

# THE ECONOMIC EFFECTS OF GOVERNMENT SPENDING REDUCTIONS RELATIVE TO OTHER OPTIONS

**A Report from the Office of the University Economist**

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## **SUMMARY OF THE EFFECTS OF A REDUCTION IN GOVERNMENT SPENDING RELATIVE TO AN INCREASE IN REVENUE**

After the implementation of permanent spending reductions of nearly \$600 million in the current fiscal year, the state government general fund shortfall in the next fiscal year is projected to be \$2.4 billion. While fund transfers and temporary federal assistance are expected to be available, a projected shortfall of \$1.6 billion will need to be closed through spending reductions and/or revenue enhancements.

So far, the Legislature has refused to consider revenue enhancements, focusing on reductions in funding to state agencies. However, unlike much of the private sector, demand does not decline for most public-sector services during a recession. In some government programs, demand rises. Thus, imposed decreases in public spending during recessions come at the same time that demand for public services is stable or rising, resulting in a reduction in the quantity and/or quality of government services. For the most disadvantaged of those consuming public services, real hardship can ensue.

Spending reductions by governments during recessions also worsen economic conditions. In addition to reducing demand for private-sector goods and services, cutting the public-sector workforce causes public-sector revenues to decline. Further, the savings to state government of not paying the former workers' salaries and benefits are partially offset by rising payments to the ex-workers for unemployment insurance and other public welfare programs.

If spending reductions alone are used to resolve the \$1.6 billion shortfall in the state government general fund in the next fiscal year, the negative effects (including the just-passed reductions in the current fiscal year) in calendar year 2010 will include a loss of between 49,000 and 59,000 jobs and between \$3.1 billion and \$3.3 billion in the state's gross product. Thus, the result of state spending cuts would be to very significantly worsen and lengthen the economic recession.

Spending reductions are not the only way to balance the budget. In fact, the negative economic effects from a personal tax increase would be less than those of a governmental spending decrease. If the remaining \$1.6 billion shortfall were to be closed entirely through an increase in the general sales tax rate, between 30,000 and 36,000 jobs would be lost— nearly a 40 percent lesser job loss than if a spending reduction of \$1.6 billion was implemented.

In contrast, increases in business taxes instead of personal taxes will result in greater negative effects than public spending reductions. Thus, it is essential that any tax increase be focused on personal taxes.

There are various reasons why a sales tax increase would have a lesser negative impact than government spending reductions. One is that revenue enhancement will spread the negative effects throughout the state, with the effect on any individual and on any business being minor. In contrast, government spending reductions severely affect a small number of state residents and businesses — state employees and those private-sector businesses that serve state employees and state government directly. The likelihood of a business failing under this scenario is much greater than in the tax increase scenario.

Another reason is that a high percentage of state government expenditures are made directly to state residents and local businesses, while some of the expenditures of individuals quickly leave the state. Also, a portion of the sales tax increase will be exported to tourists and other visitors to the state. In addition, since state taxes are deductible on the federal income tax return, some of the state tax increase ends up being exported to the federal government.

An increase in the sales tax of 2 cents would raise approximately \$1.6 billion per year. The increase would equate to less than \$250 per Arizona resident, or less than \$675 per household, even without considering that some of the tax increase would be exported. Arizona still would rank as a low-tax state at 34th, based on Tax Foundation data. A tax increase of this magnitude would offset only a portion of the state tax cuts implemented between 1993 and 2008 and would be less than the federal tax rebates distributed in May 2008 and the likely rebates to be distributed in 2009.

The demand for university services also does not drop during recessions. Therefore, any reduction in funding for universities will have a negative and direct effect on students. Significant reductions in state funding, if not substantially offset by higher tuition, likely will result in the elimination of programs, reductions in the quality of other programs, enrollment caps, fewer course offerings, larger class size, and the loss of scholarship aid.

