

TAX LAW CHANGES IN ARIZONA SINCE 1989 AND THE IMPACT ON GOVERNMENT REVENUES AND ECONOMIC GROWTH

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Changes to Arizona's tax laws have been numerous since 1989¹, following a period of limited changes during the mid-1980s. Initially (from 1989 through 1992), the changes resulted in substantial increases in tax collections. Since then, the changes have resulted in reductions in tax collections in all but two years, as Arizona policymakers have taken many opportunities to reduce tax burdens, primarily for individuals. Substantial reductions were implemented in each year from 1995 through 2001, and again in 2007 and 2008.

As estimated by the Joint Legislative Budget Committee, the effects of the tax law changes are shown in Table 1. The cumulative effect of these annual changes sums to a revenue loss of about \$1.15 billion. Adjusting for inflation, the cumulative loss is somewhat greater at \$1.25 billion. Adjusting for population growth as well as inflation places the loss at \$1.3 billion. The limited effects from the adjustments for inflation and population growth result from increases, not decreases, in the earliest years of the time series. Tax law changes since 1993 cumulate to a decline in general fund revenues of about \$2.45 billion after adjusting for inflation and population growth.

Expressed as a percentage of general fund expenditures, the effects of the tax law changes were large from 1989 through 1991, raising revenues at least 3.6 percent in each of the three years. Between 1995 and 2001, the decreases in revenues ranged from 1.8 to 6.5 percent of the size of the general fund. The tax increases of 1989 through 1992 were reversed by 1996 on a nominal basis, by 1997 on a real basis, and by 1998 on a real per capita basis. Tax decreases since then have lowered general fund revenues to considerably below the historical norm, after adjustments for economic and population growth.

The effects of the tax law changes expressed as a percentage of general fund expenditures are shown in Chart 1 compared to a measure of the inflation-adjusted growth in the Arizona economy. While gross domestic product by state is the broadest measure of the economy, inflation-adjusted data go back only to 1990. Thus, for this analysis, the next-broadest economic measure — earnings — is used.

The effects of tax law changes have been inversely related to earnings. The correlation coefficient is significant at $-.75$, with the coefficient nearly as high at $-.71$ when economic performance in the preceding year is compared to the tax law changes. That is, when the economy is strong, surpluses in the general fund are realized, allowing taxes to be cut while still balancing the budget as required by the Arizona Constitution. When the economy is weak, budget deficits occur, precluding tax cuts and sometimes resulting in tax increases.

As seen in the chart, the Arizona economy is highly cyclical, with the growth rate of inflation-adjusted earnings ranging from about 1 to nearly 10 percent over the last 25 years. While real growth in this measure has remained positive in the last two recessions, this is due to the state's rapid population growth. Real per capita earnings fell from 1989 through 1991 and in 2002 and 2003, as well as in earlier recessions.

¹ All years in this paper refer to the July 1 to June 30 fiscal year used by the State of Arizona. Measures of economic growth and inflation were converted to a fiscal year basis.

A close examination of Chart 1 reveals that economic performance leads the changes in tax policy. Economic growth during the 1980s peaked at 9.5 percent in 1985 and was down to 4.7 percent in 1988, the year preceding the first year of tax increases. Economic gains continued to slow, bottoming at 0.7 percent in 1990. After the recession that ended in 1991, economic growth in Arizona began to accelerate despite the state's high tax burden. Real economic growth reached 5 percent in 1993 and rose further to 6 percent in 1994 and 7 percent in 1995. The first tax cut did not occur until 1993 and was minimal; it was not until 1995 that the first sizable decrease occurred, considerably after economic growth had strengthened. Economic gains remained at 7

