The Hilltop Institute
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report

The Economic Impact of Medicaid Expansion in Mississippi, 2023-2028: Technical Report

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Executive Summary

As part of the 2010 Affordable Care Act (ACA), states have the option of expanding their Medicaid programs by extending eligibility to individuals with income up to 138% of the federal poverty level. This is a significant expansion to Medicaid eligibility policy. To date, 38 states and the District of Columbia have expanded. Mississippi is 1 of only 12 states to have not expanded their Medicaid program. This study estimates the effects of a hypothetical Medicaid expansion on Mississippi's Medicaid program, state costs, health services providers, and wider state economy.

Medicaid expansion provides health insurance coverage to individuals with low income and can add significantly to state budgets. However, these costs are offset in a number of ways. First, there is substantial federal cost sharing. Medicaid is jointly funded at the state and federal levels, and the federal government's portion of the cost is determined by the Federal Medical Assistance Percentage (FMAP). The FMAP is based on the average per capita income for the state relative to the national average, with lower-income states receiving a higher federal match. Mississippi's FMAP in FY 2021 was 77.76%, the highest in the country; however, the FMAP for the Medicaid expansion population is 90%. That is, the state would be responsible for just 10% of the costs for newly eligible individuals.

There are also additional sources of cost offsets. Increases in the consumption of health services and wider economic stimulus generates additional tax revenue. States can experience savings if Medicaid participants from traditional coverage groups shift to the high-FMAP expansion group, and as other state-funded health spending can shift to Medicaid. Moreover, Mississippi's hospital landscape, with its high degree of public ownership, means that Medicaid expansion will lead to additional financial gain to the state though the reduction of uncompensated care at state- and local government-owned hospitals. Finally, the American Rescue Plan (ARP) Act, with its 5-point FMAP increase for traditional coverage groups, entails significant savings to Medicaid expansion states that was unavailable to states prior to the passage of the ARP Act in March 2021.

Specifically, we estimate the following effects of Medicaid expansion in Mississippi:

1. Prior to any cost offsets, expansion costs for Mississippi would range from $159 million to $201 million per year from 2023 to 2028.
2. Approximately 50% of the state's annual cost will be covered by additional tax revenue.
3. Roughly 15% of the state's annual cost would be offset by reductions in Medicaid expenditure or non-Medicaid state-funded health spending.

4. Uncompensated care for government-owned hospitals would fall by approximately $60 million per year, which we credit as a financial gain to the state as a result of Medicaid expansion.
5. If Mississippi were to expand Medicaid in 2023, the state would earn $676 million in the ARP enhanced FMAP in 2023 and 2024.

Even without accounting for the ARP Act enhanced FMAP, the net cost of Medicaid expansion to the state would range from $18 million in *savings* to $11 million in additional outlays per year from 2023 to 2028. Including the ARP Act enhanced FMAP, the state would experience net savings of $355 million and $343 million in 2023 and 2024, respectively. Our model suggests that if Mississippi were to use the ARP Act enhanced FMAP to fund expansion, the state could fully offset the net cost of expansion for the foreseeable future. These results are consistent with literature that finds that Medicaid expansion results in little to no additional net costs to states and can even result in net *savings* to state budgets (Ward, 2020).

In addition to estimating the impact of Medicaid expansion on enrollment and costs, this study also forecasts the effect on certain economic outcomes. In particular, Medicaid expansion in Mississippi would lead to the following:

1. Roughly 11,000 new jobs each year
2. An additional 0.7% of economic growth, relative to pre-expansion levels
3. A reduction of $164 million to $191 million in uncompensated care for all acute-care hospitals in the state

Finally, Hilltop estimated the impact of Medicaid expansion on hospital finances. From 2012 to 2019, Mississippi's hospitals—government-owned, private nonprofit, and private for-profit—experienced a period of financial decline. However, Medicaid expansion would increase aggregate operating margin for these hospitals by 2.4 percentage points and aggregate total margin by 2.2 percentage points. Given the strain on the hospital system posed by the COVID-19 pandemic, as well as Mississippi's recent rural hospital closures (several since 2013), Medicaid expansion would significantly benefit the state's hospitals.

Two factors suggest that quick action on Medicaid expansion would be more cost-effective for Mississippi than a delay. First, the ARP Act enhanced FMAP depends on the size of the traditional Medicaid population; due to the maintenance of effort requirement as part of the Families First Coronavirus Response Act (FFCRA), the traditional Medicaid population in Mississippi is currently large relative to its pre-COVID-19 level. However, once the state of public health emergency ends, Medicaid enrollment will decrease, and the ARP Act enhanced FMAP payment will also decrease. Second, Mississippi's hospitals experienced a period of financial decline prior to the COVID-19 pandemic, and the COVID-19 pandemic—as well as the associated reduction in health care utilization—likely stressed hospital finances even further. Any delay in expansion in Mississippi is likely to lead to continued financial strain for hospitals, as well as risk for potential hospital closures.

Even without expansion, Medicaid is a critical component of Mississippi's public health landscape. Expansion would have benefits for patients, providers, and the economy. The cost to the state should be balanced against these benefits by legislators and policymakers. This report illustrates that, net of offsets and compensating revenues, the cost of Medicaid expansion may be relatively small.

The Economic Impact of Medicaid Expansion in Mississippi: Technical Report

Section 1. Introduction, Background, and Approach

Introduction

Enacted in 2010, the Affordable Care Act (ACA) required states to expand their Medicaid programs by extending eligibility to almost all adults under age 65 with income below 138% of the federal poverty level (FPL). This was a significant shift in Medicaid eligibility policy, which, prior to expansion, tended to be based on categorical eligibility: for example, parental status or pregnancy (Gruber & Sommers, 2019). In a 2012 Supreme Court decision, however, mandating states to expand Medicaid was deemed unconstitutional; as a result, Medicaid expansion became optional for states (*National Federation of Independent Business v. Sebelius*, 567 U.S. 519 (2012)).

As of December 2021, Mississippi was 1 of 12 states that has not expanded its Medicaid program (Kaiser Family Foundation, 2021). In order to provide state policymakers with the latest available evidence on the potential impact of Medicaid expansion, the Center for Mississippi Health Policy commissioned The Hilltop Institute at the University of Maryland, Baltimore County (UMBC) to conduct a study on the likely effects of Medicaid expansion on Mississippi's Medicaid program, state budget, wider economy, and providers.

This report contains three sections. Section 1 sets the stage for Medicaid expansion in Mississippi. We discuss the current Mississippi Medicaid program, the expected effects of Medicaid expansion, a brief literature review on the effects of Medicaid expansion, the assumptions and methodology for this study, and the limitations of our approach. Section 2 presents the estimated effects of Medicaid expansion from 2023 to 2028 on Medicaid enrollment, Medicaid costs, direct tax revenue, indirect tax revenue and other economic effects, cost offsets within Medicaid and from other state spending sources, and uncompensated care for Mississippi hospitals. Section 3 focuses on Mississippi's hospital landscape. We forecast the financial health of the state's government-owned, private nonprofit, and private for-profit hospitals with—and without—Medicaid expansion.

Current Medicaid Landscape in Mississippi

What is Medicaid?

Medicaid, jointly financed by federal and state governments, is a public health insurance program for individuals with low income. Mississippi's Medicaid program is administered by the Division of Medicaid, housed within the Office of the Governor. The federal government's matching contribution—the Federal Medical Assistance Percentage, or FMAP—is "designed so that the federal government pays a larger portion of Medicaid costs in states with lower per capita incomes relative to the national average" (Congressional Research Service, 2020). As of FY 2021, Mississippi's FMAP of 77.76% is the highest in the nation. For every dollar spent in the

state's Medicaid program, the federal government pays $0.7776, while the state of Mississippi pays the remaining $0.2224. The next-highest states are West Virginia (74.99%), New Mexico (73.46%), Alabama (72.58%), and Kentucky (72.05%). Thirteen states have the lowest statutorily permitted FMAP of 50.00%.

Mississippi's FMAP has been increasing over time at an average of 0.718 percentage points per year from FY 2016 to FY 2021, and Mississippi experienced the 10th largest increase in FMAP from FY 2020 to FY 2021 of all 50 states and the District of Columbia. Historical FMAPs for Mississippi are shown in Table 1, below.

Table 1. Mississippi Medicaid FMAP, 2016–2021

	2016	2017	2018	2019	2020	2021
FMAP	74.17	74.63	75.65	76.39	76.98	77.76

Source: Congressional Research Service, 2020. Additionally, due to the Families First Coronavirus Response Act (FFCRA), Mississippi has received an extra 6.2 percentage points of FMAP since the onset of the COVID-19 pandemic. At the time of writing, this enhanced FMAP is still in effect.

When projecting future policy changes, Hilltop assumes that the FMAP will continue a linear upward trend.

Medicaid Eligibility

Mississippi maintains income-based eligibility standards for several different groups. Mississippi Medicaid offers full benefits to children aged 0 to 1 up to 194% of the FPL; children aged 1 to 6 up to 143% of the FPL; and children aged 6 to 19 up to 133% of the FPL (Mississippi Division of Medicaid, 2021). Pregnant women with income up to 194% of the FPL are covered, as are the aged, blind, and disabled. Parents and caretaker relatives with children under age 18 living at home are eligible if their incomes do not exceed 21% of the FPL. At the time of writing, Mississippi has the third-lowest income standard among remaining non-expansion states (behind Texas, at 17% of the FPL, and Alabama, at 18% of the FPL) (Mississippi Division of Medicaid, 2021).

Additionally, Mississippi Medicaid offers two limited benefit programs: the Family Planning Waiver, which covers men and women aged 13 to 44 up to 194% of the FPL, and Healthier Mississippi waiver, intended for the aged, blind, and disabled who are not Medicare-eligible and whose incomes do not exceed 135% of the FPL (Mississippi Division of Medicaid, 2021).

Medicaid Enrollment

Mississippi Medicaid participants are predominantly children, followed by blind and disabled individuals, aged individuals, adults, and then individuals in other eligibility groups (such as the Family Planning Waiver). See Table 2 for the distribution among these groups as of October 2021.

Table 2. Mississippi Medicaid Coverage, December 2019 and October 2021

Coverage Group	December 2019		October 2021	
	Count	Percentage	Count	Percentage
Children	343,910	51%	414,739	53%
Blind and Disabled	169,922	25%	172,487	22%
Aged	71,711	11%	74,786	10%
Adults	60,704	9%	100,665	13%
Other (Family Planning Waiver)	23,766	4%	26,547	3%
Total	**670,013**		**789,224**	

Source: https://medicaid.ms.gov/wp-content/uploads/2020/01/2019-Enrollment-Reports.pdf; https://medicaid.ms.gov/wp-content/uploads/2021/11/Copy-of-Enrollment-Reports-2021-Nov..pdf

The percentage of Mississippians enrolled in Medicaid is high compared to other states. As of the 2020 Census, Mississippi's state population was estimated at 2,961,279; enrollment of 670,013 implies that, prior to the COVID-19 pandemic, 22.6% of all Mississippians were enrolled in traditional Medicaid (U.S. Census Bureau, 2021). Note that this does not include children in the Children's Health Insurance Program (CHIP), which covers an additional 45,802 children who are not income-eligible for traditional Medicaid. Including CHIP enrollment, approximately 24% of Mississippi's population is covered by either Medicaid or CHIP; this exceeds the analogous percentages in neighboring non-expansion states Tennessee (21%) and Alabama (21%) and is the highest of the 12 states that have not expanded their Medicaid programs at the time of writing (Kaiser Family Foundation, 2019).

Moreover, the COVID-19 pandemic resulted in a significant increase in Medicaid enrollment, but this increase was not uniform across coverage groups. Children and adults contributed most to the increase in enrollment, although other eligibility groups experienced a minor gain. This is likely to be a result of two factors: first, the Families First Coronavirus Response Act (FFCRA) "prohibits state Medicaid agencies from disenrolling participants during the public health emergency" (Buettgens & Green, 2021). Medicaid programs experience "churn" as people both enroll and disenroll; in recent months, however, disenrollment has been restricted, which has led to growing Medicaid populations. The state of public health emergency was renewed on October 15, 2021, and is currently valid for 90 days. Second, the economic recession that was caused by the COVID-19 response likely increased the population of children and adults who were income-eligible for traditional Medicaid.

Understanding the state's Medicaid program is necessary to accurately account for changes in the event of Medicaid expansion. Moreover, the traditional (i.e., non-expansion) Medicaid population is also relevant for the estimate of the savings due to the American Rescue Plan (ARP) enhanced FMAP. Under the ARP, states that expand their Medicaid programs will receive an additional 5 percentage points in FMAP for their traditional Medicaid programs, starting at the time of expansion and lasting for two years (Musumeci, 2021). Thus, if Mississippi were to expand soon, because of its higher-than-usual Medicaid enrollment, the ARP supplemental payment would be larger than it might have otherwise been under more typical enrollment.

Medicaid Managed Care

Mississippi launched its managed care program, MSCAN, in 2011 (Milliman, 2019a). At the time of writing, the Mississippi Division of Medicaid contracts with three payers as coordinated care organizations (CCOs): Molina Health, Magnolia Health (owned by Centene Corporation), and United Healthcare. Participation in MSCAN is mandatory for all eligible coverage groups except children aged 0 to 19 who have disabilities or are in foster care. Dually eligible participants are not eligible for MSCAN, nor are individuals in any waiver program or institutional setting (Mississippi Division of Medicaid, n.d.b). As of December 2019, 438,029 participants were enrolled in MSCAN, or 65.4% of the total Medicaid population (Mississippi Division of Medicaid, 2019b).

Under Medicaid managed care, CCOs receive monthly capitated payments from the state for Medicaid participants. The CCOs, in turn, are then responsible for building networks of providers and reimbursing providers at contractually agreed-upon amounts. In this study, Hilltop assumes that a Medicaid expansion in Mississippi will operate through the state's managed care program.

Provider Participation

Provider participation in Medicaid varies significantly from state to state. Low provider participation can be detrimental to expansion efforts if the provider capacity is not able to meet the demand from newly covered Medicaid participants. Available data suggest that provider participation in Mississippi Medicaid is already consistently high: from 2014 to 2017 (the latest period for which data are available), 88.0% of physicians in Mississippi accepted new Medicaid patients, relative to 74.0% nationally. Mississippi's proportion of physicians accepting new Medicaid patients is significantly higher than nearby non-expansion states (AL: 79.0%; TN: 76.8%; GA: 69.4%; FL: 55.0%; TX: 65.1%) and is fifth highest among all 12 non-expansion states as of the time of writing (MACPAC, 2021a). According to the Office of Mississippi Physician Workforce (n.d.), provider capacity is nonetheless an ongoing concern in Mississippi.