A total reduction in state government spending for the university system of \$387.4 million in the next fiscal year (including the \$141.5 million reduction passed in early February) is identified in the Appropriations Chairmen Budget Options report. This would cause job losses of approximately 8,700 to 12,300, with about 45 percent of the lost employment occurring in the private sector. Gross product would be \$560 million-to-\$593 million lower.

A substantial decrease in state government funding for universities will have negative consequences beyond these short-term effects. Lowered student retention and a declining number of students earning degrees will threaten the state's future economy. To remain competitive, Arizona must transition with the rest of the United States to a knowledge-based economy in which science- and technology-based jobs will be key drivers of the economy.

As demonstrated by the severity in Arizona of the current economic downturn, further diversification of Arizona's economy is desirable. Knowledge-based industries, which include high-technology manufacturing as well as services, are the activities with growth potential and the ability to drive the Arizona economy.

An essential feature of the knowledge economy is the importance of a highly skilled workforce, trained in new technologies. In particular, college graduates are of more importance in the new economy than in the old economy. A large number of college graduates with a range of skills are essential to companies in the knowledge economy. Thus, any action — such as budget cuts — that undermines the success of the state's universities also impairs the state's economy.

## **BACKGROUND**

For a general discussion of the effects of government spending reductions and tax increases, see the October 2008 University Economist report “The Economic Contributions of the University System” (<http://economist.asu.edu/arizona-universities>). That report also discusses the effects of state government funding reductions to the university system.

### **State Government General Fund**

Released in mid-January, the 500-page Appropriations Chairmen Budget Options report was intended to provide a starting point for legislative deliberations on both the fiscal year (FY) 2009 and 2010 budgets. While the amount of savings identified for FY 2009 exceeded the projected deficit, the options identified for FY 2010 barely are greater than the projected deficit.

In early February, the Legislature passed a plan to balance the state government general fund in FY 2009. This plan resolved a deficit projected to be near \$1.6 billion through a combination of spending reductions (nearly \$600 million), fund transfers (about \$600 million), minimal additional revenue (\$9 million), and temporary federal assistance of \$500 million. The plan provides a cushion of about \$100 million to allow for further deterioration in revenues or for a lesser-than-projected amount of temporary federal assistance. The permanent spending cuts just implemented lower the projected deficit in FY 2010 from \$3.0 billion to just more than \$2.4 billion.

The options identified in the Budget Options report largely consist of spending reductions in FY 2010. Only a small amount of additional revenue is included (\$51 million). Fund transfers of \$360 million are identified. Temporary federal assistance of \$400 million was assumed.

Using the figures in the Budget Options report and the nearly \$600 million in spending reductions just implemented leaves an additional \$1.6 billion in spending reductions needed in FY 2010. The total reduction in expenditures of \$2.2 billion over the two years amounts to 99 percent of the identified spending reductions, and just more than 20 percent of the expenditures initially projected by the Joint Legislative Budget Committee (JLBC). Given that the demand for most state government functions does not decrease during a recession, while the demand for some services increases, the cut effectively will be even larger than 20 percent.

Even if temporary federal assistance turns out to be greater than projected in the Budget Options report, the vast majority of the identified spending reductions will need to be implemented unless an increase in revenue occurs. Spending reductions in the magnitude of 20 percent overall and more than 20 percent for some programs obviously will have tremendous negative impacts on public services.

Of the spending reductions implemented in FY 2009 and identified as options for FY 2010, those affecting the university system make up a disproportionately large share. The FY 2009 reductions just passed account for just less than 6 percent of the total general fund, but the reduction to the university system is 13 percent. The spending reduction options presented for FY 2010 amount to 20 percent of the total general fund but nearly 30 percent of the university system budget. These shares do not include the effects of fund transfers.

