

# Local Government Financial Vulnerability: New Tools for Identifying and Tracking Challenges

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## Background

The Covid-19 pandemic has caused a new set of challenges and operational difficulties, impacting all levels of government. In the United States, local governments are typically the frontline providers of critical public health and public safety operations, both of which are in great demand and pressure during the pandemic. In addition to the day-to-day fiscal issues that local governments can face, the onset of a major pandemic-induced recession has presented a second wave of fiscal problems for local governments. In this situation, state and local governments are seeking out new tools to assess risk and vulnerability and to chart new options moving forward.

Historically, state governments have played an important role in tracking local government finances in areas such as budgeting rules and practices, accounting requirements, and debt issuance. State governments have assigned the role of tracking and administering financial rules on local fiscal health to a variety of agencies and departments, including state auditors, revenue and treasury departments, and community development departments. These agencies are assigned to review potentially thousands of local government entities. Each of these local entities may have a variety of accounting and financial issues and may work on different fiscal calendars.

Since the 1970's and the near bankruptcy of New York City and Cleveland, state governments have ramped up efforts to use financial data to explicitly track local fiscal health and identify problems before an acute crisis occurs. The goal of a risk identification, or fiscal early warning, system is to assist state agencies by triaging the huge amount of available financial information and determine where financial problems are likely to arise or may exist. For several years now, state governments have been using information contained in local government financial audits to calculate fiscal indicators, or ratios, and use those to identify potential problems at the local level. The metrics, or index, calculated in such a system is often measured against some type of numerical grading scale indicating whether or not a problem exists. At that point, a state agency can provide additional training, seek out input from local officials, or, in some cases, require additional local actions with the intention of preventing a fiscal crisis from occurring.

Any such fiscal early warning system faces the overall problem of identifying a financial problem in a local government where 1) a problem does not exist or 2) a problem is missed. The metrics or index used could cause a state to misidentify a local government as distressed when it is not or, alternatively, cause a state to miss a local government that is distressed. This misidentification is no different than the advantages and potential problems involved in using indicators such as blood pressure or temperature as a quick gauge of human health.

Since the 1970's, some state governments have developed analytical tools to identify, track, and manage financial risk and vulnerability. State governments have historically used fiscal indicators from audited financial statements to determine if a local government is potentially in or will soon be in fiscal distress. Using financial data from financial audits, which has become the standard approach to fiscal early warning or fiscal risk identification, has some specific advantages and as well as disadvantages relative to other approaches.

### Advantages of the Standard Approach

Many state governments have developed fiscal databases based on local government financial audits.<sup>1</sup> One of the biggest advantages of using financial data from financial audits is that this approach relies on easily accessible fiscal data. There is an added advantage that many states also regulate the content and quality of these financial audits and there are even general standards that exist through the Government Accounting Standards Board (GASB).

With this information available in digital format, it is relatively straightforward to calculate a series of fiscal indicators and ratios such as the current ratio, cash ratio, or deficit indicators. These indicators and ratios can be combined into an index and then scored on a relative or absolute approach. Such scoring then leads to the identification of some categorization of early warning or risk for each local government.

### Disadvantages of the Standard Approach

One of the main disadvantages is the timing of the data. With a potentially two-year lag in audited financial data, it is difficult for this type of system to quickly track changes in the fiscal health of local governments. With the time lag, changes in a local government's fiscal health may be occurring and this type of system may not be aware of it for a significant period. Monitoring fiscal trends year to year helps address this shortcoming.

A second shortcoming of the standard approach is that it does not consider real time data and trends, especially events possibly occurring in the external economic environment at the same time. It is possible, using economic and sometimes revenue data, to track real changes in the world. These changes can have direct consequences on the real time financial health of a local government and would not be captured for some time by audited financial statements.

### A New Approach

Since the advent of the global pandemic in 2020, state governments have been seeking new tools to identify financial risk amongst local governments. These new tools are called vulnerability analysis. They primarily focus on risk on the revenue side. Analysts look at revenue sources and how economic dislocation, which, in the case of the pandemic and subsequent shutdowns, means a decrease in normal business

1 <https://www.pewtrusts.org/en/research-and-analysis/articles/2020/10/20/state-websites-offer-fiscal-data-on-local-governments>

activity due to pandemic closures, will impact the inflows from revenue sources. For example, a local government that relies on a local casino tax would be hit hard if casinos were closed due to social distancing rules. This approach presents the risk on the revenue side of a local government and tends not to focus on the spending side. Examples of this new form of vulnerability

analysis are presented here from the Commonwealth of Virginia and the State of Louisiana. These examples may help other state governments who wish to initiate this type of analytical approach. It is recommended that this vulnerability approach be paired with the traditional approach using the more holistic ratio based analysis.

