695	3.23%	\$379,742,350	1.64%
Gross Receipts - Other	\$31,298,200	\$26,144,976	-16.46%	\$35,443,757	35.57%
Beer Tax	\$16,954,100	\$17,398,254	2.62%	\$16,307,333	-6.27%
Alcoholic Beverage Tax	\$70,246,200	\$75,801,651	7.91%	\$78,808,040	3.97%
Franchise and Excise Tax	\$2,752,023,800	\$2,234,537,173	-18.80%	\$1,966,622,408	-11.99%
Inheritance Tax	\$2,221,300	\$0	-100.00%	\$0	0.00%
Tobacco Tax	\$241,773,000	\$328,748,220	35.97%	\$327,050,000	-0.52%
MotorTitle Tax	\$23,600,900	\$24,209,476	2.58%	\$21,499,987	-11.19%
MixDrinks Tax	\$136,145,200	\$143,349,892	5.29%	\$142,794,124	-0.39%
Business Tax	\$203,359,900	\$139,300,672	-31.50%	\$210,358,406	51.01%
Severance Tax	\$1,012,400	\$1,100,906	8.74%	\$1,081,753	-1.74%
CoinAmus Tax	\$261,100	\$96,547	-63.02%	\$109,327	13.24%
Usub Tax	\$6,000	\$0	-100.00%	\$0	0.00%
Total:	\$15,267,922,800	\$14,870,757,719	-2.60%	\$14,058,368,502	-5.46%

FY20 Allocation by Fund						
Source of Revenue	Total Revenue	General Fund	Education Fund	Highway Fund	Debt Service Fund	Cities & Counties
Sales and Use Tax	\$9,593,294,435	\$3,477,029,621	\$5,508,145,196	\$22,325,379	\$68,161,556	\$517,632,684
Gasoline Tax	\$793,949,187	\$12,547,918	\$0	\$410,470,376	\$68,246,229	\$302,684,665
Motor Fuel Tax	\$322,210,970	\$2,778,639	\$0	\$234,961,707	\$0	\$84,470,623
Gasoline Inspection Tax	\$69,656,984	\$20,551,280	\$0	\$37,249,196	\$0	\$11,856,508
Motor Vehicle Registration Tax	\$324,426,453	\$51,140,179	\$95,056	\$273,191,217	\$0	\$0
Income Tax	\$50,778,845	\$32,581,519	\$0	\$0	\$0	\$18,197,326
Privilege Tax	\$352,136,382	\$346,124,984	\$187,856	\$0	\$0	\$5,823,541
Gross Receipts Tax - TVA	\$373,616,695	\$204,961,819	\$0	\$0	\$0	\$168,654,876
Gross Receipts Tax - Other	\$26,144,976	\$22,468,338	\$0	\$3,676,637	\$0	\$0
Beer Tax	\$17,398,254	\$11,664,739	\$0	\$2,174,782	\$0	\$3,558,734
Alcoholic Beverage Tax	\$75,801,651	\$62,640,934	\$0	\$0	\$0	\$13,160,717
Franchise Tax	\$2,234,537,173	\$2,065,104,215	\$0	\$0	\$140,073,850	\$29,359,108
Inheritance and Estate Tax	\$0	\$0	\$0	\$0	\$0	\$0
Tobacco Tax	\$328,748,220	\$40,311,621	\$288,436,599	\$0	\$0	\$0
Motor Vehicle Title Fees	\$24,209,476	\$21,485,910	\$0	\$0	\$2,723,566	\$0
Mixed Drink Tax	\$143,349,892	\$0	\$71,627,321	\$0	\$0	\$71,722,570
Business Tax	\$139,300,672	\$139,300,672	\$0	\$0	\$0	\$0
Severance Tax	\$1,100,906	\$330,272	\$0	\$0	\$0	\$770,634
Coin-operated Amusement Tax	\$96,547	\$96,547	\$0	\$0	\$0	\$0
Unauthorized Substance Tax	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$14,870,757,719	\$6,511,119,207	\$5,868,492,029	\$984,049,294	\$279,205,201	\$1,227,891,987

FY21 Allocation by Fund		General	Education	Highway	Debt Service	Cities &
Source of Revenue	Total Revenue	Fund	Fund	Fund	Fund	Counties
Sales and Use Tax	\$9,593,294,435	\$3,477,029,621	\$5,508,145,196	\$22,325,379	\$68,161,556	\$517,632,684
Gasoline Tax	\$793,949,187	\$12,547,918	\$0	\$410,470,376	\$68,246,229	\$302,684,665
Motor Fuel Tax	\$322,210,970	\$2,778,639	\$0	\$234,961,707	\$0	\$84,470,623
Gasoline Inspection Tax	\$69,656,984	\$20,551,280	\$0	\$37,249,196	\$0	\$11,856,508
Motor Vehicle Registration Tax	\$324,426,453	\$51,140,179	\$95,056	\$273,191,217	\$0	\$0
Income Tax	\$50,778,845	\$32,581,519	\$0	\$0	\$0	\$18,197,326
Privilege Tax	\$352,136,382	\$346,124,984	\$187,856	\$0	\$0	\$5,823,541
Gross Receipts Tax - TVA	\$373,616,695	\$204,961,819	\$0	\$0	\$0	\$168,654,876
Gross Receipts Tax - Other	\$26,144,976	\$22,468,338	\$0	\$3,676,637	\$0	\$0
Beer Tax	\$17,398,254	\$11,664,739	\$0	\$2,174,782	\$0	\$3,558,734
Alcoholic Beverage Tax	\$75,801,651	\$62,640,934	\$0	\$0	\$0	\$13,160,717
Franchise Tax	\$2,234,537,173	\$2,065,104,215	\$0	\$0	\$140,073,850	\$29,359,108
Inheritance and Estate Tax	\$0	\$0	\$0	\$0	\$0	\$0
Tobacco Tax	\$328,748,220	\$40,311,621	\$288,436,599	\$0	\$0	\$0
Motor Vehicle Title Fees	\$24,209,476	\$21,485,910	\$0	\$0	\$2,723,566	\$0
Mixed Drink Tax	\$143,349,892	\$0	\$71,627,321	\$0	\$0	\$71,722,570
Business Tax	\$139,300,672	\$139,300,672	\$0	\$0	\$0	\$0
Severance Tax	\$1,100,906	\$330,272	\$0	\$0	\$0	\$770,634
Coin-operated Amusement Tax	\$96,547	\$96,547	\$0	\$0	\$0	\$0
Unauthorized Substance Tax	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$14,870,757,719	\$6,511,119,207	\$5,868,492,029	\$984,049,294	\$279,205,201	\$1,227,891,987



Estimated State Tax Revenue

May 27, 2020

Risks to the Forecast

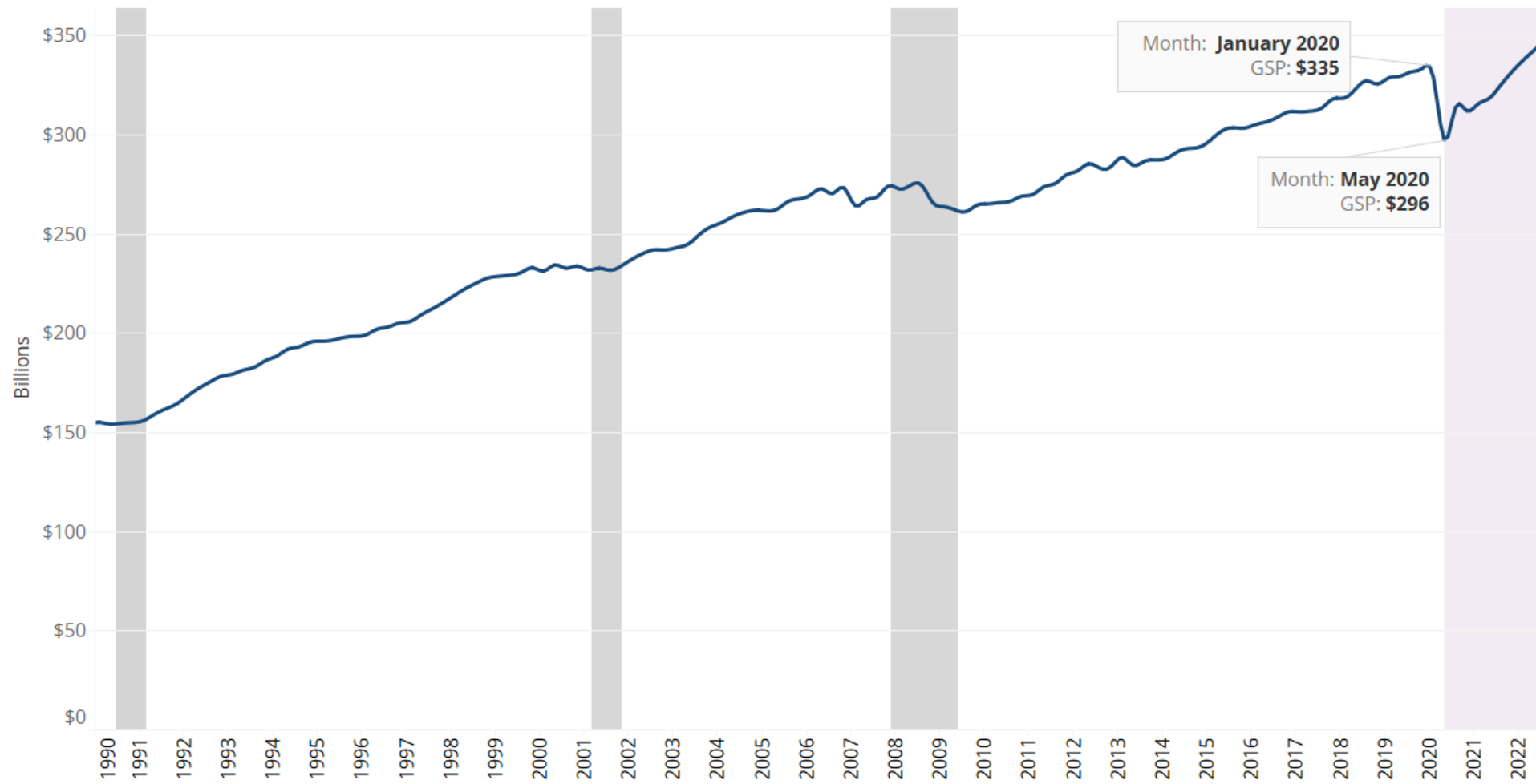
- Uncertainty
 - Forecasting is an uncertain business in the best of times
 - Filing/payment deferrals are a major source of uncertainty in F&E, Business Tax, Hall Income Tax, and Privilege Tax, as well as motor vehicle registrations.
 - Recovery shape and duration unknown (epidemiological uncertainty as well as economic uncertainty)
- Lags in collections data
 - Monthly data is notably delayed
 - For Sales and Use Tax, sales activity in one month is not reported until the 20th of the following month
- Econometric model limitations
 - Significant manual adjustments to model outputs

Filing Extensions

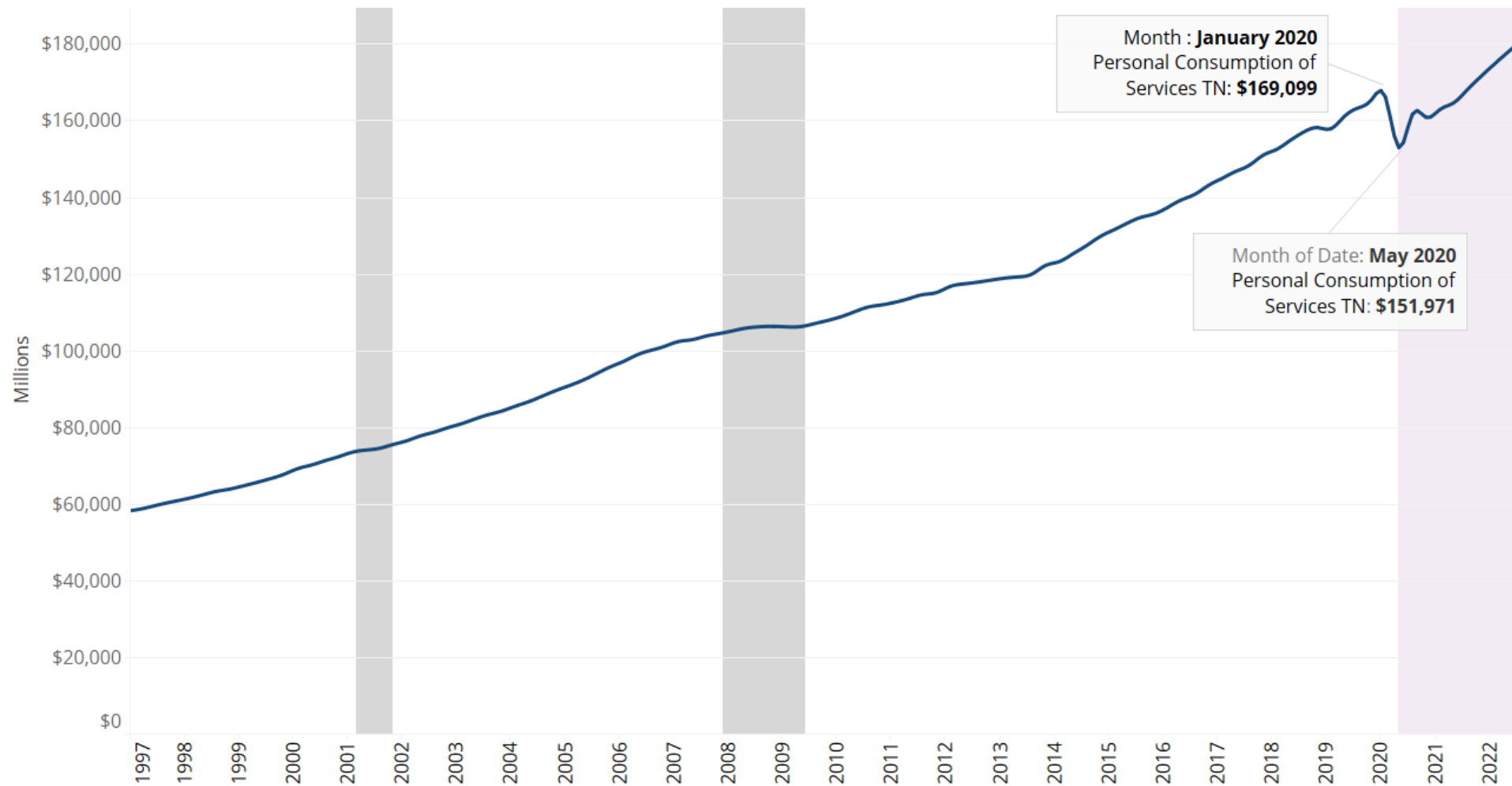
Filing deadline deferrals across multiple tax programs:

