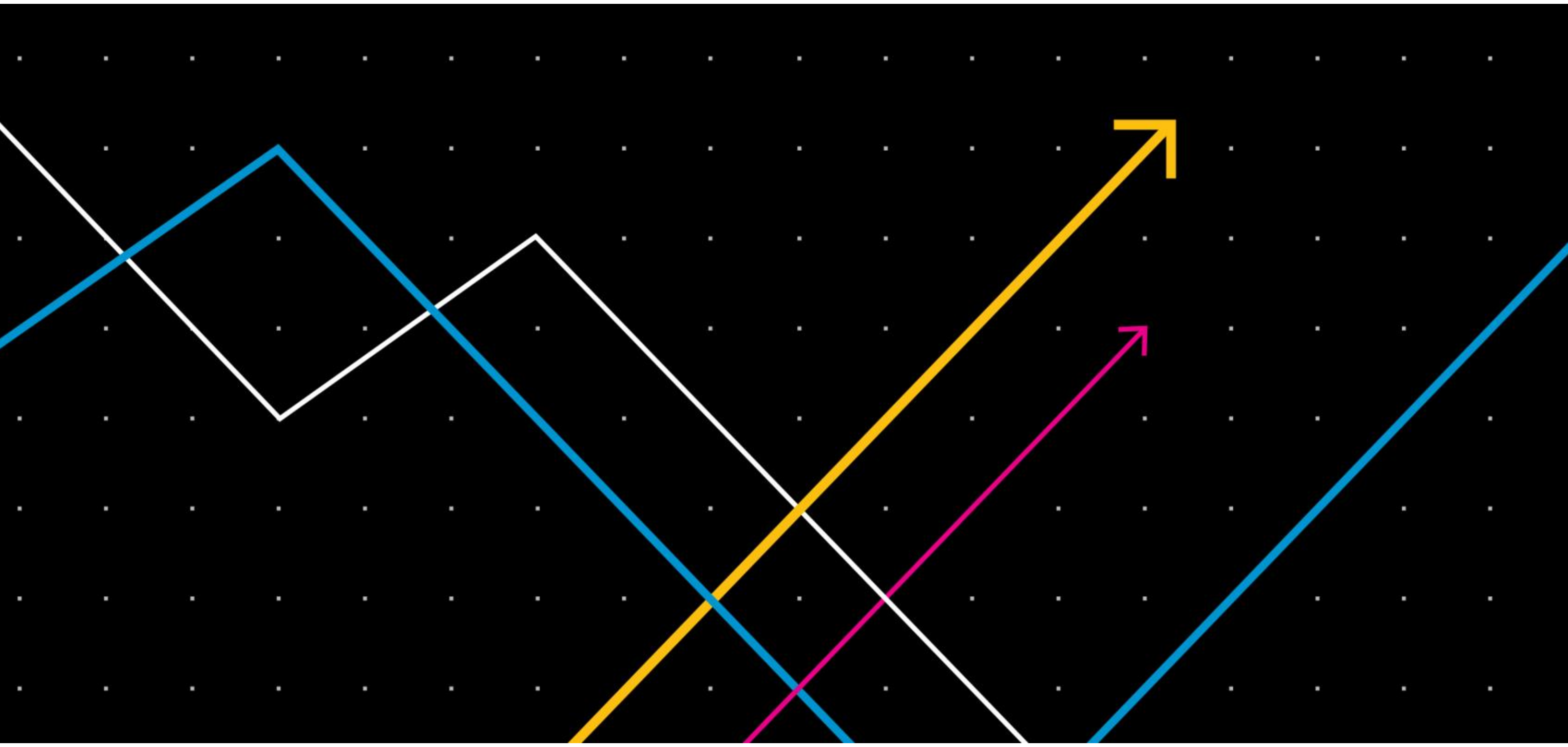

RESEARCH REPORT

States Saw Freefall Drop in Revenues in the Second Quarter; Partly Offset in the Third Quarter but Still Depressed from Pandemic

State Tax and Economic Review, 2020 Quarter 2

Lucy Dadayan

December 2020

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Acknowledgments

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Executive Summary

- **State and local government tax revenues** from major sources—personal income, corporate income, sales, and property taxes—were 18 percent lower in the second quarter of 2020 than in the prior year, which was in sharp contrast to the 6.9 percent average annual growth rates for the prior four quarters. The decline in state and local government tax revenues was the steepest on record for a single quarter and was due to the COVID-19 pandemic and government responses. Although some of the revenue decline is because of real changes in the levels of economic activity and tax receipts, part of this decline also reflects the shifting of income tax deadlines in most states to July 15, meaning that a share of 2019 income tax revenue was received in the third quarter of 2020. Using six-month periods to make comparisons to a year earlier often presents a clearer picture of the fiscal health of states.

- **State government tax revenues** from major sources showed year-over-year declines at 27.2 percent for the second quarter of 2020, which contrasted with the 7.3 percent average annual growth rates for the prior four quarters. Declines were widespread across the states and were primarily caused by the COVID-19 pandemic and government and economic response but also reflects the shifting in state income tax receipts. The magnitude of declines varied considerably among major revenue sources:

  » **State personal income tax revenues** declined 33.7 percent in the second quarter of 2020, mostly because states delayed their income tax filing deadlines into the third quarter. Declines in state personal income tax revenues also reflected millions of US workers losing jobs either temporarily or permanently in the face of the pandemic.

  » **State sales tax revenues** declined 13.2 percent in the second quarter of 2020, mostly because of government mandated shutdowns early in the spring that dramatically reduced business activity. State sales tax revenues had seen some increases prior to the onset of the Covid-19 pandemic, mostly in response to the US Supreme Court's decision in *South Dakota v. Wayfair, Inc.* in June 2018, and subsequent changes in state tax rules.

  » **State corporate income tax revenues** showed steep year-over-year declines in the second quarter of 2020. Under the Coronavirus Aid, Relief, and Economic Security (CARES) Act passed in March 2020, net operating losses (NOLs) incurred in calendar years 2018, 2019, and 2020 can be carried back to each of the five tax years preceding the tax year of such loss. Therefore, corporate income tax revenues may also be retrospectively lowered for prior fiscal years in those states that have rolling conformity with the Internal Revenue Service tax code and have adopted the NOL carryback provisions.

- **Local government tax revenues** from major sources showed year-over-year declines of 0.9 percent for the second quarter of 2020, which contrasts with the 6.2 percent average annual growth rates for the prior four quarters
  - » **Local property tax revenues** increased 0.9 percent year-over-year for the second quarter of 2020, which is weaker than the 6.0 percent average growth for the prior four quarters.
- **Preliminary data for April through September** indicate year-over-year declines in overall state tax revenue collections as well as in major sources of tax revenues: personal income, corporate income, and sales taxes. Examining this period largely eliminates the effects of states delaying the filing deadline for income tax returns.
  - » **State personal income tax** collections declined 2.8 percent from April to September compared with the same period a year earlier.
  - » **State corporate income tax** collections declined 8.9 percent from April to September compared with the same period a year earlier.
  - » **State sales tax** collections declined 5.8 percent from April to September compared with the same period a year earlier.
- **Economic factors** driving revenue growth were all negative in the second quarter of 2020. States' economic performance took a dramatic turn in the second quarter of 2020 because of the pandemic and governmental responses. However, growth in some economic factors had been weakening in some states since mid-2019, well before the COVID-19 pandemic.
  - » Real **gross domestic product** (GDP) declined 9.1 percent for the second quarter of 2020 compared with the same quarter in 2019. This is the steepest quarterly decline since the end of the World War II. The steep decline in real GDP in the second quarter of 2020 was expected because of the massive economic disruptions caused by the COVID-19 pandemic and government and individual responses.
  - » The seasonally adjusted **unemployment rate** soared to 13 percent in the second quarter of 2020, marking the worst quarter on record since 1948. Many businesses were forced to shut down or dramatically reduce activity because of the pandemic, leaving millions of Americans out of work.
  - » Year-over-year decline in **employment** was 11.3 percent for the second quarter of 2020, marking the largest decline on record. All 50 states reported outright employment declines

in the second quarter. However, overall employment growth had slowed even before the onset of the COVID-19 pandemic.

- **Personal consumption expenditures** declined 1.4 percent for the second quarter of 2020 compared with the same quarter a year earlier. Declines in personal consumption spending were largely expected given that oil prices declined precipitously in April and that the COVID-19 pandemic paralyzed large portions of the economy beginning in mid-March.
- **House prices** increased 4.2 percent in nominal terms for the second quarter of 2020 compared with a year earlier. Overall, growth in house prices was weaker throughout 2019 and the first half of 2020 than growth for the prior two years. Although average house prices have been rising since the Great Recession, as of the second quarter of 2020 they were still below their pre–Great Recession peaks in five states.

Trends in State and Local Revenues

The COVID-19 pandemic and the resultant government actions have caused an unprecedented economic shock and paralyzed economies worldwide. As a result, state and local government tax revenues saw steep declines this past spring. Some of the revenue losses were in response to government actions that deferred revenue collections to a later period; others are permanent and unrecoverable.

State and local tax revenues have become increasingly volatile and sensitive to economic, policy, and behavioral changes. Unfortunately, we expect the impact of the COVID-19 pandemic on state and local government tax revenues to be long-lasting. The recovery period for state and local tax revenues, absent further federal aid, may take far longer than with past economic downturns. States' fiscal and economic recovery paths remain uncertain because of the recent spike in the coronavirus infection rates as well as changes in consumer behavior in response to the pandemic.

State and local government tax revenues fluctuated wildly after the passage of the Tax Cuts and Jobs Act (TCJA), as discussed in previous *State Tax and Economic Review* quarterly reports. Growth in state and local government tax revenues had normalized in the second half of 2019. But that did not last as the COVID-19 pandemic spread to the United States and governments and individuals changed behavior and governments closed parts of the economy.

Table 1 shows state and local government tax revenues from major sources for the second quarter of 2019 and the second quarter of 2020 as well as the nominal percentage change between both quarters and the average quarterly year-over-year growth in the prior four quarters. Overall, states and localities suffered large revenue losses in the second quarter of 2020. However, some of these declines are caused by the shifting of filing deadlines and income tax receipts being shifted to the third quarter of 2020. Major findings include the following:

- **State and local government revenues** from major sources declined 18 percent in the second quarter of 2020 compared with a year earlier; this is in contrast to the average quarterly year-over-year growth rate of 6.9 percent in the prior four quarters.
- **State government revenue** from major sources declined 27.2 percent in the second quarter of 2020 relative to a year earlier, which was in sharp contrast to the average year-over-year growth rate of 7.3 percent observed for the prior four quarters. The decline in **state personal income tax** revenues was 33.7 percent for the second quarter of 2020 compared with the second quarter of 2019; this is in contrast to the average quarterly year-over-year growth rate of 8.6 percent observed for the prior four quarters. **State sales tax** collections declined 13.2

percent for the second quarter of 2020 compared with the second quarter of 2019, ending the uninterrupted growth pattern in state sales taxes observed throughout the decade. **State corporate income tax** revenues declined 44.2 percent for the second quarter of 2020 compared with a year earlier. However, part of the steep decline in income taxes was due to the delays in filing deadlines.

- **Local government revenue** from major sources declined 0.9 percent from a year earlier in the second quarter of 2020, which was substantially weaker than the 6.2 percent average quarterly year-over-year growth for the prior four quarters. **Local property taxes**, the single largest source of local government tax revenues, increased 0.9 percent from the prior year; the average quarterly year-over-year growth was 6.0 percent for the prior four quarters. Local property taxes saw some fluctuations in the past two years as some taxpayers shifted the timing of property tax payments in response to passage of the TCJA in late 2017. **Local sales taxes** grew 2.8 percent for the second quarter of 2020 compared with the prior-year level. Both **local personal income taxes** and **local corporate income taxes** saw steep declines in the second quarter of 2020, but these constitute a relatively small share of local revenues, are concentrated in a few states, and as with state income taxes, reflect in part the postponed deadlines for filing of 2019 income tax returns.

TABLE 1

State and Local Government Tax Revenue Trends

Tax source	2019 Q2	2020 Q2	Y-O-Y percentage change	Average quarterly Y-O-Y growth rate, prior four quarters
Total state and local major taxes	**$411,343**	**$337,378**	**(18.0)**	**6.9**
State major taxes	***$266,650***	***$194,030***	***(27.2)***	***7.3***
Personal income tax	144,056	95,521	(33.7)	8.6
Corporate income tax	26,891	15,002	(44.2)	12.5
Sales tax	91,385	79,296	(13.2)	4.8
Property tax	4,318	4,210	(2.5)	2.8
Local major taxes	***$144,693***	***$143,348***	***(0.9)***	***6.2***
Personal income tax	12,293	9,765	(20.6)	8.7
Corporate income tax	2,852	2,449	(14.1)	5.0
Sales tax	22,798	23,429	2.8	5.6
Property tax	106,750	107,705	0.9	6.0

Source: US Census Bureau (tax revenue), with adjustments by the author.

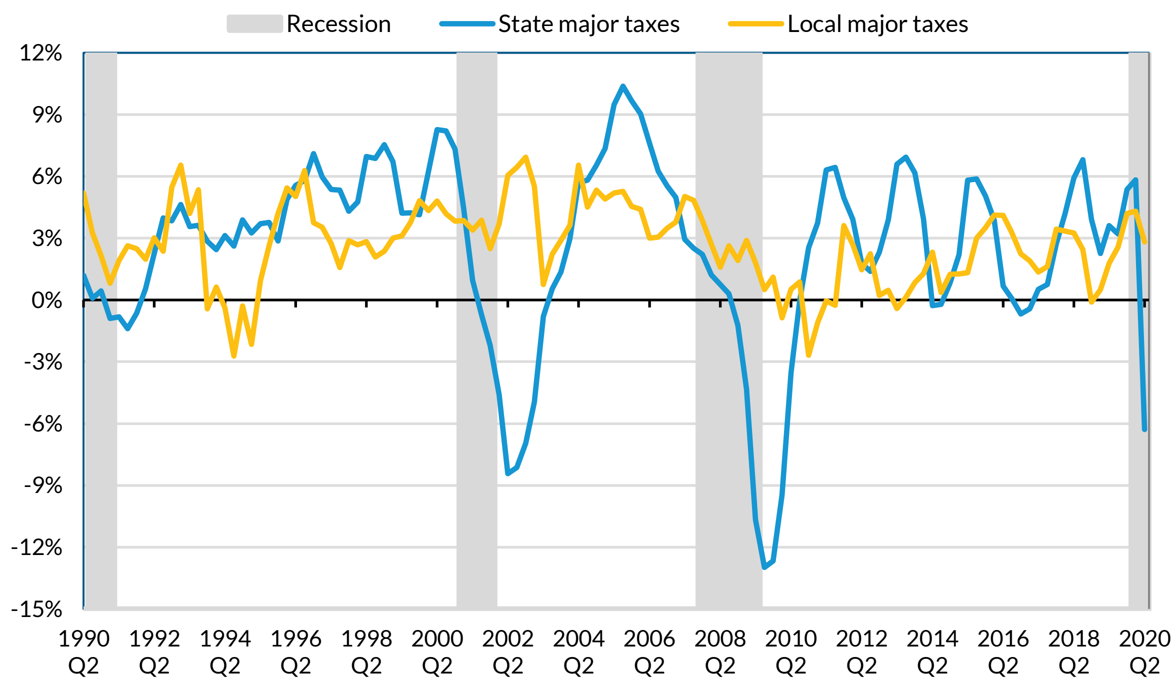
Notes: Q = quarter; Y-O-Y = year-over-year.

Figure 1 shows longer-term trends in state and local tax collections, specifically, the year-over-year percentage change in the four-quarter moving average of inflation-adjusted state and local tax collections from major sources: personal income tax, corporate income tax, sales tax, and property tax. As shown in Figure 1, state tax revenues from major sources fluctuated greatly over the past few years, mostly driven by the impact of the federal fiscal cliff negotiations (in 2013), volatility in the stock market, and the impact of taxpayer behavior in response to the passage of the TCJA. The COVID-19 pandemic caused further volatility in state and local taxes. State taxes from major sources, adjusted for inflation, declined 6.3 percent on average for the past four quarters relative to a year earlier. The four-quarter moving average of inflation-adjusted local taxes from major sources showed a 2.8 percent increase for the second quarter of 2020.

FIGURE 1

State and Local Major Tax Revenues Grew before the COVID-19 Pandemic

Year-over-year inflation-adjusted change in state and local taxes from major sources



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Source: US Census Bureau (tax revenue) and Bureau of Economic Analysis (GDP), analysis by the author.
Notes: Year-over-year change is the percentage change of four-quarter moving averages. Data are adjusted for inflation. Data are for four major tax categories only: personal income, corporate income, general sales, and property.

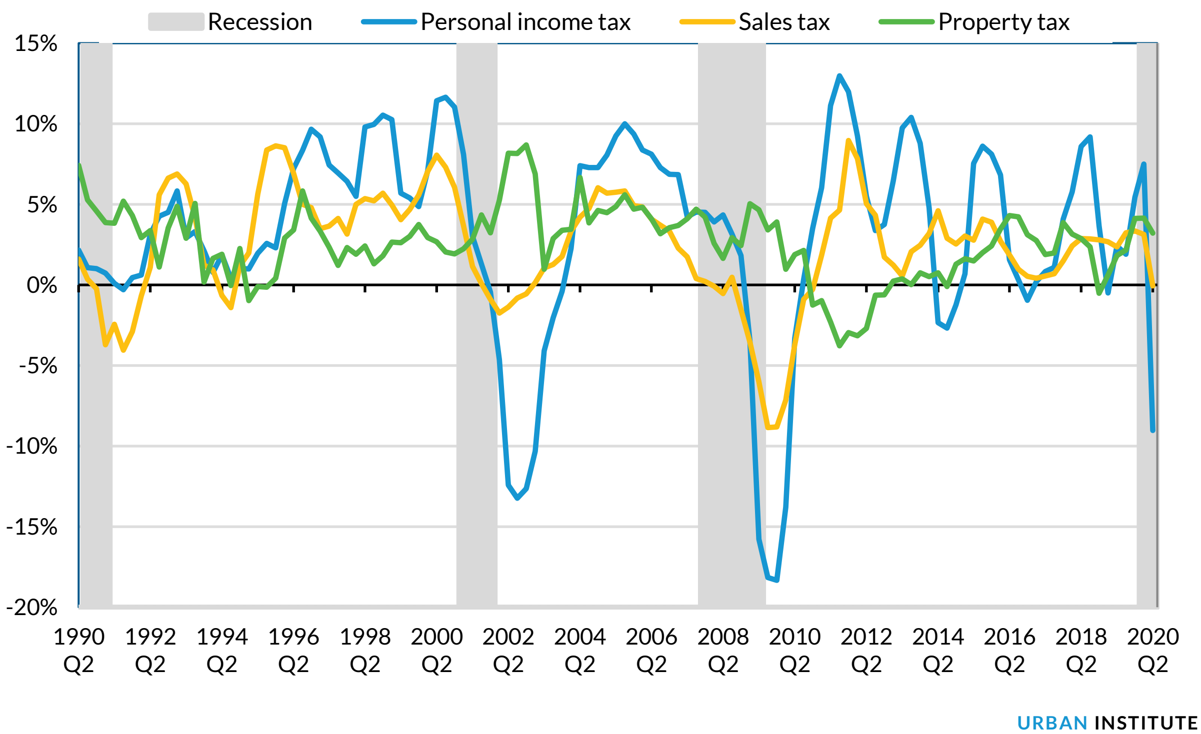
Most local governments rely heavily on property taxes, which are relatively stable and respond slowly to changes in property values. By contrast, the personal income, sales, and corporate income taxes that states heavily rely on respond more rapidly to economic upticks and declines. Over the past two decades, property taxes have consistently made up at least two-thirds of total local tax collections. As noted, the recent fluctuations in property tax receipts were mostly caused by payment shifts in response to the TCJA.