## **PROJECTED ECONOMIC EFFECTS OF BALANCING THE STATE BUDGET**

The economic effects of resolving the state government budget deficit were estimated using the economic forecasting/economic impact estimating models of Regional Economic Models, Inc. (REMI) and Minnesota IMPLAN Group (IMPLAN). Three basic scenarios for resolving the budget deficit in FY 2010 were examined:

- Spending reductions only
- Tax increases and other revenue enhancements only
- A mix of spending reductions and revenue enhancements

Each of the scenarios includes the \$584.5 million in spending reductions just implemented for FY 2009 and assumes an additional \$1,600 million in FY 2010 in either additional spending reductions and/or revenue increases. The actual figure needed in FY 2010 will depend on the amount of temporary federal assistance received and on actual revenue flows.

Since the REMI and IMPLAN models are constructed to receive calendar year (CY) inputs and produce CY outputs, the fiscal year spending reductions and revenue enhancements were converted to calendar year figures. All of the spending reduction in FY 2009 will occur in CY 2009. The spending reduction and/or revenue enhancement in FY 2010 is assumed to be distributed throughout the fiscal year, such that half is implemented in CY 2009 and half in CY 2010.

Thus, in the **first scenario**, spending reductions of \$1,384.5 million in CY 2009 and \$2,184.5 in CY 2010 were modeled. Though this is the only scenario currently being considered in the Legislature, it would require devastating reductions to many state programs and thus is not seen as a practical option.

The December 2008 University Economist reports on “Public Finance in Arizona” include a discussion of supplementing revenue in the near term in “Volume III: Options for Managing the Arizona State General Fund” (<http://economist.asu.edu/public-finance>). Increasing the general sales tax rate is the only means of quickly raising substantial amounts of revenue, though this is proposed as only a temporary measure. An increase of 2 cents on the general sales tax would raise around \$1,600 million per year in the next two years in net revenue to the state government general fund. However, if low-income tax credits are used to minimize the negative effects of the tax increase on low-income households, the revenue increase would be somewhat less. Given the possibility of greater federal assistance than assumed, it is reasonable to conclude that a 2 cent increase in the sales tax will be sufficient to balance the budget.

Thus, in the **second scenario**, the \$584.5 million spending reduction already passed is assumed in both CY 2009 and CY 2010. The tax increase amounts to \$800 million in CY 2009 and \$1,600 million in CY 2010.

With an Arizona population of around 6.6 million, a tax increase of \$1,600 million equals less than \$250 per person or less than \$675 for the median-sized household. The actual tax increase on individuals would be less, given that businesses and visitors to the state would pay a portion of the \$1,600 million. A tax increase of this magnitude is less than the federal tax rebate delivered in May 2008 and is less than the amount likely to be rebated in 2009. Further, a tax

increase of this magnitude would be considerably less than the cumulative effect of state tax cuts implemented between 1993 and 2008 (estimated to be \$2,579 million after adjusting for inflation and population growth in FY 2009). If Arizona's tax burden in 2008 had been \$242 more per person, the state's tax burden would have ranked 34th in the nation (compared to an actual rank of 41st), using Tax Foundation data. Thus, Arizona still could claim to be a low-tax state even after passing such a tax increase.

In the **third scenario**, a combination of tax increases and spending reductions would be used to balance the general fund. While many combinations would result in a balanced budget, a tax increase of half the size of that in the second scenario is assumed (a 1 cent increase in the general sales tax). Thus, further spending reductions of \$800 million would be necessary in FY 2010. Spending reductions thus would total \$984.5 million in CY 2009 and \$1,384.5 million in CY 2010. The tax increase would be \$400 million in CY 2009 and \$800 million in CY 2010.

### **Economic Effects by Scenario**

The economic effects of each scenario are expressed relative to the output of the control scenario, in which no state tax increases or spending reductions are assumed. The impact of each scenario is negative in each model on each of the economic measures, as seen in Table 1.

