

October 2006

MEDICAID

Strategies to Help States Address Increased Expenditures during Economic Downturns





Highlights of [GAO-07-97](#), a report to congressional requesters

Why GAO Did This Study

During economic downturns, states may struggle to finance Medicaid, a federal-state health financing program for certain low-income individuals. States receive federal matching funds for their Medicaid programs according to a statutory formula based on each state's per capita income (PCI) in relation to national PCI. The number of individuals eligible for Medicaid can increase during downturns as a result of rising unemployment. GAO previously reported that any federal assistance to respond to downturns should be well-timed and account for each state's fiscal circumstances. GAO was asked to consider strategies to help states offset increased Medicaid expenditures in the event of future economic downturns.

GAO analyzed policy proposals and federal and state strategies to cope with downturns to identify and develop three potential strategies. GAO explored (1) targeting assistance to states most affected by a downturn, (2) using 2 instead of 3 years of PCI data to compute federal matching rates to more accurately reflect states' economic circumstances, and (3) giving states the option to obtain assistance based on their own determination of need. GAO discussed the strategies with experts, identified design considerations, and analyzed each strategy's potential effects.

The Department of Health and Human Services received a draft of this report and did not comment.

www.gao.gov/cgi-bin/getrpt?GAO-07-97.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Kathryn G. Allen at (202) 512-7118 or Stanley J. Czerwinski at (202) 512-6806.

MEDICAID

Strategies to Help States Address Increased Expenditures during Economic Downturns

What GAO Found

No single strategy or combination of strategies can meet the varied economic needs of all states at all times, but one or more of the following strategies GAO analyzed may be useful for Congress as it deliberates how to help states cope with Medicaid expenditure increases during economic downturns. Any potential strategy would need to be considered within the context of broader health care and fiscal challenges, including continually rising health care costs, a growing elderly population, and Medicaid's increasing share of the federal budget.

Supplemental federal assistance provided to states based on changes in states' unemployment rates would target funds to states most affected by downturns. GAO used unemployment as the key variable because it reflects the potential for increases in Medicaid enrollment resulting from an economic downturn. GAO created a simulation model to illustrate this strategy, which also adjusts the amount of funding relative to each state's per person spending on Medicaid services. The model captured about 90 percent of states' increases in unemployment during 2001, and all states would have received some federal assistance. A few states with relatively earlier or later increases in unemployment would not have received a commensurate amount of funding because a portion of their downturns was outside the period of the simulation.

Using 2 years of PCI data to compute federal matching rates instead of the 3 years required under current law did not result in matching rates that consistently reflected current economic circumstances, as measured by PCI or changes in states' unemployment. Under certain conditions, reducing the number of years of data also skewed rates farther from current economic conditions. This strategy would also result in greater annual fluctuations in matching rates for most states. For these reasons, eliminating 1 year of PCI data is not a feasible alternative to help states address increased Medicaid expenditures.

States could be given the option to decide whether and to what extent they need federal assistance, through a loan, either from the federal government or from the private capital market (subsidized and possibly guaranteed by the federal government), or a Medicaid-specific national "rainy day" fund. This strategy's viability would depend on states' willingness to pay into a national fund or assume additional Medicaid-specific debt and on states' accepting the terms of the loan or rainy day fund. Federal funding required for this strategy would vary depending on design factors such as whether federal loan subsidies or Medicaid rainy day matching funds are included.

Contents

Letter		1
	Results in Brief	5
	Background	7
	Targeting Supplemental Federal Assistance to States Requires Careful Consideration to Address Differences in States' Downturns	13
	Using Fewer Years of Data to Compute Matching Rates Would Not Consistently Result in Assistance that Better Reflects States' Current Economic Conditions	20
	States Could Determine Their Own Needs for Assistance with Medicaid-Specific Loans or a National Rainy Day Fund	23
	Concluding Observations	26
	Agency Comments	27
Appendix I	Objectives, Scope, and Methodology	29
Appendix II	Designing a Strategy of Targeted Supplemental Medicaid Assistance	32
Appendix III	Designing a Strategy to Better Reflect States' Current Economic Conditions	55
Appendix IV	Information on Selected Intergovernmental Loan Programs and State Rainy Day Funds	65
Appendix V	GAO Contacts and Staff Acknowledgments	69
Tables		
	Table 1: Average Annual State Medicaid Expenditures per Beneficiary, by Population Group, 2003	11

Table 2: Key Design Decisions, Parameters of GAO’s Model, and Alternative Parameters that Could Be Applied for Targeting Supplemental Medicaid Assistance to States	15
Table 3: Characteristics of Economic Downturns and Their Effect on States’ Receipt of Supplemental Assistance	19
Table 4: Analysis of Three Strategies to Help States Respond to Increased Medicaid Costs during Economic Downturns	30
Table 5: Simulated Supplemental Assistance for Economic Conditions of the 2001 Downturn	49
Table 6: Matching Rates Used to Analyze Strategy	56
Table 7: Comparison of States’ Year-to-Year Differences in 2-Year and 3-Year Matching Rates, 1990-2004	64

Figures

Figure 1: Medicaid Beneficiaries and Expenditures by Population Group, Fiscal Year 2003	8
Figure 2: States’ Percentage Point Change in Unemployment, March 2001 to March 2002	10
Figure 3: Number of States Experiencing a 10 Percent or More Increase in Their Unemployment Rate, 2000 to 2004	17
Figure 4: Timing of Data Used to Calculate States’ Federal Matching Rates for Fiscal Year 2006	21
Figure 5: Number of States with a 10 Percent or More Increase in Their Unemployment Rate Compared to the Same Quarter 1 Year Earlier, 1979-2004	38
Figure 6: Total of States’ Quarterly Increase in Unemployment Covered by Simulation Model’s Supplemental Assistance	40
Figure 7: Effects of Alternative Threshold Parameters on the Start and Number of Quarters of Supplemental Assistance, 2000 through 2005	42
Figure 8: Simulated Supplemental Assistance for a State with an Early, Long, and Deep Economic Downturn	51
Figure 9: Simulated Supplemental Assistance for a State with a Relatively Early, Long-Lasting, and Shallow Downturn	52
Figure 10: Simulated Supplemental Assistance for a State with a Late, Short, and Shallow Downturn	53
Figure 11: Simulated Supplemental Assistance for a State with a Short, Deep Downturn	54
Figure 12: Correlations of the Changes in the 3-Year and 2-Year Matching Rates with Changes in PCI	58

Figure 13: Correlations of the Changes in the 3-Year and 2-Year Matching Rates with Changes in the Unemployment Rates	59
Figure 14: Correlations of the Changes in the Simulated Matching Rate with the Changes in PCI, 1990 to 2004	60
Figure 15: Correlations of the Changes in 3-Year and 2-Year Matching Rates with the Changes in the Simulated Matching Rate	62

Abbreviations

BCCA	Breast and Cervical Cancer Act
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
CMS	Centers for Medicare & Medicaid Services
CWSRF	Clean Water State Revolving Fund
CDL	Community Disaster Loan
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FMAP	Federal Medical Assistance Percentage
FUA	Federal Unemployment Account
GDP	gross domestic product
JGTRRA	Jobs and Growth Tax Relief Reconciliation Act of 2003
NASBO	National Association of State Budget Officers
NBER	National Bureau of Economic Research
NCSL	National Conference of State Legislatures
PCI	per capita income
TANF	Temporary Assistance for Needy Families
UI	Unemployment Insurance

This is a work of the U.S. government and is not subject to copyright protection in the United States. It may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



United States Government Accountability Office
Washington, DC 20548

October 18, 2006

The Honorable Susan M. Collins
Chairman, Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Gordon H. Smith
Chairman, Special Committee on Aging
United States Senate

The Honorable Jeff Bingaman
The Honorable Ben Nelson
The Honorable John D. Rockefeller, IV
United States Senate

During economic downturns, states can experience difficulties financing programs such as Medicaid, a joint federal-state health financing program that covers medical costs for certain categories of low-income individuals. Economic downturns result in rising unemployment, which can lead to increases in the number of individuals who are eligible for Medicaid coverage, and in declining tax revenues, which can lead to less available revenue with which to fund coverage of additional enrollees. For example, during a period of economic downturn, Medicaid enrollment rose 8.6 percent between 2001 and 2002, which was largely attributed to states' increases in unemployment. During this same time period, state tax revenues fell 7.5 percent. Further complicating the challenge of responding to increased Medicaid expenditures during economic downturns is the fact that Medicaid funding consumed a growing share of state general fund or operating budgets, increasing from 15 percent in 1994 to 18 percent in 2004.¹

Both the federal government and the states have responded to the demands of Medicaid expenditure increases related to economic downturns. Following the 2001 recession, Congress passed the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA), which provided \$10 billion in fiscal relief through a temporary increase in federal Medicaid funding for all states, as well as \$10 billion in general assistance divided

¹In fiscal year 2004, total expenditures for the Medicaid program (federal and state) were about \$298 billion.

among the states to be used for essential government services.² States have responded to downturns in various ways, such as by using cost-cutting program modifications; budget stabilization, or “rainy day,” funds; and borrowing.

Problems that states face in financing Medicaid cost increases during an economic downturn can be exacerbated because, by design, the formula used to calculate the amount of federal assistance that states receive for Medicaid includes data that are as much as 5 years old. The federal government matches state Medicaid spending according to this formula, which is based on each state’s per capita income (PCI) in relation to national PCI. The amount of federal assistance states receive for Medicaid is determined by a statutory formula known as the Federal Medical Assistance Percentage (FMAP), or federal matching rate. The statute specifies that matching rates be calculated 1 year before the fiscal year in which they are effective, using a 3-year average of the most recently available PCI data reported by the Department of Commerce. For example, fiscal year 2007 matching rates were calculated at the beginning of fiscal year 2006 using a 3-year average of PCI for 2002 through 2004.³ Consequently, federal matching rates reflect economic conditions that existed several years earlier.

Recognizing the complex combination of factors affecting states during economic downturns—increased unemployment, declining state revenues, and increased downturn-related Medicaid costs—policymakers and others have considered the possibility of establishing a legislative response that would help states better cope with Medicaid cost increases. Any potential legislative response would need to be considered within the context of broader health care and fiscal challenges—including continually rising health care costs, a growing elderly population, and Medicare and Medicaid’s increasing share of the federal budget. Absent fundamental Medicaid reform, legislative actions and proposals have generally focused

²The \$10 billion temporary increase in federal Medicaid funding made available through JGTRRA provided supplemental Medicaid funding to states for the last two calendar quarters (April through September) of fiscal year 2003 and the first three calendar quarters (October through June) of fiscal year 2004.

³The federal matching rate is intended to adjust for differences in state fiscal capacity and reduce program benefit disparities across states by providing more federal funds to states with weaker tax bases. For fiscal year 2006, federal matching rates ranged from 50 to 76 percent of state Medicaid expenditures.

on targeting assistance to states, improving the timing of the assistance provided, or helping states build financial reserves for Medicaid.⁴

In 2004, we reported on the assistance provided by the federal government to the states through JGTRRA, noting that federal assistance is most effective when it takes into account each state's fiscal circumstances as well as when and how severely states are affected by an economic downturn.⁵ On the basis of these findings, you asked us to consider strategies to help states address the increased costs of Medicaid in any future economic downturn. An underlying assumption was that, in the event of any future nationwide economic downturn, Congress would act to appropriate additional funds, as it did following the 2001 recession. Your interest was in exploring strategies whereby any additional funds could be accurately timed and targeted to respond to a downturn but could also be established in advance so that Congress would not have to wait to act until a nationwide economic downturn is clearly identified. Accordingly, we reviewed prior GAO reports, policy proposals, and federal and state strategies to cope with downturns to identify and develop three potential strategies. In this report, we explore the design considerations and possible effects of three potential strategies aimed at helping states with their share of Medicaid expenditures during an economic downturn by (1) targeting supplemental funds to specific states on the basis of the relative depth and duration of their economic downturns (as measured by changes in their unemployment rates) as well as the extent to which their Medicaid costs are likely to increase during a downturn, (2) using 2 instead of 3 years of PCI data to compute federal matching rates in an attempt to better reflect states' current economic conditions, and (3) providing states with options for obtaining assistance through a Medicaid-specific rainy day fund or loan based on their own determination of need.

To do our work, we analyzed research, including prior GAO reports that examined the effects of economic downturns on Medicaid enrollment and expenditures, the responsiveness of federal matching rates to economic

⁴See GAO, *Federal Assistance: Temporary State Fiscal Relief*, [GAO-04-736R](#) (Washington, D.C.: May 7, 2004); GAO, *Medicaid Formula: Differences in Funding Ability among States Often Are Widened*, [GAO-03-620](#) (Washington, D.C.: July 10, 2003); Miller and Schneider, *The Medicaid Matching Formula: Policy Considerations and Options for Modification*, #2004-09, AARP Public Policy Institute (Washington, D.C.: September 2004); and GAO, *Medicaid: Restructuring Approaches Leave Many Questions*, [GAO/HEHS-95-103](#) (Washington, D.C.: Apr. 4, 1995).

⁵[GAO-04-736R](#).

cycles, and policy proposals to help states respond to increased program costs during downturns. We discussed the three potential strategies with technical experts and representatives of key research groups and state associations to gain insights on the extent to which strategies could help states cope with the Medicaid-related fiscal consequences of economic downturns. These discussions provided an opportunity to evaluate our selection of strategies and discuss their potential effects. Our analysis of the strategies differed depending on the strategy. For the first strategy, we identified factors to consider in developing the targeting strategy and devised a model to illustrate the extent to which different methods of targeting supplemental federal funds would help states with their Medicaid programs during economic downturns.⁶ The assumptions built into our model were based on our analysis of data indicators from the past three recessions.⁷ We chose unemployment as the key variable because it reflects the potential for increases in Medicaid enrollments as a result of an economic downturn. For the second strategy, which focused on using 2 years of PCI data—instead of the 3 years currently required by statute—to compute federal matching rates in an attempt to better reflect states’ economic conditions, we analyzed how closely the federal matching rates approximated states’ economic conditions and constructed statistical simulations to compare the federal assistance states would receive under the strategy with the assistance they would receive under current policy.⁸ To determine the potential of each of the first two strategies to help states address increased Medicaid spending, we simulated how the implementation of the strategy could differ depending on the timing, depth, and duration of a state’s economic downturn. For the third strategy, which focused on providing states with options for obtaining assistance through a Medicaid-specific national rainy day fund or loan, we identified key factors that could be considered, such as the structure and use of existing intergovernmental loan programs and state rainy day funds. We determined that the unemployment, PCI, and Medicaid expenditure data used in this report are sufficiently reliable for describing the three strategies and illustrating their potential effects. (Appendixes I through IV

⁶Throughout this report, the term state refers to the 50 states and the District of Columbia.

⁷We analyzed the past three recessions—1981 through 1983, 1991 through 1992, and 2001—to understand differences in the timing, depth, and duration of different economic downturns. However, similar economic patterns may not repeat themselves in future economic downturns.

⁸Where we conducted simulations for the first and second strategies, we asked experts in Medicaid financing issues to provide suggestions regarding their construction.

provide additional detail about our methodology for assessing the three strategies.) We did our work from April 2005 through September 2006 in accordance with generally accepted government auditing standards.

Results in Brief

No single strategy or combination of strategies can meet the varied economic needs of all states at all times. However, the following strategies may be useful starting points for Congress as it deliberates how to help states cope with increased Medicaid expenditures during any future economic downturn. Having an automatic mechanism in place could provide a targeted and predictable response. The three strategies we explored are

- target supplemental Medicaid assistance to states most affected by a downturn,
- use 2 years of PCI data to compute federal matching rates in an effort to better reflect states' current economic circumstances, and
- give states the option to obtain assistance through a Medicaid-specific national rainy day fund or loan.

First, a strategy that provides supplemental assistance to states based on changes in their unemployment rates would target funds to states most affected by a downturn, but the design of such a strategy would need to address the different characteristics of states' downturns. To illustrate this strategy, we constructed a simulation model that adjusts the amount of funding a state would receive on the basis of each state's percentage increases in unemployment and per person spending on Medicaid services. Our simulation model captured about 90 percent of states' increases in unemployment during the most recent (2001) recession. While all states received some amount of assistance under the model, states that experienced the largest percentage increases in unemployment within the same period in which the national downturn occurred received the largest proportion of supplemental assistance. A smaller number of states received less assistance than others in our simulation model because their increased unemployment occurred either earlier or later than the national downturn. Adjustments to the strategy design, such as extending the period of assistance, could be applied to ensure that states with earlier or later increases in unemployment also receive a commensurate amount of funding, but such adjustments would add to the overall cost of the strategy. Targeted supplemental federal assistance to states most affected by a downturn could assist states relative to the depth and duration of a

downturn as well as increased Medicaid expenditures while also reflecting congressional policy choices.

Second, using 2 years of PCI data to compute federal matching rates instead of the 3 years required under current law did not result in matching rates that consistently reflected states' recent economic circumstances as measured by PCI or changes in states' unemployment. To illustrate this strategy, we analyzed matching rates that varied in the number of years of data used and compared them with changes in PCI and unemployment data. Our analysis of this strategy, however, did not result in federal matching rates that consistently increased during economic downturns. In some cases, reducing the number of years of data also skewed rates farther away from current economic conditions. In addition, this strategy would result in larger year-to-year changes in matching rates for most states compared to the fluctuations experienced under current law. For these reasons, eliminating a year of data from the current matching formula does not present a feasible alternative to help states address increased Medicaid expenditures during economic downturns.

Third, giving states the opportunity to decide whether and to what extent they need federal assistance could take the form of a loan, either from the federal government or from the private capital market (subsidized and possibly guaranteed by the federal government), or a Medicaid-specific national rainy day fund. A federal Medicaid loan or rainy day fund could give states greater autonomy in determining their need for assistance, but utilization of either approach would depend on states' own economic and political constraints as well as the program's design. For example, limitations on the use of a loan may exist because of a state's statutory or constitutional debt restrictions as well as federal restrictions on the obligation of federal funds. While a national rainy day fund could allow states to pool their risk and thereby spend less than they would if they chose to establish individual Medicaid rainy day funds at the state level, representatives of some public policy and research organizations we contacted believed that some states might be reluctant to contribute to a national fund that other states or the federal government could draw from. Federal funding required for this strategy would vary depending on design factors such as the inclusion of federal subsidies or matching funds. A loan or national rainy day fund strategy could help address states' Medicaid funding challenges during downturns, but the feasibility and utility of this strategy would depend on the design of the loan or fund, among other possible constraints.