- **F&E Tax** (July 15 for returns originally due in April)
- **Hall Income Tax** (July 15 for returns originally due in April)
- **Professional Privilege Tax** (July 1 for returns originally due June 1)
- **Business Tax** (June 15 for returns originally due in April)
- **Automotive Registrations** (March, April and May registrations extended to June 15)

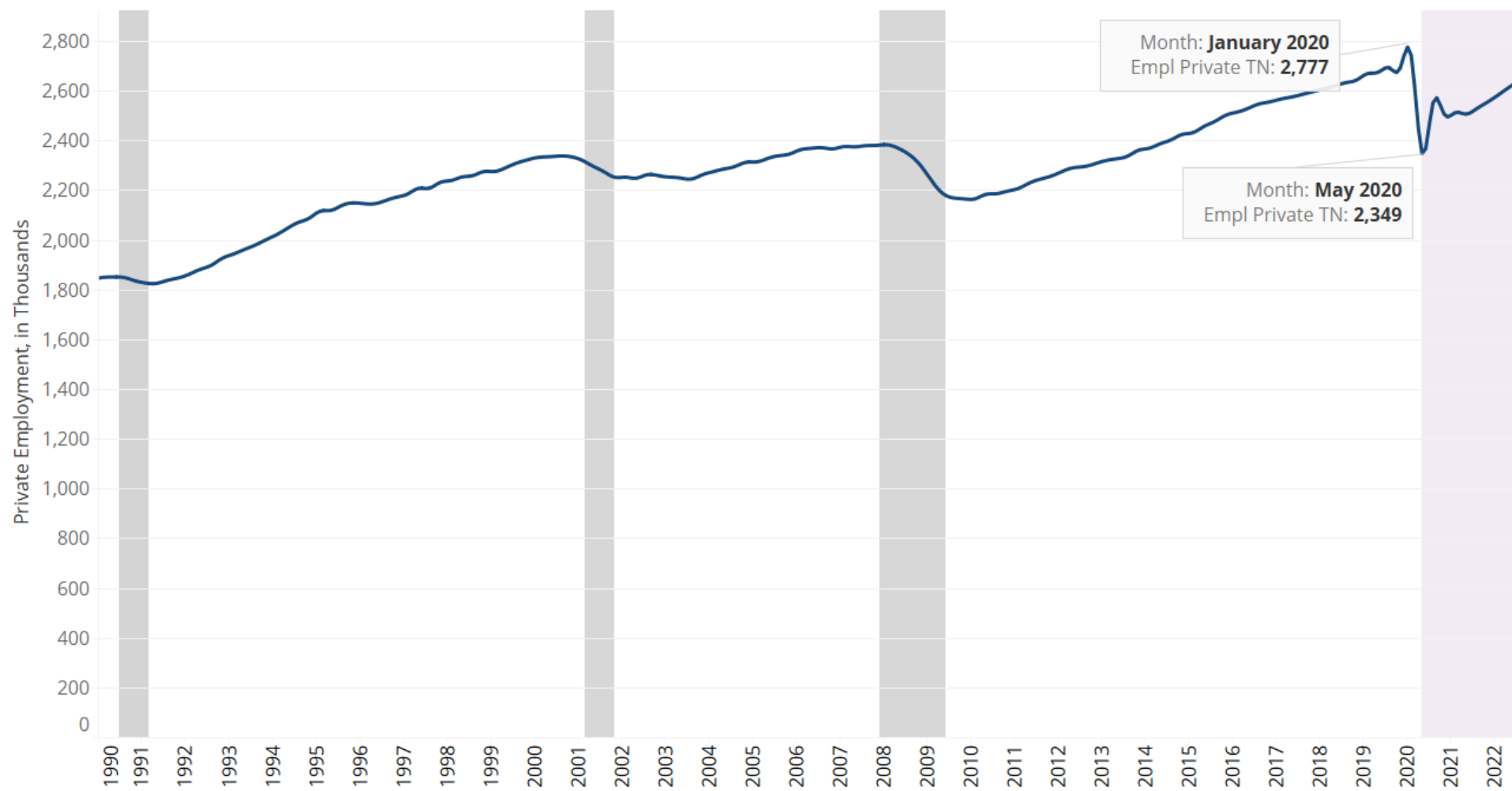
Tennessee Gross State Product



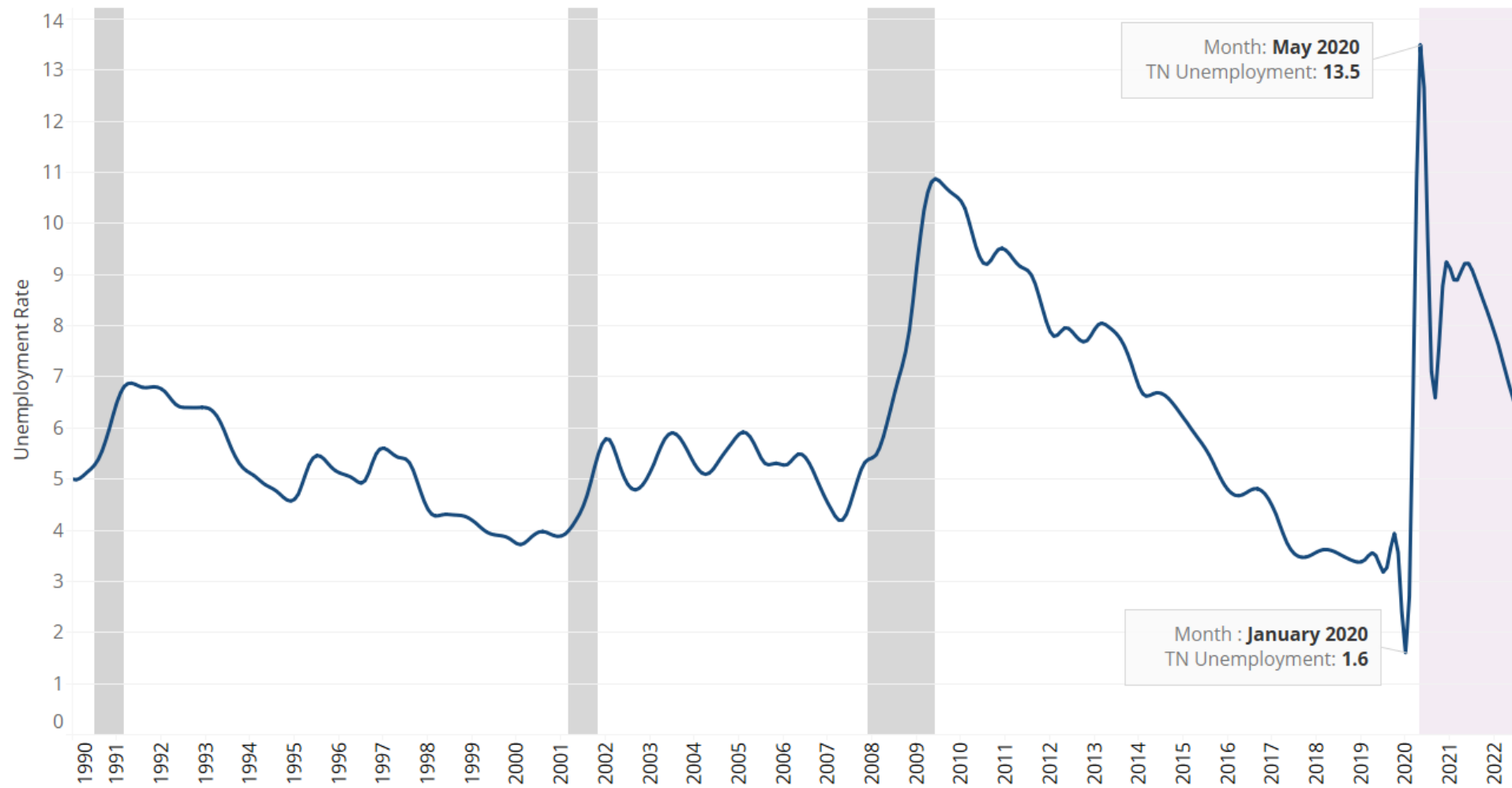
Tennessee Personal Consumption of Services



Tennessee Employment

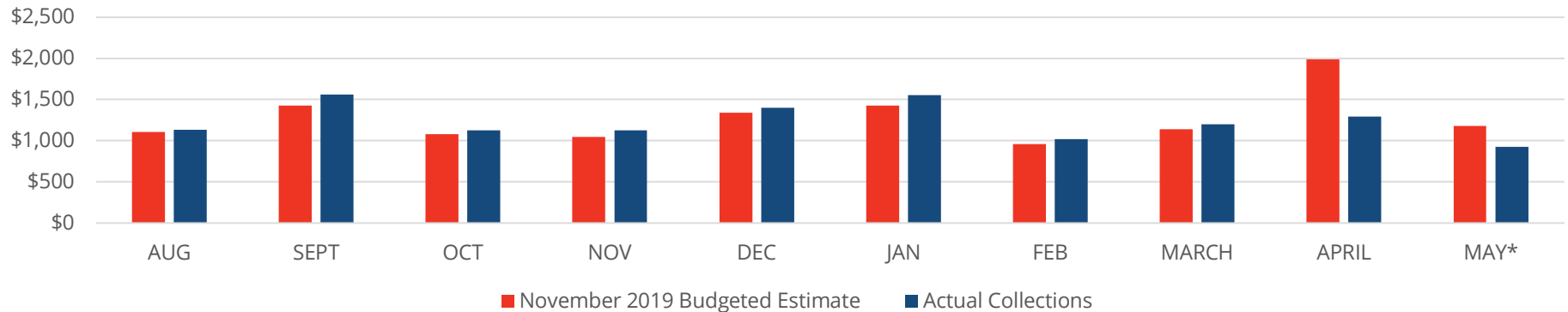


Tennessee Unemployment

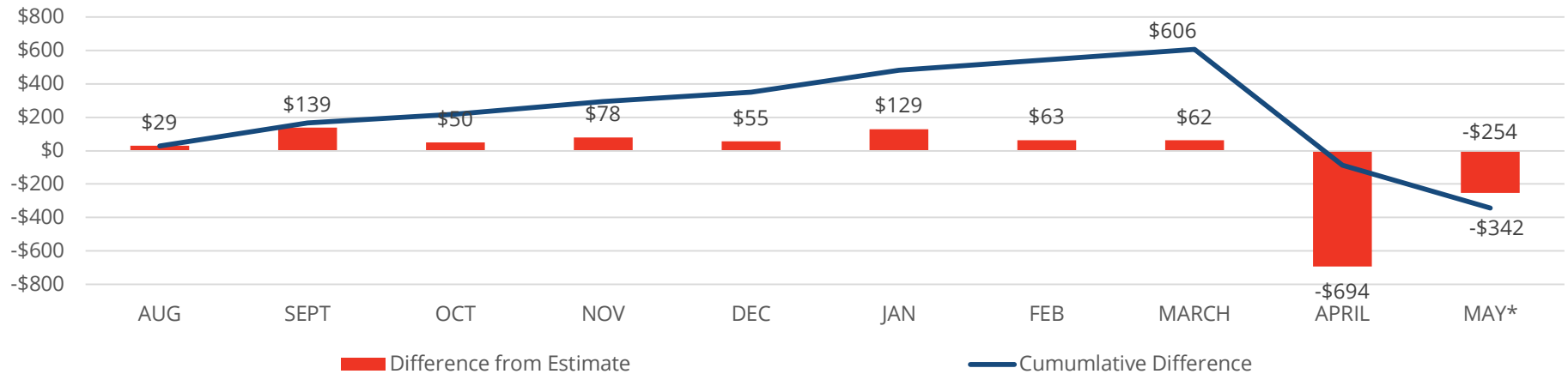


Fiscal Year 2020 Tax Revenue Through April

Actual Vs. Budgeted Collections



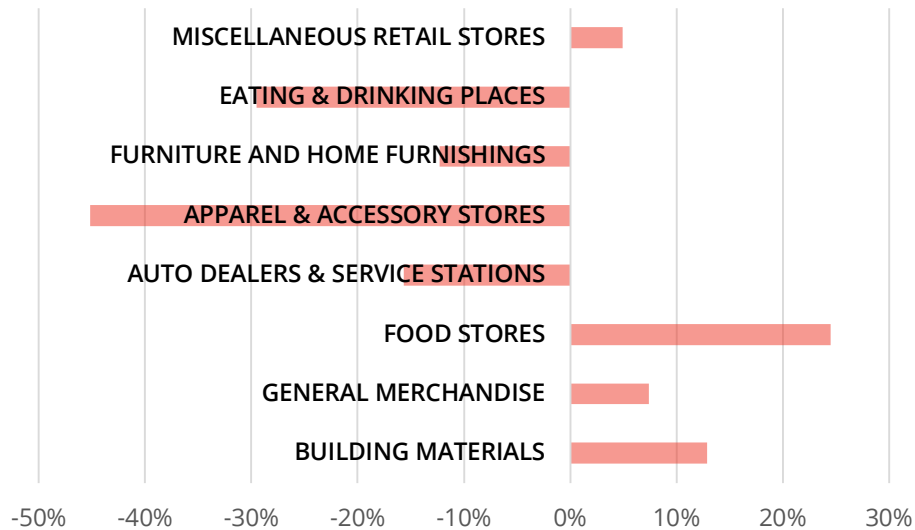
Collections Difference from Budgeted Estimate



