Planning for Tomorrow: Challenges States Face in Forecasting Long-Term Expenditures

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EXECUTIVE SUMMARY

The Government Finance Research Center at the University of Illinois Chicago conducted a qualitative analysis of the challenges that states face in producing long-term expenditure forecasts, as commissioned by The Pew Charitable Trusts. Nationally, 30 states publish these forecasts, while the remaining 20 exhibit variation in their financial planning practices. The research, which relied on collecting information through interviews, began with a state typology that accounted for characteristics associated with expenditure forecasting challenges. The typology used variables anchored in a review of academic papers, technical reports, and other relevant materials, to produce eight clusters of states. Interviews were conducted with a representative of each of the eight groupings. In designing semi-structured interview questions, the researchers aimed to learn about the forecasting challenges associated with: (1) the process, (2) budget components, (3) policy changes, (4) spending frequency, (5) economic conditions, (6) structural changes to the economy, and (7) structural balance. Questions about the process also focused on the use of current services as a forecasting baseline.

Consistently across states, the most challenging aspect of long-term expenditure forecasting was the uncertainty introduced by Medicaid. This challenge is a function of the magnitude and nature (real time payments) of expenditures, which is further complicated by the shared fiduciary responsibility with the Federal government as well as the unpredictability of healthcare costs and the financial status of providers. In general, caseload driven forecasts were associated with more challenges than other budget components. Some states described the simple forecasting approaches used as a challenge. For the most part, the expenditure forecasting process is anchored in historical trends. Therefore, policy changes, economic conditions, or structural changes to the economy are not typically incorporated into forecasts until they materialize. In terms of spending frequency, for some states the challenge revolves around differentiating between one-time versus ongoing spending, which is often a discretionary decision.

The existing prevalent culture of collaboration across states can serve as the foundation for a partnership focused on producing best practices and common standards, which can subsequently alleviate some of the challenges that states face. Notably, more sophisticated modeling or any other changes to the forecasting process, in line with best practices, could face statutory hurdles. Regularly, communication emerged as a challenge. For some, communicating the nature of forecasting to stakeholders was complicated. In other instances, communication was identified as a challenge in the context of the use of a current services model or differentiating between one-time versus ongoing spending. Therefore, an initiative that provides targeted training to stakeholders, with an emphasis on engaging legislators and the press could directly address these communication challenges. Indirectly, it could facilitate the adoption of best practices as it can help increase the relevance and visibility of long-term expenditure forecasts. One additional theme that emerged in the interviews focused on preserving and expanding knowledge. Consequently, a centralized database of resources could provide key support to states as they tackle unexpected expenditure forecasting challenges.
1. INTRODUCTION

Each state in the U.S. produces a budget yearly or biennially. Financial forecasting is a tool that can accompany this process to provide estimated information on future revenue and expenditure trends. According to the Government Finance Officers Association (GFOA), forecasting involves setting a time horizon and choosing scenarios, e.g., conservative or baseline. In addition, it requires knowledge of business cycles and their interplay with expenditures or revenues, demographic trends, and law changes, among other factors. Further, forecasting models range from simple extrapolation to linear regressions that account for a series of factors with predictive power.¹

The Pew Charitable Trusts (Pew)’s own research provides leading practices for states to follow as they produce their long-term financial projections: (1) analyze major revenue sources and spending categories, (2) forecast at least three years into the future, (3) account for the impact of economic, demographic, and technological factors, (4) acknowledge uncertainty, (5) identify the key factors driving the state’s structural position, and (6) “analyze factors that could lead to long-term deficits.”²,³

By interviewing subject matter experts, this report aims to increase our understanding of the challenges that states face in producing long-term expenditure forecasts and how to facilitate their adoption of best practices. The focus of this research is on operating expenditure forecasting, which differs from capital expenditure forecasting, often included in states’ capital improvement plans.⁴

For background, according to a survey of executive state budget officers across all 50 states, conducted throughout 2020 and early 2021:⁵

- 30 states reported that they published a multi-year operating expenditure forecast.
- Forecasts were from one to five years beyond the current budget cycle, with only Utah providing a 15-year forecast.
- The forecast is prepared by the executive branch in 19 states, the legislative branch in two states, and both branches (collaboratively) in nine states.
- Nearly all 30 states reported that forecasts are based on current law requirements, assume current level of services, and include all general fund spending.

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Similarly, Pew’s own review of long-term expenditure forecasting practices identified 30 states that are relevant to this project.\(^6\) These are states that have published either long-term budget assessments or projections, on or after Jan. 1, 2018, that include at least three years into the future, and project balance between revenue and spending. Table 1.1 highlights the differences in the Pew categorization compared to NASBO’s. Both organizations list the same 25 states as forecasting long-term expenditures. Diverging categorization impacts 5 states per methodology.

<table>
<thead>
<tr>
<th>State</th>
<th>Pew(^6)</th>
<th>NASBO(^7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>Does Not Forecast(^8)</td>
<td>Forecasts 4 Years</td>
</tr>
<tr>
<td>Kansas</td>
<td>Forecasts(^9)</td>
<td>Does Not Forecast</td>
</tr>
<tr>
<td>Maine</td>
<td>Does Not Forecast 3+ Years(^10)</td>
<td>Forecasts 2 Years</td>
</tr>
<tr>
<td>Michigan</td>
<td>Does Not Forecast 3+ Years</td>
<td>Forecasts 1 Year</td>
</tr>
<tr>
<td>Missouri</td>
<td>Does Not Forecast 3+ Years</td>
<td>Forecasts 1 Year</td>
</tr>
<tr>
<td>Montana</td>
<td>Produces Long-Term Budget Assessments</td>
<td>Does Not Forecast</td>
</tr>
<tr>
<td>Nebraska</td>
<td>Forecasts</td>
<td>Does Not Forecast(^11)</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Produces Long-Term Budget Assessments</td>
<td>Does Not Forecast</td>
</tr>
<tr>
<td>Texas</td>
<td>Forecasts(^12)</td>
<td>Does Not Forecast</td>
</tr>
<tr>
<td>Virginia</td>
<td>Does Not Forecast(^13)</td>
<td>Forecasts 4 Years</td>
</tr>
</tbody>
</table>

This report builds on Pew’s categorization of states and produces a typology that aims to account for varying state characteristics that interplay with expenditure forecasting challenges. To illustrate, even some of the challenges facing states that seem universal, e.g., climate change, might have heterogeneous impacts, as a function of regional idiosyncrasies. While flooding is a natural disaster that impacts all 50 states, hurricanes mainly impact coastal states, especially in the southeast. Reflecting on the recent past, while the trajectory of COVID-19 was a national concern, the impact of the pandemic

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\(^6\) The Pew Charitable Trusts. (2023). *Figure 6: 30 States and DC Produced Either Long-Term Budget Assessments or Long-Term Projections.* In *Tools for Sustainable State Budgeting.*

\(^7\) National Association of State Budget Officers. (2021). *Table 26: Long-Term Expenditure Forecasting.* In *Budget Processes in the States.*

\(^8\) The Pew categorization did not include Delaware as a forecaster because the state did not project the balance between revenue and spending.


\(^10\) The Pew review found that Maine’s projections only include two fiscal years beyond the current one.

\(^11\) The NASBO report clarifies: “estimated revenues and expenditures projected for following biennium included with Executive Budget package and prepared by Legislature after enacted budget.”

\(^12\) Legislative Budget Board. (2019). *Cost Drivers and Revenues: 10-Year Trend.*

\(^13\) At the time of the Pew analysis, Virginia had not published a long-term budget assessment or long-term projection since 2016, therefore it was not included as a forecasting state.
was disproportionately felt in the northeast.\textsuperscript{14,15} Ultimately, the typology introduced in this report attempts to capture some of the variation that exists across states in expenditure forecasting challenges. To that end, the link between characteristics or variables used to create the typology and challenges is anchored in a review of academic papers, technical reports, state budget documents, and other relevant materials.

The typology produced a grouping of states. Then, interviews were conducted with representatives of these groups. In designing semi structured interview questions, the researchers aimed to collect information on the forecasting challenges associated with: (1) the process, (2) budget components, (3) policy changes, (4) spending frequency, (5) economic conditions, (6) structural changes to the economy, and (7) structural balance. Questions about the forecasting process also focused on the use of a current services model, or in other words, forecasting expenditures while assuming that the current level of services provided will be maintained.\textsuperscript{16} The report culminates with a synthesis of findings from these interviews and a set of recommended strategies.

\section{2. A TYPOLOGY OF STATES}
This section reviews academic papers, technical reports, and other relevant materials on challenges that states face as they produce their long-term expenditure forecasts. In addition, it uses this review to identify relevant variables for a typology dataset created to apply a clustering algorithm that groups states based on these characteristics. This grouping method determines the states interviewed. Based upon existing research, differences in expenditures across states can generally be attributed to internal factors, such as geography and demographics, as well as external factors, often related to federal policy.\textsuperscript{17} To illustrate, while the average state spending per capita was $9,349 in 2021, the range varied from $5,507 in Florida to $17,823 in Alaska, as seen in Figure 2.1. State expenditures are mostly distributed across social insurance programs (including Medicaid), health and hospitals, public education, transportation, and public safety.

\begin{itemize}
\item \textsuperscript{14} Freed, M., Cubanski, J., Neuman, T., Kates, J., & Michaud, J. (2020). \textit{What Share of People Who Have Died of COVID-19 Are 65 and Older -- and How Does It Vary by State?}
\item \textsuperscript{15} McDonald, M., Kirton, S., Rogers, M., & Luo, J. (2021). \textit{50 States, 50 Pandemic Responses: An Analysis of Jobs Lost and Lives Lost.}
\item \textsuperscript{17} Gordon, T., Auxier, R., & Iselin, J. (2016). \textit{Assessing Fiscal Capacities of States.} Research Report, Urban Institute. Washington, DC.
\end{itemize}
In 2021, state governments spent roughly $796 billion or 26.8% of total expenditures on social insurance programs, rendering this category the largest spending component in state budgets.\textsuperscript{19,20} More than 96% of these expenditures were allocated to operational costs, most notably as payments to Medicaid programs and other public services for low-income beneficiaries.\textsuperscript{21} Given its scale, this category is associated with significant forecasting challenges in prior research. In 2021, the share of expenditures spent on social insurance programs varied from 11.3% in Connecticut to 39.3% in Arizona, as seen in Figure 2.2.

In addition to the challenges associated with scale, prior research suggests the complexity of the Medicaid cost structure makes it difficult to appropriately forecast expenditures for this budget component. For instance, there are more than 30 fee-for-service categories.\textsuperscript{22} The corresponding prices vary significantly, depending on the nature of service (e.g., acute), providers, and coverage plans. In 2020, per-enrollee

\textsuperscript{18} This figure illustrates state expenditures per capita in 2021 using total expenditures from the Annual Survey of State and Local Government Finances and population from the American Community Survey. Total expenditures include both direct expenditures and intergovernmental expenditures. The appendix includes data descriptions and sources.

\textsuperscript{19} Census Bureau. (2021). \textit{Annual Survey of State and Local Government Finances}.

\textsuperscript{20} The share in 2019 was 27.2%, although the spending level was higher at $796B in 2021 compared to about $685B in 2019, in response to COVID-19.

\textsuperscript{21} U.S. Census. (2021). \textit{Annual Survey of State and Local Government Finances}.

\textsuperscript{22} Centers for Medicare and Medicaid Services. (2020). \textit{Medicare Fee-For-Service Post-Acute Care and Hospice Provider Utilization and Payment Public Use Files: Methodological Overview}. 
Medicaid spending ranged from $4,480 to $38,786 depending on the type of institutional care provided (long-term support services or home and community-based services). Further, usage measures (a component of Medicaid cost calculations) vary across states, and these can be defined as potential use by everyone who is eligible, by enrollee, or per capita. Each denominator carries different purposes and implications, which adds an extra layer of complication to the forecasting process.