Background

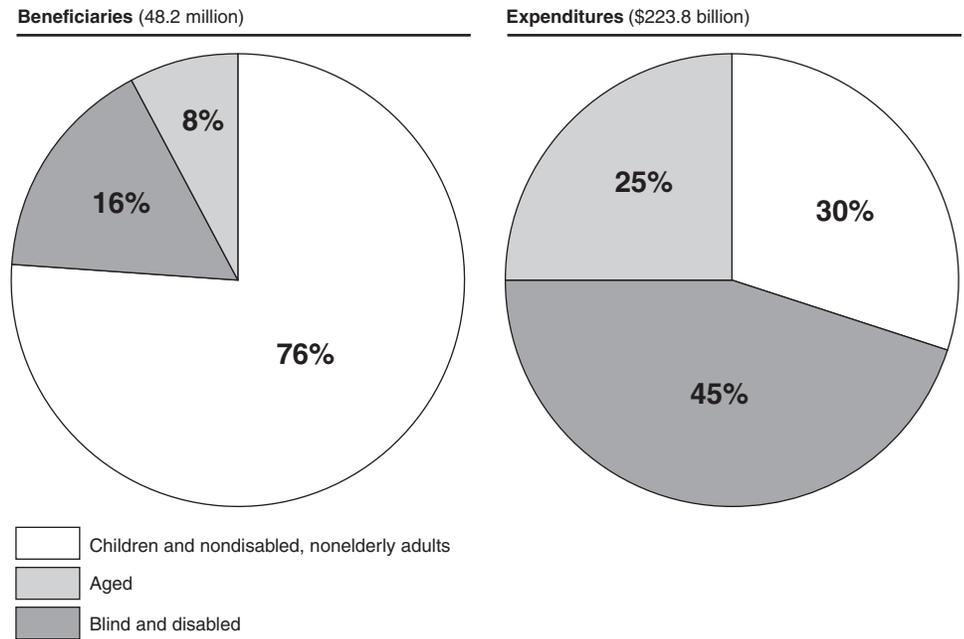
Economic downturns are characterized by reductions in output and income as well as increased unemployment—and an accompanying increase in Medicaid enrollment. Generally, as unemployment rises, the number of households with incomes low enough to qualify for Medicaid coverage also rises. Across the four broad populations eligible for Medicaid—children; nondisabled, nonelderly adults; the elderly; and individuals with disabilities—increases in eligibility for Medicaid during an economic downturn are most concentrated among children and nondisabled, nonelderly adults. One analysis of the relationship between unemployment and Medicaid enrollment found that a 1 percentage point increase in the unemployment rate would result in a nationwide increase in Medicaid enrollment of more than 857,000 individuals—about 470,000 children and 387,000 nondisabled, nonelderly adults.⁹ While these two populations make up the largest share of Medicaid beneficiaries, they represent a small share of total Medicaid expenditures (see fig. 1).¹⁰ Nondisabled, nonelderly adults and children make up 76 percent of beneficiaries but account for just 30 percent of expenditures.¹¹

⁹Stan Dorn, Barbara Markham Smith, and Bowen Garrett, *Medicaid Responsiveness, Health Coverage, and Economic Resilience: A Preliminary Analysis*, Prepared for the Health Policy Institute of the Joint Center for Political and Economic Studies (Washington, D.C.: Joint Center for Political and Economic Studies, Sept. 27, 2005).

¹⁰In contrast, 70 percent of Medicaid spending goes to elderly individuals and individuals with disabilities, who are least affected by economic downturns, as reported by Dorn et al.

¹¹In some cases, expenditures could not be attributed to specific beneficiary populations and thus were excluded from these calculations.

Figure 1: Medicaid Beneficiaries and Expenditures by Population Group, Fiscal Year 2003



Source: GAO analysis of CMS data.

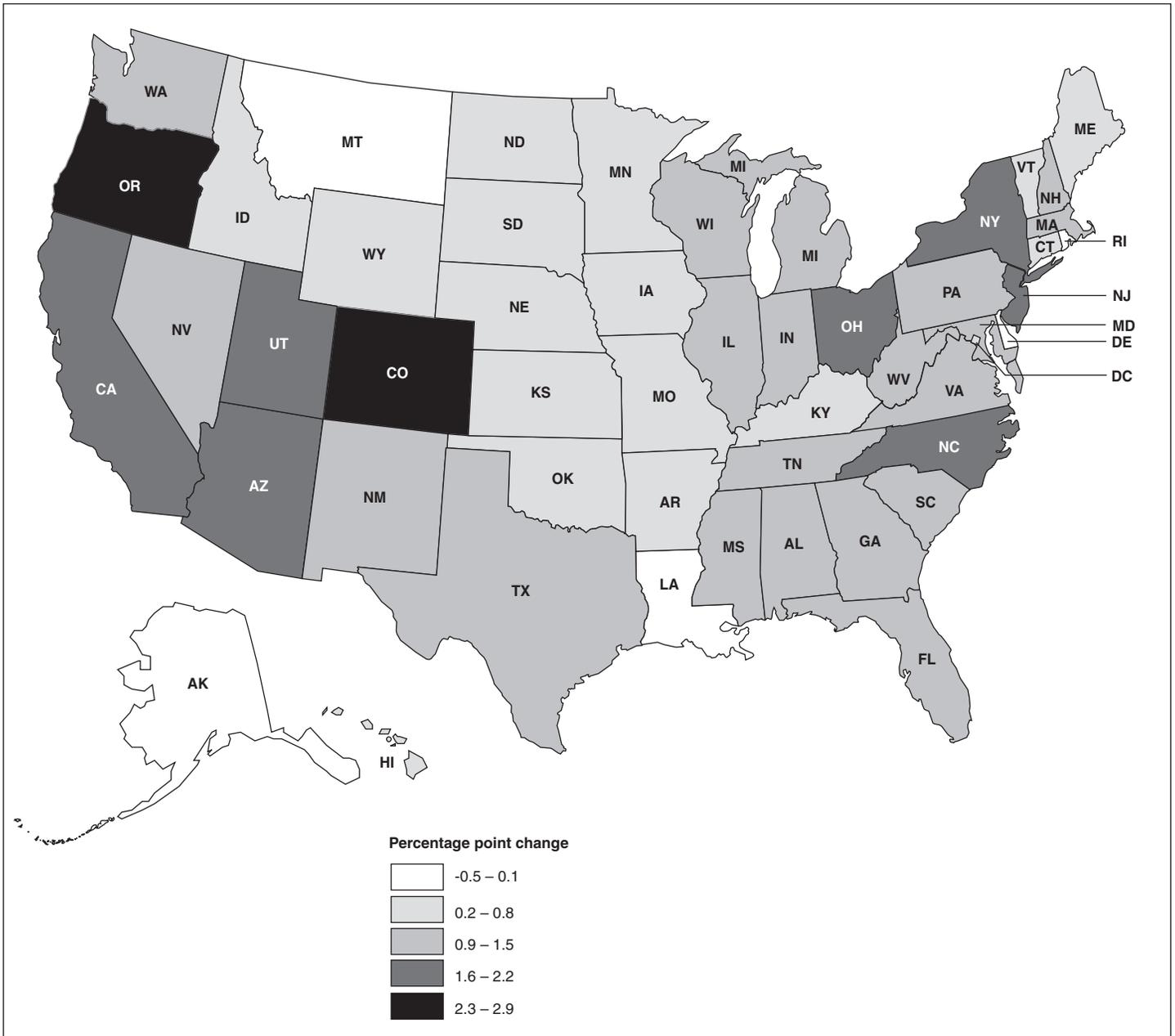
Note: Percentages are based on Centers for Medicare & Medicaid Services (CMS) beneficiary and expenditure data for fiscal year 2003, the most recent year for which data are available by type of beneficiary. Total fiscal year 2003 expenditures for Medicaid were \$276 billion. Expenditures in figure 1 do not include administrative expenses, disproportionate share hospital payments, and other expenses that could not be attributed to specific beneficiary populations. Beneficiaries do not include women covered under the Breast and Cervical Cancer Act (BCCA) or individuals whose eligibility status is unknown.

Additionally, increases in Medicaid enrollment and expenditures that occur during nationwide downturns are not distributed evenly among states because of differences in states' economic conditions, Medicaid program design, and health care costs. Among states, downturns vary widely in their onset, depth, and duration. For example, in March 2001, the United States entered a recession, as indicated by a significant decline in overall business activity, including an increase in unemployment, over

several months.¹² During the next year, the national unemployment rate increased by 1.4 percentage points, from 4.3 percent to 5.7 percent. During this same period, the unemployment rate increased by more than 2 percentage points in some states but actually decreased in others (see fig. 2).

¹²The National Bureau of Economic Research (NBER) identifies recessions on the basis of several indicators, including employment, sales in the manufacturing and trade sectors, and industrial production. A recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real gross domestic product (GDP), real income, employment, industrial production, and wholesale-retail sales. A recession begins just after the economy reaches a peak of activity and ends as the economy reaches its trough. Not all economic downturns are recessions. Economic downturns would include—but not be limited to—recessions identified by NBER.

Figure 2: States' Percentage Point Change in Unemployment, March 2001 to March 2002



Source: GAO.

Note: Percentage point unemployment changes from GAO, *Health Insurance: States' Protections and Programs Benefit Some Unemployed Individuals*, [GAO-03-191](#) (Washington, D.C.: Oct. 25, 2002).

The Medicaid enrollment and expenditure increases associated with a given increase in unemployment also vary across states because of differences in the scope of states' coverage for groups most affected by the downturn. For example, in 2003, average annual state expenditures for children and nondisabled, nonelderly adults ranged from \$1,258 per beneficiary to \$4,377, with a national average of \$1,823. Table 1 shows the range in states' Medicaid expenditures per beneficiary by population group in 2003.

Table 1: Average Annual State Medicaid Expenditures per Beneficiary, by Population Group, 2003

State Medicaid expenditures	Children and nondisabled, nonelderly adults	Elderly	Blind/disabled
Average	\$1,823	\$14,540	\$14,079
Minimum	1,258	6,781	6,792
Maximum	4,377	26,384	25,553

Source: GAO analysis of CMS data.

Note: Data represent annual state expenditures per beneficiary.

The federal matching formula for Medicaid adjusts for differences in state fiscal capacity and reduces program benefit disparities across states by providing more federal funds to states with weaker tax bases.¹³ The statutory matching formula calculates the federal matching rate for each state on the basis of its PCI in relation to national PCI as follows.

$$\text{Federal matching rate} = 1.00 - 0.45 * [(\text{State PCI}) / (\text{U.S. PCI})]^2$$

Relative PCI is included as a representation of states' funding ability, as a combination of states' resources and people in poverty. Squaring PCI has the effect of making PCI appear in the formula twice, to reflect both states' resources and people in poverty. The formula uses a 3-year average of PCI, the effect of which is to smooth out fluctuations in state PCI so that it reflects longer-term trends rather than short-term fluctuations of the business cycle. This smoothing effect helps minimize year-to-year changes

¹³By statute, the federal share of Medicaid spending ranges from 50 to 83 percent. The 50 percent minimum federal share ("50 percent floor") reflects a federal commitment to fund at least half the cost of each state's Medicaid program. For 2006, 12 states received federal matching rates of 50 percent.

in federal matching funds, which could be disruptive to states' budget planning.

The use of PCI as a measure of states' funding ability, however, is problematic. Our prior work concluded that PCI is not a comprehensive indicator of states' total available resources and thus does not accurately represent states' funding ability. PCI also does not account for the size and cost of serving states' poverty populations, which vary considerably; for example, two states with low PCIs may have very different proportions of elderly persons potentially eligible for Medicaid and thus very different amounts of Medicaid spending. Moreover, concerns have been raised regarding the age of the data used to calculate the matching rate. In particular, the use of a 3-year PCI average to compute matching rates, combined with a 1-year lag between computation and implementation, means that the rates reflect economic conditions that existed several years earlier.¹⁴

To cope with the difficulties of financing Medicaid and other programs during an economic downturn, states have, among other actions, borrowed from intergovernmental loan programs and drawn down state budget stabilization funds, which are also referred to as rainy day funds. Intergovernmental loan programs can generally be categorized as direct loans or loan guarantees. Both require federal involvement and can include a federal subsidy, but loan guarantees are administered by nonfederal lending institutions. Federal credit programs can vary in their design and purpose. While federal guidelines offer broad standards and principles for administering credit programs, specific loan terms are set in statute or by administering agencies based on the program's policy goals.¹⁵ According to the National Association of State Budget Officers (NASBO), budget stabilization funds exist in almost all states and allow states to set aside surplus revenue during periods of economic growth for use during downturns. States have different legislative requirements regarding the amount of funds that can be accumulated, the process for releasing funds, and the purposes for which funds can be used.

¹⁴See [GAO-03-620](#).

¹⁵OMB Circular A-129 outlines guidelines on federal government loans.

Targeting Supplemental Federal Assistance to States Requires Careful Consideration to Address Differences in States' Downturns

Providing supplemental federal assistance to states that is based on changes in their unemployment rates would target additional Medicaid funds to states most affected by a downturn, but the design of such a strategy would need to address the different characteristics of states' downturns. A strategy to target funds to states based on the duration and depth of states' downturns assumes that, if authorized by Congress, supplemental assistance could begin when predetermined thresholds are reached. This approach is in contrast with the 2003 fiscal relief package, JGTRRA, which provided assistance to states after the recession had ended. This supplemental assistance strategy would leave the existing Medicaid formula unchanged and add a new, separate assistance formula that would operate only during times of economic downturn and use variables and a distribution mechanism that differ from those used for calculating matching rates. We identified key design considerations for a strategy that would target funds based on states' downturns and devised a model to illustrate the extent to which it could help target supplemental federal Medicaid funds to states experiencing economic downturns of different depths and durations. The design we simulated in our model would deliver the most assistance to the group of states that experience increases in unemployment within the same relative period of time. However, a smaller number of states with relatively earlier or later increases in unemployment would receive less assistance. Further adjustments to the strategy design, such as methods to extend the period of assistance, could be applied to ensure that states with earlier or later increases in unemployment would receive more quarters of supplemental assistance payments. Such extensions, however, would add to the overall cost of the strategy.

Design Considerations

Development of a strategy to target funds based on differences in states' economic downturns involves three key considerations: (1) deciding the starting and ending points of assistance, (2) determining the amount of additional federal Medicaid assistance that will be available, and (3) determining how this additional assistance will be distributed to the states. Using data from the past three recessions, we developed a model to simulate targeted supplemental assistance to states experiencing increased unemployment. The model focused on mechanisms to distribute supplemental federal funds depending on the extent of a state's downturn and its relative Medicaid expenditures.

To determine the amount of federal assistance that would be provided based on this strategy, our model incorporated a retrospective assessment, which would involve assessing the increase in each state's unemployment

rate for a particular quarter compared to the same quarter of the previous year. The economic trigger for this strategy would be when 23 or more states had increased unemployment of 10 percent or more compared to the unemployment rate that existed for the same quarter 1 year earlier (such as from 5 percent to 5.5 percent unemployment). This is an increase of 10 percent compared to the unemployment rate of the same quarter in the previous year and not a 10 percentage point change in unemployment rates (such as from 5 percent unemployment to 15 percent). We chose these two threshold values—23 or more states and increased unemployment of 10 percent or more—to work in tandem to ensure that the national economy had entered a downturn and that the majority of states were not yet in recovery from the downturn.¹⁶ Table 2 summarizes the key design decisions, our model’s parameters, and some alternative parameters. (See app. II for additional discussion of the key design decisions incorporated into the GAO model.)

¹⁶We chose both numbers based on a review of states’ unemployment rates over the past three recessions and determined that these levels would have provided considerable certainty that the economic slowdown was nationwide.

Table 2: Key Design Decisions, Parameters of GAO’s Model, and Alternative Parameters that Could Be Applied for Targeting Supplemental Medicaid Assistance to States

Key design decision	Parameters of GAO model ^a	Alternative parameters ^b
Establish starting and ending point	<p>Starting point</p> <ul style="list-style-type: none"> The starting point would be when 23 or more states show a quarterly state unemployment rate increase of 10 percent or more (the retrospective assessment).^c Once started, any state with any increase in unemployment would be eligible to receive assistance. <p>Ending point</p> <ul style="list-style-type: none"> The ending point would be when fewer than 23 states had quarterly unemployment increases of 10 percent or more. The number of quarters that assistance continued would depend on the severity and duration of the economic downturn. 	<p>Starting point</p> <ul style="list-style-type: none"> Varying numbers of states and percentage changes in unemployment could be applied. Indicators other than unemployment—or indicators used in conjunction with unemployment—could be used to start the program. Congressional action could be required to start the program (rather than establishing an automatic trigger based on threshold values). <p>Ending point</p> <ul style="list-style-type: none"> Varying numbers of states, percentage changes in unemployment, and quarters of assistance could be applied. Other indicators could be used to end the program. Congressional action could be required to end the program (rather than establishing an automatic stopping point based on threshold values).
Determine amount of federal assistance to be available	<ul style="list-style-type: none"> The amount of federal assistance would be determined on the basis of the relationship between changes in unemployment and increases in Medicaid expenditures. Based on the depth of the 2001 recession, the amount of federal assistance would have been \$4.2 billion. 	<ul style="list-style-type: none"> The amount of federal assistance could be set by Congress based on factors other than changes in unemployment and increases in Medicaid expenditures.
Determine distribution of assistance	<ul style="list-style-type: none"> Funds would be distributed quarterly through a targeted supplement to states’ federal matching rates. Distribution amount varies based on a state’s change in unemployment and its average cost of providing services to children and nondisabled, nonelderly adults. 	<ul style="list-style-type: none"> Model could allow for a lump-sum grant distributed on some schedule other than quarterly payments tied to states’ federal matching rates. Retroactive rebate payments could be provided to the states based on their actual increased expenditures. Assistance could be determined based on an alternative threshold (other than a 10 percent or more increase in unemployment).

Source: GAO.

^aOur model assumed that once enacted, the targeted assistance would operate without the need for congressional action to initiate assistance during an economic downturn.

^bMost alternative parameters were not simulated in our model. Appendix II provides additional details on alternative parameters that could be used.

⁶The retrospective assessment is based on a quarterly moving average of seasonally adjusted unemployment data for the 12 most recent months. The GAO model included these parameters based on quantitative analysis of prior recessions combined with subjective judgment. We chose these threshold values based on evidence which indicated that 23 states experiencing a 10 percent or more increase in unemployment provided considerable certainty that an economic slowdown had extended nationwide and that at least 23 states had not yet entered a recovery. These parameters could be adjusted up or down to tighten or loosen the threshold for providing supplemental assistance. The use of unemployment as an indicator also reflects research establishing a connection between increased unemployment and Medicaid enrollment.