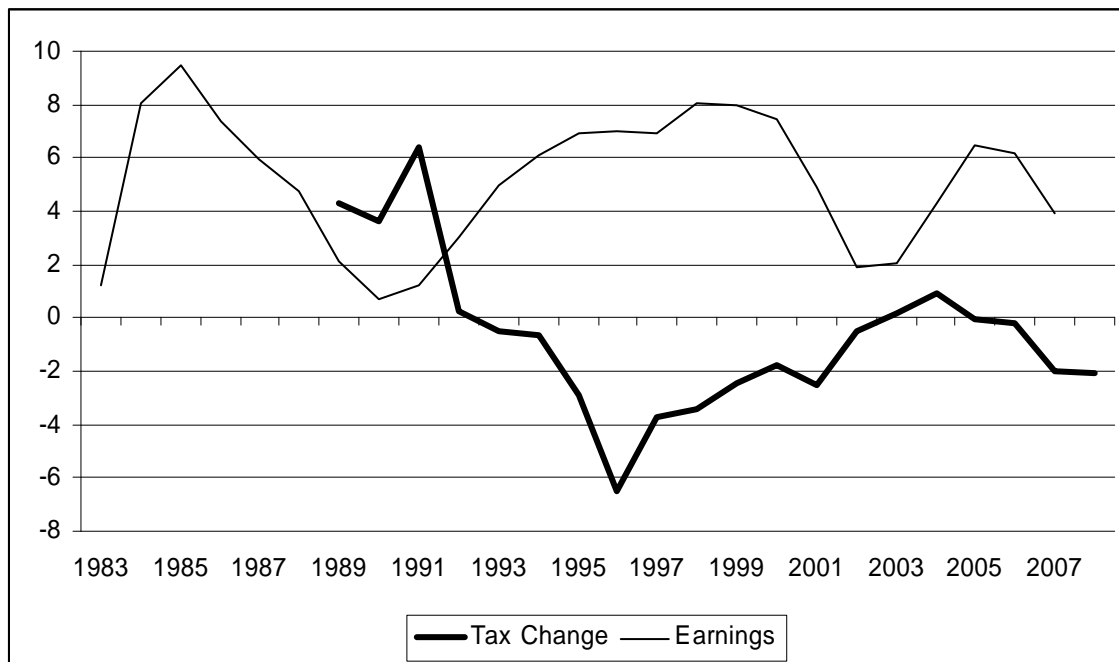
**TABLE 1
ARIZONA GENERAL FUND TAX CHANGES**

Fiscal Year	Nominal Incremental Tax Change*	GDP Implicit Price Deflator	Arizona Population	Real Incremental Tax Change*	Real Per Capita Incremental Tax Change
1989	\$121,700,000	0.6300	3,535,183	\$193,166,830	\$54.64
1990	109,300,000	0.6553	3,622,184	166,787,022	46.05
1991	208,376,000	0.6803	3,684,097	306,291,783	83.14
1992	9,707,500	0.7042	3,788,576	13,785,192	3.64
1993	-19,343,100	0.7211	3,915,740	-26,822,926	-6.85
1994	-25,452,500	0.7379	4,065,440	-34,494,357	-8.48
1995	-120,693,000	0.7526	4,245,089	-160,360,925	-37.78
1996	-284,668,400	0.7686	4,432,499	-370,385,945	-83.56
1997	-174,537,300	0.7836	4,586,940	-222,728,446	-48.56
1998	-172,380,000	0.7966	4,736,990	-216,401,122	-45.68
1999	-141,790,900	0.8053	4,883,342	-176,071,508	-36.06
2000	-104,614,100	0.8172	5,023,823	-128,011,268	-25.48
2001	-157,803,100	0.8346	5,167,260	-189,086,859	-36.59
2002	-33,171,300	0.8555	5,301,097	-38,772,842	-7.31
2003	12,381,000	0.8696	5,444,881	14,236,995	2.61
2004	57,418,100	0.8874	5,579,307	64,703,229	11.60
2005	-4,942,000	0.9135	5,744,367	-5,410,091	-0.94
2006	-18,050,000	0.9408	5,952,083	-19,185,369	-3.22
2007	-193,758,600	0.9735	6,165,689	-199,041,094	-32.28
2008	-217,510,000	1.0000	6,338,755	-217,510,000	-34.31
Cumulative	-1,149,831,700			-1,245,311,700	-205.44
Cumulative Real Per Capita Multiplied by 2008 Population >>>>>>>					-1,302,239,693

* Each yearly amount represents the incremental dollar value of tax law changes relative to the prior year.