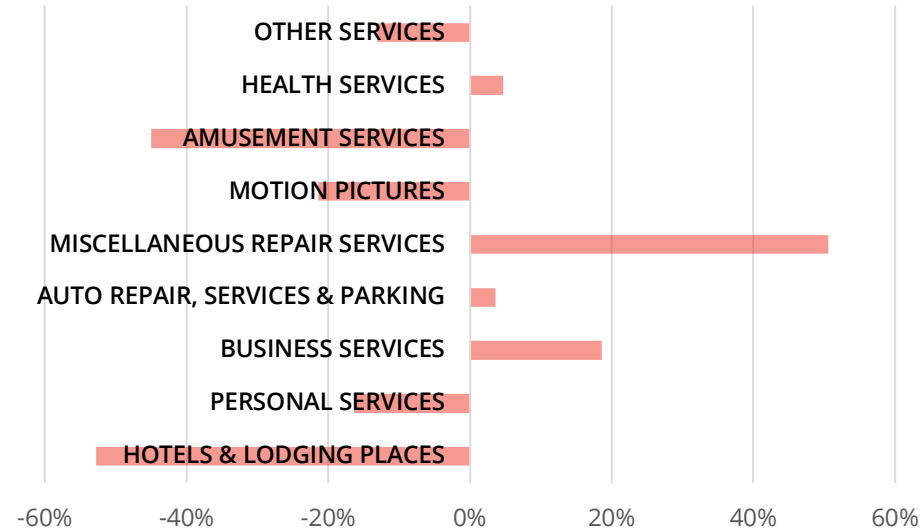
Sales Tax - SIC Sector Changes

April 2020 Vs. April 2019

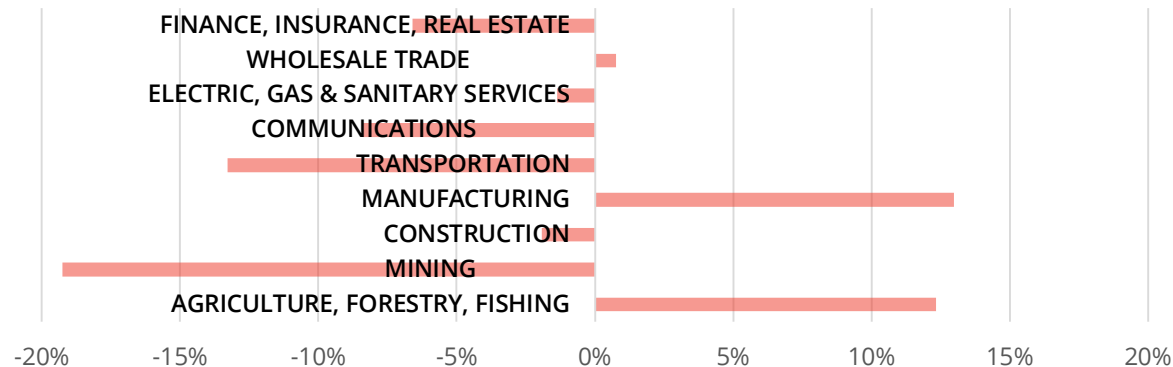
PERCENT CHANGE RETAIL SALES APRIL COLLECTIONS



PERCENT CHANGE SERVICES APRIL COLLECTIONS



PERCENT CHANGE NON-RETAIL, NON-SERVICE APRIL COLLECTIONS





Revenue Collections Estimates

State Funding Board Meeting - 5/27/2020

Accrual Basis (USD)

	Accrual Revenues	FY 2020 Closing Estimates (5/13/20)		FY 2021 Revised Estimates (5/18/20)	
	FY 2019	FY 2020	% Change from FY2019	FY 2021	% Change from FY2020
Sales and Use Tax ¹	\$9,337,800,000	9,369,300,000	0.34%	9,129,000,000	-2.56%
Gasoline Tax	843,400,000	847,900,000	0.53%	797,600,000	-5.93%
Motor Fuel Tax	257,700,000	260,300,000	1.01%	206,200,000	-20.78%
Gasoline Inspection Tax	69,800,000	63,400,000	-9.17%	57,400,000	-9.46%
Motor Vehicle Registration Tax	337,900,000	305,400,000	-9.62%	337,900,000	10.64%
Income Tax	203,800,000	100,700,000	-50.59%	56,500,000	-43.89%
Privilege Tax ²	376,800,000	364,200,000	-3.34%	336,000,000	-7.74%
Gross Receipts Tax - TVA	361,900,000	324,000,000	-10.47%	361,900,000	11.70%
Gross Receipts Tax - Other	31,300,000	23,700,000	-24.28%	31,300,000	32.07%
Beer Tax	17,000,000	15,200,000	-10.59%	17,600,000	15.79%
Alcoholic Beverage Tax	70,200,000	67,400,000	-3.99%	77,500,000	14.99%
Franchise & Excise Tax	2,752,000,000	2,628,800,000	-4.48%	2,500,000,000	-4.90%
Inheritance and Estate Tax	2,200,000	-	-100.00%	-	-
Tobacco Tax	241,800,000	235,800,000	-2.48%	232,200,000	-1.53%
Motor Vehicle Title Fees	23,600,000	23,600,000	0.00%	23,600,000	0.00%
Mixed Drink Tax	136,100,000	111,800,000	-17.85%	120,700,000	7.96%
Business Tax	203,400,000	206,300,000	1.43%	201,400,000	-2.38%
Severance Tax	1,000,000	700,000	-30.00%	1,000,000	42.86%
Coin-operated Amusement Tax	300,000	200,000	-33.33%	300,000	50.00%
Unauthorized Substance Tax	6,000	-	-100.00%	-	-
Total Department of Revenue	\$15,268,000,000	\$14,948,700,000	-2.09%	\$14,488,100,000	-3.08%
General Fund Only	\$12,693,900,000	\$12,489,800,000	-1.61%	\$12,128,000,000	-2.90%

¹Excludes \$112.0 million estimated earmarked fees collected under sales tax for E911 telecommunications service (2016 PC 1047).

²Excludes \$52.0 million estimated earmarked funds collected under the privilege tax.

Note: Totals may differ due to rounding

Sources

- Data Sourced From:
 - Moody's Analytics (May, 2020)
 - BEA (May, 2020)
 - BLS (May, 2020)
 - U.S. Census Bureau (May, 2020)
 - TN Department of Revenue (May, 2020)
 - TN Department of Finance & Administration (May, 2020)

Economic Outlook and Tax Revenue Estimates



Fiscal Review Committee Staff
May 27, 2020

Overview

- Unprecedented uncertainty
- Government actions
- Impact of business restrictions
 - Economic impact
 - Tax revenue impact
- Revised estimates

Federal Government Action

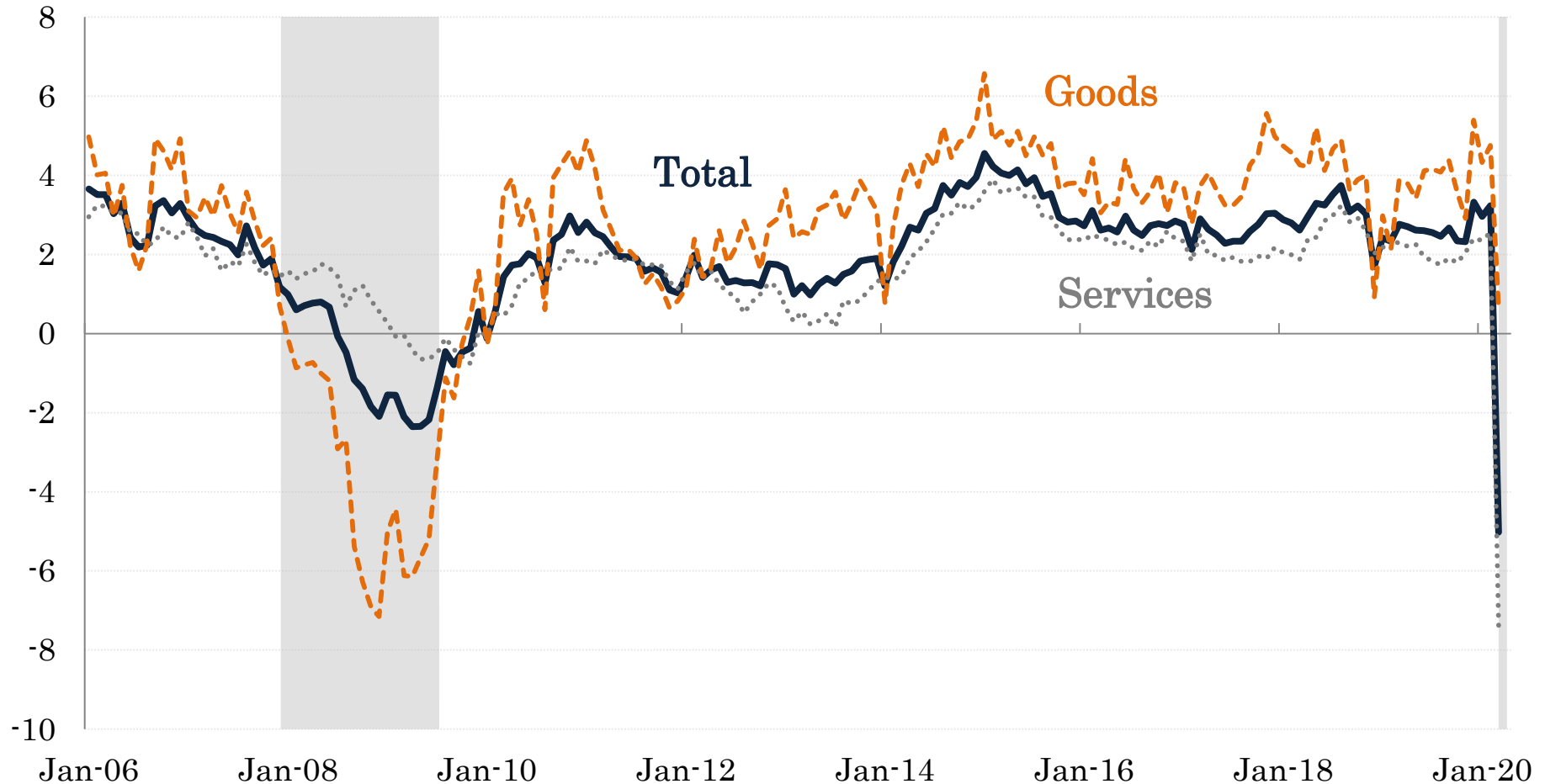
- Four emergency aid packages - \$2.7 trillion
 - Paycheck Protection Program - \$700 billion
 - One-time payments - up to \$1,200 per person
 - Expanded unemployment insurance benefits - \$600 per week; suspension of certain qualifying criteria
 - IRS tax filing deferred from April 15, 2020 to July 15, 2020
 - Waived early withdrawal penalty on RA distributions

State Government Action

- Safer at Home Order
 - Essential business operations
 - Phased removal of restrictions
- Tax Actions
 - F&E and HIT from April 15, 2020 to July 15, 2020
 - Professional Privilege from June 1, 2020 to July 1, 2020
 - Business Tax from April 15, 2020 to June 15, 2020
 - MVR March & April renewals to June 15, 2020
 - Other tax changes

Real PCE and its Components

Year-over-Year % Change (Monthly, SAAR)