To determine the amount of supplemental federal assistance needed to help states address increased Medicaid expenditures during a downturn, we relied on research that estimated a relationship between changes in unemployment and changes in Medicaid spending while holding constant other factors that influence Medicaid spending.¹⁷ Using data from the 2001 and the 1991-1992 recessions and this research, our model assumes federal assistance of approximately \$4.2 billion, which would be less than 1 percent of Medicaid spending for a 2-year period.¹⁸ Depending on the fund distribution method, budgeting sufficient amounts for the supplemental federal funding would require estimating the potential economic effects of a downturn because forecasting states' unemployment increases is difficult. If the targeting strategy was designed to function as an open-ended grant that provides states with an incremental increase to their matching rates, then states' expenditures would be matched as the downturn-induced growth of enrollments increased their Medicaid spending. However, if the program was designed to provide a lump-sum amount of assistance or to function as a closed-ended assistance program, then setting a funding level would be necessary.

Within the key parameters that frame this strategy are many variations in design that could be considered to achieve different policy goals. For example, if it was deemed important to provide states with a longer period of assistance, the retrospective assessment of the increase in the unemployment rate could be extended in order to help states with longer-lasting or late downturns. Additional criteria could be established to accomplish other policy objectives, such as controlling federal spending by limiting the number of quarters of payments or stopping payments after predetermined spending caps are reached.

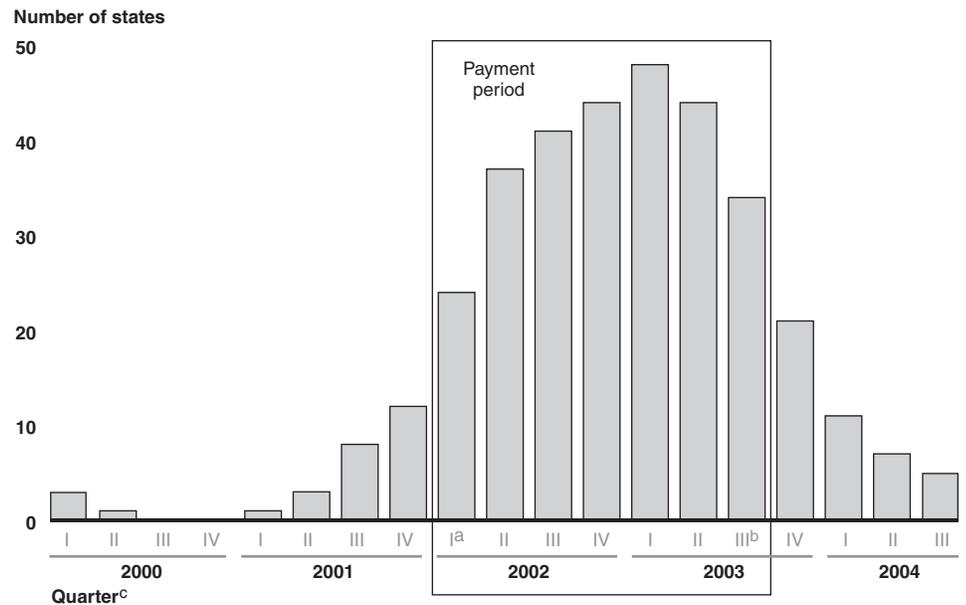
¹⁷See Dorn et al. (Sept. 27, 2005).

¹⁸For our model, we used Dorn et al.'s estimates to derive an average increase in Medicaid expenditures per additional unemployed person of \$300, which could be adjusted over time by inflation and changes in demographics of the Medicaid population. See Dorn et al. (Sept. 27, 2005).

Effects

Our simulation model showed that a retrospective assessment resulting in a 10 percent or more increase in unemployment in 23 or more states would trigger supplemental assistance for 7 quarters, the period beginning with the first quarter of 2002 and continuing through the third quarter of 2003.¹⁹ Overall, about 90 percent of state increases in unemployment from the second quarter of 2000 through the fourth quarter of 2004 were captured by our simulation, which began the assistance in the first quarter of 2002 and continued it through the third quarter of 2003. If the simulation model had been in effect during the 2001 recession, this strategy's starting point would have provided assistance to states a full year earlier than the enhanced matching rate implemented by Congress under the previous fiscal assistance legislation, JGTRRA, which began providing supplemental assistance in the third quarter of 2003. (See fig. 3.)

Figure 3: Number of States Experiencing a 10 Percent or More Increase in Their Unemployment Rate, 2000 to 2004



Source: GAO analysis of Bureau of Labor Statistics (BLS) data.

^aThe quarter in which payment begins under this strategy reflects a two-quarter lag for data to become available. Therefore, the count of states represents the count from the third quarter of 2001.

¹⁹This is an increase of 10 percent or more compared to the unemployment rate that existed a year earlier and not a 10 percentage point change in unemployment rates. Unless otherwise specified, all percentage changes are stated in terms of a percentage increase over a base quarter.

¹⁹In response to the 2001 recession, our model would have had the strategy in operation from the first quarter of 2002 to the third quarter of 2003, the period when 23 states had a 10 percent or more increase in unemployment compared to the same quarter of the previous year.

²⁰For comparison purposes, the enhanced matching rate under the 2003 fiscal relief package, JGTRRA, was implemented in the third quarter of 2003.

Under this strategy, our model's results show that the timing and depth of a state's economic downturn can affect the amount of supplemental assistance a state receives. In general, states with deep downturns that occur coincident with the period in which supplemental assistance payments would be made would receive the largest proportion of federal assistance. States experiencing an earlier or later economic downturn—meaning more than 1 year before or 1 year later than the start of the payments—would not receive payments to cover the full period of their economic downturn, regardless of the extent of the state's increased unemployment. With regard to the depth of each state's downturn, the results of our model simulation showed that all states would receive some amount of supplemental federal Medicaid assistance, with the increased matching rate ranging from 0 percent to 2.01 percent.²⁰ (See table 3.) In contrast, the previous fiscal assistance legislation, JGTRRA, provided the same matching rate increase to all states.

²⁰One state received a matching rate increase that was less than 0.005 percentage points.

Table 3: Characteristics of Economic Downturns and Their Effect on States' Receipt of Supplemental Assistance

Downturn characteristic	Effect on states' receipt of supplemental assistance	Results of GAO model^a
Timing	States with unemployment increases that are relatively earlier or later than the strategy's starting point may not receive the maximum amount of supplemental federal assistance.	<p>37 states would have had increases in unemployment commensurate with the start of the supplemental federal assistance.</p> <p>12 states would have had increases in unemployment that began before the start of supplemental federal assistance.</p> <p>1 state would have had an increase in unemployment that started after the supplemental federal assistance ended.</p>
Duration	States with economic downturns lasting 7 or fewer quarters would be most likely to receive the maximum amount of supplemental federal assistance.	<p>4 states had downturns lasting 7 quarters.</p> <p>28 states had downturns lasting fewer than 7 quarters.^b</p> <p>18 states had downturns lasting more than 7 quarters.</p>
Depth	The supplemental federal assistance a state would receive is determined in part by the depth of its economic downturn and the amount of its unemployment increase.	<p>0.80 percent was the median increase in a state's federal matching rate.</p> <p>0.00 percent was the lowest increase in a state's federal matching rate.^c</p> <p>1.77 percent was the highest increase in a state's federal matching rate.</p>

Source: GAO simulation using data from BLS and CMS.

^aBased on the first quarter of 2002 through the third quarter of 2003.

^bOne state showed no indication of a downturn based on increases in unemployment.

^cOne state received a matching rate increase that was less than 0.005 percentage points.

Additionally, assistance provided to individual states would vary depending on the relative size and composition of their expenditures for cyclically sensitive Medicaid populations. Because economic downturns are likely to increase Medicaid enrollment for children and nondisabled, nonelderly adults—but generally not for the elderly or individuals with disabilities—we adjusted the amount of supplemental federal Medicaid assistance based on the characteristics of each state's Medicaid spending by beneficiary population category in order to target the amount of supplemental federal assistance. As a result, two states with similar downturns in terms of percentage change in unemployment could receive different amounts of supplemental assistance depending on their average cyclically sensitive Medicaid expenditures per nonelderly person in

poverty. For example, Arizona and Wisconsin had an average quarterly percentage change in unemployment of 41 percent and 52 percent during the 2001 recession, which would have resulted in lump sum amounts of assistance of \$86 million and \$106 million, respectively. However, applying a Medicaid expenditure index that we developed, which takes into account each state's relative Medicaid spending per nonelderly person in poverty, Arizona would have received \$93 million in supplemental federal Medicaid payments compared with \$45 million for Wisconsin using the parameters described for this strategy.²¹

Using Fewer Years of Data to Compute Matching Rates Would Not Consistently Result in Assistance that Better Reflects States' Current Economic Conditions

A second strategy uses fewer years of data by eliminating the oldest data from the computation of federal matching rates in an attempt to better reflect states' current economic conditions. However, based on our analysis of a 15-year period (1990 to 2004), we found that using fewer years of data did not result in federal matching rates that better reflected states' current economic conditions. In particular, the inherent time lag necessary to obtain data and calculate the matching rates limited the ability of this strategy to provide assistance to states that reflected more recent economic conditions. In some cases, reducing the number of years of data skewed rates farther away from current economic conditions. This strategy would result in larger year-to-year changes in matching rates for most states compared with the fluctuations experienced under current law.²² Based on this analysis, eliminating a year of data from the current matching formula would not help states address increased Medicaid expenditures during economic downturns.

Design Considerations

This strategy would use fewer years of PCI data to compute federal matching rates. This strategy relies on the current matching formula, with the adjustment of using 2 years of PCI data instead of the 3 years required under current law (see fig. 4). Implementation of this strategy would require a statutory change to the federal matching formula and could be made permanent. Unlike the first strategy, which would require that an

²¹ Appendix II provides details on the calculation of this index and how it affects the amount of assistance a state would receive. We use poverty in lieu of actual enrollments because states vary in terms of the services provided and eligibility for those services.

²² Changes in states' federal matching rates can have a significant effect on the amount of federal funds available to a state. For example, a 0.25 percent increase in states' federal matching rates for 2004 would have resulted in a minimum increase in federal funds of more than \$0.9 million in Wyoming and more than \$102 million in New York.

established number of states reach a certain percentage change in unemployment, this strategy would not require monitoring of economic conditions to trigger implementation. In addition, this strategy would not distribute the supplemental Medicaid assistance required for implementation of the first strategy but would instead adjust the relative proportion of Medicaid funding distributed to the states.

Figure 4: Timing of Data Used to Calculate States' Federal Matching Rates for Fiscal Year 2006

2001 ^a	2002	2003	October 2004	October 2005
Average of PCI data from these 3 fiscal years included in fiscal year 2006 matching rate			Department of Health and Human Services calculates and publishes matching rates for fiscal year 2006	Fiscal year 2006 Medicaid matching rates become effective in October 2005 and remain in place through September 2006

Source: GAO.

^aUnder this strategy, 2001 data would be eliminated from the matching rate calculation.

To analyze the effect of using fewer years of data to calculate the matching rates, we used three matching rates that employed the current statutory formula but varied in the years of data used. The first matching rate mirrored the current statutory construction, using 3 years of PCI data that are 3 to 5 years old. The second matching rate was based on the statutory construction, except that it eliminated the oldest year of PCI data and only used 2 years of data. The third matching rate used PCI data for the current year (the year in which the calculations are made) and for 1 year prior, thus showing no time lag in the data used.²³ We compared the three matching rates with year-to-year percentage changes in PCI and year-to-year percentage changes in the unemployment rate and analyzed the extent to which the 3-year and 2-year matching rates fluctuated from year to year. (Appendix III provides additional detail regarding our methodology.)

Effects

Contrary to our expectations that eliminating the oldest year of data from the computation of matching rates would make them more sensitive to

²³Although not feasible to implement because of lags in data publication, we devised this simulated matching rate in order to evaluate whether changing the years of data used to calculate the matching rate resulted in a better approximation of states' current economic circumstances.

current economic conditions, our simulation results showed that using 2 years of PCI data instead of 3 did not consistently improve the correlation of the rates with state PCI—one measure of state economic conditions. In addition, rates based on 2 years of PCI data did not result in rates that more closely correlated with states' PCI trends. We repeated the same analysis using unemployment data and confirmed that matching rates also did not correlate with state unemployment trends. These results remained consistent during the full period of our analysis, 1990 through 2004.

We found that using 2 years of data would result in larger average fluctuations in matching rates from year to year than states currently experience. Our simulation of matching rates from 1990 to 2004 showed that when rates were computed using 2 years of PCI data instead of 3, the average percentage point change in rates from year to year increased to 0.44, from 0.39 under current law. A small number of states experienced substantially larger fluctuations (more than 0.5 percentage points larger) under this strategy than they currently experience. The effects of these fluctuations for individual states would depend on whether they represented a substantial increase or decrease in federal funds. Depending on the scope of a state's Medicaid program, a 0.5 percentage point difference in the matching rate would have meant a difference of \$1.7 million to \$77.1 million in federal matching funds for a given state in 2003.²⁴ In 8 of 14 years, fewer than 22 states would have experienced larger fluctuations in their matching rates than they experienced under current law,²⁵ and in 9 of 14 years, fewer than 4 states would have experienced fluctuations that were more than 0.5 percentage points larger.²⁶

²⁴These amounts represented 0.08 to 0.29 percent of state own-source revenues. Also referred to as general revenues from own sources, these revenues are state and local total receipts, excluding federal grants-in-aid. We excluded from this analysis the 14 states whose matching rates in 2003 were at the 50 percent floor or had been established in legislation. (As we have previously reported, because of the 50 percent floor, some states receive higher federal matching rates than they would if their rates were based only on their PCI.)

²⁵Across all of the years of our analysis (1990-2004), the number of states that would have experienced larger fluctuations under this strategy than under current law ranged from 17 to 27.

²⁶Across all years, the number of states that would have experienced fluctuations more than 0.5 percentage points larger under this strategy than under current law ranged from 0 to 8.

States Could Determine Their Own Needs for Assistance with Medicaid-Specific Loans or a National Rainy Day Fund

Giving states the option to decide whether and to what extent they need federal assistance could take the form of a loan, either from the federal government or from the private capital market (subsidized and possibly guaranteed by the federal government), or a Medicaid-specific national rainy day fund. We considered the features of existing intergovernmental loan programs and state rainy day funds to better understand how these programs are structured and utilized by states. Implementation of this strategy would require approval of legislation to authorize a Medicaid-specific loan program or national rainy day fund as well as appropriation of federal funds to cover any federal expenditures required for either the loan program or national rainy day fund. While this strategy would provide states with greater autonomy over their receipt of additional federal assistance, their ability to utilize either broad approach would depend on their debt restrictions, their borrowing costs, the availability of future state revenues to repay loans, and their willingness to participate in a Medicaid-specific loan or national rainy day program. State participation also could depend on the depth and duration of states' downturns (deep or shallow and short or long) and the availability of state funds to fill funding gaps. Federal funding required for this strategy could vary depending on factors such as whether federal subsidies are included in a loan program or whether a national rainy day fund includes federal matching funds as well as decisions on the overall federal budget.

Design Considerations

To identify the factors likely to be involved in designing this strategy, we considered the features of existing intergovernmental loan programs and state rainy day funds to better understand how these programs are structured, how they are utilized by states, and how they could contribute to a conceptual model of this strategy.²⁷ This strategy draws on the features of existing programs to inform our understanding of ways to increase the states' role in determining the timing and targeting of increased federal assistance to the states during economic downturns. We analyzed approaches to this strategy based on two broad methods of providing federal credit: (1) a loan, administered directly from the federal government or indirectly through the private capital market (subsidized and possibly guaranteed by the federal government); and (2) a Medicaid-specific national rainy day fund that could distribute federal fiscal assistance during an economic downturn. Implementation of one or more approaches to this strategy would require numerous decisions about the

²⁷Appendix IV includes background information on selected federal programs that include intergovernmental loan components.

use, structure, financing, and repayment of a loan or national rainy day fund. Any new federal loan program would have to comply with the Federal Credit Reform Act of 1990 requirements that budget authority sufficient to cover the program's cost to the government be provided in advance, before new direct loan obligations could be incurred or new loan guarantee commitments could be made.

Direct Intergovernmental Loans

Congress could authorize a new federal program so that states could borrow funds directly from the federal government based on a rate-setting and repayment process specified in law. For example, the law could specify that rates be determined by the Treasury based partially on Treasury's borrowing costs. CMS could be designated as the administering agency. This approach could allow states that might otherwise face high interest rates in the private capital market access to federal funds that reflect a lower interest rate subsidy. The administering agency would have to develop a method to estimate any subsidy costs (e.g., the estimated long-term cost to the federal government on a net-present value basis of all cash flows to and from the government, such as interest rate subsidies and defaults over the life of the loan) in order to conform with the Federal Credit Reform Act of 1990.²⁸ The administering agency would have to analyze and control the risk and cost of the program, obtain budget authority and record outlays to cover the subsidy cost of the program, and could also specify loan repayment terms. States would have to designate funding sources to repay the loans.

Facilitated Private Lending

Under this approach, instead of lending money directly to states, the federal government could facilitate private lending, such as through a guaranteed loan.²⁹ The federal government could help offset the risk of lending money to states by covering all or part of the risk of loan defaults and by providing an interest subsidy to states. This approach would enable the federal government to minimize direct involvement with the loan process by placing the burden of loan administration on third-party

²⁸The Federal Credit Reform Act of 1990, P.L. 101-508, requires that credit subsidy costs be financed from new budget authority and be recorded as budget outlays at the time direct or guaranteed loans are disbursed. Agencies must have appropriations for the subsidy cost before they can enter into direct loan obligations or loan guarantee commitments. Subsidy costs include the estimated long-term cost to the federal government on a net-present value basis of all cash flows to and from the government, such as interest rate subsidies and defaults over the life of the loan.

²⁹Specific examples of facilitated lending include The Federal Family Education Loan Program and the Health Center Loan Guarantees.

nonfederal lenders. However, the administering agency would still have to analyze and control the risk and cost of the program and obtain budget authority to cover the subsidy costs. States would still have to identify repayment sources. State-managed capital access programs, in which state governments provide a fixed share of lenders' loan loss reserves, provide another model for possible consideration and adaptation to facilitate private lending.

National Rainy Day Fund

Legislative approval of a Medicaid-specific national rainy day fund would allow states to pool their resources to help cope with the increased costs of Medicaid during economic downturns. We previously found that the adequacy of states' own rainy day funds is unknown and that choices on competing priorities would have to be made in a fiscal crisis.³⁰ Furthermore, some states have placed caps and restrictions on the use of these funds.³¹ States could capitalize a national rainy day fund in whole or in part, depending on whether the program design included matching contributions from the federal government. Determining the amount of money that each state should pay into a national rainy day fund would present an additional design challenge, given that state Medicaid programs vary widely in the population groups and services covered.