Figure 2 breaks out inflation-adjusted state and local personal income, sales, and property tax revenue over the past 30 years. The graph shows the large fluctuations in real (inflation-adjusted) state and local personal income tax collections in recent years. State and local personal income tax revenues saw 9.0 percent year-over-year decline in the second quarter of 2020. Real state and local sales tax revenues showed a 0.1 percent year-over-year decline in the second quarter of 2020. State and local property taxes, nearly all of which are collected by local governments, showed a 3.2 percent real growth rate from a year earlier for the second quarter of 2020.

FIGURE 2

Weaker Growth in State-Local Sales Tax Revenues Took a Sharp Turn in the Second Quarter

Year-over-year inflation-adjusted change in major state-local taxes



Source: US Census Bureau (tax revenue) and Bureau of Economic Analysis (GDP), analysis by the author.

Notes: Year-over-year change is the percentage change of four-quarter moving averages. Data are adjusted for inflation.

Trends in State Tax Revenue in 2020 Quarter 2

Total state tax revenue declined 25.0 percent in nominal terms in the second quarter of 2020 relative to a year earlier, according to US Census Bureau data adjusted by the author (Table A1).[1] All major sources of taxes showed double-digit declines. The year-over-year decline in state personal income tax revenues was 33.7 percent for the second quarter of 2020. Corporate income tax revenue collections declined 44.2 percent for the second quarter of 2020 compared with a year earlier. State sales tax collections declined 13.2 percent and motor fuel tax collections declined 18.1 percent relative to a year earlier. Table A1 shows (1) nominal and inflation-adjusted growth in state government tax revenue collections from major sources and (2) average quarterly year-over-year growth between the first quarter of 2010 and the second quarter of 2020. Despite the prolonged economic expansion, the inflation-adjusted average annual growth rate in overall state tax revenues since 2010 was only 2.4 percent.

There were some regional disparities in terms of year-over-year declines in total state tax revenues for the second quarter of 2020 (Table A2). State tax revenues saw double-digit declines in all regions. The Far West and Southwest regions had the steepest year-over-year declines at 39.2 and 26.1 percent, respectively, while the Southeast and Great Lakes regions had the smallest declines at 14.9 and 18.1 percent, respectively.[2]

Forty-six states reported declines in total state tax revenue collections for the second quarter of 2020 relative to a year prior, with 36 states reporting double-digit declines. Declines in state tax revenues were particularly steep in Alaska, North Dakota, and California. State tax revenues grew in Idaho, Maine, New Mexico, and South Dakota.

Personal Income Taxes

State personal income tax revenues declined 33.7 percent in nominal terms and 34.1 percent in inflation-adjusted terms in the second quarter of 2020 compared with the same period in 2019. This contrasts with earlier quarters, where growth in personal income tax collections had stabilized in the second half of 2019 and the first quarter of 2020. This relative stability followed wild swings in personal income tax collections in response to federal policy changes under the TCJA, as noted in previous *State Tax and Economic Review* quarterly reports. The average quarterly year-over-year growth rate in state personal income tax collections since 2010 has been 5.2 percent in nominal terms and 3.5 percent in real terms (Table A1).

Because the Internal Revenue Service delayed income tax deadlines in 2020 from April 15 to July 15 and states generally followed suit, states collected substantially less income tax revenue in April 2020. Typically, April is the most important month for income tax payments. Usually states collect around 13 to 15 percent of annual personal income tax revenues in April, with 70 to 75 percent coming from estimated and final payments. This year, large shares of estimated and final payments were shifted to July.

Personal income tax collections declined across all regions in the second quarter of 2020 compared with the same period in 2019 (Table A2). The Far West region saw the steepest decline at 54.9 percent, largely reflecting declines in California.

As noted, the income tax revenue picture in the second quarter of 2020 is complicated because of delayed income tax filing deadlines. This led to substantial declines in personal income tax collections across the states for the second quarter. However, some states adjusted their accounting to shift income tax revenues received in July back into June, which falls in fiscal year 2020 in most states. We found that 15 states counted income tax revenues in the second quarter of 2020 even though they were received in the third quarter of 2020, while 27 states did not shift revenues from the third quarter.

Overall, personal income tax collections decreased in 37 states, with 31 states reporting double-digit percentage-point declines. The largest decline in dollar value was in California, where income tax revenues declined by $21.2 billion or 56.5 percent, mostly because the income tax filing deadline was delayed from April 15 to July 15. State personal income tax revenues grew in Connecticut, Idaho, Kentucky, Maine, New Mexico, and South Carolina reflecting that these states shifted a portion of income tax collections received in July back to the second quarter of 2020.

To get a clearer picture of the underlying trends in personal income tax collections, we examine trends in the four major components: withholding, quarterly estimated payments, final payments, and refunds. The US Census Bureau does not collect data on the individual components of personal income tax collections. The data presented here were collected by the author directly from the states.

TABLE 2

Growth in State Government Personal Income Tax Components

Year-over-year nominal percentage change

Personal income tax components	State fiscal year 2019				State fiscal year 2020			
	2018Q3	2018Q4	2019Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2
Withholding	6.2	6.7	1.2	5.2	4.4	4.8	5.8	(1.3)
Estimated payments	18.2	(71.3)	(8.8)	16.3	2.4	9.1	9.7	(64.0)
Final payments	12.8	(1.5)	18.5	39.0	21.2	20.8	(10.3)	(55.7)
Refunds	14.4	16.9	(0.3)	(1.1)	8.2	7.4	9.9	(16.4)
Total	**7.8**	**(10.4)**	**(0.2)**	**18.7**	**3.9**	**6.1**	**4.4**	**(34.8)**

Source: Individual state data, analysis by the author.

Notes: Q = quarter. The percentage changes for total personal income tax differ from data reported by the US Census Bureau. Red numbers in parentheses represent declines.

Table 2 shows the growth for each major component of personal income tax collections in the past eight quarters, illustrating the fiscal year 2019 volatility following enactment of the TCJA. Personal income tax collections declined in the fourth quarter of 2018 and first quarter of 2019 but soared in the second quarter of 2019 because of an increase in extension and final payments. The volatility in personal income tax revenues was mostly observed in estimated payments and final payments, which were shifted between tax years because of the TCJA. Growth in personal income tax collections moderated in the third and fourth quarters of 2019 as well as the first quarter of 2020. However, year-over-year growth in the first quarter of 2020 was weaker than the growth in the fourth quarter of 2019, largely driven by final tax payments. And the latest data indicate steep declines in personal income tax collections in the second quarter of 2020, largely because most states delayed income tax filing deadlines from April 15 to July 15, but also because of the economic impact of the pandemic.

Withholding

Withholding is usually a good indicator of the current strength of personal income tax revenue and the economy because it comes largely from current wages and is less volatile than estimated payments or final settlements. Table A3 shows year-over-year growth in withholding for the past eight quarters for all states with a broad-based personal income tax.

The annual average and median growth rates in withholding for 2019 were weaker for all quarters than the growth rates for 2018. The strength in withholding in 2018 was partially driven by employers shifting the timing of bonus payments from one quarter to another. Year-over-year growth in withholding was weak in the first quarter of 2019, at 1.2 percent. Growth in withholding regained strength since then (Table A3) and year-over-year growth was particularly strong for the first quarter of 2020, at 5.8 percent. However, withholding declined 1.3 percent year-over-year for the second quarter of 2020.

All regions but the New England and Rocky Mountain regions showed year-over-year declines in withholding in the second quarter of 2020. The Rocky Mountain region reported strong year-over-year growth for the second quarter of 2020 at 7.7 percent, while the New England region had much weaker year-over-year growth at 2.5 percent. Withholding declines in the rest of the country ranged from 0.4 percent in the Southwest region to 2.8 percent in the Great Lakes region.

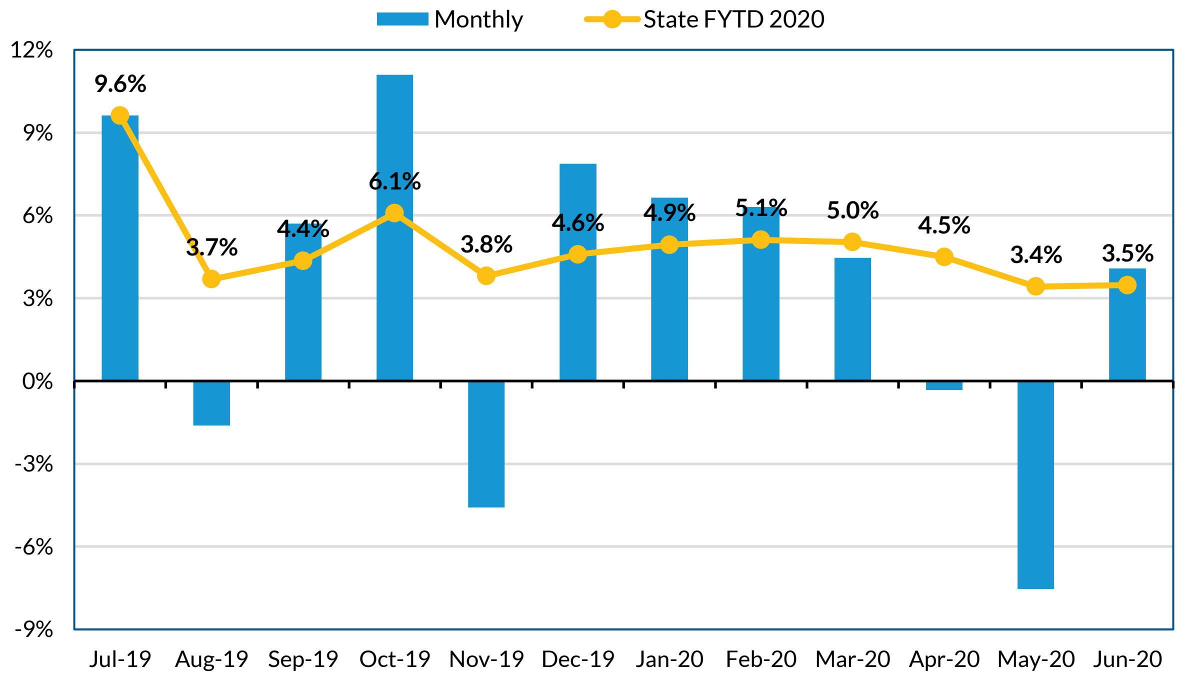
Twenty-two of the 41 states with a broad-based personal income tax reported declines in withholding in the second quarter of 2020 compared with a year earlier, with 4 states (Indiana, New Mexico, Ohio, and West Virginia) reporting double-digit declines. The weakness in withholding observed during the second quarter of 2020 was largely because of the economic disruptions caused by the COVID-19 pandemic, which triggered mass layoffs and furloughs beginning in the second half of March.

Figure 3 shows monthly and fiscal year-to-date growth rates in withholding between July 2019 and June 2020, which corresponds to state fiscal year 2020 in 46 states. Withholding was lower in August 2019 than in August 2018 and lower in November 2019 than in November 2018. These declines were likely linked to personal income tax rate cuts in about a dozen states. Further, the lower withholding in November 2019 relative to November 2018 was mostly attributable to a single state, California, where withholding was lower than a year earlier by $1.7 billion, or 24.9 percent. State officials interpreted November declines as a timing issue, because the large bonus day that usually follows Thanksgiving fell in December rather than November in 2019.[3] Because of this, California's withholding rebounded in December 2019 and increased by $1.3 billion, or 19.1 percent, over the December 2018 level. Withholding showed solid growth in January through March before crashing in April and May as the COVID-19 pandemic spread across the nation and left millions of Americans jobless. Yet several states saw some growth in withholding despite job losses. There was one silver lining for income tax withholding: the $600 weekly federal supplement to unemployment benefits led some recipients to withhold a portion for income tax payments. Officials in some states indicated that withholding increased in the second quarter of 2020 partially because state income tax was withheld on some unemployment benefits. The extra $600 federal unemployment benefit on top of existing state-level benefits meant that for some recipients income subject to withholding was larger than income earned while in the work force before the pandemic. Therefore, the additional $600 weekly unemployment insurance benefit not only helped many Americans continue to pay for everyday necessities, it also may have helped the 35 states with a broad-based income tax that tax unemployment benefits partially sustain withholding revenues. (Among the 41 states with a broad-based income tax, only 6 do not include unemployment benefits as taxable income: Alabama, California, Montana, New Jersey, Pennsylvania, and Virginia.)

FIGURE 3

Withholding Declined in April and May Amid Steep Job Losses

Percentage change in withholding tax collections compared with the previous year, monthly and year-to date for state fiscal year 2020



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Source: Individual state government agencies, analysis by the author.
Notes: FYTD = fiscal year to date.

Year-to-date growth in withholding for fiscal year 2020 was 3.5 percent, which was weaker than the growth rates observed in fiscal years 2017 through 2019. States collected around $350 billion in withholding revenues from July 2019 through June 2020. Year-to-date growth in withholding was stronger before the pandemic hit the US, and it would have been stronger absent the income tax rate cuts in several states. The subsequent weakness in withholding in April and May was caused by millions of people losing their jobs temporarily or permanently following the COVID-19 pandemic's spread to the United States and subsequent economic shutdowns.

Estimated Payments

Higher-income taxpayers (and the self-employed) generally make estimated tax payments (also known as declarations) on their income not subject to withholding. This income often comes from investments, such as capital gains realized in the stock market, or from self-employment or business income. Estimated payments normally represent a small share of overall income tax revenues, but because of their volatility, they can have a large impact on the direction of overall collections. Estimated payments accounted for 24.4 percent of total personal income tax revenues in the first quarter of 2020 and 14.0 percent in the second quarter of 2020.

The first estimated payment for each tax year is due in April in most states; the second, third, and fourth payments are generally due in June, September, and January, respectively (although many high-income taxpayers make the last estimated payment in December so that it is deductible on the federal tax return for that tax year rather than the next). In some states, the first estimated payment includes payments with extension requests for income tax returns for the previous tax year and is thus related partly to income received in that previous tax year. Subsequent estimated payments are generally related to income for the current tax year, although that relationship is often quite loose.

As noted, because the first estimated payment contains a combination of payments related to the current and prior tax year, it is not a good indication for the current strength of the economy. The second and third estimated payments are easier to interpret because they are almost always related to the current year, and they can give a real-time look at how the economy and income tax base are doing. Weakness in these payments can reflect weakness in nonwage income, such as that generated by the stock market. However, it can also be "noisy" in the sense that it reflects taxpayers' responses to tax-payment rules as well as to expected nonwage income.

The filing deadline for federal individual income tax returns was extended in 2020 from April 15 to July 15, and most states also delayed their filing deadlines.[4] The federal government also extended the filing deadline for estimated tax payments for tax year 2020 that were due on April 15. Twenty-nine states followed the federal government and extended the filing deadline for the first estimated payments attributable to tax year 2020 from April 15 to July 15.[5] To make things even more confusing, eight states (Delaware, Indiana, Nebraska, New Jersey, New York, Oklahoma, Rhode Island, and Tennessee) delayed the first estimated payments for tax year 2020 originally due on April 15 to July 15 but did *not* extend the deadline for the second estimated payments for tax year 2020, which were due on June 15. It appears that most taxpayers have filed first estimated payments for tax year 2020 with their 2019 income tax returns, even in the states where the first estimated payments for tax year 2020 were due in April. That could be because of confusion caused by differences between federal and state due dates for filing estimated payments for tax year 2020. In addition, estimated payments may have declined for some self-employed individuals if their earnings declined.

As expected, because of delays in filing deadlines, all states but Arizona and Illinois reported double-digit percentage-point declines from prior-year levels for the first estimated payments for tax year 2020, those that were to be filed in April 2020. Estimated payments due in April declined 82.3 percent on average compared with the prior year, but the decline in the median state was 72 percent (Table A4). Arizona and Illinois are among the states that had not extended the deadline for the first quarterly estimated payments for tax year 2020. That is the likely reason that those two states, in contrast with the others, saw growth in estimated payments in April. Declines in the second estimated payments for tax year 2020 were also steep and widespread, again likely because of delayed filing deadlines from June 15 to July 15. Estimated payments due in June declined 47.9 percent on average compared with the prior year; the decline in the median state was 38.8 percent. Finally, states also reported declines in the third estimated payments for tax year 2020 that were due in September, although such declines were less severe, an average of 1.6 percent (Table A4).

Personal income tax filing deadlines have now passed, and states have mostly processed income tax payments received in July, which can help gauge the strength of estimated payments attributable to tax years 2019 and 2020. In prior *State Tax and Economic Review* reports we have warned that because of wide fluctuations in the performance of financial markets, possible declines in self-employment income, and other changes in the economy related to the COVID-19 pandemic, estimated payments were likely to be lower in 2020. Now we have complete data for estimated income tax payments through September and our data show that 32 states reported declines in estimated payments for the April 2020 through September 2020 period compared with the same period in the prior year. Estimated payments for the nation declined by $6.9 billion or 13.2 percent between April to September compared with the same period last year.

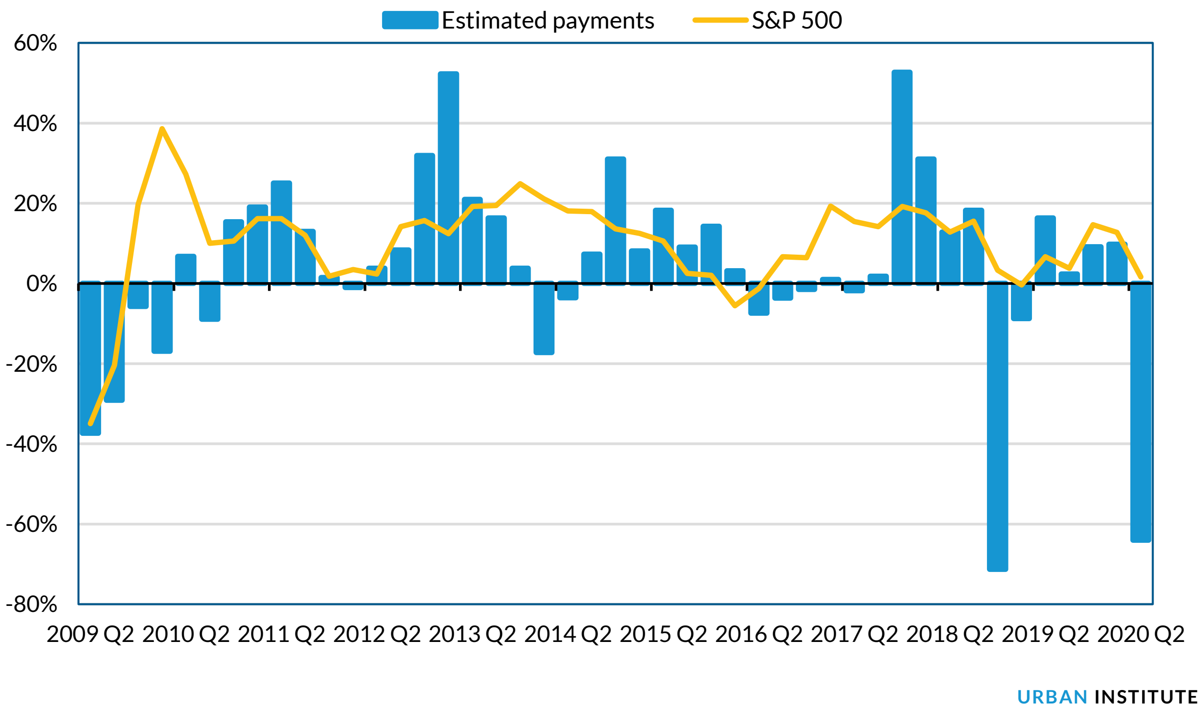
Figure 4 shows year-over-year percentage change by quarter in estimated payments and in the S&P 500 Index for the past 11 years. The longer-term trends indicate substantial volatility in estimated payments, which is partially caused by volatility in the stock market but is also affected by federal policy changes and taxpayers' subsequent behavioral changes related to tax timing. For example, growth in estimated payments in the final quarter of 2012 and the first quarter of 2013 was much larger than the growth rates in the S&P 500 Index because estimated payments were tied to the impact of the "fiscal cliff" budget deal as Congress raised top federal income tax rates for tax year 2013. Therefore, some high-income taxpayers accelerated income into tax year 2012 to avoid higher tax rates for future years. This led to large declines in the year-over-year comparisons for estimated payments the following year. Similarly, the substantial growth in estimated payments in the final quarter of 2017, as well as in the first quarter of 2018, and the steep declines in estimated payments in the final quarter of 2018 were mostly attributable to the passage of the TCJA. However, the further decline in estimated payments in the first quarter of 2019 was likely also driven by the weak stock market performance in December 2018 and

January 2019. In response to declines in realized capital gains, some taxpayers may have reduced their December 2018 and January 2019 estimated payments. After two consecutive quarters of decline, estimated payments rebounded and showed strong growth in the second quarter of 2019, compared with the year-earlier level; growth in the stock market was weaker for the same period. Estimated payments showed continued year-over-year growth for the second half of 2019 and for the first quarter of 2020; growth in the stock market was stronger for the same period. Finally, estimated payments saw steep declines at 64 percent for the second quarter of 2020 compared to the same period in 2019, mostly because of filing deadline extensions. For the second quarter of 2020, the stock market ended only 1.6 percent higher than for the second quarter of 2019.