The relatively high rate of participation in the Mississippi Medicaid program may reflect relatively high physician fees.[1] Based on a composite measure of 27 common procedures, research from the Urban Institute shows that, on average, Medicaid fees are 72% of Medicare fees. However, in Mississippi, this fee ratio is 92%, which is high relative to nearby non-expansion states: 84% in Alabama, 83% in Georgia, 65% in Texas, and 58% in Florida (Zuckerman et al., 2021).

[1] While this research is based on Medicaid fee-for-service fees, CCO contracts in Mississippi require CCOs to reimburse providers at least the FFS payment amount. See Section 7.J. of Mississippi's CCO contracts (https://medicaid.ms.gov/wp-content/uploads/2018/03/MSCAN-Contract-Jul2017-June2020-UHC.pdf; https://medicaid.ms.gov/wp-content/uploads/2018/03/MSCAN-Contract-Jul2017-Jun2020-Magnolia.pdf; https://medicaid.ms.gov/wp-content/uploads/2018/03/MSCAN-Contract-Jul2017-June2020-Molina.pdf).

Revenue Sources

As of FY 2020, Mississippi Medicaid cost $6.4 billion: $931 million in direct state support, $248 million from other sources, and $5.2 billion in federal match (Mississippi Division of Medicaid, 2020). Direct state support is primarily from the state general fund; provider assessments, drug rebates, and transfers from other state agencies compose the rest (Mississippi Division of Medicaid Senate Medicaid Committee, 2020).

Included in this total are supplemental payments for hospitals. Mississippi currently has two sources of supplemental payments: disproportionate share hospital (DSH) payments, and the Mississippi Hospital Access Program (MHAP). DSH payments are intended to support hospitals that provide services to a large population of patients with low income. They are determined at the federal level and subject to a federal match (Centers for Medicare & Medicaid Services [CMS], n.d.b). As of FY 2022, Mississippi hospitals are allotted $236.9 million in DSH payments, which is subject to the state's FMAP. Thus, the federal portion is $184.2 million, and the state is responsible for $52.7 million (MACPAC, 2021b). DSH payment levels have been slated for reduction since the passage of the ACA, but these reductions have been delayed several times (Congressional Research Service, 2021).

The MHAP was initially created in 2015 to support hospitals by including additional funding for hospitals in MSCAN rates. Total MHAP funding has been $533 million since its inception in 2015, but the program's structure changed in 2018 to transition from a pass-through program to "directed payments consisting of rate adjustments and quality incentive payments" (Marks et al., 2018; Milliman, 2021b). The overall size of the program is large: the $533 million in MHAP funding scales to approximately 8.3% of total Medicaid spending in the state.

Health Care Access and Affordability

Hilltop believes that it is relevant to position Mississippi in the national landscape along certain other economic and health care metrics. As of 2018, Mississippi ranked lowest in the nation for median household income, at $42,781; the next-lowest state was New Mexico ($48,283), followed by Arkansas ($49,781) (U.S. Census Bureau, n.d.). As of 2019, Mississippi ranked 5th in the nation in terms of fraction of the population uninsured, at 12.9%, relative to a national figure of 9.2% (Kaiser Family Foundation, n.d.a). In 2015, Mississippi ranked highest in the nation in past-due medical debt, with 37.4% of non-elderly adults reporting an "outstanding, past-due medical bill" (Urban Institute, 2016). Mississippi is followed by Arkansas (36.3%), West Virginia (33.0%), and Indiana (32.5%), and the national average was 23.8% (Urban Institute, 2016).

Expected Effects of Medicaid Expansion

In theory, the effects of Medicaid expansion are relatively straightforward. As noted above, Medicaid expansion extends Medicaid eligibility to most adults with incomes up to 138% of the FPL. Thus, at the time of expansion, a large population of individuals who were previously ineligible for Medicaid become eligible. A portion of the newly eligible—depending on the take-

up rate—will enroll in Medicaid. The state bears a small fraction of the costs for these new participants: since 2020, the federal government has borne 90% of the costs for the expansion group. It is notable that the 90% expansion FMAP is higher than Mississippi's non-expansion FMAP, which, as of FY 2021, is 77.76%.[2]

Medicaid expansion also results in further changes to other parts of Medicaid and other state health programs. First, certain individuals who would have been covered under traditional Medicaid, with a lower FMAP, become covered by the expansion group; this creates a savings to Mississippi because the state bears a lower share of the costs for these individuals. Second, certain state-funded health services that were provided to the expansion population prior to Medicaid expansion can now be funded through Medicaid, which results in additional savings to the state due to the federal cost sharing now available. Mississippi would also earn additional premium tax revenue due to the increase in funding flowing to the state's CCOs.

Beyond these direct effects, the injection of federal expenditures into the state leads to a wider economic stimulus. The additional federal funding dollars flow to providers and then ripple out through the economy as health care providers—and employees of health care providers—spend that infusion of funding on other goods and services in the economy (Chernew, 2016). This additional economic activity leads to additional employment and tax revenue for the state.

Moreover, providers can also benefit from Medicaid expansion. Hospitals provide uncompensated care (a combination of charity care and bad debt), and a large and growing body of research has shown that Medicaid expansion leads to not only fewer un- and under-insured patients presenting at hospitals, but also improved hospital financial outcomes (Blavin, 2016; Blavin & Ramos, 2021; Dranove et al., 2016; Rhodes et al., 2020; Santos et al., 2021). Moreover, at the time of writing, approximately 40% of hospitals in Mississippi are state- or locally (i.e., county-) owned, which means that any financial benefit to these public hospitals is also a financial benefit to the state.

While all expanding states benefit from the factors discussed here, the impact of expansion is—to a certain degree—state-specific, depending on 1) who and what services are covered in the state's existing Medicaid program, 2) the state's non-Medicaid expenditures on health services, 3) the state's tax code, and 4) the structure of the state economy.

Literature Review

In early 2021, Hilltop conducted a literature review on Medicaid expansion in states that were either geographically proximal to Mississippi, published recently, or otherwise relevant to an eventual Mississippi study. This yielded a pool of eight states: Louisiana (expanded in July 2016), Arkansas (expanded in January 2014), Kentucky (expanded in January 2014), Alabama (not expanded), Missouri (expansion planned for July 2021), Michigan (expanded in April 2014),

[2] Technically, Mississippi's FMAP is 6.2 percentage points higher due to the FFCRA (Dolan et al., 2020).

Kansas (not expanded), and Montana (expanded in January 2016) (Kaiser Family Foundation, 2021).

While the effects of Medicaid expansion are necessarily state-specific, these comparisons offer valuable data on the actual (or estimated) impact of expansion on Medicaid enrollment and expenditures that can guide the eventual Mississippi expansion study (Henderson et al., 2021). Studies from Arkansas, Louisiana, Kentucky, Michigan, and Montana projected the future net state costs of expansion and found that expansion would lead to state budgetary *savings*. The mechanisms for these savings differ by state. Expansion in Arkansas was predicted to lead to significant savings due to cost shifting from traditional Medicaid to the expansion group, reduction in uncompensated care, and an additional $100 million in tax revenue (Arkansas Health Reform Legislative Task Force, 2016). Researchers in Louisiana estimated that Medicaid expansion would lead to approximately $145 million in additional state and local tax revenue (Richardson et al., 2019). In Kentucky, Medicaid expansion costs were more than offset by additional $161.9 million in state and local tax revenues and further reductions in general fund expenditure (Commonwealth of Kentucky, 2015). In Michigan, the costs of expansion are also more than fully offset by reductions in state-funded health services, $193.1 million in additional provider tax revenue, and $138 million in additional tax revenue due to the increase in general economic activity (Levy et al., 2020). Finally, Medicaid expansion in Montana is estimated to be roughly budget neutral due to reductions in state expenditure and nearly $60 million in additional tax revenue (Ward, 2021; Montana Healthcare Foundation, 2021). Additional details can be found in Henderson et al., 2021.

Readers interested in further research on the impacts of Medicaid expansion should consult Guth et al. (2020) and Guth and Ammula (2021).

Methodology

Hilltop's methodology for estimating the effects of Medicaid expansion in Mississippi is broadly similar to that used in other studies of the effects on states. First, Hilltop derived estimates of enrollment in Mississippi Medicaid from 2023 to 2028 by assuming certain take-up rates, in conjunction with microdata from the American Community Survey (ACS). Next, we estimated annual costs per Medicaid participant, applied these to the projected enrollment, and then applied FMAP for the expansion group in order to calculate predicted state and federal costs. After estimating the additional premium tax revenue that will accrue to the state due to Medicaid expansion, Hilltop used IMPLAN software in order to estimate the broader effects of the net increases in federal spending in the state (including value added, jobs, and indirect tax revenue). Next, the model predicts the state cost offsets, both within Medicaid and in other non-Medicaid cost centers, and then quantifies the amount of uncompensated care that Medicaid expansion would replace for hospitals around the state. We believe that this type of "ground-up" approach transparently displays the linkages between the various components of the model, and we present each of these components in its own sub-section.

Hilltop's methodology differs from the typical Medicaid expansion study in three important ways. The first difference from other Medicaid studies is our use of capitation rate certification reports as a source of cost data. Other studies tend to use publicly available health cost data, such as the Medical Expenditure Panel Survey (MEPS), despite well-documented issues of cost underestimation in the MEPS (Becker, 2019; Center for Health Economics and Policy, 2019; Aizcorbe et al., 2012). Hilltop had initially planned on using Mississippi Medicaid claims for the analysis but was unable to obtain these data. However, Hilltop was able to obtain capitation rate certification reports from 2020, 2021, and 2022. As the most recent source of Mississippi-specific Medicaid cost data, and assuming that Medicaid expansion will occur through managed care, we believe this is an appropriate data source. Moreover, Hilltop's experience in capitated rate setting could be leveraged using this data source.[3]

Second, given that approximately 40% of Mississippi's acute care hospitals are owned and operated by the state or local jurisdictions, and the large body of research documenting the positive impact of Medicaid expansion on hospital finances, Hilltop's model includes the financial benefit to government-owned hospitals resulting from Medicaid expansion as a cost offset.[4] While certain other Medicaid expansion studies capture the effect of Medicaid expansion on uncompensated care across all hospitals, we are the only study of which we are aware that focuses on uncompensated care of publicly owned hospitals.

Third, in a standalone analysis using Medicare Cost Report financial data, we project the financial performance from 2023 to 2028 for government-owned hospitals, private nonprofit hospitals, and private for-profit hospitals with—and without—Medicaid expansion.

Hilltop's study aims to make apples-to-apples comparisons when calculating costs and benefits of Medicaid expansion. Other studies sometimes conflate the costs incurred to the state budget and benefits that accrue broadly to the state. For example, researchers might compare the state's budget for Medicaid expansion with the estimated reductions in uncompensated hospital care across hospitals and conclude that Medicaid will be a net gain to the state if the reduction in uncompensated care outweighs the state's costs of expansion. While this may be true in a broad sense, it is not actionable by policymakers: the state dollars that are spent on Medicaid expansion come from state funding, while the reduction in uncompensated care costs accrues to Mississippi's hospitals. This report strives to keep comparisons apt.

[3] See https://www.hilltopinstitute.org/our-work/rate-setting-and-payment-reform/ for more information.
[4] We acknowledge that this improvement in financial benefit of government-owned hospitals will not directly flow back to the state treasury. However, to the extent that counties receive intergovernmental subsidies from states, and to the extent that Medicaid expansion improves the potential (future) sale value of county-owned hospitals, we believe that an improvement in the financial position of state- and locally owned hospitals can be credited as a cost offset.

Key Assumptions

This study entails several key assumptions, which are noted throughout this report when applicable. The principal assumptions are addressed here.

First, the analysis assumes that this would be a "traditional" Medicaid expansion, which confers eligibility for adults aged 19 to 64 with income up to 138% of the FPL. However, other types of expansion are possible; Arkansas expanded in 2014 via the "Private Option," in which federal matching funds were used to pay premiums on the ACA Exchange. Other proposed Medicaid expansion plans have included community engagement requirements (Commonwealth Fund, 2021) although these have since been disallowed by the Biden administration (Rosenbaum, 2021). Any variation on the expansion that imposes premiums, copays, or other cost obligations on participants is likely to dampen enrollment and thus mute any resulting economic effects (Cliff et al., 2021). Moreover, we assume that the expansion will occur on January 1, 2023.

The second major assumption is that the Medicaid expansion will operate through Mississippi's managed care program, Mississippi Coordinated Access Network (MSCAN). Under this assumption, the costs of the expansion will be in the form of capitated payments: that is, monthly payments made by the state to participating CCOs, who then remit payments as needed to providers in order to deliver required medical care for covered participants. These payments to CCOs include administrative costs, premium taxes, and profit margin and thus represent a largely comprehensive cost of service provision under expansion.

This assumption has a further consequence for the impact of Medicaid expansion on providers. In Medicaid managed care, responsibility for establishing and maintaining a robust provider network shifts away from the state and onto the CCOs. Provider network adequacy standards are typically specified in CCO contracts, which require certain benchmarks for provider networks. For example, a 2017 CCO contract from Mississippi requires the CCO to maintain a network such that there are at least two primary care providers within 15 miles for urban participants and within 30 miles for rural participants (Mississippi Division of Medicaid, 2017, Table 6, p. 92). Moreover, "the Contractor must pay for services covered under the Contract on an out-of-network basis for the Member if the Contractor's Provider Network is unable to provide such services within the geographic access standards" (Mississippi Division of Medicaid, 2017, p. 93-94). CCOs contract privately with providers in order to establish networks; to the extent that Medicaid expansion stimulates demand for health care providers, it is incumbent on the CCOs—not the state—to expand these provider networks. It is true, however, that if Medicaid expansion were to lead to a shortage of providers, and Mississippi's CCOs had to increase negotiated rates in order to attract additional providers to their networks, then this would be reflected in higher capitation payments in future years since capitation payments are based on actual cost experience in a prior year, trended forward. We have been unaware of any evidence on this point from expansion states.

Third, the enrollment projections rely on estimates of take-up rates: that is, the percentage of newly *eligible* individuals that will *enroll* in Medicaid once Medicaid has expanded. These take-up

rates, necessarily, are speculative; however, for the purposes of this study, Hilltop used take-up rates that are guided by the experience of states that have expanded and that are consistent with the literature. It is important to note that these assumptions may differ from reality in proportion to outreach and enrollment efforts.

