Georgia Department of Audits and Accounts
Performance Audit Division
Greg S. Griffin, State Auditor
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Why we did this review

The House Appropriations Committee requested this special examination of Motor Fuel Funds. Based on the request, we reviewed: (1) what are the trends in motor fuel tax revenue; (2) how is the amount budgeted from motor fuel tax revenue determined; (3) what state and regional factors that affect fuel consumption also affect the growth of state motor fuel tax revenue; (4) how have the annual adjustments to the state excise tax affected the growth of motor fuel tax revenue; (5) are there reasonable controls to ensure motor fuel tax revenue is collected; and (6) what impact has the slower growth of motor fuel tax revenue had on state transportation projects.

About Motor Fuel Taxes

The state imposes an excise tax on motor fuel in the state. The excise tax applies to gasoline, fuel oils (diesel), liquid petroleum gas, aviation, and special fuel. The current rate is $0.287 per gallon for gasoline and $0.322 per gallon for diesel.

The Department of Revenue (DOR) is responsible for collecting payments for motor fuel taxes. An average of $1.8 billion has been collected from motor fuel taxes annually since fiscal year 2016. Motor fuel funds are primarily appropriated to the Georgia Department of Transportation (GDOT) and must be spent on the construction and maintenance of state roads and bridges. In fiscal year 2020, approximately $1.9 billion from motor fuel funds were appropriated to GDOT.

Motor Fuel Funds

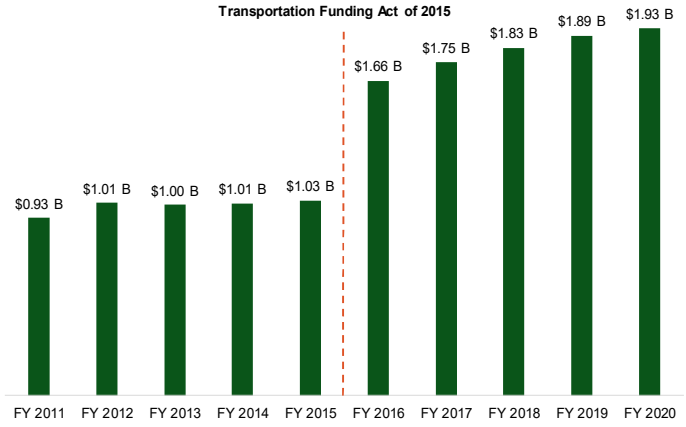
Slowed growth in motor fuel funds did not impact current transportation projects

What we found

While motor fuel tax revenue and its related appropriations have increased annually over the past five fiscal years, the growth rate has slowed. Changes in motor fuel tax revenue can be attributed to a variety of factors affecting gasoline and diesel consumption, including employment and vehicle miles traveled. The slowed growth in motor fuel tax revenue has not impacted current state transportation projects. However, sustained declines in motor fuel tax revenue related to COVID-19 may impact projects in the future.

Motor fuel tax revenue growth rate has decreased in recent years.

In the five years prior to the Georgia Transportation Funding Act of 2015, annual motor fuel tax revenue averaged approximately $1.0 billion, compared to $1.8 billion since the Act passed (fiscal years 2016 and 2020). Motor fuel tax revenue increased annually from approximately $1.7 billion in fiscal year 2016 to almost $2.0 billion



in fiscal year 2020. However, the growth rate of motor fuel tax revenue slowed from 6% in fiscal year 2017 to 2% in fiscal year 2020.

Gasoline and diesel consumption are key drivers of motor fuel tax revenue.

Gasoline and diesel comprise nearly all monthly taxable gallons sold—significantly more than the other fuel categories (aviation, liquid petroleum, or special fuels). Therefore, factors affecting gasoline and diesel consumption—which has declined since mid-2018—should explain changes in motor fuel tax revenue.

We conducted a literature review of motor fuel demand models to determine key factors affecting motor fuel consumption and tax revenue. We tested explanatory variables for motor fuel demand to determine the potential impact on statewide gasoline and diesel consumption levels. We found that declines in consumption—which decreased the amended fiscal year 2018 budget estimate by $15 million—corresponded with a "soft patch" in the labor force. A subsequent $32 million increase in the fiscal year 2019 motor fuel tax revenue estimate corresponded with a strengthening in some trends, including labor force.

Additionally, we observed clear relationships with transit usage and nonfarm employment (consumption decreased with higher transit use and increased with more nonfarm employment). We did not find a strong relationship between consumption and gasoline price or income, and electric vehicles did not have a significant impact. Finally, changes in employment and travel behavior related to COVID-19 could potentially reduce future motor fuel tax revenue in the near-term and perhaps longer.

Slower growth in motor fuel tax revenue has not significantly impacted current state transportation projects.

While revenue growth has slowed in recent years, this has not impacted state transportation projects, which are funded through motor fuel appropriations to GDOT. Between fiscal years 2016 and 2020, the Georgia Transportation Funding Act of 2015 generated approximately $4 billion in additional revenue, which allowed GDOT to increase the number of funded transportation projects. For each fiscal year, GDOT receives net revenue from motor fuel taxes equal to the amount collected in the previous fiscal year (less any funds designated to authorize or pay general obligation debt), which establishes a baseline for appropriations.

The sustained increases in GDOT's appropriations from motor fuel funds since fiscal year 2016 have enabled the agency to commit funding to complete its long-term capital projects and programs. To maintain budgetary compliance, these committed funds must be reported in the year in which they are spent. As a result, between 6% and 24% of GDOT's annual appropriations has been reserved and carried forward per the Office of Planning and Budget and the State Accounting Office policy. The reserve balance was $2.2 billion in fiscal year 2020—a 70% increase from the $1.3 billion in fiscal year 2015.

What we recommend

This report is intended to answer questions posed by the House Appropriations Committee and to help inform policy decisions. It does not include findings with recommendations.

Summary of Responses: DOR and OPB generally agreed with the report. GDOT stated that it had concerns with DOR's calculation of the adjustment for fuel efficiency and the calculation's impact on motor fuel tax revenue. This exception is noted at the end of the relevant finding on page 19.

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Purpose of the Special Examination

This review of motor fuel funds was conducted at the request of the House Appropriations Committee. The Committee requested that we determine the factors that contributed to a decline in fuel consumption prior to COVID-19 and its resulting impact on motor fuel tax revenue. Based on this request, we address the following questions:

1. What are the trends in motor fuel tax revenue?
2. How is the amount budgeted from motor fuel tax revenue determined?
3. What state and regional factors that affect fuel consumption also affect the growth of state motor fuel tax revenue?
4. How have the annual adjustments to the state excise tax affected the growth of motor fuel tax revenue?
5. Are there reasonable controls to ensure motor fuel tax revenue is collected?
6. What impact has the slower growth of motor fuel tax revenue had on state transportation projects?

A description of the objectives, scope, and methodology used in this review is included in Appendix A. A draft of the report was provided to the Governor's Office of Planning and Budget and the Departments of Revenue and Transportation for their review, and pertinent responses were incorporated into the report.

Background

Motor Fuel Taxes

State Motor Fuel Taxes

The state imposes taxes on motor fuel used for operating motor vehicles on public highways. O.C.G.A. § 48-9-3 establishes a state excise tax on distributors who sell or use motor fuel in the state. The state excise tax applies to gasoline, fuel oils (hereafter referred to as diesel), liquid petroleum gas, and special fuel (including compressed natural gas).[1]

As of January 2021, the current state excise tax rate is $0.322 per gallon for diesel and $0.287 per gallon for gasoline, liquid petroleum gas, and special fuel. Aviation gasoline is capped at $0.01 per gallon when sold to licensed distributors; otherwise, it is taxed at the same rate as gasoline. As discussed on page 17, the state excise tax rate is adjusted each year for inflation and fuel efficiency.

Distributors—which include individuals or businesses who produce, refine, prepare, manufacture, blend, or compound motor fuel—must obtain a license to distribute motor fuel.[2] To obtain a distributor license, individuals must file an application, pay a

[1] Fuel oils include clear and dyed diesel, as well as liquid petroleum products such as kerosene.

[2] Distributors also include those who make the first sale of any imported motor fuel into Georgia, purchase motor fuel for export, or engage in certain other activities pertaining to motor fuel.

Georgia Transportation Funding Act

In 2015, the General Assembly passed the Transportation Funding Act (House Bill 170), which made significant changes to state motor fuel taxes. Prior to 2015, motor fuel taxes consisted of a fixed state excise tax rate of $0.075 per gallon for motor fuels, a 3% second motor fuel tax and 1% state sales and use tax.

The Act eliminated the second motor fuel tax and exempted motor fuels used for highway purposes from state sales and use taxes. The legislation increased the state excise tax rate to $0.26 per gallon for gasoline, liquid petroleum gas, and special fuel, effective July 2015. The state excise tax rate for diesel also increased to $0.29 per gallon.

Additionally, the Act required the DOR to automatically adjust the state excise tax rate on an annual basis by fuel efficiency and inflation beginning July 1, 2016. The Act requires the annual adjustments to the state excise tax rate to be completed by July of each year.

The Act also specified the methodology for calculating the annual adjustment. To calculate the adjustment for fuel efficiency, the Act requires the use of the average combined miles per gallon published in the United States Department of Energy Fuel Economy Guides to determine the average miles per gallon for all new vehicles registered in the state. To calculate the adjustment for inflation, the Act requires the use of data from the Consumer Price Index.

filing fee, and file a surety bond. As of October 2020, approximately 850 distributors were licensed to operate in the state.

Distributors are required to electronically file monthly tax returns and remit motor fuel taxes. Distributors must file a report with the Department of Revenue (DOR) by the 20th day of each month and remit required motor fuel state excise taxes for the previous month's activities. The amount of state motor fuel taxes due is determined by multiplying the applicable state excise tax rate by the number of gallons sold or consumed for a specific month. Distributors can retain 1% of the fee for filing and paying motor fuel taxes on time.

State law exempts certain transactions from motor fuel taxes. For example, distributors are not required to pay motor fuel taxes for bulk sales to a duly licensed distributor, sales of motor fuel to the U.S. government for exclusive use, sales to a licensed distributor for export, or when exempted by any provisions in the U.S. or Georgia Constitution.

Motor Carrier Tax

Certain interstate motor carriers pay a motor fuel tax on a prorated basis equivalent to the state excise tax due for motor fuel used in Georgia. The tax is applicable to any motor carrier that operates in interstate commerce, as well as any motor vehicle or combination of vehicles used to transport more than 20 persons, property that weighs more than 26,000 pounds, or that has three or more axles regardless of weight.

Georgia utilizes the International Fuel Tax Agreement (IFTA) to license motor carriers to operate in the state.[3] To register and obtain an IFTA license in Georgia, individuals operating a qualified motor vehicle must create an IFTA account, file an

[3] The agreement, which is administered by the International Fuel Tax Association, allows for the equitable collection and distribution of motor fuel tax revenue from motor carriers. Member jurisdictions adhere to a uniform administration of motor fuels tax laws and definition of a qualified motor vehicle, assume a standardized role of a base jurisdiction, and collect and proportionally distribute motor fuels taxes.

application, and pay the licensing fee. DOR issues one annual license and two decals for each qualified motor vehicle the licensee operates. Licensees must file and remit taxes on a quarterly basis using the IFTA tax forms. Taxes are due on or before the last day of the month immediately following the end of a quarter. Approximately 10,000 motor carriers were reported as of December 2020.

Prepaid Local Taxes

Motor fuel sales are subject to various local sales and use taxes collectively called prepaid local taxes. The prepaid local taxes are in addition to the state excise tax on motor fuels. Prepaid local taxes include the Local Option Sales Tax (LOST), Special Purpose Local Option Sales Tax (SPLOST), Education SPLOST (ESPLOST), Municipal Option Sales Tax (MOST), Homestead Option Sales Tax (HOST), and the Metropolitan Atlanta Rapid Transit Authority Sales Tax (MARTA). Each jurisdiction in Georgia has a prepaid local tax rate composed of a variation of these local sales and use taxes. The prepaid local tax rate ranges from 2.0% to 4.5% depending on the number and type of local sales and use taxes imposed in each jurisdiction.[4]

Licensed distributors must file a return and remit prepaid local taxes to DOR at the same time they file and remit taxes for the state excise tax. These returns must be filed and paid electronically if distributors owe more than $500. If less than $500 is owed, distributors can file using a paper-based form and pay through an automated clearing house debit method. The revenue DOR collects from prepaid local taxes is subsequently distributed to local governments. While motor fuel transactions are subject to both state excise taxes and local sales and use taxes, this review will primarily focus on state excise taxes.