Effects

States' decisions about whether to access any new federal Medicaid loans or a national rainy day fund could depend on the nature of the economic downturn in terms of when and to what extent states experience increased unemployment, each state's own resources, and the design features of the program. States generally have resources available to weather short-term economic downturns but may be more likely to utilize a loan or national rainy day fund approach when they are affected by a deeper downturn. States with a 50 percent federal matching rate could also view federal loans or a national rainy day fund as an additional tool for increasing funding on a short-term basis during an economic downturn, filling gaps created by a matching rate that does not necessarily rise when additional funds are needed. However, some states also face constraints on their ability to borrow because of statutory or constitutional debt restrictions

³⁰GAO, *Welfare Reform: Challenges in Saving for a "Rainy Day"*, GAO-01-674T (Washington, D.C.: Apr. 26, 2001).

³¹GAO, *Budgeting for Emergencies: State Practices and Federal Implications*, GAO/AIMD-99-250 (Washington, D.C.: Sept. 30, 1999).

and most states have some form of balanced budget requirements.³² Consequently, states might not be able to take advantage of a loan program.

The effects of either a loan or national rainy day fund approach would also depend on the numerous technical decisions required, including, but not limited to, interest rates, repayment terms, allowable uses of funds, borrowing limits, and any requirements governing maintenance of states' efforts in providing their own funds or Medicaid eligibility. A direct or guaranteed loan could give states greater autonomy in determining their need for assistance but would also result in a requirement to repay the loans (an additional financial burden for states) as they try to recover from an economic downturn. States would have to consider the availability of future revenues to repay loans and their borrowing costs, as well as statutory debt restrictions that could limit their loan access. A national rainy day fund could allow states to pool risk and thereby spend less than they would if they chose to establish individual Medicaid rainy day funds or address economic downturn-related Medicaid cost increases on an as-needed basis. However, representatives of public policy and research organizations we contacted cautioned that states may be reluctant to contribute to a national fund that could be drawn down by other states or tapped by the federal government. The impact on federal outlays of this strategy could depend on subsidy costs as well as whether the federal government provided matching funds for a national rainy day fund. Unless mandated, state participation in a loan or national rainy day fund would likely depend on the terms of the program as well as state economic circumstances.

Concluding Observations

Economic downturns, typically accompanied by increases in unemployment, can leave states with increased demand for Medicaid program services and spending, decreased revenues to help states finance the increased demand, and few strategies for grappling with difficult fiscal circumstances that will not place them in worse financial positions in the future. Current federal and state approaches to help states cope with the increased cost of Medicaid during economic downturns present temporary solutions to a recurring combination of circumstances. Having an automatic mechanism in place to address significant downturns in the economy could provide for a more predictable and targeted response to

³² [GAO/AIMD-99-250](#).

states' situations. The targeted supplemental assistance and loan or national rainy day fund strategies considered in this report illustrate potentially more responsive measures that could help states adjust to economic downturns similar to the last three national recessions. However, each also presents challenges.

No single strategy or combination of strategies for providing federal financial assistance could fully meet the varied economic needs of all states at all times. Any strategy also is inhibited by the lags inherent in the collection and publication of data, thus limiting its ability to have a real-time effect. However, the first and third strategies—targeting supplemental assistance to states most affected by a downturn and allowing states to determine their own need for assistance from a national rainy day fund or loan—could potentially better address some of the difficulties faced by states during downturns in a more timely and cost-efficient manner than the JGTRRA, which provided assistance to all states. Additionally, these two strategies are not mutually exclusive and could be used in combination.

Any strategy to help states cope with increased Medicaid costs during economic downturns requires trade-offs as Congress seeks to provide assistance to states that have the greatest financial need and the least capacity to meet those needs while balancing the federal government's own long-term fiscal challenges. While none of the strategies may fully satisfy all dimensions of targeting, timing, and increasing states' own options, Congress may find one or more of these strategies useful as starting points in considering whether and how to provide supplemental Medicaid assistance during the most difficult economic times faced by states.

Agency Comments

We provided the Secretary of Health and Human Services (HHS) with a draft of this report. HHS stated that it did not have comments.

As agreed with your offices, we plan no further distribution of this report until 28 days from its date, unless you publicly announce its contents earlier. At that time, we will send copies of this report to the Secretary of Health and Human Services and the Administrator of the Centers for Medicare & Medicaid Services. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staffs have any questions about this report, please contact Kathryn G. Allen at (202) 512-7118 or Stanley J. Czerwinski at (202) 512-6806. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix V.

Kathryn G. Allen

Kathryn G. Allen
Director, Health Care

Stanley J. Czerwinski

Stanley J. Czerwinski
Director, Strategic Issues

Appendix I: Objectives, Scope, and Methodology

This appendix describes our objectives and the scope and methodology of the work we did to address them, including how we illustrated the range of economic conditions affecting states during economic downturns. We include a list of the organizations we contacted during the course of our work.

Objectives and Scope

We explored the design considerations and potential effects of strategies aimed at helping states with their share of Medicaid expenditures during an economic downturn by (1) targeting supplemental funds to specific states on the basis of the relative depth and duration of their economic downturns as well as the extent to which their Medicaid enrollment and expenditures are likely to increase during a downturn, (2) using 2 years of per capita income (PCI) data instead of the 3 years of data required by statute to compute federal matching rates in an attempt to better reflect states' current economic conditions, and (3) providing states with options for obtaining assistance from a Medicaid-specific national rainy day fund or loan based on their own determination of need.

Identifying and Evaluating the Strategies

To address the objectives, we

- analyzed research, including prior GAO reports and other policy proposals, that assessed the effects of economic downturns on Medicaid enrollment and expenditures across states, the responsiveness of the current Medicaid formula to the effects of economic downturns, and differences in Medicaid expenditures across states;
- simulated the potential effects of the strategies to use fewer years of data to compute federal matching rates and target supplemental federal assistance; and
- analyzed the features of existing intergovernmental loan programs and state rainy day funds as potential models for providing states with discretion in determining the timing and targeting of assistance through a federal government-sponsored Medicaid-specific loan program or rainy day fund.

To evaluate the strategies identified, we

- conducted statistical simulations of the strategies by comparing the actual matching rates in states during recessionary times with the

matching rates that could exist under the strategies to provide targeted supplemental Medicaid assistance and have Medicaid matching rates better reflect states' current economic conditions,

- consulted with experts in Medicaid financing issues on our targeting simulation in terms of its design and suggestions to refine it, and
- discussed the strategies with key research groups and state associations to discern the potential utility of the strategies as well as the feasibility of states' implementing different strategies.

Table 4 summarizes the three strategies considered for this report. Appendixes II, III, and IV provide additional detail regarding the analyses of these strategies.

Table 4: Analysis of Three Strategies to Help States Respond to Increased Medicaid Costs during Economic Downturns

Goal of strategy	Approach	Analysis
Provide targeted supplemental Medicaid assistance	Target supplemental funds to states based on projected Medicaid spending increases and depth and duration of economic downturn.	<ul style="list-style-type: none"> • Identify design considerations involved in defining national downturns and distributing supplemental federal funds. • Estimate amounts states would receive based on economic conditions present during three prior recessions.
Have Medicaid matching rates better reflect states' current economic conditions	Use 2 years of PCI data in the statutory formula used to compute federal matching rates.	<ul style="list-style-type: none"> • Compare matching rates computed using 2 years of PCI data to rates based on the 3 years of PCI data required under current law. • Analyze extent to which existing matching rates and matching rates based on 2 years of PCI data were consistent with states' economic circumstances.
Provide states with options to improve timing and targeting of increased Medicaid assistance	Allow states to determine whether and when they need increased assistance in response to economic downturns.	<ul style="list-style-type: none"> • Identify considerations involved in designing loans or a national rainy day fund. • Identify potential effects based on structure and use of existing intergovernmental loan programs.

Source: GAO.

Illustrating the Range of Economic Conditions Affecting States during Economic Downturns

To illustrate the potential ability of each strategy to help states address increased expenditures during economic downturns, we analyzed how implementation of each strategy might differ with respect to the varied economic effects of downturns, including (1) early onset of a shallow downturn, (2) early onset of a deeper downturn, (3) later onset of a shallow downturn, and (4) later onset of a deeper downturn. We also reviewed examples of states whose matching rates generally remained at the lowest level allowable by federal statute.

Organizations GAO Contacted

We contacted representatives of public policy and research organizations to (1) gain insights into various issues, such as the extent to which strategies could help states cope with the Medicaid-related fiscal consequences of economic downturns; (2) obtain referrals to related research; (3) validate our selection of strategies; and (4) obtain views regarding the feasibility and utility of the three strategies, as well as to discuss the potential effects of these strategies. The organizations we contacted were as follows:

American Enterprise Institute
Cato Institute
Center on Budget and Policy Priorities
Heritage Foundation
National Association of State Budget Officers
National Conference of State Legislatures
National Governors Association

In addition, we consulted with technical experts from Federal Funds Information for States and The Urban Institute regarding our simulations for the strategies to target supplemental Medicaid assistance to specific states based on the depth and duration of their economic downturns as well as their Medicaid expenditures and to use 2 instead of 3 years of PCI data to calculate federal matching rates.

Data and Data Reliability

We obtained and analyzed data on personal income and state population from the Bureau of Economic Analysis, data on unemployment from the Bureau of Labor Statistics, and data on Medicaid expenditures from the Centers for Medicare & Medicaid Services. We discussed our use of these data with agency officials and reviewed relevant documentation. On the basis of these efforts and our use of the data to illustrate potential policy strategies and their simulated effects, we determined that the data were sufficiently reliable for this report.

Appendix II: Designing a Strategy of Targeted Supplemental Medicaid Assistance

This appendix describes the design decisions and policy considerations involved in creating a strategy aimed at targeting supplemental funds to states based on the extent to which their Medicaid expenses increase during an economic downturn. This supplemental assistance strategy would leave the existing Medicaid formula unchanged and add a new, separate assistance formula that would operate only during times of economic downturn and use variables and a distribution mechanism that differ from those used for calculating matching rates. The strategy would require policy decisions on three basic steps: (1) deciding when to start and stop the supplemental assistance to states, (2) determining the level of assistance provided (including defining the formula for distributing funds), and (3) deciding how to distribute the assistance (principally, deciding whether assistance should be an incremental increase in federal matching rates or provided as a lump-sum grant payment). To illustrate these design considerations, we developed a model to simulate supplemental assistance. The following sections describe the choices made to simulate and illustrate the resulting supplemental assistance as well as some possible alternatives.

Design Considerations for Starting and Stopping Assistance

This section presents information about how we chose unemployment as the indicator for an economic downturn and how we selected the rules for starting and stopping the provision of supplemental assistance. We reviewed how these rules would have applied to the past three recessions (2001, 1991-1992, and 1981-1983) using our simulation model.

Choice of Unemployment as an Indicator

We used unemployment as the key variable because it reflects the potential for increases in Medicaid enrollment as a result of an economic downturn. Although other indicators of economic downturn are widely reported and important in other contexts,¹ experts consider increases in unemployment to be an indicator of the likely increase in Medicaid

¹For example, in its retrospective determination of the dates of nationwide economic peaks and troughs, the Business Cycle Dating Committee of the National Bureau of Economic Research (a private, nonprofit, nonpartisan research organization) relies primarily on real gross domestic product (GDP), real income, employment, industrial production, and wholesale-retail sales. The Committee views real GDP as the single best available measure. These data are not all available at the state level.

enrollments of adults and children.² To simulate how supplemental assistance could be provided, we used Bureau of Labor Statistics (BLS) unemployment data by state. Monthly BLS unemployment data by state become available with a lag of less than one quarter.³

Use of Unemployment as an Economic Indicator

Ideally, the indicator used should reflect the economic downturn and exclude other influences such as long-term trends, seasonal influences, and other shorter fluctuations. In order to minimize the influence of seasonality and the month-to-month fluctuations on the unemployment data used in our model simulations, we used a quarterly average of seasonally adjusted unemployment data for the 12 most recent months.⁴ Because the level of unemployment is driven by trends in the structure of a state's economy, we used increases in unemployment during a period of economic downturn as our measure of the effects of the economic cycle.⁵ (The problem of deciding on a base period from which to calculate those increases in unemployment was a key issue that is discussed later in this appendix.) This is an inexact method for isolating the effects of cyclical downturn on unemployment, especially if the trend should change along with the economic downturn. For example, if an economic downturn is a precipitating event that leads to long-lasting declines in a state's manufacturing industries, at some point the state's increases in unemployment are attributable to structural change in its economy. When the increases in unemployment are long term rather than cyclical, this may be a policy consideration in deciding when to stop the supplemental assistance.

²Centers for Medicare & Medicaid Services (CMS) data on Medicaid enrollments would not be useful for this purpose because they reflect both changes in enrollments due to changes in state policies affecting eligibility as well as increases in enrollment that are attributable to economic downturn.

³More specifically, we used monthly, seasonally adjusted unemployment data and unemployment rates from BLS Local Area Unemployment Statistics by state.

⁴Month-to-month fluctuations are dampened by using a quarterly rolling average of the 12 most recent months, though it also somewhat dampens the indicator's sensitivity to turns in the economy. However, we retained some degree of sensitivity by recomputing these 12-month averages for each quarter. For this strategy, when referring to unemployment or the unemployment rate, we are referring to the average of the 12 most recent months.

⁵More sophisticated statistical methods could perhaps better isolate cyclical change from trends and other noncyclical factors causing changes. We chose this quarterly moving average method because it offers greater simplicity that helps make the assistance formula mechanism easier to explain and understand.

Alternative Indicators of Downturns and Increases in Medicaid Enrollments

Economists generally prefer indicators other than unemployment to signal economic downturns. Unemployment sometimes lags behind the cyclical turns in the economy; it can be both slow to increase when the downturn begins and slow to return to pre-downturn levels when other indicators show the economy is recovering. In general, other indicators show an earlier and briefer downturn than unemployment.

For example, researchers at the Philadelphia Federal Reserve Bank developed a monthly index of four state economic indicators intended to coincide with the economic cycle.^{6,7} Such a broad index of economic conditions could provide a more reliable and timely indication of a state's cyclical downturn than unemployment. Furthermore, if the purpose of supplemental assistance was to include the provision of some countercyclical stimulus—that is, provide incentives to increase spending to boost macroeconomic activity—rather than to help states address the impacts of the downturn on increased Medicaid expenditures, then an alternative to unemployment as a variable for triggering funding would have better prospects for providing well-timed assistance.

However, there is some leeway in providing supplemental assistance to compensate states for the impact of a downturn on their Medicaid enrollments and spending. According to experts, states have budget resources and financial management techniques to temporarily sustain them for a year or two with downturn-driven increases in Medicaid expenditures. To assist states with the costs of Medicaid enrollment increases, the relatively brief lags caused by using unemployment rates to trigger supplemental assistance payments would not present a problem.

Starting and Stopping Supplemental Assistance

Supplemental federal assistance could be set to begin payments to states when economic evidence shows a significant number of states are in an economic downturn. For example, when a certain number of states have each exceeded a specified increase in their unemployment rate, supplemental assistance could be authorized to begin for the next quarter.

⁶Theodore M. Crone, "What a New Set of Indexes Tells Us About State and National Business Cycles," *Federal Reserve Bank of Philadelphia Business Review* (2006, Q1): pp. 11-24.

⁷The National Bureau of Economic Research establishes widely used dates of the start and end of expansions and contractions of the U.S. business cycle. These dates are determined retrospectively and would not be available on a timely basis for use in an automatic trigger.

A similar criterion could be used to stop payments. Such a rule could be designed to provide a high degree of certainty that the nation had entered a downturn and that states were not all in recovery. For our simulation model, we chose the rule that payments to states would begin when 23 or more had an increase in their unemployment rate of 10 percent or more from the comparable quarter a year earlier, and payments would stop when fewer than 23 states had increases of 10 percent or more.⁸ We chose 23 states and a 10 percent or more increase in unemployment on the basis of a review of states' unemployment rates over past economic cycles and made a judgment that these levels would provide considerable certainty that an economic slowdown was nationwide. Other thresholds could be selected to tighten or loosen the parameters to start and stop supplemental federal assistance.

Automatic Trigger Design Objectives and Issues

An automatic trigger would need to specify several key parameters or rules that together would control when assistance payments would begin, how long they would last, and when they would stop. Though the trigger would control all supplemental assistance payments, it should utilize state-by-state data rather than national aggregates because it involves assistance to state Medicaid programs. The trigger should distinguish between small up-and-down movements in unemployment, which could be associated with an economy that is basically stagnant, from those movements that clearly show a state whose economy has entered a downturn. The trigger must clearly identify the duration of the period of economic downturn because of the previously mentioned difficulty of separating a state's trend in unemployment from its cyclical changes. Furthermore, the design decision should involve consideration of potential risks. A trigger that is too sensitive could provide more payments than are reasonably justified by the economic downturn, while a trigger with standards that are too rigorous would penalize states whose downturns are exceptionally long-lasting, early or late. Also, an automatic trigger for supplemental assistance would need to be designed with some degree of simplicity and transparency.

⁸This 10 percent threshold is used as a criterion for beginning federal supplemental assistance to states. As explained later in this appendix, it does not restrict an individual state's eligibility. In other words, a state with a 2 percent increase in unemployment would receive assistance, but its supplemental increase to its matching rate would be smaller.

An Illustrative Automatic Trigger

For our simulation model, state payments would be triggered when 23 or more states had an increase of 10 percent⁹ or more in the state's unemployment rate compared to the same quarter in the previous year, and payments would stop when those conditions were no longer present. This trigger consists of three key elements:

- a threshold number of states (23),
- a threshold percentage increase in the unemployment rate (10 percent or more), and
- a “retrospective assessment” used to derive the percentage increase in the unemployment rate compared to the same quarter in the previous year.

We chose the two threshold values of 23 states and 10 percent or more to work in tandem to ensure that when the program starts, the national economy has entered a downturn and that many states (at least 23 and probably more) are not yet in recovery.¹⁰ We chose both numbers based on a review of states' unemployment rates over past economic cycles and made a judgment that these levels would provide considerable certainty that the economic slowdown was nationwide.

To illustrate the application of this trigger, figure 5 shows the number of states with a 10 percent or greater increase in their unemployment rate from the same quarter a year earlier for the period from 1979 through the

⁹This is an increase of 10 percent compared to the unemployment rate for the same quarter in the previous year and not a 10 percentage point change in unemployment rates. Unless otherwise specified, all percentage changes in unemployment or unemployment rates for this strategy are expressed in terms of a percentage increase over a base quarter, and not percentage points. (However, supplemental increases to states' matching rates are reported in percentage points because that is the common way to present that information.)