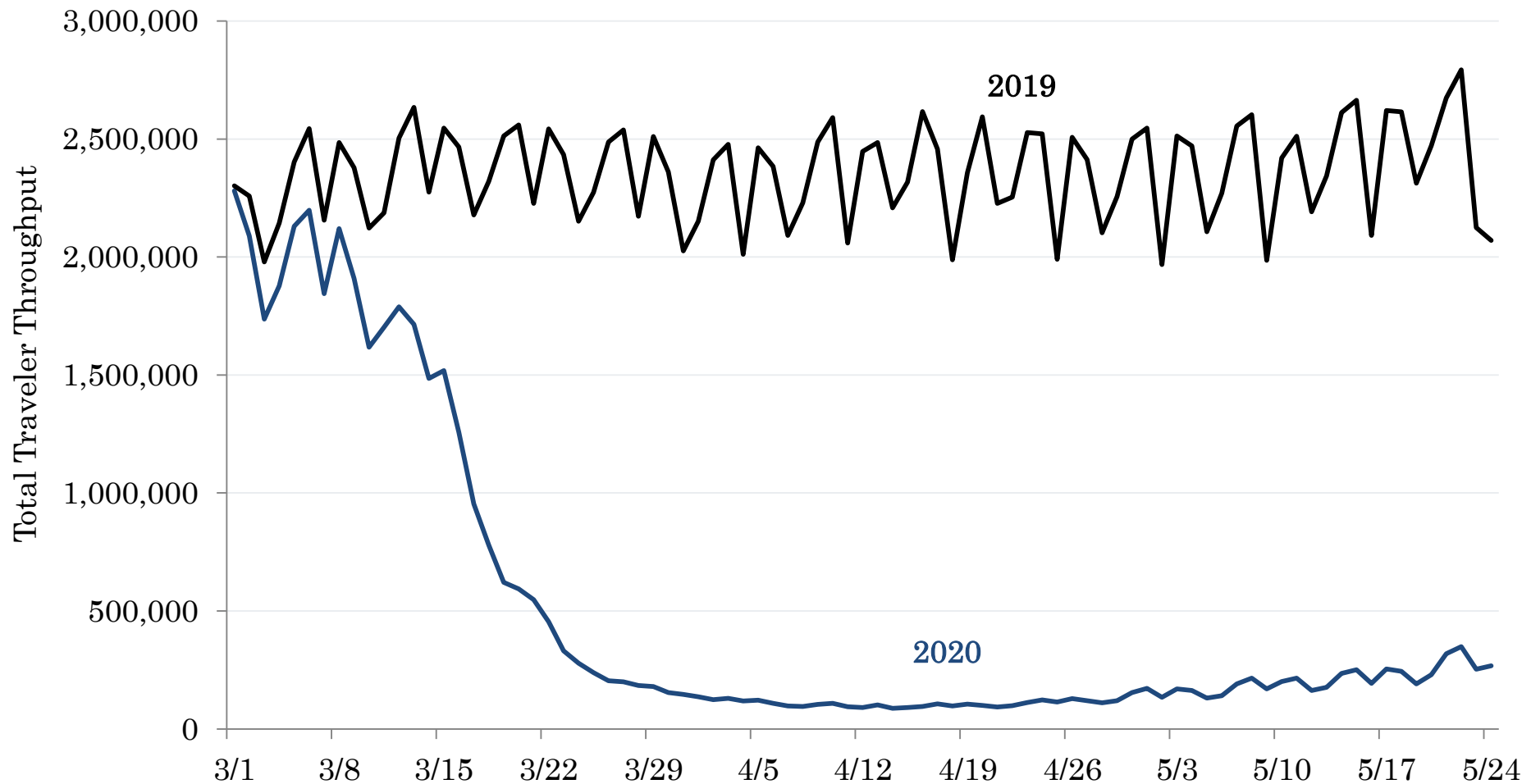
Sources: U.S. Bureau of Economic Analysis; retrieved from FRED, Federal Reserve Bank of St. Louis, May 26, 2020.

Stock Market



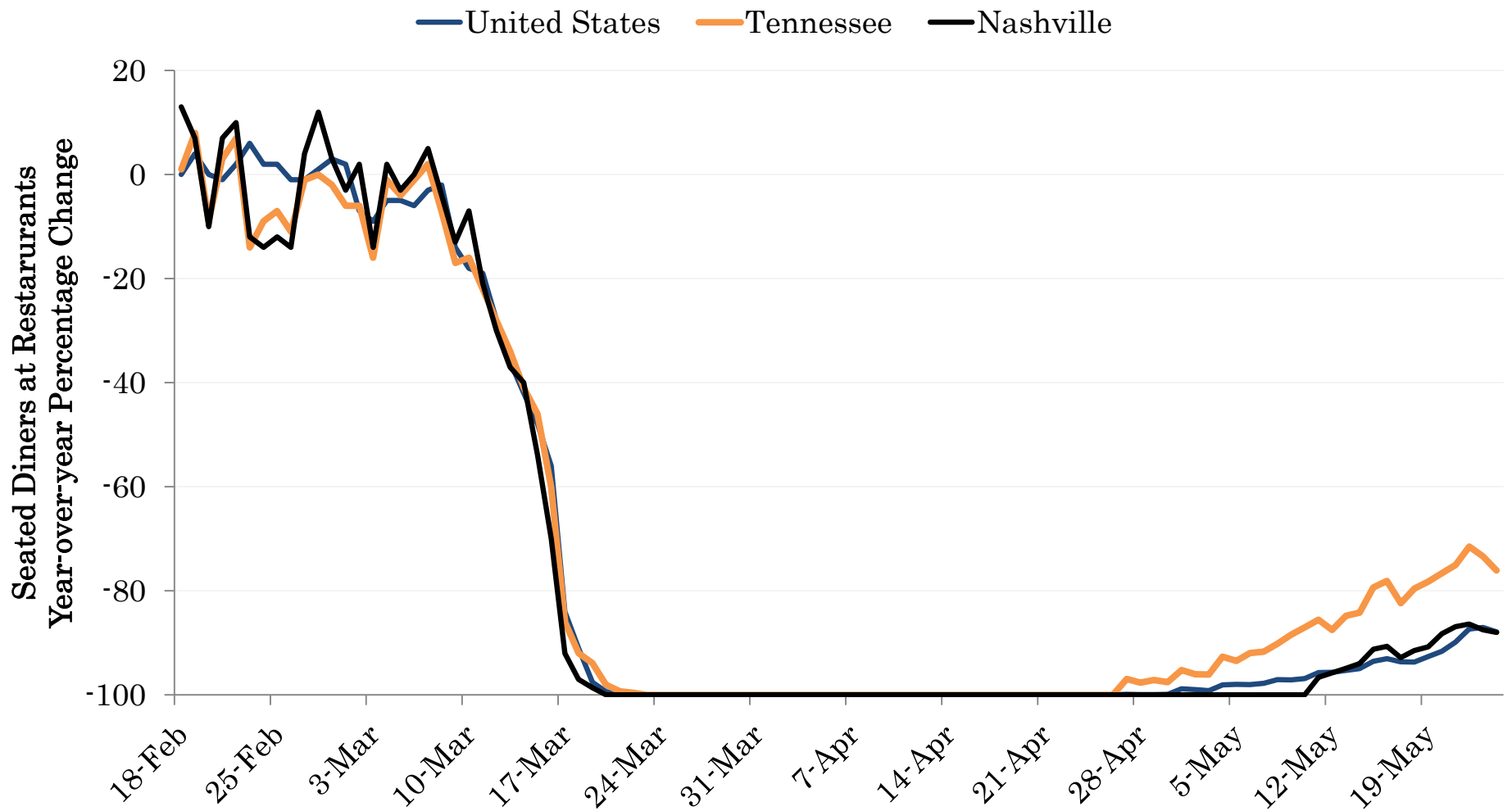
Sources: S&P Dow Jones Indices LLC; retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

Airport Travel



Source: Transportation Security Administration, retrieved May 25, 2020.

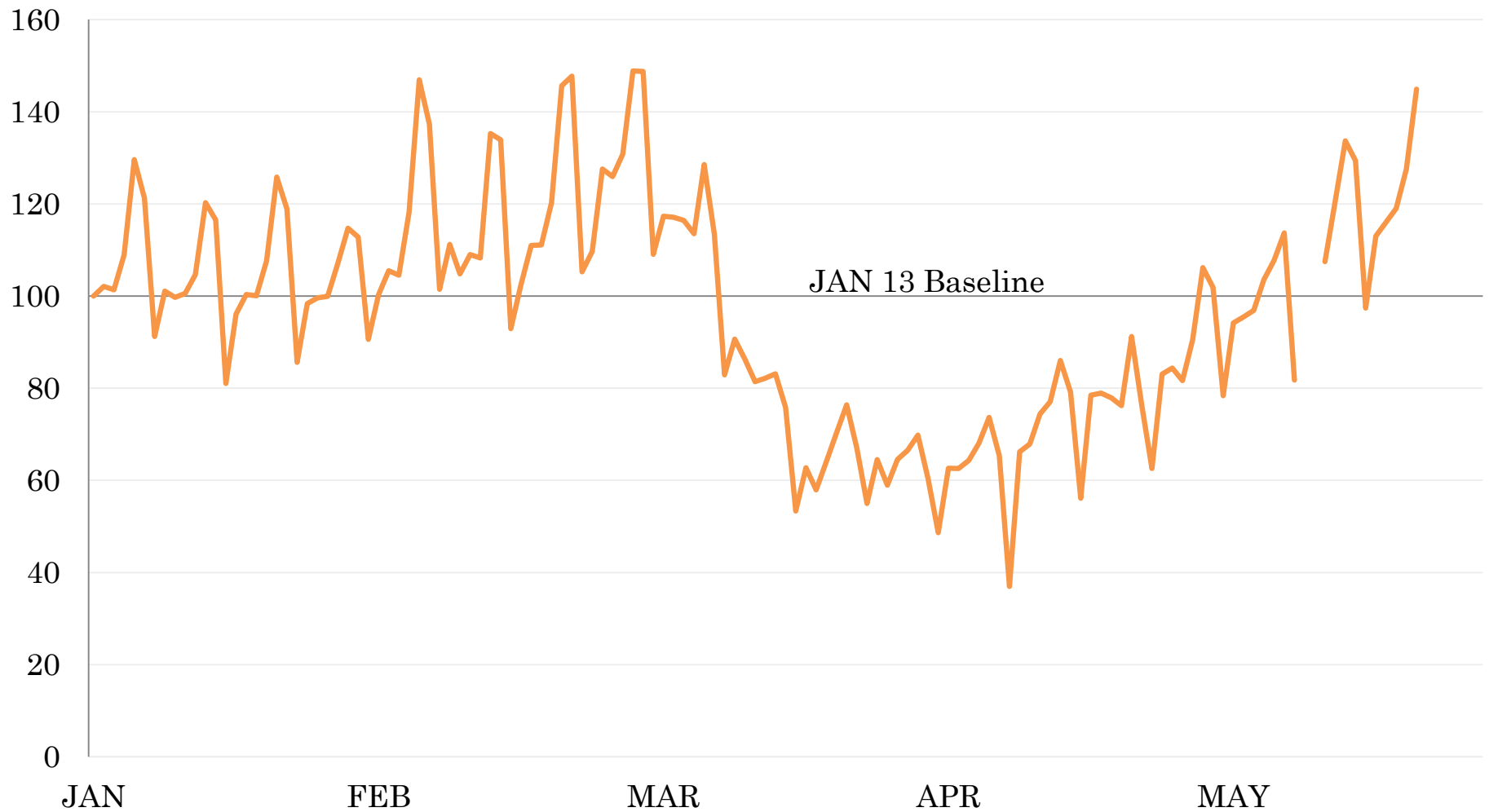
Restaurant Dining



Source: Open Table, retrieved May 25, 2020.