Fourth, we assume that future Medicaid enrollment will return to levels similar to those experienced prior to the COVID-19 pandemic. The pandemic resulted in significant increases to enrollment due to both the economic recession and the public health emergency that halted disenrollment. If redeterminations—and subsequent disenrollment—begin again, and the economy recovers from the COVID-19 recession, we believe that is it reasonable to assume that enrollment will return to pre-COVID levels. For the same reason, we disregard the additional 6.2 percentage points in FMAP that Mississippi currently earns due to the state of public health emergency. As a corollary, the policy environment that existed as of December 2021 is assumed to persist in the future.[5]

Fifth, we do not model potentially relevant changes to the policy landscape that, as of December 2021, have not been passed into law. In particular, the "Build Back Better" Act contains several provisions that, if passed, could potentially change Mississippi's costs and benefits of expansion (Cox, Rudowitz, Cubanski, et al., 2021).

Finally, because a fully comprehensive accounting of all possible costs and benefits of a Medicaid expansion is not feasible, Hilltop aimed for an accurate and moderate estimate. We enumerate certain unmodeled costs and benefits in a further sub-section. Additionally, this report presents *estimates*—guided by history and the experience of other states—that are intended to neither overstate nor understate costs and offsets. Medicaid expansion is not intended to be an economic stimulus program, although cost offsets, revenue gains, and economic growth are consequences of expansion.

Limitations

This study is confined to examining the impact of Medicaid expansion on Medicaid enrollment, costs to the Division of Medicaid and to the state budget, effects on the state's economy, and financial impact on hospitals. Medicaid expansion has been demonstrated to have a wide impact on a variety of factors relating to individuals' health and health care utilization, but we do not address these here (Guth et al., 2020; Guth & Ammula, 2021).

Second, Hilltop was limited to publicly available data. Our inability to obtain Mississippi Medicaid claims required adaptations to our methodology and use of alternative, publicly available data sources to estimate costs, but we do not believe the accuracy of our estimates was

[5] For example, we assume that the FMAP for the expansion group will continue to be 90%. It is possible that future legislation may further alter the costs and benefits of Medicaid expansion, for example, by levying a penalty on non-expansion states. However, we are unable to account for this possibility in this study.

compromised. We also focused on the effects of Medicaid expansion on hospitals since data on hospital finances are readily available, whereas data on other provider types are not.

Finally, much of this work necessarily relies on assumptions of key parameters. Hilltop makes note of these assumptions and strives to situate our results within the broader literature where possible.

Section 2. Effects of Medicaid Expansion, 2023 to 2028

This section presents estimates of the impact of Medicaid expansion on Medicaid enrollment, Medicaid costs, premium tax revenue, indirect tax revenue, cost offsets, uncompensated care, and other economic outcomes. The impact of Medicaid expansion on net costs to the state of Mississippi is calculated as follows:

> *Net cost to state = (Direct state costs of expansion) – (increase in direct tax revenue) – (increase in indirect tax revenue) – (cost offsets due to Medicaid eligibility shifts) – (cost offsets due to service funding shifts) – (reduction in uncompensated care for state and local hospitals) – (ARP Act enhanced federal match)*

The *net cost to the state* is founded on an estimate of the *direct state costs of expansion* before any cost offsets. These direct state costs are a function of three factors: the number of additional Medicaid participants, the cost per additional Medicaid participant, and the FMAP. Medicaid is jointly funded at the state and federal levels, and the federal government's portion of the cost is determined by the FMAP. The FMAP is based on the average per capita income for the state relative to the national average, with lower-income states receiving a higher federal match. Mississippi's FMAP in FY 2021 was 77.76%, the highest in the country; however, the FMAP for the Medicaid expansion population is 90% (Congressional Research Service, 2020). That is, Mississippi would be responsible for only 10% of the direct costs of the expansion group.

The direct state cost is counterbalanced by several factors. First, Medicaid expansion would lead to increased tax revenue—due to both Mississippi's insurance premium tax and the general stimulus to economic activity—which would offset the state cost.[6] Second, there would be cost offsets as individuals from traditional Medicaid groups with a lower federal match transition to the expansion group (with its 90% federal match) and as previously state-funded health spending can shift to Medicaid. Third, there would be a reduction in uncompensated care for hospitals owned by the state and local jurisdictions, which would improve the financial health of these hospitals. Although this reduction in uncompensated care would not directly flow back to the government as revenue, this should be credited as a cost offset given that these hospitals are government-owned. Finally, it is important to note that the ARP Act provides states that expand Medicaid with an additional 5 percentage points of federal match for traditional coverage groups for two years following expansion.[7] This represents a substantial source of cost offsets that was not available for expansion states prior to passage of the ARP Act in March 2021.

[6] Miss. Code Ann. § 27-15-109
[7] 42 USC § 1396d(ii)

Enrollment

Hilltop first quantified changes in enrollment resulting from Medicaid eligibility expansion using 2019 ACS microdata (the latest year available) from IPUMS USA at the University of Minnesota (Ruggles et al., 2021).

Medicaid expansion confers eligibility to nearly all individuals aged 19 to 64 (inclusive) who earn up to 138% of the FPL.[8] It is important to note, however, that Mississippi *currently* offers Medicaid eligibility to parents and caretakers with low income. In Mississippi, the current monthly income eligibility limit for parents and caretaker relatives is 21% of the federal poverty line (CMS, 2021b). Individuals in this group (parents and caretakers with income below 21% of the FPL) are not eligible for the Medicaid expansion group, and the state of Mississippi will not receive the enhanced FMAP for these participants. Thus, the newly eligible group consists of childless adults aged 19 to 64 who earn up to 138% of the FPL, and parents and caretaker relatives who earn from 21% to 138% of the FPL.

The FPL is a function of family income and family size. For example, an individual with low income in a high-income *family* may not be under the 138% FPL eligibility limit because poverty is calculated using family income (HealthCare.gov, n.d.). Additionally, identification of the family unit can be challenging in the ACS because the ACS surveys *households*, which may or may not equate to family units; for example, it is possible that multiple family units can reside in the same household. The State Health Access Data Assistance Center (SHADAC) recommends using the "health insurance unit" identifier available in the ACS microdata instead of ACS-supplied household identifiers (SHADAC, 2012).[9]

Using the 2019 ACS will yield an estimate of the newly eligible population as of 2019. However, it is necessary to trend this population forward in order to estimate the expansion population from 2023 to 2028. There are three potential countervailing effects. First, the population of adults is declining in Mississippi: Hilltop calculates that from 2015 to 2019, the population of adults aged 19 to 64 (regardless of income) fell an average 0.4% per year. Second, the population of adults with low income is also declining. Hilltop calculates that from 2015 to 2019, the population of newly eligible individuals fell by 2.8% per year. Third, awareness of Medicaid expansion may rise over time, which may lead to an increase in take-up rates—and thus enrollment—over the study period. For this study, these latter two effects are assumed to largely balance each other, with a net population change of **-0.5%** per year.[10]

The population of *income-eligible* individuals—that is, adults aged 19 to 64 with income from 0 to 138% of the FPL for childless adults and 21 to 138% of the FPL for parents/caretaker

[8] Technically, Medicaid expansion is limited to citizens or legal immigrants with at least five years of residence in the U.S. We include this restriction in our calculations but omit it from the text in the interest of brevity. Source: 42 CFR § 435.406.
[9] Becker (2019) uses a similar approach.
[10] This also relies on our assumption that Medicaid enrollment, and the trajectory of Medicaid enrollment, will return to pre-COVID levels by the time of the hypothetical expansion in 2023.

relatives—in 2019 is estimated to be 587,962. Of these, 184,209 were uninsured, 186,230 had employer-sponsored insurance, 57,338 had insurance that they purchased, and 184,159 had existing public coverage (such as Medicaid, Medicare, or VA health care).

For the purposes of this analysis, we focus on the individuals who are uninsured, have employer-sponsored insurance, or who have coverage that they purchased themselves. Individuals with existing public coverage are excluded for two reasons. First, even though these individuals may be income-eligible for the Medicaid expansion group, they would not represent *new* Medicaid participants. Second, it is well-documented that Medicaid coverage is measured with error in the ACS; thus, it is not advisable to use this as a data source for detailed enrollment estimates (Boudreaux et al., 2019).

The Urban Institute's Health Insurance Policy Simulation Model assume a 72% take-up rate for newly eligible uninsured individuals and a 13% take-up rate for individuals with employer-sponsored insurance (Buettgens, 2021).[11] While it would be economically rational for individuals who purchase their own coverage—either in the marketplace or not—to enroll in Medicaid, research has shown that Medicaid enrollment from this population phases in gradually (Broaddus, 2020). Thus, individuals who purchase their own coverage are assumed to have take-up rates of 50% in 2023 (year 1 of expansion), 75% in 2024 (year 2 of expansion), and 100% thereafter.[12] Finally, we include in our estimates the "welcome mat" population: individuals who are *eligible* for Medicaid under pre-expansion standards but currently not enrolled, and those who enroll due to the increased public awareness of Medicaid. We assume that adults and children who are currently eligible but uninsured will have a 33% take-up rate.[13]

The extent to which Mississippi promotes outreach and enrollment efforts will impact the utility of these assumptions. The take-up rate is likely to be higher if the state undertakes extensive outreach efforts or if there is outreach by the federal government or health care navigators; the opposite may hold true if outreach and enrollment efforts are minimized. The estimates of new Medicaid enrollment are in Table 3, below.

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[11] While other Medicaid eligibility simulation models exist, the Urban Institute's model has been shown to have high forecasting accuracy (Glied et al., 2015).

[12] This assumption matches that of the Mississippi Insurance Department, which wrote in 2018 that as a result of Medicaid expansion, "virtually all of the membership [on the ACA exchange] in the 100% - 133% FPL range would move to Medicaid" (Commission on Expansion of Medicaid Managed Care for Medicaid Recipients in Mississippi, 2018, Tab E).

[13] Many Medicaid expansion studies tend to omit the welcome mat population, for two reasons. First, given the relatively low-income thresholds for parents/caretaker relatives in Mississippi, this effect will be small for adults and likely to be more concentrated among children. Second, children tend to be a low-cost Medicaid enrollment group: in MSCAN as of SFY 2020, annual capitation payments for children ranged from $3,128 to $3,385 while for Medicaid adults, analogous estimates are $6,619 to $7,296 (Milliman, 2019a). While the impact of "welcome mat" participants on costs may be small, we include them here in order to capture, as fully as possible, the effects of expansion. We roughly based our take-up rate assumption on the observed increase in Mississippi Medicaid enrollment surrounding the 2014 introduction of the ACA, although we were unable to locate additional research on the subject.

Table 3. Estimates of New Medicaid Enrollment, 2023–2028

	2023	2024	2025	2026	2027	2028
New Enrollment	192,065	205,085	217,969	216,879	215,795	214,716
Expansion Group	181,827	194,897	207,833	206,794	205,760	204,731
Welcome Mat	10,238	10,187	10,136	10,086	10,035	9,985

Hilltop's model estimates that Medicaid enrollment will increase through 2025—as newly eligible individuals with previously purchased coverage switch over to Medicaid—but will stabilize and decline thereafter. The preponderance of additional enrollment is newly eligible adult participants (both childless adults and parents/caretaker relatives with income above 21% but below 138% of the FPL), with roughly 5% of additional enrollment due to the "welcome mat" population.

These estimates are in line with other studies. Miller and Collins (2021) estimate enrollment increases in Mississippi of 228,000 to 233,000 from 2022 to 2027. Ku and Brantley (2021) estimate additional enrollment of 217,000, and Simpson (2020) estimates additional enrollment of 207,000. Manatt Health (2021) estimates that Medicaid expansion will lead to 229,000 additional adult participants by the third year of expansion.

Coverage Gap

In this sub-section, we focus on the population of new Medicaid participants in order to better understand the impact of Medicaid expansion on the uninsured population, as well as on the "coverage gap" (explained on the following page). Table 4 presents the status of newly covered participants.

Table 4. Previous Uninsured Status of New Medicaid Participants, 2023–2028

	2023	2024	2025	2026	2027	2028
Enrollment	192,065	205,085	217,969	216,879	215,795	214,716
Previously Uninsured	140,236	139,535	138,837	138,143	137,452	136,765
From Coverage Gap	106,048	105,518	104,990	104,465	103,943	103,423

Hilltop estimates that, of the new participants, approximately 136,000 to 140,000 (or 64% to 73%) will have been previously uninsured. This is in line with other estimates. For example, Ku and Brantley (2021) estimate that the 217,000 increase in Medicaid enrollment will occur alongside a reduction in the uninsured population of 156,000, implying that 71.9% of new participants will have been previously uninsured. Simpson (2020) suggests that 67.1% of new participants in Mississippi would be previously uninsured.

This estimate is notable because of the *coverage gap*: individuals with incomes that "exceed their state's eligibility for Medicaid but [are] below poverty, the minimum income eligibility for tax credits through the ACA marketplace" are not eligible for any form of premium assistance and thus pay the full "sticker price" for marketplace plans (Garfield et al., 2021). This means that all childless adults previously earning under 100% of the FPL and parents/caretaker relatives

earning between 21% and 100% of the FPL were both ineligible for Medicaid *and* ineligible for tax credits for ACA exchange plans. Using the assumed 72% take-up rate for the previously uninsured population, the number of newly eligible *expansion* participants that were previously uninsured (that is, excluding the welcome mat population) that would have fallen into the coverage gap ranges from roughly 103,000 to 106,000. Currently, these individuals in the coverage gap do not qualify for advanced premium tax credits (APTC) and must pay the total premium cost for any policy purchased through the ACA insurance exchange: the APTC is only eligible for individuals earning at least 100% of the FPL. These tax credits can be substantial: CMS (2021) estimates that the average value of the advanced premium tax credit in Mississippi is $544.85 per month as of February 2021.

In order to better understand the implications for individuals in the coverage gap, Hilltop collected premium information from Healthcare.gov for plan year 2021 from three ZIP codes in Mississippi for three different groups: 25-year-olds, 40-year-olds, and 60-year-olds. Table 5 shows the premium for the "standard plan"—that is, the second-lowest cost silver plan. It is important to note that many different plans are offered through the exchange and can differ in premium cost depending on the "metal" of the plan: gold plans have higher premiums than silver, which have higher premiums than bronze.

Table 5. ACA Exchange Standard Plan Premiums in Mississippi, Plan Year 2021

Grouping	Premium
25-year-olds	$4,320
40-year-olds	$5,499
60-year-olds	$11,677

Note: These data were collected from https://www.healthcare.gov/see-plans/#/ in October 2021, for plan year 2021. Three different ZIP codes were used: 39213 (Metro Jackson area), 39531 (Biloxi area), and 38863 (Tupelo area), and the table is an average of the second-lowest silver plan across these ZIP codes.