¹⁰This is the percentage increase in a state's unemployment rate compared to the same quarter in the previous year (the retrospective assessment). We do not use the national unemployment rate as a reference point because many states usually remain well above or below the national unemployment rate. The use of state-by-state unemployment rates is also appropriate because supplemental assistance is intended for individual states, whose Medicaid programs vary.

third quarter of 2004.¹¹ This period covers three recessions and offers supplemental assistance as follows:

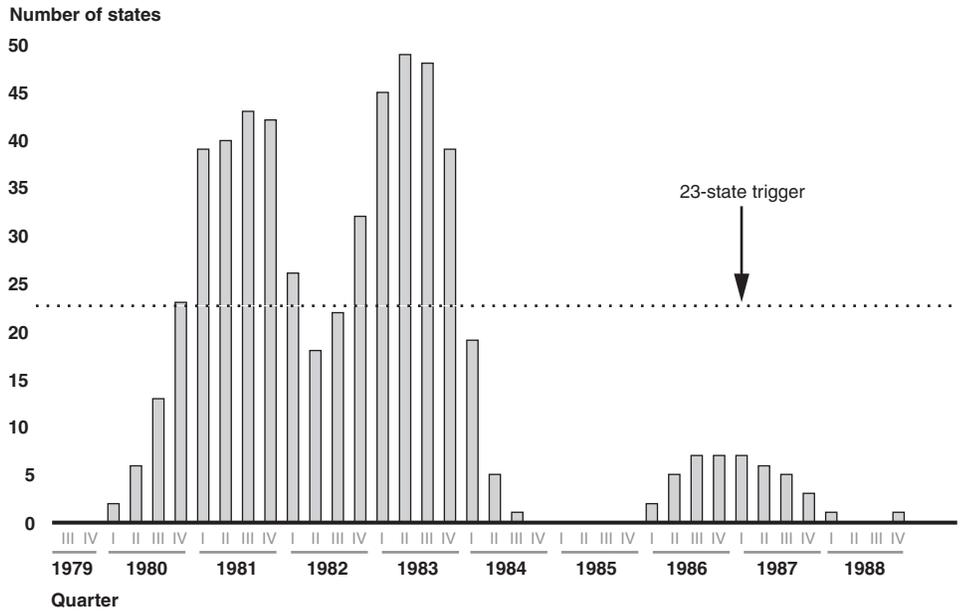
- for the 2001 recession, 7 quarters of assistance is provided beginning in the first quarter of 2002 and ending as of the fourth quarter of 2003;
- for the 1991-1992 recession, 6 quarters of assistance is provided beginning with the fourth quarter of 1991 and ending as of the second quarter of 1993; and
- for the 1981-1983 recession, 11 quarters of assistance is provided in two phases, with the first phase beginning in the fourth quarter of 1980 and ending as of the second quarter of 1982, and the second phase resuming assistance in the fourth quarter of 1982 and ending as of the first quarter of 1984.

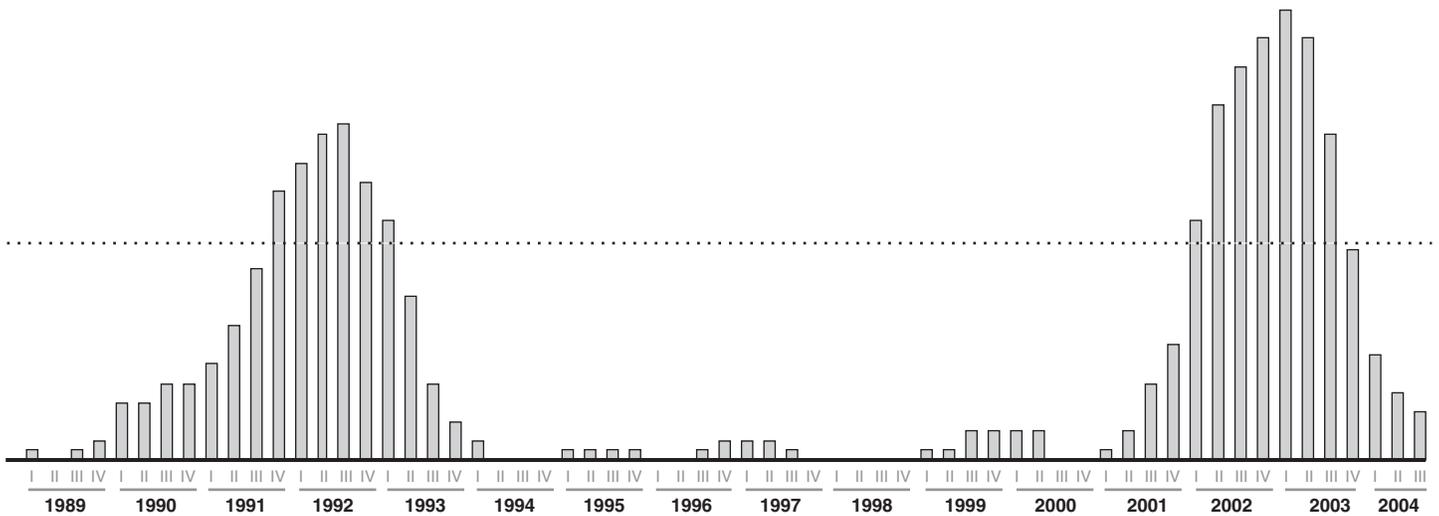
Each recessionary period has different characteristics. For example, the 1991-1992 recessionary period shows a more gradual increase in unemployment compared to the other recessions—and fewer states are affected.¹²

¹¹Note that in all the data displays in this appendix, a 2-quarter administrative lag is assumed between the date of the increase in unemployment data and the date the supplemental assistance could be provided. Such an administrative lag would reflect time for data to become available, for allocations to be computed, and for other administrative purposes. For example, on a table or figure showing unemployment for the third quarter of 2002, those are actually unemployment data as of the first quarter of 2002, with the difference due to the assumed 2-quarter administrative lag.

¹²If the onset of the downturn is very gradual, it is more likely that fewer states will have the requisite 10 percent increase over the unemployment rate from the prior year.

Figure 5: Number of States with a 10 Percent or More Increase in Their Unemployment Rate Compared to the Same Quarter 1 Year Earlier, 1979-2004





Source: GAO analysis of BLS data.

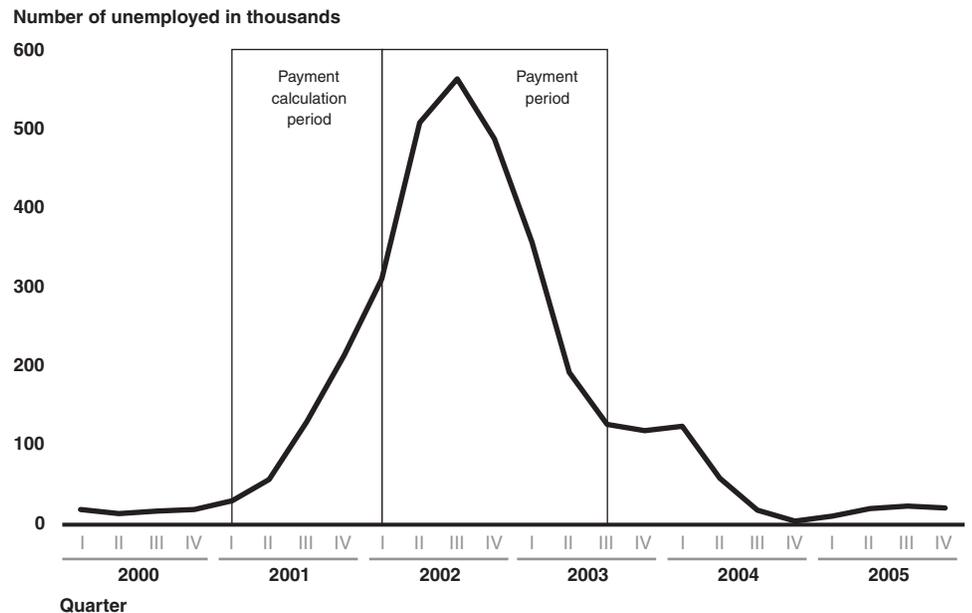
Performance of the Automatic Trigger

A rough method of evaluating the performance of the automatic trigger is the degree to which the period it identifies encompasses states' increases in unemployment in that period.¹³ The trigger must delineate a period of payments that coincides well with most states' increases in the number of unemployed, in order for the supplemental federal assistance calculated on the basis of those unemployment increases to also be well targeted. Overall, about 90 percent of the unemployment increases in the period from the second quarter of 2000 through the fourth quarter of 2004 are captured by the time period of the trigger plus the 1-year retrospective assessment used by the simulation model. When the trigger identifies the start of the first quarter of the program of supplemental federal assistance, then the process of computing each state's assistance for that first quarter and each subsequent quarter of assistance takes place. As part of that process, the simulation model calculates each state's increase in

¹³Note that this is an increase in the number of persons unemployed and not the unemployment rate.

unemployment, which is the increase in unemployment compared to the base quarter. For each state, the base quarter is whatever quarter had the lowest unemployment within the preceding 4 quarters. Thus, though the program begins in the first quarter of 2002, it could use states' increases in unemployment that occurred as early as the first quarter of 2001. Figure 6 shows the sum of states' increases in unemployment over the previous quarter for the first quarter of 2000 through the fourth quarter of 2005. While the trigger in the first quarter of 2002 appears late relative to when some states actually experienced an increase in unemployment, the simulation model's retrospective assessment captures much of the preceding unemployment.

Figure 6: Total of States' Quarterly Increase in Unemployment Covered by Simulation Model's Supplemental Assistance



Source: GAO analysis of BLS data.

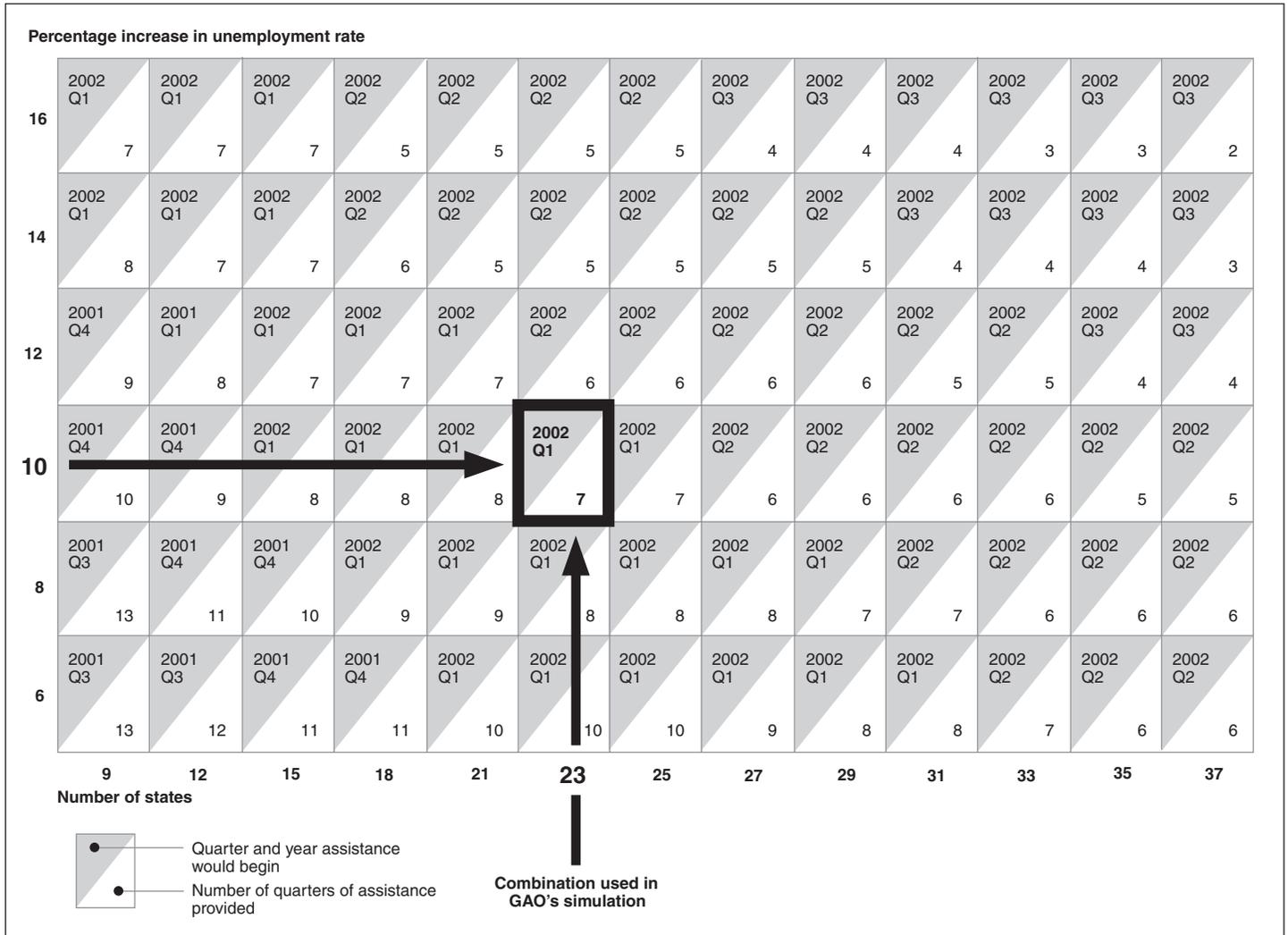
Use of Alternative Parameters in the Automatic Trigger

A lower threshold for the increase in the unemployment rate or requiring a smaller number of states to pass that threshold could trigger supplemental assistance somewhat sooner and provide more quarters of payments (especially for states that may enter a downturn much earlier or later than

others). These parameters would also have potential disadvantages: (1) they could provide less certainty that there has been a nationwide downturn, and (2) with more quarters of supplemental assistance, the overall cost could be greater (other things remaining the same).

To show the way in which the threshold parameters included in our simulation model work together, figure 7 displays the effects of choosing alternative combinations of these parameters for the period 2000 through 2005. For example, if we use 21 rather than 23 states, supplemental assistance would be triggered with the same first quarter but last for 8 rather than 7 quarters. Many adjoining cells of the figure have the same first quarter and number of quarters because small changes in the threshold parameters may not change when supplemental assistance is triggered. However, over the broad ranges shown in the figure, the clear pattern is that lowering the percentage increase or lowering the number of states generally moves in the direction of an earlier first quarter and a greater number of quarters of payments.

Figure 7: Effects of Alternative Threshold Parameters on the Start and Number of Quarters of Supplemental Assistance, 2000 through 2005



Source: GAO analysis of BLS data.

Note: Numbers in bold font are those used in GAO's simulation.

The trigger for our simulation is based on the increase in the unemployment rate over the same quarter of the previous year. Depending on congressional preferences, the period could instead be longer than 1 year, or it could be based on the increase from the pre-downturn levels. Because unemployment is slower to recover than other economic indicators, it may be a number of years into the national recovery before unemployment rates return to the levels immediately preceding the

downturn. Therefore, the effect of a longer retrospective assessment would be to provide supplemental assistance for more quarters and also to provide more assistance to the states with longer-lasting or late downturns. Using a shorter period reflects a policy judgment that the program should be temporary and, in particular, that after 1 year the states should then adjust their budgets and programs to reflect changed economic conditions.¹⁴

Alternative Ways to Start and Stop Supplemental Assistance

An alternative way to start and stop supplemental assistance is through legislation. Congress could consider other indicators and criteria to start or stop assistance with the intention of implementing other policy objectives. For example, decisions could be made regarding limiting the number of quarters of payments or stopping payments after spending caps are reached. Additionally, instead of an automatic trigger, supplemental assistance could begin when Congress enacted legislation. However, enacting appropriately funded and timely legislation under the pressure of worsening national and state economies presents its own challenges. Studies of the past performance of discretionary federal fiscal policy actions in response to recession have shown instances of enactment of belated and inappropriate levels of fiscal stimulus.¹⁵ Also, some of the groups we contacted for this study believed that an “automatic trigger” based on economic criteria would be the most likely method of implementing assistance in a consistent and timely manner.¹⁶

Determining the Level of Supplemental Assistance

There are three important aspects to determining the level of supplemental assistance. First, a level of funding must be developed. The level of funding in our model is based on the average costs to states attributable to increases in unemployment. Second, the estimates and allocations of quarterly funding must be consistent with the annual appropriations

¹⁴The choices are not merely limited to the choice between a longer and shorter retrospective assessment. For example, the retrospective assessment could be a weighted average of long and short periods, with less weight on the long periods.

¹⁵For example, see John Taylor, “Reassessing Discretionary Fiscal Policy,” *Journal of Economic Perspectives*, v. 14, n. 3 (Summer 2000): pp. 21-36.

¹⁶Congressional action could override any approach in place. For example, if there were signs of an incipient national economic downturn, supplemental assistance could be enacted ahead of an automatic trigger. Alternatively, supplemental assistance could be blocked if funding of other budget priorities was deemed more important.

process. Third, assistance needs to be targeted to states on the basis of the impact of increases in unemployment on their Medicaid programs.

Level of Funding

Several studies in the economics literature have estimated a relationship between changes in unemployment rates and changes in Medicaid spending while holding constant other factors that influence Medicaid spending.¹⁷ While these models cannot provide state-by-state estimates of enrollment increases, they provide national average estimates from which we can calculate an average amount of additional federal Medicaid spending per additional unemployed person. We have chosen to use the estimate of \$300 per additional unemployed person derived from a recent econometric study of the responsiveness of Medicaid enrollments and spending to changes in unemployment rates and other factors, such as states' spending on certain Medicaid populations.¹⁸ Based on the depth of the 2001 recession, the amount of federal assistance would have been \$4.2 billion.

Funding and the Appropriations Process

Given the difficulties of forecasting the depth and duration of a downturn, as well as the pace of the recovery, estimating the cost of supplemental assistance can be difficult. However, within the context of the overall Medicaid program, the amount of supplemental assistance provided in our simulation (\$4.2 billion) is relatively small—less than 1 percent of total Medicaid spending for a 2-year period. As an open-ended matching grant that provides states with an incremental increase to their matching rates, funding may need to be appropriated.¹⁹ Similarly, supplemental assistance designed to provide a lump-sum grant or to be closed-ended, could also require an appropriation amount. The funding would need to be

¹⁷John Holahan and Bowen Garrett, "Rising Unemployment and Medicaid," *Urban Institute Health Policy Online* (Oct. 16, 2001). This description somewhat oversimplifies the econometric methods of these studies. For instance, these studies rely on several estimating equations, and they also estimate increases in Medicaid enrollments from which the impact on Medicaid spending is calculated.

¹⁸Stan Dorn, Barbara Markham Smith, and Bowen Garrett, *Medicaid Responsiveness, Health Coverage, and Economic Resilience: A Preliminary Analysis*, prepared for the Health Policy Institute of The Joint Center for Political and Economic Studies (Washington, D.C.: The Joint Center for Political and Economic Studies, Sept. 27, 2005).