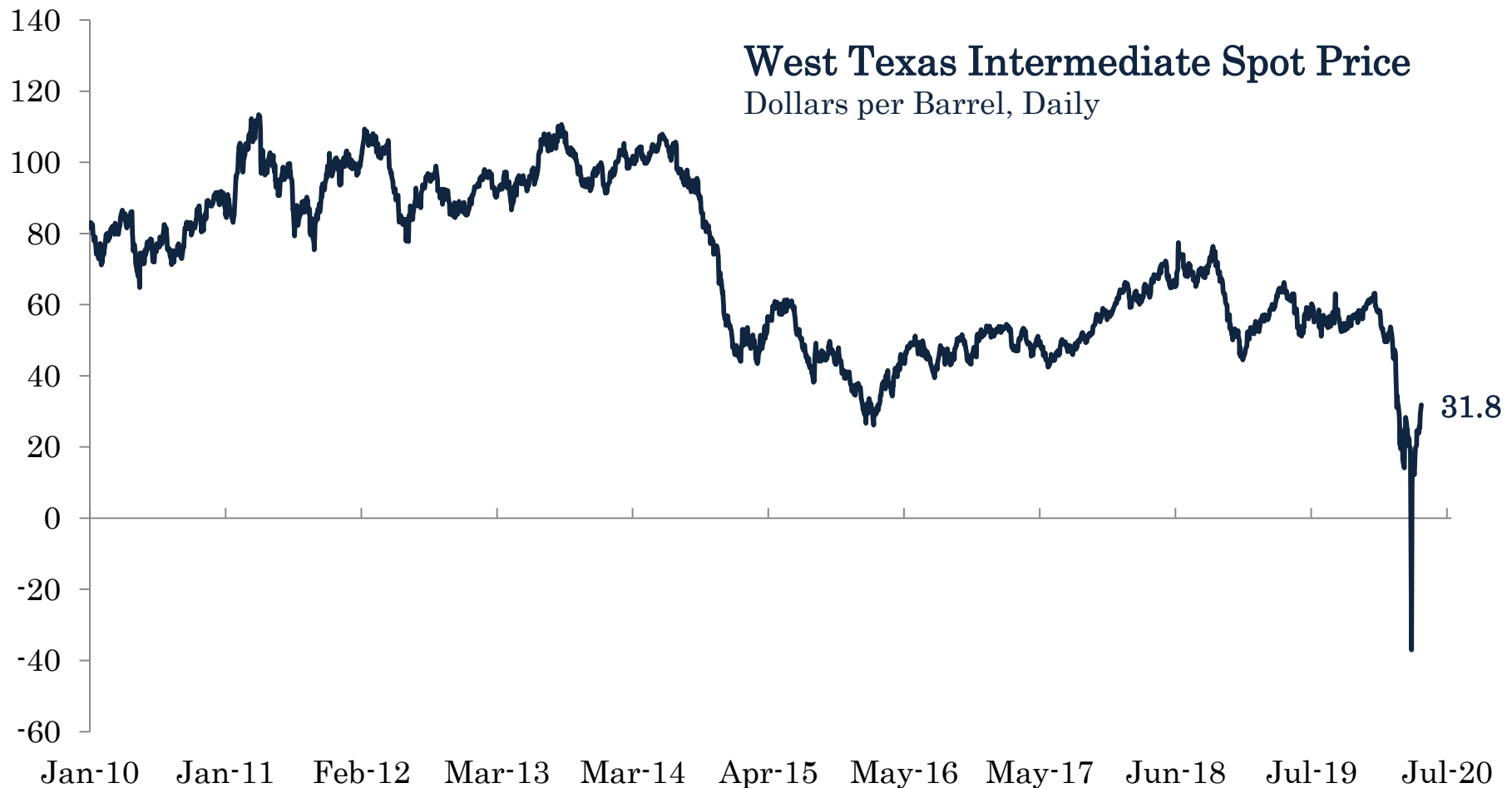
Tennessee Mobility

Change in Routing Requests



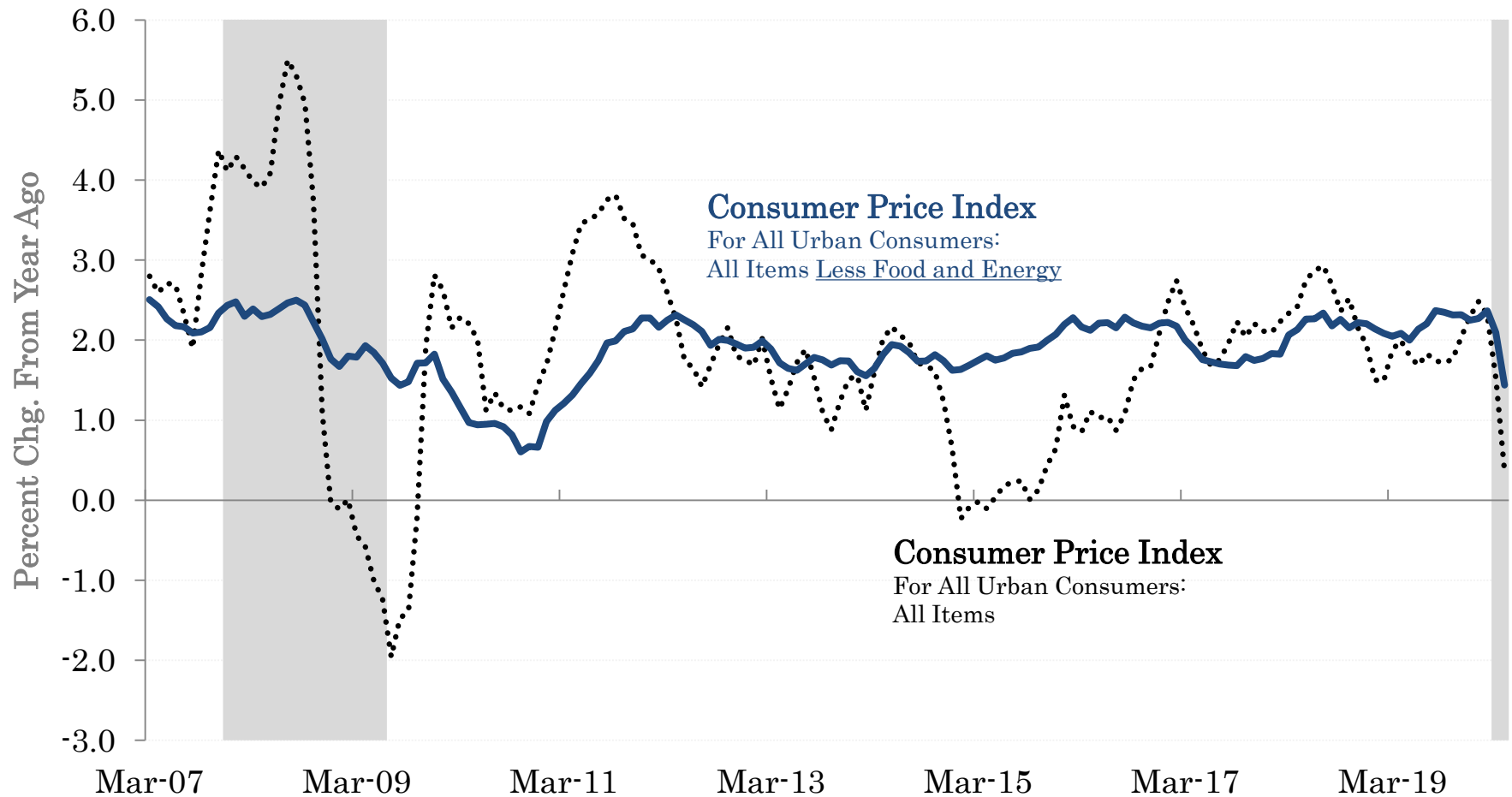
Source: Apple Mobility Trends Reports, retrieved May 24, 2020.

Crude Oil



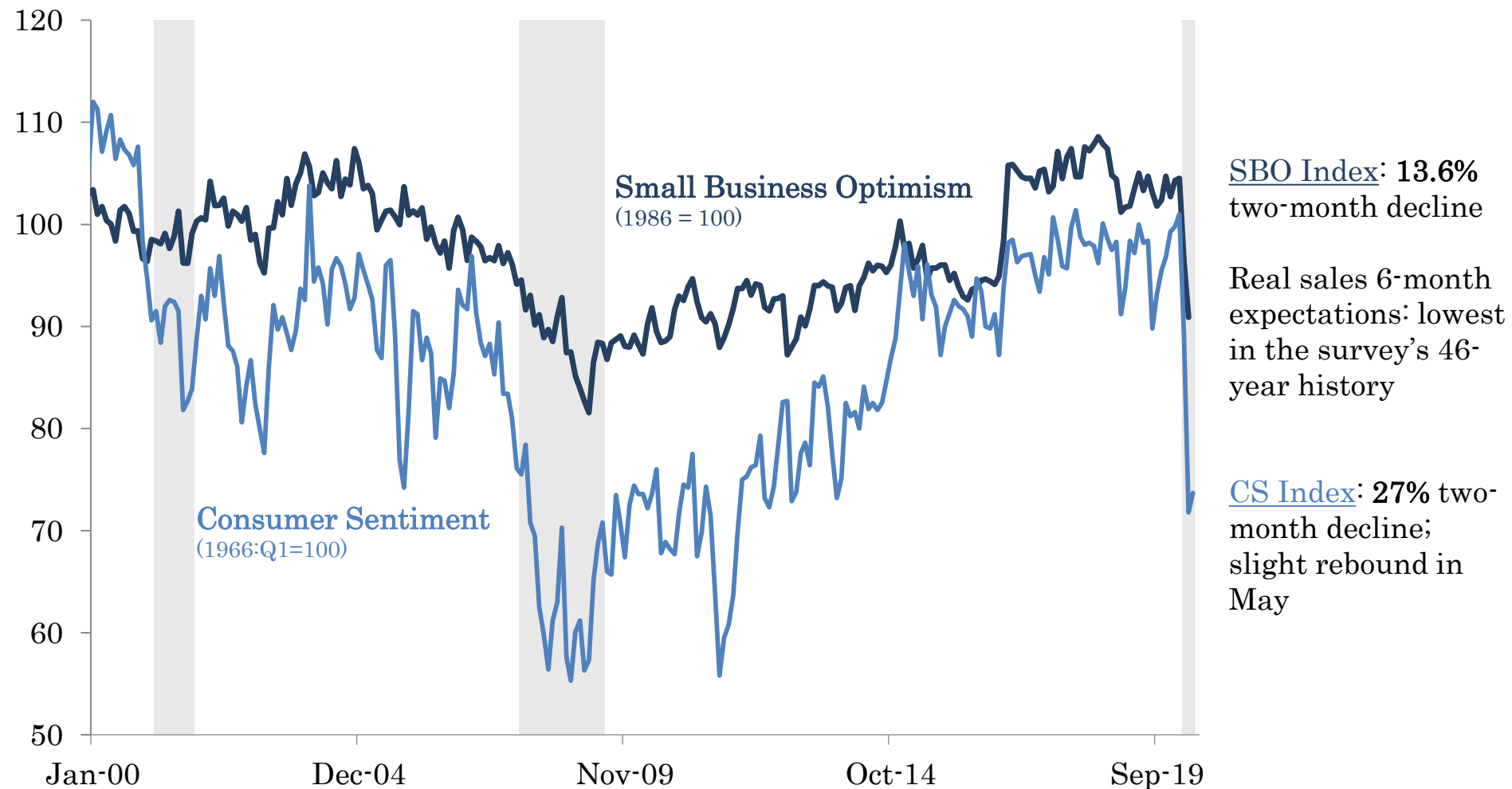
Sources: U.S. Energy Information Administration; retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

Inflation



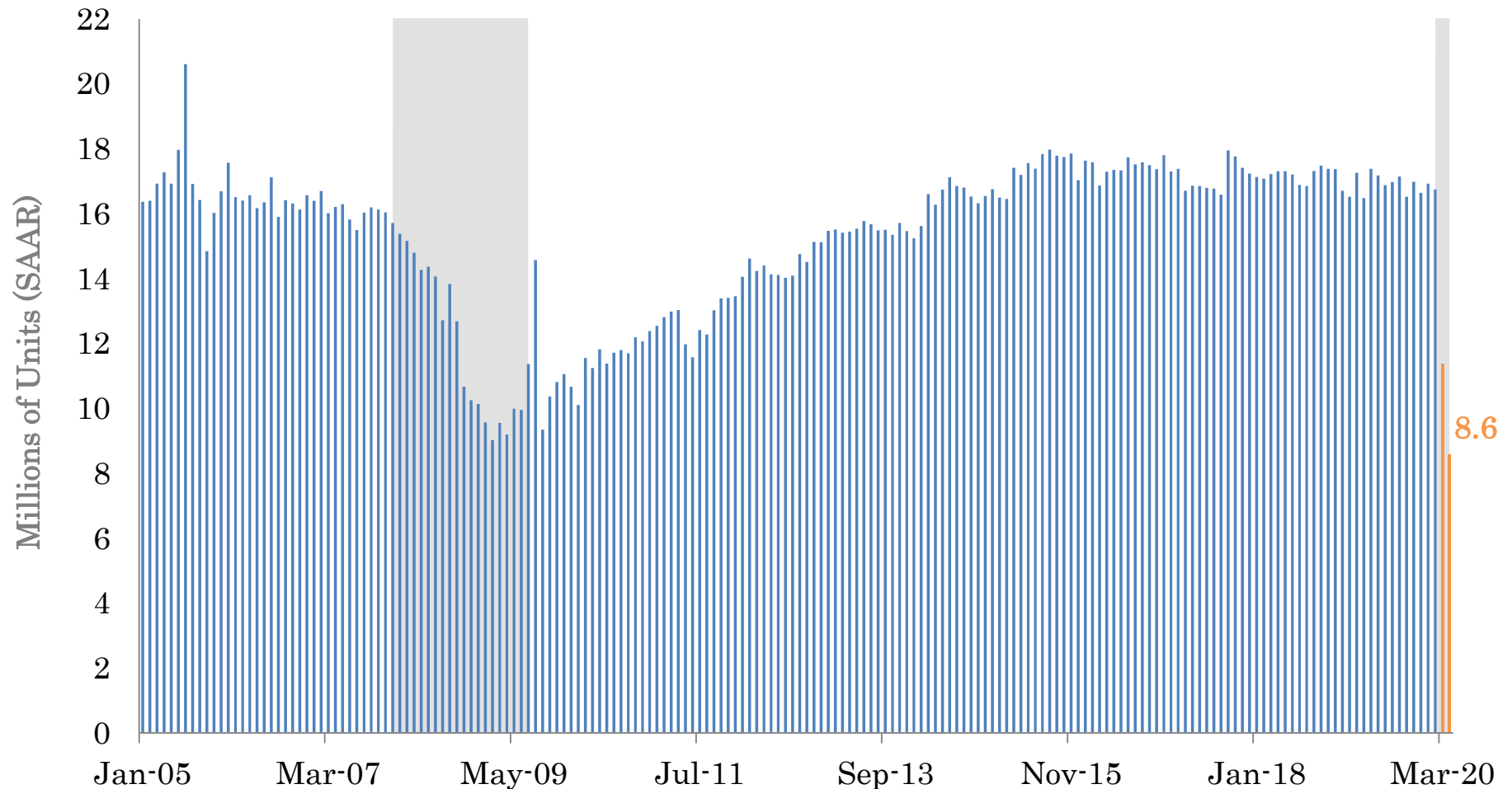
Sources: U.S. Bureau of Labor Statistics, retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