This point is vital to understanding the impact of Medicaid expansion: individuals in the coverage gap are effectively excluded from obtaining exchange-based health insurance. There are between 103,000 and 106,000 individuals in the coverage gap who would enroll in Medicaid if it expanded. Each of these individuals, by definition, earn under 100% of the FPL, which, as of 2021, was $12,880 for a single individual (ASPE, 2021). In order to purchase health insurance through the ACA exchange, a 60-year-old in the coverage gap would need to spend $11,677 of his income on health insurance premiums. These individuals are currently effectively shut out of the health insurance market and must self-finance their care.

Costs

Capitation rate certifications are the basis for our estimates of per-participant cost. These are the most up-to-date data on Mississippi Medicaid costs that we were able to access and use of these data is consistent with the assumption that the Medicaid expansion population would be covered through MSCAN, the state's Medicaid managed care plan. Capitation rates are monthly

payments paid directly to managed care organizations by the state. They include administrative costs, expected profit margin, and premium taxes in addition to the expected cost of medical care. Capitation rates are risk-adjusted by enrollment group and region: the SFY 2020 capitation rates, for example, cover 12 rate cells over 3 regions per rate cell (Milliman, 2019a).

Hilltop received multiple years of capitation rate certifications from the Mississippi Division of Medicaid for use in this analysis. While rate certification reports are available for SFYs 2020, 2021, and 2022, the rate certification report from SFY 2020 was used as the baseline cost estimates for this study in order to minimize the impact of the COVID-19 pandemic on our results. The COVID-19 pandemic resulted in dramatically lower utilization rates for certain services starting in March 2020, and capitation rates are, mechanically, the product of expected unit cost and expected utilization (Cox, Kamal, & McDermott, 2021). Thus, using capitation rates in place during the COVID-19 pandemic (SFY 2021 and SFY 2022) may underestimate costs. The SFY 2020 capitation rates were developed using pre-pandemic health care experience as a base; as such, they immediately pre-date the onset of the COVID-19 pandemic (Milliman, 2019a).

There are limitations to using capitation rates to estimate the costs of Medicaid expansion. First, using capitation rates restricts us to cell-level averages of expected medical costs instead of the granular, individual-level costs that would be available through claims. However, we attempted to correct for this in order to adjust for the expected demographics of the expansion group (see details below). Second, it is possible for certain services to be "carved out" of capitation, meaning that they are not included in capitation rates; this could, in principle, lead to underestimates of the costs of expansion. It is unlikely to be a meaningful issue for the SFY 2020 MSCAN rates, however. The only carve-out in the SFY 2020 rates for MSCAN of which we are aware was for graduate medical education (GME) and only accounted for 0.7% of capitation rates. Because of the small magnitude of this effect, we ignore it for the purposes of this analysis. Third, if the service package covered by Medicaid after expansion differs from the services provided pre-expansion, then the model may mis-estimate the costs of expansion due to changes in benefits. Hilltop does not believe, though, that this is an issue with Mississippi Medicaid.

It is important to note that the expansion population will be demographically distinct from the current adult participant population. Currently, the only adults without disabilities who are eligible for full-benefit Medicaid coverage in Mississippi are pregnant women and parents and caretaker relatives; as such, the current population of adult participants is likely to be predominantly female and predominantly younger. Given that younger participants tend to incur fewer health costs than older participants, it is important to account for the expected demographics of the enrollment group when estimating the health costs for this group (Yamamoto, 2013).

Two states that have actively studied expansion participants following the state's Medicaid expansion are Ohio and Kentucky. The *Ohio Medicaid Group VIII Assessment*, published in 2016, compared demographic characteristics of individuals enrolled through the expansion group with those who were eligible under pre-expansion rules (which granted eligibility up to 90% FPL for

certain groups). This study finds that, relative to the previously eligible, expansion participants are substantially more male (55.8% vs 30.2%) and older (with a roughly even breakdown between 19 to 44 and 45 to 64 age groups for expansion participants, while pre-expansion participants were roughly three-quarters aged 19 to 44, and one-quarter aged 45 to 64). Mississippi's experience may be different, however, given that the income threshold for Ohio's previously eligible group is so much higher than Mississippi's income threshold for parents and caretaker relatives: up to 90% of the FPL in Ohio compared to 26% of the FPL in Mississippi (Ohio Department of Medicaid, 2016).

The Commonwealth of Kentucky's 2015 Medicaid expansion report also contains the demographic characteristics of the expansion population and previously income-eligible adults, noting that among previously eligible adults, "nearly 60% ... is composed of women under age 35" (Commonwealth of Kentucky, 2015). As in Ohio, the expansion population in Kentucky is older and more heavily male: the average age is 30 in the previously income-eligible group and 38 in the expansion group. Additionally, the previously eligible group is predominantly female, while the gender breakdown is more even in the expansion group. Of the previously eligible participants, roughly 75% are females aged 18 to 45, 20% are males aged 18 to 45, and the remainder are evenly split between men and women aged 46 to 64. In the expansion group, however, approximately 36% are women aged 18 to 45, 33% are men aged 18 to 45, 17% are women aged 46 to 64, and 14% are men aged 46 to 64. Given that Kentucky's income limit for previously eligible group was 43% of the FPL, this seems to be a more apt comparison for Mississippi than Ohio (Kentucky Cabinet for Health and Family Services, 2014).

Thus, in order to adjust the expenses for the expected age and gender breakdown, Hilltop's model assumes that the expansion participants will be evenly distributed among males and females, with the three out of five new participants aged 19 to 39, and two out of five new participants aged 40 to 64. Hilltop applied the current "MA Adult" rate to female participants from ages 19 to 39. Then, based on CY 2013 MSCAN capitation rates (the latest year for which we could find this data), we applied the following correction factors to account for differential expected medical costs: 0.84 for males age 19 to 39; 1.45 for females aged 45 to 64; and 1.45 for males aged 45 to 64 (Mississippi Division of Medicaid, n.d.a).[14] SFY 2020 "MA Children" rate cell is applied to the welcome mat child population, and the unadjusted "MA Adult" rate is applied to the adult welcome mat population. Finally, Hilltop applied a correction to account for supplemental hospital payments in MSCAN. The SFY 2020 capitation report indicates that the MHAP fee schedule adjustment payment of $275 million is included in rates; thus, given expansion, this component of the capitation rates would be amortized over a larger population and, thus, monthly capitation payments would be somewhat lower than currently indicated.

The resulting per-person cost is estimated to increase 2.5% annually. Hilltop bases this estimate on unit cost trend data from the 2020 capitation certification report (Milliman, 2019a). Mississippi's state fiscal year (which runs from July 1 to June 30) is translated to a calendar year basis where applicable. The per-person expenditure amount is applied to estimates of

[14] Additionally, it is important to note that the "MA Adult" rate cell is distinct from the "Pregnant Women" rate cell.

enrollment from Table 3, above. Table 6, below, shows the results of Hilltop's cost estimates assuming 90% FMAP—implying that the state will be responsible for 10% of these costs. [15]

Table 6. Cost Projections for Mississippi Medicaid Expansion, 2023–2028

	2023	2024	2025	2026	2027	2028
Annual Cost per Participant	$8,262	$8,482	$8,705	$8,923	$9,146	$9,375
Enrollment	192,065	205,085	217,969	216,879	215,795	214,716
Total Cost (millions)	$1,587	$1,739	$1,898	$1,935	$1,974	$2,013
Mississippi Cost (millions)	$159	$174	$190	$194	$197	$201

The cost projections are somewhat higher than those estimated in other studies, but we believe they are reasonable.[16] First, these are not only estimates of medical costs per person: these are capitation rates and include non-medical cost components, such as administrative expenses, targeted margin, and the premium tax. Only a fraction of capitation rates are spent on participant medical costs. Per the SFY 2021 capitated rate report, the medical loss ratio—that is, the fraction of premium revenue spent on medical expenses—was 87.8% in SFY 2019 and 87.6% in Q3 2019 to Q4 2019 (Milliman, 2021a).

Furthermore, other data report similar estimates for expenditure in Mississippi. MACPAC (2020) estimates that, as of FY 2018, annual full-year medical benefit spending for full-benefit participants for "adults under age 65" who do not qualify through a disability pathway in Mississippi is $6,331. Adjusted for inflation, this amount scales to $6,973 in CY 2021 dollars.[17] Additionally, nationally, the expenditure ratio between the new adult eligibility group (i.e., individuals with income up to 138% of the FPL) to other adult full-benefit participants was 1.139; applying this to the estimate for Mississippi, a plausible value for expansion group costs in CY 2021 is $7,942.

American Rescue Plan (ARP) Act Supplemental Payment

As part of the ARP Act, states that expand their Medicaid programs up to 138% of the FPL are eligible to receive an additional 5 percentage points of FMAP for their traditional Medicaid populations for the first two years of expansion (Park & Corlette, 2021). This is intended to serve as an additional incentive for states to expand their Medicaid programs beyond the current incentive of 90% FMAP for the expansion population.

[15] We recognize that, due to the presence of "welcome mat" enrollees, the 90% FMAP is somewhat overstated. However, we make this assumption for two reasons. First, our welcome mat population is small: approximately 5% of the total expansion population. Second, the FMAP for the welcome mat population is high: at the time of writing, 77.76%. Thus, even accounting for the "welcome mat" population, the effective FMAP is likely to be very close to 90%.

[16] For example, a recent study by economists at the Mississippi Institutions of Higher Learning estimate per-capita expenditures for the expansion group of $5,911. (Miller & Collins, 2021).

[17] See https://data.bls.gov/cgi-bin/cpicalc.pl?cost1=6%2C331&year1=201801&year2=202107

Recent research has presented a range of estimates for the magnitude of the two-year ARP Act enhanced FMAP for Mississippi, from $622 million (Ku & Brantley, 2021) to $690 million (Rudowitz et al., 2021) to $739 million (Striar et al., 2021). These depend on three factors: 1) the expected size of the traditional Medicaid population at the time of expansion; 2) the per-participant costs at the time of expansion; and 3) the rate of increase (or decrease) in both factors from the first year of expansion to the second year.

The magnitude of the ARP Act payment for Mississippi can be estimated by projecting traditional Medicaid spending forward and applying the 5-percentage-point FMAP quantity. In order to avoid including any one-time funding due to COVID-19, Hilltop uses the overall Medicaid expenditure from FY 2019 as a baseline estimate of expenditure per person. Total spending from FY 2019 was $5,916,439,237, and average monthly enrollment from FY 2019 was 674,787 (Mississippi Division of Medicaid, 2019a). This implies per-person expenditure of $8,768 for FY 2019. Applying the assumed 2.5% annual growth rate, this implies that annual per-person expenditure will be $9,798.3 in 2023 and $10,043.3 in 2024.

Next, it is necessary to estimate Medicaid enrollment. Given the current growth trajectory and the state of public emergency, we estimate that enrollment will grow to 800,620 by January 2022. The subsequent growth path of the Medicaid population depends entirely on whether the public health emergency is allowed to expire. If the public health emergency is permitted to expire in January 2022, then disenrollment will commence, and, ultimately, enrollment will likely return to its pre-COVID levels. In order to avoid over-estimating the magnitude of the potential ARP bonus, we assume that the public health emergency will be allowed to expire in early January 2022 and that enrollment will immediately begin to decline to its pre-COVID level. Given that Medicaid enrollment in April 2020 was 667,610, and in November 2021 was 792,555, we estimate a straight-line monthly decline of 6,567 participants per month. We estimate that Medicaid enrollment will reach its pre-COVID level of 674,787 by August 2023 and assume that it would remain at that level going forward.

Hilltop applied the enrollment estimates to the cost estimates and then calculated the 5-percentage point increase in FMAP. See Table 7 for the results.

Table 7. Estimates American Recovery Plan Act Bonus Payment

	2023	2024
Estimated Traditional Medicaid Enrollment	689,072	674,787
Per-Person Traditional Medicaid Cost	$9,798	$10,043
Projected Total Spending (millions)	$6,752	$6,777
ARP Act Enhanced FMAP (millions)	$338	$339

There are two important factors to note. First, the timing of the expansion matters. While Hilltop assumes that Mississippi will expand its Medicaid program in January 2023, the state would likely earn a higher ARP Act if it expanded its Medicaid program sooner rather than later. Expanding Medicaid before disenrollments begin would maximize the value of the ARP Act enhanced FMAP. Second, the state can treat this funding in a number of ways. It could set this funding aside in

order to fund the Medicaid expansion, remit this back to the citizens of Mississippi as a tax cut, or spend it on other policy priorities. If the state spends it or remits it as a tax cut, then this would have stimulative effects on the economy that we do not model here.

Direct Tax Revenue

Mississippi currently levies a 3% premium tax on all health insurers within the state.[18] As of FY 2020, the insurance premium tax was the fifth largest source of general fund revenue for the state, accounting for 5.58% of general fund receipts (Mississippi Department of Revenue, 2020). Health insurance premium taxes are common: according to America's Health Insurance Plans (2016), "nearly all states have implemented premium taxes," with the average tax rate of 2.25%. Therefore, the additional premium dollars that flow from the state to the CCOs would be taxed at 3%, and these taxes would return to the state treasury.

Because these taxes are built into the capitation rates, the state portion of the tax flows back to itself, and the federal government pays much more of the tax than the state. This has been recognized as a source of savings for MSCAN. According to Milliman, Inc. (2019b), using the traditional FMAP (which, pre-COVID, was roughly 77% federal, 23% state), "the state realizes net proceeds from the MississippiCAN premium tax (DOI collections less DOM costs) equivalent to the 2.3% federal contribution." For the expansion population, however, the federal government will pay more of this tax than in traditional Medicaid: it will pay 90%. Hilltop's model does not restrict focus to only the federal portion of the premium tax; we also calculate the tax revenue generated from the state's share of expansion spending. Our reasoning is that, while state spending on Medicaid expansion will likely divert other state expenditures that *would* have occurred regardless of Medicaid expansion, it *is* very likely to be "new" *premium* spending in the state.

To avoid overstating the Medicaid expansion budgetary savings due to the premium tax, it is necessary to account for the fact that a portion of the new participants were previously insured. Thus, there are new premiums—and new premium tax revenue—*only* for the individuals who gained health insurance because of Medicaid expansion. We applied a correction factor in our calculation to capture the premium tax accruing for this population.

Additionally, it is important to note that individuals enrolling in Medicaid coverage who currently have *self-insured employer sponsored insurance* will also represent additional tax dollars for the state. Many large employers do not contract with third-party insurance companies; instead, they directly fund the health costs for employees. Such "self-funded" coverage is not subject to the state premium tax (Enthoven, 2021). Research has found that 60.3% of individuals in Mississippi with health coverage through work are covered through self-insurance; the model includes these individuals in its estimate of the additional premium tax accruing to the state due to Medicaid expansion (Kaiser Family Foundation, 2020).