The overall negative effect is greatest when the FY 2010 budget is balanced entirely by spending reductions and least when balanced entirely by revenue enhancements. Employment losses in CY 2010, for example, in the revenue enhancement scenario compared to the spending reduction scenario would be one-third smaller based on the REMI model and only half as large based on IMPLAN. The third scenario of a blend of the two options has an intermediate negative effect. Regardless of the scenario, the negative effect is greater in CY 2010 than in CY 2009 due to the larger deficit to be closed in 2010.

After FY 2010, revenue is likely to rise as the economy recovers from the recession. However, since further temporary federal aid is not expected, and since fund transfers into the general fund in FYs 2008 through 2010 will need to be reversed, the magnitudes of the total spending reduction and/or revenue enhancement during CY 2010 is not likely to be reduced in CYs 2011 or 2012. Thus, the negative effects of balancing the budget in FYs 2009 and 2010 will continue into succeeding years. As seen in Table 2, the negative effects in CYs 2011 and 2012 are similar to those in 2010.

While total job losses are least in the revenue enhancement scenario, private-sector job losses are somewhat greater in that scenario than in the other two scenarios. However, government absorbs a disproportionate share of the job losses in each scenario. Compared to a 13 percent share of total employment in 2007, government would account for 22 percent of the job losses in 2010 in the revenue enhancement scenario, 41 percent in the mix of spending reduction and revenue enhancement scenario, and 55 percent in the spending reduction scenario.

**TABLE 1  
ECONOMIC EFFECTS OF BALANCING THE STATE BUDGET  
IN CALENDAR YEARS 2009 AND 2010**

	<b>1st Scenario: Spending Reduction</b>	<b>2nd Scenario: Revenue Enhancement</b>	<b>3rd Scenario: Mix of Both</b>
<b>EMPLOYMENT</b>			
2009 REMI	-30,570	-23,540	-27,050
2010 REMI	-49,020	-36,250	-42,660
2009 IMPLAN	-37,887	-23,324	-30,605
2010 IMPLAN	-58,727	-29,991	-44,359
<b>GROSS PRODUCT (in millions)</b>			
2009 REMI	\$-1,906	\$-1,683	\$-1,794
2010 REMI	-3,125	-2,793	-2,963
2009 IMPLAN	-2,111	-1,421	-1,766
2010 IMPLAN	-3,261	-1,905	-2,583

Source: Calculated from REMI and IMPLAN models.

**TABLE 2  
ECONOMIC EFFECTS OF BALANCING THE STATE BUDGET,  
EMPLOYMENT DETAIL BY CALENDAR YEAR**

	<b>1st Scenario: Spending Reduction</b>	<b>2nd Scenario: Revenue Enhancement</b>	<b>3rd Scenario: Mix of Both</b>
<b>TOTAL EMPLOYMENT</b>			
2009	-30,570	-23,540	-27,050
2010	-49,020	-36,250	-42,660
2011	-49,360	-38,270	-43,860
2012	-49,070	-39,260	-44,210
<b>GOVERNMENT EMPLOYMENT</b>			
2009	-17,150	-7,580	-12,360
2010	-26,810	-8,150	-17,480
2011	-26,720	-8,640	-17,680
2012	-26,570	-9,050	-17,810
<b>PRIVATE-SECTOR EMPLOYMENT</b>			
2009	-13,420	-15,960	-14,690
2010	-22,210	-28,100	-25,180
2011	-22,640	-29,630	-26,180
2012	-22,500	-30,210	-26,400

Source: Calculated from REMI model.

## **Analysis**

While the greater negative economic effects from government spending reductions than from tax increases may be a surprise to some, the REMI model does indicate that increases in business taxes instead of personal taxes will result in greater negative effects than public spending reductions. Thus, it is essential that any tax increase be focused on personal taxes, such as the general sales tax. Currently, personal tax burdens in Arizona are very low compared to other states, while corporate tax burdens in Arizona do not compare so favorably.