Sources: The nominal incremental tax change is from the Arizona Joint Legislative Budget Committee, published in the State of Arizona 2007 Tax Handbook. The GDP Deflator is from the U.S. Department of Commerce, Bureau of Economic Analysis; it is as of the beginning of the fiscal year, with the base being the beginning of FY 2008. The Arizona population estimate is from the U.S. Department of Commerce, Census Bureau; it is the figure at the beginning of the fiscal year.

CHART 1
INCREMENTAL TAX CHANGE AS A SHARE OF GENERAL FUND EXPENDITURES
AND PERCENT CHANGE IN INFLATION-ADJUSTED EARNINGS



Note: GDP by state for fiscal years estimated as the average of successive calendar years. GDP by state prior to 1997 estimated due to break in series caused by the switch from the Standard Industrial Classification to the North American Industry Classification System.

Sources: Arizona Joint Legislative Budget Committee and U.S. Department of Commerce, Bureau of Economic Analysis.

to 8 percent through 2000, even though the state’s tax burden fell from above to considerably below the historic norm during this period.

Despite historically low tax burdens, the state’s economic growth rate fell sharply during 2001 and 2002, ending the long period of tax cuts. Following the 2001 calendar year recession, economic growth again rose. Subsequent to this, another round of tax cuts were implemented in 2007 and 2008. Despite a historically low tax burden, economic growth rates in the expansion that began in 2002 were less than those of either of the two prior expansions.

Thus, no indication exists that the level of state tax collections in Arizona has had an impact on the state’s economic growth. However, the possibility that economic growth in Arizona relative to the national average has been affected by tax levels needs to be examined.

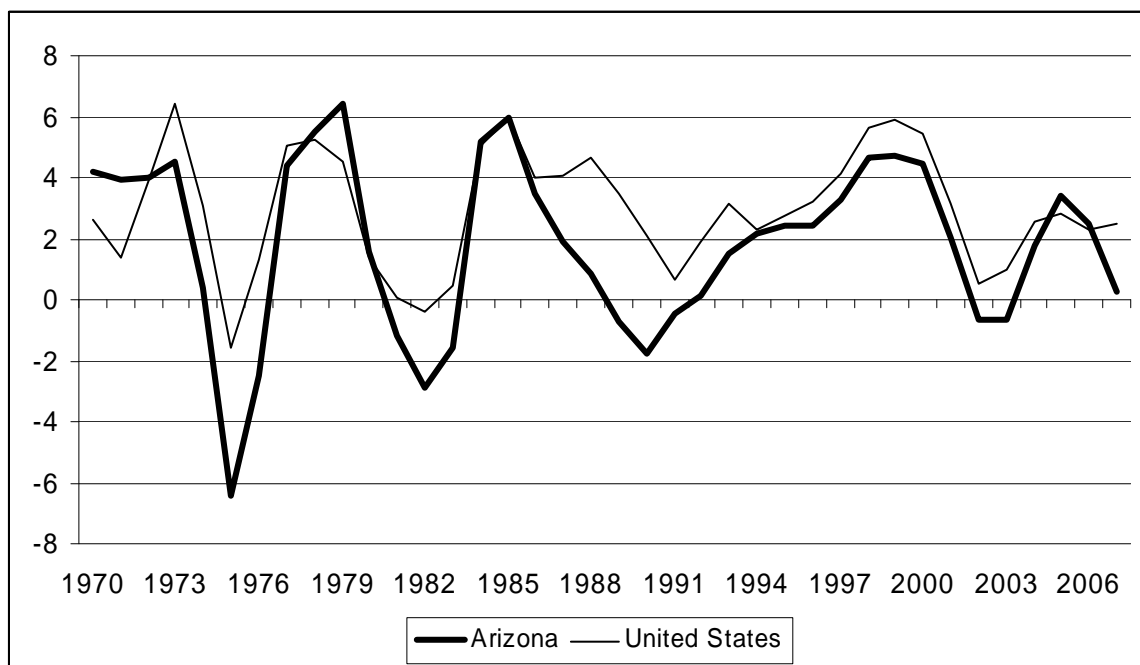
Based on the Tax Foundation’s measure of state and local government tax burden — which is expressed relative to a measure of income — Arizona’s tax burden historically was above the national average. (The tax burden in Arizona is not nearly as high based on a per capita comparison.) From 1970 through 1996, Arizona’s tax burden according to the Tax Foundation always was higher than the U.S. average and ranked among the highest 20 states in the country,