[18] Miss. Code Ann. § 27-15-109.

Table 8, below, presents these results.

Table 8. Additional Premium Tax Revenue Due to Mississippi Medicaid Expansion, 2023–2028

	2023	2024	2025	2026	2027	2028
Additional Tax Revenue (millions)	$38.3	$39.1	$40.0	$40.8	$41.6	$42.4

Under Medicaid expansion, Mississippi's premium tax will generate $38 to $42 million in additional general fund revenue. Neighboring Arkansas also cites its premium tax as a source of cost savings, estimating that its premium tax of 2.5% led to $26,000,000 in savings in 2020 (Arkansas Insurance Department, n.d.). This is an important source of cost offsets that would result from Medicaid expansion in Mississippi. Without any additional offsets, premium taxes alone would offset 21% to 24% of the state's cost of Medicaid expansion.

Other Economic Effects and Indirect Tax Revenue

Other Economic Effects

As noted above, Medicaid expansion will result in a significant influx of federal funding into Mississippi *that would not have occurred in the absence of expansion*. This funding will first increase revenues to the three CCOs in MSCAN and will then flow to health services providers. Health service providers will spend this additional revenue on supplies and salaries; employees, then, will spend this additional revenue on goods and services in the state. Thus, the infusion of federal Medicaid funding will ripple through the state's economy and lead to further tax revenue for the state. Failing to account for this tax revenue would underestimate offsets to expansion, and "analyses that omit feedback effects overlook a significant fiscal benefit to the state" (Levy et al., 2020).

It is important to note that this cycle of expenditure does not occur endlessly: money "leaks" out of the economy in the form of taxation, savings, or out-of-state spending. Becker and Morrissey (2013) use relatively low multipliers for their analysis of Mississippi and note that these "are reflective of many states that, like Mississippi, lack a large multi-sector economy. Much of the new income generated by Medicaid expansion will be spent on goods and services from other states." However, Hilltop believes that this important source of potential cost offsets for the Mississippi Medicaid expansion can be quantified in this study. Many other Medicaid expansion studies also quantify this source of cost savings (to name a few: Becker, 2019; Miller & Collins, 2021; Levy et al., 2020; Richardson et al., 2019).

Before this step, however, it is necessary to make three adjustments to the influx of federal expenditure to accurately estimate the new expenditure that will occur within the state. First, we consider only the additional *federal* spending, not additional total spending; the state portion of the Medicaid expansion is not "new" and thus should not be counted as a stimulus. Second, we acknowledge that the three CCOs in MSCAN are headquartered out of state and, as such, the non-medical expenses in the capitation rates may not stimulate the state's economy. Thus,

based on the medical loss ratio, we assume that 88% of capitation payments are for medical expenses and, as such, will occur within the state (Milliman, 2021a).[19]

Finally, we subtract the federally funded advanced premium tax credits for individuals who transition over from ACA Marketplace coverage to Medicaid (Becker, 2019; Levy et al., 2020). This is necessary to avoid double-counting federal stimulus: these individuals were already bringing federal funding into the state in the form of federal tax credits, and by shifting to Medicaid, they will no longer be receiving these tax credits.[20]

Because Mississippi participates in the federal ACA insurance exchange, issuer-level enrollment data is available to estimate the population of individuals who would be eligible for Medicaid in the event of Medicaid expansion (CMS, n.d.a). To calculate this, we estimate the number of individuals aged 18+ under 138% of the FPL who ever enrolled in an exchange plan in Mississippi in 2019. Given the generous tax credits that apply only to individuals from 100% to 138% of the FPL (but not below 100%), we assume that all individuals on the exchange under 138% of the FPL are in the range from 100% to 138%; thus, all would be newly eligible for Medicaid under expansion, and thus potential switchers from the exchange. We applied the assumed -0.5% population growth rate and used the same phased-in take-up rates (presented in the Enrollment section above) to estimate the number of individuals *switching* from exchange plans to Medicaid each year. Following Levy and colleagues (2020), we assume that the APTC would equal 90% of the Medicaid spending in each year.[21] Table 9 presents estimates of the net new federal spending per year.

Table 9. Net New Federal Spending Due to Mississippi Medicaid Expansion, 2023–2028

	2023	2024	2025	2026	2027	2028
New Federal Spending (millions)	$1,092	$1,125	$1,159	$1,182	$1,206	$1,230

Hilltop believes that this accords with other estimates. Levy et al. (2020) estimate that the gross federal spending for the Michigan Medicaid expansion in FY 2021 (the final year they estimate) was $3.4 billion, but that there were $487.7 million in foregone advanced premium tax credits, or 14.3% of total new federal spending. Similarly, Becker (2019) estimates that in Alabama, federal costs in FY 2020 would be $1.97 billion, but only $1.62 billion would represent new federal spending, implying that the foregone APTC represents 17.8% of the total new spending.

[19] This may be a conservative assumption, to the extent that the non-medical component of capitation payments are spent in Mississippi. Additionally, if any MSCAN payments are made to out-of-state providers, we may be overstating the extent of the stimulus.
[20] We recognize that it is possible that, like MSCAN capitation payments, some of the APTC funds may not have flowed directly into the state. However, in order avoid over-estimating the federal stimulus represented by Medicaid expansion, we assume that every dollar of these tax credits would have accrued to residents of Mississippi.
[21] This assumption is borne out in estimates of average APTC: CMS calculates that average APTC per month in CY 2020 in Mississippi is $559.18, which scales to $6,710.16 per year. This equates to roughly 88% of our estimate of Medicaid expansion costs per enrollees as of SFY 2020 (CMS, 2021).

Hilltop estimates this percentage to range from 12% to 20% in our study period, which is in line with these other estimates.

Hilltop input the estimates of net new federal spending from Table 9 into IMPLAN, an input-output software that is used to estimate the economic stimulus of new economic activity within a given state. IMPLAN is a widely used economic impact software that estimates the linkages through the different components of the economy and then uses these linkages to model the "ripple effects" of economic stimulus. We assume that the additional federal spending each year will occur through four channels: hospitals, offices of physicians, pharmacies, and other medical. We applied the distribution of MSCAN spending from CY 2019 for MA Adult non-deliveries for these categories (Milliman, 2021b). It is important to note that we do not include the ARP Act enhanced FMAP in these estimates because we assume that this is not immediately spent. If it were immediately spent, then the magnitude of the net new federal spending—and of the resulting economic stimulus—would be larger for the first two years of Medicaid expansion.

IMPLAN yields various sets of results. Here, we focus on two results: value added and employment. Value added is akin to the contribution to the state's gross product, which is the final value of all goods and services produced in a given year; employment is the number of full-time, part-time, and seasonal employment. See Table 10 for these estimates.

Table 10. Estimated Effect of Medicaid Expansion on Value Added and Jobs, 2023–2028

	2023	2024	2025	2026	2027	2028
Value added (millions)	$814	$840	$866	$884	$902	$921
Employment	10,532	10,729	10,927	11,017	11,109	11,201

Hilltop found that Medicaid expansion would increase the state's economy by roughly $800 million to $900 million per year, representing an addition of 0.7% to the state's current gross product (FRED Economic Data, 2021). Given the recent sluggish growth in Mississippi GDP (ranging from -1.3% to 0.9% from 2010 to 2017), Medicaid expansion would represent a significant stimulus to the state's overall economy (University Research Center, 2019). Moreover, we estimate that Medicaid expansion would yield roughly 11,000 additional jobs per year from 2023 to 2028.

Hilltop believes that our results are consistent with other studies. In line with our estimate, Miller and Collins (2021) estimate that Medicaid expansion in Mississippi would result in the addition of roughly 11,300 jobs per year from 2022 to 2027. Moreover, we can calculate the implied "dollars per job": that is, the federal expenditure per job created. We estimate that this ranges from $120,000 to $129,000, which is in line with corresponding estimates of $125,000 in Michigan and in other research (Levy et al., 2020; Chodorow-Reich, 2019).

Beyond the infusion of federal funding into the economy, there may be additional positive effects on the economy due to improved health or productivity of the workforce due to gaining Medicaid coverage (Miller et al., 2021). Additionally, while it is theoretically possible that Medicaid expansion may marginally reduce individuals' work force participation incentives, there

is little evidence of any impact of Medicaid expansion on labor force outcomes (Buchmueller et al., 2021). We do not address these points in this study.

Indirect Tax Revenue

In our study, we used the IMPLAN software to estimate the additional tax revenue that would be created by the increase in economic activity caused by the infusion of federal funds. We adjusted for tax-exempt status of non-profit and government hospitals; thus, we used only the portion of "direct effect" taxation attributable to for-profit hospitals. Additionally, we included both state and local taxes (denoted as county, sub-county special, and sub-county general). See Table 11 for these results.

Table 11. Indirect Tax Revenue resulting from Medicaid Expansion, 2023–2028

	2023	2024	2025	2026	2027	2028
Indirect tax revenue (millions)	$51.5	$53.1	$54.8	$56.0	$57.2	$58.4

We estimate that the indirect tax revenue generated by the economic stimulus resulting from Medicaid expansion will generate from $52 to $58 million from 2023 to 2028. This is consistent with a previous Mississippi Medicaid expansion study, which found that Medicaid expansion would lead to $55.3 to $60.5 million in state general fund tax revenue from 2022 to 2025 (Neal, 2012). This substantial indirect tax revenue accords with intuition given Mississippi's tax landscape: per the Tax Foundation, the combined state and local tax burden for Mississippi in CY 2019 was 9.5%, ahead of neighbors Louisiana (9.2%), Tennessee (7.0%), and Alabama (9.0%) (York & Walczak, 2021).

This result also accords with studies from other states. Research on Medicaid expansions in Arkansas, Louisiana, Kentucky, Michigan, and Montana have document sizable increases in state and local tax revenue resulting from Medicaid expansion: roughly $100 million in Arkansas, $145 million in Louisiana, $160 million in Kentucky, $325 million in Michigan, and $60 million in Montana (Arkansas Health Reform Legislative Task Force, 2016; Richardson et al., 2019; Commonwealth of Kentucky, 2015; Levy et al., 2020; Ward, 2021). While some of these results include both provider-specific taxes and the tax revenue due to the general economic stimulus, we believe this supports the findings from our model.

Cost Offsets

Cost Offsets due to Medicaid Eligibility Shifts

As a result of Medicaid expansion, certain individuals who might otherwise have been eligible for Medicaid in a traditional eligibility group will also be eligible for coverage through the expansion group. Such individuals can, in some circumstances, enroll through the expansion population, leading to state savings in proportion to the difference in FMAP. That is, if an individual (for example, an individual with a disability) *would* have been in traditional Medicaid with an FMAP of 77.76% and incurred total spending of $1,000 in a month, then the state would have been

responsible for paying $222.40 of those dollars, with the federal government paying the balance of $777.60. If that same individual had been enrolled through the expansion group, however, the FMAP would be 90%, and so Mississippi would only be responsible for paying $100, and the federal government the balance of $900. Thus, Mississippi Medicaid would have saved $122.40 ($222.40 minus $100).

These eligibility transitions are commonly estimated as a source of Medicaid expansion cost offsets in other states. In neighboring Alabama, for example, researchers estimate that Medicaid expansion would result in savings of $15.3 to $25.9 million from SFY 2020 to SFY 2023 due to this type of eligibility shifting (Manatt Health, 2019). However, the scope for this type of savings in Mississippi is limited for two reasons. First, the state's high FMAP structurally limits the savings due to this type of eligibility group shifting: at the current FMAP, the state can only save 12.24% for participants that shift to the expansion population. Moreover, the ARP supplemental FMAP effectively increases the traditional FMAP by 5 percentage points for each of the first two years of expansion; while this is a source of state revenue due to Medicaid expansion, this further limits the potential savings. We use Mississippi FMAPs from 2016 to 2021 and linearly project the FMAPs for 2023 to 2028 that we use for this portion of the analysis. Table 12 presents these FMAPs.

Table 12. Projected Mississippi FMAPs, 2023–2028

Type of FMAP	2023	2024	2025	2026	2027	2028
Projected	79.24	79.97	80.71	81.45	82.18	82.92
ARP Act Supplemental	5.00	5.00				
Effective Future	84.24	84.97	80.71	81.45	82.18	82.92

Source: Linear forecast of FMAP for Mississippi. Original source: Congressional Research Service, 2020.

Hilltop forecasts that Mississippi's FMAP rate will continue to rise from 2023 to 2028, capping out at 82.92%. Note that this is under the statutory maximum FMAP of 83% (MACPAC, n.d.).

Second, to our knowledge, Mississippi's current Medicaid program does not offer significant coverage to individuals who could switch to the expansion group *en masse*. This is in contrast with other states such as Louisiana, which offered limited benefit plans in which "participants could be 'flipped,' or automatically enrolled, since they had already undergone a Medicaid eligibility application" (Boles et al., 2021, p. 7).

Hilltop estimates Medicaid cost offsets for three populations: pregnant women, individuals with disabilities, and individuals in the Healthier MS Waiver program.

Pregnant Women

The methodology used by the Kansas Health Institute (KHI) can be applied to estimate the cost offsets from pregnant women joining the expansion group (Steiner et al., 2021). First, Hilltop identified the population of women of child-bearing age who will join the expansion group each year. Second, Hilltop used the state-level birth rate to estimate the number of women in the

expansion group who become pregnant. While a portion of these women would be shifted into the traditional pregnant women eligibility group in their annual redetermination, we assume that this would occur for only 1/3 of coverage months. Thus, "the assumption is that on average two-thirds of the months of pregnancy for women enrolled in the newly eligible group could qualify for the 90% match" (Steiner et al., 2021). Hilltop then applied nine months of a monthly cost estimate derived from the state's 2021 capitation certification report and calculated the state's savings as the difference in the state share of costs.

Using the assumptions regarding the demographics of the expansion group outlined above, roughly 72,000 women aged 18 to 44 will enroll in Medicaid upon expansion. Applying a statewide birth rate of 62.7 births/1,000 women, roughly 4,500 individuals of this population will become pregnant each year (National Center for Health Statistics, 2021). Starting in 2022, we estimate the monthly capitation rate to be $1,533 with an assumed 2.5% growth rate (Milliman, 2021a).[22] Assuming that each woman receives nine months of these capitation payments, the total expenditure on this group is roughly $75 million. Following the assumption outlined above, we assume that 1/3 of these months will be in the traditional Medicaid group, but 2/3 will remain in the expansion group. Thus, $50 million of expenditures occur in the expansion group that *would* have taken place in the traditional Medicaid pregnant women coverage group were it not for expansion. Mississippi saves the difference in FMAP each year for this amount.