Figure 2. 2. Share of Expenditures Spent on Social Insurance Programs

Variations in program design exacerbates these forecasting challenges highlighted in existing research. For instance, there are four main eligibility groups: adults, children, disabled, and aged. However, within each group, there are certain subgroups, such as children with single parents, that may be eligible for different types of services at different rates. Estimating costs for all groups and/or subgroups is a complex task. Additionally, in the case of dual eligible beneficiaries (for both Medicare and Medicaid),

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25 This figure illustrates share of expenditures spent on social insurance programs in 2021 using data from the Annual Survey of State and Local Government Finances. Expenditures on social insurance programs include cash assistance payments, vendor payments, and other payments (including for administrative activities, setting of provider fees and rates, and establishing standards). The appendix includes data descriptions and sources.

estimating expenditures is even more challenging due to administrative complexity and lack of coordination between the two programs.27

Reforms of social insurance programs, most notably Medicaid Expansion and the Affordable Care Act (ACA), significantly impact the forecasting of long-term spending, particularly for Medicaid. These policy changes initiate discrepancies between estimated eligibility and actual enrollment. Subsequently, differences between estimated and actual costs per enrollee can threaten state budgets and the validity of expenditure forecasting. For instance, “of the 29 states expanding Medicaid in FY 2015, more than half (17 states) observed that enrollment initially increased faster than expected.”28

Under the rules of ACA, the federal government pays 100% of the costs associated with expansion in the first year in part to manage the impact of the enrollment bump. However, as the subsidy decreases over time, discrepancies between expected and actual enrollment can increase stress on state budgets and consequently influence other state spending categories.29 Measuring the fiscal effects of policies like ACA comprehensively is challenging, because: (1) cost implications are experienced across different budget categories that fall within and outside social insurance programs, and (2) unraveling the effects of policies, as opposed to other demographic and socioeconomic factors, is tremendously difficult.30 Finally, the rising costs associated with healthcare and hospitals have increased spending considerably on social insurance programs over time. From 1997 to 2020, spending on health and hospitals was the fastest-growing line item on state budgets.31 In 2021, state governments spent about $177 billion on health and hospitals or about 6% of total expenditures.32 At the state level, the share varied from 1.8% in Arizona to 15.7% in Kansas, as seen in Figure 2.3.

Based upon extant research highlighting some of the variation across states in forecasting challenges related to social insurance programs, as well as health and hospitals expenditures, the typology dataset includes variables measuring 1) the share of expenditures spent on social insurance programs, 2) the average yearly change in personal healthcare cost per Medicaid enrollee, 3) the change in state-reported count of unduplicated individuals enrolled in Medicaid, 4) the share of expenditures spent on

health and hospitals, 5) the average yearly change in health care expenditures per capita, and 6) the average yearly change in the percentage of those with health insurance coverage. The appendix includes data descriptions and sources.

![Figure 2.3. Share of Expenditures Spent on Health and Hospitals](image)

**Public Education**

Education funding is primarily the responsibility of state and local governments. In fact, state governments are often exclusively responsible for higher education spending, whereas most spending on elementary and secondary education is provided by local governments. In 2021, state governments spent roughly $265 billion on higher education or 8.9% of total expenditures. That same year, the share of expenditures spent on higher education varied from 4.5% in New York to 20.7% in Utah, as seen in Figure 2.4.

The main challenge documented in existing research regarding forecasting public education expenditures is heterogeneity across higher education institutions. This variation is in: (1) full-time equivalent (FTE) enrollment and enrollment profile, such as undergraduate vs. graduate or the ratio of low-income students who may need financial aid, (2) type of produced output, such as research versus teaching, (3) design of instructional programs, which includes student-faculty ratios, and (4) organizational

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33 This figure illustrates share of expenditures spent on health and hospitals in 2021 using data from the Annual Survey of State and Local Government Finances. Expenditures on health and hospitals include capital outlays. The appendix includes data descriptions and sources.


structure, such as 2- versus 4-year institutions. Accordingly, these differences greatly impact expenditures per institution. For instance, according to state law, all public universities in California must provide a university-sponsored student health insurance plan as an option for students to purchase. The premiums under this program varied significantly in 2019, ranging from $1,751 to $3,537 per undergraduate student, and from $2,970 to $6,317 per graduate student. Thus, projecting state expenditures for this plan alone was challenging for analysts.

Figure 2. 4. Share of State Expenditures Spent on Higher Education

Although elementary and secondary education expenditures are mostly funded by local governments, some states play a significant role in K12 education. For example, around 70% of K12 funding in Washington is from state funds, rendering it the largest share of the operating budget. Similar to higher education, prior research suggests the challenges in K12 forecasting stem from variations in the student body. For example, these include varying needs for services, such as free or reduced-price lunch programs. To illustrate further, in Illinois, depending on the socioeconomic characteristics of school districts, spending per pupil can vary from $9,892 to $15,268. Moreover, academic research shows the current lack of consistent guidelines to measure K12 education costs

38 This figure illustrates share of expenditures spent on higher education in 2021 using data from the Annual Survey of State and Local Government Finances. Expenditures on higher education include capital outlays. The appendix includes data descriptions and sources.
creates challenges to forecasting.\textsuperscript{42} Notably, another challenging aspect to forecasting expenditures highlighted in the literature is the need to consider tradeoffs that govern the budgeting process. For example, the literature reports that an increase of $1 spent on the Medicaid program crowds out roughly 6 to 7 cents in higher education appropriations.\textsuperscript{43}

In light of extant research, to capture some of the variation across states in forecasting challenges related to education expenditures, the typology dataset includes variables measuring 1) the share of expenditures spent on higher education, 2) the average yearly change in FTE fall enrollment in public postsecondary institutions, and 3) the average yearly change in the total number of students eligible for free and reduced-price lunch programs in public schools. The appendix includes data descriptions and sources.

\textit{Transportation}

In 2021, state governments spent about $124 billion on public transportation or 4.2 \% of total expenditures.\textsuperscript{44} That same year, the share of expenditures spent on transportation varied from 2.2\% in New York to 10.9\% in South Dakota, as seen in Figure 2.5. These expenditures mainly covered operational costs, including maintenance and repairs as well as highway design, operation, and safety.\textsuperscript{45} While the federal government is the primary funder of capital spending on highway and road construction, most operational costs are the responsibility of state and local governments.\textsuperscript{46} According to prior research, this spending poses challenges for long-term forecasts because of the complexity associated with measuring maintenance costs. In fact, state expenditures on highway and road maintenance depend on many factors, such as the number of lane miles, traffic, type of roads and highways, as well as the frequency of roadway usage, materials, and conditions, often related to weather.\textsuperscript{47}

Additionally, the administrative aspect of the maintenance process further complicates cost projections. The National Academies of Sciences, Engineering, and Medicine divides maintenance costs into two types. The first mainly includes equipment, material, and labor costs. The other type covers planning, management, research, and other functions that support activities. Measuring the exact magnitude of the latter is challenging given that the definitions used do not sufficiently distinguish between the two types, which

\begin{itemize}
\item \textsuperscript{43} Orszag, P. R., & Kane, T. J. (2013). \textit{Higher Education Spending: The Role of Medicaid and the Business Cycle}.
\item \textsuperscript{44} Census Bureau. (2021). \textit{Annual Survey of State and Local Government Finances}.
\item \textsuperscript{45} The reported data does not include capital spending.
\item \textsuperscript{46} Congressional Budget Office. (2016). \textit{Approaches to Making Federal Highway Spending More Productive}.
\item \textsuperscript{47} Urban Institute. (2020). \textit{State and Local Backgrounders: Highway and Road Expenditures}.
\end{itemize}
creates jurisdictional conflicts.\textsuperscript{48} For instance, program management and field supervision can overlap with program administration. Thus, precisely accounting for the costs of these activities without double counting requires an intricate process.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{Figure2.png}
\caption{Share of Expenditures Spent on Transportation\textsuperscript{49}}
\end{figure}

Another factor that interplays with transportation forecasts is natural disasters. The challenges from prior literature associated with disasters will be discussed in more detail at the end of this section. However, infrastructure destruction is one of the most critical and costly consequences of natural disasters. The episodic nature of the events in terms of both frequency and magnitude adds great volatility to any projections.\textsuperscript{50} For instance, in Florida, the costs of damage caused by natural disasters and catastrophic events in 2023 ranged from as low as $975 to as high as $61.5 million.\textsuperscript{51}

To capture some of the variation across states in forecasting challenges related to transportation expenditures highlighted in existing research, the typology dataset includes variables measuring 1) the share of expenditures spent on transportation, 2) the


\textsuperscript{49} This figure illustrates share of expenditures spent on transportation in 2021 using data from the Annual Survey of State and Local Government Finances. Expenditures on transportation include spending on highways, parking facilities, and airport transportation. The appendix includes data descriptions and sources.


\textsuperscript{51} U.S. Department of Transportation. (2023). \textit{Biden-Harris Administration Announces $749 Million to Repair Roads and Bridges Damaged by Natural Disasters and Catastrophic Events}. 
average yearly change in the percentage of state-operated roads that are classified as "acceptable" under the International Roughness Index, and 3) the average yearly change in total costs of construction (including preliminary and engineering construction) and physical maintenance of state-operated roads and highways. The appendix includes data descriptions and sources.

**Public Safety**

This budget category includes police protection, corrections, and protective inspections. In 2021, state governments spent roughly $73 billion on public safety or 2.8% of total expenditures. That same year, the share of expenditures spent on public safety varied from 1.7% in New York to 4.8% in Delaware, as seen in Figure 2.6. According to prior research, the challenges of forecasting public safety expenditures generally revolve around two main themes: police reforms that influence police staffing and the unreliability of prison forecasts due to the caseload component of the calculations.

Over the past few decades, major police reforms took place that directly influenced the recruitment and retention of police officers. Some were related to changes in organizational structures and operating budgets, while others were spurred by technological advancements or increased crimes and safety threats. More recently, Black Lives Matter protests pushed at least 30 states to pass legislative policing reforms.

Some of these reforms can have complex, or even contradictory, impacts on police staffing and related costs. For example, the application of technology in law enforcement can help decrease personnel expenditures by supporting operations and enforcement strategies. However, the integration of technology involves a constellation of costs associated with initial installation, operations, maintenance, and disposal.

Further, during budget crises, agencies must grapple with strategies to reduce spending, which may involve cutting staff and other personnel costs. On the other hand, increases in crime and safety threats stimulate demand for police officers, demonstrated through the support for increases in police funding. This everchanging landscape

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impacts both the demand and supply side of policing, thus disrupting estimations of related costs.

**Figure 2.6. Share of Expenditures Spent on Public Safety**

Reflecting on corrections, in 2021, this spending accounted for roughly 75% of all public safety expenditures.\(^{59}\) Inmate population is the most critical determinant here as it directly affects spending on corrections workforce, medical needs, and facilities. However, forecasts which entail estimations of the inmate population and cost per inmate remain tremendously challenging. Specifically, forecasts on population require different inputs, ranging from sentencing policies, length of stay, and criminal justice system flows, such as arrest, conviction, recidivism rates, as well as demographics.\(^{60}\) To illustrate, jail sentences in most jurisdictions are capped at one or two years, while the prison population has longer stays and fewer admissions, which implies that projection methods for jail population need to differ from those for prisons.\(^{61}\) Moreover, new legislation can affect inmate population, e.g. cannabis laws.\(^{62}\)

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\(^{58}\) This figure illustrates share of expenditures spent on public safety in 2021 using data from the Annual Survey of State and Local Government Finances. Expenditures on public safety include spending on police protection, corrections, and protective inspection and regulation. The appendix includes data descriptions and sources.


Based upon extant research, to capture some of the variation across states in forecasting challenges related to public safety expenditures, the typology dataset includes variables measuring 1) the share of expenditures spent on public safety, 2) the average yearly change in the total number of prisoners in state-administered prisons, and 3) the average yearly change in the operating cost per inmate in state-operated prison. The appendix includes data descriptions and sources.

**Legacy Costs**

Legacy costs refer to spending obligations resulting from past policy decisions. These include pensions, other post-employment retiree benefits (OPEB), and debt service. In 2021, state governments spent roughly $42 billion on debt service or 1.4% of total expenditures. That same year, the share of expenditures spent on debt service varied from 0.3% in Wyoming to 5.2% in Connecticut, as seen in Figure 2.7.

Over the past few decades, legacy costs have been trending upwards across US states, posing great fiscal stress to state governments. Prior research suggests the challenges in long-term expenditure forecasts associated with legacy costs stem from a variety of factors. First, by issuing large and frequent pension debts, states are responsible for long-lasting liabilities that can take two to five decades to pay off even when they make proper payments on the full actuarially recommended contribution every year. In most states, unfunded pension liabilities are the largest fiscal obligations in their budgets. In states with high unfunded pensions like Illinois or California, public education gets adversely impacted when expenditure shifts are needed to fund liabilities. Such changes in priorities significantly increase uncertainties in budget forecasts. However, we note that pensions do not instantly constitute a worrisome debt. Rather, the burden is created when assets lag liabilities over time, due to inaccurate actuarial forecasts or deliberate underfunding.

Second, the technical forecasting process for legacy costs is an arduous task that can impact the validity of the entire expenditure forecast. Whether legacy costs should be measured in constant dollars and how to select a proper discount rate are still up for

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debate. In addition, health issues or medical needs resulting from demographic changes can increase legacy costs considerably, yet quantifying that impact remains challenging. Further, market performance can have a considerable influence on discount rates used in legacy cost forecasting. Notably, higher discount rates could lead pensions to appear better funded than they are. Moreover, states, counties, cities, and other municipal entities can jointly fund certain pension plans. Therefore, it is challenging to identify the liabilities exclusive to state budgets.