with the highest ranks at fourth in 1975 and fifth in 1990. In contrast, in 2007 Arizona's tax burden was noticeably less than the national average and ranked 31st in the nation.

Despite this significant decline in relative tax burden, economic growth relative to the nation in recent years has been no different than the historical relationship. Real per capita earnings growth is compared in Chart 2. Arizona's annual percent change occasionally has been equal to or greater than the national average, as in 1970-71, 1978-80, 1984-85, and 2005-06, but generally has been inferior to the national average, particularly during recessions. Note that the extended period of inferior growth in Arizona from the mid-1980s through the early 1990s began well before the substantial tax increases of 1989 through 1991. Despite the low tax burden, including additional tax cuts in 2007 and 2008, Arizona's economic growth during 2007 (the last year in Chart 2) dropped considerably, to substantially below the national average. Most economists believe that Arizona currently is one of a minority of states to be in recession.

That the changes in taxes in Arizona — both increases and decreases — have not had a noticeable empirical impact on the state's economic growth should not come as a surprise. A conceptual basis for such an effect is lacking, as discussed in the next section. In contrast, the state's general fund was severely in deficit during the last recession and again in 2008, with an even larger deficit predicted for 2009. While the economic recession is the first cause of the budget deficit, the severity of the deficit results from many years of significant tax cuts not accompanied by an equivalent amount of spending cuts.

CHART 2
ANNUAL PERCENT CHANGE IN INFLATION-ADJUSTED PER CAPITA EARNINGS



Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Taxes and Economic Growth

Nearly any position on the relationship between taxes and economic performance is supported in the published literature. However, the bulk of the modern literature indicates that taxes have only a small effect on economic growth. For example, one study suggests that a 10 percent reduction in *all* state and local taxes would increase employment growth over the course of 20 years by 2.5 percentage points over and above the growth that would have occurred without the tax reduction. In a fast-growing state like Arizona, where the 20-year increase in employment from 1986 to 2006 was 97 percent, such an increase is inconsequential.

Generally, tax burdens must be far out of line with competitor regions before much of an effect on the economy can be measured. For a state, a tax cut will have little effect on the economy unless the tax burden is comparatively quite high (especially versus competing states) and the tax reduction is very large. In general, tax policy is an inefficient way to stimulate the economy. Investment in infrastructure and education has been shown to have a greater effect on economic growth.

Taxes as a Business Expense

Despite the attention given to taxes, state and local tax payments are a small expense for most businesses, averaging less than 2 percent of operating income. Therefore, the difference in state and local tax rates between states would have to be very large to have a noticeable effect on a company's profits. The compensation of company officers is a larger expense than state and local taxes.

Taxes receive attention because many state and local governments grant tax incentives, tax credits and tax exemptions to businesses. A rational profit-seeking business will avail itself of such opportunities. In site location decisions, such tax breaks can be a deciding factor only if two or more locations are viewed equally on all other factors.