Individuals with Disabilities

Similar logic applies to the population of individuals with disabilities. Mississippi Medicaid automatically covers individuals who receive Supplemental Security Income (SSI), which is a program that "makes monthly payments to people who have low income and few resources that are either age 65 or over or blind or disabled" (Mississippi Division of Medicaid, 2016). Again, we follow the method of KHI (Steiner et al., 2021):

> Based on literature demonstrating a 2 percent reduction in SSI participation in expansion states, we assume a 2 percent reduction in non-dually eligible SSI adults who are not on waivers for home and community-based services. These adults could receive medical coverage through expansion, avoiding the complicated and lengthy SSI application process or the low SSI income and resource limits when medical care coverage may be the main benefit some seek. The state's savings comes from the conversion of 2 percent of non-dual SSI expenditures with regular FMAP to the 90 percent federal match.

The Kansas method is more conservative than other methods. For example, research on Medicaid expansion in Alabama assumed that up to 4% of individuals with disabilities will enroll through the expansion group, rather than the SSI/disability group (Manatt Health, 2019). Hilltop first estimated the population of individuals who receive Medicaid through the non-newborn

[22] We opted to use SFY 2021 rates for this analysis because delivery costs were not part of the pregnant women capitation rate cell in SFY 2020.

SSI/disabled rate cell. This group has mandatory enrollment in MSCAN and comprises roughly 62,000 individuals (Milliman, 2021b). This estimate is in line with other research: Manatt Health estimated that 107,652 "individuals with incomes up to 74% FPL were enrolled in Alabama through the SSI disabled eligibility pathway and were not dually eligible for Medicaid in FFY 2017" (Manatt Health, 2019). Given the population differences between the two states—roughly 4.9 million in Alabama and 3 million in Mississippi—these estimates are comparable.

Population changes are projected forward estimating annual cost derived from the state's 2020 capitation certification report (of roughly $16,000 per year) trended forward to reflect the assumed 2.5% annual cost growth. Following the KHI assumption, 2% of these participants would be diverted from the SSI/disabled group to the expansion group. Hilltop then applied the difference in FMAPs in order to calculate the savings to the state.

Other Medicaid Groups

Hilltop reviewed several other Mississippi Medicaid programs in order to identify areas of potential cost savings. The Family Planning Waiver offers limited coverage to individuals who are likely to shift to the expansion group upon coverage; however, the FMAP for this program is 90% and thus does not represent a source of savings to the state (CMS Center for Medicaid & CHIP Services, 2020, p. 9). Additionally, Mississippi operates a Breast and Cervical Cancer program, but coverage is limited. Based on the capitation rate report for SFY 2022, Hilltop estimates that only about 100 women are enrolled (Milliman, 2021b). The potential savings from altered enrollment patterns is limited, and we do not calculate the cost offset here.

The Healthier Mississippi Waiver is the final source of within-Medicaid cost offsets that we identified. Mississippi offers this §1115 waiver to individuals up to 135% of the FPL who are either aged or have a disability, ineligible for Medicare, or "who do not otherwise qualify for Medicaid" (CMS, 2018). The Healthier MS Waiver offers "all state plan services except for long-term care services" to qualifying participants (Mississippi Division of Medicaid, 2020b). The waiver membership is capped at 6,000 members per year.

Medicaid expansion means that some current participants of the Healthier MS Waiver will be eligible for the expansion group, and thus become *ineligible* for the Healthier MS Waiver. Thus, expansion would result in the shift of a portion of the waiver population to the expansion group. By definition, all waiver recipients are under the 138% FPL cap and are not also eligible for Medicare. Some of the participants, however, will be over age 65, or under age 18, and thus ineligible for the expansion group. Based on information from the Healthier MS annual reports, we assume that 75% of participants are age-eligible for the expansion population. Hilltop estimated the annual spending for these individuals and then applied the difference in FMAP.

Summary of Cost Offsets Due to Medicaid Eligibility Shifts

Hilltop presents summary estimates of within-Medicaid cost savings in Table 13, below.

Table 13. Estimate of Savings due to Medicaid Eligibility Shifts, 2023-2028 ($ millions)

	2023	2024	2025	2026	2027	2028
Pregnant Women	$2.4	$2.1	$4.1	$3.8	$3.5	$3.3
Individuals w/ Disability	$1.2	$1.1	$2.0	$1.9	$1.8	$1.6
Healthier MS Waiver	$4.8	$3.9	$7.2	$6.6	$6.1	$5.5
Total	**$8.4**	**$7.1**	**$13.3**	**$12.4**	**$11.4**	**$10.4**

Medicaid expansion is estimated to save $7 million to $13 million per year due to changes in enrollment and eligibility groups. This is relatively low compared to estimates from other states, but these estimates are consistent with the high Mississippi FMAP.

Cost Offsets Due to Service Funding Changes

When states expand Medicaid, certain health services that used to be funded by the state can now be funded through Medicaid (which, because of the enhanced federal match, is largely federal funding), representing another potential source of savings to the state. Research shows that, in certain states, this savings can be considerable: for example, Alabama, researchers estimate that the state could save anywhere from $43.6 million to $61.8 million due to reductions in spending on corrections, mental health and substance abuse, and public health programs (Manatt Health, 2019).

However, these types of estimates tend to be speculative. Future state funding depends on the future state actions; just because Medicaid expansion means that state funding *can* be reduced without reducing service offerings does not guarantee that it *will* be reduced. Moreover, it is challenging to make precise estimates for these cost savings. Doing so requires knowledge of two sets of data points: 1) the menu of services currently funded by the state that *would* be funded by Medicaid, in the event of expansion; and 2) the distribution of utilization: that is, the spending incurred by individuals that currently consume state-funded services, which would switch to being Medicaid-funded in the event of expansion (because those individuals would become eligible for, and enroll in, the Medicaid expansion group).[23]

It is certainly possible to overstate the magnitude of expected savings to the state. For example, upon the expansion of Medicaid in Michigan in 2014, Governor Snyder assumed that "72% of the spending and services provided in the CMH non-Medicaid line item would be shifted over to expansion Medicaid" and reduced that line item accordingly in the 2013 to 2014 proposed budget (Angelotti, 2014). This proved to be an overestimate of the potential savings, however, and the next year's budget was revised upward by $16.0 million.

[23] This is also noted in a memorandum from the Michigan Senate Fiscal Agency from 2014 regarding the reduction in other state funding as a result of Medicaid expansion: "The Administration based its estimate on an examination of payments for CMH non-Medicaid services, the services provided (that is, whether they were services eligible for Medicaid reimbursement), and the likely eligibility status of those who received the services" (Angelotti, 2014).

A comprehensive review of all state services was out of the scope of this study. In order to avoid overestimating potential cost savings, Hilltop restricted attention to two areas: 1) corrections and 2) spending on mental health services. It is possible that savings could also accrue to other areas of state-funded services (for example, in the Department of Public Health or Department of Human Services), but we do not include these here.

Corrections

Upon Medicaid expansion, almost all individuals up to 138% FPL become eligible for Medicaid. While this generally excludes current correctional inmates, there is one exception: Medicaid may cover care "delivered outside the institution, such as at a hospital or nursing home, when the person has been admitted for 24 hours or more" (Pew Charitable Trusts, 2016). Thus, Medicaid expansion implies that the state can save the bulk of the funds it *would* have spent on care for inmates admitted to a hospital for 24 hours or more. Assuming that all inmates would meet the income eligibility thresholds for Medicaid expansion, the state would only be responsible for the 10% state share of such costs.

In FY 2020, the Mississippi Department of Corrections expenditure for medical services was roughly $77 million: $53 million for onsite care and $24 million for offsite care (PEER Mississippi, 2021). Offsite care comprises inpatient, outpatient, emergency care, dialysis, and medical and diagnostic testing labs (Pew Charitable Trusts, 2017). Research from ten states from 2007 to 2011 shows that, on average, 20% of prison health care spending was incurred for hospitalization; however, the research does not specify the site of care (onsite or offsite) and whether hospitalization occurred for more than 24 hours (Pew Charitable Trusts, 2014). Applying this 20% to Mississippi's total spending on inmate medical care, an estimated $15.5 million was spent on hospitalizations in FY 2020. Moreover, according to officials from Ohio, "A drop in hospital spending by more than half was the largest contributor to the department's overall health care spending decline and the use of Medicaid financing was a leading reason" (Pew Charitable Trusts, 2017). Thus, the Mississippi Department of Corrections would reduce its spending on hospitalizations by an estimated 50%, and that this spending would shift to Medicaid.

Using data from the Mississippi Department of Corrections, Hilltop applied the observed FY 2019 to FY 2020 growth rate of 4.1% for all medical spending (PEER Mississippi, 2021). Finally, Hilltop adjusted the potential savings to reflect the 90% FMAP: by shifting spending through Medicaid, Mississippi is only responsible for 10% of the costs. We estimate that the savings on offsite correctional medical care will range from $8 million to $10 million. This is in line with other studies on Medicaid expansion in Mississippi, with Miller and Collins (2021) estimating savings of $8 million annually from 2022 to 2027, and Neal (2012) estimating savings of $6.9 million to $7.4 million from 2022 to 2025.

Mental Health Services

Currently, Mississippi provides certain non-Medicaid health services through its Department of Mental Health (DMH). DMH provides services through three major branches: state-operated programs for individuals with behavioral health needs; regional community mental health centers (CMHCs); and other nonprofit service organizations that are partially funded through DMH (Mississippi Department of Mental Health, 2020). The DMH budget for FY 2020 was almost $571 million, of which $233 million was funded through a combination of state appropriations ($213.6 million) and state support special funds ($33.3 million) (Mississippi Legislative Budget Office, n.d.).

The state's network of 13 regional CMHCs are certified, monitored by, and receive certain grant funding through DMH. CMHCs provide an array of community-based mental health and substance use disorder-related services and, according to estimates from the Mississippi Association of Community Mental Health Centers (MACMHC), served over 102,000 Mississippians in 2019 and provided $29 million in indigent services (MACMHC, 2021). State funding for these CMHCs is a source of potential cost offsets given Medicaid expansion. While CMHCs are not directly funded by DMH, they do receive state and local grant funding. For example, the Region 12 CMHC received 16% of its FY 2020 funding from state grants (Pine Belt Mental Healthcare Resources, 2020). Moreover, a substantial portion of CMHC revenue is from Medicaid. The Region 12 CMHC received 45% of its FY 2020 revenue through Medicaid, and Medicaid revenue constituted 72.6% of overall revenue for the Region 7 CMHC as reported in November 2019 (Pine Belt Mental Healthcare Resources, 2020; Smith, 2019).

While certain state grant funding is awarded on a programmatic basis, and as such, use is restricted to specific programs, other state grant funding is operational, and, as such, has relatively unrestricted use. Given the high burden of indigent care incurred by CMHCs, Medicaid expansion may lead CMHCs to experience a reduction in the indigent care burden as previously uninsured individuals gain Medicaid coverage—this, in turn, may alleviate the need for some state funding for CMHCs. Recent research shows that for community health centers, Medicaid expansion leads to some substitution away from state and local grant funding (Luo et al., 2021).

In order to estimate the state-based funding that could, in principle, be replaced with Medicaid funding, it is necessary to quantify a) the current and future level of state-based funding and b) the portion of that funding that could plausibly be shifted to Medicaid. Based on information provided by the Mississippi DMH, which we validated through data from the Substance Abuse and Mental Health Services Administration (SAMHSA), we estimate that state funding for all DMH state-funded sub-recipient grants would range from $60.6 million in 2023 up to $78.9 million in 2028.[24]

[24] SAMHSA data are based on Uniform Reporting System data for Mississippi (https://www.samhsa.gov/data/all-reports?f%5B0%5D=location%3A210&f%5B1%5D=survey_type%3A389).

Hilltop assumes that 80% of CMHC patients are under the 138% FPL threshold and that 25% of *this* population are uninsured.[25] This implies that 20% of the patient load are uninsured *and* with incomes under 138% of the FPL—and are thus eligible for Medicaid in the event of expansion. Then, assuming a 72% take-up rate for this population as above for the general uninsured population, this implies that roughly 15% of current CMHC patients *would* enroll in Medicaid in the event of expansion.

While state funding for CMHCs is not necessarily proportional to the uninsured patient population, given the increased patient enrollment in Medicaid and subsequent increase in revenue from Medicaid, the need for state funding—for example, to cover budget shortfalls due to uncompensated care—would be likely to fall. However, we recognize that much of this state funding may be earmarked for certain activities and not necessarily accessible to offset uncompensated care. Thus, we assume that only 25% of state funding can be used to offset uncompensated or indigent care as a result of the uninsured population. Finally, if 25% of *all* CMHC patients are uninsured, and that indigent care occurs among this population, then the 15% of patients who would enroll in Medicaid represents a 60% reduction in the indigent care burden. Applying the assumption above that 25% of state funding can fall to reflect this implies that state funding can fall by 15% (25% * 60%).

This results in annual savings of $8 million to $11 million during the study period. Hilltop believes that this estimate is reasonable as it aligns with reductions in uncompensated care observed in hospitals. Specifically, researchers have documented that Medicaid expansion can lead to significant reductions in hospital uncompensated care (Callison et al., 2021; Rhodes et al., 2020; Blavin & Ramos, 2021). In the next section, Hilltop assumes that expansion would lead to a 25% reduction in hospital uncompensated care burden. Applying this reduction to the $29 million of indigent care from the MACMHC economic impact statement, Medicaid expansion would lead to an estimated reduction in indigent care of roughly $7.3 million. We believe that this robustness check supports the results from this section.

Summary of Cost Offsets Due to Service Funding Changes

Hilltop estimates that Medicaid expansion in Mississippi would lead to a total of $16 to $20 million in savings from 2023 to 2028. See Table 14.

Table 14. Estimate of Savings from Service Funding Changes, 2023–2028

	2023	2024	2025	2026	2027	2028
Corrections (millions)	$8.0	$8.3	$8.6	$9.0	$9.3	$9.7
Mental Health (millions)	$8.2	$8.7	$9.2	$9.7	$10.2	$10.7
Total (millions)	**$16.2**	**$17.0**	**$17.8**	**$18.6**	**$19.5**	**$20.4**

[25] This assumption is based on correspondence with the Region 6 CMHC.

These estimates accord with results from other studies and reflect the current realities of non-Medicaid state funding for medical services.