Motor Fuel Tax Administration

DOR is responsible for performing the functions necessary to administer motor fuel taxes, including licensing and tax collection. Staff in multiple divisions, many of which are under the supervision of the Chief Tax Officer, perform these duties (see Appendix B for DOR's organizational structure). While these divisions support DOR's overall responsibility as the primary revenue collection agency in the state, some divisions have staff specifically responsible for performing tasks related to motor fuel. DOR's divisions with motor fuel related functions are described below.

- **Taxpayer Services** processes payments and returns, administers tax credits, and provides taxpayer assistance. The division's Motor Fuel Unit provides services specifically for motor fuel taxpayers, including registering and licensing motor fuel distributors and issuing refunds.
- **Tax Compliance** serves as DOR's collections unit and is responsible for ensuring taxpayer compliance with Georgia's tax laws. This division issues assessments and other notices of liabilities and collects delinquent taxes.
- **Finance**, which is an office of the Division of Administration, manages all financial transactions, including depositing, recording, reconciling, and reporting all revenue collected. The office also processes all disbursements such as tax refunds.

[4] Most jurisdictions have a 3% prepaid local tax rate.

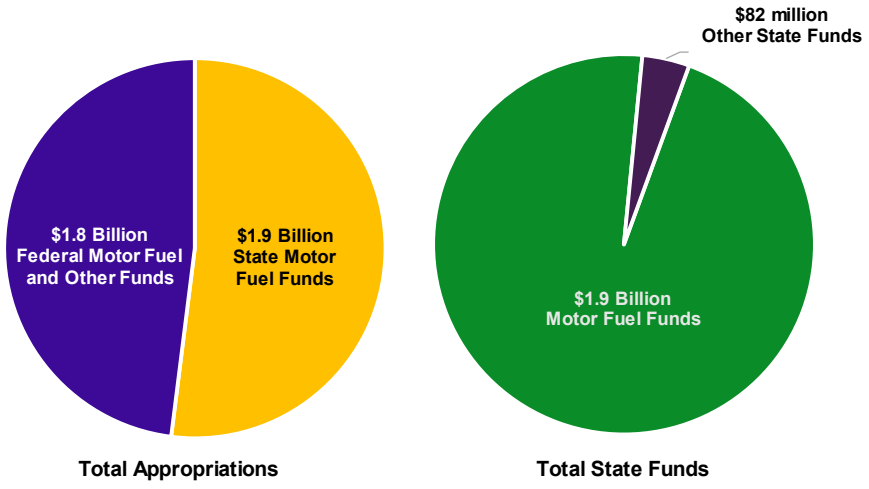
- **Audits** conducts audits of taxes administered by the department. The division's Motor Fuel Excise Audit Unit is responsible for conducting audits of commercial vehicle operations and licensed motor fuel distributors.
- **Legal Affairs and Tax Policy** issues written guidance to assist taxpayers with complying with state laws and regulatory requirements. Staff also annually calculate the excise tax rate applicable for motor transactions for the following year.
- **Office of Special Investigations** serves as DOR's criminal tax enforcement unit. The office reviews alleged violations of the tax law, investigates violations, and recommends criminal sanctions to deter tax violators and influence compliance. The Motor Fuel Investigations Unit provides law enforcement support necessary to enforce state motor fuel tax laws.

DOR collects motor fuel payments from distributors and motor carriers. DOR staff processes and reconciles motor fuel tax payments and transfers the funds to accounts administered by the Office of the State Treasurer. Motor fuel funds on deposit at the Office of State Treasurer accrues interest that is considered motor fuel tax revenue.

State law designates revenue from motor fuel taxes for activities that support the construction and maintenance of state roads and bridges and for grants to counties for construction and maintenance. The process for budgeting motor fuel funds is discussed on page 7.

As discussed on page 9, motor fuel funds are primarily appropriated to the Georgia Department of Transportation (GDOT). Motor fuel funds accounted for half of GDOT's total appropriations for fiscal year 2020 and 96% of all state funds appropriated to GDOT, excluding general obligation bond debt service (see **Exhibit 1**).

Exhibit 1
Motor Fuel Funds Accounted for 52% of GDOT's Total Appropriations and 96% of State Funds, FY 2020



Source: Appropriations Acts

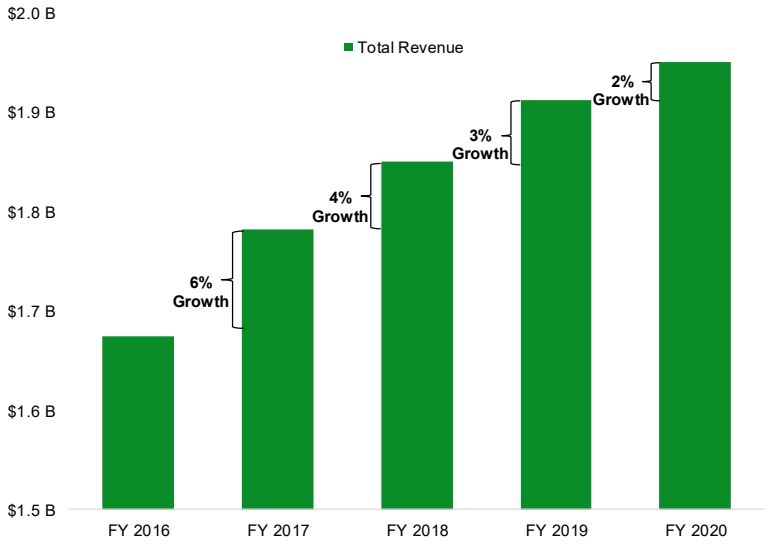
Requested Information

Finding 1: While the Georgia Transportation Funding Act of 2015 resulted in a significant increase in motor fuel tax revenue, the growth rate has slowed from 6% in fiscal year 2017 to 2% in fiscal year 2020.

In the five years prior to the Georgia Transportation Funding Act of 2015, motor fuel tax revenue averaged approximately $1.0 billion, compared to $1.8 billion since the Act passed (fiscal years 2016 and 2020). Motor fuel tax revenue increased annually from approximately $1.7 billion in fiscal year 2016 to almost $2.0 billion in fiscal year 2020. However, the growth rate of motor fuel tax revenue slowed from 6% in fiscal year 2017 to 2% in fiscal year 2020. Approximately 96% of fiscal year 2020 motor fuel tax revenue was derived from the state excise tax, while interest accounts for about 4% of total revenue.

As shown in **Exhibit 2**, the annual growth rate for motor fuel tax revenue slowed between fiscal years 2017 and 2020. During this period, revenue increased by slightly more than $181 million. Although revenue grew by 6% between fiscal years 2016 and 2017, it grew by only 2% between fiscal years 2019 and 2020.

Exhibit 2
The Growth Rate for Motor Fuel Tax Revenue Has Slowed, FY 2017-2020



	Revenue	*Change in Revenue from Prior Year*			
Excise Tax	$1,603,101,885	$147,681,925	$39,792,312	$27,697,283	$47,241,245
3% Sales Tax [1]	$50,066,016	($49,609,601)	($178,663)	($267,766)	$27,067
Motor Carrier Tax	$11,241,194	($1,132,810)	$10,729,660	$7,965,826	($14,242,762)
Interest	$9,436,908	$10,416,149	$18,277,831	$25,854,412	$5,170,262
Reserve Fund Excess [2]	$168,758	$330,823	$166,061	$600,021	($211,107)
Total [3]	**$1,674,014,761**	**$107,686,487**	**$68,787,202**	**$61,849,776**	**$37,984,706**

[1] The Transportation Funding Act of 2015 eliminated the 3% state sales tax on motor fuel. Most of the revenue collected since fiscal year 2016 has been generated primarily from amended tax returns.

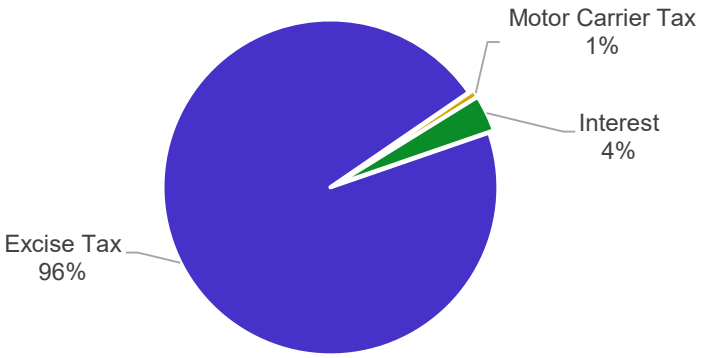
[2] This represents the amount of motor fuel tax funds on deposit in the Guaranteed Revenue Debt Common Reserve Fund that were in excess of the amount that was required for the year.

[3] Total does not include deductions for refunds and collection costs.

Source: Georgia Revenue & Reserves Report

Motor fuel tax revenue is derived primarily from taxes and interest earned on motor fuel deposits (see **Exhibit 3**). The state excise tax accounted for about 96% of motor fuel tax revenue in fiscal year 2020, or approximately $1.9 billion.[5] Interest earned on motor fuel funds on deposit and excess funds on deposit with the Guaranteed Revenue Debt Common Reserve Fund (Office of the State Treasurer) accounted for 4% of revenue (approximately $70.2 million) in fiscal year 2020.

Exhibit 3
Motor Fuel Tax Revenue is Derived Primarily from Taxes and Interest, FY 2020[1,2]



[1] Percentages exceed 100% due to rounding.

[2] Revenue also includes residual funds collected from the 3% state sales tax and funds on deposit in the Guaranteed Revenue Debt Common Reserve Fund in excess of the amount required. Revenue from these sources accounted for less than 0.10% of total motor fuel tax revenue collected in fiscal year 2020.

Source: Georgia Revenue & Reserves Report

[5] Fiscal year 2020 tax collections also include $37,054 from the 3% sales tax, which accounted for less than 1% of total motor fuel tax revenue. The Transportation Funding Act of 2015 eliminated the 3% sales tax and revenue collected since fiscal year 2016 has been generated primarily from amended tax returns.

Finding 2: The budget for motor fuel funds is based on the governor's revenue estimate for motor fuel taxes and projected interest. The budget is the basis for the General Assembly's appropriation, which constitutionally must be no less than the funds derived from motor fuel taxes the prior year.

The state economist provides information for the governor's office to develop the revenue estimate for motor fuel taxes. The revenue estimate and projected interest determines the amount budgeted from motor fuel funds and subsequently the amount appropriated, which cannot be less than prior year funds derived from motor fuel taxes. During fiscal years 2017-2020, the amount appropriated from motor fuel funds exceeded prior year motor fuel funds by 1%-6%.

Budget Process

As shown in **Exhibit 4,** the budget for motor fuel funds is developed throughout the prior fiscal year (e.g., fiscal year 2021 budget developed during fiscal year 2020). First, the state economist projects motor fuel tax revenue by evaluating historical revenue from motor fuel taxes and applicable transportation indicators such as traffic counts and vehicle miles traveled. The state economist also projects motor fuel tax revenue for the amended fiscal year, which may be a revision of the initial projection.