The Laffer Curve and Supply-Side Economics

Supply-side economics is based on the concept that tax reductions stimulate economic growth, with the stimulus so great that government revenues rise despite the lower tax rates. The "Laffer Curve" popularized this theory.

The economist Arthur Laffer brought the relationship between taxes and economic performance into the popular literature in the 1970s. However, the analytical foundations of his Laffer Curve were established centuries ago. Moreover, the curve is a mathematical relationship (Rolle's Theorem).

The concept is simple: An optimal level of tax rates produces the greatest government revenue; lower tax rates than optimal result in lower revenues, while higher-than-optimal tax rates reduce public revenues by discouraging economic activity. This relationship follows a curve. The exact shape of the curve can vary by specific circumstances, but the end points always are the same: No tax results in no public revenue while a 100 percent tax rate would cause all legal economic activity to cease. The difficulties in real-world application of this relationship are to identify the tax rate that constitutes the optimal point, and to describe the exact shape of the curve.

Elasticity is defined in economics as the responsiveness, or sensitivity, of consumers to a change in price. Elasticities apply to fiscal policy because tax rates are a price. Economic theory indicates that unless elasticities are quite high, the peak of the Laffer Curve (the optimal tax rate) for a broad tax (such as the personal income tax) is higher than commonly assumed, so high that such a rate would not be considered realistic. High elasticities are more possible in the case of narrowly defined taxes, raising the possibility that a tax rate on a narrow tax might be higher than optimal.

Laffer originally discussed the relationship between tax rates and tax revenues in the context of national tax rates, particularly the federal income tax, which was quite high in the 1970s. The concept also is valid at a regional level such as a state. However, state tax rates are low relative to the federal income tax rate. Thus, a decrease in a state tax rate is less likely to have a supply-side effect and any effect likely is small.

On the other hand, a state tax by definition is narrower than a national tax and thus is more likely to have an optimal point that is being exceeded in reality. This is because states compete for economic activity, most of which is mobile (not tied to a particular place as in the case of a mine). Capital and labor can move easily throughout the country. Thus, at the state level, the optimal point on the Laffer Curve may be the average tax burden of all states. Alternatively, for any given state, the optimal point may be the average only of its most competitive states.

It might be argued that the optimal tax rate is not either of these averages, but rather is a tax level higher or lower than this. For example, some may argue that tax burdens in all states are either higher or lower than optimal. Not only is this argument not easily proved, but one or a few states that aggressively raise or lower taxes based on such an argument still would be bound by the existing Laffer Curve. If tax policy in these states strayed too far from the norm in either direction, diminishing government revenues would result.

Thus, for a tax cut to result in a positive effect on economic growth and government revenue, the existing tax rate must be higher than optimum. For much of a positive effect to result, the tax rate must be far above the norm and be lowered to near the optimal point. Such a situation is most likely in the case of a narrow tax. In addition, a greater economic impact is likely from a reduction in a higher-than-optimal business tax than in a higher-than-optimal personal tax since one business decision (for example, in site selection) can affect many workers.

Another requirement for a *net* positive effect to accrue on government finance from a state tax cut is that the state must have underutilized resources. For example, if a state with higher-than-optimal tax rates also has high unemployment and high commercial and industrial vacancy rates, then a reduction in taxes to near the optimal point might stimulate economic growth, putting more residents to work and more highly utilizing existing facilities. Since labor to support the faster economic growth would not have to be imported to the state, population growth would not accelerate. Thus, the increase in government revenues would not be offset by the need to increase public spending to support new residents.

The Situation in Arizona

Most of the taxes cut in Arizona since the early 1990s have been broad-based taxes applied to individuals. In particular, decreases in the individual income tax have accounted for 64 percent of the cumulative \$1.15 billion nominal overall decrease since 1989. Even in the early 1990s, the individual income tax rate was less than the average of the states. Thus, the lack of evidence that actual tax cuts (or increases) in Arizona had an effect on economic performance fits this Laffer Curve analysis.