Hospital Uncompensated Care

According to the Mississippi Legislature (2020), hospitals in Mississippi incurred approximately $600 million of uncompensated care in 2019. Uncompensated care is typically defined as the sum of charity care and bad debt and can place a strain on hospital finances. In 2019, Mississippi's uncompensated care burden amounted to 7.2% of total hospital operating costs in the state, which was third highest in the nation.[26] Medicaid expansion has been credibly demonstrated to reduce hospitals' uncompensated care burdens and to improve their financial condition. This section of the report presents hospital uncompensated care in Mississippi by hospital ownership type and estimates of the *reduction* in uncompensated care that will be attributable to Medicaid expansion. Hilltop calculated the general reduction in uncompensated care in order to estimate an aggregate benefit of Medicaid expansion. Specifically, we calculated the effect of uncompensated care on state and local government hospitals because this is a net benefit to the state.

For this analysis, Hilltop focused on the types of hospitals that we expect to be most affected by Medicaid expansion: short-term and critical access hospitals (CAHs) (as opposed to long-term, psychiatric, rehabilitation, children's, and other types of hospitals). As of the June 2021 CMS Provider of Services File, Mississippi had 93 such acute care hospitals.[27] Furthermore, Mississippi has a unique hospital landscape: relative to the national distribution of hospital ownership, Mississippi hospitals tend to be disproportionately owned by state or local (i.e., county or city) governments. Table 15 shows the Mississippi-specific and national hospital ownership distributions as of June 2021.

Table 15. Ownership Distribution of Hospitals, Mississippi and National, June 2021

Ownership Type	Mississippi	National
Private nonprofit	0.247	0.460
Private for-profit	0.226	0.171
State- or locally owned	0.398	0.096
Other	0.129	0.272

Source: CMS, 2019.
Note: If gnrl_cntl_type_cd = 02, private nonprofit; if gnrl_cntl_type_cd = 04, private forprofit; if gnrl_cntl_type_cd = 06 or 07, state and local; all else, other. It is important to note that for the purposes of this analysis, we classify hospitals with ownership "Hospital District or Authority" as ownership type "other" and do not include these in our definition of state- or locally owned hospitals.

[26] Source: authors' calculations using Medicare Hospital Cost Report data.
[27] In this study, we refer to this sample of short-term and critical access hospitals as "acute care" hospitals.

Then, using CMS Healthcare Cost Report Information System (HCRIS) data, Hilltop linked on the financial data for these 93 hospitals from 2012 to 2019. Table 16 shows the distribution of 2019 uncompensated care (in millions) by hospital ownership type.

Table 16. Uncompensated Care by Ownership Type, 2019

Ownership Type	Level	Percentage
Private nonprofit	$201.0	33.6%
Private for-profit	$70.1	11.7%
State- or locally owned	$257.9	43.1%
Other	$69.7	11.6%
Total	**$598.7**	

The uncompensated care burden is projected forward (2023 to 2028) for the four hospital types in Table 16 using growth rates in uncompensated care derived from the HCRIS data on a balanced sample of hospitals with non-missing uncompensated care data from 2012 to 2019. This is the counterfactual: our estimate of what *would* occur in the absence of Medicaid expansion.

Researchers have estimated that Medicaid expansion leads to a reduction in hospital uncompensated care that ranges from 28 to 53% (Callison et al., 2021; Rhodes et al., 2020; Blavin & Ramos, 2021). However, it is important to note that reductions in uncompensated care due to Medicaid expansion may not translate into improvement in hospital finances on a one-for-one basis due to Medicaid shortfalls. While Medicaid expansion may result in coverage for previously uninsured individuals who might otherwise have incurred uncompensated care, it may also result in coverage of individuals who previously had other types of health insurance. To the extent that Medicaid reimbursements to hospitals are below other insurers' reimbursements to hospitals, there may be "unreimbursed cost for treating Medicaid participants" that offsets any financial benefit due to reductions in uncompensated care (Young et al., 2019). Thus, we selected a relatively low estimate of the effect of Medicaid expansion on hospital uncompensated care and assume that expansion will lead to a 25% reduction in uncompensated care. See Table 17.

Table 17. Reduction in Uncompensated Care by Hospital Type, 2023–2028

Ownership Type	2023	2024	2025	2026	2027	2028
Private nonprofit	$63.8	$67.7	$71.9	$76.3	$81.1	$86.0
Private for-profit	$15.8	$15.4	$15.0	$14.6	$14.3	$13.9
State- or locally owned	$62.0	$61.4	$60.8	$60.2	$59.6	$59.0
Other	$22.8	$24.4	$26.1	$27.9	$29.9	$32.0
Total	**$164.4**	**$169.0**	**$173.8**	**$179.1**	**$184.8**	**$190.9**

Hilltop predicts that Medicaid expansion would lead to an estimated $164 to $191 million reduction in uncompensated care for all acute care hospitals in Mississippi. All four ownership types would experience some reduction in uncompensated care. Notably, uncompensated care would fall for state- and locally owned hospitals from $62 to $59 million.

Reducing uncompensated care for state and local hospitals is warranted as a cost offset to the state's costs of expansion. Locally owned hospitals are treated as "component units" of counties (as are library systems and fire districts) and, as such, operate financially independently of counties. However, these hospitals are owned by their respective jurisdictions; thus, any gains or losses are the jurisdiction's gains or losses. The reductions in uncompensated care—and attendant improvement in hospital financial positions—could be used to invest in hospital infrastructure upgrades, additional salaries for hospital staff, or reduced rates for hospital services. While state revenue is not directly affected, the reduction in uncompensated care improves the value of governmental asset holdings and thus diminishes the state's cost of Medicaid expansion.

Impact on Other Providers

Hilltop assumes that Medicaid expansion in Mississippi will operate through the state's managed care program and that the CCOs would be responsible for ensuring that the increase in demand for health services does not overwhelm the state's supply of providers. This sub-section addresses the potential for binding provider capacity constraints as a result of Medicaid expansion.

There has been concern that an increase in demand for health care services prompted by Medicaid expansion could overwhelm available supply and lead to shortages. This is potentially a significant issue in Mississippi given the relative size of its physician workforce. According to the Office of Mississippi Physician Workforce (n.d.), Mississippi has 65.9 per 100,000 population active primary care physicians, compared to 90.8 in the median U.S. state. Indeed, a recent Medicaid expansion study in Mississippi states that, "in order for the additional spending from Medicaid expansion to increase the number of jobs in the state … the supply of healthcare workers would need to increase from its current level by nearly 5.0 percent per year" (Miller & Collins, 2021, p. 16).

In principle, provider shortages may result from a Medicaid expansion. In a purely competitive market, an increase in demand for a service based on an exogenous policy shift would not result in shortages. Instead, the equilibrium price of the service would rise, which would induce suppliers to provide more of that service: markets self-adjust to accommodate shifts in demand through changing prices. For a fixed-price good or service, however, the price cannot rise; thus, it is possible for increases in demand to lead to shortages. That is, at the Medicaid payment rate, there are more individuals demanding the service than there are providers willing to provide it. In the context of Medicaid, this could manifest itself as longer wait times or potentially lower-quality care.[28]

However, discussions of potential provider shortages resulting from Medicaid expansion often overlook several key points. First, provider shortages are only possible to the extent that

[28] Recent research has found some evidence of this: Medicaid expansions are estimated to increase emergency department wait times by approximately 10% (Allen et al., 2021).

individuals seek more care following Medicaid expansion *than they would have otherwise*. Medicaid eligibility confers health insurance–that is, a source of payment—not health care. Individuals who become eligible for Medicaid choose to seek care, and some of these individuals may have also sought care even if they were not Medicaid-eligible. Thus, the key parameter is the *additional* care that is sought among the expansion population, net of the care that *would* have been sought had Medicaid not expanded.

Numerous studies have reported that Medicaid expansion has led to increases in utilization of health services, indicating that Medicaid eligibility does, indeed, increase the demand for health care (Miller & Wherry, 2016; Gold et al., 2014). However, it is important to note that additional demand is not from a baseline of zero: even without Medicaid expansion, the research indicates that new Medicaid participants would have consumed some health care services even without Medicaid coverage. For example, the Oregon Health Insurance Experiment allowed researchers to precisely estimate the causal effects of receiving Medicaid on a variety of outcomes. They found that "respondents reported that coverage increased the number of office visits in the prior year by 2.7 visits, or about 50% relative to the control group average of 5.5 office visits per year" (Baicker et al., 2013). Moreover, Sommers et al. (2016) compared the experiences of individuals with family income under 138% of the FPL in Arkansas and Kentucky (both expansion states) to Texas (not an expansion state) in order to assess the impact of expansion on health care utilization among individuals with low income in these states. The authors found that expansion led to 0.69 additional outpatient visits per year, from a baseline average of 2.80 visits per year in 2013 (i.e., pre-expansion) in the expansion states. Thus, while expansion likely did increase utilization, a significant portion of that utilization would have occurred regardless of expansion.

Conversely, capacity constraints will not necessarily persist in the case of Mississippi Medicaid expansion, for three reasons. First, the provider population is not static: physicians can choose where to locate, and recent research shows that general internists tend to locate more in Medicaid expansion states than in non-expansion states (Escarce et al., 2021). Thus, expanding Medicaid could, in part, work to *offset* a low physician workforce. Second, strategies are available for meeting increased demand by increasing the effective provider workforce using advanced practice non-physician providers or increasing the office hours of health care sites (Wishner & Burton, 2017). For example, nurse practitioners in Mississippi do not currently have full practice authority, and it may be possible to increase the effective provider workforce through altering nurse practitioner scope of practice laws (Bean, 2021). Finally, the recent COVID-19 pandemic saw dramatically increased use of telemedicine across the nation (Cantor et al., 2021). While uptake of telemedicine has been relatively low in the South, we believe that this holds the potential to at least partially alleviate provider supply problems (Demeke et al., 2021).

Unmodeled Costs and Benefits

As noted above, this report focuses on the relatively narrow questions on the impact of Medicaid expansion on enrollment, Medicaid costs, state costs, hospital uncompensated care, and certain

economic outcomes. Although we were unable to include several potential additional areas of cost savings into our model, we discuss three such areas here.

First, a growing body of research has shown that Medicaid expansion tends to reduce premiums for individuals with coverage through the state's ACA insurance exchange due to changes in the state's risk pool. Researchers have documented that this reduction in premiums ranges from 11 to 25%, and the state's insurance department predicted a similar outcome in remarks to the state legislature (Peng, 2017; Sen & DeLeire, 2018; Commission on Expansion of Medicaid Managed Care for Medicaid Recipients in Mississippi, 2018, Tab E). This reduction in premiums for individuals who purchase insurance through the exchange would then be spent on other goods and services, further stimulating the state economy.

Second, as noted above, there is evidence that Medicaid expansion reduces the mortality of newly eligible individuals (Miller et al., 2021). Improved general health should improve the productivity of the workforce, which should further stimulate the economy. While other studies have attempted to model this (see The Perryman Group, 2019), Hilltop believes that it is beyond the scope of our model.

Third, as noted above, it is not the case that all individuals newly eligible for Medicaid consumed no health services prior to Medicaid coverage; multiple studies show that while there is an increase in utilization, the baseline is not zero (Sommers et al., 2016; Biener et al., 2018; Miller & Wherry, 2016). With Medicaid coverage, however, newly covered individuals would be able to spend the money they formerly spent on their own health care on other goods and services, further stimulating the economy. Moreover, reductions in medical debt resulting from Medicaid expansion may also allow newly covered individuals to further stimulate the economy (Kluender et al., 2021).

Hilltop also notes that it is possible that unmodeled costs may exist. Recent research has shown that Medicaid expansion appears to lead to increased wait times at emergency departments, although the magnitude is relatively small (Allen et al., 2021). Administrative costs due to the increased enrollment may be non-trivial and, with increased enrollment, program integrity functions may need expansion (Boles et al., 2021).

Summary

Table 18 summarizes the above discussion and presents the results.

Table 18. Summary of Results of Mississippi Medicaid Expansion State Costs, 2023–2028 ($ Millions)

	2023	2024	2025	2026	2027	2028
1) New Medicaid enrollment	192,065	205,085	217,969	216,879	215,795	214,716
2) State costs before offsets	$159	$174	$190	$194	$197	$201
3) Increase in direct tax revenue	$38.3	$39.1	$40.0	$40.8	$41.6	$42.4
4) Increase in indirect tax revenue	$51.5	$53.1	$54.8	$56.0	$57.2	$58.4
5) Cost offsets: Eligibility shifts	$8.4	$7.1	$13.3	$12.4	$11.4	$10.4
6) Cost offsets: Service funding shifts	$16.2	$17.0	$17.8	$18.6	$19.5	$20.4
7) Reduction in uncompensated care for state and local hospitals	$62.0	$61.4	$60.8	$60.2	$59.6	$59.0
8) Net cost to state prior to ARP Act enhanced federal match (2 – 3 – 4 – 5 – 6 – 7)	-$17.7	-$3.8	$3.1	$5.6	$8.2	$10.7
9) ARP Act enhanced federal match	$338	$339				
10) Net cost to state including ARP Act enhanced federal match (8 – 9)	-$355	-$343	$3.1	$5.6	$8.2	$10.7

The state's direct cost of expansion, prior to any offsets, could range from $159 million to $201 million per year from 2023 to 2028. The additional tax revenue, however, will offset $90 million to $101 million of this cost, covering roughly half the state's direct costs each year. Additionally, the other cost offsets due to reductions in Medicaid spending and in state-funded services amount to an additional $24 million to $31 million annually. Government-owned hospitals will experience an estimated reduction of approximately $60 million in annual uncompensated care burden, and the estimated ARP Act enhanced FMAP funding totals $676.4 million over 2023 and 2024.

Even without accounting for the ARP Act, Medicaid expansion would more than pay for itself in 2023 and 2024 (see row 8 in Table 18, above). Accounting for the ARP Act, Medicaid expansion will lead to $355 million and $343 million in state savings in 2023 and 2024, respectively, with annual net state costs thereafter ranging from $3 million to $11 million. This adds to the growing body of evidence that finds that Medicaid expansion can occur with little or no cost to state budgets and, in fact, can result in net state *savings* (Ward 2020; Gruber & Sommers, 2020).

Table 19 presents Hilltop's economic analysis.

Table 19. Summary of Economic Impacts of Mississippi Medicaid Expansion, 2023–2028

	2023	2024	2025	2026	2027	2028
New employment	10,532	10,729	10,927	11,017	11,109	11,201
Increased Economic Activity	$814	$840	$866	$884	$902	$921
Reduction in uncompensated care (all hospitals)	$164	$169	$174	$179	$185	$191

Medicaid expansion in Mississippi would lead to an estimated 11,000 additional jobs per year due to the infusion of federal funding into the state, with roughly $800 million to $900 million added to the state's economy each year. This represents an increase of roughly 0.7% to the

state's current gross product, which—given the sluggish recent growth (ranging from -1.3% to 0.9% from 2010 to 2017)—represents a non-negligible stimulus to the state's economy (FRED Economic Data, 2021; University Research Center, 2019). Additionally, *all* acute care hospitals in the state would experience a reduction of $164 to $191 million in uncompensated care burden.