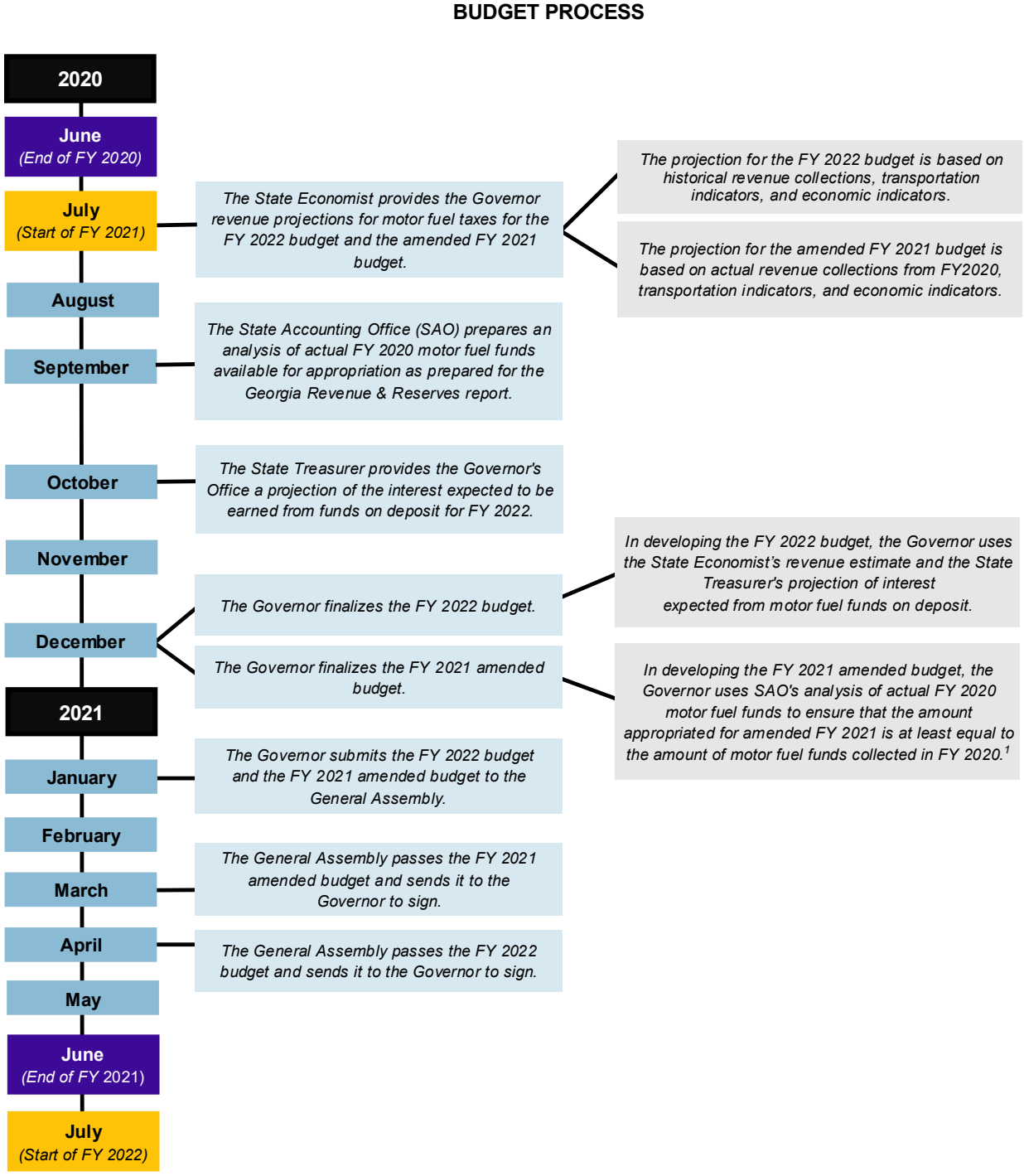
The Governor's Office of Planning and Budget (OPB) uses the state economist's revenue projection to determine the revenue estimate for motor fuel funds each year. The amount budgeted for motor fuel funds is equal to the revenue estimate and the state treasurer's estimate for interest expected to be earned on motor fuel funds. The amount budgeted for motor fuel is included in the governor's recommended budget for the upcoming fiscal year.

While OPB determines the budget for the upcoming fiscal year, it also revises the current fiscal year's budget based on the State Accounting Office's (SAO) analysis of motor fuel funds collected the previous fiscal year.[6] This is to ensure compliance with the constitutional requirement that the amount appropriated for the fiscal year is at least equal to the amount derived from motor fuel taxes in the prior year. SAO's analysis determines this amount by calculating the net revenue from motor fuel taxes, which is the sum of revenue generated from all motor fuel tax collections and interest less refunds and collection costs.[7] Appendix C shows the amount derived from motor fuel taxes during fiscal years 2016-2020.

[6] After the end of each fiscal year, SAO publishes the Georgia Revenue and Reserves Report for the previous fiscal year, which includes an analysis of motor fuel funds available for appropriation.

[7] The amount derived from motor fuel funds also include any excess funds on deposit in the Guaranteed Revenue Debt Common Reserve Fund.

Exhibit 4
The Budget for the Motor Fuel Fund is Developed Throughout the Prior Fiscal Year

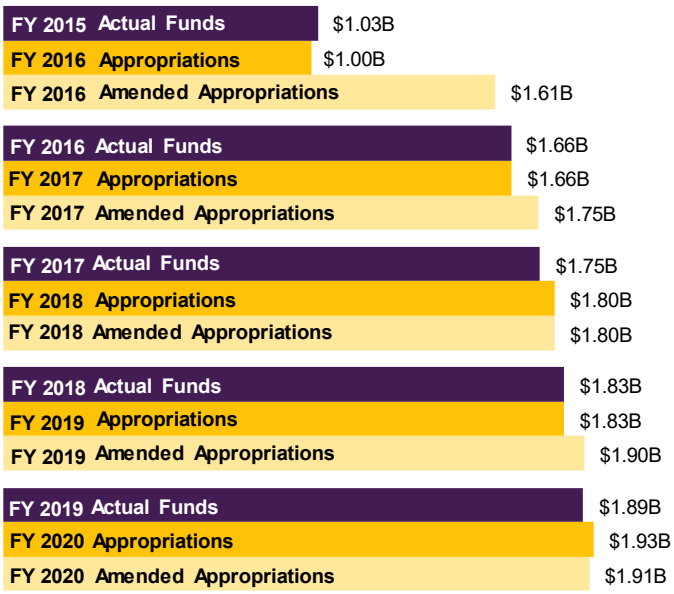


[1]If the amount of funds collected in the prior year is less than the revenue estimate for the current fiscal year, the amended budget will be based on the original revenue estimate.

Source: Governor's Office of Planning & Budget interviews

As shown in **Exhibit 5**, appropriations for the amended fiscal year was equal to or higher than initial appropriations each year until fiscal year 2020 ($14 million less).[8] Between fiscal years 2016 and 2020, motor fuel funds were appropriated in accordance with the state constitution, exceeding the prior year amount by between 1% and 6%.

Exhibit 5
Amended Appropriations for the Motor Fuel Fund Was Equal to Or Higher Than the Initial Appropriation Each Year Until FY 2020, FY 2016 to 2020



Source: Georgia Revenue and Reserves Report and Appropriations Acts

Use of Motor Fuel Funds

Between fiscal years 2016 and 2020, motor fuel funds were primarily appropriated to GDOT. Georgia Constitution Art. III, § 9, ¶ VI (b) limits the use of motor fuel funds to activities related to maintaining the state's public roads and bridges and for construction and maintenance grants to counties. O.C.G.A. § 32-2-2 authorizes GDOT to receive and manage all motor fuel funds appropriated for the purposes of public road work, except for appropriations to authorize or pay general obligation debt for public road work.

All $1.9 billion appropriated from motor fuel funds for fiscal year 2020 was appropriated to GDOT. As shown in **Exhibit 6**, motor fuel funds are appropriated to each GDOT program except Intermodal.[9] During this period, three programs (routine maintenance, capital construction, and local maintenance and improvement grants) received 76% of the motor fuel funds appropriated to GDOT. GDOT uses motor fuel

[8] The $14 million difference between fiscal year 2020 appropriations ($1,925,866,307) and amended appropriations ($1,911,699,955) is not apparent in Exhibit 5 due to rounding.

[9] Motor fuel tax revenue is not appropriated to the Intermodal program because the program does not conduct activities to maintain public roads and bridges. The Intermodal program manages planning and operations for transit, rail, port, waterway and aviation systems.

funds for various types of projects, including road widening and resurfacing and bridge replacement.

Exhibit 6
Motor Fuel Funds Are Appropriated to Most GDOT Programs, FY 2016 to 2020

Program	Fiscal Year 2016	2017	2018	2019	2020
Capital Construction	$684,975,593	$766,777,859	$783,993,059	$834,997,692	$823,634,375
Routine Maintenance	416,339,439	426,546,251	447,927,451	442,916,181	443,892,701
Local Maintenance and Improvement Grants	160,591,530	173,915,000	179,885,000	189,544,365	191,169,996
Capital Maintenance	99,600,000	127,396,500	148,931,288	165,481,288	177,547,536
Construction Administration	82,124,154	101,192,556	98,792,556	101,192,556	101,192,556
Departmental Administration	59,010,528	68,824,177	66,624,177	69,774,177	69,999,177
Traffic Management and Control	21,871,601	31,062,611	36,062,611	50,062,611	50,062,611
Payments to the State Road and Tollway Authority	73,710,270	43,677,626	27,048,612	31,889,529	44,415,757
Local Road Assistance	4,346,461	4,346,461	4,346,461	4,346,461	4,346,461
Data Collection	1,825,346	1,837,709	2,951,687	2,951,687	2,951,687
Planning	1,520,378	1,769,750	2,287,098	2,287,098	2,487,098
Intermodal	0	0	0	0	0
Total	**$1,605,915,300**	**$1,747,346,500**	**$1,798,850,000**	**$1,895,443,645**	**$1,911,699,955**

Source: General Appropriations Acts

Finding 3: Employment levels, public transit use, and vehicle miles traveled were key drivers of the demand for fuel in Georgia. Regional factors such as Hurricane Michael do not impact overall state fuel consumption.

While employment, vehicle miles traveled, and public transit use impacted fuel demand in Georgia, gasoline and diesel prices and income had no detectable impact on consumption between fiscal years 2016 and 2020. Regional factors—in particular Hurricane Michael—had no obvious impact on statewide gasoline or diesel consumption.

We conducted a literature review of motor fuel demand models to determine key factors affecting motor fuel consumption and tax revenue. We also reviewed an economic study GDOT conducts every five years that includes projections of long-term motor fuel tax revenue. GDOT develops this study to comply with federal regulations requiring the creation of documents outlining transportation needs, investment priorities, and project selection decisions.

Our review identified seven key explanatory variables for motor fuel demand: price of fuel, income, the number of vehicles or ownership, employment variables, population or urban density, vehicle miles traveled (vehicle usage), and vehicle fuel efficiency. We

collected these variables or a proxy for them at the statewide level, when possible, and compared them to the taxable gallons for gasoline and diesel to identify relationships that could explain motor fuel consumption. Additionally, we considered two uncommon factors and their effects on consumption: Hurricane Michael and COVID-19. Hurricane Michael and population were also analyzed at a regional level to explore potential behavior differences in regional or county areas. Finally, we reviewed the potential impact of electric vehicles on gasoline consumption.