FIGURE 4

Large Volatility in Estimated Payments

Year-over-year percentage change in estimated payments and S&P 500 Index



Source: Individual state government agencies and Yahoo Finance (S&P500), analysis by the author.

In general, estimated payments as a share of overall personal income taxes have grown somewhat over time. In state fiscal year 2018, estimated payments made up 22.2 percent of total personal income tax collections, up from 17.7 percent in fiscal year 2010 and 19.9 percent in fiscal year 2014. However, estimated payments as a share of total personal income tax collections declined in state fiscal year 2019, representing around 19.1 percent of the total, mostly because of the TCJA and subsequent income tax–shifting behavior. Estimated payments as a share of total personal income tax collections declined further in state fiscal year 2020, representing only 15.7 percent of the total with the decline mostly attributable to the shifting filing deadlines. The volatility of estimated payments adds more uncertainty to state income tax revenues and makes them harder to forecast. This was especially true this year because of the shift in tax filing deadlines.

Final Payments

Final tax payments normally represent a small share of total personal income tax revenues in the first, third, and fourth quarters of the tax year and a much larger share in the second quarter of the tax year because of the April 15 personal income tax return deadline.[6] Final payments accounted for 26.3 percent of all personal income tax revenues in the second quarter of 2019 but less than 7 percent in the third and fourth quarters of 2019 as well as in the first quarter of 2020. Because this year most states have extended the filing deadline for income tax returns from April 15 to July 15, final payments in the second quarter of 2020 represented only 17.9 percent of personal income tax revenues, because a significant share of final payments were shifted into the third quarter of 2020.

Table A5 shows year-over-year growth in final payments for the most recent eight quarters. Final payments on average showed double-digit percentage-point year-over-year growth for all four quarters of 2019, followed by double-digit declines in the first and second quarters of 2020. Final payments on average declined 10.3 percent compared with the prior year for the first quarter of 2020, but the decline in the median state was only 0.9 percent. The average year-over-year decline in final payments was steeper in the second quarter of 2020 at 55.7 percent, and the decline in the median state was even larger at 68.5 percent.

Year-over-year declines in final payments were widespread across the states for the second quarter of 2020, with 37 states reporting declines compared with a year earlier. (Because final amounts are relatively small as a share of total personal income tax revenues, small dollar changes can cause large variations in percentage changes.) These declines were largely caused by the COVID-19 pandemic and the resulting shift in due dates for income tax returns and payments to July 15.

Refunds

By definition, personal income tax refunds represent a negative share of personal tax revenues and usually are a small amount in the third and fourth quarters of the tax year and a much larger negative amount in the first and second quarters of the tax year.

Refunds compared with the prior year declined 0.3 percent for the first quarter of 2019 and 1.1 percent for the second quarter of 2019 but increased 8.2 and 7.4 percent, respectively, for the third and fourth quarters. Refunds increased further, 9.9 percent, for the first quarter of 2020 compared with the first quarter of 2019 but declined 16.4 percent for the second quarter of 2020. In total, states paid out $3.9 billion less in tax refunds in the second quarter of 2020 than in the second quarter of 2019, mostly because of the later processing of income tax refunds caused by delayed income tax filing deadlines.

In total, only six states paid out more in tax refunds in the second quarter of 2020 compared with the same quarter in 2019. Oregon was among the six states and had the largest increase in refunds in dollar value ($290 million) in the second quarter of 2020, largely attributable to the state's "kicker" rebate. Oregon's 2 percent kicker law requires the state to refund surplus revenue to taxpayers when actual general fund revenues exceed the forecast amount by more than 2 percent. Taxpayers in Oregon were expected to receive a credit on their 2019 income tax returns because the state had a $1.6 billion tax surplus for the 2017–19 biennium.[7]

Actual versus Forecasted Income Tax Revenues

We collect data on actual and forecasted amounts for monthly personal income tax revenue from the states. April is typically the most important month in the year with nearly 15 percent of all income tax revenues collected. Although monthly personal income tax forecast information is not available for all states, it was available for 24 states (Table 3). In this section, we present data for the April–June quarter to illustrate the variance between actual and forecasts personal income tax revenues. As expected, this April was drastically different because of extended income tax filing deadlines and the impact of the COVID-19 pandemic.

Actual personal income tax collections in the second quarter of 2020 were lower than in the second quarter of 2019 in 19 of the 24 states for which we have detailed data. Personal income tax collections declined more than 20 percent in the April–June 2020 quarter in 16 states. Although steep declines were largely expected because of the extended income tax filing deadlines, these declines still created substantial budgetary gaps for state officials in fiscal year 2020.

Actual personal income tax collections in the April–June 2020 quarter were also dramatically lower than forecasts in 16 states and above the forecasts in 8 states, with an average overestimate of 40.9 percent and a median overestimate of 25.2 percent (Table 3). Most states prepared their monthly forecasts well before the pandemic hit the US, so large overestimations were inevitable. States where actual revenue collections outperformed revenue forecasts updated their forecasts once the pandemic was widely recognized, but even those states were unable to forecast revenues precisely.

TABLE 3

Actual versus Forecasted State Personal Income Tax Revenues for April-June 2020

Dollar amounts in millions

	April-June 2019 actual	April-June 2020 actual	April-June 2020 forecast	Percent change, April-June 2020 vs April-June 2019	Percentage variance, April-June 2020 actual from forecast
Median				***(26.9)***	***(25.2)***
Average	***$89,837***	***$51,915***	***$87,839***	***(42.2)***	***(40.9)***
Arizona*	$1,806	$1,139	$759	(36.9)	50.1
Arkansas*	$960	$741	$502	(22.8)	47.8
California	$36,913	$16,038	$37,347	(56.6)	(57.1)
Colorado*	$2,783	$1,901	$2,000	(31.7)	(4.9)
Idaho	$713	$798	$797	12.0	0.1
Indiana	$2,211	$1,309	$2,188	(40.8)	(40.2)
Kansas*	$1,474	$851	$803	(42.2)	6.0
Maine*	$584	$656	$617	12.4	6.2
Massachusetts	$6,046	$3,540	$5,950	(41.4)	(40.5)
Minnesota*	$4,545	$4,048	$2,913	(11.0)	38.9
Mississippi	$720	$570	$698	(20.8)	(18.3)
Montana	$494	$331	$477	(33.1)	(30.7)
Nebraska	$886	$648	$901	(26.9)	(28.1)
New Mexico	$559	$595	$513	6.3	16.0
New York	$16,910	$8,634	$17,562	(48.9)	(50.8)
North Dakota	$156	$103	$144	(33.8)	(28.4)
Ohio	$2,838	$1,874	$2,680	(33.9)	(30.0)
Oklahoma	$776	$630	$946	(18.8)	(33.4)
Pennsylvania	$4,690	$3,075	$4,795	(34.4)	(35.9)
Rhode Island	$474	$447	$509	(5.7)	(12.2)
South Carolina	$1,364	$1,492	$1,439	9.4	3.7
Vermont	$327	$178	$314	(45.6)	(43.4)
West Virginia	$690	$513	$686	(25.6)	(25.2)
Wisconsin	$2,725	$2,942	$3,057	8.0	(3.8)

Source: Individual state data, analysis by the author.

Note: * Forecasts in these states were prepared after the pandemic spread to the United States.

In the past two years, state revenue forecasters faced many uncertainties related to the passage of the TCJA and warned that forecasts were subject to higher-than-usual margins of error because forecasting taxpayers' behavioral responses to the federal tax policy changes would be difficult. State revenue forecasters are now facing even larger challenges in forecasting because of uncertainties about the length and severity of the pandemic and associated economic damage (Dadayan 2020c).

Corporate Income Taxes

State corporate income tax revenue is highly volatile because corporate profits and the timing of tax payments can vary and shift across quarters. Further, most states collect a small share of state revenues from corporate taxes and can therefore experience large fluctuations in percentage terms, with little overall budgetary impact. Average quarterly year-over-year growth rates in state corporate income tax collections were 3.7 percent in nominal terms and 1.9 percent in real terms since 2010 (Table A1).

State corporate income tax revenue saw steep declines during the Great Recession and only recently approached or surpassed levels observed before the Great Recession, driven by strong growth in reported profits following enactment of the TCJA. This growth weakened substantially in early 2020 and fell off because of the COVID-19 pandemic. Year-over-year corporate income tax receipts grew by double digits in percentage-point terms for seven consecutive quarters, from the second quarter of 2018 through the fourth quarter of 2019. However, the strong growth observed during that time was largely attributable to the TCJA, which created an incentive for corporations to shift profits from tax year 2017 into tax years 2018 and beyond because of the law's lower federal corporate income tax rates.

With the change in NOL carryback provisions under the CARES Act, some states may see revisions in prior-year state corporate income tax returns. More than half of the states (including states with large shares of corporate income tax revenues, such as California, Illinois, New Jersey, and New York) have decoupled from the federal NOL carryback provisions. States that conform with the federal NOL carryback provisions may have state-specific restrictions on either the timing or the amount of the allowable carrybacks.

To mitigate the impact of the pandemic, the Internal Revenue Service extended the filing deadline for corporations filing calendar year income tax returns from March 15, 2020 to July 15, 2020.[8] Many states followed and extended corporate income tax return and payment due dates as well. This led to steep declines in state corporate income tax revenues in the second quarter of 2020.

State corporate income tax revenues declined 44.2 percent in the second quarter of 2020 compared with a year earlier. Declines were steep and widespread, with 41 states reporting double-digit percentage point declines and only 3 states reporting single-digit declines (Table A2). Corporate income tax collections saw double-digit percentage point declines across all regions. The Far West region saw the steepest year-over-year decline in corporate income tax revenues, at 68.2 percent, while the New England region saw the smallest decline at 23.9 percent. However, as with personal income taxes, some of these declines are caused by the delays in filing deadlines and will be offset or mitigated by increased revenues in the third quarter.

The future of corporate income tax collections is unpredictable not only because of the impact of the COVID-19 pandemic, but also because of the various provisions of the TCJA, some of which might be altered under the incoming Biden administration. (See prior *State Tax and Economic Review* reports for detailed discussions of the TCJA provisions and its impact on state corporate income taxes.)

Before the pandemic greatly affected the US economy, states were already forecasting lower corporate income tax collections for fiscal years 2020 and 2021, mostly because of higher costs for business inputs and a weaker global economy (Dadayan 2020c). Moreover, data from the Bureau of Economic Analysis indicated substantial weakness in business investment even before the onset of the pandemic,[9] which implied lower corporate income tax revenue collections. Now, besides the anticipated temporary increase in corporate income tax revenues from the shifting of filing deadlines, state corporate income tax revenues will likely continue to see trend declines in the coming months because of the economic downturn. Corporate income tax revenues will be especially affected for firms in the hospitality, entertainment, travel, and oil and gas industries, all of which have been significantly affected by the pandemic.

General Sales Taxes

General state sales tax collections declined 13.2 percent in nominal terms for the second quarter of 2020 compared with the same period in 2019 (Table A1). This marked the first time in a decade that year-over-year quarterly sales tax revenues declined. Before the pandemic, sales tax collections had grown continuously since the first quarter of 2010 in nominal terms, and growth generally has been steady if unspectacular.

Year-over-year sales tax collections declined in all regions for the second quarter of 2020 (Table A2). The Southwest region reported the steepest average decline at 23.2 percent; the Rocky Mountain region reported the smallest average decline at 2.0 percent.

Thirty-nine of 45 states with broad-based sales taxes reported declines in sales tax collections for the second quarter of 2020 compared with the prior year. Nineteen states reported double-digit percentage point declines. Arkansas, Idaho, Nebraska, New Mexico, South Dakota, and Utah reported growth in sales tax collections. Among these states, Idaho and South Dakota impose their full sales tax rate on grocery food, although Idaho provides some credits to lower-income households. Arkansas and

Utah also impose sales tax on grocery food but at reduced rates. In addition, officials in Arkansas, Nebraska, South Dakota, and Utah did not mandate statewide stay-at-home orders, and economies in these states remained largely open during the first phase of the pandemic.

The recovery in sales tax collections was relatively slow following the Great Recession. Since 2010, the average quarterly year-over-year growth rate in state sales tax collections was 3.7 percent in nominal terms and 2.0 percent in real terms. The weak annual growth rate in sales tax collections was partially attributable to tax dollars lost because online retail sellers were not collecting and remitting sales tax on some or all sales. However, growth in sales tax revenue collections strengthened in the recent past, largely because of sales tax base expansions in several states and because of states' efforts to capture tax revenues from a larger share of online sales following the *Wayfair* decision.

On June 21, 2018, the US Supreme Court ruled in favor of South Dakota in *South Dakota v. Wayfair*,[10] which ultimately gives states the authority to require out-of-state sellers with at least a specified amount of sales within the state to collect sales taxes and transfer the revenues to state governments. Since the Supreme Court's *Wayfair* ruling, 43 of 45 states with general sales taxes have enacted laws or regulations to require sales tax collections by remote sellers. The remaining two states, Florida and Missouri, have bills under consideration that are likely to be enacted into law in the coming months. States have set different sales and volume thresholds for internet sales taxation (Table A6). Finally, most states have also enacted laws or regulations requiring marketplace facilitators to collect sales taxes on behalf of their sellers.

Implementing online sales taxation by states does not address if and how local jurisdictions that operate independently and have independent taxing authority will be able to collect sales taxes from remote sellers. However, some states (e.g., Alabama and Texas) have either passed legislation or continue debating regulations for creating a "single local use tax rate" that remote sellers can use to calculate the local tax due instead of applying local sales tax rates for the specific jurisdiction in which a sale is made.

Before the COVID-19 pandemic acutely hit the US, we had projected that growth in sales tax revenues would level off. The pandemic has a detrimental impact on state sales tax revenue collections, particularly in states with high reliance on the tourism, entertainment, and hospitality service industries. Federally mandated travel restrictions and state or regionally mandated restrictions on a wide range of businesses and services resulted in less business activity, less consumer spending, and therefore less sales tax revenue collections for states, particularly during the second quarter of 2020. This also led to a spike in overall personal savings as many people stayed home and therefore reduced their spending. Further, because of mass layoffs and furloughs, many people likely tried to spend less and save more. The national savings rate jumped from 9.6 percent in the first quarter of 2020 to 25.7 percent in the second quarter of 2020, the highest rate on record since 1948. However, this may be a temporary boost as individuals better understand the likelihood of job loss or reduced work hours, particularly during the second phase of the pandemic. The higher savings rate, although beneficial for many individuals, means lower current demand. For these reasons we maintain a depressed state sales tax revenue outlook during the pandemic. Our previous analysis indicated that sales tax revenues shrank by over $6 billion in the month of May alone (Dadayan 2020d).

Motor Fuel Taxes

State motor fuel sales taxes declined 18.1 percent year-over-year for the second quarter of 2020. This is the first time that motor fuel sales taxes declined in nominal terms since the first quarter of 2013. Moreover, the declines in motor fuel sales taxes observed in the second quarter of 2020 were much steeper than declines observed throughout the Great Recession.

Motor fuel sales tax collections have fluctuated since the Great Recession. Average quarterly year-over-year growth in state motor fuel tax collections has been 3.6 percent in nominal terms and 1.9 percent in real terms since 2010. Economic growth, changing fuel prices, general increases in fuel efficiency, and changing driving habits all affect gasoline consumption and motor fuel taxes. Changes in state motor fuel tax rates also affect tax collections.

Growth rates from the second quarter of 2019 to the second quarter of 2020 varied widely across the states and the regions (Table A2). Motor fuel tax revenue collections decreased in all regions but the Great Lakes, where revenues increased 1.2 percent. The steepest declines were in the Mideast and Far West regions, at 25.4 and 25.1 percent, respectively.

Forty-three states reported year-over-year declines in motor fuel sales tax collections for the second quarter of 2020; 39 states reported double-digit declines. In total 7 states reported growth in motor fuel sales tax collections in the second quarter of 2020 compared with the same quarter in 2019. Growth in these states was mostly caused by motor fuel tax rate increases. For example, Illinois doubled its motor fuel tax rate from 19 cents a gallon to 38 cents a gallon and increased the diesel fuel rate from 21.5 cents to 45.5 cents, effective July 1, 2019.[11] Ohio increased its gasoline tax rate from 28 cents a gallon to 38.5 cents a gallon and increased the tax rate for diesel and all other fuel types from 28 cents a gallon to 47 cents a gallon.[12] Hawaii too increased motor fuel tax rates effective July 1, 2019; tax rate increases in Hawaii vary by county.[13]

Steep declines in motor fuel sales tax revenue collections in the second quarter of 2020 were largely anticipated because of stay-at-home orders across states earlier in the spring and because many employees continue to work remotely, which has drastically reduced commuting traffic.

Other Taxes

The US Census Bureau's quarterly data on state tax collections provide detailed information for some of the smaller revenue sources, including state property taxes, tobacco products excise taxes, alcoholic beverage excise taxes, and motor vehicle and operators' license taxes. In Table A7, we show year-over-year growth rates for four-quarter moving average inflation-adjusted revenue for the nation as a whole. In the second quarter of 2020, states collected $51.5 billion from all the smaller tax sources, which constituted 20.4 percent of total state tax collections.

Compared with major tax sources, revenues from smaller taxes have been growing at a slower pace since the Great Recession. The average quarterly year-over-year growth rate in state tax revenues from smaller sources was 1.8 percent in real terms since 2010.

The four-quarter moving average of inflation-adjusted revenues from smaller tax sources showed a 3.3 percent decline for the second quarter of 2020 compared with the same quarter in 2019. State property taxes, which represent a small portion of overall state tax revenues, increased 0.5 percent. Tax revenues from motor vehicle and operators' licenses decreased 3.3 percent, and tax revenue from alcoholic beverage sales decreased 2.6 percent. Revenue from tobacco product sales decreased 2.7 percent, marking the seventh consecutive quarter of decline. Finally, revenues from all other smaller tax sources decreased 4.0 percent in the second quarter of 2020 compared with levels a year earlier.