## A New Approach: Vulnerability Analysis

Given the limitations of the standard approach, a complementary approach is being developed by state governments during the Covid-19 crisis and it may be a new model for future risk identification or early warning system strategies. The states of Louisiana and Virginia have each developed a vulnerability framework that complements their specific fiscal indicator early warning system.

Both state vulnerability analyses identify the local tax revenue streams that localities rely on and the extent to which each of these tax sources may be impacted by economic shocks related to the COVID-19 pandemic. Each system also estimates the economic vulnerability that each locality may experience based on its mix of industries and associated job vulnerability.

### Louisiana Local Revenue Framework<sup>2</sup>

Shortly after the COVID-19 began to spread in the U.S., the Louisiana Legislative Auditor worked to estimate the potential impact of economic downturn on local government revenues. The first report for fiscal year 2020-2021 local government revenue projections was issued in May 2020. Data availability drove the scope of the analysis. A few months later, the analysis was repeated with newly available economic data, and an updated and extended report was issued in September 2020 for fiscal years 2020-2025. In addition to shocks caused by COVID-19, other shocks impacting much of Louisiana, caused by oil price reductions and Hurricane Laura, were also accounted for in these analyses.

2 Effect of COVID-19 on Local Government Revenues, Control # 40250001, released May 7, 2020  
 Summary: <https://lla.la.gov/go.nsf/getSummary?OpenAgent&arlkey=40210001APPP-BPDKT7>  
 Full Report: <https://lla.la.gov/go.nsf/get?OpenAgent&arlkey=40210001APPP-BPDKT7>  
 Supplement: <https://lla.la.gov/go.nsf/getSup?OpenAgent&arlkey=40210001APPP-BPDKT7>

Impact of COVID-19 and Hurricane Laura on Local Government Finances - Update to May 7, 2020 Report, Control # 40210001, released September 17, 2020  
 Summary: <https://lla.la.gov/go.nsf/getSummary?OpenAgent&arlkey=40250001APPP-BTHTFM>  
 Full Report: <https://lla.la.gov/go.nsf/get?OpenAgent&arlkey=40250001APPP-BTHTFM>  
 Supplement: <https://lla.la.gov/go.nsf/getSup?OpenAgent&arlkey=40250001APPP-BTHTFM>

By determining which parishes were most likely to be impacted the hardest by these economic shocks, this analysis could help policymakers decide where federal aid is most needed and provide local officials facing budget uncertainty help as they plan and adopt budgets.

### Local Government Types

Louisiana analyzed four categories of local governments: municipalities (villages, towns, and cities), parish governing authorities, school boards, and sheriffs. These categories were chosen because these four types of entities account for almost all sales taxes received by local governments. Hospital service districts were not included because these entities generally do not receive sales taxes. Further, these four local government types are the largest in terms of expenditures and are broad in scope and activities.

Once the types of local governments are decided upon, then one needs to decide which aspect of their revenue finances are going to be forecasted.

### Tax Structure and Local Government Revenues

Revenue estimation analysis should be tailored to the locality. Louisiana focused on local government revenue sources based on their relevance to local government budgets. Certain revenue sources are more cyclical in nature and sensitive to recessions and changes in employment. Louisiana chose to forecast the following revenue sources' impact on local government revenues: sales taxes, ad valorem taxes, severance tax and mineral-related revenues, and gaming revenues.

Sales taxes and mineral-related revenues account for nearly a quarter of local government budgets and are more sensitive to the economic contraction caused by COVID-19 than other revenue sources. Ad valorem taxes account for 20 percent of local government revenues and grow more slowly following economic downturns.

**Sales taxes.** Louisiana differs from many states in its heavier reliance on sales taxes as opposed to property taxes to generate revenues for local government services. Louisiana allows for parish-level sales tax with 63 of 64 parishes levying local sales taxes. Voters must vote to renew these local sales taxes. The sales tax base was divided up into different sales tax categories. Categories of sales tax data obtained from various sector sources include tourism, groceries, drug prescriptions, motor vehicles, manufacturing machinery and equipment, and all other retail.