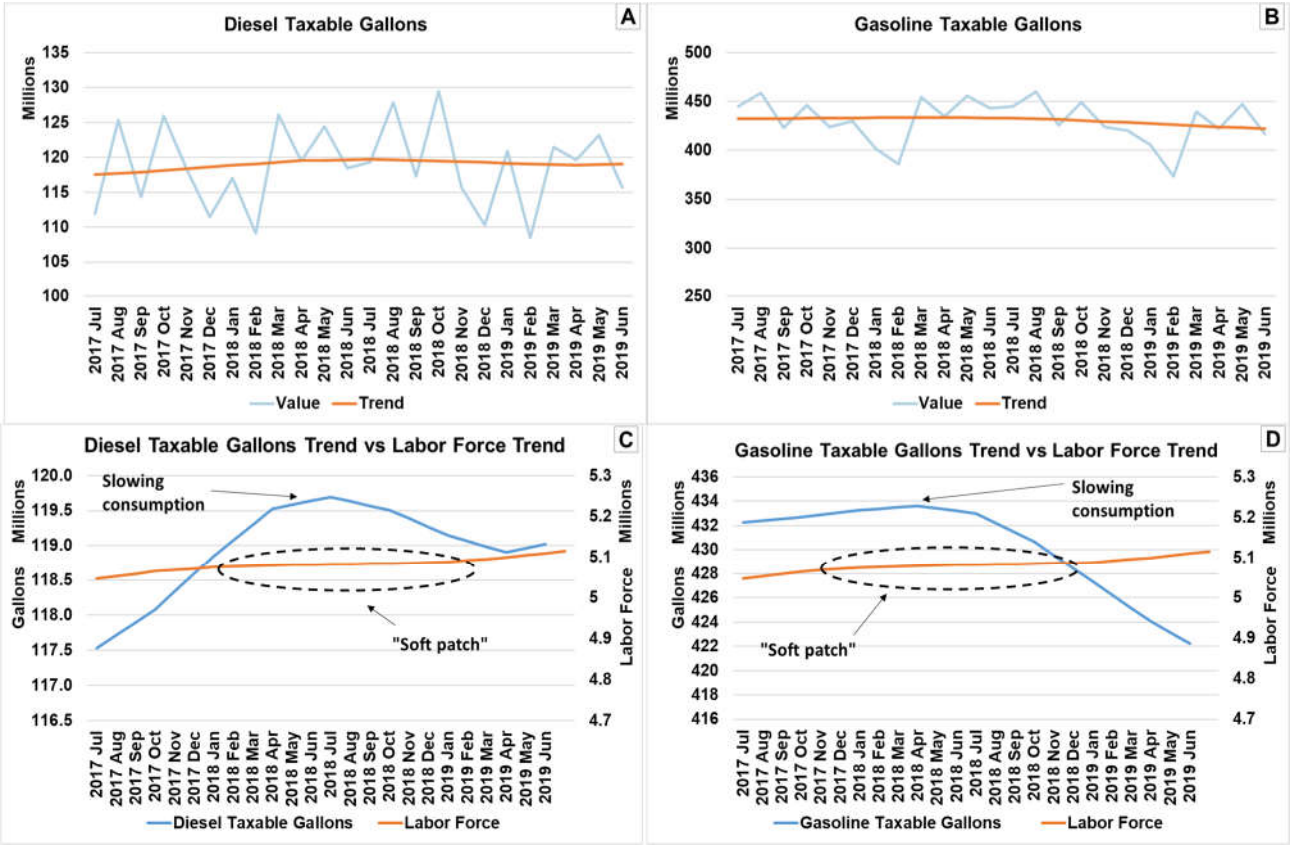
Our analyses are intended to provide economic context regarding changes in fuel consumption levels. We did not forecast future fuel consumption. We were unable to determine that any single variable was the direct cause of consumption behavior. Consumption behavior is the result of a combination of influencing factors. We did not estimate the degree of influence each variable exerts on consumption, and these variables could counteract each other.

State Factors

Factors affecting gasoline and diesel levels should explain changes in motor fuel tax revenue. Gasoline and diesel consumption are key drivers of motor fuel tax revenue, nearly all of which is generated from taxable gallons sold. Gasoline and diesel comprise nearly all monthly taxable gallons sold—significantly more than the other fuel categories (aviation, liquid petroleum, or special fuels). Between July 2015 and March 2020, gasoline averaged approximately 428 million gallons sold monthly, while diesel averaged approximately 118 million gallons sold monthly. Combined, the other fuels (aviation, liquid petroleum, and special fuels) averaged approximately 1.9 million gallons sold monthly.

As shown in **Exhibit 7 (A and B)**, consumption trends in gasoline and diesel taxable gallons slow in 2017 and start to decline in 2018. Diesel's trend peaked in July 2018 and declined by 0.7% by April 2019 before growing again. Gasoline's trend peaked in April 2018 and declined by 2.8% by July 2019. This slowdown and decline in consumption correspond with a "soft patch" in labor force (see **Exhibit 7 C and D**) and resulted in a $15 million decrease in the amended mid-year fiscal year 2018 motor fuel tax revenue budget estimate. The fiscal year 2019 motor fuel tax revenue estimate was increased by $32 million over the prior fiscal year because of a strengthening in some of the consumption explanatory variable trends, including labor force.

Exhibit 7
Diesel and Gasoline Taxable Gallon Trends (A and B) and Comparison to Labor Force (C and D)[1]



[1]Smoothed trend-cycles are left after removing seasonality and irregular components from the raw data, making turning points easier to identify. These trends are robust to extreme values.

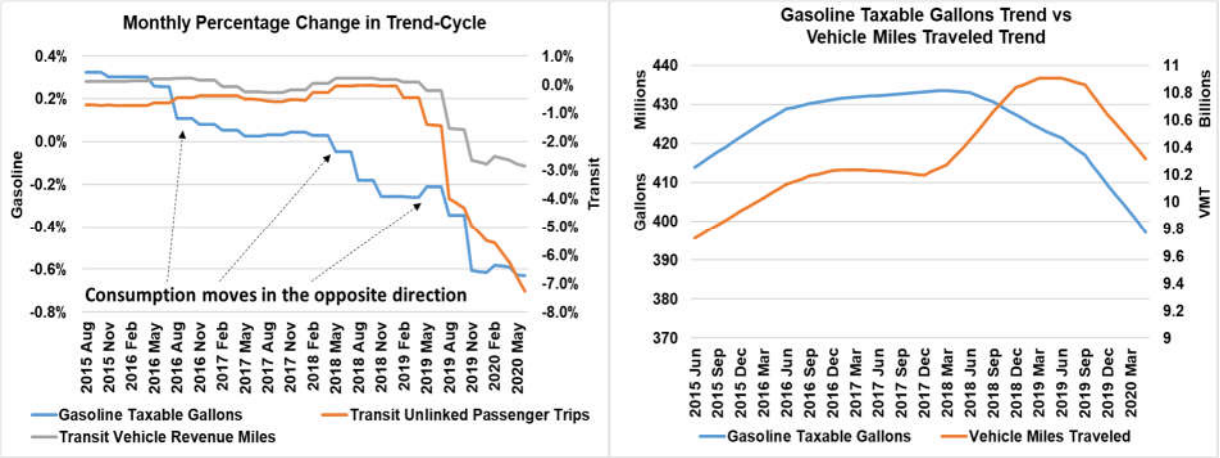
Source: DOAA analysis; DOR MFD-04 taxable gallons; and U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics

While no explanatory variable we reviewed compared perfectly to consumption, the clearest observed relationships were with transit unlinked passenger trips (the number of passengers who board) and transit vehicle revenue miles traveled (scheduled or actual miles traveled in service),[10] as well as nonfarm employment (jobs), unemployment, and vehicle miles traveled.

- Travel-related variables moved in opposite directions to fuel consumption. As shown in **Exhibit 8**, consumption decreased as transit variables and vehicle miles traveled increased, though this relationship was more mixed for vehicle miles traveled.

[10] Transit unlinked passenger trips are the number of passengers who board public transportation vehicles. Transit vehicle revenue miles are miles transit vehicles are scheduled to or actually travel while in revenue service. Revenue service is the time when a vehicle is available to the general public and there is an expectation of carrying passengers. Both transit variables are proxy variables linked to urban density and vehicle usage.

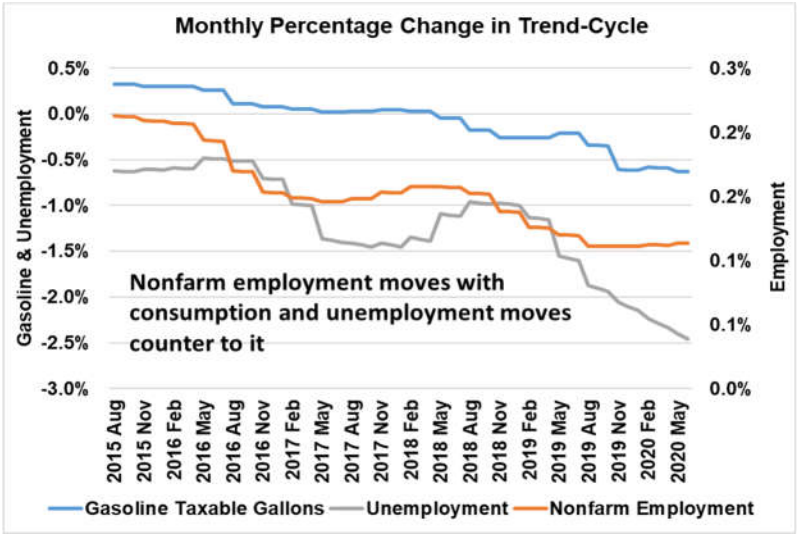
Exhibit 8
Monthly Percentage Changes in Travel Variables



Source: DOAA analysis; DOR MFD-04 taxable gallons; U.S. Department of Transportation, Federal Transit Administration, August 2020 National Transit Database extract, and Federal Highway Administration vehicle miles traveled

- As shown in **Exhibit 9**, nonfarm employment changed at the same time and in the same direction as gasoline consumption (the observation was similar for diesel). By contrast, the number of unemployed tended to move in opposite directions to gasoline and diesel consumption.

Exhibit 9
Monthly Percentage Changes in Employment Variables



Source: DOAA analysis; DOR MFD-04 taxable gallons; and U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics and Current Employment Statistics

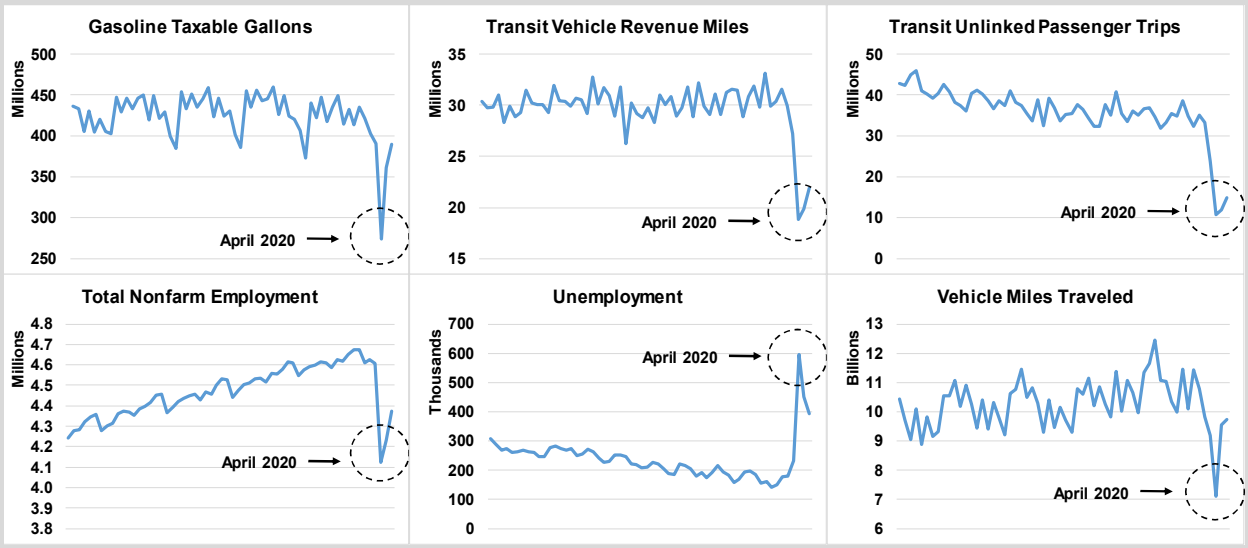
- Some employment-related explanatory variables such as labor force, labor force participation rate, and the number of employed people showed important movements with consumption even though their overall relationship was mixed. These variables had slowing growth or declines corresponding to when consumption began to slow and decline in 2017 and 2018.
- While research states that price and income are important predictors of consumption, we did not find a strong relationship between either variable and gasoline and diesel consumption during 2015 to 2020. The literature suggests that fuel quantity demanded may not be immediately affected by changes in price and income—at least in the short-term. However, the literature suggests that increases in price over time may change drivers' behavior, which would reduce quantity demanded, while increases in income increase quantity demanded.
- We determined electric vehicles do not have a significant impact on consumption of gasoline in Georgia. We estimated that the 2020 registered electric vehicles would consume approximately 12 million gallons of gasoline if they were not electrically powered. The annual consumption of gasoline in Georgia is approximately 5 billion gallons. The foregone gasoline consumption resulting from electric vehicles is approximately 0.2% of total annual gasoline taxable gallons. This indicates that any influence these vehicles have over motor fuel tax revenue is likely minimal. Data limitations for the period fiscal year 2016 to fiscal year 2020 prevented creating a trend of electric vehicle sales. However, based on 2020 electric vehicle registrations we were able to estimate fuel gallons not purchased by these vehicle owners.