¹⁹Open-ended matching grants increase the capacity of state and local governments to provide services, but because of difficulty in predicting expenditures, they create a degree of fiscal uncertainty at the federal level.

apportioned across quarters of the fiscal year in order to provide proportionately equal treatment between the states that enter a downturn early and those that enter late, presuming equal treatment is defined as providing states with equal funding for equal increases in unemployment and commensurate with state Medicaid populations (all other factors remaining the same). Past economic data show that the middle quarters of the supplemental assistance are certain to have much greater increases in unemployment than the earlier and later quarters (see fig. 5).²⁰ Therefore, a policy of spending until funds are gone would seem to leave the states with late-starting downturns, or prolonged contractions, at risk of receiving little or no supplemental funding.

Allocation Model

Our simulation model targets funds to states in proportion to the product of two factors. The first is the state's increase in the number of unemployed persons in that quarter compared to the number of unemployed in the base quarter.²¹ The second factor is a Medicaid spending index intended to adjust the first factor for the relative size of the states' Medicaid programs for the nonelderly. The first factor is intended to gauge the impact of the economic downturn on Medicaid enrollment in the state. The factor is the amount by which unemployment for the most recent quarter exceeds the number of unemployed in the base quarter. The base quarter is the quarter with the lowest number of unemployed in the year immediately preceding the first quarter in which assistance is triggered. However, if the state's number of unemployed decreased after the first quarter, that lowest quarter would then become the base quarter unemployment. If a state has a decrease in the number of unemployed compared to the base quarter, it would not receive funding because of a lack of discernible impact from the economic downturn. However, states with even small increases in the number of unemployed would receive

²⁰This variation by quarter is one reason why calculating quarterly supplemental assistance payments could better target funds than calculating payments on an annual basis.

²¹We used the number of unemployed persons rather than the unemployment rate because state size must be taken into account. Two states with identical unemployment rate increases may have different increases in their numbers of unemployed persons. The state with a larger increase in the number of unemployed persons would have greater resulting Medicaid spending, assuming everything else remained the same. This increase in the number of unemployed could be adjusted to take into account the change in the labor force from the base period. However, we chose not to take this approach to avoid complicating the simulation model.

some assistance, in proportion to the increase in unemployment.²² We excluded increases in the number of unemployed that predated this retrospective assessment. Presumably, such increases would be small and possibly unrelated to the nationwide economic downturn.

The purpose of the second factor is to adjust the number of unemployed for the relative cost of state Medicaid programs. Two states with an equal increase in the number of unemployed could have very different increases in Medicaid expenditures, depending on their rate of Medicaid spending. The Medicaid index is calculated for each state as its average Medicaid spending per nonelderly poor person relative to the national average. Thus, a state whose Medicaid spending per nonelderly person in poverty was equal to the national average would have an index value equal to one (1.00). CMS spending data are used to approximate each state's Medicaid spending for the cyclically sensitive population. Census Bureau data provide an estimate of adults and children in poverty, who are the potential beneficiaries of such Medicaid spending. The Medicaid index factor would not be updated quarterly because it is intended to supply relative positions of the states and not quarterly impacts of the economic cycle.²³

The Medicaid index varies widely among the states because of differing Medicaid program characteristics and funding efforts. If Congress did not want supplemental assistance funding to reflect the full magnitude of variations in Medicaid spending, constraints could be designed to moderate this factor, or it could be eliminated from the methodology for allocating supplemental assistance.

²²While states could cope with the impact of small increases in the number of unemployed, it could be problematic to specify a level of increase that is small enough for states to cope without federal aid. Furthermore, because of our inability to separate trends from the effects of economic cycles, a fast-growing state that has a small increase in the number of unemployed could claim to be significantly affected by the national downturn, considering how large its decrease in the number of unemployed might have been without the downturn.

²³CMS does not make these data available frequently enough to permit their use on a quarterly basis by states. For our simulation model, we used 2003 expenditure data, which were the most recent data available at the time we did our work.

Deciding How to Distribute Supplemental Assistance

Matching Assistance or Lump-sum Grants

Assistance could be provided either as an incremental increase to states' federal matching rates or as a lump-sum grant. Representatives of one organization we contacted preferred matching assistance on the grounds that it would better ensure maintenance of state contributions to the Medicaid program, in contrast to lump-sum grant payments that could more readily allow states to reduce their own Medicaid spending effort and thus use state funds for other purposes. Supplemental federal assistance as described in this appendix could be provided as a targeted incremental increase in each state's matching rate or targeted lump-sum grant to states. Either approach could provide a state with a comparable amount of funding.

Calculation of Lump-sum and Matching Assistance Amounts

Supplemental assistance could provide either a lump-sum grant to each state or a comparable level of funding through an incremental increase in the state's matching rate. The lump-sum formula would provide funds in proportion to the state's increase in the number of unemployed, with that increase adjusted by the index of relative Medicaid cost. The increase in the Medicaid matching rate is calculated by dividing the lump-sum grant amount by a state's total Medicaid spending. Thus, if a state left its Medicaid spending unchanged, it would receive the full assistance amount.

Simulation Model Results

This section highlights results from our supplemental targeted assistance simulation model for the 1998 through 2004 time span.²⁴ Individual states vary in different recessions in terms of unemployment levels and supplemental federal assistance that would result from changes in the

²⁴Similar targeting was displayed in other recessionary periods. That is, the targeted assistance was proportional to the increases in unemployment. In addition, a relatively small number of states (usually different states in each period) would receive small payments because their recessions began either earlier or later compared with the national downturn.

number of unemployed. A state with minimal unemployment increases in one recession can experience much greater increases in the number of unemployed in another recession. The widely differing nature of states' experiences suggests that simulated supplemental assistance is unlikely to reflect what a particular state would receive in a future economic downturn.

Table 5 shows data related to the factors used in the formula and the resulting supplemental assistance, by state. As shown in table 5, the average percentage increase in the number of unemployed ranged from 0.1 to about 80 percent. With a few exceptions, every state would begin receiving assistance during the first quarter of 2002 and would receive 7 quarters of payments. The next column shows the Medicaid index used, and the final two columns show the average increase in each state's matching rate during the 7 quarters, with and without the Medicaid expenditure index factor. Because of the importance of the Medicaid expenditure index in determining assistance (especially to those states with relatively large or small indexes), we present the assistance computed with and without the Medicaid factor. In general, the simulated increases in matching rates show the targeting with respect to the variations in the increases in unemployment that the formula is designed to provide. This targeting is especially apparent for the supplemental matching rates that exclude the Medicaid index. For some states, the Medicaid index is an important determinant of the supplemental assistance, but much less important to those states whose index value is closer to the U.S. average of 1.00. For example, table 5 shows that Alaska's average percentage point increase in matching rate would more than triple by including the Medicaid expenditure index, increasing from 0.26 to 0.86. In contrast, Oregon's average percentage point increase in matching rate experienced a minimal change by including the Medicaid expenditure index, increasing from 1.68 to 1.70.

Appendix II: Designing a Strategy of Targeted Supplemental Medicaid Assistance

Table 5: Simulated Supplemental Assistance for Economic Conditions of the 2001 Downturn

State	Average percentage increase in unemployment	Initial payment quarter	Number of quarters	Index of Medicaid expenditures per nonelderly person in poverty ^a (U.S.=1.000)	Average percentage point increase in matching rate	
					Excluding Medicaid expenditure index	Including Medicaid expenditure index
Alabama	22.6	2002Q1	7	0.654	0.65	0.43
Alaska	9.8	2002Q1	7	3.272	0.26	0.86
Arizona	40.9	2002Q1	7	1.078	1.00	1.08
Arkansas	19.8	2002Q1	7	0.685	0.49	0.33
California	27.4	2002Q1	7	0.933	0.88	0.83
Colorado	80.3	2002Q1	7	0.682	2.36	1.61
Connecticut	68.9	2002Q1	7	1.576	1.12	1.77
Delaware	16.8	2002Q1	7	2.429	0.34	0.83
District of Columbia	12.7	2002Q1	7	1.553	0.24	0.37
Florida	40.2	2002Q1	7	0.705	1.13	0.80
Georgia	29.2	2002Q1	7	1.059	0.74	0.78
Hawaii	8.8	2002Q1	6	2.309	0.27	0.63
Idaho	15.1	2002Q1	7	0.852	0.59	0.50
Illinois	33.8	2002Q1	7	0.813	1.16	0.95
Indiana	61.0	2002Q1	7	1.075	1.37	1.48
Iowa	36.4	2002Q1	7	1.033	0.84	0.87
Kansas	29.3	2002Q1	7	0.665	1.02	0.68
Kentucky	30.5	2002Q1	7	0.908	0.74	0.67
Louisiana	18.7	2002Q1	7	0.581	0.44	0.26
Maine	28.4	2002Q1	7	2.589	0.49	1.28
Maryland	24.0	2002Q1	7	1.467	0.62	0.91
Massachusetts	67.2	2002Q1	7	1.225	0.85	1.05
Michigan	57.9	2002Q1	7	0.712	1.57	1.11
Minnesota	46.5	2002Q1	7	1.948	0.84	1.63
Mississippi	17.1	2002Q1	7	0.821	0.43	0.35
Missouri	62.4	2002Q1	7	1.192	1.11	1.32
Montana	0.1	2002Q4	4	0.675	0.00 ^b	0.00 ^b
Nebraska	26.0	2002Q1	7	0.973	0.57	0.56
Nevada	33.5	2002Q1	7	0.703	1.78	1.25
New Hampshire	51.5	2002Q1	7	1.539	1.01	1.55
New Jersey	40.8	2002Q1	7	0.735	0.96	0.71

Appendix II: Designing a Strategy of Targeted Supplemental Medicaid Assistance

State	Average percentage increase in unemployment	Initial payment quarter	Number of quarters	Index of Medicaid expenditures per nonelderly person in poverty ^a (U.S.=1.000)	Average percentage point increase in matching rate	
					Excluding Medicaid expenditure index	Including Medicaid expenditure index
New Mexico	8.9	2002Q1	7	1.286	0.20	0.26
New York	28.7	2002Q1	7	1.796	0.34	0.61
North Carolina	77.4	2002Q1	7	0.915	1.70	1.55
North Dakota	16.3	2002Q2	6	0.595	0.39	0.23
Ohio	28.5	2002Q1	7	1.041	0.69	0.72
Oklahoma	39.7	2002Q1	7	0.667	0.98	0.66
Oregon	39.1	2002Q1	7	1.011	1.68	1.70
Pennsylvania	26.3	2002Q1	7	1.035	0.57	0.59
Rhode Island	18.1	2002Q1	7	1.106	0.30	0.33
South Carolina	53.1	2002Q1	7	0.972	1.17	1.14
South Dakota	24.9	2002Q1	7	1.122	0.57	0.64
Tennessee	27.0	2002Q1	7	1.431	0.53	0.75
Texas	34.4	2002Q1	7	0.749	1.16	0.87
Utah	61.0	2002Q1	7	0.752	2.20	1.65
Vermont	41.0	2002Q1	7	1.992	0.55	1.10
Virginia	69.3	2002Q1	7	0.610	1.77	1.08
Washington	41.6	2002Q1	7	0.971	1.41	1.37
West Virginia	6.3	2002Q3	5	1.345	0.16	0.22
Wisconsin	52.3	2002Q1	7	0.422	1.38	0.58
Wyoming	8.1	2002Q1	7	1.267	0.27	0.34

Source: GAO calculations based on BLS, CMS, and Census data.

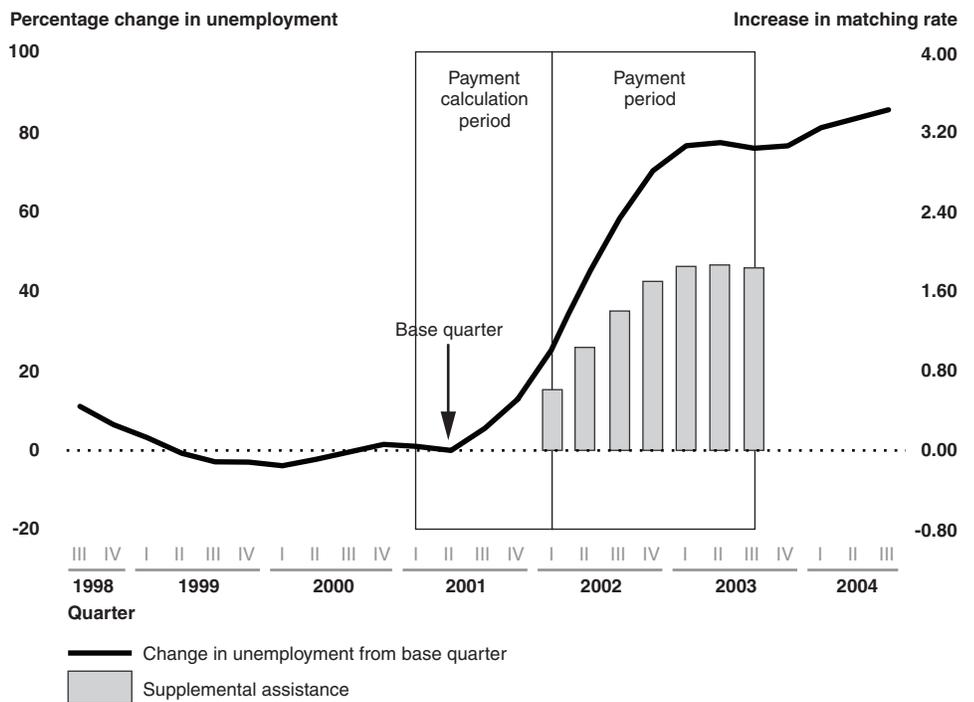
^aExpenditures for categories that would be cyclically sensitive such as spending for children and nondisabled, nonelderly adults.

^bLess than 0.005.

Next are figures showing changes in states' matching rates resulting from the supplemental assistance and changes in unemployment for selected states with widely varying economic downturns in order to illustrate patterns of simulated supplemental assistance in relation to changes in unemployment. These states provide a broader picture to illustrate the different economic circumstances that states can experience during the same economic downturn. On each of the next four figures, the trend line shows the percentage increase in unemployment from the base quarter and is plotted with respect to the percentage change in unemployment. The bars show supplemental matching rate increases, and relate to the

increased matching rate. Figure 8 depicts a downturn in a state that had increasing unemployment from the first quarter of 2000 and shows an increase in unemployment that continues through the third quarter of 2004. The bars show that the supplemental assistance would be responsive to the increase in unemployment during the 7 quarters the state received the assistance.

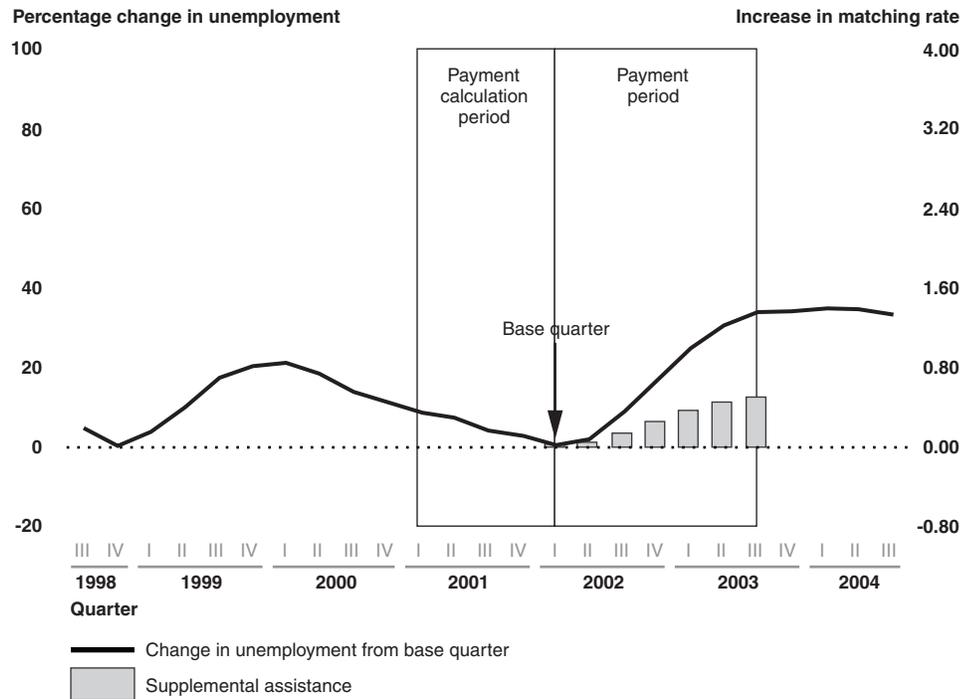
Figure 8: Simulated Supplemental Assistance for a State with an Early, Long, and Deep Economic Downturn



Source: GAO analysis of BLS, CMS, and Census data.

In figure 9, the state experiences a “double dip” with increasing, then decreasing, and again increasing unemployment. The first increase in unemployment is 3 years before the start of simulated supplemental assistance in the first quarter of 2002. The second increase begins in the second quarter of 2002, so the state misses the first quarter of assistance entirely, and the assistance received in the second quarter of 2002 would be relatively small. The first increase in unemployment is relatively small, so it could be considered a transitory economic event rather than a real economic contraction. By the final quarter in which supplemental assistance would be provided, unemployment has leveled off.

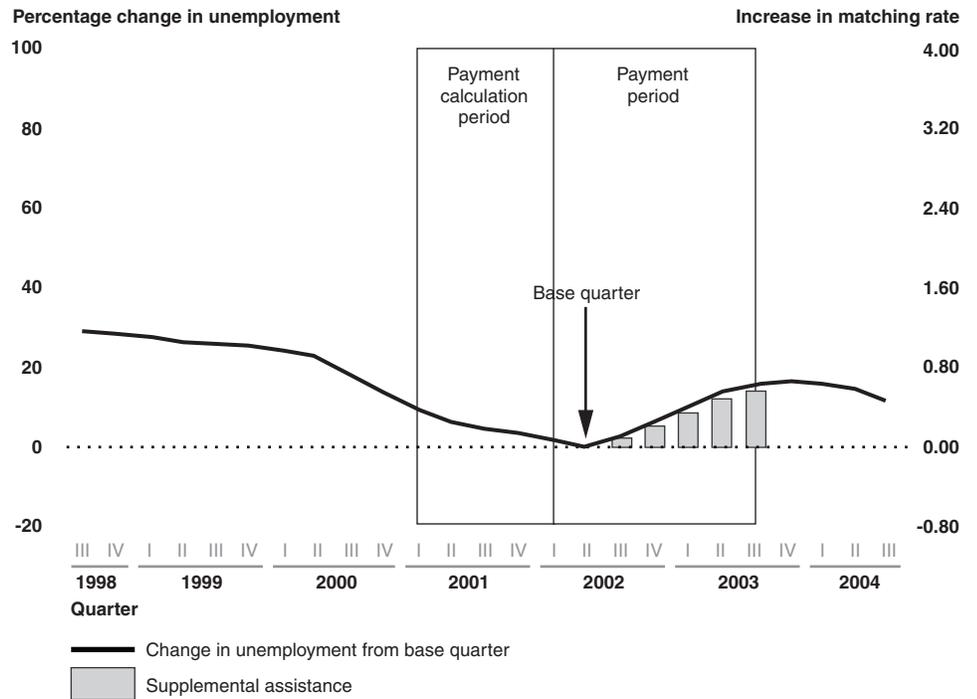
Figure 9: Simulated Supplemental Assistance for a State with a Relatively Early, Long-Lasting, and Shallow Downturn



Source: GAO analysis of BLS, CMS, and Census data.