Next, one needs to determine how much each of these sectors contribute to the sales tax base in each parish economy. Data

from Louisiana’s local governments show that some parishes have seen drastic reductions in local sales tax revenues, while others have seen modest increases since the start of the pandemic. Based on the specific make up of economic activity within each parish, some parishes rely more on retail sales taxes whereas other parishes rely more on non-retail (industrial) sales tax revenues. Sales tax revenues for each local government type were calculated using information in the Minimum Foundation Program (MFP) Budget Letter<sup>3</sup>, the U.S. Census Bureau’s Census of Governments for municipalities, or each local entity’s audited financial statements.

**Ad valorem taxes.** Ad valorem taxes were modeled relating the ad valorem tax base in each parish to the amount of private-sector wages in each parish. The ad valorem tax base was divided up into three component uses consistent with the tax commission: real property (land and buildings), personal property (machinery, equipment, and inventory), and public service property (such as real and personal property owned by pipeline, electric, railroad, landline telephone, airline, and barge companies). Decreases in assessed values at the parish level can occur particularly for property types other than real property.<sup>4</sup> Additionally, parish residents periodically vote to renew certain ad valorem taxes. The impact on each local government from ad valorem tax renewals is dependent on the amount of ad valorem taxes that are up for renewal. Ad valorem taxes were already collected for 2020, so any impact would only reflect 2021 and beyond.

**Severance taxes and mineral royalties.** Louisiana is an oil and natural gas producing state. Severance<sup>5</sup> tax and mineral royalty data were used to estimate local revenues from these sources. According to formulas in the Louisiana Constitution<sup>6</sup>, each parish governing authority is entitled to receive revenue from natural resource extraction. Increased global oil production has caused oil and natural gas prices to fall considerably. Most

3 The Minimum Foundation Program, or MFP, is Louisiana’s funding formula. It determines how much financial support that the state will provide to local school districts and is prepared by the Louisiana Department of Education.

4 However, there is the possibility that assessors will reduce assessed values pursuant to statute R.S. 47:1978.1. This statute provides for the reduction in assessed value of properties for various reasons, including but not limited to an emergency declared by the governor that causes property to be non-operational or uninhabitable. The Louisiana Tax Commission issued statewide advisory 07-2020 on June 29, 2020 stating that this statute “may be applicable as a result of COVID-19” and that “the taxpayer bears the burden of substantiating such claim for reduction in value.”

5 According to 2017 data, thirty-four states levy severance taxes. These are taxes on the extraction of natural resources (including oil and natural gas) intended for consumption in other states. The severance tax is imposed to compensate the states for the loss or “severance” of the non-renewable source and to cover the costs associated with extracting these resources. The revenue from these taxes is extremely volatile because it rises and falls with the price and production of natural resources. Source: <https://www.taxpolicycenter.org/briefing-book/how-do-state-and-local-severance-taxes-work>

6 La. Const. Art. VII Sec. 4

production in Louisiana comes from existing wells, so the actual change in production is less than the change in new drilling. Additionally, depressed oil and gas extraction activities could adversely impact sales and ad valorem tax collections.

Mineral revenues were estimated using severance tax data from the Department of Revenue and mineral royalties data from the Department of Natural Resources.

**Gaming revenues.** Local government gaming revenues from video poker, slot machines at racetracks, river boat casinos, and the land-based casino were estimated.

### Impact on Local Government Revenues<sup>7</sup>

Using updated economic data,<sup>8</sup> new projections anticipate a larger reduction in ad valorem taxes, but a smaller reduction in sales taxes and overall revenues (Table 1). The updated revenue vulnerability model estimated that local government revenues from sales taxes, ad valorem taxes, mineral-related revenues, and gaming revenues will decrease from \$180.0 million to \$202.8 million for fiscal year 2020, and from \$342.9 million to \$657.3 million for fiscal year 2021 as a result of COVID-19 and Hurricane Laura.

Identifying the economic sectors and each sector’s impact on parish revenues is discussed below.

### Economic Sectors

Choosing economic factors that reflect local circumstances and also for which timely data is available can be a challenge. Based on available data as well as how certain economic sectors weathered other downturns, Louisiana’s economic model included temporary increases in grocery spending and unemployment benefits under the Coronavirus Aid, Relief, and Economic Security Act.<sup>9</sup> The model factored in decreases in the following sectors: tourism spending, restaurant sales and employment, investment in manufacturing machinery and equipment, automobile sales, oil prices, production, and drilling, natural gas production, and earnings for oil and gas workers. Also included were other earnings economy-wide as well as temporary decreases in retail spending during calendar year 2020’s second quarter because of the stay-at-home order. Now that the economic sectors have been identified, one needs to decide how to apply those sectors to each of the revenue streams.