Overview of Tax Revenues in State Fiscal Year 2020

Most states have now closed out state fiscal year 2020, and most states ended the year with lower revenues. According to preliminary data, in state fiscal year 2020, states collected $1,034 billion in total tax revenues, which was a decline of $46.4 billion or 4.3 percent from the prior year (Table A8). The declines in state tax revenues broke a 10-year long expansion. Before the spread of the COVID-19 pandemic, states were reporting steady revenue growth and were forecasting solid growth for fiscal year 2020 (Dadayan 2020c). But the pandemic and subsequent federal and state policy actions rapidly altered states' fiscal year 2020 trajectory for revenues (Dadayan 2020a). As noted, although revenues declined in most states in fiscal year 2020, some of the declines and budget deficits at the end of the fiscal 2020 reflected the delay of income tax revenues into July and therefore into the first quarter of fiscal year 2021. States largely passed fiscal year 2021 budgets reflecting the need to make up any prior year deficits with the delayed income tax payments or to pay for services with federal funds or using earlier surpluses.

All regions reported declines in state tax collections in fiscal year 2020. The Far West region had the steepest year-over-year decline at 8.0 percent, while the Southeast region had the smallest decline at 1.4 percent Thirty-five states reported year-over-year declines in overall state tax revenues in fiscal year 2020, with 14 states reporting declines of over 5 percent. In total, 14 states reported some growth in state fiscal year 2020 tax revenue collections. Several factors played a role in these patterns. First, some of the states reporting growth in revenues shifted income tax revenue to fiscal year 2020, even though the revenues were received in July because of the extended income tax filing deadlines. Second, states with sales tax charged on grocery food purchases helped maintain revenues as consumers were stocking up. Third, states that did not impose statewide lockdowns and kept their economies open seemed to see smaller declines in revenues. Finally, many of the states reporting growth for fiscal year 2020 were not as harshly impacted by the pandemic as some other states. The last two reasons can be connected, because places with fewer COVID-19 cases may have more easily maintained economic activity. If caseloads are high, even without government mandates, economic activity is still likely to be affected, reflecting behavioral responses to the pandemic.

In contrast, states with the steepest revenue declines were often those with the highest caseloads and economies largely dependent on tourism, entertainment, or natural resources and some of these states had stricter initial responses to the pandemic. Note also that these patterns are likely to change in the coming months given the recently rising caseload numbers throughout the country.

Among individual states, Alaska and North Dakota saw the steepest year-over-year declines in state revenues at 32.6 and 12.0 percent, respectively. Both states have a high reliance on the oil and gas industry and thus on severance tax revenues (Dadayan and Boyd 2016). Severance tax revenues saw substantial declines even before the pandemic because of weakness in oil and natural gas prices last year and the freefall of prices in April; this subsequently led to weaknesses in overall state tax revenues.

All major sources of state tax revenues except sales taxes declined for fiscal year 2020, compared to 2019 levels. Personal income tax revenues totaled $380.5 billion, which was $34.6 billion or 8.3 percent lower for fiscal year 2020 than for fiscal year 2019. The decline for the median state was 5.7 percent. Overall, 33 states reported year-over-year declines while 10 states reported growth in personal income tax revenues for fiscal year 2020. Personal income tax revenues fared well in most states before the pandemic. Declines in personal income tax revenues in fiscal year 2020 were certainly caused by the delays in state tax filing deadlines. According to our preliminary analysis, about 15 states had accrued income tax revenue in fiscal year 2020 though it was received after the end of the fiscal year. These deferred income tax revenues change the personal income tax revenue picture from gloomy to cloudy. In addition, the pandemic's impact on state personal income tax revenues has tended to be less severe in the states that have progressive income tax rates and thus have greater reliance on high-income taxpayers. That mostly reflects the fact that the majority of Americans who have been economically affected by the pandemic's recession are lower-wage earners. Moreover, as discussed above, the $600 weekly federal supplement to unemployment benefits may have helped states sustain their income tax withholding revenues.

Corporate income tax revenues totaled $51.1 billion, which was $8.6 billion or 14.5 percent lower in fiscal year 2020 than in fiscal year 2019. Decline in the median state was 12.9 percent. Overall, 37 states reported declines and only 8 states reported growth in corporate income tax revenue collections in fiscal year 2020 compared with year-earlier levels. Fiscal 2020 year-end declines in corporate income tax revenues were also affected by the delay in filing deadlines, which largely shifted corporate income tax revenues from the final quarter of fiscal year 2020 into the first quarter of fiscal year 2021.

Sales tax revenues totaled $333.6 billion, which was $1.4 billion or 0.4 percent higher in fiscal 2020 than in fiscal year 2019. Growth in the median state was stronger at 1.4 percent. Thirty states reported year-over-year growth in sales tax revenue in fiscal year 2020, while 15 states reported declines.

Finally, motor fuel tax revenues totaled $52.0 billion, which was $0.1 billion or 0.2 percent lower in fiscal year 2020 than in fiscal year 2019. The observed revenue decline in the median state was higher, at 2.5 percent. Only 15 states reported growth in motor fuel tax revenue collections; 35 states reported declines. The relative stability in motor fuel tax revenues was related to increased tax rates in some states, most notably the large excise tax rate increases in Illinois and Ohio.

Preliminary Review of State Revenues during the Pandemic

In this section we present the state revenue picture for the six-month period from April to September. Comparing states' revenue performance from April to September 2020 to the same period during the prior year is a deviation from the typical approach of analyzing data on a quarterly or annual basis.

However, this alternative six-month range is useful because several states moved their income tax filing deadlines from April to July this year because of the pandemic and these new deadlines shifted the receipt of income tax revenues between quarters and fiscal years. Preliminary data collected for the April-September period (Table A9) show year-over-year declines in overall state tax collections as well as in all major sources of state revenues: personal income, corporate income, and sales tax collections.

Overall state tax collections declined 5.2 percent for the April to September 2020 time period, compared with the same period in 2019. The comparable decline for the median state was 3.8 percent. Thirty-nine states reported year-over-year declines, with 8 states reporting double-digit percentage point declines. The steepest revenue declines were in states with a relatively high reliance on tourism and hospitality activities (e.g., Hawaii, Florida, and Nevada). States that depend heavily on the oil industry (e.g., Alaska and North Dakota) also experienced sharp reductions in tax collections.

Personal income tax collections for the April to September 2020 period declined 2.8 percent compared with the same period a year earlier. The rate of decline for the median state was 2.1 percent. Twenty-eight states reported year-over-year declines, while 14 states reported growth. Declines in personal income tax revenue were not as steep as initially forecasted largely because many of those who temporarily or permanently lost their jobs because of the pandemic were low-wage earners.

State sales tax collections for the April to September 2020 period declined 5.8 percent compared with the same period a year earlier. The comparable decline for the median state was 2.0 percent. Thirty states reported declines in sales tax collections, while 15 states reported increases. The pandemic-induced recession brought significant changes to consumer spending behavior, spending outlets, and spending subjects. Spending at online retailers surged during the pandemic, while many small and medium businesses continue facing fiscal strains. Even as some states have seen rebounding sales tax revenues recently, that could well change in the coming months. With winter ahead and COVID-19 cases spiking, overall economic activity is likely to diminish as many states have tightened restrictions.

Finally, corporate income tax revenues declined 8.9 percent year-over-year for the April to September period. The comparable decline for the median state was 7.5 percent. Thirty-five states reported declines, while 8 states reported growth.

Looking at the coming months, state revenues are likely to remain depressed because of the recent surge in COVID-19 cases and associated economic disruptions. Many states closed their fiscal year 2020 with revenue shortfalls. And states may end up with even more shortfalls in fiscal year 2021. We estimated a total $200 billion tax revenue shortfall for fiscal years 2020 and 2021 combined, when compared with tax revenue forecasts prepared before the pandemic (Dadayan 2020b).

Factors Driving State Tax Revenues

State revenues vary across place and time because of three underlying forces: state-level changes in the economy (which often differ from national trends), different ways that national economic changes and trends affect each state's tax system, and legislated changes in tax rates or rules. The next two sections discuss changes in both economic conditions and recently legislated tax changes.

Economic Indicators

Most state tax revenue sources are heavily influenced by the economy. In general, state tax revenues rise when the state economy grows, income taxes grow when resident incomes go up, sales taxes generate more revenue when consumers increase their purchases of taxable items, property taxes increase when house prices go up, and so on.

State Gross Domestic Product

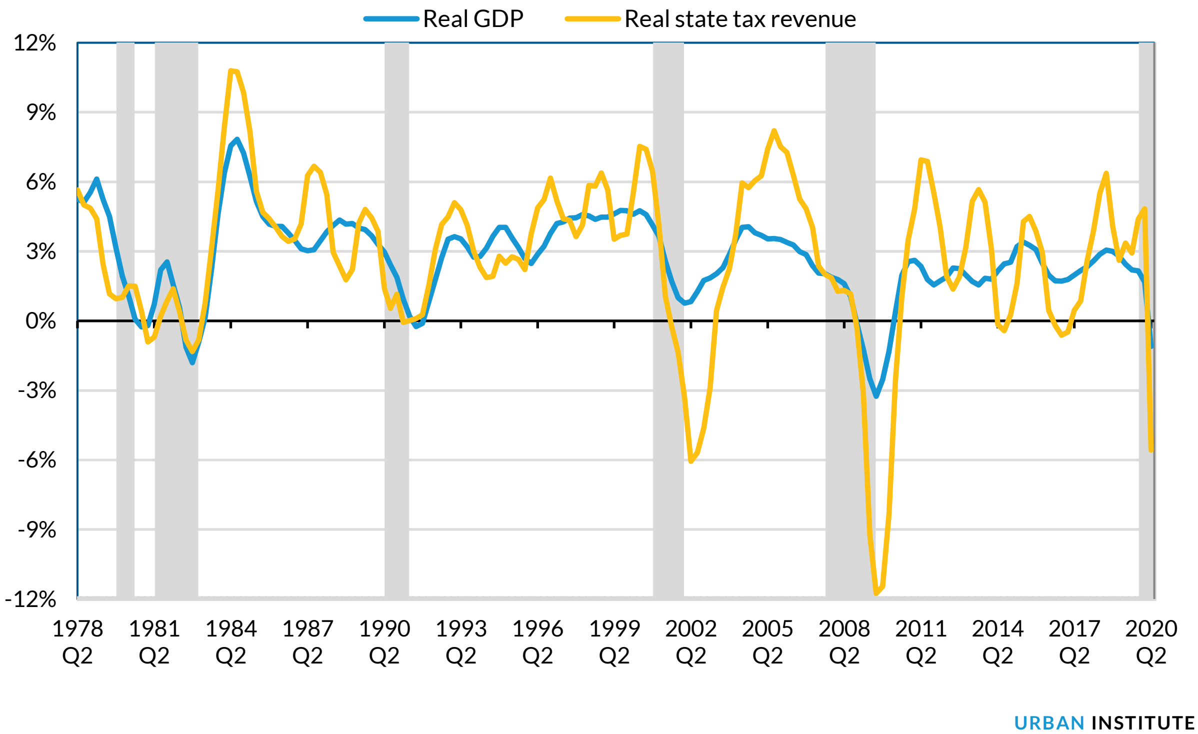
When the economy booms, tax revenues tend to rise rapidly, and when the economy declines, revenues tend to decline, though these changes have different patterns and timing. Figure 5 shows year-over-year growth for four-quarter moving averages in real state tax revenue and GDP. We present moving averages to smooth short-term fluctuations and illustrate the interplay between the state of the economy and state revenues. As shown in Figure 5, real GDP showed uninterrupted growth since the second quarter of 2010. Real GDP growth weakened throughout 2019 and the first quarter of 2020 and declined in the second quarter of 2020, based on the four-quarter moving-average measure. Real state tax revenues also declined in the second quarter of 2020. The declines in GDP and in state tax revenues were primarily because of the global pandemic.

Volatility in state tax revenue is not fully explained by changes in real GDP, a broad measure of the economy. State tax revenues became far more volatile in the past two decades, mostly because of changes in state tax rates and states' growing reliance on income taxes, some of which are progressive and very dependent on volatile income sources such as stock options and capital gains.

FIGURE 5

State Tax Revenue Is More Volatile Than the Economy

Year-over-year change in real state taxes and real GDP



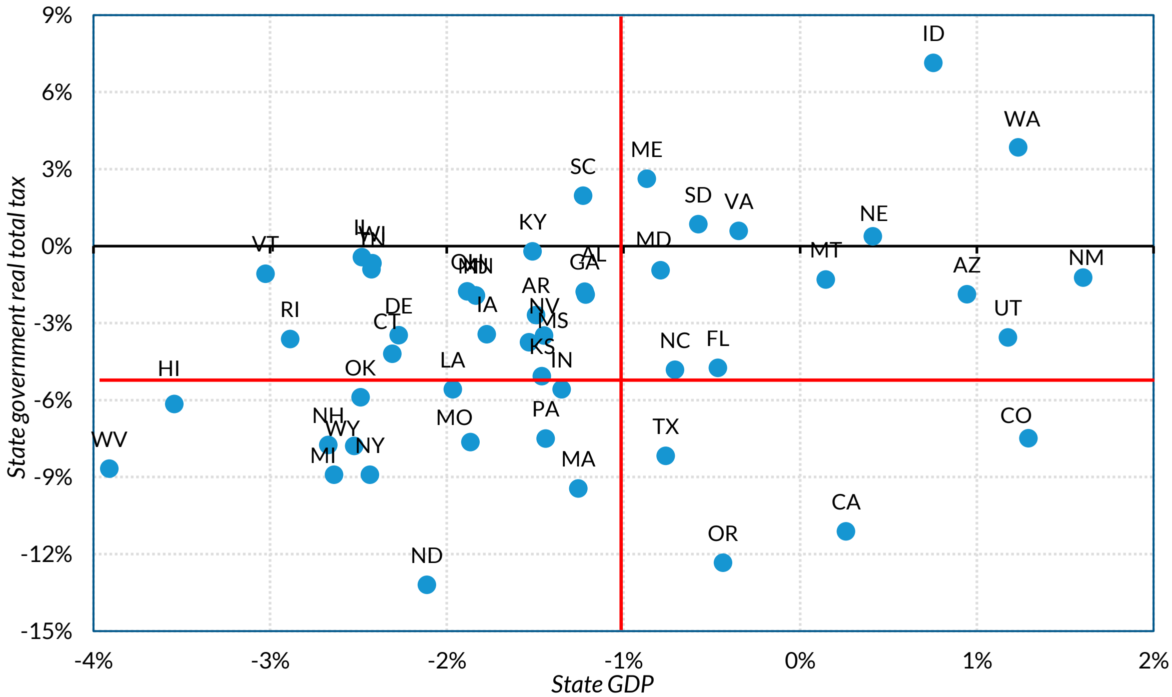
Source: US Census Bureau (tax revenue) and Bureau of Economic Analysis (GDP), analysis by the author.
Notes: Year-over-year change is the percentage change of four-quarter moving averages. Data are adjusted for inflation.

States vary substantially in terms of the correlation between growth rates in real state tax revenues and state GDP. Figure 6 shows for each state the four-quarter moving averages in real state tax revenue and real state GDP for the second quarter of 2020 compared with the same quarter in 2019. By this measure, real state tax revenues decreased in 43 states, and real state GDP decreased in 41. (Alaska is an outlier state and is excluded from Figure 6 to better display the overall relationship.) The year-over-year change in real state tax revenues ranged from negative 33.6 percent for Alaska and negative 13.2 percent for North Dakota to 7.1 percent growth for Idaho; the change in real state GDP ranged from negative 3.9 percent for West Virginia to 1.6 percent growth for New Mexico. The national average year-over-year decline in real state GDP was 1.0 percent and the national average year-over-year decline in real state tax revenues was 5.6 percent, based on the four-quarter moving-average measure.

FIGURE 6

Growth Disparity: State Tax Revenues versus State GDP

Year-over-year change in real state taxes and real GDP, 2020 quarter 2 versus 2019 quarter 2



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Source: US Census Bureau (tax revenue) and Bureau of Economic Analysis (GDP), analysis by the author.
Notes: Year-over-year change is the percentage change of four-quarter moving averages. Data are adjusted for inflation. Red lines show US averages. Figure excludes Alaska because it is an outlier.

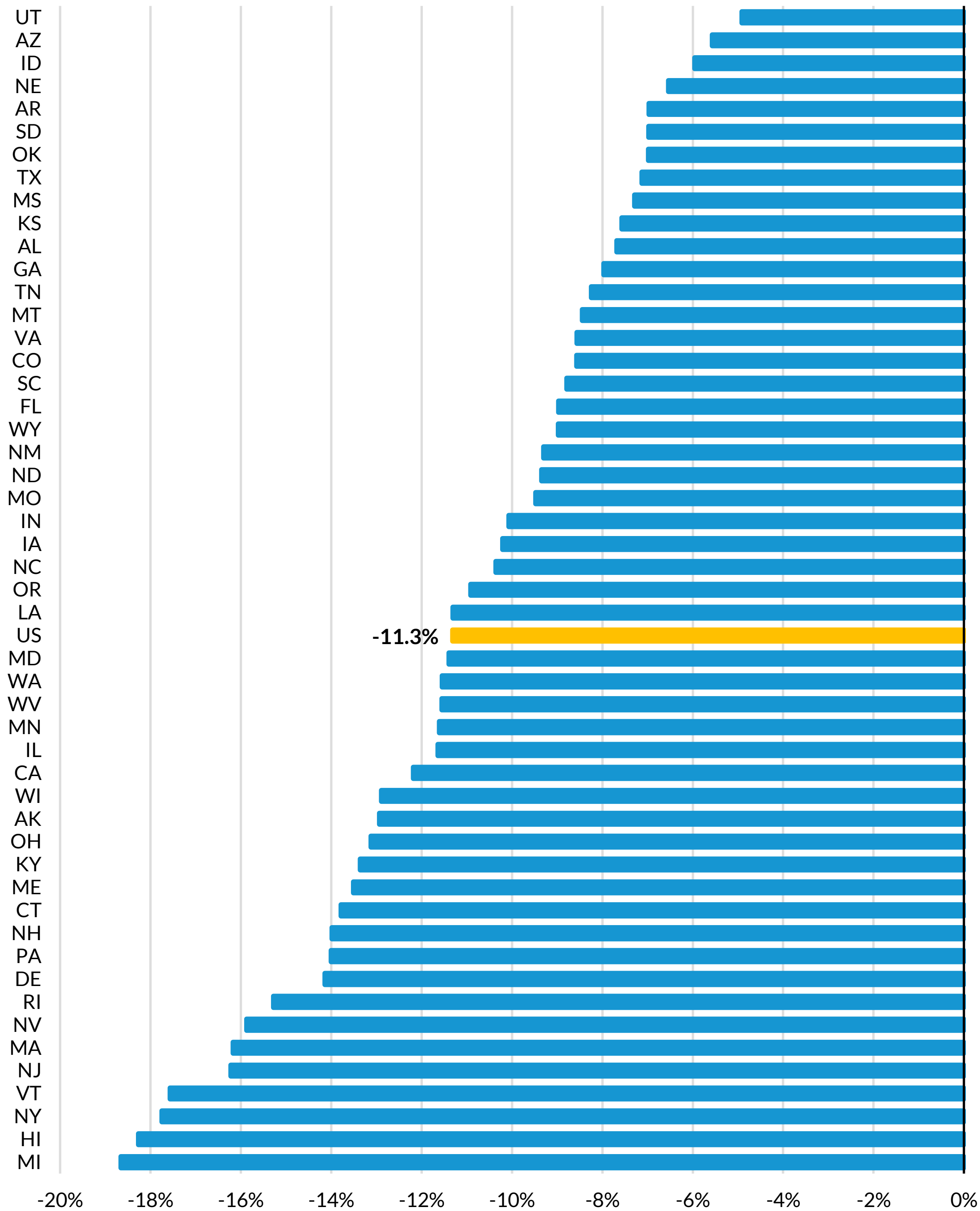
State Unemployment and Employment

The national unemployment rate climbed to 9.9 percent in the fourth quarter of 2009, which was the highest rate observed since 1982. Until the pandemic, the unemployment rate had seen nearly uninterrupted decline from that peak. The unemployment rate was 3.5 percent in the fourth quarter of 2019, which was a 50-year low.[14] The unemployment rate increased to 3.8 percent in the first quarter of 2020 and increased to 13 percent in the second quarter of 2020, marking the highest level on record since 1948. Unemployment rates ranged from 6.9 percent in Nebraska to 23.5 percent in Nevada for the second quarter of 2020. The national unemployment rate dropped to 8.8 percent in the third quarter of 2020.