Third, the risks associated with common fiscal instruments used to fund legacy costs can fuel uncertainties for expenditure forecasts. Particularly, as a last option, states can issue pension obligation bonds (POB) to finance these costs. The motivation behind this approach is that states can achieve bond proceeds with a higher rate of return than the interest rate issued with the bond. However, this strategy is highly risky since it can double the burden, through both the unfunded pension liabilities that remain unmet and the debt services required for the taxable POB, in the event states fail to reach the targeted rate of return.

Figure 2. 7. Share of Expenditures Spent on Debt Services

This figure illustrates share of expenditures spent on debt service in 2021 using data from the Annual Survey of State and Local Government Finances. Expenditures on debt service include interest payments on general debt. The appendix includes data descriptions and sources.

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73 Munnell, A. H., Aubry, J., & Quinby, L. The Impact of Public Pensions on State and Local Budgets.
74 This figure illustrates share of expenditures spent on debt service in 2021 using data from the Annual Survey of State and Local Government Finances. Expenditures on debt service include interest payments on general debt. The appendix includes data descriptions and sources.
Fourth, depending on the states’ regulatory environments, officials can employ different budget maneuvers to avoid funding legacy costs within the current budget cycle. Specifically, they can defer current spending to future years, which is a borrowing action that can violate balanced budget rules and the voting requirements for bond issuance.76 Similarly, in states with weak legal frameworks and reporting requirements, there can be serious concerns about the lack of actuarial standards and valuations, or the use of unrealistic actuarial assumptions.77 To illustrate, some states express their pension contributions as their statutorily required contributions in place of their actuarially required contributions and, as the legislature sets the statutory contribution level, the state may appear well funded, diverging from fiscal transparency standards.78

Finally, extant research reveals that legacy costs can affect credit rating and borrowing capacity, posing more challenges to expenditure forecasts. Major credit rating agencies are increasingly taking legacy costs into consideration when assessing state and local government borrower risks. Therefore, failing to make payments or deferring obligations can reduce states’ credit scores, making future borrowing more costly.79

Notably, empirical research over the 2010–2014 period shows that in states with weak unions, i.e., lower unionization rates, average per capita spending on OPEB liabilities decreased by $2,015, whereas the corresponding decrease was only $156 in those with strong unions, although confounding factors (e.g., seat shares by political party) and limited data availability could be driving these findings.80 Nonetheless state unions can greatly influence legacy cost policies and related spending priorities as one of their foremost missions is to bargain for higher salaries and better benefits for their members, which are often considerable cost burdens for state governments.81 Adding to this, different unions representing different employee coalitions, such as teachers, policemen, or firefighters, may pursue conflicting interests. Thus, states with more union

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representation experience higher pressure in favor of certain budget allocations. This could add volatility to expenditure forecasts.

Additional challenges for long-term forecasts are a function of the different maneuvers that arise from interactions between unions’ strength and political parties. For example, unions can prioritize expenditure on salaries and benefits or pensions if salary increase limits are met. In states with weak unions, politicians have more power to limit OPEB promises. However, as union membership increases, legislators’ abilities to constrain spending on OPEB decline.

Based upon the literature, to capture some of the variation across states in forecasting challenges related to legacy costs, the typology dataset includes variables measuring 1) the share of expenditures spent on debt service, 2) bond ratings for state governments, 3) the pension funded ratio, 4) an indicator variable for the state making its OPEB actuarially required or determined contribution (ARC or ADC), 5) an indicator variable for the state making its public employee pension ARC or ADC, 6) the average yearly change in total liabilities, and 7) the percentage of employed population represented by unions. The appendix includes data descriptions and sources.

**Structural Balance**

Most states are subject to a requirement to pass a balanced budget, although not all balanced budgets support financial sustainability for multiple years into the future. Rainy Day Funds (RDFs), or budget stabilization funds, are the reserves states save during economic booms to use during economic downturns. Best practices suggest that reserves be maintained at desired levels, defined as the minimum amount needed to hedge against risk, and usage remain aligned with structural balance, i.e., building reserves during periods of economic growth and expending them during recessions. According to the National Association of State Budget Officers (NASBO), by 2020, all 50 states had RDFs, which are governed by either state statutes or constitutions. Figure 2.8 illustrates the change in the percentage of RDF balance to state’s total expenditures.

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Using Pew's definition, where budget stabilization funds are characterized by "enabling legislation, operating across fiscal years and over the whole economic cycle, and serving as a government-wide reserve for general purposes," Colorado and Illinois do not have RDFs. The regulations on repayments, deposits, and withdrawals of RDFs and overarching state rules that can interact with RDF regulations add complications to the expenditure forecasting process. In addition, the stabilization effects of RDFs are inconsistent across states. Further, short-term cost savings (under the effects of RDFs for example), may result in higher costs in the long-term, due to decreased investment in education or social insurance programs. According to existing research, this can cause additional challenges for long-term forecasts. RDFs can also affect state credit ratings. To illustrate, rating agencies often warn against frivolously withdrawing from RDFs.

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88 This figure illustrates the average yearly change in the percentage of RDF balance to states’ total expenditures using data from the Annual Survey of State and Local Government Finances from 2010 to 2020. The appendix includes data descriptions and sources.


RDFs, especially during periods of growth. Good credit signals fiscal responsibility and yields lower interest rates.

Based upon existing research, to capture some of the variation across states in forecasting challenges related to structural balance, the typology dataset includes 1) an indicator variable for not funding recurring expenditures with debt, 2) an indicator variable for not deferring recurring expenditures, 3) an indicator variable for having a RDF balance specifically tied to the historical trend of revenue volatility, 4) an indicator variable for the RDF or general fund balance being greater than zero on the first day of the fiscal year, and 5) the average yearly change in the percentage of RDF balance to state’s total expenditures. The appendix includes data descriptions and sources.

**Demographic Changes**

Broadly defined, demographic changes are the fluctuations in size, age structure, and mobility of the population. The change in size of the population, growth or reduction, directly influences expenditures on all categories, especially major spending items such as social insurance programs and public education. Adding to this, the aging population can strain state budgets significantly, especially through healthcare and pension expenditures. There are two main mechanisms of such impact: 1) the elderly are more likely to need medical assistance and services, and 2) they are less likely to pay taxes that contribute to financing public spending. In fact, research documents that the increase in healthcare expenditures from 1996 to 2013 was associated with both population growth and aging. Beyond these, extant research suggests the mobility of population can also escalate the challenge for expenditure forecasts. For example, capital spending has been reported to be positively associated with migration.

In general, forecasting the costs associated with such changes accurately is challenging as spending per capita varies significantly depending on the age of the structure, the types of services needed, and the population’s distribution of socioeconomic status. For instance, spending on a child from a low-income family would differ from that of a child in an upper-middle-class family as they have significantly different needs for resources.

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Similarly, healthcare costs for two elderly residents may vary greatly depending on the type of services they need and their financial capacities. A good projection model predicting the costs associated with population changes, therefore, must consider all demographic, economic, and social variables, as well as control for the inter relationships among them. Current forecasts often ignore those complexities.

Based upon the literature, to capture some of the variation across states in forecasting challenges related to demographic changes, the typology dataset includes a variable measuring the difference between population percentage change 2010-2020 and percentage change 2000-2010. As seen in Figure 2.9, Nevada saw the largest decrease in percentage points between the percentage change from 2000 to 2010 (35.1%) compared to the change from 2010 to 2020 (15%). North Dakota saw the largest increase in percentage points between the percentage change from 2000 to 2010 (4.7%) compared to the change from 2010 to 2020 (15.8%). The appendix includes data descriptions and sources.

Figure 2.9. Difference in Percentage Points Across Decennial Censuses

Structural Threats
Climate change exacerbates natural hazards, adding threats to states’ fiscal sustainability. Both climate change and natural disasters cause catastrophic impacts on a large scale and across different aspects of the economy. Subsequently, the interventions require resources across multiple budget components. In addition, disaster related spending entails a variety of response and recovery efforts in both the short term and

102 This figure illustrates differences in percentage points when examining the percentage change in population from the 2000 to 2010 census compared to the change from the 2010 to 2020 census using data from the U.S Census Bureau. The appendix includes data descriptions and sources.
long-term, making it complicated for budget projections. For instance, in the aftermath of a disaster, states must initiate programs to provide immediate support to the affected community while rebuilding critical infrastructure and investing in long-term preparedness and prevention. These efforts complicate estimations of expenditures.\textsuperscript{103}

Adding to this, the unpredictability and heterogeneity in size, frequency, and severity of damage can fuel uncertainties in forecasting expenditures. It is hard to predict natural disasters despite a good archive of data. This limits proper prevention efforts that can help curb the costs of damage.\textsuperscript{104} Moreover, the role of different levels of government and heterogeneity in government funding strategies further complicate expenditure estimations. Oftentimes, local governments are responsible for spending on recovery from natural disasters. However, certain disasters can cause damage beyond local governments’ response capacity, demanding support from state and federal governments.

Further, state governments can apply a range of instruments to fund relief efforts in response to natural disasters, including disaster accounts, state agency budgets, RDFs, or supplemental appropriations. Based upon existing research, the diversity in both funding entities and funding strategies certainly increases challenges to budget forecasts.\textsuperscript{105} Additionally, the literature highlights unique events, such as the COVID-19 pandemic, as exacerbating forecasting challenges. For instance, Medicaid enrollment increased by more than five million individuals during the pandemic from February to August 2020.\textsuperscript{106}

In addition to climate change and natural disasters, automation can also create challenges for expenditure forecasting. In fact, the COVID-19 pandemic spurred state governments to consider automation in the public sector.\textsuperscript{107} Implementing automation related technologies can impact multiple expenditure categories through their effect on labor demand and the trade off in skills needed. To illustrate, a survey of Federal and State agencies identified data collection and processing, document management, identity verification, multi-system workflow and access, and call center support as the


\textsuperscript{106} Kaiser Family Foundation. (2021). \textit{Medicaid Expansion Enrollment and Spending Leading up to the COVID-19 Pandemic.}

\textsuperscript{107} Businesswire. (2020). \textit{COVID-19 Pandemic Set to Accelerate Automation in the Public Sector, Insight Study Finds.}
most common applications for agencies currently using Robotic Process Automation.\textsuperscript{108} The shift away from labor demand that requires the ability to perform simple tasks is not specific to the public sector; rather, it is consistent with the national trend.\textsuperscript{109}

Based upon extant research, to capture some of the variation across states in forecasting challenges related to climate change, disasters, and other structural changes to the economy, the typology dataset includes variables measuring 1) the Expected Annual Loss (EAL), a measure calculated by the Federal Emergency Management Agency using a multiplicative equation that includes exposure, annualized frequency, and historic loss ratio risk factors for 18 natural hazards, 2) the share of jobs with high risk of automation, 3) an indicator variable for having above average unemployment in April 2020 (unemployment peak in COVID-19 period), and 4) and an indicator variable for having above average inflation in June 2022 (inflation peak in COVID-19 period). As seen in Figure 2.10, at the state level, the EAL ranges from 5.36 (very low) in Vermont to 100 (very high) in California. The appendix includes data descriptions and sources.

**Figure 2. 10. Expected Annual Loss from Natural Hazards**\textsuperscript{110}

![Map of the United States with color gradients indicating different levels of Expected Annual Loss from Natural Hazards.]

**Clustering Results**
As previously mentioned, Pew’s own review of long-term expenditure forecasting across states identified 30 states that are relevant to this project.\textsuperscript{111} These are states that

\textsuperscript{108} Rehr. (2021). \textit{The Promise of Robotic Process Automation for the Public Sector.}
\textsuperscript{110} This figure illustrates the EAL measure calculated by the Federal Emergency Management Agency. The appendix includes data descriptions and sources.
produced either long-term budget assessments or long-term projections at least three years into the future. In addition to this binary categorization of states and a variable indicating an annual or biennial budgeting process, the 32 variables previously mentioned, which reflect variation among states in terms of challenges associated with expenditure forecasting, are included in a typology dataset. Having built this dataset of variables anchored in a review of academic papers, technical reports, and other relevant materials, the researchers apply unsupervised machine learning (ML) to create a typology of states. This technique detects data patterns and allows for a better grouping of states that account for their characteristics, as represented by the variables.

The variables were normalized to ensure that they are on the same scale, a common preparatory approach prior to clustering. Unsupervised ML involves finding clusters of observations that are dimensionally similar and identifying patterns not easily detected by human observation.\textsuperscript{112} This method has been used to study the impact of state fiscal centralization and intergovernmental aid on local governments’ efforts to raise revenue, to automatically assign occupations to job titles, to classify chief executive officer behavior, and to provide a typology of counties based on economic development strategies, among other applications.\textsuperscript{113,114,115,116}

While some clustering methods simply partition the data, this report uses agglomerative hierarchical clustering, which starts with every point in its own cluster. The algorithm then merges the closest pairs of clusters based on the Euclidean distances between them. This process is iterative and continues until all observations are merged into one cluster. The layered categorization of states, possible through hierarchal clustering, allows broad grouping of states based on overlapping characteristics, as well as narrower groupings based on more idiosyncratic attributes specific to a smaller number of states. Figure 2.11 illustrates the hierarchical relationship between states using a dendrogram.