The sales tax is the most sensitive and therefore the most important revenue stream. The sales tax base was analyzed in each parish. The following sector spending as a percentage

7 September 2020 report.

8 September 2020 report updates results of May 2020 report.

9 Personal income was higher in the 2<sup>nd</sup> quarter of 2020 due to CARES act stimulus payments.

of the sales tax base was divided into tourism,<sup>10</sup> groceries<sup>11</sup> (less Supplemental Nutrition Assistance Program (SNAP) benefits)<sup>12</sup>, prescription drugs,<sup>13</sup> manufacturing machinery and equipment,<sup>14</sup> motor vehicle purchases, other retail,<sup>15</sup> and all other purchases.<sup>16</sup>

Louisiana used past recessions (the Great Recession of 2008-2009, the employment shock from Hurricane Katrina in 2005, and the Great Depression of 1929-1933) as a guide to forecast the effects of COVID-19, in addition to futures prices from energy markets.

<sup>10</sup> "Tourism spending was estimated using spending amounts by category reported by the UNO Hospitality Research Center. Tourism numbers were based on TSA enrollment numbers through June 30, 2020 and national advisories and statewide orders against nonessential travel. The optimistic scenario has travel recovering fully by June of next year, while the pessimistic scenario has travel recovering over a five-year period." Source: Louisiana Report, September 2020.

<sup>11</sup> Spending on groceries was obtained from the Economic Census (or, where missing, estimated using regression analysis). Grocery sales were based on consumer spending on groceries as reported by [www.tracktherecovery.org](http://www.tracktherecovery.org) through June 30, 2020. All scenarios assumed that grocery demand will return to its former trend within one year. Source: Louisiana Report, September 2020.

<sup>12</sup> SNAP benefits were estimated based on regional benefit amounts published in the Department of Children and Family Services' annual reports. Source: Louisiana Report, September 2020.

<sup>13</sup> Spending on prescription drugs was obtained from the Economic Census (or, where missing, estimated using regression analysis). Source: Louisiana Report, September 2020.

<sup>14</sup> Manufacturing machinery and equipment was allocated from the amount reported in the Tax Exemption Budget to each parish using the fair market value of machinery and equipment in each parish reported in the Louisiana Tax Commission's annual reports. Source: Louisiana Report, September 2020.

<sup>15</sup> Other retail was the residual portion of the retail tax base. The overall retail sales tax base was obtained from the Economic Census and calibrated using the sales tax base data contained in comprehensive annual financial reports. Source: Louisiana Report, September 2020.

<sup>16</sup> The remaining portion of the sales tax base consisted of all other sales not elsewhere classified, and includes various business-to-business transactions, as well as transactions reported by services companies outside of the accommodation and food services (NAICS 72) group. Source: Louisiana Report, September 2020.

Additional factors incorporated in the economic model include the impact of a state law relating to property assessments after declared emergencies<sup>17</sup> and the potential impact to revenue due to the non-renewal of ad valorem and sales taxes<sup>18</sup> in calendar year 2020.

### Economic Scenarios

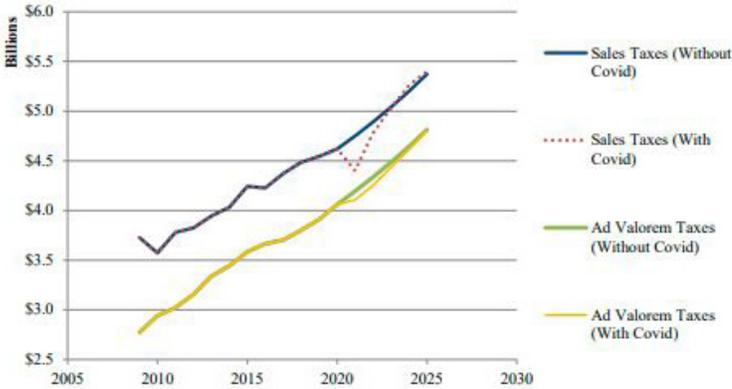
Forecasting future revenues is challenging. The economic downturn, driven by the COVID-19 pandemic, that the global economy is experiencing is unprecedented. Neither the length of the recession nor the depth of recession is known. To account for these challenges, a range of possible outcomes based on three scenarios modeling the effect on local government revenues were presented.

The COVID-19 scenarios are categorized into average, optimistic, and pessimistic scenarios. The three scenarios assume a rapid decline starting in the first quarter and bottoming-out in the second quarter of calendar year 2020, followed by a gradual recovery. The pessimistic scenario assumes that the state will experience a large drop in economic output and a slower recovery, resulting in lower tax collections and revenues. A more optimistic scenario assumes that the state will experience a smaller drop and faster recovery in economic output, resulting in higher tax collections and revenues. The average scenario is a scenario that falls roughly in the middle of the optimistic and pessimistic scenarios.