COVID-19 Effects

COVID-19, which affected the state of Georgia beginning on March 14, 2020 when the governor issued a declaration of public health state of emergency, is a potential factor that could reduce future motor fuel revenue in the near-term and perhaps longer. Two ways in which COVID-19 may reduce motor fuel revenue is through changing employment levels and travel behavior. As shown on the exhibit below (July 2015 to June 2020), major changes occurred when the pandemic began.

- ***Employment effects*** *- Virus prevention efforts reduced employment in some industry sectors, and levels have not yet recovered to where they were before the pandemic. Employment and income are linked, and income determines how much consumers can spend on fuel. Falling employment could lead to reduced income and consumption. Government assistance may mitigate these effects to some degree through unemployment assistance and pandemic stimulus.*

- ***Travel behavior*** *- Falling vehicle miles traveled and increases in public transit use could reduce fuel consumption and revenue. Both personal and public travel diminished due to the virus, and neither are back to pre-pandemic levels. Should work habits such as increased teleworking become permanent, fuel consumption and revenue could be reduced.*



While we cannot be certain whether COVID-related changes will persist, there is some indication from policy makers and industry that they may. According to the Federal Reserve Chairman, "The pandemic has accelerated existing trends in the economy and society, including the increasing use of technology, telework, and automation. This will have lasting effects on how people live and work." An April 2020 survey of human resource executives conducted by the Conference Board found that 77% expect the number of employees working from home at least three days per week will increase even 12 months after COVID-19. Additionally, a March 2020 Gartner survey of 317 company finance leaders, including more than 200 CFOs, found that 74% plan to move some of their workforce to full-time remote work. The magnitude of these changes and how long they must persist to affect motor fuel revenue is unknown.

Regional Factors

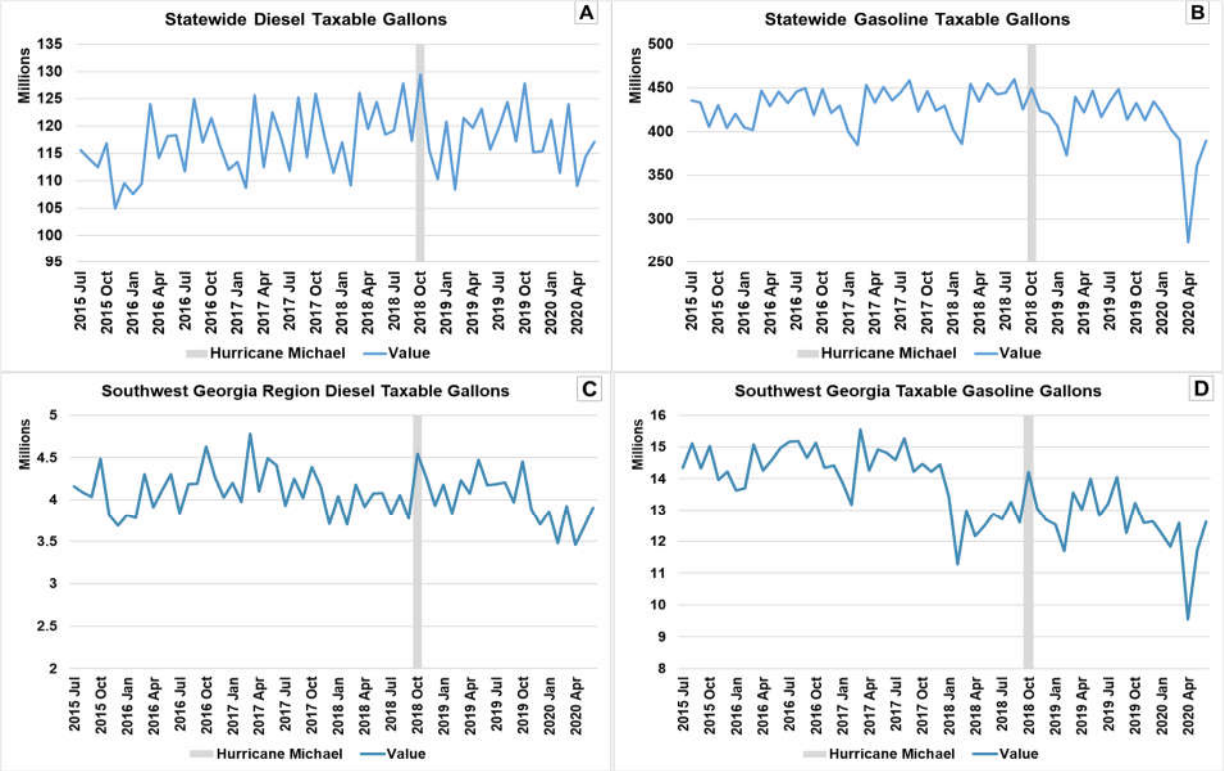
Factors that influence fuel consumption may have different effects in regional and county areas, but these effects are likely not to have a statewide impact unless they are widespread or significantly impact the most populous regions. For example, state gasoline and diesel fuel consumption are dominated by the densely populated area served by the Atlanta Regional Commission (ARC). Changes affecting other regions

would need to overcome ARC and other regional effects when aggregated to have an impact at the statewide level. However, while factors may not impact state motor tax revenue, they could still affect local motor fuel tax revenue, as discussed on page 3.

We examined the consumption of gasoline and diesel fuel in each of 12 areas served by Georgia Regional Commissions for evidence of influence from two potential consumption-affecting factors: Hurricane Michael and population changes. We expected to see regional effects from both that were not apparent in the statewide consumption data. We did not observe any effects from Hurricane Michael, but we did find potential effects from domestic migration in some regions.

- **Hurricane Michael** – Hurricane Michael made landfall in October 2018. We expected to see some unusual activity in or around this month in the monthly consumption series, especially in the southwest and southern regions. However, there was no apparent effect from the storm in any region. Changes in gasoline and diesel consumption in and around the month of landfall were not outside the range of those in prior and future periods (see **Exhibit 10**).

Exhibit 10
Hurricane Michael Had No Discernable Influence Statewide or Regionally

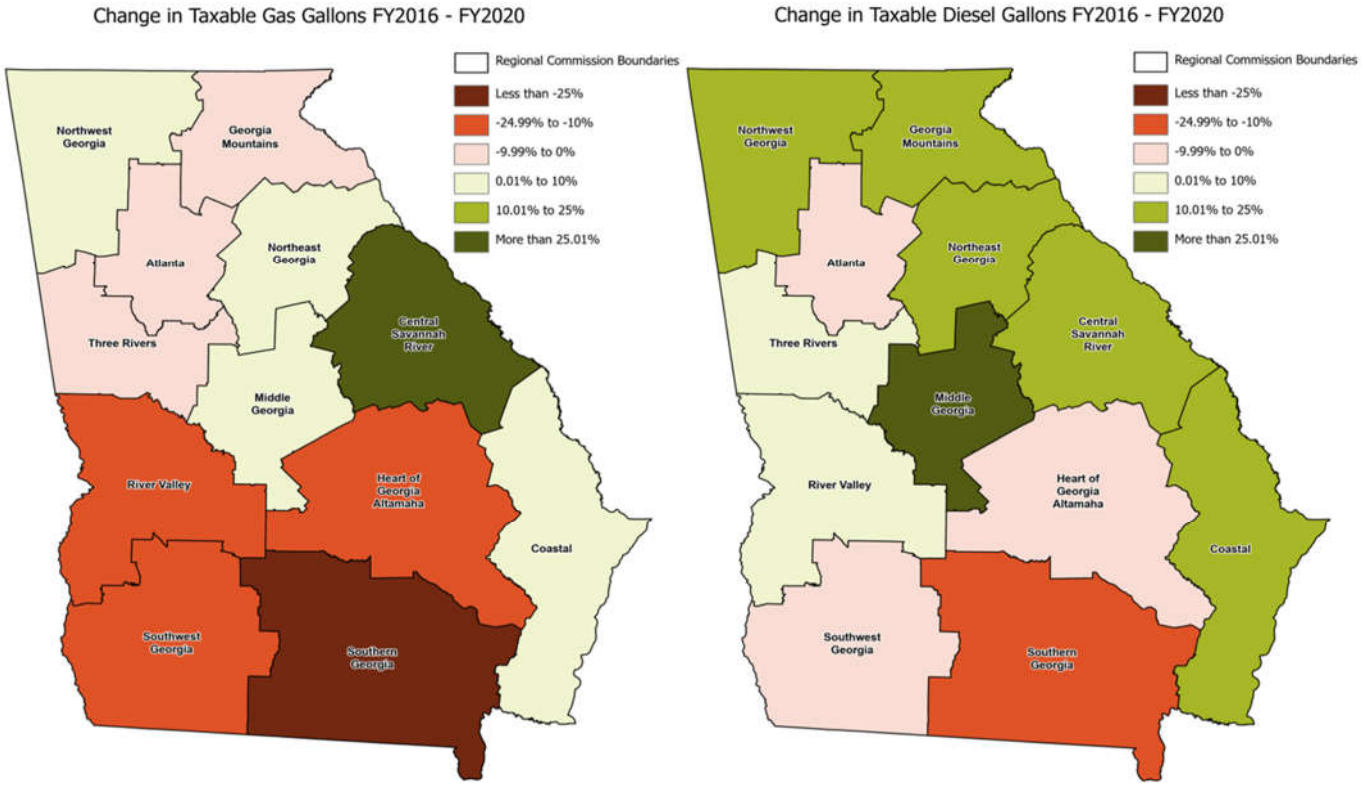


Source: DOAA analysis and DOR MFD-04 (statewide) and ST-3 (region) taxable gallons

- **Population** – As shown in **Exhibit 11**, some regions experienced gasoline and diesel consumption declines from fiscal year 2016 to fiscal year 2020. While not a strong explanatory factor statewide, regional population trends may explain some of these declines. In the Heart of Georgia Altamaha, Southwest

Georgia, and River Valley[11] regions, net population declined from 2010 to 2019. The primary contributor to these declines was domestic migration out of the regions. While the Southern Region had the largest declines in gasoline and diesel consumption, its population was growing at the same time. We were unable to identify an explanation for these declines.

Exhibit 11
Regional Gas and Diesel Consumption from FY 2016 to FY 2020



Source: DOAA analysis and DOR ST-3 taxable gallons

Finding 4: Since July 2016, the annual adjustments for inflation and fuel efficiency have increased the state excise tax rate by approximately $0.03 per gallon.

O.C.G.A. § 48-9-3 (a)(1.1) requires DOR to adjust the state excise tax rate for gasoline and diesel annually to ensure the state excise tax rate keeps pace with inflation and fuel efficiency. Between fiscal years 2017 and 2020 these adjustments resulted in approximately $228.3 million more revenue than if the state excise tax rate were not adjusted. Inflation accounted for the majority of the increase.

[11] The River Valley region had growing population in 2018 and 2019, but the net population change from 2015 through 2019 was still negative.

DOR calculates the annual adjustment to the state excise tax rate by multiplying the state excise tax rate by the percent change in fuel efficiency. The resulting rate is then multiplied by the annual percentage increase or decrease in CPI.

The first adjustment[12] to the state excise tax rate was effective January 2017 and increased the gasoline tax rate from $0.26 per gallon to $0.263 per gallon. Since then, the state excise tax rate for gasoline has grown to $0.287 per gallon. Effective January 2017, the state excise tax rate for diesel increased from $0.29 per gallon to $0.294 per gallon. Since then, the state excise tax rate for diesel has grown to $0.322 per gallon.

The growth in the state excise tax rate and motor fuel tax revenue is primarily attributed to the growth in inflation. Fuel efficiency as calculated by DOR[13] decreased twice between 2016 and 2020. However, the growth of inflation during this period (approximately 1% to 2% annually) was large enough to offset a decrease in fuel efficiency.