Figure 10 shows a state with a particularly late and short economic downturn, in which unemployment was leveling off by the final quarter of the supplemental assistance provided and declining thereafter. Nevertheless, the state would have received 5 quarters of supplemental assistance.

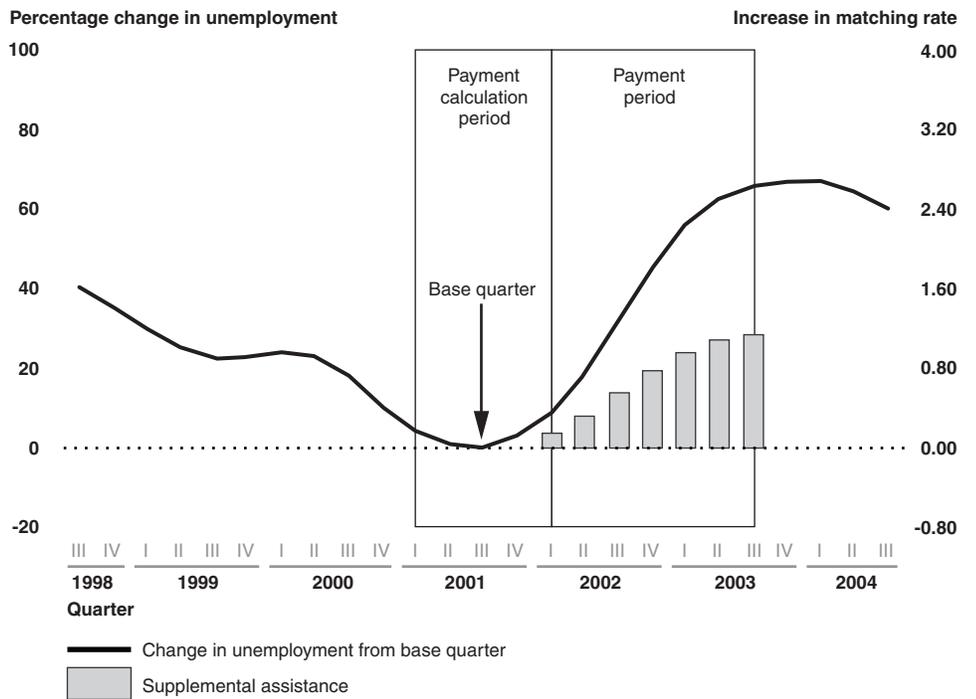
Figure 10: Simulated Supplemental Assistance for a State with a Late, Short, and Shallow Downturn



Source: GAO analysis of BLS, CMS, and Census data.

Figure 11 shows a state with a short and relatively deep recession. Supplemental assistance would have been provided through 7 quarters of increased unemployment and would have been phased out about the time when unemployment peaked.

Figure 11: Simulated Supplemental Assistance for a State with a Short, Deep Downturn



Source: GAO analysis of BLS, CMS, and Census data.

Appendix III: Designing a Strategy to Better Reflect States' Current Economic Conditions

This appendix presents additional detail about the development and analysis of our strategy to use fewer years of per capita income (PCI) data to compute Medicaid matching rates. As currently constructed, the PCI data in the Medicaid formula reflect economic conditions that existed several years earlier.¹ The age of the data used to calculate the matching rate can result in states not receiving a matching rate consistent with their current economic situation because state PCI for a particular year becomes available nearly 2 years after the start of the calendar year for which the data are reported.² For example, the United States entered a recession in 2001, but matching rates for 2001 were based on PCI data from 1996 to 1998, when the national economy was expanding. Efforts to use fewer years of data to calculate the matching rate assume that eliminating the oldest year of data would more accurately reflect a state's current economic circumstances. We tested this assumption by analyzing the effects of using fewer years of data to calculate states' federal matching rates. To develop and analyze this strategy, we reviewed a similar proposal published in a 2004 AARP Public Policy Institute report³ and our previous work on the Medicaid matching formula.⁴

Overview of Analysis

To analyze the effect of using fewer years of data to calculate the matching rates, we used three matching rates that employed the current statutory formula but varied in the years of data used (see table 6). The first matching rate (“the 3-year matching rate”) mirrors the current statutory construction of the Medicaid matching rate calculation, using 3 years of PCI data that are 3 to 5 years old. The second matching rate (“the 2-year matching rate”) is based on the statutory construction, except that it eliminates the oldest year of data and uses 2 years of PCI data. The third matching rate (“the simulated matching rate”) only uses PCI data for the

¹For example, the fiscal year 2006 matching rate includes a 3-year average of PCI data from 2001 to 2003.

²The age of the data used to calculate the matching rate results from both a data reporting lag and an announcement lag. The reporting lag occurs because the Bureau of Economic Analysis reports state PCI amounts about 9 to 12 months after the end of a calendar year. For instance, state PCI for 2004 was reported toward the end of 2005. The announcement lag occurs because matching rates are announced 1 year before the year in which they become effective. This is referred to as the announcement period, because it gives states time to plan their budgets based on Medicaid matching rates for the upcoming fiscal year.

³Vic Miller and Andy Schneider, *The Medicaid Matching Formula: Policy Considerations and Options for Modification*, #2004-09, AARP Public Policy Institute (Washington, D.C.: September 2004).

⁴GAO, *Medicaid Formula: Differences in Funding Ability among States Often Are Widened*, [GAO-03-620](#) (Washington, D.C.: July 10, 2003).

current year (the year in which the calculations are made) and for 1 year prior, thus showing no time lag in the data used. Although not feasible to implement because of lags in data publication, we devised the simulated matching rate in order to evaluate whether changing the years of data used to calculate the matching rate resulted in a better approximation of states' current economic circumstances.

Table 6: Matching Rates Used to Analyze Strategy

Matching rate	Description	Years of PCI data used to calculate matching rate for 2001
3-year	Uses 3 years of PCI data, as outlined in federal statute	1996-1998
2-year	Removes the oldest year of PCI data from the current statutory matching rate calculation	1997-1998
Simulated	Uses current year and 1 prior year of PCI data to calculate matching rate	2000-2001

Source: GAO analysis using Bureau of Economic Analysis (BEA) PCI data.

We calculated these matching rates for the period from 1990 through 2004, which covers the last two national recessions.⁵ We then compared (1) the annual percentage point changes in the three matching rates with annual percentage changes in PCI and annual percentage point changes in the unemployment rate, (2) the simulated matching rate with changes in PCI, and (3) the 3-year and 2-year matching rates with the simulated matching rate. Finally, we analyzed the extent to which the 3-year and 2-year matching rates fluctuated from year to year.

Comparison of Changes in Matching Rates with Changes in PCI and Unemployment

To measure the extent to which the 3-year and 2-year matching rates can assist states throughout the economic cycle, we did a correlation analysis that compared the annual changes in matching rates with the changes in PCI⁶ and the unemployment rate, two commonly used indicators of economic performance. A negative correlation coefficient would mean that when current PCI decreased, matching rates would increase, and vice versa. A positive correlation coefficient would mean that when the current unemployment rate increased, matching rates would increase, and vice versa. For example, it would indicate that the matching rates would increase assistance provided to the states during an economic downturn.

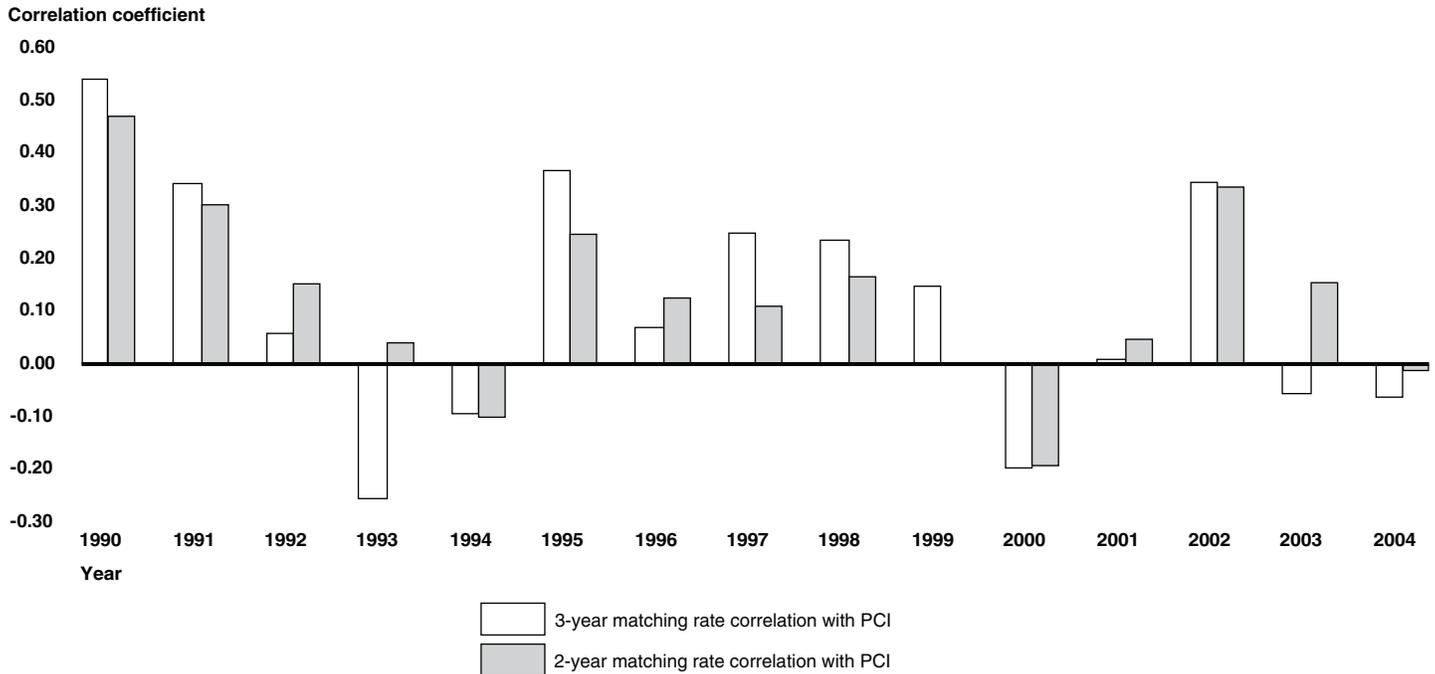
⁵The first recession occurred in 1990-1991. The second recession occurred in 2001.

⁶State PCIs were deflated using the price index for personal consumption expenditures from BEA.

Specifically, we examined the correlation between the annual changes in the 3-year matching rate and the percentage change in PCI and the annual changes in the 2-year matching rate and the percentage change in PCI. For the 3-year and 2-year matching rates, to offer states relief during an economic downturn, the correlation should be negative. In other words, a decline in PCI would be associated with an increased matching rate. (Similarly, in an economic upturn the matching rates would decline.) However, we found that the correlation between the changes in the 3-year and 2-year matching rates, and the changes in PCI fluctuated (see fig. 12). Changes in current economic conditions were essentially uncorrelated with changes in matching rates during this time period.⁷ For example, while a moderate positive correlation existed in 1990 (+0.54 and +0.47 for the respective 3-year and 2-year matching rates), the correlation became negative for both the 3-year and 2-year matching rates 4 years later. For most years, correlations between 3-year and 2-year matching rates followed similar patterns, but occasionally they diverged. For example, in 1993, the 3-year matching rate had a negative correlation (-0.25), while the 2-year matching rate essentially showed no correlation (0.04). Importantly, during the recession years 1990 through 1991 and 2001, the correlation coefficients were positive. Therefore, this indicated a declining current PCI associated with a declining matching rate. Consequently, the 3-year and 2-year matching rates do not tend to assist the states during economic downturns.

⁷However, in fig. 12, positive correlations were more prevalent than negative correlations.

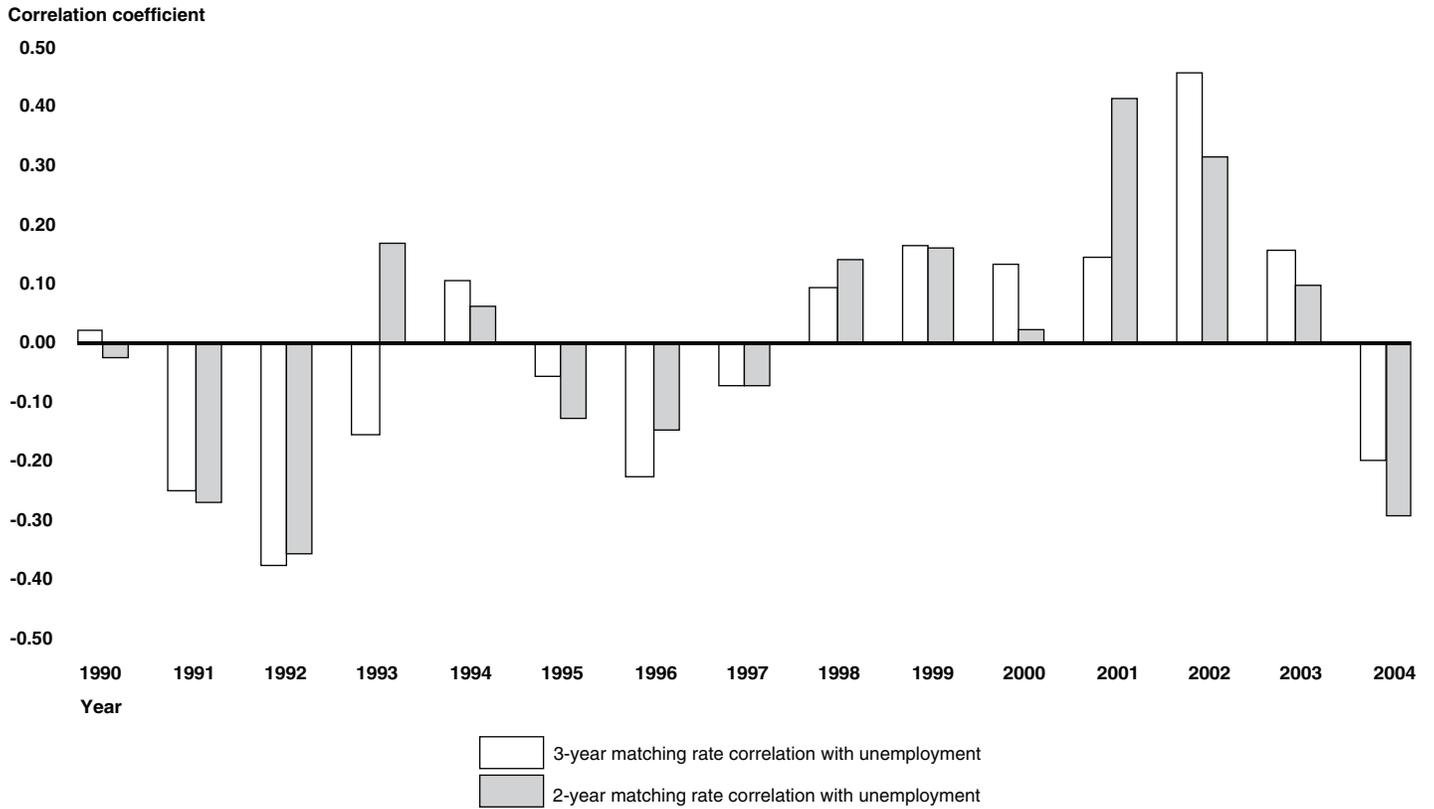
Figure 12: Correlations of the Changes in the 3-Year and 2-Year Matching Rates with Changes in PCI



Source: GAO.

We also examined the relationship between the changes in the 3-year and 2-year matching rates and changes in the unemployment rate. If the matching rates assisted the states during periods of increased unemployment, the relationship between the change in matching rates and the change in the unemployment rate would be positive. In other words, increases in the unemployment rate would be associated with increases in the matching rates, and vice versa. Similar to the results with PCI, the relationship is mixed—in some years, the relationship is positive and in some it is negative (see fig. 13). In the 1990-1991 recession, the relationship was negative, indicating that increases in the unemployment rate were associated with decreased matching rates. In the 2001 recession, the relationship was positive: increases in unemployment were associated with increased matching rates.

Figure 13: Correlations of the Changes in the 3-Year and 2-Year Matching Rates with Changes in the Unemployment Rates



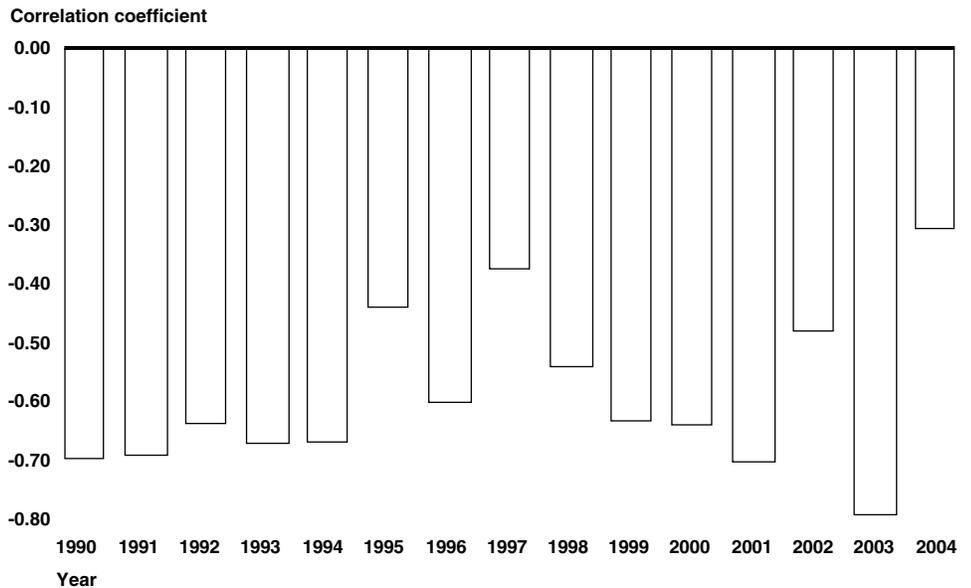
Source: GAO.

Note: A positive correlation coefficient would show that when unemployment increased, matching rates would also increase.