FIGURE 7

Steep Declines in Employment in the Second Quarter of 2020, by State

Year-over-year change in seasonally-adjusted employment, 2020 quarter 2 versus 2019 quarter 2



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Source: Bureau of Labor Statistics, analysis by the author.

Since mid-March, when the novel coronavirus began to spread more quickly across the US and governments announced state-mandated restrictions, the sum of weekly unemployment insurance claims has exceeded 66 million, surpassing levels seen during the Great Recession and prior three recessions (Dadayan and Charleston 2020).

Nationwide employment declined 11.3 percent in the second quarter of 2020 compared with the same quarter in 2019 (Figure 7). Employment declines were particularly steep in states with high reliance on hospitality and tourism industries such as Hawaii and Nevada as well as in states that experienced high numbers of COVID-19 cases during the first phase of the pandemic, such as Michigan and New York. Employment declines year-over-year ranged from 4.9 percent in Utah to 18.7 percent in Michigan for the second quarter of 2020. Many states will likely see further declines in employment in the coming months due to the recent surge in COVID-19 cases across the nation.

Personal Consumption Expenditures

"Personal consumption expenditures" is a measure of national consumer spending. The measure shows the value of the goods and services purchased by American consumers and is correlated with the base for states' sales taxes. Figure 8 displays the year-over-year percentage change in the four-quarter moving average of real personal consumption expenditures for services, durable goods, and nondurable goods, as well as for aggregate state real sales tax collections. We also show trends in the consumption of energy goods and services.

Before the pandemic, overall growth rates for both goods and services were weaker than growth rates observed before the Great Recession. Growth rates in state sales tax revenues were also substantially weaker than their prerecession peaks, although growth in sales tax revenues improved after the *Wayfair* decision as states started requiring remote sellers to collect and remit sales and use tax. Year-over-year spending on durable goods and services declined an average of 0.3 percent in the second quarter of 2020, while year-over-year spending on nondurable goods increased.

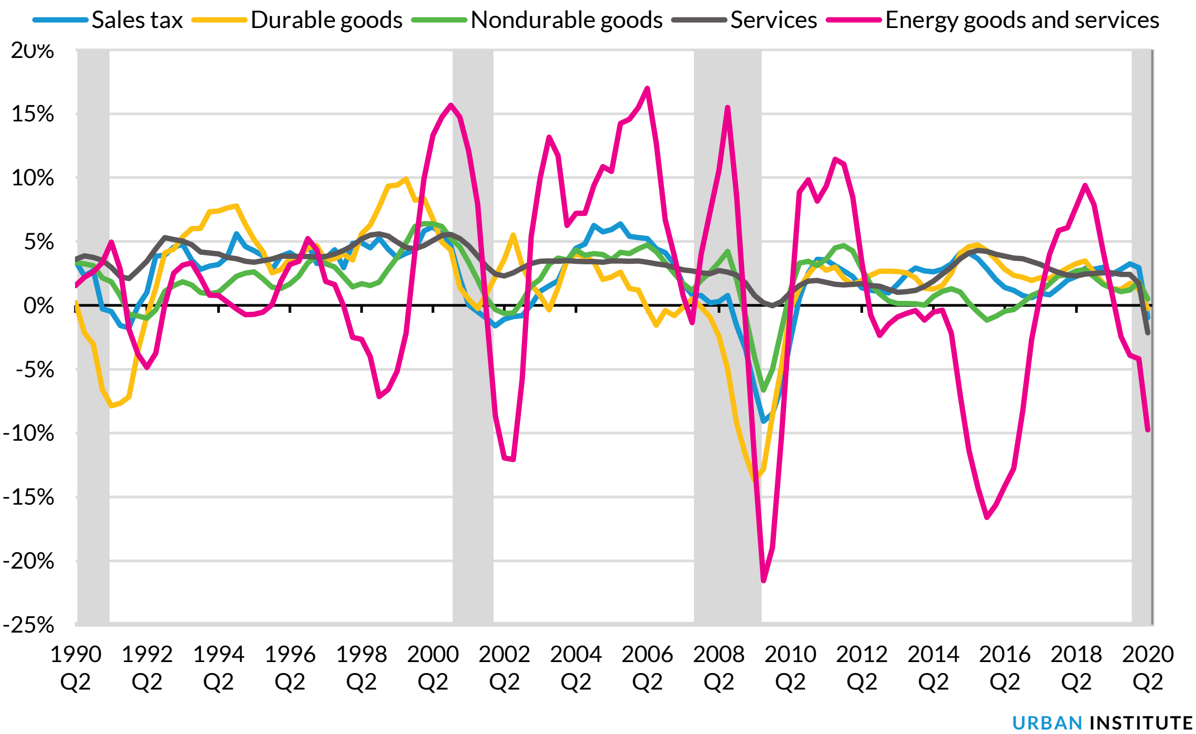
Year-over-year spending on services also declined for the second quarter of 2020, at 2.1 percent. This decline in spending on services was the first one on record since 1948. American consumers spend substantially more on services (70 percent of total consumption) than on goods, and spending on services as a share of total personal consumption has grown steadily throughout the past four decades. Although some states have expanded their sales tax bases to include some services, many services are still not subject to state sales tax. And some states, such as Arizona and Missouri, have banned taxing services altogether.

Year-over-year growth in nondurable goods was 1.8 percent for the first quarter of 2020, largely because of grocery sales increases as consumers bought more groceries to eat more at home and to stock up out of fear of pandemic-related shortages. This contrasts with earlier periods where the amount of nondurable spending was significantly affected by consumption of gasoline and other energy goods. Year-over-year growth on spending on nondurable goods was weak, at 0.5 percent, for the second quarter of 2020.

FIGURE 8

Substantial Declines in Energy Goods and Services

Year-over-year percentage change in real sales taxes and real personal consumption spending



Sources: US Census Bureau (sales taxes) and Bureau of Economic Analysis (NIPA table 2.3.5), analysis by the author.
Notes: Year-over-year change is the percentage change of four-quarter moving averages. Data are adjusted for inflation.

As shown in Figure 8, year-over-year spending on energy goods and services declined for 19 consecutive quarters, between the third quarter of 2012 and the first quarter of 2017. The decline was particularly dramatic throughout 2015 and 2016 in response to steep declines in oil and gas prices. The decline in total spending in the energy sector led to declines in overall general sales tax revenues, which are based on prices as well as quantity consumed. Overall consumption of energy goods and services had been recovering since the second quarter of 2017 and showed strong year-over-year growth through the first quarter of 2019, largely bouncing back from previously depressed levels. However, year-over-year growth in consumption of energy goods and services weakened substantially for the second quarter of 2019 and showed declines in the second half of 2019 and the first half of 2020. Because oil prices declined precipitously in April and because many people are commuting less and working remotely, spending on energy goods and services will continue to decline in the year ahead. The year-over-year decline in spending on energy goods and services for the second quarter of 2020 was 9.7 percent.

Housing Market

House prices are an important determinant of local property taxes, though changes in property tax revenues often lag property price changes. Assessment lags and assessment caps can affect how quickly house price changes translate into property tax revenue changes, but declines in house prices usually lead to declines in property taxes, while growth in house prices usually lead to growth in property tax revenues.

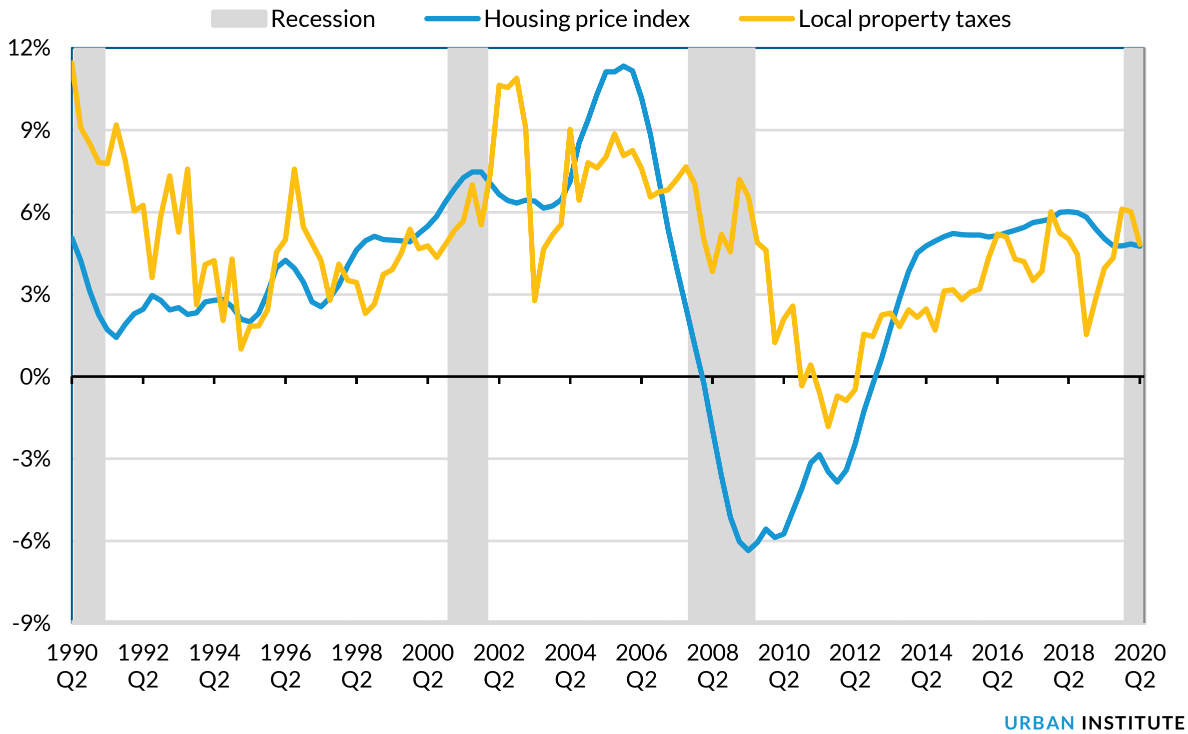
Figure 9 shows year-over-year percentage changes in the four-quarter moving average of the house price index and local property taxes in nominal terms. House prices saw steep declines during the Great Recession, which led to a significant slowdown in local property tax growth and to an actual decline in property tax revenues during state fiscal years 2011 and 2012.[15] Growth in the house price index began weakening in mid-2005, and the price index declined for five straight years, between the first quarter of 2008 and the fourth quarter of 2012, though patterns varied across states and regions. The trend in the house price index has been generally upward between 2013 and 2018 but showed some weakness following the first quarter of 2019. National average house prices appreciated 4.8 percent for the second quarter of 2020 compared with one year earlier; year-over-year growth in local property taxes was also 4.8 percent for the same period.

Statewide house price indexes increased in all states for the second quarter of 2020 compared with a year earlier, ranging from a 1.4 percent increase in North Dakota to an 8.8 percent increase in Idaho. Year-over-year growth was 4.2 percent for the nation. Despite continuous and strong nationwide growth in the housing market, prices are still below their prerecession peaks in five states. Figure 10 shows the state-by-state nominal percentage change in house price indexes at the end of the second quarter of 2020 compared with the first quarter of 2007.

FIGURE 9

Slowing Growth in Housing Prices and in Local Property Taxes

Year-over-year percentage change in house prices versus local property taxes



Sources: US Census Bureau (property taxes) and Federal Housing Finance Agency (house price indexes), analysis by the author.
Notes: Year-over-year change is the percentage change of four-quarter moving averages.

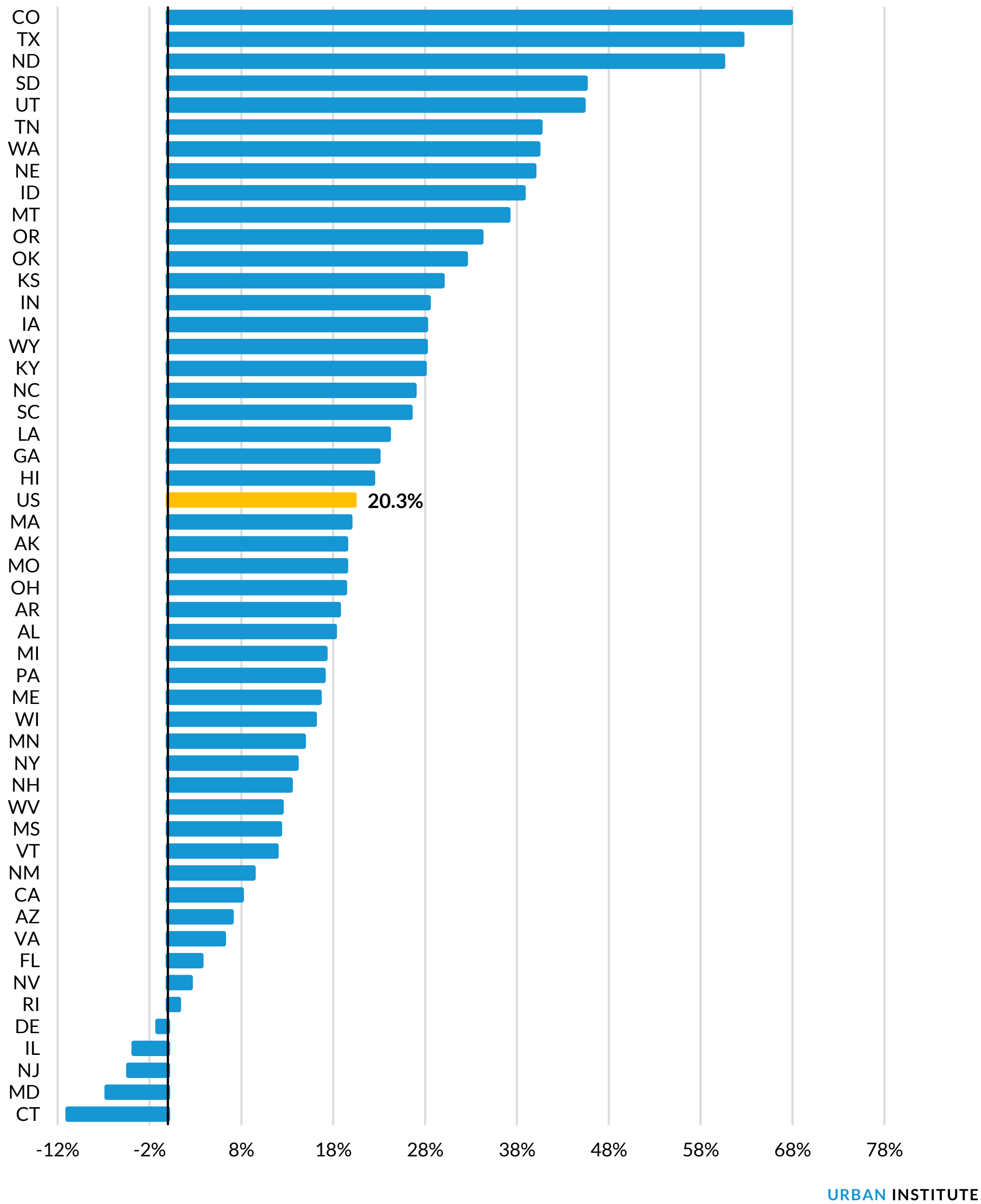
National average house prices grew 20.3 percent in nominal terms between the first quarter of 2007 and the second quarter of 2020. However, house price movements varied substantially across the states. House prices are above their prerecession peaks in 45 states in the second quarter of 2020 but are still lower in 5 states (in nominal terms). Housing prices in Connecticut were the hardest hit and are still on average 10.9 percent below their peak. On the other hand, statewide house price indexes increased by double digit rates in 38 states over this period. In 22 states, growth in statewide average house prices since 2007 was over 20 percent, with Colorado, Texas, and North Dakota having the highest growth rates at 67.8, 62.5, and 60.4 percent, respectively.

In response to the negative economic impact of the pandemic, the Federal Reserve cut interest rates twice, once on March 3, 2020, and again on March 16, 2020. These were the largest one-time interest rate cuts since 2008 but followed earlier cuts in short-term interest rates that began in July 2019, even though the economy was still expanding at that time. Because interest rates are now very low, there is virtually no room for the Federal Reserve to pursue further interest rate cuts to stimulate the economy.

FIGURE 10

Growth in House Price Indexes Since the Prerecession Peak

Percent change in house prices from pre-recession peak level, 2020 quarter 2 versus 2007 quarter 1



Source: Federal Housing Finance Agency (house price indexes), analysis by the author.

Tax Law Changes Affecting the Second Quarter of 2020

Anticipated and actual federal policy changes had a substantial impact on state tax revenues in the past few years. But changes in state tax laws also affect state tax revenue trends. Many states enacted tax changes for fiscal year 2020, partly responding to federal policy changes and partly reflecting policy preferences and strong balance sheets at the time. Most states also enacted tax changes in response to the Supreme Court's *Wayfair* decision to collect taxes on online sales. We present analysis here based on the data and information retrieved from the National Association of State Budget Officers' Fall 2019 Fiscal Survey of the States. However, the analysis and forecasted effects are based on anticipated revenue gains or losses based on states' legislated tax changes and **do not** include the effects of changing economic conditions related to the COVID-19 pandemic. Because of decreased economic activity, actual revenue collections typically varied from expected tax revenues. Some states also revised enacted budgets to undo some of the enacted changes.

During the second quarter of 2020, enacted tax changes were forecasted to increase revenues by $2.9 billion compared with the same period in 2019.[16] Overall, tax changes were expected to increase personal income taxes by $580 million, increase corporate income taxes by $499 million, increase sales taxes by $477 million, and increase motor fuel taxes by $241 million in the second quarter of 2020 compared with a year earlier. Further, states enacted tax changes in other taxes and fees, which were expected to increase state tax and fee revenues by approximately $1 billion (National Association of State Budget Officers 2019). Next, we discuss some of the major enacted tax changes for fiscal year 2020. As noted, the estimated values predate the COVID-19 pandemic, so actual revenue changes may differ substantially from these predictions, due to changing economic activity.

The estimated impact of all the enacted tax changes was a projected net increase of $8.1 billion in state revenues in fiscal year 2020. By comparison, legislated tax actions in fiscal year 2019 were less substantial, with an estimated net revenue increase of $3.3 billion. California and New York enacted the most substantial changes, with estimated net revenue increases of $1.8 billion and $1.0 billion, respectively, for fiscal year 2020. Legislated changes were also substantial in Connecticut and Illinois, with an estimated net revenue increase of over $900 million in each.