As shown in **Exhibit 12**, the inflation adjustment to the state excise tax rate for gasoline and diesel grew approximately $0.025 and $0.027 per gallon, respectively. By contrast, the fuel efficiency adjusted state excise tax rate grew by only $0.003 per gallon for gasoline and diesel. Of the $228.3 million[14] generated from the fuel efficiency and inflation adjustments between fiscal years 2017 and 2020, inflation generated approximately $192.5 million (84%).

Exhibit 12
Inflation Adjustments Accounted for the Greatest Increase to the State Excise Tax Rate, CY 2017 to 2021[1]

		Calendar Year						Total
	Annual Adjustment	2016	2017	2018	2019	2020	2021	Growth
Gasoline & Other Fuels	Excise Tax Rate	$ 0.26	$ 0.260	$ 0.263	$ 0.268	$ 0.275	$ 0.279	
	Fuel Efficiency Adjustment	$ -	$ 0.001	$ (0.000)	$ 0.001	$ (0.001)	$ 0.001	**$ 0.003**
	Inflation Adjustment	$ -	$ 0.002	$ 0.006	$ 0.006	$ 0.005	$ 0.006	**$ 0.025**
	Final ExciseTax Rate	**$ 0.26**	**$ 0.263**	**$ 0.268**	**$ 0.275**	**$ 0.279**	**$ 0.287**	**$ 0.027**
Diesel	Excise Tax Rate	$ 0.29	$ 0.290	$ 0.294	$ 0.300	$ 0.308	$ 0.313	
	Fuel Efficiency Adjustment	$ -	$ 0.001	$ (0.000)	$ 0.002	$ (0.001)	$ 0.002	**$ 0.003**
	Inflation Adjustment	$ -	$ 0.002	$ 0.006	$ 0.006	$ 0.006	$ 0.007	**$ 0.027**
	Final Excise Tax Rate	**$ 0.29**	**$ 0.294**	**$ 0.300**	**$ 0.308**	**$ 0.313**	**$ 0.322**	**$ 0.032**

[1] The excise tax rate, fuel efficiency adjustment and inflation adjustment when combined may not equal the final rate due to rounding of the adjustment rates.

Source: DOAA analysis

To adjust the excise tax rate for fuel efficiency, O.C.G.A. § 48-9-3(a)(1.1)(B) requires DOR to calculate the average miles per gallon of all new vehicles registered in Georgia the previous year. DOR staff stated that they are unable to calculate fuel efficiency using this method due to data limitations. They determined an alternative method to adjust the state excise tax rate. Based on the availability of data, we could not

[12] The state excise tax rate must be adjusted by July of each year and is effective January 1 to December 31 of the next calendar year.

[13] DOR calculates fuel efficiency using the Department of Energy Fuel Economy Guides, which are regularly updated. DOR calculations are based on the time in which they pulled the fuel economy guides.

[14] This amount reflects the estimated state motor fuel tax revenue collected from distributors for all fuel types (gasoline, diesel, liquid petroleum gas, special fuel, and unlicensed aviation gasoline) except licensed aviation gasoline and does not account for refunds, vendor's compensation, or interest. This revenue was calculated by multiplying the number of gallons sold by the applicable adjustments to the state excise tax rates each month.

determine the impact of DOR's method of calculation relative to the method specified in law.

GDOT's Response: *In its response, GDOT expressed concerns with the methodology DOR uses to adjust the excise tax rate for fuel efficiency and whether the methodology is effective in mitigating the effects of increased fuel efficiency. GDOT stated that data in Exhibit 8 of this report "suggest an increase in fuel efficiency." GDOT noted that "due to data limitations, the Department of Revenue is unable to adjust the index within the letter of the law" and concluded that there is a "discrepancy between trends seen in VMT and gasoline consumed versus the fuel efficiency index adjustment," and attributed this perceived discrepancy solely to "the slowing growth rate of motor fuel tax revenue." GDOT believes the methodology DOR uses to calculate the fuel efficiency adjustment reduces revenue. GDOT used vehicle identification number data provided by DOR as well as published fuel guide information to calculate an alternative fuel efficiency adjustment in line with the intent of O.C.G.A. § 48-9-3 (a) (1.1). This alternative adjustment would increase revenue.*

***DOAA Response**: As stated in the report, we agree that DOR is not following the letter of the law when adjusting the excise tax for fuel efficiency. Incomplete data on certain types of vehicles in the federal source for fuel efficiency standards and incomplete data on newly registered vehicles prevent calculating a fuel efficiency index that follows the letter of the law. Given these data limitations, we were unable to determine which agency (DOR or GDOT) has the adjustment methodology that would closest resemble the calculation outlined in O.C.G.A. § 48-9-3 (a) (1.1). Additionally, the law's narrow focus on newly registered vehicles results in efficiency estimates that are not representative of all vehicles in use, which would be a mix of new and old.*

It is plausible that the diverging trends of vehicle miles traveled (VMT) and gallons consumed is the result of increased fuel efficiency, but we caution against emphasizing the importance of any single factor discussed in our report. As discussed in finding three, many potential factors influence fuel consumption, and we cannot be certain that the trend in gallons we observed is not driven more by factors other than fuel efficiency. Additionally, the state-level VMT data used are subject to revision and continual update. The VMT data makes no distinction of miles traveled by vehicle fuel type or resident status. The VMT trend presented in the report includes miles for electric and alternative fuel vehicles as well as those for nonresident travelers passing through the state (who may not purchase fuel in Georgia).

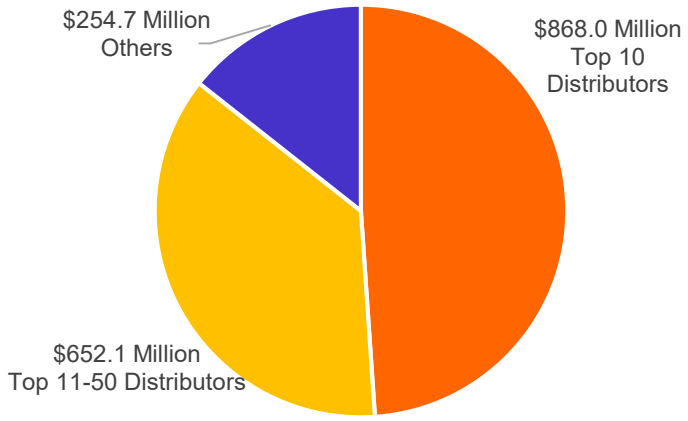
Finding 5: DOR has reasonable controls to ensure motor fuel tax revenue is collected.

Payments from motor fuel distributors account for about 97% of motor fuel tax revenue collected annually. Because these distributors represent a relatively small and finite group of taxpayers, DOR can readily monitor the distributors. Additionally, electronic tax records provide the data necessary to monitor motor fuel tax payments made by distributors. DOR conducts audits and operates a collections unit to ensure motor fuel tax revenue is collected. Also, the incentives offered provide an effective tool for achieving voluntary compliance with motor fuel tax requirements.

Motor fuel distributors represent a relatively small segment of the state's taxpayers. As of October 2020, there were approximately 850 licensed motor fuel distributors in the state. As shown in **Exhibit 13**, the 10 distributors with the highest amount of total

payments accounted for almost half ($868.0 million) of the $1.8 billion collected from distributors during fiscal year 2020.[15] The next 40 distributors accounted for another 40% of total payments ($652.1 million).

Exhibit 13
Top 10 Distributors Account for 49% of Motor Fuel Tax Payments, FY 2020



Source: DOAA analysis of DOR data

To determine whether DOR has reasonable controls to ensure motor fuel tax revenue is collected, we reviewed the overall motor fuel tax collection environment and gained an understanding of primary control activities related to compliance.[16] This examination did not assess DOR's audit and collections functions.

We found that DOR has reasonable controls to ensure motor fuel tax revenue is collected. DOR uses several mechanisms that facilitate the collection of motor fuel tax revenue. These mechanisms are discussed below.

- **Incentivized payment structure** – Statutorily authorized incentives and penalties promote voluntary compliance with requirements for distributors to pay motor fuel taxes.[17] DOR provides distributors a 1% allowance for filing and paying motor fuel taxes on time. DOR imposes a $50 late fee and 10% penalty when distributors file motor fuel taxes after the deadline.[18] DOR also charges distributors monthly interest on overdue tax payments.[19] During

[15] Approximately 500 of the 850 licensed distributors conduct transactions that require payment of motor fuel taxes. Distributors who exclusively import fuel from outside of the state pay motor fuel taxes in the state the fuel was purchased. While these distributors report their motor fuel transactions to DOR, they are not subject to Georgia's motor fuel tax.

[16] This review did not test DOR's control activities for compliance related functions.

[17] O.C.G.A. § 48-9-8(b) allows distributors to retain 1% of the motor fuel tax as compensation when they report and pay motor fuel taxes on time. O.C.G.A. § 48-9-16(a) and (d) establishes penalties and interest for distributors who fail to file reports and pay taxes due in a timely manner.

[18] Distributors are required to file and pay motor fuel taxes by the 20th day of each month.

[19] As of July 1, 2016, interest accrues at an annual rate equal to the Federal Reserve prime rate plus 3%.

fiscal year 2020, DOR collected approximately $532,000 in penalty and interest payments from motor fuel distributors.

- **Electronic tax records** – DOR utilizes electronic tax records to ensure motor fuel taxes owed are collected. As of July 1, 2019, O.C.G.A. § 48-9-8(a) requires distributors to electronically file tax reports for motor fuel. DOR's online portal, the Georgia Tax Center, allows taxpayers to electronically file and pay taxes. DOR reported that the availability of electronic records for motor fuel facilitates its ability to efficiently monitor taxpayer compliance.
- **Periodic audits** – DOR's Division of Audits' Motor Fuel Excise Audit Unit has 23 employees who electronically review tax reports filed by licensed distributors to verify the accuracy of motor fuel tax returns. Staff examine electronically submitted motor fuel tax forms and receipts from motor fuel transactions. When errors are identified, DOR notifies distributors of the amount due, and accounts that are not paid in a timely manner proceed to collections.
- **Collection functions** – The Division of Compliance analyzes tax account data to identify and pursue taxpayers who failed to file tax returns or make timely payments. Agents contact taxpayers to notify them of the statutory requirements and obtain compliance with a payment schedule. Accounts that are not paid are subject to enforcement actions such as a lien or garnishment of wages. The division coordinates its activities with outside agencies, employers, and financial institutions to collect outstanding payments.

  While DOR's collection process is in place, it is rarely used for motor fuel accounts. According to DOR staff, motor fuel distributors represent a relatively small segment of collection accounts. About 2% of licensed distributors had a balance greater than $25,000 as of October 2020.

Finding 6: Slower growth in motor fuel tax revenue has not significantly impacted current state transportation projects.

Motor fuel funds appropriated to GDOT have increased each year since the Transportation Funding Act passed in 2015. This has allowed the agency to commit funding to complete its long-term capital projects and programs. However, sustained declines in motor fuel tax revenue related to COVID-19 may impact projects in the future.

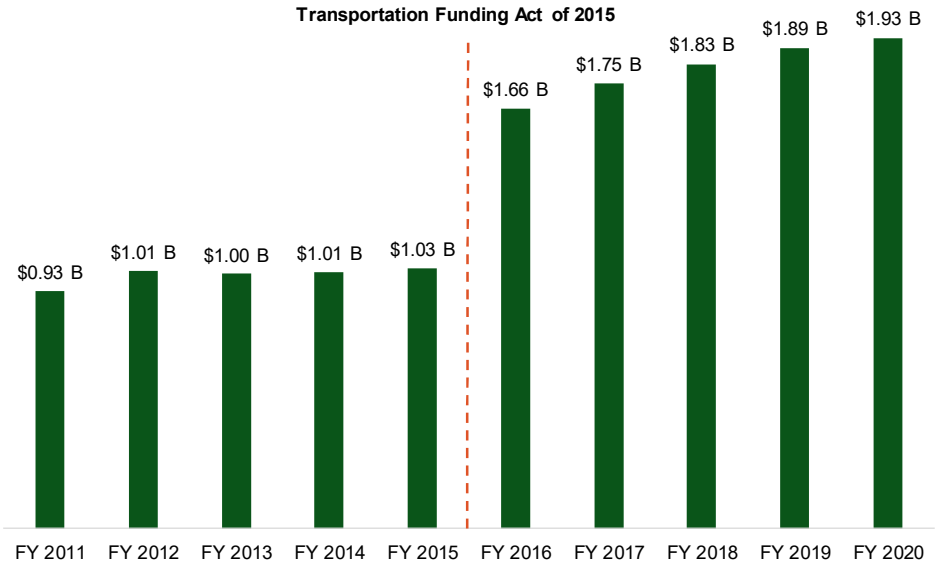
Motor fuel funds make up a considerable portion of GDOT's budget for transportation projects. For fiscal year 2020, motor fuel funds accounted for 52% of GDOT's total appropriations and 96% of its state funds. Each of GDOT's 12 programs receives motor fuel funds (except Intermodal). The funds comprise between 7% and 100% of each program's fiscal year 2020 budget and more than 30% of seven programs' budgets.