Figure 2.11. Hierarchical Clustering Using Relevant Variables to Expenditure Forecasting
In this analysis, the hierarchical clustering provides groupings of states ranging from 50 clusters (each with one state) to one group containing all 50 states. Clustering applications vary in how distance is measured between observations and clusters. This report uses the commonly employed squared Euclidean distance.\textsuperscript{117} In addition, distance between groups or clusters can be measured through multiple methods, one of which is named Ward and used in this report.\textsuperscript{118}

The researchers chose to use the number of clusters at which no cluster contains less than three states. Thus, the dendrogram was cut at eight clusters, as indicated on Figure 2.11. The boxes around states, on that same figure, illustrate which states form one cluster. In Table 2.1, within each cluster, states are sorted from the most representative of their group to the least.

As such, the first state within each cluster is the first choice for interviews, conditional on it being a state that publishes forecasts. In addition, the arrows on Figure 2.11 illustrate the centrality of the interviewed states within their cluster. Seven of the eight clusters are named after the challenges that are most prominent within the grouping. The last group (group eight) is named No Forecast since all states within this group do not publish their expenditure forecasting. This does not mean that all states outside this

\begin{table}[h]
\centering
\begin{tabular}{|l|l|l|l|l|l|l|l|}
\hline
\textbf{Public Education} & \textbf{Social Insurance Programs} & \textbf{Demographic Changes} & \textbf{Other Structural Changes} & \textbf{Liabilities} & \textbf{Employment Related Obligations} & \textbf{Structural Balance} & \textbf{No Forecast} \\
\hline
Kansas & Arizona & Wyoming & Nebraska & Indiana & Connecticut & Maryland & Mississippi \\
Florida & New Mexico & Texas & West Virginia & Minnesota & Hawaii & Pennsylvania & New Hampshire \\
Delaware & Montana & Alaska & Rhode Island & Utah & Massachusetts & Illinois & Oregon \\
South Carolina & Alaska & Wisconsin & North Dakota & California & New Jersey & & \\
Missouri & & & & & & & \\
Georgia & & & & & & & \\
Arkansas & & & & & & & \\
Iowa & & & & & & & \\
Alabama & & & & & & & \\
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\end{tabular}
\caption{All 50 States Grouped into Eight Clusters\textsuperscript{119}}
\end{table}


\textsuperscript{119} The table lists states by groups produced by applying a clustering algorithm to a typology dataset including variables anchored in a review of academic papers, technical reports, and other relevant materials. Shaded in grey are states that do not publish forecasts. In bold, are states whose representatives were interviewed. Underlined, are states that were reclassified by the researchers to ensure a naming that appropriately applies to the cluster.
group publish their expenditure forecasts. States that are similar in all dimensions are grouped together, so it is possible for a state that does not publish expenditure forecasts to be included in another cluster based on sharing other characteristics with its group. All states that do not publish expenditure forecasts are in grey cells as shown in Table 2.1.

Referring to Table 2.1, group 1 is named *Public Education* as states within this grouping have a higher than average share of expenditures on higher education or a positive average yearly change in the total number of students eligible for free and reduced-price lunch programs in public schools. Group 2 is named *Social Insurance Programs* since all three states have a higher-than-average share of expenditures on social insurance programs. Group 3 is named *Demographic Changes* since all included states experienced substantial differences between population percentage change 2020-2010 and percentage change 2010-2000. Group 4 is named *Other Structural Changes* since states within this group have a higher than average share of jobs with high risk of automation or high unemployment as defined in the previous section. Group 5 is named *Liabilities* since states within this group have higher than average yearly change in total liabilities or higher than average share of expenditures on debt service. Group 6 is named *Employment Related Obligations* as the states included within this grouping either have lower than average pension ratios or do not use best practices in funding OPEB. Group 7 is named *Structural Balance*, as the states within this cluster defer recurring expenditures or finance them with debt. Again, Group 8 is named *No Forecast* since all states within this group do not publish their expenditure forecasting. Figure 2.12 illustrates the eight clusters geographically.

Once the researchers identified the states to include in this analysis (in bold in Table 2.1 and noted in Figure 2.12), they sent email invitations to representatives of state offices, tasked with forecasting long-term expenditures, who were receptive and thus, meetings were scheduled over the period from September to November 2023. In total, the researchers conducted nine interviews among the eight clusters; two interviews were conducted for Washington, with representatives of the executive and legislative branches due to the nature of the state’s forecast, which requires formal collaboration between the two.
Table 2.2 presents select statistics for states whose representatives were interviewed. These variables illustrate in a snapshot the naming process for clusters. For example, among the eight states chosen for interviews, Colorado has the highest share of expenditures on higher education, Louisiana the highest share of expenditures on social insurance programs, which informed the naming of their corresponding clusters, Public Education and Social Insurance Programs, respectively.

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Share of Expenditures on Higher Education</strong></td>
<td>12.61%</td>
<td>9.46%</td>
<td>11.40%</td>
<td>9.36%</td>
<td>8.51%</td>
<td>10.21%</td>
<td>4.50%</td>
<td>9.38%</td>
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<tr>
<td><strong>Share of Expenditures on Social Insurance Programs</strong></td>
<td>23.54%</td>
<td>34.09%</td>
<td>23.87%</td>
<td>24.08%</td>
<td>28.68%</td>
<td>20.31%</td>
<td>29.26%</td>
<td>31.75%</td>
</tr>
<tr>
<td><strong>Demographic Changes</strong></td>
<td>-2.1pp</td>
<td>1.3pp</td>
<td>-9pp</td>
<td>1pp</td>
<td>-2pp</td>
<td>5pp</td>
<td>2.1pp</td>
<td>-2.6pp</td>
</tr>
<tr>
<td><strong>Automation</strong></td>
<td>22.79%</td>
<td>25.02%</td>
<td>26.08%</td>
<td>28.12%</td>
<td>24.68%</td>
<td>23.99%</td>
<td>20.31%</td>
<td>26.99%</td>
</tr>
<tr>
<td><strong>Change in Total Liabilities</strong></td>
<td>1.94%</td>
<td>-0.33%</td>
<td>-2.15%</td>
<td>1.09%</td>
<td>4.28%</td>
<td>0.82%</td>
<td>1.89%</td>
<td>1.92%</td>
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<tr>
<td><strong>Uses Best Practices in Funding OPEB</strong></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Does Not Fund Recurring Expenditures with Debt</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Publishes Forecast</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

As previously mentioned, one of the interviews was with a state that does not publish forecasts. Tennessee explained that while they internally forecast long-term

\[\text{Figure 2.12: Geographic Representation of the Eight Clusters}\]

The figure illustrates groups of states produced by applying a clustering algorithm to a dataset including variables anchored in a review of academic papers, technical reports, and other relevant materials. The figure notes the states whose representatives were interviewed.
expenditures, the findings are not released, as they are prohibited by statute to bind the decisions of future legislatures. The state also discussed concerns around the public misinterpreting forecasts as definitive budgeting. Following this interview, the researchers contacted other states that do not publish forecasts and learned that their financial planning practices vary; some forecast comprehensively for internal purposes and do not publish, others forecast some of the budget components (mainly Medicaid and education), and a third group does not forecast long-term.

The researchers acknowledge that the typology used in this report does not include all variables or state characteristics that are associated with potential long-term expenditure forecasting challenges. However, the goal here was only to guide the decision of which states to interview in an attempt to select states with varied challenges. Despite data limitations or circumstantial variable inclusion, this approach to state selection is more robust than simply relying on convenience sampling. Sections 3 to 9 synthesize the interview findings.

3. FORECASTING PROCESS

During this project, the focus was on understanding the challenges faced by states when conducting long-term expenditure forecasts. The semi-structured interview questionnaire used can be found in the Appendix. The state offices responsible for forecasting had varied names, which often included a mention of Budget, Finance, Planning, and/or Management. Representatives of these offices were first asked about their forecasting processes. Louisiana provided an intuitive description of the forecasting process: We are looking at existing expenditures and project those expenditures out...So, we add inflation. We add any workload adjustments that are needed in order to continue doing today's business with tomorrow's dollars.

More comprehensively, North Carolina explained: With the baseline of the governor’s recommended budget for the upcoming biennium as the starting point, [we] look at the recurring expenditures that will occur in the second year and then use different growth factors for different components of the longer-term forecast. The state added: [We examine] population growth projections for the 5 to 18 population as a major driver for public school funding, historical growth patterns for community colleges or the university system, historical medical care and inflation for Medicaid, and for all other operations we look at the State and Local Government Price Index and overall state population growth.

Most offices received forecasting of some of the budget components from other specialized governmental departments. For example, Colorado explained: We do not run
any of the modeling for Medicaid itself, or corrections, but we have more involvement over education...We have built out our model [for K12 financing]...to include some of these longer-term assumptions on pupil counts which we collaborate on with the State Demographer’s office. Colorado added: There is a team over at the department that oversees Medicaid, and they have a very established [forecasting] model that has [received] a lot of peer review.

Similarly, Washington, where the executive and legislative branches collaborate on the forecast, explained their process as: We are calculating a handful of growth rates that are applied at the item level in our budgets, and using that information to estimate the ensuing biennium expenditures for items that are considered ongoing spending rather than just one time. The state added: K12 has its own enormous mega model, and they [Department of Education] do the modeling themselves. There is a bond model that is maintained by the State Treasurer’s office, and they have their own process [for forecasting].

Notably, while Colorado was one of the states with flexibility in terms of the forecasting methodology applied, others were stricter in following the letter of the law.\textsuperscript{121} For example, Minnesota stated: For large parts of our budget, we have formulas built into law. Similarly, Louisiana explained: The statutes guide what we can include in those projections and what is excluded. However, the state noted: The statutes cannot provide for everything that we are projecting so, some of it is at our discretion but we try to follow [the statutes] closely.

In terms of procedural challenges, for Minnesota and South Dakota, these seemed to center around the validity of the assumptions used. Minnesota emphasized: Our job is to get it right...It is all about managing risk and making sure that policymakers are aware of the assumptions we are making and understand how we built our forecast and oftentimes it is making sure policymakers are aware of the mileposts along the way. [For example], we expect this to happen, but if this didn’t happen, or it happened differently, then the numbers are going to be different in the future [than what was forecasted]. Minnesota also noted the importance of benchmarking, specifically how comparable forecast assumptions are to the ones made in other state forecasts.

\textsuperscript{121} At the time of the interview with Colorado, in October 2023, the state’s forecasting process incorporated existing flexibility in funding K12, supported through the \textit{budget stabilization factor (BSF)}, introduced in FY 2010. In the 2024 regular session, the Colorado legislature eliminated BSF with no expectation of reimplementation. Thus, the current model used by Colorado to forecast K12 expenditures is now solely based on the school finance formula as described in statute, which relies on inputs such as pupil count and inflation.
These thoughts were echoed by Louisiana whose representative reflected on the challenges of communicating the nature of forecasting to stakeholders, specifically the role that unknown factors can play in invalidating a forecast. In addition, the state described challenges caused by the varying level of knowledge across stakeholders in terms of statutes governing processes for forecasting.

As it pertains to unit staffing, teams engaged in forecasting often included employees with diverse backgrounds, e.g., public administration, economics, finance, among others. South Dakota noted that on-the-job training is key for analysts to attain the skills required for long-term forecasting. In addition, the size of the teams varied and seemed to be a function of the budget components forecasted in-house. North Carolina and Washington expressed that limited workforce capacity sometimes creates challenges for forecasting while Louisiana and South Dakota mentioned some turnover challenges.