Four states enacted personal income tax increases and 13 states enacted decreases for fiscal year 2020. Legislated tax changes were estimated to increase aggregate personal income tax revenues by $310 million in fiscal year 2020. The largest estimated increase was in California, where conformity to federal tax rules contained in the TCJA income tax overhaul and expansion of earned income tax credits were estimated to lead to a $0.7 billion increase in personal income tax collections in fiscal year 2020.[17] In New York, Governor Cuomo extended the "temporary" millionaire tax through 2024 (Office of New

York Governor Andrew M. Cuomo 2019). The millionaire tax was first enacted in 2009, in response to the Great Recession. New York also lowered income tax rates for middle-class taxpayers. The net impact of these changes was estimated to lead to a $0.6 billion increase in personal income tax collections in fiscal year 2020. Officials in Ohio enacted a 4 percent across-the-board personal income tax cut (among other changes), which was expected to reduce personal income tax collections by $364 million in fiscal year 2020 (Ohio Legislative Service Commission 2019). Officials in Oregon slightly reduced personal income tax rates, which was estimated to reduce personal income tax revenues by $175 million in fiscal year 2020 (Oregon Legislative Revenue Office 2019). Lawmakers in Wisconsin also reduced personal income tax rates by cutting the rates for the two lowest income tax brackets from 4.00 percent to 3.86 percent and from 5.21 percent to 5.04 percent.[18] These tax rate reductions were estimated to decrease personal income tax collections by $167 million in fiscal year 2020. Finally, lawmakers in Minnesota enacted several changes to its personal income tax system, including conforming to the federal tax overhaul embodied in the TCJA and a reduction in the personal income tax rate for the second-tier tax bracket (Minnesota Department of Fiscal Analysis 2019). These changes were estimated to reduce Minnesota's personal income tax collections by $171 million in fiscal year 2020.

Seven states enacted corporate income tax increases; another seven states enacted decreases. Legislated tax changes were estimated to increase aggregate corporate income tax revenues by $1.3 billion in fiscal year 2020. The largest corporate income tax change was in Oregon, where Governor Brown signed into law a new corporate activity tax that applies to all entities (i.e., individuals, partnerships, corporations, and others) with taxable commercial activity. The new tax was estimated to increase corporate income tax revenue collections by $799 million in fiscal year 2020 (Oregon Legislative Revenue Office 2019). Legislated changes related to conformity to the federal tax law changes in the TCJA were expected to increase corporate income tax revenues by $229 million in California and by $170 million in Minnesota in fiscal year 2020. New Mexico more than doubled the annual cap on rebate payments for film and televisions productions,[19] which was estimated to decrease corporate income tax revenues collections by $110 million in fiscal year 2020.

The National Association of State Budget Officers' fall 2019 Fiscal Survey of the States reports sales tax changes in the wake of the Supreme Court's *Wayfair* decision related to state laws requiring remote sellers to collect and remit sales and use tax. To date, 43 of 45 states with a sales tax base have enacted economic nexus laws to collect sales and use taxes from remote sellers (Table A6). A few states, such as Massachusetts, Ohio, Pennsylvania, and Rhode Island, had adopted internet sales tax laws before the *Wayfair* ruling on June 21, 2018, and have since updated the laws or provided additional guidance for remote sellers. Florida and Missouri still have not enacted such laws, but both states have proposed legislation on collecting sales and use tax from remote sellers. Legislated changes related to expansion of the sales tax base in response to the *Wayfair* decision were expected to increase state sales tax revenues by $1.3 billion in fiscal year 2020. The largest increases were expected in states with the largest populations, such as California, New York, and Texas. Officials in California estimated that online and remote sales tax collections will produce an additional $616 million in fiscal year 2020.[20]

Apart from legislated changes related to the *Wayfair* decision, seven states enacted sales tax increases, and 10 states enacted decreases. Legislated tax changes were estimated to increase sales tax revenues by $325 million in fiscal year 2020. The most significant legislative changes were in Connecticut and New Mexico. Lawmakers in Connecticut expanded the sales and use tax base and repealed several sales tax exemptions,[21] and these changes were estimated to increase sales tax revenues by $145 million in fiscal year 2020. Officials in New Mexico enacted policy changes that include repealing hospital credits and subjecting hospitals to a gross receipts tax.[22] These changes were estimated to increase New Mexico's sales tax revenue collections by $125 million in fiscal year 2020.

Four states enacted motor fuel tax increases, for an estimated overall increase of $939 million in fiscal year 2020. The largest increase was in Ohio, where lawmakers increased the gasoline tax rate from 28 cents a gallon to 38.5 cents a gallon and increased the tax rate for diesel and all other fuel types from 28 cents a gallon to 47 cents a gallon effective July 1, 2019.[23] These rate increases were estimated to increase motor fuel tax revenues by $865 million in fiscal year 2020.

Fourteen states enacted changes for taxes on cigarettes, alcohol, and gaming, with an estimated overall increase of $139 million in fiscal year 2020. The estimated impact of each state's changes was not significant except in Illinois, where Governor Pritzker signed a bill that raised the tax on video gaming terminals from 30 percent to 33 percent for fiscal year 2020,[24] which was expected to increase gaming tax revenues by $89 million in fiscal year 2020.

Over half of the states enacted changes for some other taxes and fees, with an estimated overall increase of $3.8 billion in fiscal year 2020. These changes were estimated to increase state revenues in 19 states but decrease revenue in 8 states. The largest estimated increases were in California and Illinois, mostly because of the managed care organization (MCO) tax. In California, officials urged an extension of the MCO tax that was set to expire on July 1, 2019.[25] Governor Newsom approved the bill to renew the MCO tax retroactively, subject to approval from the federal government.[26] The MCO tax is estimated to increase state tax revenues by $915 million in fiscal year 2020. The federal government initially rejected California's MCO tax on January 30, 2020.[27] However, officials in California continued discussions with the federal government and reached an agreement on the MCO tax for the period of

January 1, 2020 through June 30, 2023.[28] Similarly, officials in Illinois also proposed a tax on MCOs that would have increased state revenues by an estimated $500 million in fiscal year 2020.[29]

Conclusion

State tax revenues showed solid growth in the first three quarters of fiscal year 2020. Despite concerns about an economic slowdown and weaknesses in some economic indicators, most states were on track to close state fiscal year 2020 budgets with revenue increases and little in the way of budget shortfalls. However, things took a dramatic turn in March; the COVID-19 pandemic and subsequent federal and state policy actions rapidly altered states' fiscal year 2020 revenue trajectories. States saw steep declines in revenues in the second quarter of 2020, though some of this was caused by shifting revenues into the next quarter and next fiscal year. Consequently, most states ended fiscal year 2020 uncertain about their fiscal bottom line. Many states cut spending, laid off or furloughed workers, or used federal aid or rainy-day funds, while they waited to see what their revenues would be after the July 15 income tax filing deadline.

States are still facing unprecedented fiscal uncertainties because of the pandemic which has substantially weakened the economy since March. The recent surge in infection rates mean depressed business activity for a wide range of businesses and services across virtually all states, possibly less consumer spending, and less sales tax revenues for states. Although COVID vaccines are on the horizon, it will take a long time for business activity to return to pre-pandemic levels, with some activities and industries facing a very slow recovery.

Most economic indicators, such as GDP, unemployment rate, employment, and personal consumption spending, reported the worst performance on record in the second quarter of 2020 and remain precarious in recent months. State officials are faced with the challenge of addressing budget constraints in a dire economic environment.

The damage of the COVID-19 pandemic on state and local governments and their budgets is already substantial. State and local government officials continue to face fiscal and economic crises.

Appendix: Additional Tables

TABLE A1

Quarterly State Government Tax Revenue by Major Tax

	Nominal Y-O-Y Percentage Change					Inflation	Real Y-O-Y Percentage Change				
2010 Q1–2020 Q2	**PIT**	**CIT**	**Sales**	**MFT**	**Total**	**rate**	**PIT**	**CIT**	**Sales**	**MFT**	**Total**
average growth	***5.2***	***3.7***	***3.7***	***3.6***	***4.1***	***1.7***	***3.5***	***1.9***	***2.0***	***1.9***	***2.4***
2020 Q2	(33.7)	(44.2)	(13.2)	(18.1)	(25.0)	0.6	(34.1)	(44.5)	(13.8)	(18.6)	(25.4)
2020 Q1	5.0	(1.2)	4.0	5.1	4.1	1.7	3.3	(2.8)	2.3	3.4	2.4
2019 Q4	6.2	18.4	5.6	7.6	5.6	1.6	4.5	16.5	3.9	5.9	3.9
2019 Q3	4.3	11.7	7.1	6.0	5.5	1.7	2.5	9.7	5.3	4.2	3.7
2019 Q2	18.8	21.0	2.5	3.5	10.5	1.8	16.7	18.8	0.6	1.6	8.5
2019 Q1	(2.4)	40.5	5.6	1.4	2.7	2.0	(4.3)	37.8	3.5	(0.6)	0.6
2018 Q4	(9.2)	12.0	4.5	6.0	(0.1)	2.3	(11.3)	9.4	2.1	3.6	(2.4)
2018 Q3	7.9	26.4	6.3	8.8	8.4	2.5	5.2	23.3	3.7	6.2	5.7
2018 Q2	10.6	17.5	5.3	8.9	8.9	2.6	7.8	14.5	2.6	6.1	6.2
2018 Q1	15.3	(6.5)	5.0	10.9	8.9	2.1	12.9	(8.4)	2.8	8.6	6.6
2017 Q4	14.9	10.5	4.5	9.7	9.1	2.0	12.6	8.4	2.4	7.6	7.0
2017 Q3	4.6	6.5	3.1	2.0	3.9	1.9	2.6	4.5	1.2	0.0	2.0
2017 Q2	(0.0)	11.7	3.2	5.2	2.3	1.7	(1.7)	9.8	1.5	3.5	0.6
2017 Q1	8.9	(28.1)	2.3	0.9	3.3	2.0	6.7	(29.5)	0.3	(1.1)	1.2
2016 Q4	0.3	(3.4)	1.7	1.2	1.2	1.5	(1.2)	(4.8)	0.2	(0.3)	(0.3)
2016 Q3	2.4	(9.0)	2.7	1.4	1.3	1.0	1.5	(9.8)	1.7	0.4	0.3
2016 Q2	(2.8)	(9.7)	1.2	0.3	(1.7)	0.9	(3.7)	(10.5)	0.2	(0.6)	(2.5)
2016 Q1	1.7	(5.9)	1.9	2.9	1.4	0.8	0.9	(6.6)	1.1	2.0	0.6
2015 Q4	5.1	(9.4)	2.7	3.5	2.4	0.8	4.3	(10.2)	1.8	2.7	1.5
2015 Q3	6.5	0.3	3.5	5.0	4.1	0.9	5.5	(0.6)	2.6	4.1	3.2
2015 Q2	14.0	6.0	3.6	2.5	7.1	1.1	12.8	4.8	2.5	1.5	5.9
2015 Q1	6.9	3.3	5.8	4.3	5.5	1.1	5.8	2.2	4.7	3.2	4.3
2014 Q4	8.4	10.1	6.5	2.4	5.7	1.5	6.8	8.5	5.0	0.9	4.1
2014 Q3	4.4	7.4	6.6	0.6	4.3	2.0	2.4	5.3	4.5	(1.3)	2.2
2014 Q2	(6.7)	(0.3)	4.6	4.0	(1.0)	2.1	(8.6)	(2.4)	2.5	1.9	(3.0)
2014 Q1	(1.3)	7.9	3.0	2.8	0.5	1.8	(3.0)	6.0	1.2	1.0	(1.3)
2013 Q4	1.1	3.6	5.1	3.6	3.0	1.8	(0.7)	1.8	3.2	1.7	1.2
2013 Q3	4.9	1.8	5.5	2.8	5.3	1.7	3.1	0.1	3.7	1.1	3.5
2013 Q2	19.2	8.5	4.6	2.0	10.0	1.7	17.2	6.6	2.8	0.3	8.1
2013 Q1	18.2	9.6	3.9	(1.7)	8.9	1.9	16.0	7.6	2.0	(3.4)	6.9
2012 Q4	10.4	2.5	3.3	1.3	5.6	2.1	8.1	0.4	1.2	(0.8)	3.4
2012 Q3	4.7	8.6	2.3	2.2	3.1	1.8	2.8	6.7	0.5	0.3	1.3
2012 Q2	4.7	1.6	2.1	1.7	3.2	1.7	2.9	(0.2)	0.4	(0.1)	1.4
2012 Q1	4.0	4.2	4.6	1.3	3.7	2.1	1.9	2.1	2.5	(0.8)	1.6
2011 Q4	3.7	(6.5)	3.5	0.7	3.2	2.0	1.7	(8.3)	1.5	(1.2)	1.2
2011 Q3	9.7	2.5	3.7	(0.3)	6.2	2.4	7.2	0.1	1.3	(2.6)	3.7
2011 Q2	15.3	19.3	5.7	7.5	11.1	2.2	12.9	16.8	3.5	5.2	8.8
2011 Q1	12.1	4.4	6.3	13.4	10.0	1.9	10.1	2.5	4.4	11.3	8.0
2010 Q4	10.5	19.8	4.8	11.8	8.4	1.6	8.8	17.9	3.2	10.1	6.7
2010 Q3	4.8	(0.9)	4.5	10.6	5.4	1.4	3.4	(2.3)	3.1	9.1	3.9
2010 Q2	2.2	(19.4)	4.8	4.0	2.6	1.1	1.0	(20.3)	3.7	2.8	1.5
2010 Q1	2.4	0.8	0.6	(0.2)	2.9	0.6	1.9	0.2	0.0	(0.7)	2.3

Source: Bureau of Economic Analysis (GDP) and US Census Bureau (tax revenue), analysis by the author.

Notes: CIT = corporate income tax; PIT = personal income tax; MFT = motor fuel tax; Y-O-Y = year-over-year.

TABLE A2

Quarterly State Government Tax Revenue, by State

Nominal percentage change, 2020 quarter 2 versus 2019 quarter 2

State/region	PIT	CIT	Sales	MFT	Total
US (median)	***(29.0)***	***(45.5)***	***(9.1)***	***(17.3)***	***(18.7)***
US (average)	***(33.7)***	***(44.2)***	***(13.2)***	***(18.1)***	***(25.0)***
New England	**(25.1)**	**(23.9)**	**(12.5)**	**(24.7)**	**(20.6)**
Connecticut	0.2	(8.1)	(10.4)	(20.7)	(7.9)
Maine	12.2	(22.1)	(8.5)	(21.6)	0.5
Massachusetts	(41.5)	(34.3)	(16.2)	(32.4)	(34.4)
New Hampshire	(6.1)	(21.1)	N/A	(31.1)	(19.6)
Rhode Island	(37.5)	(46.9)	(10.9)	3.8	(26.3)
Vermont	(43.8)	(61.5)	(0.6)	(11.9)	(9.3)
Mideast	**(32.0)**	**(26.9)**	**(18.3)**	**(25.4)**	**(25.3)**
Delaware	(29.0)	(47.4)	N/A	(24.2)	(16.0)
Maryland	(1.0)	(2.3)	(22.2)	(17.3)	(7.6)
New Jersey	(5.9)	(18.0)	(14.3)	(11.6)	(10.0)
New York	(48.9)	(35.7)	(18.7)	(37.1)	(38.4)
Pennsylvania	(34.6)	(46.3)	(20.3)	(26.7)	(30.1)
Great Lakes	**(24.5)**	**(39.9)**	**(11.3)**	**1.2**	**(18.1)**
Illinois	(24.3)	(35.2)	(15.7)	48.5	(18.4)
Indiana	(29.3)	(56.0)	(7.0)	(17.3)	(24.9)
Michigan	(29.2)	(67.8)	(18.9)	(31.6)	(27.0)
Ohio	(33.4)	NM	(9.2)	16.7	(14.3)
Wisconsin	(7.5)	(19.6)	(2.6)	(12.8)	(6.5)
Plains	**(25.4)**	**(33.2)**	**(3.7)**	**(14.9)**	**(19.5)**
Iowa	(26.1)	(31.0)	(6.1)	(6.3)	(20.5)
Kansas	(42.1)	(48.1)	(4.3)	(16.6)	(25.7)
Minnesota	(11.0)	(14.0)	(3.1)	(23.1)	(9.5)
Missouri	(41.1)	(48.7)	(3.6)	(12.0)	(28.8)
Nebraska	(26.7)	(52.0)	0.5	(14.7)	(19.8)
North Dakota	(36.7)	(62.3)	(11.5)	(14.8)	(48.6)
South Dakota	N/A	(41.4)	2.9	(10.1)	1.5
Southeast	**(13.3)**	**(38.7)**	**(12.8)**	**(17.8)**	**(14.9)**
Alabama	(31.4)	(62.7)	(3.2)	10.5	(18.0)
Arkansas	(22.7)	(14.7)	0.8	(17.3)	(12.0)
Florida	N/A	(48.0)	(22.6)	(23.7)	(22.0)
Georgia	(1.8)	(19.8)	(9.4)	1.9	(6.4)
Kentucky	4.1	(16.5)	(5.9)	(19.0)	(5.2)
Louisiana	(31.8)	(60.8)	(13.2)	(22.4)	(21.7)
Mississippi	(25.7)	(44.6)	(1.1)	(16.9)	(15.4)
North Carolina	(22.5)	(39.7)	(11.8)	(35.4)	(19.2)
South Carolina	9.4	(39.3)	(9.1)	(11.8)	(4.4)
Tennessee	(79.9)	(47.8)	(6.8)	(13.0)	(17.3)
Virginia	(8.2)	(4.9)	(9.9)	(17.3)	(7.6)
West Virginia	(25.6)	(65.7)	(1.7)	(17.3)	(24.1)
Southwest	**(26.3)**	**(41.0)**	**(23.2)**	**(19.5)**	**(26.1)**
Arizona	(37.0)	(48.0)	(1.4)	(17.3)	(18.0)
New Mexico	6.3	NM	9.9	(17.3)	14.7
Oklahoma	(25.4)	(80.6)	(6.9)	(11.7)	(23.0)
Texas	N/A	N/A	(29.4)	(21.9)	(33.0)
Rocky Mountain	**(26.3)**	**(51.7)**	**(2.0)**	**(20.2)**	**(19.3)**
Colorado	(31.7)	(64.7)	(10.2)	(11.9)	(27.8)
Idaho	12.0	(28.4)	7.2	(8.6)	4.8

State/region	PIT	CIT	Sales	MFT	Total
Montana	(33.4)	(17.7)	N/A	(9.5)	(15.7)
Utah	(31.5)	(57.5)	5.4	(41.6)	(20.7)
Wyoming	N/A	N/A	(12.4)	(3.3)	(19.0)
Far West	**(54.9)**	**(68.2)**	**(6.7)**	**(25.1)**	**(39.2)**
Alaska	N/A	(96.5)	N/A	13.2	(53.5)
California	(56.5)	(69.5)	(0.7)	(21.2)	(45.2)
Hawaii	(40.5)	(93.5)	(24.6)	46.0	(30.0)
Nevada	N/A	N/A	(17.2)	(17.3)	(14.8)
Oregon	(41.8)	(26.0)	N/A	(17.3)	(35.2)
Washington	N/A	N/A	(10.2)	(47.1)	(4.0)

Source: US Census Bureau (tax revenue), analysis by the author.

Notes: CIT = corporate income tax; PIT = personal income tax; MFT = motor fuel tax; N/A = not applicable; NM = not meaningful.