There are at least three reasons why a sales tax increase would have a lesser negative impact than government spending reductions. First, a high percentage of government expenditures initially stay within the state's economy, going either to employees (state residents) in the form of salaries or to local businesses for the purchase of goods and services. In contrast, though most spending by Arizona residents takes place within Arizona, much of those monies quickly leave the state's economy, particularly since so few manufactured goods are built within the state.

Second, the revenue enhancement scenario spreads the negative effects throughout the state, both geographically and across all 6.6 million residents (or most residents if a tax credit is implemented). The effect on any individual and on any business is minor. In contrast, the spending reduction scenario severely affects a small number of state residents and businesses — state employees and those private-sector businesses that serve state employees and state government directly. The likelihood of a business failing under this scenario is much greater than in the tax increase scenario. A business failure will have a ripple effect across the economy.

Third, a portion of the sales tax increase will be exported to tourists and other visitors to the state. The full effect of the tax increase is not felt within Arizona. In addition, since state taxes are deductible on the federal income tax return, some of the state tax increase ends up being exported to the federal government.

### **Considering Local Government Spending Reductions**

State government is not the only government in Arizona anticipating the need to reduce spending. Many city and county governments already have announced plans to reduce spending in order to balance their budgets. Thus, the magnitude of the negative economic effects of government spending reductions on the state's economy is understated by considering state government only.

While a total of local government spending reductions is not available, a figure of \$900 million was estimated based on the amount of cuts announced in various cities and counties across the state. Such spending cuts in CY 2009 would cost 21,100 jobs and \$1.1 billion in gross product — beyond the negative effects already reported from state government spending reductions. The total negative effect in CY 2009 of state government spending reductions of \$1,384.5 million (the first scenario) and local government cuts of \$900 million is a loss of 51,700 jobs and \$2,600 million in gross product. Total negative effects will be greater in CY 2010.

For perspective, a loss of 51,700 jobs amounts to 1.5 percent of total employment in 2007 and 2 percent of Arizona's total wage and salary employment in December 2008. While a 2 percent decrease may not seem large at first glance, it is the result of a decline in economic activity in

just one sector: government. Further, Arizona has rarely experienced a decrease in employment in the past. Annual average total employment fell in only one year (1975) between 1970 and 2007. Based on the preliminary wage and salary employment estimates for December 2008, the decrease in employment was 116,500 since December 2007. Thus, a loss of 51,700 jobs due to government spending reductions during 2009 would substantially worsen and extend the state's economic recession.

### **The Impact of Funding Reductions to the University System**

Funding for the public university system in FY 2009 was reduced \$141.5 million in early February. The Appropriations Chairmen Budget Options report identifies \$387.4 million of spending reductions to the Board of Regents and the three state universities in FY 2010. This figure includes the lump-sum reduction to spending assessed to nearly all state agencies, agency-specific reductions, the state employee personnel expense reduction, and fund transfers.

The REMI and IMPLAN results of such funding reductions are displayed in Table 3. According to the REMI model, gross product would be \$364 million less in CY 2009 and \$560 million less in CY 2010 than if no funding reductions occur. Employment is projected to fall by more than 5,800 in CY 2009 and by more than 8,700 in CY 2010. Approximately 45 percent of the reduction in employment occurs in the private sector.

The negative effects, especially on employment, are larger using the IMPLAN model. Most of the losses are in direct effects rather than in multiplier effects.

**TABLE 3  
ECONOMIC EFFECTS OF A REDUCTION IN UNIVERSITY SPENDING  
OF \$264.5 MILLION IN FY 2009 AND \$387.4 MILLION IN FY 2010**

	<b>Employment</b>	<b>Gross Product (in Millions)</b>
CY 2009 REMI	-5,839	\$-364.3
CY 2010 REMI	-8,737	-560.1
CY 2009 IMPLAN	-8,567	-413.8
CY 2010 IMPLAN	-12,285	-593.1

Source: Calculated from REMI and IMPLAN models.