<sup>17</sup> Economic model accounted for impacts to ad valorem taxes resulting from reductions in assessed values made by assessors pursuant to statute R.S. 47:1978.1, which provides for reductions in assessed values for properties rendered uninhabitable or nonoperational due to an emergency declared by the governor. Specifically, industries that were forced to close or limit operations due to the Governor's proclamations and were likely to make up the largest share of the ad valorem tax base include: restaurants, bars, hospitals, ambulatory surgical centers, dentist's offices, movie theaters, hotel and retail establishments. Analysts assumed that these businesses would receive reductions in their assessed values proportional to the percentage of the year that they were prevented from operating based on discussions with local assessors. Source: Louisiana Report, September 2020.

<sup>18</sup> See Tax Structure on Local Government Revenues section.

**Figure 1. Impact of COVID-19 and Hurricane Laura on Local Sales Tax and Ad Valorem Tax Revenues.**  
Fiscal years 2009 to 2025, Average Scenario.

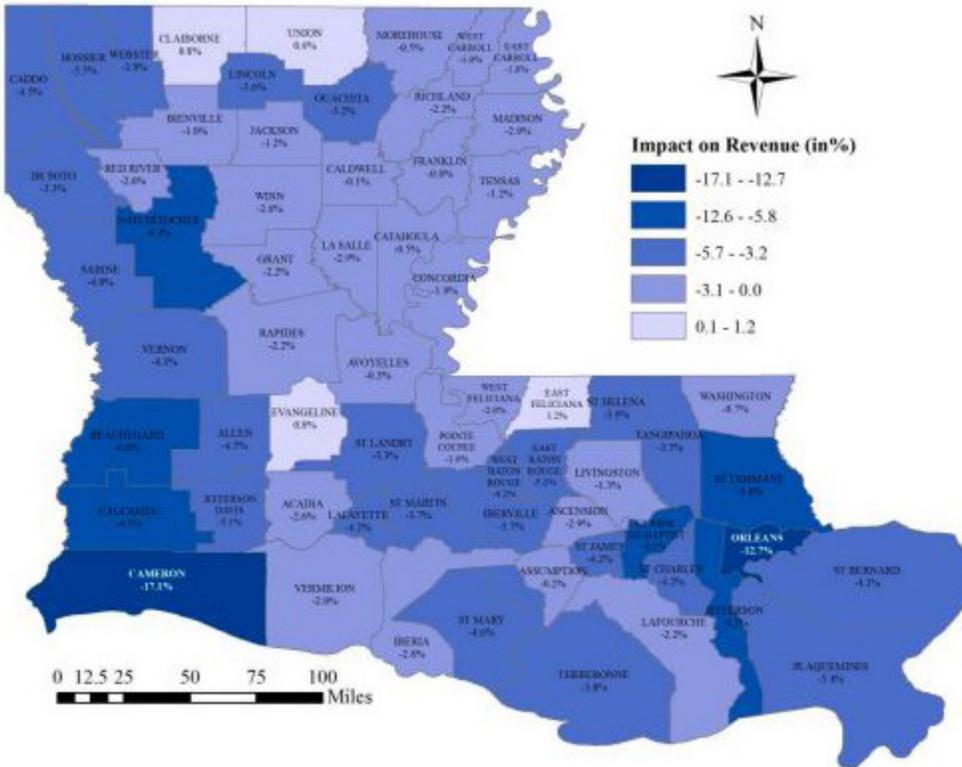


Source: Prepared by legislative auditor's staff using data sources in Appendix A.

Figure 1 shows the path of sales and ad valorem taxes over time under the average scenario and with the effects of COVID-19 and Hurricane Laura.

The report includes the estimated impact of Hurricane Laura on the revenue projections for ten parishes most impacted. The most impacted are parishes with the most population. The economy of Orleans parish is reliant on tourism and the downturn in tourism is driving the revenue losses in Orleans. Figure 2 includes the impact by parish from the average scenario.

**Figure 2. Impact of COVID-19 and Hurricane Laura on Local Government Revenues by Parish.**  
Fiscal years 2021, Average Scenario.



Source: Prepared by legislative auditor's staff using data sources described in Appendix A.

The following table (Table 1) provides a sense of how the Louisiana system has assessed the economic impact of Covid and Hurricane Laura on various economic sectors across the various scenarios. It also presents information on differences in scenarios and sectors for the period of May and August and how estimates

are dynamic and change over time. This is crucial in the case where local governments rely on a local sales tax. It also helps get a sense of the recovery time that can inform state and local policymakers.