Consumer Sentiment & Small Business Optimism



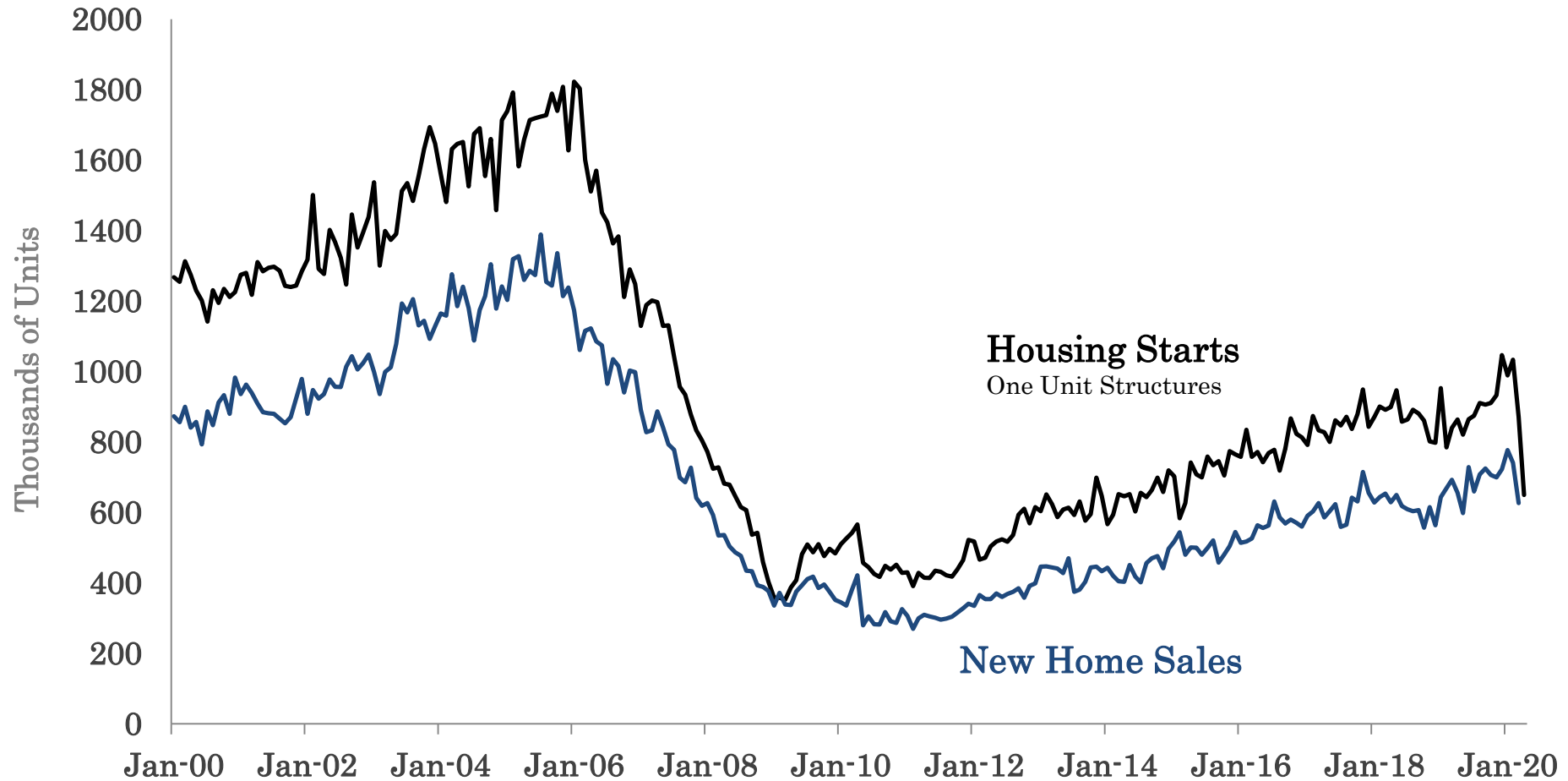
Auto Sector

U.S. Light Weight Vehicle Sales



Sources: U.S. Bureau of Economic Analysis, retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

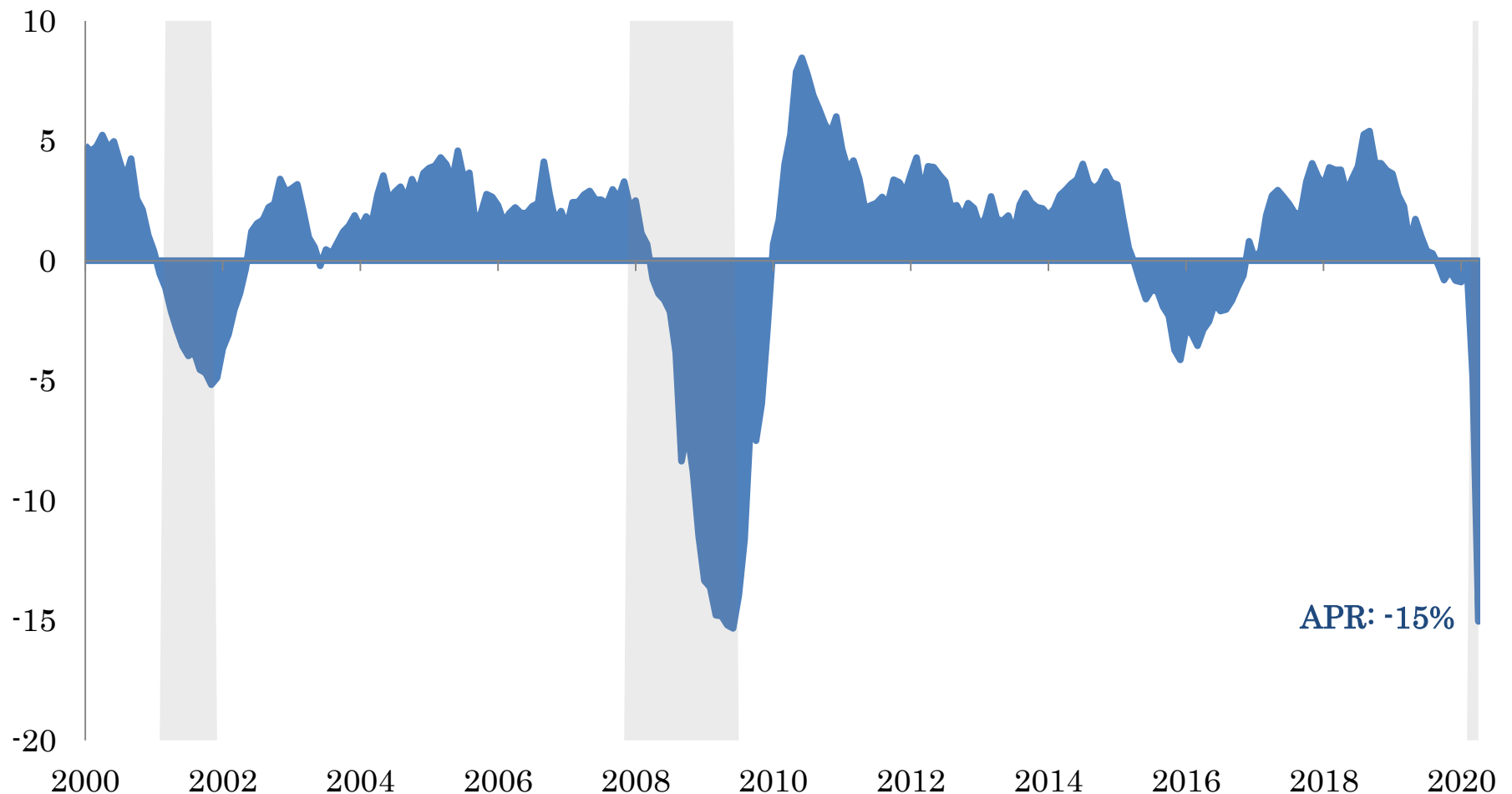
Housing Sector



Sources: U.S. Bureau of the Census, retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

Industrial Production

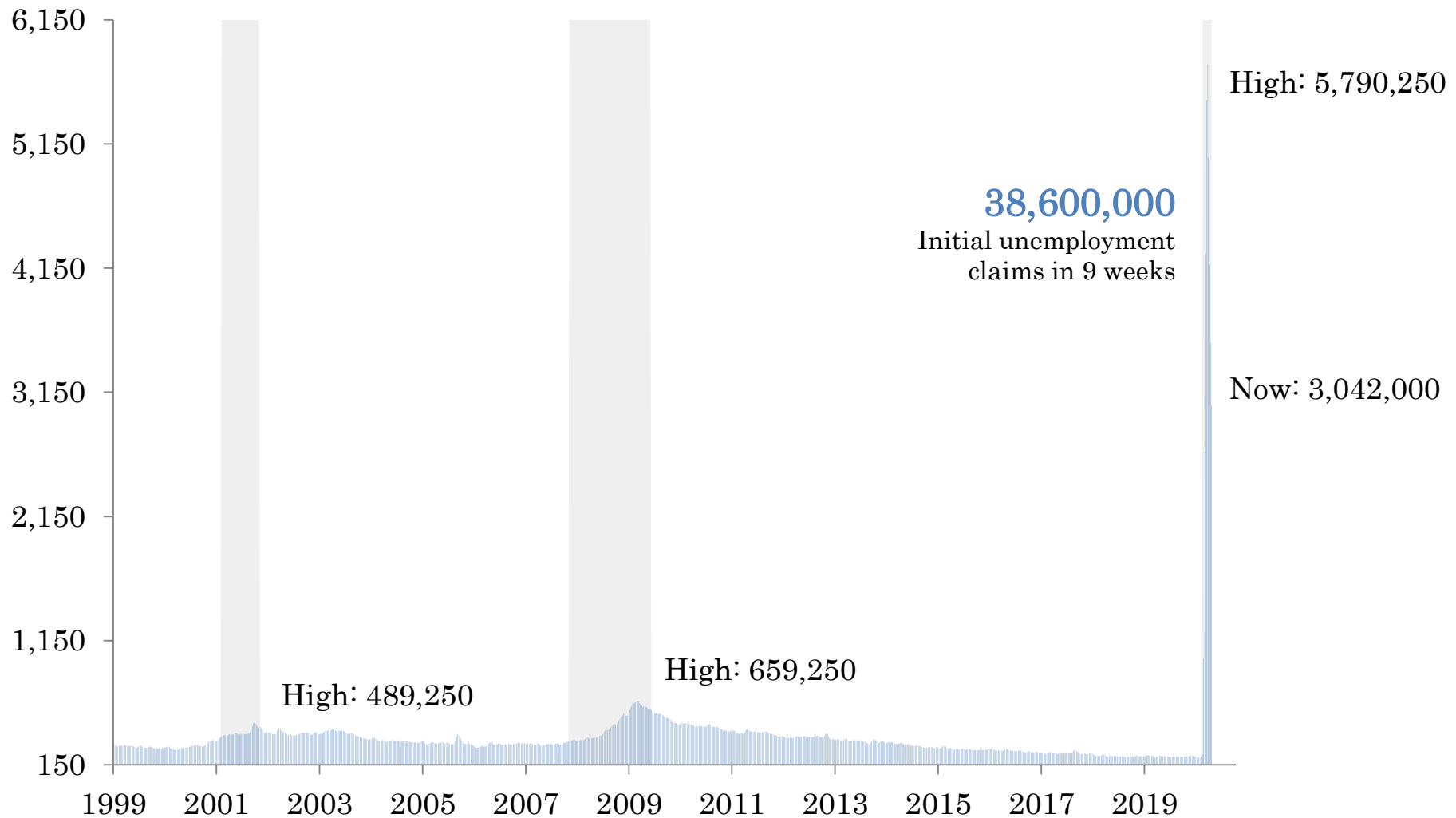
Year-over-year percentage change



Sources: Board of Governors of the Federal Reserve System, retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