Except during recessions, Arizona has had neither high unemployment rates nor high commercial/industrial vacancy rates. The majority of jobs created in Arizona are filled by labor imported into the state from other states and other countries. (Arizona would not have strong net migration and population growth if this were not the case.) Thus, even assuming that tax cuts in Arizona did have an effect on economic growth, the requirement of excess capacity is not met. If lowered taxes stimulated the Arizona economy further, then even more labor would have to be imported into the state, both for the construction of the facilities needed to house these economic activities and for the permanent employment created. Thus, while public revenues would increase, the need for public spending also would rise. Unless the incomes of the imported workers were above the existing average (considerably so if the worker had or would have school-age children), taxes paid by new residents would not cover the costs of providing them with public services.

One example exists in Arizona of a tax reduction that might have a net positive effect on economic growth and public-sector finance. The business property tax, a narrow tax, is demonstrably high relative to other places. (This situation has not changed substantially despite the 15 years of cutting taxes.) It is a tax that disproportionately affects some businesses, particularly manufacturers who use considerable equipment in their operation. High-tech manufacturers, such as semiconductor plants, are among those with considerable equipment. These companies pay high wages. Lower business property taxes might encourage companies to expand facilities in Arizona. Although most of the labor force needed for an expansion would be imported, the high wages of these new workers could result in a net positive effect even on public-sector finance.

Value of Public Services

Over time, some supply-side enthusiasts have moved to a position that any tax cut is good for the economy and enhances public revenues — which violates the Laffer Curve. The idea that lower taxes always are better ignores the purpose of taxation.

Taxes merely are the price paid for a service that is publicly provided. Particularly at the state and local level, many government services directly impact the lives of all: education of children, water provision and sewer services, collection of trash, building and maintaining roads, police and fire protection, the judicial system, the correctional system, etc. Many public services, such as education (kindergarten through graduate school) and provision and maintenance of physical infrastructure, are of key importance to businesses, particularly high-tech and other “new-economy” companies. For these types of companies, the quality of public goods is more important than the level of taxes. Thus, business climate benefits from investment in various public programs.

Empirical evidence exists that public infrastructure plays a role in increasing business investment, job creation and economic growth. Similarly, tax reductions financed by cutting education, infrastructure spending, and other services valued by businesses likely will have a negative effect on economic performance.

The idea that taxes remove money from the economy is false. Tax revenues are spent in much the same way as private-sector revenues: paying employees, purchasing materials from the private sector, etc. On average, a higher portion of public-sector spending is for wages and salaries while private-sector firms spend a higher portion of their revenues on raw materials and manufactured goods.

At most, it might be argued that the in-state multiplier effect of government spending is less than that of private-sector expenditures. However, this is unlikely. A public-sector worker is no different than a private-sector employee in how they spend money. To the extent that private-sector businesses spend a higher proportion of their revenues on goods than the public sector and to the extent that most of these goods are manufactured out of state (manufacturing in Arizona is limited except in a few high-tech subsectors), the multiplier likely is higher for public-sector spending than for private-sector spending.

Summary

The historical evidence is clear. Arizona policymakers have chosen to impose tax cuts when they have had an opportunity (a budget surplus). Tax cuts not offset fully by spending reductions result in budget-balancing challenges when the economy invariably turns down.

This discussion does not suggest that tax and regulatory climates are irrelevant for economic growth. But positive impacts from tax cuts are more likely to occur with business or capital gains tax reduction in cross-country comparisons. Arizona's tax reductions have been targeted largely at individual citizens and likely have not influenced the decisions of major corporations to locate in the state rather than elsewhere in the world. If the tax cuts produce budget challenges that result in fewer infrastructure investments in transportation, communication, water, energy or education, the tax cuts may do more to stifle growth than enhance it.