**Table 1. Louisiana Impact by Economic Sector and Scenario**

Table A.3 Summary of Economic Scenarios for Each Sector					
Sector	Scenario	May 7, 2020		August X, 2020	
		Impact in CY 2020 Q2	Years to Recover	Impact in CY 2020 Q2	Years to Recover
Groceries	Average	36.0%	1.0	11.1%	1.0
	Pessimistic	10.0%	1.0	11.1%	1.0
	Optimistic	62.0%	1.0	11.1%	1.0
Tourism	Average	-90.0%	2.0	-89.0%	2.0
	Pessimistic	-100.0%	5.0	-89.0%	5.0
	Optimistic	-80.0%	1.0	-89.0%	1.0
Restaurant Earnings	Average	-60.0%	2.0	-33.2%	2.0
	Pessimistic	-70.0%	5.0	-38.2%	5.0
	Optimistic	-50.0%	1.0	-28.2%	1.0
Manuf. Machinery & Equip.	Average	-58.3%	3.0	-19.5%	2.7
	Pessimistic	-75.5%	5.0	-19.5%	4.9
	Optimistic	-41.0%	1.0	-19.5%	1.9
Automobile Sales	Average	-18.8%	3.0	-18.8%	3.0
	Pessimistic	-23.8%	5.0	-23.8%	5.0
	Optimistic	-13.8%	1.0	-13.8%	1.0
Oil Prices	Average	-47.7%	8.0	-29.8%	8.0
	Pessimistic	-52.7%	10.0	-29.8%	10.0
	Optimistic	-42.7%	3.0	-29.8%	3.0
Oil Production	Average	-6.4%	8.0	-5.6%	8.0
	Pessimistic	-7.1%	10.0	-5.6%	10.0
	Optimistic	-5.7%	3.0	-5.6%	3.0
Natural Gas Prices	Average	0.0%	0.0	0.0%	0.0
	Pessimistic	0.0%	0.0	0.0%	0.0
	Optimistic	0.0%	0.0	0.0%	0.0
Natural Gas Production	Average	-10.0%	2.0	-3.9%	2.0
	Pessimistic	-15.0%	3.0	-3.9%	3.0
	Optimistic	-5.0%	1.0	-3.9%	1.0
Upstream Energy Earnings - Oil	Average	-69.1%	8.0	-59.9%	8.0
	Pessimistic	-76.4%	10.0	-59.9%	10.0
	Optimistic	-61.9%	3.0	-59.9%	3.0
Upstream Energy Earnings - Gas	Average	-69.1%	8.0	-5.8%	8.0
	Pessimistic	-76.4%	10.0	-5.8%	10.0
	Optimistic	-61.9%	3.0	-5.8%	3.0
Other Earnings (Before Unemployment Benefits)	Average	-5.2%	3.0	-11.0%	3.0
	Pessimistic	-7.3%	5.0	-11.0%	5.0
	Optimistic	-2.5%	2.0	-11.0%	2.0

Source: Legislative Auditor's staff.

## Virginia Vulnerability Framework<sup>19</sup>

Virginia developed and now uses a process to identify local units that may be in need of fiscal support from the state through various agency programs. The Fiscal Distress Index process uses audited financial data. The 12 financial ratios are based on data lagging by nearly two calendar years. Recognizing the need for a more timely and targeted understanding of local fiscal vulnerability due to COVID-19 as well as the unique community needs related to the pandemic, the Virginia Department of Housing and Community Development identified and analyzed additional indicators to supplement the Fiscal Distress Index analysis.

The vulnerability analysis uses the same indexing methodology of the Fiscal Distress Index where each locality's values are indexed to the statewide average, which is set to 100. Each locality is classified based on its deviation from the statewide average.

The composite local unit vulnerability index is made up of three component parts, each measuring different aspects of local fiscal vulnerability. The fiscal stress index<sup>20</sup> measures a locality's ability to generate additional local revenues from its current tax base.<sup>21</sup>

<sup>19</sup> <https://www.dhcd.virginia.gov/sites/default/files/Docx/clg/fiscal-stress/local-vulnerability-report.pdf>

<sup>20</sup> FY 2018 is the most recent Fiscal Stress Index score by locality.

<sup>21</sup> This indicator weighs equally Revenue Capacity per Capita (computed as the theoretical ability of a locality to raise local revenue if it taxed its population at statewide average rates); Revenue Effort per Capita (a ratio of actual tax revenues by a locality to its computed revenue capacity; and Median Household Income.