TABLE A3

State Personal Income Tax Withholding

Year-over-year nominal percentage change

State/region	State Fiscal Year 2019				State Fiscal Year 2020			
	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2
US (median)	***6.7***	***6.5***	***2.7***	***5.3***	***5.0***	***4.2***	***6.9***	***(0.1)***
US (average)	***6.2***	***6.7***	***1.2***	***5.2***	***4.4***	***4.8***	***5.8***	***(1.3)***
New England	**4.0**	**6.6**	**5.7**	**3.2**	**4.7**	**2.8**	**4.7**	**2.5**
Connecticut	8.8	9.4	6.4	7.3	5.5	2.8	2.0	1.9
Maine	4.9	8.5	3.6	5.3	10.0	2.0	7.6	2.8
Massachusetts	2.2	5.1	6.0	1.5	4.1	3.1	5.8	2.9
Rhode Island	(0.3)	5.4	3.9	1.2	3.8	2.0	6.9	1.1
Vermont	5.3	9.4	1.9	1.5	0.6	(0.3)	3.1	2.3
Mideast	**4.1**	**3.3**	**0.5**	**5.0**	**5.1**	**4.6**	**5.6**	**(2.1)**
Delaware	6.3	4.8	3.2	7.9	6.2	0.9	10.1	(2.3)
Maryland	3.0	4.9	0.9	4.0	6.7	5.5	8.9	2.7
New Jersey	3.0	3.9	4.8	4.5	6.2	3.2	7.0	(5.8)
New York	5.1	2.2	(1.5)	5.5	5.0	4.8	4.6	(1.8)
Pennsylvania	3.0	4.4	3.7	5.1	2.4	4.1	3.8	(6.7)
Great Lakes	**8.3**	**4.4**	**1.6**	**5.3**	**4.0**	**4.1**	**4.2**	**(2.8)**
Illinois	13.8	6.1	2.7	5.1	4.2	3.2	3.1	(0.0)
Indiana	7.0	2.9	(2.8)	8.7	1.4	4.8	7.3	(10.1)
Michigan	4.6	2.9	(2.5)	5.2	7.6	6.0	6.9	4.3
Ohio	5.5	5.9	2.3	3.5	2.5	1.9	1.6	(10.6)
Wisconsin	6.4	2.4	7.7	4.7	3.0	5.3	3.4	(1.3)
Plains	**4.8**	**4.8**	**0.4**	**2.8**	**3.4**	**3.3**	**4.4**	**(1.9)**
Iowa	6.6	10.8	(0.6)	(4.1)	(3.5)	(3.9)	3.0	0.8
Kansas	14.4	7.9	3.7	7.6	2.8	6.4	9.7	(4.0)
Minnesota	6.7	6.5	2.1	5.7	5.1	2.8	1.6	(2.2)
Missouri	(5.4)	(4.3)	(3.6)	(2.2)	6.0	6.4	4.7	(3.3)
Nebraska	9.6	6.8	(0.2)	8.2	2.1	6.5	10.9	2.3
North Dakota	12.4	12.2	13.3	5.5	10.2	3.7	13.3	(6.0)
Southeast	**6.3**	**7.4**	**(0.4)**	**3.1**	**2.1**	**1.8**	**5.4**	**(0.6)**
Alabama	11.3	7.6	3.9	8.3	1.7	5.4	9.0	(5.2)
Arkansas	5.7	5.4	1.3	8.2	1.9	5.7	9.3	(8.9)
Georgia	7.4	4.7	(4.0)	0.1	(2.4)	(2.3)	6.0	6.0
Kentucky	(2.5)	(0.8)	(2.4)	(4.0)	2.1	2.0	7.5	1.0
Louisiana	21.7	21.5	(2.8)	6.3	9.9	(4.7)	14.9	(7.9)
Mississippi	7.0	1.7	(0.4)	2.5	(1.0)	3.5	7.3	(4.7)
North Carolina	7.5	10.4	(1.6)	0.9	(1.0)	(0.2)	3.4	1.4
South Carolina	5.7	6.5	4.9	7.2	6.6	4.9	2.4	2.2
Virginia	1.1	7.7	1.2	4.5	5.8	5.8	2.9	(2.1)
West Virginia	15.9	9.9	6.6	6.8	(0.4)	1.2	4.1	(10.3)
Southwest	**8.1**	**6.5**	**3.8**	**9.8**	**7.3**	**7.9**	**7.3**	**(0.4)**
Arizona	9.1	6.6	2.3	8.4	7.1	8.7	10.3	2.5
New Mexico	4.8	2.4	3.5	20.1	13.2	13.9	12.8	(12.3)
Oklahoma	8.0	8.3	6.0	7.0	5.0	4.3	0.9	1.6
Rocky Mountain	**6.7**	**5.6**	**4.6**	**2.8**	**6.1**	**5.8**	**10.8**	**7.7**
Colorado	9.6	10.0	5.6	7.2	6.1	3.5	10.9	11.3
Idaho	(16.2)	(20.4)	(19.9)	(17.5)	3.2	9.7	12.1	8.0
Montana	6.8	10.6	3.1	5.6	7.6	4.2	9.7	0.7
Utah	12.4	9.2	15.5	3.3	6.5	9.0	10.3	3.3
Far West	**7.7**	**12.0**	**0.9**	**8.4**	**5.3**	**8.2**	**7.2**	**(2.3)**
California	7.4	12.3	0.2	9.4	5.1	8.2	7.5	(2.4)
Hawaii	10.3	5.1	17.8	(14.1)	4.1	5.6	4.4	(8.7)
Oregon	9.1	11.0	3.3	7.9	7.0	9.0	4.9	(0.1)

Source: Individual state data, analysis by the author.

Notes: Alaska, Florida, Nevada, New Hampshire, South Dakota, Tennessee, Texas, Washington, and Wyoming have no broad-based personal income tax and are not shown in this table.

TABLE A4

State Personal Income Tax Estimated Payments/Declarations

Year-over-year nominal percentage change

	Payments for Tax Year 2019				Payments for Tax Year 2020		
State	April 2019, 1st payment	June 2019, 2nd payment	Sep. 2019, 3rd payment	Dec. 2019-Jan. 2020, 4th payment	April 2020, 1st payment	June 2020, 2nd payment	Sep. 2020, 3rd payment
Median	***18.0***	***10.4***	***11.1***	***11.0***	***(72.0)***	***(38.8)***	***(2.4)***
Average	**35.7**	**1.3**	**0.4**	**10.5**	**(82.3)**	**(47.9)**	**(1.6)**
Alabama	30.1	11.5	12.7	13.3	(74.8)	(61.2)	(3.6)
Arizona	(25.1)	13.4	13.3	15.1	16.4	(30.5)	0.3
Arkansas	(3.2)	3.1	14.3	9.8	(16.8)	(19.3)	11.2
California	7.6	(3.6)	(14.2)	8.6	(83.2)	(82.8)	11.3
Colorado	62.9	(0.5)	1.7	6.1	(92.0)	(66.3)	(2.2)
Connecticut	(18.3)	(31.1)	(15.9)	(11.0)	(76.1)	(75.8)	(5.5)
Delaware	11.2	12.3	15.0	13.5	(58.0)	(18.3)	9.0
Georgia	2.8	6.1	4.3	4.7	(76.4)	(69.7)	(9.5)
Hawaii	138.6	22.9	48.1	41.9	(66.8)	(39.9)	(17.7)
Illinois	19.7	12.3	8.9	7.2	9.5	(20.8)	(8.2)
Indiana	19.2	10.0	8.8	13.0	(72.2)	(52.8)	(0.1)
Iowa	9.4	7.3	15.7	18.2	(20.4)	(23.1)	4.2
Kansas	12.4	13.3	19.0	22.0	(56.7)	(31.9)	(1.3)
Kentucky	4.6	(0.7)	(1.0)	11.0	(82.8)	126.6	(1.4)
Louisiana	17.7	20.9	20.3	25.2	(45.4)	(31.3)	(2.5)
Maine	18.3	15.6	6.2	9.3	(66.0)	(51.6)	15.4
Maryland	(1.0)	19.9	20.7	16.5	(75.9)	41.1	1.7
Massachusetts	7.6	0.3	3.4	3.2	(77.2)	10.1	(4.0)
Michigan	9.9	5.5	3.8	3.6	(73.5)	(65.2)	(0.3)
Minnesota	71.0	9.3	9.3	11.6	(75.4)	103.3	2.4
Mississippi	97.8	20.1	11.0	14.0	(79.1)	(44.5)	(10.9)
Missouri	135.6	(68.7)	(74.7)	NM	(52.5)	54.1	15.2
Montana	27.6	(0.8)	17.2	35.0	(66.1)	(26.3)	3.4
Nebraska	20.6	10.1	11.3	10.8	(63.7)	(20.7)	0.3
New Jersey	10.4	7.1	5.0	8.7	(75.0)	(43.7)	(7.9)
New York	57.1	7.5	2.8	7.3	(96.9)	(37.7)	(8.5)
North Carolina	15.1	13.2	11.8	16.2	(56.0)	(48.6)	1.0
North Dakota	40.6	12.7	16.0	9.6	(86.9)	(47.4)	(17.1)
Ohio	8.1	12.9	16.0	7.2	(66.0)	(55.5)	(6.1)
Oklahoma	31.6	3.6	(2.0)	(7.3)	(90.6)	(48.9)	(22.7)
Oregon	53.5	11.5	12.9	14.1	(77.1)	(1.8)	(4.4)
Pennsylvania	13.9	13.0	11.1	8.7	(70.0)	(59.0)	(10.8)
Rhode Island	5.3	10.6	9.9	16.6	(64.9)	(59.4)	(2.3)
South Carolina	157.4	18.2	11.1	16.8	(85.8)	28.3	4.4
Vermont	20.1	14.9	18.7	13.1	(71.8)	(55.0)	(23.4)
Virginia	30.3	13.7	20.5	24.7	(45.5)	(8.5)	(9.4)
West Virginia	(9.9)	10.0	5.2	5.3	(62.7)	(46.7)	(11.3)
Wisconsin	51.9	0.9	2.7	1.6	(86.7)	110.4	(11.5)

Source: Individual state data, analysis by the author.

Notes: Alaska, Florida, Nevada, New Hampshire, South Dakota, Tennessee, Texas, Washington, and Wyoming have no broad-based personal income tax and are not shown in this table. Data are not available for Idaho, New Mexico, and Utah.

NM = not meaningful.

TABLE A5

State Personal Income Tax Final Payments

Year-over-year nominal percentage change

State	State Fiscal Year 2019				State Fiscal Year 2020			
	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2
Median	***7.9***	***8.3***	***11.2***	***37.0***	***18.3***	***24.0***	***(0.9)***	***(68.5)***
Average	**12.8**	**(1.5)**	**18.5**	**39.0**	**21.2**	**20.8**	**(10.3)**	**(55.7)**
Alabama	20.7	3.1	(2.2)	40.7	18.3	28.4	17.7	(69.9)
Arizona	12.7	27.8	28.4	52.5	45.9	19.7	(22.9)	(75.5)
Arkansas	3.9	8.3	142.4	33.5	17.7	24.0	(55.0)	(64.7)
California	15.7	13.9	21.4	29.4	33.9	26.5	(12.1)	(67.6)
Colorado	12.0	7.1	0.7	26.5	4.0	9.1	(2.7)	(61.1)
Connecticut	2.6	(37.8)	(45.0)	(4.4)	(15.3)	(21.8)	(25.1)	(83.2)
Delaware	(11.6)	16.8	33.6	35.5	13.0	50.5	(39.1)	(69.2)
Georgia	32.2	15.8	22.0	51.6	46.9	40.9	38.6	(77.7)
Hawaii	25.0	(6.2)	33.8	22.1	4.3	48.2	7.9	(56.6)
Idaho	7.7	(45.5)	(48.7)	55.1	22.0	13.3	26.3	3.7
Illinois	53.7	25.5	25.8	52.8	25.7	41.3	18.1	(79.5)
Indiana	(1.4)	18.0	12.2	33.9	11.1	15.2	(4.6)	(69.0)
Iowa	16.3	30.3	(2.9)	65.6	26.8	77.8	15.5	(79.2)
Kansas	18.7	63.7	12.9	50.2	7.8	27.0	11.2	(76.5)
Kentucky	1.2	14.3	27.7	18.5	27.8	2.6	0.1	(2.4)
Louisiana	1.5	6.8	7.3	48.3	32.0	32.3	7.0	(69.9)
Maine	4.1	5.9	(2.9)	31.0	19.4	0.1	12.9	(68.5)
Maryland	7.5	6.2	21.1	49.7	24.7	24.4	(6.1)	(3.7)
Massachusetts	11.7	14.6	11.0	53.8	(0.2)	2.4	(0.9)	(2.0)
Michigan	21.2	19.1	(5.3)	46.4	6.6	13.3	0.6	(80.0)
Minnesota	7.1	(1.9)	3.1	28.4	17.3	24.7	7.3	(3.7)
Missouri	7.2	101.3	352.3	52.1	186.7	(55.0)	(47.1)	(92.5)
Montana	0.8	2.8	17.4	28.5	38.4	19.7	0.1	(69.7)
Nebraska	17.9	(4.9)	5.6	37.0	77.3	23.8	6.1	(66.0)
New Jersey	(21.7)	(42.8)	(13.4)	49.3	18.8	40.2	6.6	(83.0)
New Mexico	54.0	(47.2)	209.2	(43.6)	(2.8)	45.3	(53.3)	76.4
New York	20.5	19.6	15.4	38.3	15.9	18.9	(3.4)	(70.6)
North Carolina	1.7	(10.2)	2.8	41.5	15.5	21.6	(5.9)	(50.4)
North Dakota	(9.1)	5.3	14.6	26.1	0.0	10.0	0.0	(52.3)
Ohio	51.5	45.6	25.2	52.5	30.8	13.0	(27.5)	(75.0)
Oklahoma	13.5	16.6	12.0	20.9	25.7	28.5	1.0	(51.4)
Pennsylvania	50.2	19.3	8.0	32.4	32.5	25.0	(23.1)	(73.2)
Rhode Island	6.4	20.4	11.2	31.4	30.2	29.2	(0.9)	(75.5)
South Carolina	7.9	14.1	10.0	25.6	12.8	45.8	(2.4)	(5.8)
Utah	5.6	(71.6)	36.5	59.4	23.6	15.4	(21.6)	(63.6)
Vermont	(2.3)	13.2	9.9	23.6	18.2	14.1	(1.9)	(76.1)
Virginia	77.6	(120.2)	(16.6)	62.5	(55.1)	(63.7)	(15.3)	(14.5)
West Virginia	20.7	(1.0)	(7.2)	39.0	10.0	31.5	34.0	(53.9)
Wisconsin	2.0	(11.1)	(23.1)	29.7	13.5	25.7	16.1	(1.2)

Source: Individual state data, analysis by the author.

Notes: Alaska, Florida, Nevada, New Hampshire, South Dakota, Tennessee, Texas, Washington, and Wyoming have no broad-based personal income tax and are not shown in this table. Data are not available for Mississippi and Oregon.

TABLE A6

States with Economic Nexus and Marketplace Laws

Economic Nexus threshold levels and effective dates

State	Current threshold levels for economic nexus	Economic nexus effective date	Marketplace nexus effective date
Alabama	>$250,000	10/1/2018	1/1/2019
Arizona	> $150,000 in CY 2020, >$100,000 in CY 2021	10/1/2019	10/1/2019
Arkansas	>$100,000 or over 200 transactions	7/1/2019	7/1/2019
California	>$500,000	4/1/2019	10/1/2019
Colorado	>$100,000	6/1/2019	10/1/2019
Connecticut	>$100,000 and over 200 transactions	12/1/2018	12/1/2018
Georgia	>$100,000 in CY 2020 or over 200 transactions	1/1/2019	4/1/2020
Hawaii	>$100,000 or over 200 transactions	7/1/2018	1/1/2020
Idaho	>$100,000	6/1/2019	6/1/2019
Illinois	>$100,000 or over 200 transactions	10/1/2018	1/1/2020
Indiana	>$100,000 or over 200 transactions	10/1/2018	7/1/2019
Iowa	>$100,000	1/1/2019	1/1/2019
Kansas	TBD	10/1/2019	10/1/2019
Kentucky	>$100,000 or over 200 transactions	10/1/2018	7/1/2019
Louisiana	>$100,000 or over 200 transactions	7/1/2020	7/1/2020
Maine	>$100,000 or over 200 transactions	7/1/2018	10/1/2019
Maryland	>$100,000 or over 200 transactions	10/1/2018	10/1/2019
Massachusetts	>$100,000	10/1/2019	10/1/2019
Michigan	>$100,000 or over 200 transactions	10/1/2018	1/1/2020
Minnesota	>$100,000 or over 200 transactions	10/1/2018	10/1/2018
Mississippi	>$250,000	9/1/2018	7/1/2020
Nebraska	>$100,000 or over 200 transactions	1/1/2019	4/1/2019
Nevada	>$100,000 or over 200 transactions	10/1/2018	10/1/2019
New Jersey	>$100,000 or over 200 transactions	11/1/2018	11/1/2018
New Mexico	>$100,000	7/1/2019	7/1/2019
New York	>$500,000 and over 100 transactions	6/21/2018	6/1/2019
North Carolina	>$100,000 or over 200 transactions	11/1/2018	2/1/2020
North Dakota	>$100,000	10/1/2018	10/1/2019
Ohio	>$100,000 or over 200 transactions	8/1/2019	8/1/2019
Oklahoma	>$100,000	7/1/2018	7/1/2018
Pennsylvania	>$100,000	7/1/2019	7/1/2019
Rhode Island	>$100,000 or over 200 transactions	7/1/2019	7/1/2019
South Carolina	>$100,000	11/1/2018	11/1/2018
South Dakota	>$100,000 or over 200 transactions	11/1/2018	3/1/2019
Tennessee	>$500,000	10/1/2019	10/1/2020
Texas	>$500,000	10/1/2019	10/1/2019
Utah	>$100,000 or over 200 transactions	1/1/2019	10/1/2019
Vermont	>$100,000 or over 200 transactions	7/1/2018	6/1/2019
Virginia	>$100,000 or over 200 transactions	7/1/2019	7/1/2019
Washington	>$100,000	10/1/2018	10/1/2018
West Virginia	>$100,000 or over 200 transactions	1/1/2019	7/1/2019
Wisconsin	>$100,000 or over 200 transactions	10/1/2018	10/1/2019
Wyoming	>$100,000 or over 200 transactions	2/1/2019	7/1/2019

Source: Individual state information, compiled by the author.

Notes: CY = calendar year; TBD = to be determined. Alaska, Delaware, Montana, New Hampshire, and Oregon do not have sales tax. Florida and Missouri have not yet enacted legislation on economic nexus.

States are hyperlinked to respective economic nexus guidelines.