Finally, it is likely that this still overstates the costs of expansion. Several potentially significant effects of Medicaid expansion—ranging from reduction in medical debt, to lower premiums for marketplace participants, to the increased productivity of a healthier workforce—that would likely further stimulate the economy are not included in Hilltop's model.

Section 3. Impact on Hospitals

This section of the report focuses on the impact of Medicaid expansion on Mississippi hospitals. Hospitals are an important part of Mississippi's health service delivery system, and a large and growing body of research has shown that Medicaid expansion affects hospital finances. This section describes the Mississippi hospital landscape and analyzes Mississippi hospital data in order to forecast the impact of Medicaid expansion on Mississippi hospitals.

Background on Mississippi Hospitals

At the time of writing, Mississippi had 113 licensed hospitals, which comprises several different types of facilities: short-term, long-term, psychiatric, rehabilitation, and children's (Mississippi State Department of Health, 2022). As noted above, per the June 2021 CMS provider of current services file, 93 hospitals in Mississippi are either short-term hospitals or CAHs (CMS, 2021c).

Despite Mississippi's relatively small population of physicians compared to other states, this relationship is reversed for hospitals: as of 2019, Mississippi has the fourth-highest number of staffed beds per capita for community hospitals and, based on June 2021 data from CMS, the *highest* number of beds per capita of any state (Kaiser Family Foundation, n.d.b).

Mississippi's hospitals are also unique in other ways. As of June 2021, 35.4% of Mississippi's 93 hospitals were locally owned, which was the second-highest fraction in the country (behind Iowa, at 40.9%). This is a distinctive feature of Mississippi: in the median state, 4.5% of hospitals are locally owned. Moreover, Mississippi's local ownership is significantly higher than in neighboring states (Louisiana: 0%; Arkansas: 11.5%; Tennessee: 10.4%; Alabama: 3.4%).[29] Furthermore, Mississippi has a relatively high proportion of private, for-profit hospitals; 22.5% of Mississippi's 93 acute care hospitals are private, for-profit institutions, relative to 13.3% in the typical state.

Unsurprisingly, given the demographics of the state, the majority (71%) of Mississippi's hospitals are located in rural areas; this is the tenth highest in the country. Significant media attention has been given to the financial plight of rural hospitals, and Mississippi is no exception: the state has experienced several rural hospital closures since 2013 (Cecil G. Sheps Center for Health Services Research, n.d.). As of 2019, almost half of Mississippi's rural hospitals were rated as being at "high financial risk," and the median profit margin for rural hospitals in Mississippi fell from 6.73% in 2011 to *negative* 0.08% in 2017, which was the third-largest drop across all states (Navigant, 2019; Bai et al., 2020). Notably, however, Mississippi does not have a disproportionately high number of CAHs. In the typical state, 29.8% of hospitals are CAH-designated; in Mississippi, 33.3% of hospitals are CAH-designated. This is notable because CAH

[29] We define local ownership as gnrl_cntl_type_cd = "07" in the CMS Provider of Current Services File. This corresponds to ownership type "Local."

designation confers certain benefits designed to *reduce* the financial vulnerability of these hospitals and has been found to be beneficial to financial performance (Holmes et al., 2013).

According to the AHRQ (2018), Mississippi has a relatively low fraction of hospitals with system affiliation. In the typical state, 75% of hospitals are part of a hospital system; in Mississippi, however, only 57% of hospitals had a system affiliation as of 2018. Given that recent research shows that system affiliation improves the financial performance for rural hospitals, this further underscores the potential systemic vulnerability of Mississippi's hospitals (O'Hanlon et al., 2019).

While there are many measures of financial health, Hilltop assessed Mississippi's hospitals on profitability and uncompensated care burden (Kane et al., 2021). From Medicare Cost Report data in 2019, Mississippi's acute care hospitals experienced $8.2 billion in operating expenses, but only $7.9 billion in net patient revenue. Although this does not necessarily indicate unprofitability—because hospitals have other sources of revenue in addition to net patient revenue—there is evidence that Mississippi's hospitals are under financial strain. In the typical state, 71.4% of hospitals experienced positive net income in 2019; in Mississippi, only 41.3% of hospitals experienced positive net income. In 2017, 2018, and 2019, Mississippi ranked last among all states in this metric (CMS, 2019).

Part of this financial performance may be driven by uncompensated care burden. From Medicare Cost Report data in 2019, Mississippi's hospitals experienced roughly $600 million in uncompensated care, which was 7.3% of total operating expenses in that year. This percentage is fourth highest in the nation, almost double the national average of 3.8%. Additionally, we note that even though Mississippi is a non-expansion state, the state's Medicaid program accounts for a relatively large fraction of hospital net patient revenue. In the typical state, Medicaid accounted for 11.7% of net patient revenues in 2019; in Mississippi, it was 18.8% (ninth highest in the nation). Among states that have not expanded their Medicaid programs, this was the highest by a large margin; Texas—second highest—was 12.2% (CMS, 2019).[30]

Finally, the COVID-19 pandemic has been straining hospital systems around the country, and Mississippi is no exception. Media coverage has documented that Mississippi hospitals have been "pushed to [the] brink" as facilities deal with high caseloads (Stribling, 2021). Moreover, hospitals across the country have been adversely financially affected by the pandemic due to the reduction in utilization (Bai et al., 2021; KaufmanHall, 2021).

Modeling

As noted above, a substantial body of research has demonstrated the positive effect of Medicaid expansion on hospital finances. For this analysis, Hilltop used data from Medicare Cost Reports from 2012 to 2019 in conjunction with published estimates of the impact of Medicaid expansion on hospital profits in order to project hospital finances in Mississippi with—and without—Medicaid expansion. While the financial health of hospitals can be reflected in many dimensions,

[30] For this calculation, we include both Medicaid and CHIP revenue, as well as any supplemental Medicaid payments.

Hilltop focuses on two measures of profitability: operating margin and total excess margin (Kane et al., 2021). Operating margin measures hospital profitability due to activities "related to patient care" and is calculated as the difference between net patient revenue and operating costs, relative to total net patient revenue. Excess margin is "a broader profitability indicator that includes all other sources of income" and is calculated as (net patient revenue + all other income – total operating expenses), divided by the sum of net patient revenue + all other income (Blavin, 2016).

Table 20 shows the assumptions Hilltop used for calculating the impact of Medicaid expansion on hospital financing.

Table 20. Assumptions for Impact of Medicaid Expansion on Hospital Financial Performance

	Government-Owned	Private, Nonprofit	Private, For-Profit
Operating Margin	0.047	0[a]	0[a]
Excess Margin	0.023	0.016	0.032

Source: Blavin and Ramos (2021). The superscript "a" indicates that the estimate was not statistically different from zero.

These assumptions imply that, for government-owned hospitals, operating margin rises by 4.7 percentage points following Medicaid expansion, and excess margin rises by 2.3 percentage points. For both private nonprofit and for-profit hospitals, there is no statistically significant impact of Medicaid expansion on operating margin, but expansion increases excess margin by 1.6 percentage points and 3.2 percentage points for nonprofit and for-profit hospitals, respectively.

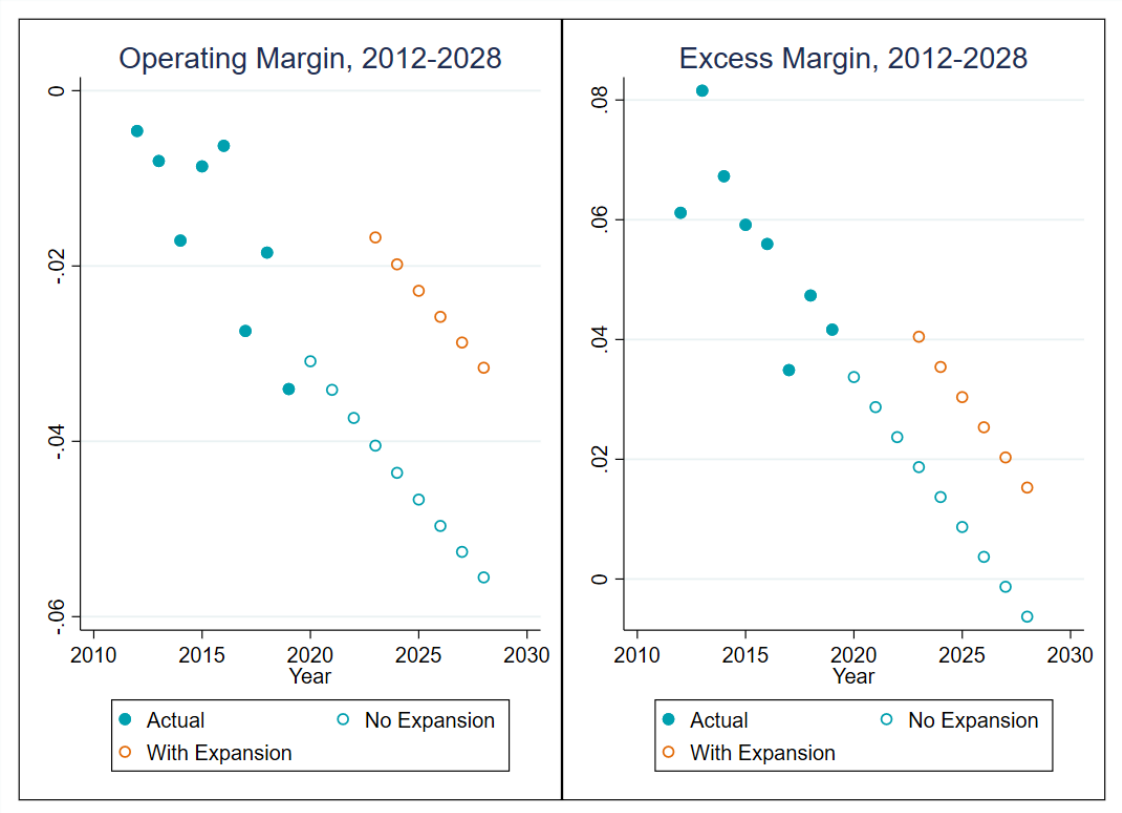
While Medicare Cost Report data are a valuable source of financial information for Medicare-certified hospitals, there are well-documented limitations to these data. The data have been shown to have missing values and erroneously reported information, and researchers employ a variety of methods for addressing these potential limitations (Blavin, 2016; Callison et al., 2021). This analysis considers hospitals that are either government-owned, private nonprofits, or private for-profits. Hilltop examined the data fields "net patient revenue," "total operating expenses," and "total other income" for outliers and excluded any hospital-years for which the value of these variables was either negative or appeared to substantially exceed the average value for the hospital from the period of 2012 to 2019.[31] Finally, we retained only those hospitals in the data for which there was a full eight years of data (that is, each year from 2012 to 2019). The final analytic sample contains 61 hospitals spanning 488 hospital-years.

Among hospitals that are either state- or locally owned, private nonprofits, or profit for-profits, Hilltop first aggregated the net patient revenue, total operating expenses, and all other income to the hospital type level by year. We then linearly forecasted these metrics within hospital type, thus allowing each different hospital type to take a different growth trajectory for each of these

[31] This restriction drops eight hospitals from the analytic sample.

variables. Then, using these trended values, we calculated the forecasted operating margin and excess margin before applying the financial improvements in Table 20, above, to simulate that operating margin and total excess margin *would* be under Medicaid expansion. We then aggregated the predicted changes to the state level (weighting by net patient revenue) in order to summarize overall hospital performance in Mississippi with—and without—Medicaid expansion. Figure 1, below, presents the results. Each data point represents one year's financial performance. Both operating margin and excess margin fell for Mississippi hospitals from 2012 to 2019, which is consistent with other research on hospital finances in Mississippi (Bai et al., 2020). Without Medicaid expansion, hospitals in this sample will, on average, be unprofitable starting in 2027. However, we find that Medicaid expansion will improve the aggregate hospital financial performance by 2.4 percentage points per year for operating margin and 2.2 percentage points per year for excess margin.

Figure 1. Predicted Hospital Financial Performance with and without Medicaid Expansion



While this simple exercise does not attempt to model how Medicaid expansion would modify the *trajectory* of hospital performance, or how Medicaid expansion would impact the likelihood of hospital closures, it does demonstrate two key results. First, along two metrics of profitability, Mississippi's hospitals declined from 2012 to 2019 and are projected to continue to decline. Second, Medicaid expansion would lead to an improvement in aggregate profitability for Mississippi hospitals, which would partially offset recent years of decline.

Given the current financial fragility of Mississippi hospitals, it is likely that Medicaid expansion would provide a much-needed infusion of revenue to this sector. While this is not a panacea for Mississippi's declining hospital profitability, it may allow hospitals to invest in capital improvements or provider retention, which in turn may alleviate concerns regarding Mississippi's provider workforce.

Section 4. Conclusion

At the time of writing, Mississippi was 1 of only 12 states to have not expanded its Medicaid program. In order to provide stakeholders in Mississippi with the latest available evidence, Hilltop conducted a study on the effects of Medicaid expansion on Mississippi's Medicaid program, state costs, health services providers, and wider state economy.

Hilltop's study indicates that Medicaid expansion in Mississippi would result in significant benefit to the state budget, hospital landscape, and wider state economy. Due to the ARP Act, Medicaid expansion would lead to $355 million and $343 million in net budgetary savings during the first two years of expansion, with relatively modest net costs to the state—ranging from $3 million to $11 million—starting in year three of expansion. Additionally, Medicaid expansion would create roughly 11,000 new jobs per year and would add roughly 0.7% to the state's economy. Finally, Medicaid expansion would result in an infusion of funding to the state's hospital system, which has been undergoing a period of financial decline.

This study focused on the relatively narrow questions of the impact of Medicaid expansion on Medicaid enrollment, costs to the state of Mississippi, economic outcomes in the state, and outcomes for hospitals. Medicaid expansion has been demonstrated to have an impact on a variety of factors relating to individuals' health and healthcare utilization, but this study does not address these issues. Additionally, there may be other economic benefits of Medicaid expansion – for example, through reduction in medical debt for new participants, or through the reduction in ACA exchange premiums – that were beyond the scope of this study.

Despite this, we believe that the available evidence suggests that Medicaid expansion in Mississippi would result in substantial state budgetary savings in 2023 and 2024, with significant additional benefit to the state's hospitals and economy. Moreover, given the relatively low annual net cost of expansion thereafter, Mississippi could potentially use its ARP Act enhanced FMAP to fully offset its net costs of expansion for the foreseeable future.

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