The local tax revenue dependence indicator measures the extent to which each locality relies on local sales and use, transient occupancy, and meals taxes. The economic vulnerability index forecasts the cities and counties most affected by COVID-19 based on a locality's mix of industries and associated job vulnerability.<sup>22</sup> The final composite vulnerability score aggregates all three indicators, equally weighted, and compares each locality's score to the statewide average.<sup>23</sup>

### Local Government Types

The Virginia composite vulnerability analysis focused on cities and counties due to data availability constraints.

### Findings

This vulnerability analysis showed noteworthy differences between localities that were classified as high risk of fiscal distress according to the FY 2018 Fiscal Stress Index and those with high vulnerability using the new Composite Vulnerability Index. Of the 19 localities classified as high vulnerability, only 11 were classified as high risk of fiscal distress. Comparing the two scoring systems rankings, the new composite local vulnerability index identified new localities that face potential fiscal vulnerability due to the economic downturn resulting from COVID-19 not captured in the fiscal stress index.

<sup>22</sup> Used labor market data from Chmura Economics and Analytics.

<sup>23</sup> See computation methodology formulas.

<b>Ranking Virginia Communities for Fiscal Distress</b>		
<b>Locality</b>	<b>Fiscal Stress Rank</b>	<b>Composite Local Vulnerability Index Rank</b>
Emporia City	1	2
Franklin City	2	13
Martinsville City	3	21
Bristol City	4	6
Petersburg City	5	25
Buena Vista City	6	51
Lynchburg City	7	15
Hopewell City	8	35
Covington City	9	22
Galax City	10	8
Portsmouth City	11	33
Radford City	12	30
Norton City	13	4
Norfolk City	14	24
Danville City	15	10
Harrisonburg City	16	5
Roanoke City	17	17
Lexington City	18	12
Hampton City	19	28
Newport News City	20	20

Source: Virginia Vulnerability Report.

<b>Virginia Communities Fiscal Distress and Fund Balance</b>		
<b>Locality</b>	<b>Composite Local Vulnerability Index Rank</b>	<b>Fiscal Stress Rank</b>
Williamsburg City	1	47
Emporia City	2	1
Colonial Heights City	3	34
Norton City	4	13
Harrisonburg City	5	16
Bristol City	6	4
Bath County	7	130
Galax City	8	10
Fredericksburg City	9	53
Danville City	10	15
Waynesboro City	11	22
Lexington City	12	18
Franklin City	13	2
Winchester City	14	31
Lynchburg City	15	7
Staunton City	16	26
Roanoke City	17	17
Salem City	18	29
Charlottesville City	19	49
Newport News City	20	20

Source: Virginia Vulnerability Report.

### **Fiscal Resiliency**

Determining a locality’s ability to weather sustained economic downturns due to the COVID-19 pandemic or other economic shocks will help policymakers target financial resources to the most severely vulnerable localities. Using fiscal year 2018 data,<sup>24</sup> it was determined that the several localities that were classified as high risk on either the fiscal stress index, composite index, or both, also have limited local resources available to pay for necessary services for residents. According to the analysis of city and county unrestricted/unassigned General Fund balances and total General Fund expenditures, over 30 localities with limited local resources available were classified as high risk on the fiscal stress index, composite vulnerability index, or both.

<sup>24</sup> FY2018 was the most recent CAFR data available.