US Initial Unemployment Claims

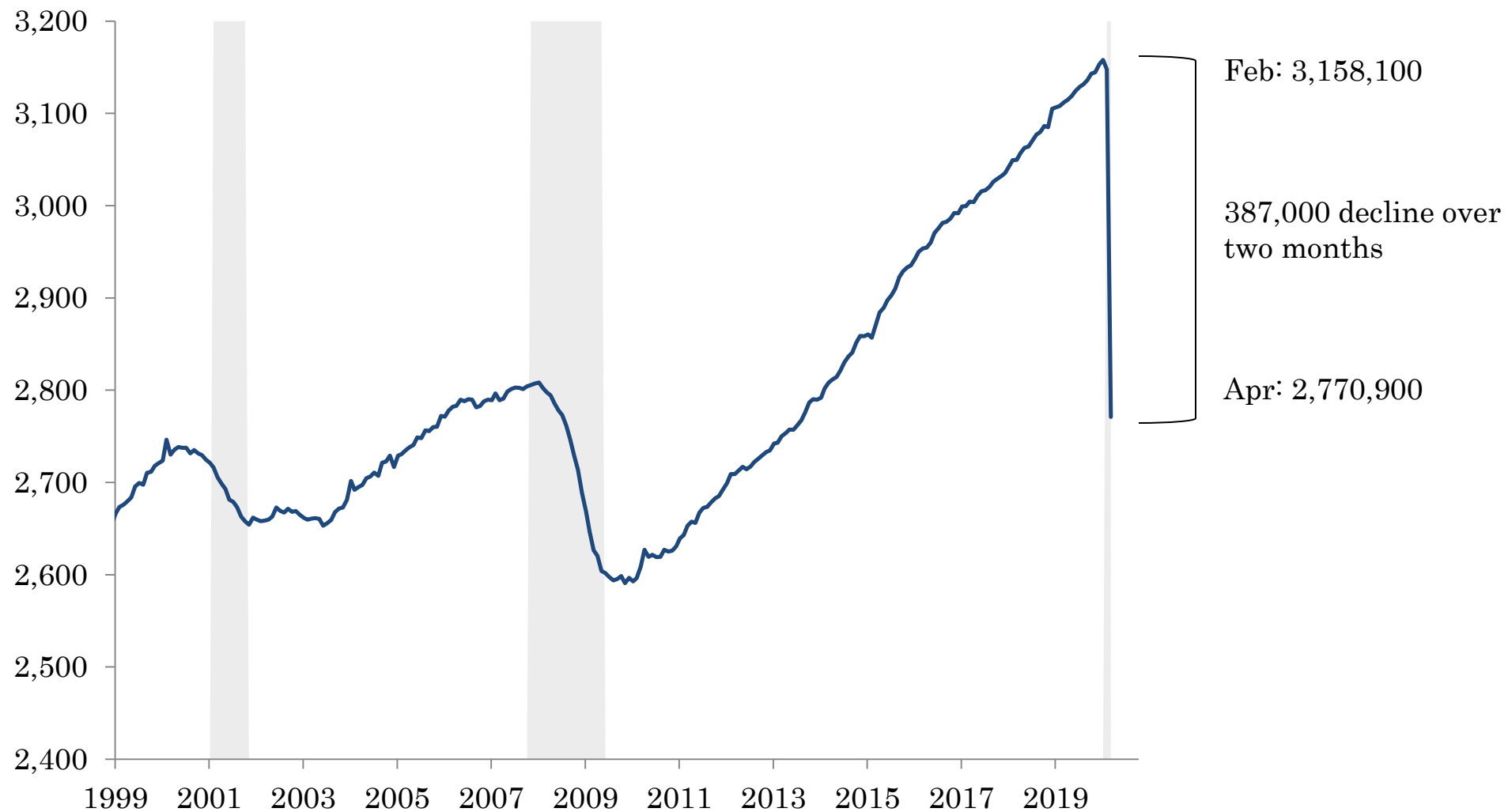
Four-week average, Thousands



Sources: U.S. Bureau of Labor Statistics, retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

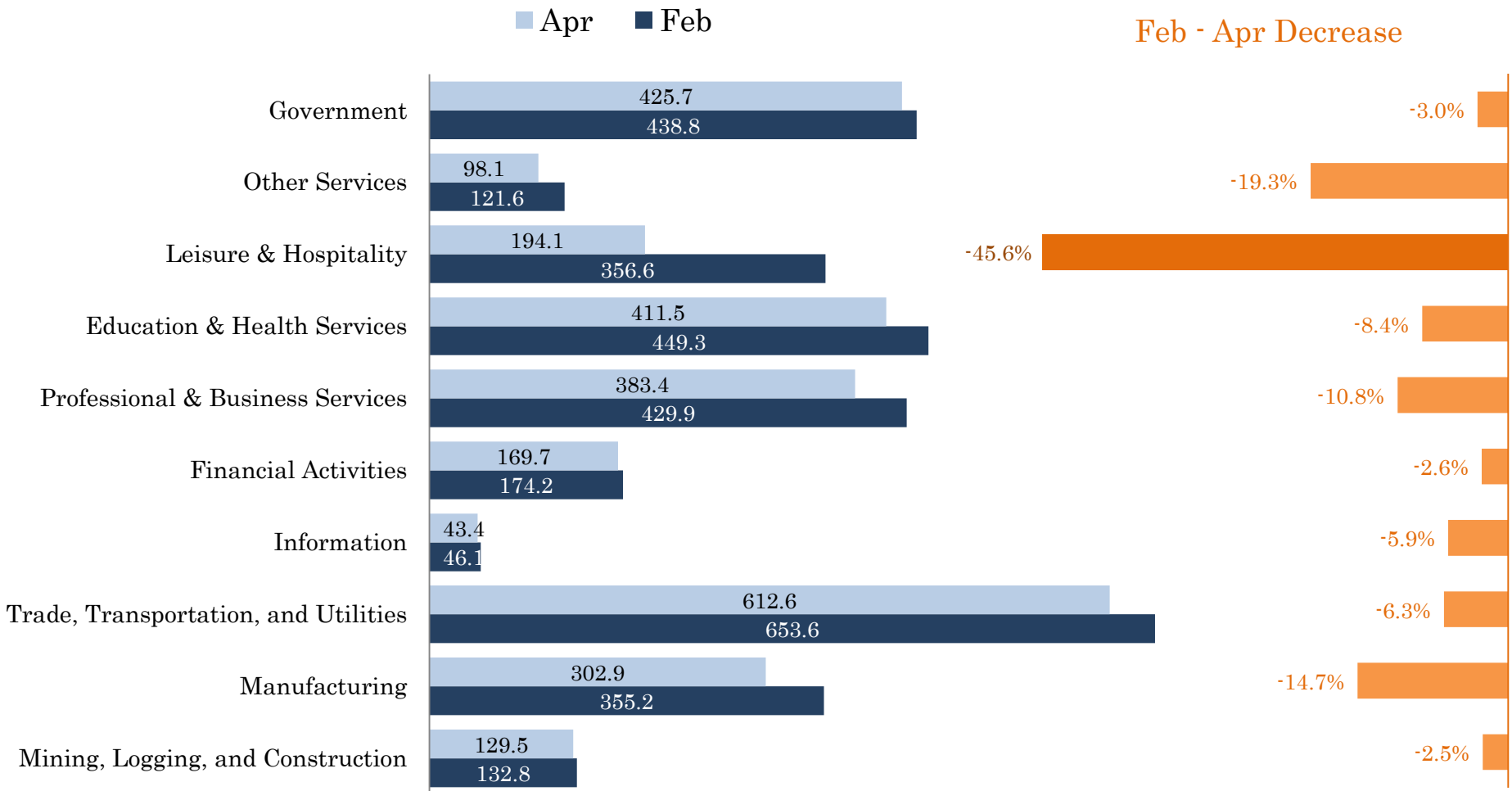
Tennessee Employment

Thousands, Monthly, SA



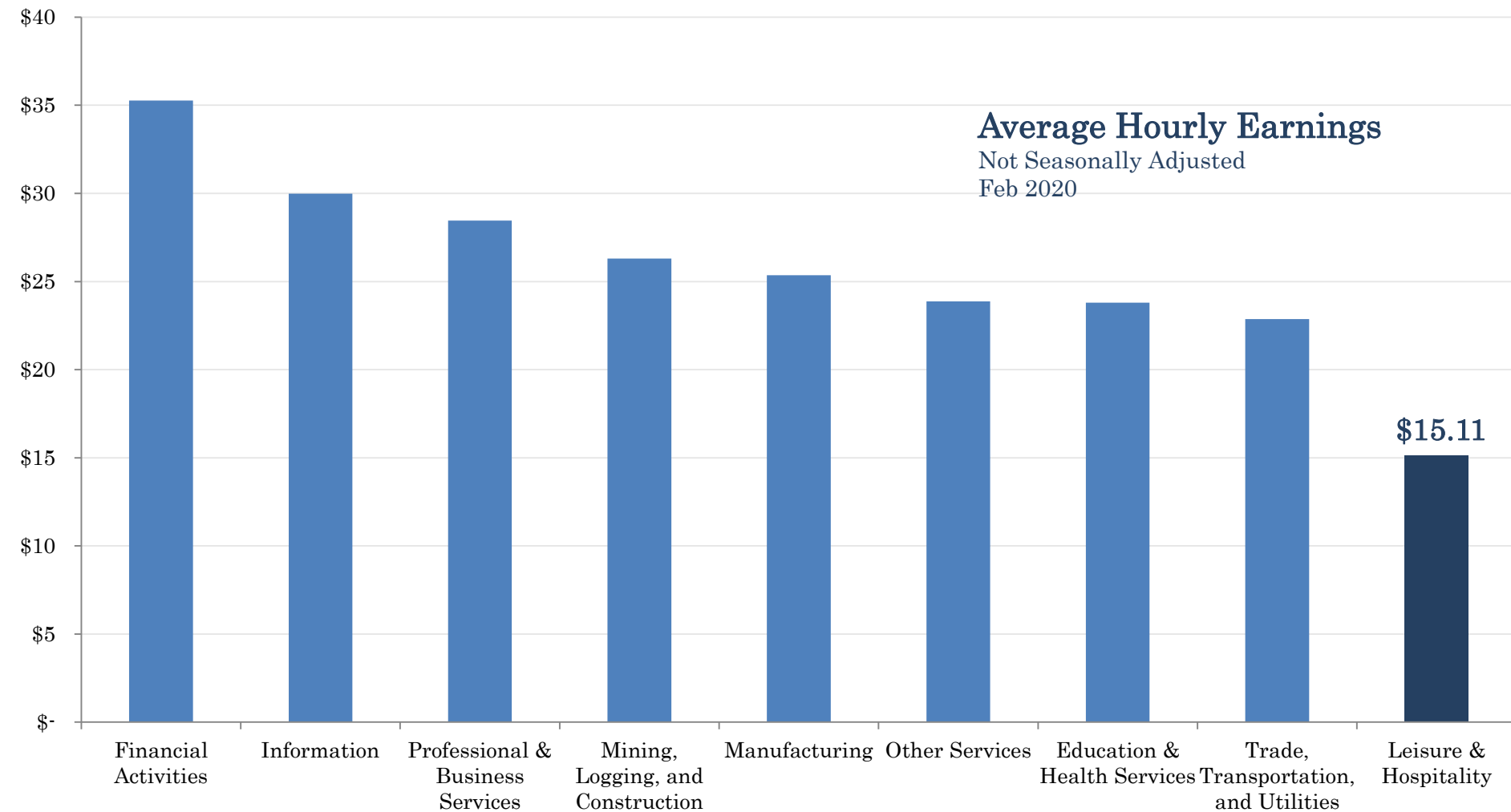
Sources: U.S. Bureau of Labor Statistics, retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

Tennessee Employment



Sources: U.S. Bureau of Labor Statistics, retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

Tennessee Employment

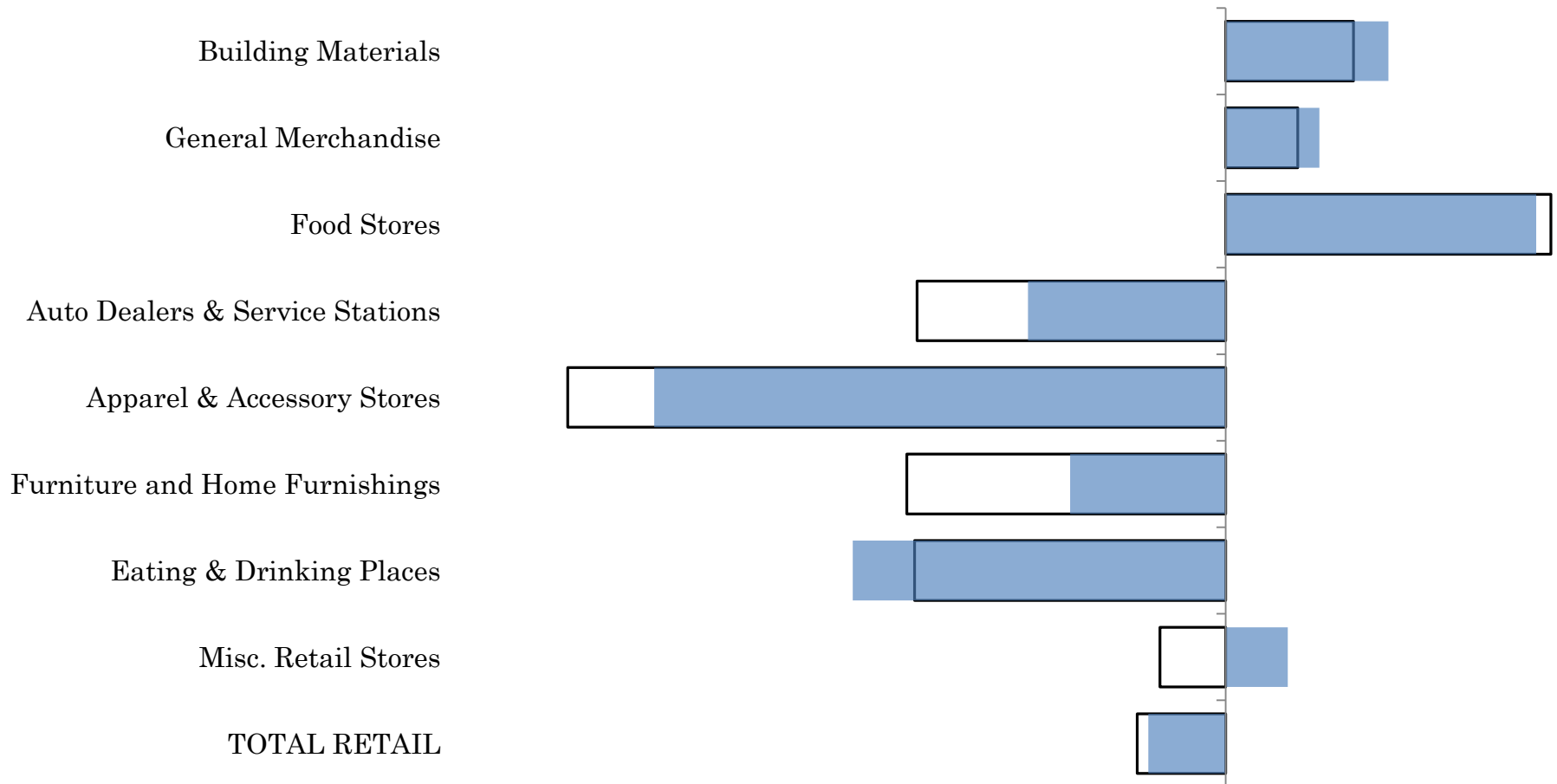


Sources: U.S. Bureau of Labor Statistics, retrieved from FRED, Federal Reserve Bank of St. Louis, May 25, 2020.