Comparison of Changes in PCI with Changes in the Simulated Matching Rate

To assess whether the simulated matching rate provided a better approximation of states' current economic conditions as measured by changes in PCI, we did a correlation analysis of the changes in PCI with the changes in the simulated matching rate, which is based on the current and prior year's PCI. Comparing changes in PCI with the simulated matching rates allowed us to assess whether (1) the time lag in the data affected the correlation between matching rates and changes in PCI or (2) the construction of the matching rate formula itself affected the correlation between matching rates and changes in PCI. The correlation between the changes in PCI and the changes in the simulated matching rate is uniformly negative during the period from 1990 through 2004 (see fig. 14), suggesting that the matching formula structure is not the cause of the mixed relationship.

Figure 14: Correlations of the Changes in the Simulated Matching Rate with the Changes in PCI, 1990 to 2004



Source: GAO.

Overall, the changes in the simulated matching rate provided a more consistent link to changes in states' PCI than did the changes in the 2-year and 3-year matching rates. Decreases in PCI were consistently associated with increases in the simulated matching rates. Conversely, increases in PCI were associated with decreases in the matching rates. The correlation coefficients ranged from -0.79 to -0.31, thus indicating variations in the strength of the relationship during the time period. The relationship between matching rates and PCI reflects that the simulated matching rate

is constrained by the 50 percent floor in some states, whereas changes in PCI do not reflect this constraint.⁸ This reduces the correlation. For example, although Connecticut's PCI fluctuated more than the majority of the states, its matching rate remained at the 50 percent floor during the entire 1990 to 2004 time period. The number of states affected by the 50 percent floor during this time period varied from 10 to 12. In addition, the simulated matching rate used a 2-year average of PCI, whereas the changes in PCI reflected year-to-year differences in PCI. The matching rate formula also squares PCI, thus reducing the correlation between PCI and the simulated matching rate. (PCI changes are linear. The squared PCI values in the simulated matching rate resulted in nonlinear changes.)

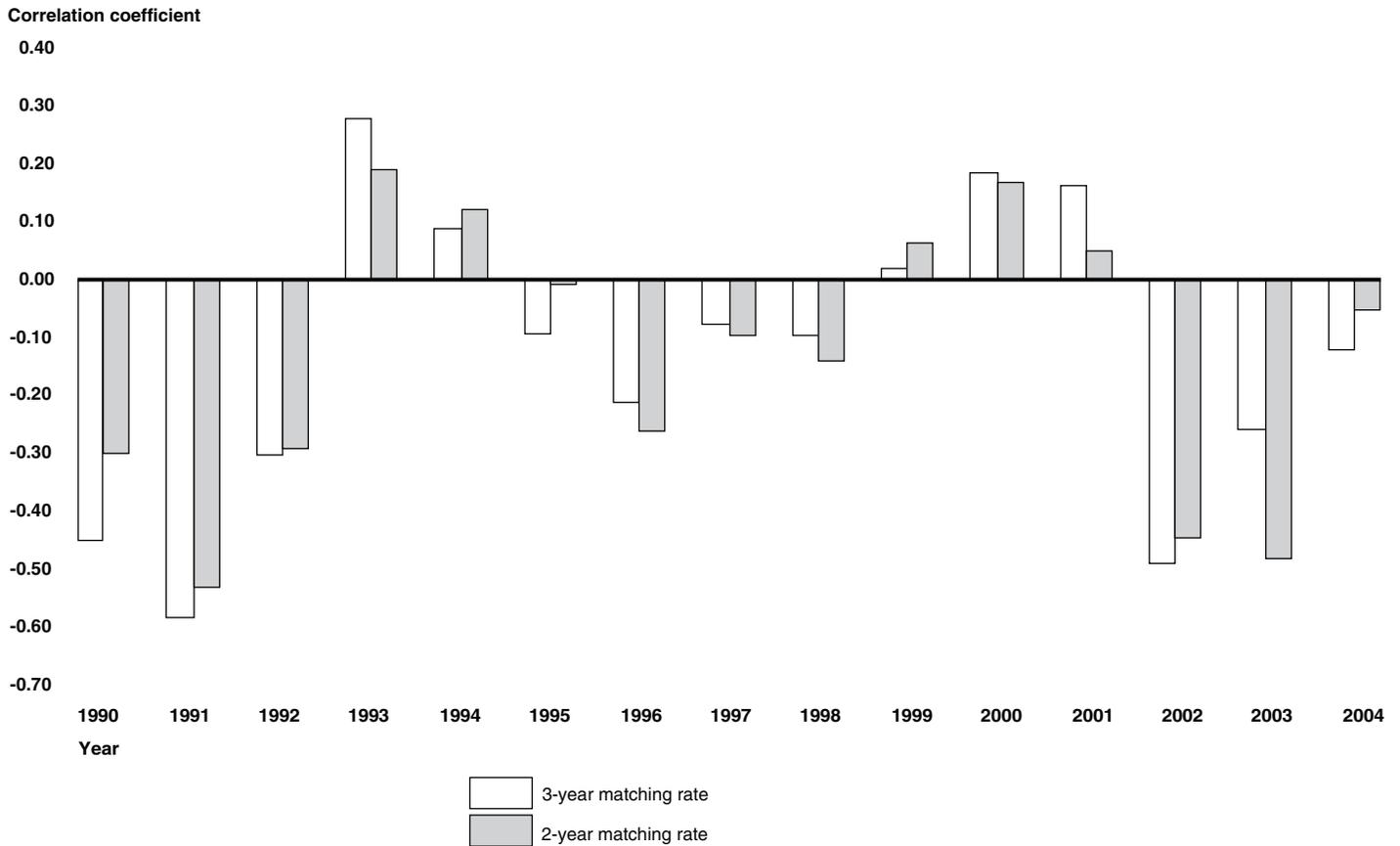
The 2-year PCI average in the simulated matching rate reduced the annual PCI fluctuations. As a result, the annual correlations between the simulated matching rate and PCI fluctuated depending on the underlying volatility of PCI across states.

Comparisons of Changes in the 3-Year and 2-Year Matching Rates with Changes in the Simulated Matching Rate

We also compared changes in the 3-year and 2-year matching rates with changes in the simulated matching rate to determine whether a 2-year matching rate better approximated states' current economic conditions. Figure 15 shows the annual correlation coefficients of the 3-year and 2-year matching rates compared with the simulated matching rate. A higher positive correlation coefficient for the 2-year matching rate would indicate that the 2-year matching rate is more sensitive to changes in current economic conditions than the 3-year matching rate. The generally negative correlation indicates that the 3-year and 2-year matching rates do not track the current economic conditions reflected in the simulated matching rate. In general, the correlations of the 3-year and 2-year matching rates with the simulated matching rate were practically identical during the entire period, 1990 to 2004 (on average, -0.130 and -0.135, respectively). These correlations fluctuated during the period of analysis and ranged from -0.58 (1991) to 0.28 (1993). The correlations were negative during the 1990-1991 recession, indicating that the matching rates would not have assisted states during this economic downturn. However, in the 2001 recession, the correlations were essentially zero.

⁸By statute, the federal share of Medicaid spending ranges from 50 to 83 percent. The 50 percent minimum federal share ("50 percent floor") reflects a federal commitment to fund at least half the cost of each state's Medicaid program. For 2006, 12 states received federal matching rates of 50 percent.

Figure 15: Correlations of the Changes in 3-Year and 2-Year Matching Rates with the Changes in the Simulated Matching Rate



Source: GAO.

Note: A positive correlation coefficient would mean that when PCI increased, matching rates would decrease.

The lack of substantial positive correlations during either recession is of particular concern because it indicates that when the states are under the most economic stress, the matching rates for states decline or, at best, remain on average unchanged. These correlation results occur because when PCI declines, the 3-year and 2-year matching rates depend upon PCI data that reflect economic conditions of several years earlier.

Comparisons of 2- Year and 3-Year Matching Rates in Year-to-Year Fluctuations

We analyzed the extent to which the 2-year and 3-year matching rates differed in year-to-year percentage point changes by comparing annual differences in matching rates to understand whether a reduction in the number of years of PCI data in the matching rate formula (from 3 years to 2 years of PCI data) yielded changes that differed from the year-to-year percentage point changes resulting from the current, statutory matching rate. We compared year-to-year percentage point changes in matching rates for the 2-year matching rate and the 3-year matching rate. As expected, the 3-year PCI average produced a smoother time trend than a 2-year average. In general, the 2-year matching rates showed slightly larger year-to-year fluctuations compared with the 3-year matching rates.

Specifically, from 1990 through 2004, we found that

- 43 percent of the annual changes in 2-year matching rates exceeded the changes in the 3-year matching rates,
- 33 percent of the annual changes in the 3-year matching rates exceeded the changes in the 2-year matching rates, and
- 24 percent of the annual changes were identical (reflecting those states at the 50 percent matching rate floor).

(See table 7.)

Table 7: Comparison of States' Year-to-Year Differences in 2-Year and 3-Year Matching Rates, 1990-2004

Differences in the changes in the matching rates (percentage points)	Number of instances 2-year matching rate exceeded 3-year matching rate	Percentage of instances 2-year matching rate exceeded 3-year matching rate	Number of instances 3-year matching rate exceeded 2-year matching rate	Percentage of instances 3-year matching rate exceeded 2-year matching rate
1 or more	7	1.0	0	0.0
0.5 to less than 1	31	4.3	22	3.1
0.25 to less than 0.5	87	12.2	51	7.1
Greater than 0 to less than 0.25	182	25.5	165	23.1

Source: GAO analysis of changes for current 3-year matching rate and proposed 2-year matching rate.

Notes: Differences represent differences in the absolute-value annual changes in 3-year matching rates with absolute-value annual changes in 2-year matching rates.

The second and fourth columns represent the number of instances any state experienced a variation within this range during 1990 to 2004.

The third and fifth columns represent the percentage of states experiencing a variation within this range between 1990 and 2004.

There were 169 instances with no state differences between the 2-year and 3-year matching rate changes. This lack of variation reflects states whose matching rates were at the 50 percent matching rate floor and thus had no annual changes.

In those years in which the 2-year matching rate exceeded the 3-year matching rate, it occasionally did so by a wide margin. For example, the 2-year matching rates in a few states—in several years—had an annual change 1 percentage point greater than the annual change in the 3-year matching rate.⁹ The changes in the 3-year matching rates never exceeded the changes in the 2-year matching rates by more than 1 percentage point.

⁹The standard deviations for the annual changes in the 3-year and 2-year matching rates, respectively, were 0.52 and 0.60 percent.

Appendix IV: Information on Selected Intergovernmental Loan Programs and State Rainy Day Funds

This appendix contains information about some of the existing programs we reviewed to understand the design decisions and policy considerations involved in a strategy to allow states to determine whether and when to access increased federal Medicaid assistance in response to economic downturns. These programs provided a conceptual framework for reviewing existing design alternatives that could inform consideration of a potential Medicaid-specific loan or national rainy day fund. We examined features of existing federal programs that include intergovernmental loan components.¹ In addition, we examined state rainy day funds as well as prior GAO work to inform our understanding of some of the issues likely to be involved in creating a Medicaid-specific national rainy day fund.²

Selected Intergovernmental Loan Programs

The Environmental Protection Agency's (EPA) Clean Water State Revolving Fund (CWSRF) program provides an independent, permanent, low-cost source of financing for a wide range of efforts to protect or improve water quality.³ Through the CWSRF, EPA provides annual grants to the states to capitalize state-level CWSRFs. States must match these EPA grants with a minimum of 20 percent of their own contributions. States loan their CWSRF dollars to local governments and other entities for various water quality projects, and loan repayments are cycled back into the state-level programs to fund additional projects. In June 2006, we reported that, since 1987, the 50 states as well as Puerto Rico have used 96 percent (about \$50 billion) of their CWSRF dollars to build, upgrade, or enlarge conventional wastewater treatment facilities and conveyances. Although the CWSRF is primarily a low-interest loan program, states can also use it to refinance, purchase, or guarantee local debt and purchase bond insurance. States may customize their loan terms, including interest rates (from 0 percent to market rates) and repayment periods (up to 20 years), depending on the financial and environmental needs of potential

¹Other loan programs included in our background research were the Student Loan Program, the Drinking Water Revolving Loan Program, and state Capital Access Programs. Any new federal loan program would have to comply with the Federal Credit Reform Act of 1990 requirements that agencies have budget authority to cover the program's cost to the government in advance, before new direct loan obligations are incurred and new loan guarantee commitments are made.

²GAO, *Medicaid: Restructuring Approaches Leave Many Questions*, [GAO/HEHS-95-103](#) (Washington, D.C.: Apr. 4, 1995).

³GAO, *Clean Water: How States Allocate Revolving Loan Funds and Measure Their Benefits*, [GAO-06-579](#) (Washington, D.C.: June 5, 2006).

borrowers. All programs are also subject to annual independent financial audits.

The Federal Emergency Management Agency (FEMA) provides Community Disaster Loans (CDL) to local governments in designated disaster areas that have suffered a substantial loss of tax and other revenue. The state's governor requests a presidential declaration of an emergency or disaster through the FEMA Regional Director. Once the president has made the declaration, loans can be provided up to a maximum of \$5 million. Loans are not to exceed 25 percent of the local government's annual operating budget for the fiscal year in which the major disaster occurs. The CDL program provides for loan forgiveness (cancellation) when it is determined that the affected government will not be able to repay the loan for 3 fiscal years following a disaster. A total of 55 CDLs were made from the initiation of the program in August 1976 through September 30, 2005. Of the 55 loans made, 36 were paid back in part or in full.⁴

The Temporary Assistance for Needy Families (TANF) program offers block grants under which states receive federal funds to design and operate their own welfare programs within federal guidelines. TANF also offers a direct loan program to provide assistance to states. This program is funded through a permanent appropriation of \$1.7 billion. States can access direct loan funds for any purpose for which TANF grants can be used, such as welfare assistance, but states must repay any loans within 3 years. However, in 2001, we reported that the TANF loan program is likely the wrong mechanism to provide assistance during a fiscal crisis because states are eligible for better financing terms in the tax-exempt municipal bond market and because officials in some states had indicated that borrowing specifically for social welfare programs in times of fiscal stress would not incur popular support.⁵ No state had applied for a TANF loan prior to 2005. In 2005, Congress made a TANF loan available to three states affected by Hurricane Katrina—Alabama, Louisiana, and

⁴The Community Disaster Loan Act of 2005 (CDLA), provided for up to \$750 million of disaster funds to be used to subsidize "special" community disaster loans, up to a total of \$1 billion, for local governments to provide essential services. For purposes of these special loans, the new law removed the \$5 million per loan limit but prohibited their cancellation. As of May 3, 2006, 59 special CDL applications had been approved for local governments in Louisiana and 47 for those in Mississippi, for a total of 106 loans.

⁵GAO, *Welfare Reform: Challenges in Saving for a "Rainy Day,"* GAO-01-674T (Washington, D.C.: Apr. 26, 2001).

Mississippi—and included language stating that penalties would not be imposed against these states for failure to repay the loan or interest on the loan.

Unemployment Insurance (UI), administered by the U.S. Department of Labor in partnership with the states, provides temporary cash benefits to eligible workers who become involuntarily unemployed. Eligibility for UI benefits, benefit amounts, and the length of time benefits are available are determined by state law, within broad federal guidelines. The UI system is funded through federal and state taxes levied on employers. States deposit their taxes with the U.S. Treasury, which maintains one trust fund with a separate account for each state. States are responsible for ensuring the solvency of their individual trust funds, which they use to pay benefits to UI claimants in their states. To ensure solvency, states may choose to build trust fund reserves during good economic times so that if unemployment rises they will have reserves sufficient for paying UI claims without raising taxes or borrowing money from the federal government. If states have insufficient reserves for paying claims, they may request a loan from the federal government.⁶ The federal government maintains a loan trust fund, which is built up using a portion of the federal UI tax. The Federal Unemployment Account (FUA) funds loans to state unemployment compensation programs. If states fail to repay any loans within the time frame specified in statute,⁷ the federal taxes on employers in a state increase each year the debt is not paid. As of July 2006, the FUA had a balance of about \$13 billion, and one state had an outstanding loan totaling about \$238 million.⁸ States utilize the loan program periodically.

State Rainy Day Funds

According to the National Association of State Budget Officers (NASBO), almost all states have established rainy day funds as one way to cope with fiscal constraints that states experience. These fiscal constraints can be imposed either by law, such as balanced budget requirements and borrowing restrictions, or by bond markets, which encourage states to

⁶ They may also choose to increase taxes on employers or raise funds through other means such as municipal bonds, which potentially offer a lower interest rate.

⁷ If a state has an outstanding balance on January 1 for 2 consecutive years, it has until November 10 of the second year to repay the loan.

⁸ These data were the most recent available balances as of Aug. 2006.

provide funding in advance for particular budgetary uncertainties.⁹ Without adequate reserves available to mitigate a fiscal crisis, states without short-term borrowing capabilities would have little choice but to reduce spending, increase revenue, or make other short-term budget adjustments. Even if a state is permitted to borrow short-term to fund unanticipated needs, the practice may be viewed unfavorably by bond-rating agencies that establish credit ratings for states and therefore play a role in determining a state's borrowing costs.

State rainy day fund requirements vary in a number of ways.¹⁰ Some state rainy day funds can be used only in years of economic downturn (determined through formulas) or in the case of a revenue shortfall or a deficit. State rainy day funds also may include requirements specifying whether funds can be used for general purposes, agency-specific purposes, or in the event of natural disasters or other emergencies. States may also require a minimum rainy day fund balance. The National Conference of State Legislatures (NCSL) recommends a minimum rainy day fund balance of 5 percent.

⁹GAO, *Budgeting for Emergencies: State Practices and Federal Implications*, GAO/AIMD-99-250 (Washington, D.C.: Sept. 30, 1999).

¹⁰NASBO, *Budget Processes in the States* (Washington, D.C.: January 2002).

Appendix V: GAO Contacts and Staff Acknowledgments

GAO Contacts

Kathryn G. Allen, (202) 512-7118
Stanley J. Czerwinski, (202) 512-6806

Acknowledgments

Major contributors included Assistant Directors Michael Springer and Carolyn L. Yocom; and Meghana Acharya, Robert Dinkelmeyer, Greg Dybalski, Nancy Fasciano, Jerry Fastrup, Summer Lingard, Romonda McKinney, Donna Miller, Elizabeth T. Morrison, and Michelle Sager.

GAO's Mission

The Government Accountability Office, the audit, evaluation and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday, GAO posts newly released reports, testimony, and correspondence on its Web site. To have GAO e-mail you a list of newly posted products every afternoon, go to www.gao.gov and select "Subscribe to Updates."

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are \$2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. Government Accountability Office
441 G Street NW, Room LM
Washington, D.C. 20548

To order by Phone: Voice: (202) 512-6000
TDD: (202) 512-2537
Fax: (202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm

E-mail: fraudnet@gao.gov

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Gloria Jarmon, Managing Director, JarmonG@gao.gov (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, D.C. 20548

Public Affairs

Paul Anderson, Managing Director, AndersonP1@gao.gov (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, D.C. 20548