**Virginia Communities Fiscal Distress and Fund Balance**

Locality	Unrestricted GF Fund Balance	FB as % of Total Expense	Months Expenditure Covered by FB	Total GF Expenditure	High FS or Composite Index or Both
Petersburg City	\$2,803,522	4%	0.49	\$68,319,064	High Fiscal Stress
Staunton City	\$4,605,965	9%	1.11	\$49,984,265	High Composite Index
Radford City	\$2,922,813	12%	1.39	\$25,237,443	High Fiscal Stress
Norfolk City	\$70,962,327	13%	1.51	\$564,085,992	High Fiscal Stress
Roanoke City	\$34,854,168	13%	1.59	\$263,151,527	Both
Newport News City	\$56,876,979	14%	1.63	\$417,587,522	High Fiscal Stress
Martinsville City	\$4,660,378	14%	1.73	\$32,409,549	High Fiscal Stress
Bristol City	\$14,168,992	15%	1.85	\$91,684,832	Both
Hopewell City	\$6,800,408	16%	1.88	\$43,294,388	High Fiscal Stress
Lynchburg City	\$29,197,526	16%	1.97	\$177,528,161	Both
Colonial Heights City	\$9,227,574	17%	1.98	\$55,879,502	High Composite Index
Galax City	\$3,544,068	18%	2.18	\$19,518,787	Both
Buena Vista City	\$2,434,483	18%	2.18	\$13,379,360	High Fiscal Stress
Richmond City	\$108,511,921	18%	2.20	\$592,633,153	High Fiscal Stress
Dickenson County	\$5,314,538	19%	2.28	\$28,003,990	High Fiscal Stress
Franklin City	\$4,189,190	19%	2.33	\$21,558,675	Both
Fredericksburg City	\$16,944,452	21%	2.57	\$79,065,057	High Composite Index
Charlottesville City	\$30,502,351	21%	2.58	\$142,011,208	High Composite Index
Waynesboro City	\$9,511,888	22%	2.59	\$44,102,212	Both
Covington City	\$4,424,555	22%	2.70	\$19,691,215	High Fiscal Stress
Hampton City	\$61,531,835	23%	2.71	\$272,553,509	High Fiscal Stress
Winchester City	\$19,545,641	24%	2.88	\$81,469,966	High Composite Index
Sussex County	\$5,952,073	26%	3.18	\$22,463,372	High Fiscal Stress
Williamsburg City	\$12,912,770	28%	3.39	\$45,666,673	High Composite Index
Harrisonburg City	\$31,239,773	29%	3.49	\$107,435,800	Both
Norton City	\$2,772,802	30%	3.55	\$9,373,816	Both
Portsmouth City	\$56,699,726	31%	3.75	\$181,677,276	High Fiscal Stress
Danville City	\$30,066,455	32%	3.88	\$93,054,692	Both
Salem City	\$28,803,322	43%	5.16	\$67,049,388	High Composite Index
Buchanan County	\$8,432,772	46%	5.56	\$18,203,518	High Fiscal Stress
Bath County	\$7,918,047	50%	5.96	\$15,948,494	High Composite Index
Lexington City	\$8,625,068	50%	6.04	\$17,132,779	Both
Emporia City	\$11,816,073	65%	7.81	\$18,162,298	Both

• Data Source: FY2018 CAFR except for the City of Hopewell as they are delinquent. FY2017 CAFR data has been used for Hopewell.

• Unassigned/Unrestricted Fund Balance - Exhibit - 3 or C or A-3.

• Total General Fund Expenditure - Exhibit - 4 or 5 or A-3 or A-4 or D or E.

Source: Virginia Vulnerability Report.

Of these localities, twenty-two localities only have enough unrestricted fund balances to cover three months of expenditures until these local resources are exhausted.

### Computation Methodology

#### Local Tax Revenue Vulnerability Index

The three taxes that comprise the local tax revenue vulnerable index are local sales and use tax, meal tax, and transient occupancy tax. Vulnerable tax as a percentage of total revenue is the ratio of total vulnerable tax divided by total local revenue. Vulnerable tax as a percentage of total local revenue are computed as follows:

$$\frac{\begin{aligned} &(Local\ Sales\ \&\ Use\ Tax) \\ &+ (Transient\ Occupancy\ Tax) \\ &+ (Meal\ Tax) \end{aligned}}{Total\ Local\ Revenue}$$

A relative vulnerable index is computed as follows:

$$\left( \left( \left( \frac{(Vulnerable\ Tax\ as\ \%\ of\ Total\ Revenue) - \mu(Vulnerable\ Tax\ as\ \%\ of\ Total\ Revenue)}{\sigma(Vulnerable\ Tax\ as\ \%\ of\ Total\ Revenue)} \right) \times 5 \right) + 100 \right)$$

$\mu$  = statewide average;  $\sigma$  = standard deviation

#### Economic Vulnerability Index

$$\left( \left( \left( \frac{(Chmura's\ Economic\ Vulnerability\ Index) - \mu(Chmura's\ Economic\ Vulnerability\ Index)}{\sigma(Chmura's\ Economic\ Vulnerability\ Index)} \right) \times 5 \right) + 100 \right)$$

$\mu$  = statewide average;  $\sigma$  = standard deviation

#### Composite Local Vulnerability Index

It is a simple average of local tax revenue vulnerability index, Economic vulnerability index, and fiscal stress index.

$$\left( \left( \left( \frac{(Local\ Tax\ Revenue\ Vulnerability\ Index) + (Economic\ Vulnerability\ Index) + (Fiscal\ Stress\ Index)}{3} \right) \right) \right)$$

Source: Virginia Vulnerability Report.