### Years Forecasted

The years forecasted are often directly determined by statute, as noted in Table 3.1. However, Colorado, whose statute mentions forecasting for the next 3 years, explained its decision to diverge from the requirement as follows: *That was not sufficient in our minds for what the goal looked like and so, we forecast out...5 years [which encompasses] current year, plus the next budgeting year, plus the following 3 [years].* Further, the state explained that the timeframe chosen was determined by discussions that emerged post pandemic: *We had lower reserve amounts. There were some stressors that happened that were really exposed during COVID-19, and so [with the 5-year forecasting, we are] trying to make sure there is a better playbook for how to think about the future.*

Notably, New York, South Dakota, Tennessee, and Washington highlighted the interdependency of forecast horizon and validity, with New York explaining: *Internally, we do longer forecast. We sometimes do 10-year forecast... [However,] the validity of a forecast [even] 5 years from now [is questionable]. If we did a forecast in 2018 and then we looked at 2023 or 2007 and we looked at 2012, [the forecast] would bear no relationship to the realized expenditures.* Washington added: *The longer you go out [in terms of forecast horizon], the bigger the cone of uncertainty.*

<table>
<thead>
<tr>
<th>State</th>
<th>Statute</th>
<th>Forecasted Years Beyond Ensuing One</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td><strong>2016 ALASKA STATUTES TITLE 37 - PUBLIC FINANCE CHAPTER 37.07 - EXECUTIVE BUDGET ACT SEC. 37.07.020 RESPONSIBILITIES OF THE GOVERNOR</strong></td>
<td>10 Years</td>
</tr>
<tr>
<td>State</td>
<td>Statute</td>
<td>Forecasted Years Beyond Ensuing One</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Arizona</td>
<td>2022 ARIZONA REVISED STATUTES TITLE 35 - PUBLIC FINANCES § 35-125</td>
<td>3 Years</td>
</tr>
<tr>
<td>California</td>
<td>CALIFORNIA CONSTITUTION ARTICLE XVI PUBLIC FINANCE</td>
<td>Not Mentioned in State Statute</td>
</tr>
<tr>
<td>Colorado</td>
<td>COLORADO REVISED STATUTES SECTION 2-3-209 - LONG-RANGE FINANCIAL PLAN</td>
<td>Not Mentioned in State Statute</td>
</tr>
<tr>
<td>Connecticut</td>
<td>SECTION 4-71 OF THE CONNECTICUT GENERAL STATUTES</td>
<td>4 Years (Ensuing Biennium and Projections For 3 Following Fiscal Years)</td>
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<td>Florida</td>
<td>ARTICLE III, SECTION 19(C)(1) OF THE FLORIDA CONSTITUTION</td>
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<td>O.C.G.A. 45-12-80 (D)</td>
<td>Not Mentioned in State Statute</td>
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<td>Hawaii</td>
<td>HAWAII REVISED STATUTES - CHAPTER 37-69 THE SIX-YEAR PROGRAM AND FINANCIAL PLAN</td>
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<td>(15 ILCS 20/) CIVIL ADMINISTRATIVE CODE OF ILLINOIS. (STATE BUDGET LAW)</td>
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<tr>
<td>Iowa</td>
<td>TITLE 8 - CHAPTER 8 BUDGET AND FINANCIAL CONTROL- SECTION 27 PREPARATION OF BUDGET</td>
<td>Not Mentioned in State Statute</td>
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<td>Kansas</td>
<td>KANSAS CONSTITUTION ARTICLE 15, SECTION 5</td>
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<td>Louisiana</td>
<td>2011 LOUISIANA LAWS REVISED STATUTES TITLE 39 — PUBLIC FINANCE RS 39:173 — EXPENDITURES</td>
<td>3 Years</td>
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<td>2 Years (Ensuing Biennium)</td>
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<td>Montana</td>
<td>MONTANA CODE ANNOTATED 2023 TITLE 17. STATE FINANCE CHAPTER 7. BUDGETING AND APPROPRIATIONS</td>
<td>Not Mentioned in State Statute</td>
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<td>Nebraska</td>
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<td>New Mexico</td>
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<td>North Carolina</td>
<td><strong>CHAPTER 143C. STATE BUDGET ACT. ARTICLE 1. GENERAL PROVISIONS</strong></td>
<td>5 Years</td>
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<td>Oklahoma</td>
<td><strong>2022 OKLAHOMA STATUTES TITLE 62. PUBLIC FINANCE §62-49. MULTI-YEAR TREND ANALYSIS OF BUDGET OUTLOOK</strong></td>
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<td>Pennsylvania</td>
<td><strong>THE CONSTITUTION OF PENNSYLVANIA ARTICLE VIII. TAXATION AND FINANCE § 12. GOVERNOR’S BUDGETS AND FINANCIAL PLAN</strong></td>
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<td>Rhode Island</td>
<td><strong>Rhode Island General Laws TITLE 35 PUBLIC FINANCE CHAPTER 3 STATE BUDGET R.I. GEN. LAWS § 35-3-1 § 35-3-1. BUDGET OFFICER — GENERAL POWERS AND DUTIES</strong></td>
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<td>South Carolina</td>
<td><strong>2022 South Carolina Code of Laws Title 11 - Public Finance Chapter 11 - State Budget System Section 11-11-350. Estimates Of Planned General Fund Expenditures</strong></td>
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<td>South Dakota</td>
<td><strong>SOUTH DAKOTA CODIFIED LAWS CHAPTER 4-7 PREPARATION AND ADOPTION OF STATE BUDGET 4-7-49. LONG-TERM FINANCIAL PLAN</strong></td>
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<td>Texas</td>
<td><strong>Texas GOVERNMENT CODE TITLE 3. LEGISLATIVE BRANCH SUBTITLE B. LEGISLATION CHAPTER 317. STATE BUDGET EXECUTION SUBCHAPTER A. REGULAR APPROPRIATIONS</strong></td>
<td>Not Mentioned in State Statute</td>
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<td>Utah</td>
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<td>Washington</td>
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<td>West Virginia</td>
<td><strong>WEST VIRGINIA CONSTITUTION ARTICLE VI THE LEGISLATURE</strong></td>
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<td>Wisconsin</td>
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<td>Not Mentioned in State Statute</td>
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<td>Wyoming</td>
<td><strong>WYOMING LEGISLATURE 28-1-115 SUBMISSION OF STATE AGENCY PLANS TO LEGISLATURE. CONTENTS, PURPOSES</strong></td>
<td>Mentions multi-year requirement without specifying number of years</td>
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Data Sources & Methodologies
For the most part, states did not express challenges associated with the current methods or data used. Louisiana stated: *It is not a very sophisticated [process]...for the expenditure side, it is a very basic projection...It is no sophisticated analytical tool that we are using.* Some states did express interest in having more resources or capacity to investigate, develop, and implement more sophisticated methodologies.

North Carolina described the data they rely on: *[It is] a mix of mostly internal data and publicly available inflation data. So, for Medicaid expenditures, we look at our own data on recent 5-year historical growth and Medicaid expenditures, especially the state appropriation side of that. For demographic projections, we use our state demographer’s age specific enrollment [and] population growth, for the 5-year period and incorporate that into our K through 12 expenditure projections. We [also] look at community college growth—expenditure growth from the state side—and same with university [growth] and apply that going forward. The state added: We would like to have a more sophisticated process...It is less an issue with specific skills than with time and staffing and the timing of when we produce those [forecasts]. So, the budget development process for putting together the governor’s recommended budget is a very time intensive process, and the same folks [who] are putting together the longer-term forecast are also the folks who are putting together the details of the governor’s recommended budget. So, the amount of time we have to dedicate to the 5-year forecast is certainly not as much as we would like to have in an ideal world.

Discussing the challenges associated with a simplified forecasting methodology, Minnesota explained: *Agencies rely more on current and past spending trends to do their forecast versus relying on economic variables.* This was characterized by the state as: *a bit of a challenge, particularly with our human services programming [where] our forecast will sometimes tend to lag real economic conditions. There have been times where our Medicaid forecasts have not caught up to real need expectations out in the world due to changes in the economy. So, it is a challenge for those agencies doing the forecast [to solely rely on current and past spending trends].*

Current Services Baseline
The majority of states that publish their forecasts begin the process with the current services baseline. In addition, Tennessee, a state that does not publish forecasts but produces them for internal use, also indicated the use of current services as a starting point. This approach is in line with recommended best practices.

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explained: We [rely on] current services baseline for the expenditure forecast and that’s one of the main reasons we use the State local government price index as a primary driver. It is a simple approximation of what we see as current services for most state services other than Medicaid.

North Carolina added: In terms of challenges, we recognize that the rather relatively simple model we use is not a perfect way of capturing current services, especially for Medicaid. When asked if there were challenges associated with a current services approach, Louisiana responded: Some of the lawmakers have a different vision for a starting point...We have tried to modify in the recent past to give a good baseline but that [current services] is how the law establishes [the starting point]. South Dakota clarified that while current services are presented as a starting point in their published forecasts, internally they consider the context around expected growth trends to ensure increases are not temporary and sometimes apply formula or zero-base budgeting.

Minnesota, the only state interviewed that does not use the current services approach, clarified that: We are 75% non-current services and 25% of our forecasted budget is current services. It is tipping more and more towards current services. In terms of challenges, the state explained: It is largely a communication challenge...When we transition from a forecast to setting a budget, the biggest challenge with our programs that are just base level in the forecast is communicating that the consequences of not increasing funding [are] that services will decline [and] that agencies will not be able to afford the same level of service or staffing that taxpayers are expecting.

Minnesota continued: A growing portion of our forecast is effectively a current services forecast. So, a fair chunk of our HHS [Health and Human Services] forecast, around 40% is cost base. So, current law appropriations [for HHS] grow in the forecast with actual need, as defined by statute. The state ended by clarifying: We added this past year an inflationary factor to our per pupil funding formula for school districts so that will grow into the future with costs. Also, special education is a cost-based forecast where appropriations grow with costs. But our baseline operating budget is not a current services forecast. It is a flat base appropriation forecast.

4. BUDGET COMPONENTS

In general, the magnitude of expenditures on specific budget components seemed to be a key driver in the level of methodological sophistication applied to the forecasting process. Consequently, in the interviews, an immediate distinction emerged in challenges associated with large budget components whose forecasts were described as caseload driven versus other types of expenditures.
Caseload Driven
Colorado, a state currently developing its long-term expenditure forecasting methodology noted: We really wanted to start [with] the major caseload issues that we see in the state. What is happening with Higher Education? What is happening with the Department of Corrections? What is happening with the Department of Health Care Policy and Financing, our Medicaid department here?

In addition, Colorado emphasized: We started out with the bigger drivers—Medicaid and K12 education. New York confirmed: Medicaid and schools are really the two giant programs in our state budget. Louisiana added: [The most challenging budget components to forecast] have been the same [for a long time]—education, corrections, and healthcare.

In relation to this category of spending, Minnesota’s experience differed: The challenge is both of these [referring to higher education and public safety] fall into the bucket of not part of the current services level budget. So, our funding for higher education is projected forward at a flat level, whether it is state grant programs or direct payments to our universities and then public safety is the same. In other words, the amount forecasted would not cover the same level of services currently provided in the future; rather expenditure increases will be required.

Medicaid
New York comprehensively explained the factors causing Medicaid expenditures to be the most challenging budget component to forecast: It is a more dynamic space, and our control over it is a little less complete than it is over education spending...[because] the payments to providers are occurring on a real time basis. New York added: The size of the spending and also the nature of the shared financing relationship we have with the Federal Government [make] Medicaid by far [the most challenging component to forecast]. At any given time, we have several state plan amendments and waivers that are pending with CMS [Centers for Medicare & Medicaid Services] that can materially affect how much we are spending on the Medicaid program. Typically, we are asking for changes to the program that allow us to experiment, to drive down costs. Those waivers and those amendments can take a long time to get approved or may not be approved at all. That fiscal federalism relationship is very challenging.

In addition, the state added: The uncertainty of costs in the healthcare space is significant. That drives a lot of uncertainty [in forecasting]. And then we also have a range of providers...We have some very distressed financial providers. We have some that are quite wealthy. The ability to provide service is continually being challenged by the difficulties we have, particularly in the hospital side, as hospitals merge, as they change, and as we deal
with a number of hospitals or systems that are really struggling, so all those things conspire to make it a very difficult area for budget forecasting.

In discussing the state’s budget guidance to all departments dealing with caseloads to use 4% as the growth rate, Colorado explained: *we came up with 4% really using current Medicaid costs as a driver, since that is one of the biggest ones...we wanted to target to something external that we had little control over.* Similarly, Minnesota stated: *Medicaid forecasting is a large component of our budget in general.* The state added: *Our Human Services Agency is in charge of doing the actual forecasting. They use a combination of actual and past experience for the program. And then they use some economic variables from our macroeconomic forecaster which right now is S&P global.*

In line with what was reported by other states interviewed, North Carolina validated that Medicaid is the most challenging budget component to forecast, while highlighting the interplay with federal policy: *Our analyst who focuses on Medicaid expenditures....She has a very sophisticated model for forecasting, but those models tend to perform less well [in the context of a 5-year forecast]. There is just so many Federal policy changes, especially looking at the last 15 years...the great recession and the slow recovery following and then the pandemic recession. In the more recent time series that we're looking at, it is hard to tease out a true signal from the noise.*

Going through programmatic changes, North Carolina added: *We have also been going through switching to managed care with Medicaid and that has also presented a lot of challenges for forecasting Medicaid going forward just because the growth in capitated Medicaid expenditures is likely to be very different than looking at a fee for service. We are also going forward with Medicaid expansion. So that is also going to create some challenging dynamics for forecasting Medicaid in the longer-term.* South Dakota, a state that also recently adopted Medicaid expansion, emphasized the extent of analysis needed to ensure future Medicaid forecasts remain reliable. The state also discussed their own research focused on other states’ experiences with the expansion, that has informing updates to their forecasting process. Notably, Tennessee stated that their adoption of managed care rendered forecasting over the last decade much easier compared to the period when fee-for-service was the payment mechanism used.