As discussed on page 5, motor fuel tax revenue increased by 2% in fiscal year 2020, compared to 6% in fiscal year 2017. While the growth of motor fuel funds has slowed, it has not significantly impacted transportation projects for the following reasons.

- **Transportation Funding Act of 2015** – In 2015, the General Assembly passed the Transportation Funding Act, which created a single state excise tax rate. The act increased the state excise tax rate from $0.075 per gallon to $0.26 per gallon for gasoline and $0.29 per gallon for diesel.[20] Additionally, the act required the state excise tax rate to be annually adjusted for fuel efficiency and inflation to ensure motor fuel tax revenue levels are maintained over time.

  In the five years prior to the act, motor fuel tax averaged approximately $1.0 billion, compared to $1.8 billion between fiscal years 2016 and 2020 (see **Exhibit 14**). The significant increase in revenue—and subsequently GDOT's state appropriation—allowed GDOT to increase the number of funded transportation projects.

Exhibit 14
Motor Fuel Funds Have Averaged $1.8 Billion Since FY 2016



Source: DOAA analysis of DOR documents

- **Guaranteed Motor Fuel Tax Funds** – GDOT is the state agency that receives appropriations of motor fuel tax funds. For each fiscal year, GDOT receives the net revenue from motor fuel taxes equal to the amount collected in the previous fiscal year (less any funds designated to authorize or pay general obligation debt), as discussed on page 7.[21] This establishes a baseline for appropriations and ensures the agency receives at least the amount collected the prior fiscal year.

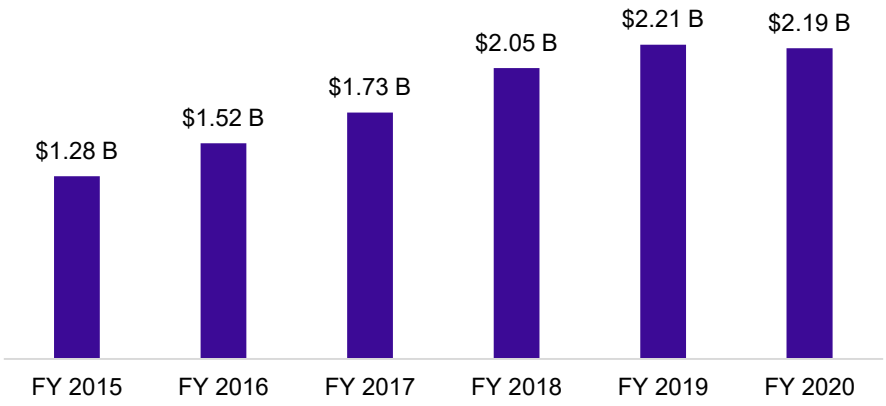
- **Motor Fuel Fund Balance** – Constitutionally, motor fuel funds do not lapse and can be carried into future fiscal years. The sustained increases in GDOT's appropriations from motor fuel funds since fiscal year 2016 have enabled the agency to commit funding to complete its long-term capital projects and

[20] In addition to increasing the excise tax rate from $0.075 cents per gallon for both gasoline and diesel, the act also eliminated the second motor fuel tax and exempted motor fuel from the 4% state sales tax.

[21] State law recognizes GDOT as the designated agency to receive motor fuel funds other than those used to authorize or pay general obligation debt for public roads and bridges.

programs. To maintain budgetary compliance, these committed funds must be reported in the year in which they are spent. As a result, between 6% and 24% of GDOT's annual appropriations has been reserved and carried forward as required by the Office of Planning and Budget and the State Accounting Office's policy. As shown in **Exhibit 15**, the fund balance was $2.2 billion in fiscal year 2020—a 70% increase from the $1.3 billion in fiscal year 2015.

Exhibit 15
GDOT's Motor Fuel Fund Balance Has Grown From $1.28 Billion in FY 2015 to $2.19 Billion in FY 2020



Source: DOAA analysis of GDOT data

GDOT's motor fuel fund balance is primarily used to fund ongoing projects authorized in previous fiscal years. This helps ensure that the agency has funds available to complete its long-term capital projects[22] and other programs over time. As of June 30, 2019, approximately $1.7 billion[23] of the motor fuel fund balance was allotted to more than 2,700 capital projects. This represented approximately 80% of GDOT's total motor fuel fund balance.

The agency also sets aside a portion of the motor fuel fund balance to cover unanticipated expenses for ongoing projects and mitigate the financial burden of emergencies (e.g., hurricanes, winter storms) on the current fiscal year budget.

[22] Capital projects are those funded to construct and maintain roads and bridges. These projects are in the capital construction, capital maintenance, and local maintenance and improvement grant programs.

[23] As of June 30, 2019, approximately $2.0 billion in reserve funds were allotted for project authorizations.

State Motor Fuel Fund Balance, Net Position Differences and Unaudited Motor Fuel Cash Balance

The State Motor Fuel Fund has different balances in various state reports because of differences in the basis of accounting. The fund balance in the 2019 Budgetary Compliance Report (BCR) is reported on the statutory basis of accounting and is approximately $2.2 billion. The net position in the 2019 Comprehensive Annual Financial Report (CAFR) is reported on an accrual basis of accounting and is approximately $3.5 billion. The CAFR excludes encumbrances.

GDOT's unaudited motor fuel cash balance reported on the statutory basis of accounting is approximately $3.5 billion (as of June 30, 2019) and can be categorized as shown in the table below.[1]

Motor Fuel Cash Balance		**% of Total**
Reserved funds allotted for project authorizations	$ 2,063,715,722	58%
Encumbrances (outstanding purchase orders)	$ 1,248,886,544	35%
Contingency reserve for ongoing projects	$ 93,586,992	3%
Expenses incurred but not paid (outstanding accounts payable)	$ 79,150,586	2%
Uncommitted Balance	$ 55,586,112	2%
Total Cash Balance	**$ 3,540,925,955**	**100%**

[1] This summary is based on information from the state financial system (TeamWorks).

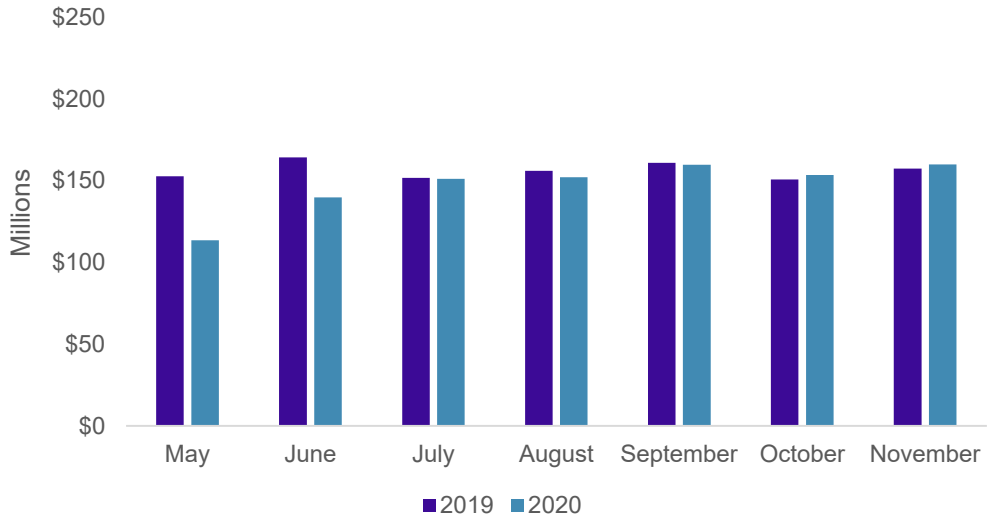
Source: DOAA analysis of GDOT data

While current transportation projects have not been significantly impacted, a long-term decline in motor fuel tax revenue could result in future delays. As discussed on page 15, COVID-19 may have changed commuting behavior, which could impact motor fuel tax revenue. From May to November 2020 (period impacted by COVID-19 prior to the release of this report),[24] the state collected approximately $64 million less in motor fuel tax revenue than during the same period in 2019.

As shown in **Exhibit 16**, the largest decline in motor fuel tax revenue occurred in May and June 2020 (approximately $64 million). At the beginning of fiscal year 2021, (July to September 2020), motor fuel tax revenue decreased approximately $6 million compared to the same time last year. However, revenue began rebounding in October 2020 and resulted in increased revenue for October and November 2020 relative to last year's collections for those months ($5 million). It is unknown whether motor fuel tax revenue will continue to increase each month from the prior year given the uncertain duration of COVID-19.

[24] May is the first month in this analysis since April 2020 was the first full month the state was impacted by COVID-19. Tax payments for motor fuel transactions that occurred in April are due in May.

Exhibit 16
Motor Fuel Tax Payments Decreased Approximately $64 Million From May to November 2020 Compared to the Previous Year



Source: DOAA analysis of DOR documents

Another factor that could impact motor fuel tax revenue is the decline in interest revenue. As discussed on page 6, motor fuel tax funds generate interest that is included in motor fuel tax appropriations to GDOT. From fiscal years 2017 to 2020, interest on motor fuel tax revenue grew from approximately $20 million to $69 million. However, interest revenue for fiscal year 2021 is estimated to only generate $10 million, an 86% decrease from fiscal year 2020.

Given the estimated decline in interest revenue for fiscal year 2021, if motor fuel tax revenue continues to decline due to COVID-19, GDOT's appropriations from motor fuel funds for fiscal year 2022 could be affected. GDOT staff reported that if the availability of motor fuel tax funds were to decline, state motor fuel tax funded projects and maintenance activities would be most affected. Projects such as widening, resurfacing, bridge replacements, mowing, and litter pickup could be delayed.

Appendix A: Objectives, Scope, and Methodology

Objectives

This report examines factors that impact fuel consumption and motor fuel tax revenue Specifically, our examination set out to determine the following:

1. What are the trends in motor fuel tax revenue?
2. How is the amount budgeted from motor fuel tax revenue determined?
3. What state and regional factors that affect fuel consumption also affect the growth of state motor fuel tax revenue?
4. How have the annual adjustments to the state excise tax affected the growth of motor fuel tax revenue?
5. Are there reasonable controls to ensure motor fuel tax revenue is collected?
6. What impact has the slower growth of motor fuel tax revenue had on state transportation projects?

Scope

This special examination generally covered activity various divisions of the Department of Revenue (DOR) performed that supported the collection of motor fuel tax revenue during fiscal years 2016-2020, with consideration of earlier or later periods when relevant. Information used in this report was obtained by reviewing relevant laws, rules, and agency documents. We also interviewed program staff from the Division of Audits, Compliance, Taxpayer Services & Processing, Legal Affairs & Tax Policy, and Finance and Accounting. We analyzed activity data and information from DOR's Statistical Report.