TABLE A7

Quarterly State Government Tax Revenue for Nonmajor Tax Revenue Sources

Year-over-year real percentage change; four-quarter moving averages

2020 Q2 collections ($ millions)	Property tax	Tobacco product sales tax	Alcoholic beverage sales tax	Motor vehicle & operators' license taxes	Other taxes	Total nonmajor taxes
	$4,210	$4,769	$1,519	$7,107	$33,934	$51,539
2010 Q1 – 2020 Q2 average growth	*2.0*	*(0.5)*	*1.0*	*1.9*	*2.2*	*1.8*
2020 Q2	0.5	(2.7)	(2.6)	(3.3)	(4.0)	(3.3)
2020 Q1	1.1	(3.1)	2.2	1.5	1.6	1.2
2019 Q4	0.1	(4.1)	2.2	1.0	1.6	0.9
2019 Q3	(0.4)	(6.1)	(0.2)	1.3	3.4	1.8
2019 Q2	5.2	(7.7)	(2.0)	0.8	4.7	2.8
2019 Q1	6.4	(5.5)	(0.6)	4.3	5.2	4.0
2018 Q4	9.0	(5.2)	(1.5)	7.1	5.3	4.6
2018 Q3	8.1	0.8	0.0	4.4	5.2	4.8
2018 Q2	3.6	5.2	1.3	4.7	3.6	3.8
2018 Q1	1.0	4.7	1.1	1.1	2.6	2.4
2017 Q4	(0.6)	6.1	2.9	(0.3)	1.9	1.8
2017 Q3	(1.2)	3.6	3.0	3.7	0.5	1.1
2017 Q2	0.4	1.8	2.2	1.5	(0.4)	0.2
2017 Q1	3.0	1.2	1.1	2.3	(1.7)	(0.4)
2016 Q4	2.3	1.4	0.4	2.7	(1.7)	(0.4)
2016 Q3	4.9	1.2	0.7	1.0	(2.5)	(1.0)
2016 Q2	4.1	0.6	1.6	2.6	(1.8)	(0.4)
2016 Q1	5.0	1.8	2.6	2.3	(1.4)	0.0
2015 Q4	8.7	0.1	1.5	2.8	(1.0)	0.4
2015 Q3	6.1	(0.8)	1.3	1.6	(0.4)	0.4
2015 Q2	5.2	(2.1)	1.6	1.2	(0.7)	(0.0)
2015 Q1	4.3	(4.0)	(0.2)	1.2	(0.4)	(0.1)
2014 Q4	0.8	(4.6)	1.5	(0.7)	(1.9)	(1.7)
2014 Q3	3.2	(3.7)	1.3	0.6	(1.7)	(1.1)
2014 Q2	5.2	0.5	(0.1)	1.1	(0.4)	0.3
2014 Q1	5.1	1.8	1.3	0.8	0.4	1.0
2013 Q4	4.8	3.7	(0.7)	0.3	3.2	2.8
2013 Q3	3.2	3.6	(2.4)	(0.5)	3.6	2.8
2013 Q2	(0.3)	(1.0)	(1.9)	(0.9)	2.7	1.5
2013 Q1	(3.2)	(1.6)	(0.1)	0.2	2.5	1.3
2012 Q4	(4.8)	(2.6)	2.2	2.0	1.2	0.6
2012 Q3	(9.2)	(3.4)	3.4	3.1	2.2	0.9
2012 Q2	(10.6)	(2.3)	3.0	3.1	4.1	2.1
2012 Q1	(10.8)	(2.5)	0.6	2.1	7.6	4.0
2011 Q4	(11.0)	(1.9)	(0.5)	1.8	11.8	6.5
2011 Q3	(7.5)	(0.9)	0.5	0.4	12.8	7.3
2011 Q2	(3.8)	0.8	1.6	1.6	12.2	7.6
2011 Q1	2.5	2.8	3.2	3.4	10.1	7.4
2010 Q4	8.2	3.2	3.3	4.1	7.9	6.7
2010 Q3	13.4	2.3	3.1	5.7	5.0	5.5
2010 Q2	13.4	0.6	2.1	3.8	(0.9)	1.2
2010 Q1	9.9	(1.2)	0.7	1.5	(8.6)	(4.7)

Source: US Census Bureau (tax revenue), analysis by the author.

TABLE A8

Fiscal Year State Government Tax Revenue, by State

Nominal percentage change, state fiscal year 2020 versus state fiscal year 2019

State/region	PIT	CIT	Sales	MFT	Total
US. (median)	***(5.7)***	***(12.9)***	***1.4***	***(2.5)***	***(2.3)***
US (average)	***(8.3)***	***(14.5)***	***0.4***	***(0.2)***	***(4.3)***
New England	**(8.2)**	**(8.3)**	**0.9**	**(5.1)**	**(5.0)**
Connecticut	(3.2)	0.9	0.8	(5.7)	(3.0)
Maine	7.9	(14.5)	3.3	(5.5)	4.0
Massachusetts	(12.1)	(14.1)	(0.3)	(8.7)	(8.2)
New Hampshire	4.3	(15.5)	N/A	(8.4)	(6.4)
Rhode Island	(9.8)	20.9	3.3	2.5	(2.3)
Vermont	(11.1)	(7.5)	4.8	30.4	0.1
Mideast	**(7.7)**	**(4.8)**	**(1.8)**	**(8.2)**	**(4.9)**
Delaware	(3.6)	(23.9)	N/A	(4.0)	(2.2)
Maryland	4.2	1.8	(3.6)	(0.7)	0.4
New Jersey	1.7	(4.8)	(1.8)	(5.7)	(0.7)
New York*	(12.7)	1.2	(0.9)	(12.2)	(7.6)
Pennsylvania	(8.8)	(15.1)	(2.3)	(9.2)	(6.2)
Great Lakes	**(6.4)**	**(10.0)**	**0.1**	**16.3**	**(1.9)**
Illinois	(4.0)	(8.7)	(1.3)	71.7	0.9
Indiana	(6.7)	(23.7)	1.8	(2.6)	(4.3)
Michigan*	(9.7)	(39.8)	(2.4)	(16.8)	(7.6)
Ohio	(11.0)	NM	1.2	27.7	(0.4)
Wisconsin	(2.8)	20.2	2.5	(3.7)	0.6
Plains	**(6.2)**	**(8.7)**	**3.9**	**(1.1)**	**(2.8)**
Iowa	(8.2)	(1.8)	4.9	6.2	(2.1)
Kansas	(11.1)	(11.4)	2.4	(1.5)	(3.8)
Minnesota	(2.3)	(5.0)	3.7	(6.0)	(0.6)
Missouri	(10.4)	(19.2)	1.6	(2.4)	(6.4)
Nebraska	(3.9)	(7.7)	10.3	1.4	1.8
North Dakota	(9.1)	(44.4)	1.4	(2.8)	(12.0)
South Dakota	N/A	(12.9)	5.2	(0.8)	2.3
Southeast	**(1.2)**	**(14.2)**	**(0.4)**	**(1.7)**	**(1.4)**
Alabama*	(4.4)	(22.1)	0.8	17.3	(0.5)
Arkansas	(5.9)	(12.0)	3.2	4.1	(1.4)
Florida	N/A	(20.9)	(3.3)	(4.2)	(3.4)
Georgia	1.9	(3.0)	(1.4)	1.5	(0.4)
Kentucky	4.9	(16.2)	3.4	(3.7)	1.2
Louisiana	(2.9)	(33.8)	(4.9)	(10.9)	(4.3)
Mississippi	(5.7)	(14.8)	2.4	(3.8)	(2.4)
North Carolina	(5.7)	(20.8)	0.1	(7.4)	(3.5)
South Carolina	6.5	(10.5)	2.8	3.8	3.4
Tennessee	(71.5)	(11.3)	2.6	3.7	0.4
Virginia	0.8	7.2	2.4	(2.3)	1.9
West Virginia	(7.1)	(23.3)	1.2	(2.3)	(7.4)
Southwest	**(6.4)**	**(11.7)**	**(3.5)**	**(4.0)**	**(5.0)**
Arizona	(9.6)	(0.5)	5.8	(5.3)	(0.5)
New Mexico	1.2	177.1	9.4	(5.8)	0.2
Oklahoma	(5.6)	(44.9)	(3.6)	0.7	(4.6)
Texas*	N/A	N/A	(6.3)	(4.2)	(6.9)
Rocky Mountain	**(4.1)**	**(16.9)**	**4.5**	**(3.9)**	**(2.5)**
Colorado	(5.9)	(12.3)	0.9	(1.9)	(6.2)
Idaho	14.7	(13.7)	10.0	(0.4)	8.6

State/region	PIT	CIT	Sales	MFT	Total
Montana	(5.2)	0.6	N/A	(0.3)	0.0
Utah	(7.7)	(31.8)	6.6	(10.9)	(2.3)
Wyoming	N/A	N/A	(0.3)	(1.4)	(6.6)
Far West	**(15.4)**	**(29.0)**	**4.5**	**(0.7)**	**(8.0)**
Alaska	N/A	(62.1)	N/A	3.0	(32.6)
California	(15.7)	(28.8)	7.4	2.7	(9.9)
Hawaii	(8.1)	(75.7)	(3.0)	12.3	(4.8)
Nevada	N/A	N/A	(1.8)	(13.1)	(2.3)
Oregon	(14.6)	(9.9)	N/A	(3.7)	(11.2)
Washington	N/A	N/A	1.3	(12.7)	5.3

Source: US Census Bureau (tax revenue), analysis by the author.

Notes: CIT = corporate income tax; PIT = personal income tax; MFT = motor fuel tax; N/A = not applicable, NM = not meaningful. *The state fiscal year runs from July 1 to June 30 in all states except Alabama, Michigan, New York, and Texas. Fiscal year-to-date data reported for Alabama, Michigan, New York, and Texas are for July 2019-June 2020 and do not correspond to those states' actual fiscal years.

TABLE A9

Preliminary Six-Month State Government Tax Revenue, by State

Nominal percentage change, April-September 2020 vs April-September 2019

State/region	PIT	CIT	Sales	Total
US (median)	***(2.1)***	***(7.5)***	***(2.0)***	***(3.8)***
US (average)	***(2.8)***	***(8.9)***	***(5.8)***	***(5.2)***
New England	**(0.8)**	**(10.0)**	**(5.6)**	**(4.8)**
Connecticut	(2.6)	(6.4)	(5.2)	(7.3)
Maine	5.4	(13.8)	(4.6)	(1.3)
Massachusetts	(1.4)	(13.6)	(7.5)	(5.8)
New Hampshire	15.7	(2.9)	N/A	(4.7)
Rhode Island	(0.3)	5.2	(1.9)	0.1
Vermont	11.5	(44.1)	6.1	5.8
Mideast	**(4.0)**	**(7.9)**	**(10.6)**	**(6.7)**
Delaware	(1.7)	(28.3)	N/A	2.9
Maryland	(0.1)	(3.9)	(14.0)	(4.4)
New Jersey	(7.4)	(17.3)	(9.0)	(9.8)
New York	(4.0)	4.0	(16.9)	(6.8)
Pennsylvania	(2.8)	(8.7)	(2.4)	(5.5)
Great Lakes	**(3.5)**	**(3.6)**	**(3.5)**	**(3.2)**
Illinois	(2.9)	(6.3)	(8.8)	(4.0)
Indiana	(2.4)	(9.2)	(0.9)	(4.6)
Michigan	0.5	(6.6)	(4.2)	(1.8)
Ohio	(6.4)	N/A	(1.9)	(2.4)
Wisconsin	(6.0)	9.6	(1.4)	(3.1)
Plains	**(5.3)**	**(6.8)**	**(1.9)**	**(4.7)**
Iowa	(0.9)	3.7	(2.1)	(3.9)
Kansas	(8.9)	(12.9)	0.9	(5.8)
Minnesota	(6.8)	(0.5)	(5.5)	(5.8)
Missouri	(5.8)	(3.5)	1.1	(4.5)
Nebraska	2.4	(26.8)	7.3	0.1
North Dakota	1.0	(44.2)	(18.9)	(11.2)
South Dakota	N/A	N/A	5.4	5.3
Southeast	**(0.6)**	**(12.9)**	**(6.0)**	**(4.5)**
Alabama	(4.4)	3.5	2.6	2.3
Arkansas	(3.8)	(5.5)	5.4	(0.7)
Florida	N/A	(35.0)	(13.7)	(17.5)
Georgia	5.4	(2.5)	(7.3)	(0.0)
Kentucky	N/A	(12.6)	0.6	(0.6)
Louisiana	(11.2)	(7.5)	(9.9)	(11.7)
Mississippi	(6.5)	(10.4)	4.5	(2.1)
North Carolina	(1.0)	(3.8)	(1.7)	(0.6)
South Carolina	3.8	(27.8)	(2.0)	(0.6)
Tennessee	(27.7)	10.7	(1.4)	(3.8)
Virginia	(1.1)	9.6	(3.1)	(0.9)
West Virginia	(5.5)	(4.0)	2.0	(5.1)
Southwest	**0.8**	**(13.0)**	**(2.7)**	**(8.0)**
Arizona	(3.2)	(16.9)	4.8	(1.3)
New Mexico	9.0	NM	2.6	7.2
Oklahoma	4.3	(7.5)	(1.2)	(5.2)
Texas	N/A	N/A	(3.9)	(11.1)
Rocky Mountain	**10.2**	**(23.0)**	**3.5**	**3.8**
Colorado	7.5	(30.8)	(4.5)	1.0
Idaho	19.6	(10.9)	9.3	9.6

Montana	13.0	6.3	N/A	(3.8)
Utah	10.3	(24.8)	7.0	7.1
Wyoming	N/A	N/A	14.4	4.5
Far West	**(4.9)**	**(7.1)**	**(9.2)**	**(6.4)**
Alaska	N/A	(62.6)	N/A	(32.6)
California	(3.7)	(5.5)	(8.7)	(5.6)
Hawaii	(6.7)	(58.9)	(24.8)	(19.7)
Nevada	N/A	N/A	(11.7)	(12.8)
Oregon	(16.0)	(2.9)	N/A	(14.3)
Washington	N/A	N/A	(5.4)	(0.3)

Source: Individual state data, analysis by the author.

Notes: CIT = corporate income tax; PIT = personal income tax; N/A = not applicable; ND = no data; NM = not meaningful. For New Mexico data are through August.

Notes

[1] The author made several adjustments for the second quarter of 2020 and to several previous quarters of tax revenue data reported by the US Census Bureau based on information and data received directly from the states and from the Census Bureau.

[2] In this report, the author uses US Bureau of Economic Analysis regions as the basis of analysis.

[3] See Brian Uhler, Justin Garosi, Brian Weatherford, and Seth Kerstein, "November 2019 State Tax Collections," California's Legislative Analyst's Office, December 18, 2019, https://lao.ca.gov/LAOEconTax/Article/Detail/421.

[4] Thirty-seven of 41 states with broad-based personal income tax extended filing deadline to July 15. Among the remaining four states, Idaho extended to June 15, Hawaii to July 20, Iowa to July 31, and Virginia to June 1.

[5] See Katherine Loughead, "In Some States, 2020 Estimated Tax Payments Are Due before 2019 Tax Returns," Tax Foundation, May 22, 2020, https://taxfoundation.org/2020-quarterly-estimated-tax-payments-2019-tax-returns.

[6] Income tax returns are due on April 15 in 35 of 41 states that have a broad-based personal income tax. The remaining six states have individual income tax return due dates later than April 15. Those states are Arkansas (May 15), Delaware (April 30), Hawaii (April 20), Iowa (April 30), Louisiana (May 15), and Virginia (May 1).

[7] See "2019 Kicker Credit," Oregon Department of Revenue, last updated March 4, 2020, https://www.oregon.gov/dor/press/Documents/kicker_fact_sheet.pdf.

[8] See "IRS Extends More Tax Deadlines to Cover Individuals, Trusts, Estates, Corporations and Others," news release, Internal Revenue Service, April 9, 2020, https://www.irs.gov/newsroom/irs-extends-more-tax-deadlines-to-cover-individuals-trusts-estates-corporations-and-others.

[9] See "Section 5 – Saving and Investment, National Income and Product Accounts," US Bureau of Economic Analysis, accessed November 25, 2020, https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey.

[10] See *South Dakota v. Wayfair*, Brief of *Amici Curiae* Law Professors and Economists in Support of Petitioner, No. 17-494, March 5, 2018, https://www.supremecourt.gov/DocketPDF/17/17-494/37603/20180305141434827_Brief%20of%20Amici%20Curiae%20Law%20Professors%20and%20Economists%20iso%20Petitioner.PDF.

[11] See Illinois Department of Revenue, "Motor Fuel Tax Rates and Fees," accessed November 25, 2020, https://www2.illinois.gov/rev/research/taxrates/Pages/motorfuel.aspx.

[12] See Ohio Department of Taxation, "Ohio Motor Fuel Tax Rates," accessed November 25, 2020, https://www.tax.ohio.gov/excise/motor_fuel/tax_rates.aspx.

[13] See Hawaii Department of Taxation, "Department of Taxation Announcement No. 2019-03," accessed November 25, 2020, https://files.hawaii.gov/tax/news/announce/ann19-03.pdf.

[14] See US Bureau of Labor Statistics, "Labor Force Statistics from the Current Population Survey," accessed November 25, 2020, https://www.bls.gov/web/empsit/cpsee_e08.htm.

[15] For more discussion of the relationship between property tax and house prices, see Dadayan (2012).

[16] Author's analysis of data from NASBO (2019), table A-1 and table A-2.

[17] See Gabriel Petek, "The 2019-20 Budget: Tax Conformity," California's Legislative Analyst's Office, March 6, 2019, https://lao.ca.gov/reports/2019/3959/tax-conformity-030619.pdf.

[18] See Wisconsin Legislative Fiscal Bureau, "Updated Information on Tax Year 2019 Individual Income Tax Reductions Under Wisconsin Acts 9 and 10," November 4, 2019, https://docs.legis.wisconsin.gov/misc/lfb/misc/205_updated_information_on_tax_year_2019_individual_income_tax_reductions_under_wisconsin_acts_9_and_10_11_4_19.

[19] New Mexico Office of the Governor, "Gov. Lujan Grisham Recommits State to Film and Television Industry, Signs Legislation Aimed at Steadier Growth, Expansion," press release, March 29, 2019, https://www.governor.state.nm.us/2019/03/29/gov-lujan-grisham-recommits-state-to-film-and-television-industry-signs-legislation-aimed-at-steadier-growth-expansion/.

[20] See California Department of Finance, "Revenue Estimates, California Budget 2019-20," May Revision, http://www.ebudget.ca.gov/2019-20/pdf/Revised/BudgetSummary/RevenueEstimates.pdf.

[21] Connecticut Governor's Office, "Fact Sheet, 2019 Legislative Session," accessed November 25, 2020, https://portal.ct.gov/-/media/Office-of-the-Governor/2019-Legislative-Proposals/SB-877--FS--An-Act-Concerning-Revenue-Items-to-Implement-the-Governors-Budget.pdf.

[22] See New Mexico Legislative Finance Committee, "Fiscal Impact Report," accessed November 25, 2020, https://www.nmlegis.gov/Sessions/19%20Regular/firs/HB0006.PDF.

[23] See Ohio Department of Taxation, "Ohio Motor Fuel Tax Rates," accessed November 25, 2020, https://www.tax.ohio.gov/excise/motor_fuel/tax_rates.aspx

[24] See Illinois Office of the Governor, "Gov. Pritzker Signs Historic Bipartisan $45 Billion Rebuild Illinois Capital Plan," news release, June 28, 2019, https://www2.illinois.gov/Pages/news-item.aspx?ReleaseID=20266.

[25] See Gabriel Petek, "The 2019-20 Budget: Analysis of the Medi-Cal Budget," California Legislative Analyst's Office, February 13, 2019, https://lao.ca.gov/Publications/Report/3935.

[26] See California Department of Health Care Services, letter to Kristin Fan, Centers for Medicare and Medicaid Services, "California Request For Waiver For Manager Care Organization Tax," September 30, 2019, https://www.dhcs.ca.gov/services/Documents/MCOTax09302019.pdf.

[27] See US Department of Health and Human Services' response letter addressed to the California Department of Health Care Services, January 30, 2020, https://www.dhcs.ca.gov/services/Documents/CMS-Response-to-CA-Tax-Waiver-Request1-30-20.pdf.

[28] See California Legislative Analyst's Office, "The 2020-21 Budget: Overview of the California Spending Plan," October 5, 2020, https://lao.ca.gov/Publications/Report/4263.

[29] See Illinois Office of Management and Budget, "Illinois Budget in Brief, Fiscal Year 2020," February 20, 2019, https://www2.illinois.gov/sites/budget/Documents/Budget%20Book/FY2020-Budget-Book/Fiscal-Year-2020-Budget-in-Brief.pdf.

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About the Author

Lucy Dadayan is a senior research associate with the Urban-Brookings Tax Policy Center at the Urban Institute. Before joining Urban, Dadayan was a senior research scientist with the Rockefeller Institute of Government, where she wrote extensively on state and local government fiscal issues, including state government tax revenue trends, personal income taxes, tax revenue forecasts, property taxes, gambling tax revenue, government employment, spending on social services, education spending, and state spending on children's programs. She has authored or coauthored four chapters for the *Book of the States* (2015, 2016, and 2017 editions). Dadayan's work is frequently cited in major news media, including the *Wall Street Journal*, the *New York Times*, the *Bond Buyer*, Bloomberg, the *Washington Post*, *Forbes*, the *Boston Globe*, the *Financial Times*, and the *Los Angeles Times*. Dadayan is often invited to present at conferences and provide testimonies for state government agencies. Dadayan holds an MA in public policy and affairs and a PhD in informatics, both from the State University of New York at Albany.

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