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124 To clarify, Colorado had a 4% statewide caseload target in the early stages of the FY 2025 budget development that was later replaced by more detailed caseload forecasts prior to enacting the FY 2025 budget. During the current FY 2026 budget development process, the state is incorporating expectations of caseload pressure by department over a 5-year horizon. Colorado has only recently began developing its long-term expenditure forecasting methodology and therefore their process continues to be refined.
Education
Washington, where K12 spending constitutes the largest share of the operating budget explained the process for this component: The agencies have their own forecasting and then we also have a caseload forecast counselor who forecasts caseloads for many of the entitlement programs and then we do our best to incorporate known factors about caseload changes and needs in these specific areas that are just outside of policy changes.

North Carolina added: For education, we have focused on population growth for the 5 to 18 population for K through 12 and then more recent historical growth patterns for community colleges and universities because those have not really fit a population growth model, because of changing economic circumstances being a bigger driver for changes in enrollment in community colleges and universities.

In terms of the two largest budget drivers, New York noted: Education is easier to forecast than Medicaid. It is a fixed amount that the legislature agrees on. There are updates on student data that are collected by our Department of Education. Those database updates can drive changes in the estimated cost for the year, several 100 million dollars when we are either positive or negative. But the scale of the changes is easily manageable. With Medicaid the cost implications are less predictable, and they are less easy to control. With schools there is a lag in reimbursement. There are more tools to manage the cost pressures and the cost pressures are lower because it’s a less volatile area.

A state that has recently updated its process for forecasting education, Minnesota clarified: We just added in the last year an inflationary factor on the actual rate of payment per pupil to schools. So, for that program, we will forecast the number of pupils we expect statewide going out 4 and 6 years into the future, and then also looking at expected cost increases within a band. Minnesota added: Our State pays school districts on a cost basis for special education. So, the forecasting process for special education, which is another large component of our budget, builds on a formula looking at actual costs experienced by school districts. Our education agency has a process for forecasting that.

Less Complex Components
Beyond the budget components with caseload driven forecasts, the consensus is that the remaining categories are simpler to forecast. In fact, most states did not communicate that pension expenditures posed challenges to the forecasting process. For example, Colorado stated: It is also something that is in our budget planning every year...It is a pretty stable thing, though, so it is not something that in a long-term budgeting path, we expect it to change much, even if an automatic trigger happened
[referring to the state’s automatic adjustment provision that keeps pensions fully funded], it is about a 10-million-dollar difference. That is not going to be much of a budget planning impact.

Similarly, Washington confirmed: We have a healthy pension system so that has not been an issue recently. In addition, North Carolina clarified: Thinking about pensions, that is an area where it has not been as challenging for us, because North Carolina has been pretty good about maintaining a fully or nearly fully funded pension system. We have not had a lot of budget pressures there, even as we have been transitioning to a lower expected rate of return for our pension system. Relatedly, Minnesota explained: Pensions are funded in State agency operating budgets, and our employee and employer contribution levels are set in statute...So, pensions are in general one step removed from our forecasting process.

Notably, in New York, pensions are constitutionally protected. Given this background, the state discussed the tools used to control costs: New pension tiers with essentially lower benefits...[and] decreased return for the pension system. For OPEB, New York continued: It is not a contractual right in the same way [as pensions]. It can be renegotiated. We have had substantial swings in our OPEB liability. We have been able to renegotiate with the public sector unions...so that is another way to control costs.

Reflecting on transportation, Minnesota explained: Transportation is outside of our general fund. Our major transportation revenue sources are directly appropriated...Our transportation agency does short-, medium-, and long-term need planning so effectively communicating funding gaps in infrastructure needs in our transportation system, you know, 10, 20, and 30 years into the future, and the legislature will use that input to determine whether current funding can pay for that gap, or if changes are needed to revenue sources for transportation funding. The state added: We will forecast going into the future, that every even year, an 800-million-dollar bonding bill will be enacted, and so, in terms of pricing a bonding bill, the legislature can enact a bonding bill of 800 million dollars at zero cost against the forecast, because we have already baked that into our forecast baseline. Similarly, North Carolina added: We do separate transportation planning from the 5-year forecast.

In New York, multiple state agencies conduct regular condition and engineering reviews to identify repair needs. New York did note that the biggest expenditure forecasting challenge they have in the transportation space is cost overruns and the lack of common language between engineers and policy makers. The state expressed: The translation between those two worlds is very difficult and that is kind of an ongoing

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125 New York Constitution. Article V - Officers and Civil Departments. Section 7 - Membership in Retirement Systems; Benefits Not to Be Diminished nor Impaired.
challenge. We have even discussed having engineers embedded in the division of budget, or having a council of infrastructure experts oversee the work of the engineers in these different departments.

Largely, states did not indicate that debt service forecasting posed significant challenges. For example, discussing bond ratings, Washington expressed that their ratings do not factor into the expenditure forecasting process. Minnesota confirmed: We have a good historical process for forecasting our debt service. In general, our debt service forecast is sophisticated and uses assumptions about future authorizations and then assumptions about the market going forward. New York explained their conservative approach: For debt service, we forecast very high interest rates, 100–200 basis points above where we think will be. We have no variable rate debt exposure at this point in the state, so, we are not subject to real time swings. Interest rates obviously drive up the cost of borrowing for a capital program over time, but that is something that is more easily managed.

In terms of bond ratings, New York added: Bond ratings do not factor into our forecast unless we are predicting a downgrade or an upgrade, but we have done some testing of bond prices and ratings and what we found over the years is that investors price in rating changes long before the rating agencies make any change. The state continued: The biggest driver of New York State interest costs, though, is just supply.

5. POLICY CHANGES

Depending on each state’s forecasting process, policy changes are incorporated in varied ways. New York has decision rules or filters: If it is enacted into law, then our assumption is that our baseline needs to reflect it. If it has been talked about, we will describe it as a risk and then we will also probably model it internally, so that a budget, director, governor, or staff can see what the consequences are if this policy proposal goes through but once it is actually approved, then we would be reflecting it in our updates. New York added: If things are expected to sunset, where a policy is supposed to be in place for 3 years. Year 4 will show [it] going away, typically. Occasionally we make an exception to that, if it is a policy that has been extended for the last 20 years, and it seems routine that [it] will continue to be extended. South Dakota also indicated the use of judgement in these instances and explained that if a policy has a high probability of being enacted, then internal forecasting could take place prior to codification. The state did note that initiated measures sometimes create challenges, especially if they were not expected to pass.

Washington noted the difficulties associated with forecasting expenditures in response to policy changes: The challenge is that a lot of those items tend to be newer things and
so we have less historical information about what the cost of those might actually be. A lot of times, we are working closely with the agencies to determine what their budgeted costs are, what they think they are going to need to implement and run whatever policy change is being contemplated. The state added: We wait until they [policy changes] are enacted. This only applies to state policies. Washington clarified: If it is Federal money, we are not required legally to balance that over 4 years [forecast horizon].

Similarly, North Carolina explained they do not incorporate policy changes that are likely, but not certain, especially Federal ones. On the other hand, Louisiana provided a nuanced answer: We are not trying to forecast out Federal funds or any of the statutory dedications, but to the extent that there is an impact to a general fund expenditure, and it fits the confines of what the statute says, then those things do come into play. For instance, the big one is Medicaid.

Notably, Colorado mentioned that federal policy was a consideration when building their newly approved long range financial planning team: We wanted to hire somebody with a federal focus to manage the roll off of ARPA [American Rescue Plan], also some of the roll on of IIJA [Infrastructure Investment and Jobs Act], IRA [Inflation Reduction Act], and Chips [and Science Act]—All these other things where there is state opportunities to match and really ramp up the amount of money we can expend without really harming our general fund as much.

6. ONE-TIME VERSUS ONGOING SPENDING
As it pertains to spending frequency, New York explained that the challenge is in differentiating between the two types of spending (one-time or ongoing), which is often a discretionary decision: What is something that is truly non-recurring and what is something that is approved annually, but not permanently each year?...We make judgments about what is non-recurring and recurring, then you can see the consequences quite clearly [in the multi-year plan]. Washington added: We spend a great deal of time when an item is funded in the budget making sure we understand. Is it one time? Is it ongoing? Is it phased in?

In addition, New York offered an example of non-recurring spending that requires an evaluative judgment: A salary bonus typically will go away but sometimes, once the bonus is there, it creates a new base for future wage negotiations and then, do you assume that there is going to be some impact on the wage base based on that, even though it is a temporary commitment. Does it change the long-term trajectory?

Minnesota noted a different type of challenge when dealing with both types of spending: If an appropriation is set to only be one time or only last 3 years from now and
then go away, our forecast will include that...Our forecast is complete and exhaustive relative to current law, so that they are in there, and they are one of those pieces that create some of that communication challenge. South Dakota echoed the communication challenges associated with differentiating between one-time versus ongoing spending.

7. ECONOMIC CONDITIONS

Most of the states interviewed did not include assumptions around recession expectations in their publicly released forecasts, although some regularly performed recession scenario-based forecasts for internal use. Markedly, Minnesota did include a short recession in their February 2023 forecast. Although in this case the recession did not materialize, long-term expenditure forecasts that include recession scenarios can help policymakers understand future impacts to budget balance.

New York confirms: We have occasionally called for a recession but typically, we are calling for a recession when the economy is slowing. The state added: When we are in a recession or on the eve of a recession, we would be reflecting that in our finance projections, what that means is that our expenditure base will be increasing slightly, and then more over time based on eligibility for service, particularly in Medicaid income maintenance, and then our receipts would be plummeting. So, that would be reflected in our public forecast.

New York continued: The impact of recessions tends to be substantial, so internally, every year, we do recession scenarios where we take our current baseline expenditure forecast, and then we apply recession forecast to our estimates, to try to assess what is the liquidity impact in the short term. Our goal is always to get out of the current fiscal year without foolhardy decisions and then we can address the consequence of the recession in the upcoming budget. So, we do recession forecasts regularly, typically using our reference points: the recession in 2001 following the terrorist attacks in New York and then the 2008 great recession. Those were two relatively extreme examples of recession. So, they may overstate the severity of a typical recession. That is something we do on a regular basis to assess our seaworthiness to deal with a shock from a recession and what the consequences would be for our expenditure activities.

North Carolina undertakes a similar practice: That is something we do on a less frequent basis. We started looking at that in 2019, and just looking at what different scenarios [mild, moderate, severe] in terms of recessions would mean for state revenues and the relative balance or how that would compare to current services expenditures. It is not required by statute, but it is something we look at just because we want to make sure we are prepared for a potential recession. So, it is something we envision doing again in the near future...but that is separate from the statutory 5-year forecast process.
Explaining the view of states that do not produce scenario-based forecasts for internal use, Louisiana clarified: If the agency did not submit a request to put more money into the budget because of X, [we are] not going to account for it in the 5-year [forecast], because it is not part of the existing operating budget and the parameters that we then [use to] project the expenditures on.

For some, in times of recessions, the main challenge is around forecasts diverging significantly from realized expenditures, as explained by Minnesota, in reference to the 2008 downturn: At that time our expenditure forecast for Medicaid spending did lag the economy. So, we ended up with larger than expected deficits. The state expressed concerns of a repeat of these conditions in the face of a future downturn.

Inflation plays a key role in expenditure forecasting. It is often the growth factor for specific budget components as required by statute, although there are instances where analysts are prohibited from accounting for inflation in their calculations. In an example illustrating the challenges associated with political change, starting in 2001, the legislature explicitly prohibited Minnesota from including a general inflation factor in the forecast, which was the norm up to that point. However, the state’s recent budget surpluses smoothed the political process and allowed changes to be implemented as mentioned by Minnesota: This past year, [in] sort of a unicorn session, we had these enormous surpluses, and [a politically unified state government] put in place some policies that they have been talking about for a long time and had the resources this time to do it. The 2001 provision was struck, and the state is now back to calculating inflation in their forecasting process for all programs that do not have an inflationary factor already built in [by statute].

Both South Dakota and Colorado expressed that inflation increases revenue as well as expenditures so often the two balance out, with Colorado stating: In a state that is constrained by TABOR, inflation helps make sure that we are still above the TABOR cap and so inflation is one of those things that [can be] helpful to state financing. TABOR refers to The Taxpayer’s Bill of Rights Amendment that was approved by voters in 1992, which “limits the amount of revenue governments in the state can retain and spend.”

8. STRUCTURAL CHANGES

Similar to economic conditions, expected structural changes facing the economy are not typically incorporated into forecasts until they materialize. For the most part, the long-term expenditure forecasting process is anchored in historical trends. For an item to be included in the process, it must have had a realized impact on budget components.