We obtained data and reports DOR collected from taxpayers through the Georgia Tax Center, which is the online portal that allows individuals and businesses to perform tax related functions, including filing and paying taxes. For motor fuel distributors, the data contains transaction level data by fuel type and payments made for taxable amounts reported on Form MFD-04 and Form ST-03 Motor Fuel. Payment transactions initiated through the Georgia Tax Center are transferred into DOR's Integrated Tax System. In 2020, DOAA's Financial Audit Division gained an understanding of DOR's process and controls for motor fuel tax related transactions. In addition, FAD tested DOR's management review control over motor fuel tax related transactions, tested the verification of transaction totals and the timely and accurate recording of motor fuel transactions, and performed substantive analytical procedures over motor fuel tax. FAD concluded there were no deficiencies found in these areas of testing. While we concluded that the information was sufficiently reliable for the purposes of our review, we did not independently verify the data.

Government auditing standards require that we also report the scope of our work on internal control that is significant within the context of the audit objectives. One of our objectives address aspects of DOR's internal controls for ensuring motor fuel tax revenue is collected. Specific information related to the scope of our internal control work for that objective is described in the methodology section below.

Methodology

To determine the trends in motor fuel tax revenue, we analyzed information reported in various state financial and budget reports, including the Governor's

Budget Report, General Appropriations Acts, Georgia Revenue & Reserves Report, and the Comprehensive Annual Financial Report for fiscal years 2015 to 2020.

To determine how the amount budgeted from motor fuel taxes is determined, we reviewed Governor's Budget Reports, General Appropriations Acts, and Georgia Revenue & Reserves Reports for fiscal years 2016-2020. We also reviewed appropriations related provisions in state law and the state constitution. We interviewed the state economist and staff in the Governor's Office of Planning and Budget staff and reviewed agency documentation and correspondence.

To determine which state and regional factors affect fuel consumption and motor fuel tax revenue, we first used motor fuel budget data from the Georgia Revenue and Reserves Report to determine that collections from taxable gallons sold generate the majority of motor fuel tax revenue. After establishing this linkage between revenue and consumption, we acquired taxable gallons data from DOR motor fuel distributor returns reported on Forms MFD-04 for the state excise tax and Form ST-3 Motor Fuel for local sales and use tax. We used the MFD-04 taxable gallons for statewide consumption analysis, and we used ST-3 taxable gallons for regional analysis. These are distinct data sources that are not additive or reducible to each other, but they capture similar information.

We aggregated MFD-04 taxable gallons by fuel type from fiscal year 2016 to fiscal year 2020 (July 2015 to June 2020). The fuel types include aviation gasoline, fuel oil (largely diesel fuel), gasoline, liquid petroleum gas, and special fuels. We identified several outliers in the statewide consumption series and conferred with DOR for an explanation of why they occurred. DOR was able to explain each case and provide some corrections. We corrected the outliers as needed, using the values provided or by imputing a new value when no direct correction amount was given. This adjusted series was used for analysis. We assessed the controls over this consumption data and determined that the data were sufficiently reliable for our analyses.

We aggregated ST-3 taxable gallons by fuel type and by Georgia Regional Commission for the fiscal year 2016 to fiscal year 2020 period. We decided to aggregate by region after determining that analysis of every county in the state would not be possible given project timelines. There are 12 regional commissions that serve a cluster of counties geographically close to each other. The regions do not share any counties. Our regional analysis was focused in part on the existence of certain outliers, so outlier corrections were not a concern for this data. We assessed the controls over this consumption data and determined that the data were sufficiently reliable for our analyses.

We reviewed motor fuel demand model literature including sources from other states, the U.S. Energy Information Administration (EIA), and GDOT. Our review identified seven key explanatory variables of motor fuel consumption including price of fuel, income, vehicle stock or ownership, employment variables, population or urban density, vehicle miles traveled, and vehicle fuel efficiency. There are many other variables researchers have used, but these seven variables and their variations were common to many models reviewed. We collected these variables or a proxy for them at the statewide level from publicly available state and federal sources. We attempted to get monthly, Georgia-level data when possible, but several sources were only available at an annual frequency.

To determine which factors best explained fuel consumption, we first determined which fuel types were driving consumption. Using MFD-04 data, we found that taxable motor fuel consumption was primarily made up of gasoline and fuel oil consumption. These were by far the largest fuel types by volume. We estimated smooth trend-cycles for these two fuels from July 2015 to June 2020. Smoothed trend-cycles are left after removing seasonality and irregular aberrations from the raw, time-ordered data, making turning points in the series easier to identify. These turning points are the consumption behavior we are trying to explain. We used a method called STL decomposition to estimate the seasonal, trend-cycle, and irregular components of each fuel series. This technique is an iterative process utilizing LOESS smoothing. This decomposition method can handle monthly seasonality and is robust to outliers.

We also applied STL to each explanatory variable we collected to allow for a trend-to-trend comparison. For monthly explanatory variables, we visually compared the estimated trend-cycles to those for gasoline and fuel oil, looking for relationships. To allow for more subtle shifts in the data, we also compared the monthly percentage changes in the fuel consumption and explanatory variable trend-cycles. We examined annual explanatory variables for evidence of behavior that would lead to the movements seen in the consumption data. No trend-cycle was estimated for the annual data, as the reporting frequency already removed most seasonal and irregular noise in the series. Because these variables were identified in the literature, we reasoned that the likelihood of a spurious relationship was reduced.

Using ST-3 consumption data, we found that gasoline and diesel fuel were the largest fuel types by volume at the regional level. Unlike the statewide analysis, we only examined population and Hurricane Michael as potential explanatory factors for regional consumption. We did not need smoothed trend cycles for these comparisons. Hurricane Michael was expected to manifest as an outlier in the regional fuel consumption for gasoline and diesel fuel. A smoothed trend robust to outliers would have removed this effect if it existed. The irregular component from the STL could be used for outlier detection, but it is not necessary for identification. We had annual population data for the regions, so no decomposition was necessary.

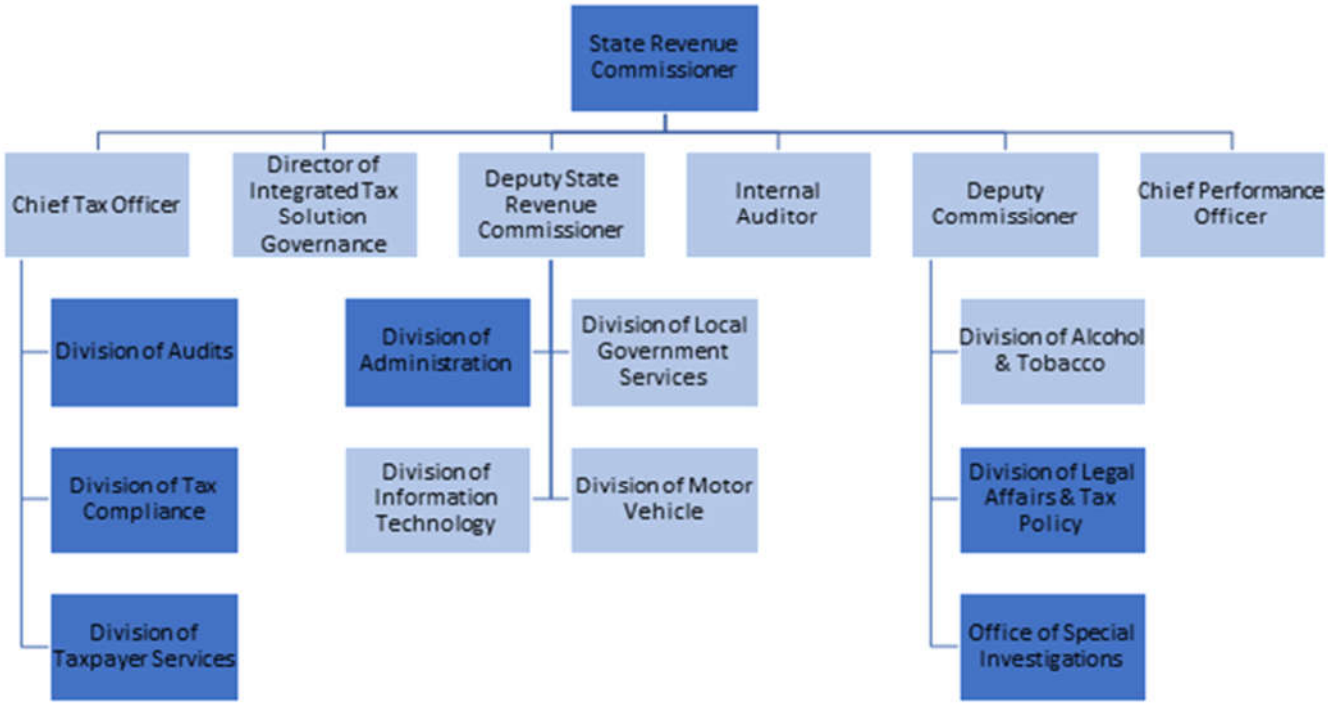
To determine how the annual adjustments to the state excise tax affected the growth of motor fuel tax revenue, we interviewed staff in DOR's Division of Legal Affairs and Tax Policy and reviewed agency documentation regarding the process and information used for adjusting the state excise rate. We also utilized data from DOR's motor fuel gallons summary reports, Department of Energy Fuel Economy Guides and the Department of Labor Bureau of Statistics Consumer Price Index for All Urban Consumers.

To determine whether there are reasonable controls to ensure motor fuel tax revenue is collected, we examined DOR's overall revenue collections environment. We interviewed staff in the Division of Audits regarding DOR's processes for verifying the accuracy of information reported on tax returns and conducting periodic audits of motor fuel returns. We also interviewed staff in the Division of Compliance regarding DOR's process for identifying taxpayers that failed to file a return and/or make tax payments on time. We also examined agency documents and correspondence used in the collections process and reviewed account summary data. The team did not audit DOR's motor fuel audit or collections functions.

To determine the impact the slower growth of state motor fuel tax revenue had on state transportation, we analyzed financial information pertaining to the motor fuel fund from state reports, including the Comprehensive Annual Financial Report and the Budgetary Compliance Report. We also interviewed GDOT budget, finance, and program staff and reviewed agency documents.

We conducted this special examination in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix B: DOR Organizational Chart



Appendix C: Amount Derived from Motor Fuel Taxes, FY 2016-2020

Description	Fiscal Year 2016	2017	2018	2019	2020
Motor Fuel Excise Tax	$1,603,101,885	$1,750,783,811	$1,790,576,123	$1,818,273,405	$1,865,514,651
Motor Carrier Mileage Tax	$11,241,194	$10,108,384	$20,838,044	$28,803,870	$14,561,108
Total Motor Fuel Taxes	**$1,614,343,079**	**$1,760,892,194**	**$1,811,414,167**	**$1,847,077,275**	**$1,880,075,759**
Refunds	($9,773,602)	($20,626,357)	($10,167,821)	($9,270,455)	($7,001,603)
Collection Costs	($8,322,045)	($8,806,743)	($9,058,460)	($9,235,436)	($9,400,564)
Total Motor Fuel Tax Receipts	**$1,596,247,432**	**$1,731,459,094**	**$1,792,187,886**	**$1,828,571,384**	**$1,863,673,591**
3% Sales Tax on Motor Fuel	$50,066,016	$456,416	$277,753	$9,987	$37,054
Total DOR Fuel Collections	$1,646,313,448	$1,731,915,509	$1,792,465,639	$1,828,581,371	$1,863,710,645
Interest	$9,436,908	$19,853,057	$38,130,888	$63,985,299	$69,155,562
Total Motor Fuel Collections	**$1,655,750,356**	**$1,751,768,566**	**$1,830,596,527**	**$1,892,566,670**	**$1,932,866,207**
Motor Fuel Tax Funds on Deposit in the Guaranteed Revenue Debt Common Reserve Fund in Excess of Amount Required	$168,758	$499,581	$665,642	$1,265,664	$1,054,557
Total Amount Derived from Motor Fuel Taxes	**$1,655,919,114**	**$1,752,268,147**	**$1,831,262,169**	**$1,893,832,334**	**$1,933,920,764**

Source: Georgia Revenue & Reserves Report

The Performance Audit Division was established in 1971 to conduct in-depth reviews of state-funded programs. Our reviews determine if programs are meeting goals and objectives; measure program results and effectiveness; identify alternate methods to meet goals; evaluate efficiency of resource allocation; assess compliance with laws and regulations; and provide credible management information to decision makers. For more information, contact us at (404)656-2180 or visit our website at www.audits.ga.gov.