Retail Sales & Tax Collections

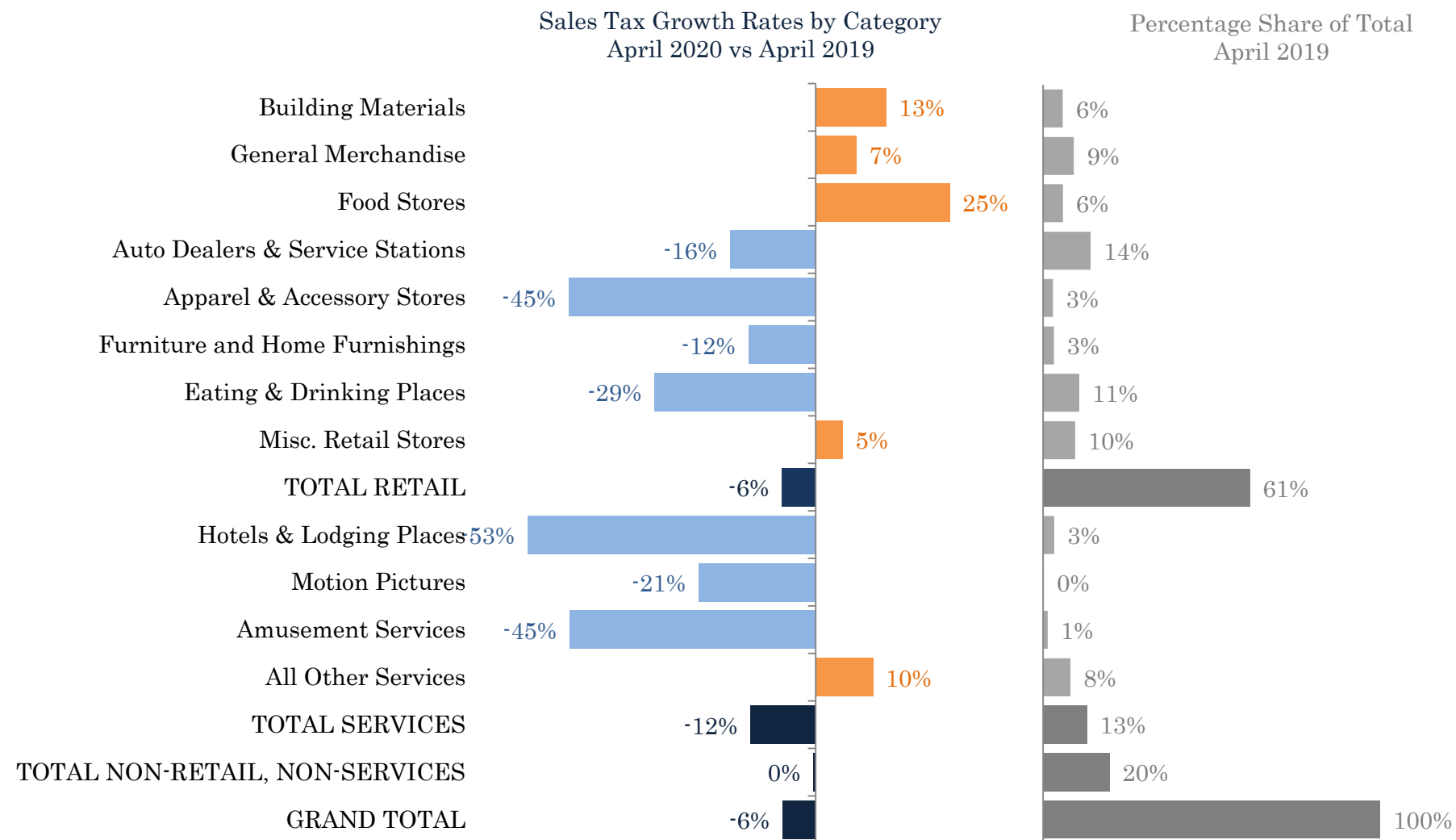
□ March Retail Sales (Adv, Not Adj)

■ April Sales Tax Collections



Sales Tax Collections

April 2020 vs. April 2019

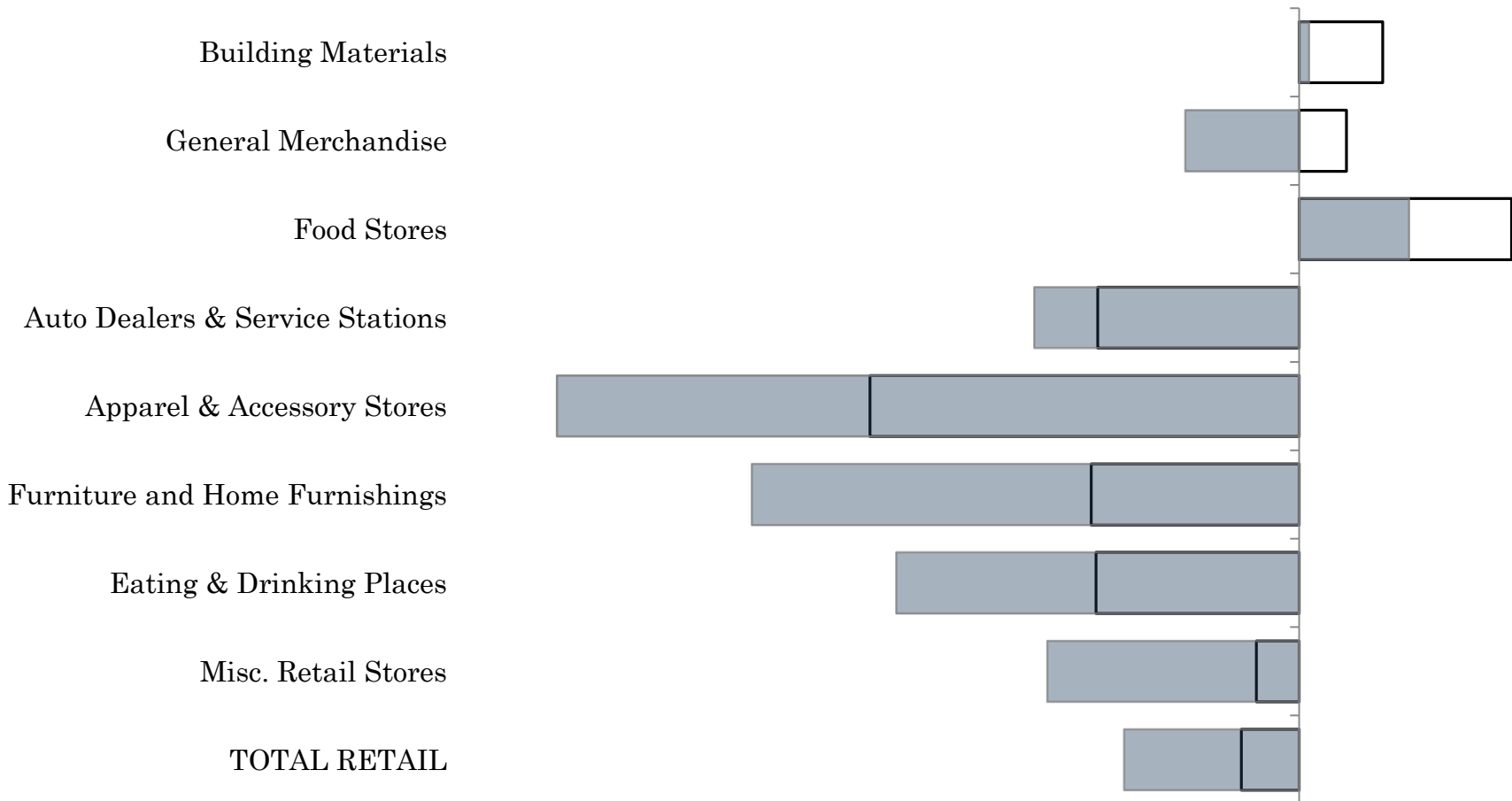


Source: TN Department of Revenue; retrieved May 25, 2020.

Retail Sales

□ March Retail Sales (Adv, Not Adj)

■ April Retail Sales (Adv, Not Adj)



Outlook Summary

- Gradual, phased-in reopening of the economy
- Continued constraints due to uncertainty, social distancing restrictions, long-lasting impacts of the economic shutdown
- Business closures, job losses, wage cuts, changes in business operations
- Subdued inflationary levels
- Isolated/localized outbreaks not resulting in widespread business closures
- 5%-6% real GDP decline in 2020; subsequent year GDP increases in the 3% to 5% annual range

FY19-20 & FY20-21 Estimates

REVENUE SOURCE	FY18-19	FY19-20 FRC STAFF REVISED TAX ESTIMATE	FY19-20 GROWTH	FY20-21 FRC STAFF REVISED TAX ESTIMATE	FY20-21 GROWTH
Sales and Use Tax	\$9,337,817,700	\$9,454,571,900	1.25%	\$9,718,000,000	2.79%
Franchise & Excise Tax	\$2,752,023,800	\$2,527,585,300	-8.16%	\$2,350,000,000	-7.03%
Fuel Taxes	\$1,170,829,400	\$1,166,300,300	-0.39%	\$1,252,000,000	7.35%
All Other Taxes	\$2,007,251,900	\$2,017,044,200	0.49%	\$1,876,475,000	-6.97%
TOTAL REVENUE	\$15,267,922,800	\$15,165,501,700	-0.67%	\$15,196,475,000	0.20%
<i>General Fund</i>	<i>\$12,693,873,200</i>	<i>\$12,614,946,800</i>	<i>-0.62%</i>	<i>\$12,576,556,600</i>	<i>-0.30%</i>
<i>Other Funds</i>	<i>\$2,574,049,600</i>	<i>2,550,554,900</i>	<i>-0.91%</i>	<i>\$2,619,918,400</i>	<i>2.72%</i>

Sales and Use Tax has been reduced by \$106.2 million in FY18-19 and \$112.0 million in FY19-20 and FY20-21 for the earmarked portion of the tax.

Privilege Tax has been reduced by \$58.0 million in FY18-19 and \$52.0 million in FY19-20 and FY20-21 for the earmarked portion of the tax.

FY19-20 & FY20-21 Estimates

FUNDS	FY19-20 BUDGET	FY19-20 FRC STAFF REVISED TAX ESTIMATE	DIFFERENCE	FY20-21 BUDGET	FY20-21 FRC STAFF REVISED TAX ESTIMATE	DIFFERENCE	TOTAL DIFFERENCE
General Fund	\$13,013,950,000	\$12,614,946,800	-\$399,003,200	\$13,135,000,000	\$12,576,556,600	-\$558,443,400	-\$957,446,600
Other Funds	\$2,637,750,000	\$2,550,554,900	-\$87,195,100	\$2,644,900,000	\$2,619,918,400	-\$24,981,600	-\$112,176,700
TOTAL	\$15,651,700,000	\$15,165,501,700	-\$486,198,300	\$15,779,900,000	\$15,196,475,000	-\$583,425,000	-\$1,069,623,300

Forecast Risks

- Downside:
 - Second wave of virus and shutdowns
 - Hesitancy
 - Long-term behavioral and business changes
- Upside:
 - Additional government stimulus
 - Strong pent-up demand; consumer & business confidence
 - Effective virus containment and treatment
- Tax deadline extensions
- Presidential and congressional elections



Thank You
Fiscal Review Committee Staff