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126 Colorado Department of Revenue. (2024). Taxpayer’s Bill of Rights (TABOR) Information.
Washington explained: Given our current process, we are always going to be behind rather than in front of issues like that [referring to structural changes] because it is going to have to flow through our maintenance level expenses before it gets picked up in our expenditure growth [applied to budget components as part of the state’s forecasting process].

Although their forecasting approach is more sophisticated, New York confirmed: If the developments are significant enough, they are incorporated into our macroeconomic forecast [which] in turn feed into our models, that then in turn get reflected in the expenditure forecast. For example, how many people might be driven to need public support or the number of people that might be on Medicaid.

Notably, Louisiana offered their approach to dealing with expected changes while conforming to statutory requirements: [When an expected expenditure] is out of the scope of the 5-year [forecast], we do have a section in our fiscal status [document], [for] items on the horizon, [to list expenditures] that we have to pay, [for example] the Hurricane [and Storm Damage Risk] Reduction System.

In the interviews, structural change questions focused on demographics and natural disasters as well as economic shifts (e.g., automation, offshoring, reshoring, energy transition). Generally, demographics played a role in the forecasting process through historical trend data. On the other hand, natural disasters were deemed too small a portion of the budget to require significant consideration. The other factors did not seem to have any realized impact on expenditures and therefore were not incorporated in the process. When discussed, interviewees indicated these factors might be more of a concern for revenue forecasting.

**Demographics**

Colorado explained that one of the main underpinnings of long-term expenditure forecasting is demographics and added: We are still getting a better handle in collaboration with the State Demographer’s office on how these different pieces look...Because we see [population] rapidly aging. We see that [the K12 age] population shrinking, but we also notice that the 18 to 24 group is growing right now. So, does that lead to some different decision making on higher education funding versus K12 funding needs? Minnesota echoed similar concerns but noted: [These] potential risks are often beyond our current forecast horizon. The state also acknowledged the importance of birth rates in forecasting education spending.

On the other hand, New York explained that demographics are accounted for in particular areas of the expenditure forecasting: It is recognized in the Medicaid
area...nursing home beds and the number of people that are going to become Medicaid eligible. Certainly, factored into schools [related expenditures], both for school age and higher education. New York added: Population change overall is something that people discuss....We see declining trends. So, what does that mean for service capacity? What does it mean for capital construction? Variation does exist in terms of the demographics considered during the forecasting process and the approach to including relevant variables. For Washington, demographics are incorporated indirectly into the forecast through the historical costs used to calculate the growth rates applied to the budget components.

North Carolina clarified some of the challenges: For education, we have our demographic projections for the 5 to 18 population which is a key driver, but we do not have the other elements of what is going to be pushing enrollment costs up or down. So, we do not have whether more children are going to be shifting into charter schools or to home schooling or into private schools. So, we do not incorporate that. So that is a challenge to getting the longer-term forecast correct. We know that the aging of the State’s population is going to have some significant effects on the balance of Medicaid costs, especially looking at the long-term and that is something we have not fully incorporated into our longer-term expenditure forecast. So, I think there are some demographic elements that we are aware of, and we do incorporate. There are others that we know are happening, but we have not gone through the process of really incorporating some of those hard to capture demographic trends, and how they influence expenditures going forward.

Some states discussed idiosyncratic threats. Both Minnesota and New York alluded to the challenges associated with migration. New York explained: There is a right to shelter in New York City. So, we have had a substantial inflow of people seeking to live in New York. Those are totally unexpected costs...That situation is going to continue for a long time. So, we are really trying to get our heads around what that means because it is not as though a unique set of circumstances triggered this migration. It has been ongoing and some of it is attributed to climate change which, obviously [is] not changing. It is not going away. If anything, [it is] going to intensify and then you have political economic instability that is driving people to come to a place where they can live more safely. So, I think the costs of that are likely to be extraordinary.

**Climate Change, Disasters, and Energy Transitions**

Reflecting on natural disasters, Colorado explained that the state has a separate state emergency reserve to tackle wildfire and stated: We have not yet run into a problem where we have needed more money than that resource [emergency reserve]. However, the state did recognize: Maybe one of the future developments [in forecasting expenditures] could be to identify if the path of wildfire and other pressures is growing more quickly
long-term than the path of that state emergency reserve but that will be future work, not something we are tackling now.

In the interview, Minnesota indicated that the Department of Natural Resources forecasts firefighting expenses, but these constitute too small a share of the total budget to warrant a serious discussion of challenges from the state’s perspective. Washington expressed similar thoughts: They [disasters] do not happen enough, and it would be a similar situation to COVID-19, where we would have no idea what an earthquake recovery would look like, or a volcanic eruption. That would be nearly impossible, probably, for us to forecast. Washington added: Part of the reason we could get away with not having an exact plan in the budget for all of our natural disasters is because we have the budget stabilization account, which is our rainy-day fund and per the Washington State constitution money can be drawn from that account to pay for natural disaster expenses if the governor declared an official emergency. The state clarified that for events that happen regularly, e.g., wildfires, money is allocated in the budget. Similarly, North Carolina explained that they do not incorporate any assumptions around natural disasters and that their well-funded savings reserve and disaster relief fund can cover ensuing costs. When asked if it would be useful to include such assumptions, the state replied: It is something we have definitely thought about and we have not yet come up with a way of accounting for the future costs of state disasters, other than just the formula driven contributions to our savings reserve.

New York offered more clarification: We never forecast natural disasters. We have looked at them very closely, like Hurricane Sandy, for example, we have had some incidents of flooding, and of course, 9/11. What we have seen is typically a deep shock, and then a very rapid rebound. And even [with] COVID-19, the swiftness of the rebound from our standpoint and given the amount of Federal aid that is typically marshalled in those sorts of events [do not create a need to forecast such events]. What we really need is liquidity to deal with the temporary needs of people until Federal aid becomes available, which is usually very quickly. So, it is really not a regular part of our forecasting. The state did note that they have called attention to the long-term costs of climate change.

Some states did indicate that these changes might matter more from a revenue forecasting standpoint. For example, Colorado noted: We want to start teasing out some of the information on the transition to EVs. From our early discussions, both internally and then collaborating with people that we know from other states, it does not appear that [this is an] immediate concern. This lack of urgency was confirmed by South Dakota. Similarly, Washington stated: On the revenue side, I think you are going to see those structural issues hit first.
9. STRUCTURAL BALANCE

In aligning their forecast with structural balance goals, states are often governed by statutes. For example, New York emphasized that they have a balanced budget requirement and explained: So, each year, depending on the nature of the gap between our current law expenditures or baseline expenditures and the revenues we expect to have available, we will come up with itemized cost containment proposals for each of those areas that then have to be approved by the legislature. On a more global scale, we have imposed expenditure caps for Medicaid and for school aid. So, school aid is calculated to grow at the growth rate of personal income in the State. Medicaid’s cap is related to a medical price inflator. And so that does not cap expenditures for real. There has to be action that is taken to make sure that things actually stay within those caps. But what that caps has done is create expectations, and it has created an anchor for negotiations each year. New York added: We are trying in any given year to figure out how do we pare back spending in an equitable way to bring the budget into balance and reduce budget gaps in the out years. That is almost exclusively the focus in any given year.

On the other hand, Louisiana underscored that they have no structural balance requirement and consequently the administration plays a big role in determining the alignment between forecast and structural balance. North Carolina explained further: Because we are doing current services [baseline], [we are] agnostic about the goals and priorities of the state, particularly as the priorities of the Governor and the General Assembly [might not always align]. South Dakota cautioned that aligning forecasts with structural balance goals becomes challenging when economic conditions worsen.

For some states, the interplay between long-term expenditure forecasting and structural balance seemed to focus on communication. In the interview, referring to their most recent 19-billion-dollar surplus in the biennium that ends in 2025, Minnesota explained: A major focus of our budget process was making sure that policymakers knew that a large portion of that money [gap between revenue and spending] could only be spent one time and if they did not, if they appropriated all of it as ongoing, we would walk away with projected, 5 or 8 billion dollar structural deficits going into the future. In reference to preserving structural balance, Minnesota added that communication is essential but also emphasized that policy makers need to maintain discipline.

New York echoed that sentiment: What we are trying to illustrate with a [multi-year] plan is the consequences of immediate decisions on longer-term operations. New York added: [the forecast] allows us to illustrate...time limited spending, which might have a bump for one or 2 years...You could see, well, those costs are going to go away after 2 or 3 years. So that is really been the value....We are mostly focused on that multiyear view to kind of
illustrate, to the legislature and to the governor, here is what these choices mean in a planning horizon that is meaningful to them.

10. RECOMMENDED STRATEGIES
The themes that emerged in interviews with representatives of state offices, tasked with forecasting long-term expenditures, often overlapped topically. To illustrate, communication was mentioned as a challenge in reference to the forecasting process, the use of current services as a starting point, and differentiating between one-time versus ongoing spending. As such, the recommendations outlined in this section reflect this intersectionality as well as some resources that could be leveraged to alleviate challenges.

Increased Collaboration & Best Practices
The key to resilience in the face of unexpected challenges when forecasting long-term expenditures seemed to center on having a culture of collaboration across governmental offices within and across states. For example, Minnesota stated: We have a strong culture in Minnesota, of nonpartisan staff working together to do the best forecast we can. The state also provided an example of this practice in action: Recently, working on our current forecast, we needed to make some assumptions about migration into Minnesota, [in relation to the] Southern border and otherwise, that we expect will impact our pupil counts, and thus our spending on education and so we have consulted with our State Demographer’s office, who is generally not involved directly in our forecasting.

In relation to this culture of collaboration, Minnesota added: On top of that, we do engage with nonpartisan legislative staff...We do view our partnership with the nonpartisan experts in the legislature as a very key factor in the viability of our forecast. In addition, Louisiana explained that success working with the legislature is facilitated when they learn: We are not doing this on our own. We are communicating with their staff...that has been very helpful...They also realize that the 5-year [forecast] is a tool and it tries to help guide you on where you are and where you are going to be in the future. Interestingly, due to the nature of the Washington forecast where both executive and legislative branches formally collaborate, the state has a Budget Outlook Work Group as well as an Economic and Revenue Forecast Council that rule on disputes when disagreements develop or in times of uncertainty. Both interviews with the executive and legislative branches in Washington confirmed that disagreements have been extremely rare.

In terms of cross-state collaboration, South Dakota discussed having access to colleagues with whom they can ideate when unexpected challenges emerge. Colorado, a state still developing its long-term financial planning process, added: We are a little
fresh at this. So, we have learned from examples and collaboration—talking with people in other States like Utah, that have been doing this for a little bit longer than we have. Many states mentioned the vital role that professional organizations, e.g., NASBO, play in connecting with their counterparts.

**Common Standards**

This existing prevalent culture of collaboration can serve as the foundation for a partnership focused on alleviating some of the challenges that states face as they produce their long-term expenditure forecasts. Minnesota suggested that more community around developing best practices can be a solution, specifically: Medicaid forecasting is largely what introduces the most volatility to an expenditure forecast and it is difficult. It is dependent on the economy...States could do a better job of working together to come up with best practices for HHS [Health and Human Services] and Medicaid forecasting.

When prompted to elaborate on how collaboration across states might be implemented, North Carolina clarified: *Obviously, there are pretty substantial differences across states in terms of expenditure projections and the drivers behind expenditures, but there is enough commonality across all states, and then enough similar groupings of states, so for States like North Carolina, that are in the middle of transition to managed care, having some sort of common standards would be helpful for producing the longer-term projections for specific budget areas. Also, it would be useful for having external validity for longer-term expenditure forecasts. Whether it is an organization like NASBO or the National Conference of State legislatures, or some sort of collaboration between those two or some other organization that could help to come up with some guides or standards for projecting expenditures, [that] would be helpful to create more consistency across states.*

Across interviews, there was a divide between states that believed their forecasting process is adequate and those that expressed interest in more sophisticated forecasting methodologies. The pursuit of increased and formalized collaboration that can inform a set of best practices could bridge this divide. Within the grouping of states that did not think more advanced techniques were needed, the motivation varied. Some questioned whether the gains would warrant the effort while others believed their methods to be sufficiently advanced. Notably, even states applying sophisticated methodologies expressed the importance of continued improvements. For example, New York observed: *There are improvements that have been made...massive improvements in the quality of financial information, the quality of our economic forecasting...new skills, new insights, new techniques. So, we [have to make sure to] continue to adopt those [as well as] continue to press forward and improve what we are doing.*
**Forecasting Methodologies**

Referring to the challenges that states face as they forecast long-term expenditures, Minnesota envisioned: *Using actual macroeconomic data may result in a more sophisticated forecast.* The state added: *One thing we are trying to push our agencies [to do] is to add some more sophistication to their forecasting process [and] not rely simply on current and past spending levels.*

When prompted to explain the benefits of more sophisticated modeling, Minnesota clarified: *There are benefits and risks with that because using the [macroeconomic] variables, during times that are not as volatile as the last 3–4 years have been, should in theory result in a better forecast. [This] will result in the state having a better top line financial plan [that accounts for] what our resources are truly going to be.* The state continued by cautioning: *Now there are risks on the other side of it too—we need policy makers to trust our forecast and if we say, the bottom is going to fall out in six months and the bottom does not fall out, and we end up with a lot more money than what we told them they could appropriate, that creates challenges as well.*

North Carolina echoed these sentiments: *The actual process for the expenditure side is not as sophisticated as we would like.* The state emphasized the importance of data collection prior to applying sophisticated models: *We have looked at using more sophisticated methods [similar to what is used in] revenue forecasting, but we would need a much more thorough documentation of historical policy changes and the expenditure impact of those, because when we have tried to use types of time series models, they tend not to produce accurate or reasonable forecasts.*

When prompted to explain the value of more sophisticated modeling, North Carolina added: *A more sophisticated look at the future drivers of Medicaid expenditures at the state level would be valuable to better capture current services, especially since it [Medicaid expenditures] is all largely driven by enrollment and actual costs, and federal policy.*

More sophisticated modeling or any other changes to the forecasting process, in line with best practices, could face statutory hurdles. To illustrate, although Louisiana did not express a need for more sophisticated modeling, the state did note: *How they generate the forecast for revenues [is not] defined in statute the way it is for expenditures. So, we have parameters that we use for the forecast of the expenditures. They are using a lot more economic data.*

Washington clarified that changes to the forecasting process would require legislative change: *We would probably need state law to dictate that we do something more*
prescriptive than what we are doing now. The state did indicate that a formal process by which to evaluate the forecast performance and recommend changes exists: We have to look at our process and our growth rates and our calculations every 5 years and make recommendations [by statute].

Communication & Visibility
Communication challenges were often cited by states discussing various elements of long-term expenditure forecasting. These existed when engaging with legislators, the press, and the public. Minnesota comprehensively explained: We work hard to build that communication [with policymakers around what are important micro and macro narratives], and then also we spend a lot of time trying to look at how it [the forecast] could be misinterpreted and try and prevent that misinterpretation.

The state added: Our forecasts are high profile. So, we have the additional challenge of media who does not have forecasting or budgeting expertise making assumptions and writing a story based on those assumptions and often, we need to work with those reporters and spend extra time explaining special issues to make sure that it is [all] reported correctly.

In reference to the governor, New York emphasized the importance of routine and standardized communication: What happens over time is there is a track record that develops where ideally the information that we are providing is deemed to be reliable, not overly optimistic, and not overly pessimistic to the people, that there is a level of trust in terms of the information that people are consuming. Obviously, people understand, these are forecasts, so they are wrong the minute they are printed but it is just how wrong are they?

In reference to the legislature communicating with constituents, Washington postulated: I suspect it is difficult for [legislative] members to explain to groups who either want to see tax reductions, redirections or want to see programmatic increases or rate increases to explain why you are leaving a larger than you might otherwise ending balance in the current biennium, so that you are balanced over the 4 years.

New York confirmed that communication with external stakeholders is more difficult: The legislature typically will be slower to accept the expected reality of a downturn, the expected need for retrenchment and spending. Interest groups likewise will often be defensive and accuse the executive of being overly conservative. We often are. Just how conservative are we? Directionally, are we right? Those are constant challenges. This is the nature of being in the political space where people have a great deal at stake in terms of governmental expenditures [that] they rightly care about.
These communication challenges might be exacerbated by a perceived lack of interest in expenditure forecasting, as Washington explained: *There is just less focus on expenditure forecasting compared to revenue forecasting.* The state added: *It is not a thing that gets a lot of talk. It is this highly technical thing that is very much in the background. The handful of people who work on it and think about it care about it, but that is a very small group of people.* Even Minnesota, whose expenditure forecast receives relatively higher visibility, echoed this sentiment: *Expenditure forecasting tends to be less high profile from a policymaker lens than the revenue forecast that sometimes there is not as much pressure to look at best practices and get better.*

Similarly, North Carolina added: *We tend not to get a lot of questions about it [the 5-year forecast], especially outside of our agency and the Governor’s team.* In reference to a question around forecasting challenges that the research team might not be aware of, the state added: *The level of attention...There is a lot of focus on the longer-term federal budget but at the state level, just because states have to balance every year, I think there seems to be a general assumption that, regardless of what current level services or revenues will be that the state will essentially find a way to balance.*

An initiative that provides targeted training to stakeholders, with an emphasis on reaching legislators and the press could directly address these communication challenges while releasing state capacity and resources. Ultimately, this initiative could indirectly facilitate the adoption of best practices as it can help increase interest and visibility of long-term expenditure forecasts.

**Institutional & Current Knowledge**

One additional theme that emerged in the interviews around challenges was focused on knowledge, specifically how to preserve institutional information and remain current with new advances. Reflecting on the pandemic-era inflation, Washington described the process of seeking institutional knowledge: *[We] started thinking...was there anyone still around that was here in the early eighties when we had a similar issue happening and [we] could not really find anyone. All those people are retired now.*

Interestingly, in discussing deferring expenditures, New York echoed the importance of preserving institutional knowledge: *I think people have generally recognized [that it is not good practice]. Will people forget this in 10 or 15 [years]? Probably, but at least in current consciousness. You know, people, I think, understand the consequences.* New York added: *People have learned the benefit of reserves. So, I think there is learning that is taking place. And again, I think this tends to be pretty cyclical. People forget it and come up with a better idea and problems happen.*
More to the point, at the end of the interview when asked about forecasting challenges that the interviewees had not yet mentioned, New York added: The biggest challenge typically is encouraging people to take a longer view. There is a natural built-in tendency to think that what has happened recently is all that happened...most things that we experience have happened before, but they are always a shock to people because they have not happened recently enough for anybody who is actually working to have remembered.

In reference to workforce related challenges, New York explained: The bigger challenge is maintaining currency of knowledge—being up to date and the developments in the field. There is a disconnect between the kind of academic study of public affairs, policy, economics, and what practitioners are doing. Unfortunately, there is a gap...I think there is often more consulting from academics into the policy world but people working the policy world—they are not necessarily regularly consulting what is going on in the academic literature. So, I think, having some sort of curated information would be very useful in a lot of different areas. Therefore, a centralized database of resources that preserves and expands knowledge could provide key support to states as they tackle unexpected expenditure forecasting challenges.

11. CONCLUSION

Long-term expenditure forecasts are challenging, given the great deal of uncertainties inherent to the process. Therefore, these projections require well-designed frameworks and practices. However, the literature and guidelines mainly focus on revenue forecasts, leaving expenditure forecasts, especially long-term ones, unaddressed. In addition, most analyses focus on national-level outlooks, obscuring a full understanding of the processes at subnational levels. This report complements the work undertaken by Pew, that sets a series of best practices around long-term expenditure forecasts, as it increases our understanding of challenges and provides a set of practical recommendations.

In fact, this report provides a qualitative analysis of challenges that states face in producing long-term expenditure forecasts by synthesizing findings from interviews with eight states. In designing semi structured interview questions, the researchers

aimed to collect information on the forecasting challenges associated with: (1) the process, (2) budget components, (3) policy changes, (4) spending frequency; (5) economic conditions, (6) structural changes to the economy, and (7) structural balance.

Interview findings indicate that procedural challenges seem to center around the validity of the assumptions used and how well states can benchmark these. Relevantly, challenges center around communicating the nature of forecasting to stakeholders, specifically the role that unknown factors can play in invalidating a forecast. Medicaid was consistently mentioned as the most challenging aspect of the expenditure forecast. In general, caseload driven forecasts seemed to provide more challenges than other budget components. Some states explained that the methods used can create challenges, specifically in relation to Medicaid. In addition, long-term expenditure forecasting seemed to be rigidly governed by statute, which often required a process anchored in historical trends. Therefore, policy changes, economic conditions, or structural threats were not accounted for in forecasts and consequently did not pose significant challenges. In terms of spending frequency, the main challenge seems to be in differentiating between one-time versus ongoing spending, which is often a discretionary decision. Further, challenges sometimes arose from the varying level of knowledge across stakeholders. Other less commonly mentioned challenges focused on limited workforce capacity and staff turnover.

In sum, a partnership focused on producing best practices and common standards that can leverage the existing prevalent culture of collaboration across states could alleviate some of the challenges that states face. Critically, statutory hurdles would need to be considered before more sophisticated modeling or any other changes to the forecasting process, in line with best practices, could be adopted.

Moreover, an initiative that provides targeted training to stakeholders, with an emphasis on reaching legislators and the press could address many of the communication challenges that were described in this report. This initiative would have the added benefit of indirectly facilitating the adoption of best practices as it can help increase interest and visibility of long-term expenditure forecasts.

Finally, a centralized database of resources could provide key support to states as they tackle unexpected expenditure forecasting challenges. This database can preserve past knowledge and provide a platform to keep states up to date with curated information regarding new skills, insights, and techniques, among other relevant information.
### APPENDIX

Variables, Sources, and Attribution

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**Table A. 2. Attribution for Images Used in Title Page**

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Semi-Structured Interview Questionnaire

Process
1. Please describe your state’s process for forecasting long-term expenditures. How many staff members are included? What are their skills? Do you ever consult external stakeholders?
2. What is the number of years that you use to forecast beyond the current budget cycle? Why is that the number of years chosen? Are there any challenges related to forecast years or general process? If so, what are they?
3. In the State of Washington, both branches collaborate to prepare the forecast? Can you describe that process? Are there any challenges around collaboration? Can you recommend someone for the legislative branch that is knowledgeable of the process and would be willing to talk to us?
4. You use a current services baseline as a forecasting starting point? What are some of the challenges associated with this?
5. What data sources, analytical tools, and models do you rely on to support your long-term expenditure forecasting efforts? [forecasting methods, assessment/validation] What are some of the challenges associated with these sources/tools/models?

Budget Components
6. What strategies do you employ to deal with the rising costs of public welfare liabilities [Medicaid, healthcare, direct cash assistance to low-income beneficiaries]? What about the rising costs of pensions?
7. How do you estimate the long-term expenditures associated with transportation/infrastructure needs, and what challenges do you encounter in this process?
8. Thinking of all the other different budget components, what are specific challenges associated with the forecasting of each of these components? Higher education expenditures? What about K-12? Public Safety?
9. Does debt service pose any specific challenges? Are expectations around bond ratings incorporated in the forecasting process?

Structural Balance
10. How do you ensure that your long-term expenditure forecasts align with the overall fiscal goals and priorities of your state? Is there a formal process by which you analyze whether your long-term expenditure forecasts align with state goals and priorities?

Policy Changes
11. How do changes in federal or state policies influence your long-term expenditure forecasts, and how do you adjust to these changes? Are expectations of changes incorporated into the process or are they only incorporated when they occur? Is the process different for state vs federal policy?
[example, if needed: Federal government passed the CHIPS act, does the state increase economic development spending to capture the full impact of federal incentives? Does it do it in anticipation (proactively) or only once in effect?]

Distinguishing Between One-Time and Ongoing Spending
12. Does your forecasting process treat one-time vs ongoing expenditures differently? If so, how does the process differ? If not, why and are there challenges associated with the differentiation or lack thereof?

Structural Threats
13. What demographic changes [population growth, aging population, migration] do you consider when projecting long-term expenditures, and how do they affect your process?
15. Are there any other structural economic changes (e.g., automation, offshoring in the 90s, reshoring currently, energy transition) that get incorporated in the forecasting process?

Other
16. How do economic recessions impact your long-term expenditure projections, and how do you account for them?
17. How does inflation and the Fed’s monetary policy (interest rates) impact your long-term expenditure forecasts?
18. Do you produce multiple forecasting scenarios based on different assumptions [in turn based on expected economic conditions]?
19. How do you communicate the challenges associated with long-term expenditure forecasts to policymakers and stakeholders? What are their responses?
20. How do you disseminate information on projections? Do you share methodology and results with the public? Is the information only incorporated in budget documents? What is the reason behind these decisions?

Wrapping Up
21. Are there any other challenges around forecasting long-term expenditures that you deal with that we have not mentioned?
22. Are expenditure forecasting challenges different from revenue forecasting challenges? What are the top three differences?
23. We had a comprehensive conversation about challenges. From your experience, what could help? Are there solutions? What is needed to implement these?
Government Finance Research Center
The purpose of the Government Finance Research Center (GFRC) at the University of Illinois at Chicago's College of Urban Planning and Public Affairs is to shape and inform public policy and scholarly discourse on government and public finance by identifying, planning, and executing research, providing reports and informed analyses, delivering educational opportunities and technical training, and offering inclusive venues to convene national and local discussions on fiscal and governance issues.

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