

THE ECONOMIC IMPACT OF FOUR FISCAL ALTERNATIVES

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PREFACE

In early December of 1988, Governor Mofford and her staff sought an independent analysis of four alternative fiscal plans. The charge was to measure the impact of each proposal on the Arizona economy. Impacts of expenditures and tax changes on employment and income were to be quantified and the net economic impact computed. In addition, the implication of each alternative for Arizona's business climate was to be examined, including effects on Arizona's ranking relative to other states on levels of taxation.

The Governor's staff offered assistance by encouraging the cooperation of the Department of Revenue in answering questions developed during the background research. After completion of background research, the study proceeded without further involvement from the Governor's staff. The fundamental assumptions concerning tax incidence, tax shifting, and multiplier effects as well as all subsequent analyses were based on established economic principles. This methodology was applied uniformly and consistently to the four fiscal alternatives without adjustments or alteration to favor any particular plan.

Preliminary results were to be delivered to the Governor's office on or before December 28, 1988. It was understood that decisions on the fiscal year 1989 - 1990 budget proposals would not be made final until after receipt of the study findings, since the Governor wished to be aware of the impacts on the Arizona economy associated with each alternative plan.

The final report was presented on January 5, 1989. The researchers believe the study is an accurate analysis of the economic impact of these alternative tax and expenditure proposals. Realistically, because of the magnitude of the task and restrictive time constraint, isolated ambiguities and typographical errors may remain.

The research assistance contributions of Mr. Dan Whalen, Mr. Tracy Clark, and Ms. Aileen Bengston are gratefully acknowledged, as well as the invaluable typography talents of Mr. Jim Dodson. Neither Arizona State University nor any agency of Arizona government is responsible for or necessarily endorses the study findings. The analysis and conclusions of the report, as well as all errors and omissions, are the sole responsibility of the authors.

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EXECUTIVE SUMMARY

A weakening Arizona economy has brought slower growth of revenues to state government. While the economy is performing sluggishly, the population of Arizona continues to expand at a rate approximately double that of the nation as a whole and projected expenses in critical areas such as education, health care, and corrections continue to grow. Government revenues are not anticipated to increase sufficiently in the coming fiscal year to adequately serve projected needs.

This report analyses the economic impact on the Arizona economy of each of four alternative fiscal plans designed to meet the increased funding requirements projected for the 1989 - 1990 fiscal year.

Methodology

Four plans are reviewed. Each has a common component – government expenditures totalling \$255 million. The four plans differ in the revenue proposals included to increase revenues by \$255 million.

The economic impact of expenditures and the tax plans is analyzed through examination of three indicators – demand, earnings, and employment. The economic impact consists of direct effects, multiplier effects, and long run incidence effects.

The direct effects are the immediate effects of a change in fiscal policy on final demand for goods and services, earnings, and employment in Arizona. The multiplier effects are the effects of a change in fiscal policy as it works its way through the economy. Multipliers for each industry examined in this study were computed for Arizona by the Bureau of Economic Analysis of the the U. S. Department of Commerce. Long run incidence refers to the effects of a change in fiscal policy due to owners of firms shifting their share of the tax burden to other resource owners, particularly workers.

The burden of any tax is often different from the legal impact of the tax due to shifting. The personal income tax, sales taxes, and residential property taxes are born by individual consumers. The corporate income tax is shared between owners of capital and consumers. The severance tax is assumed to be born entirely by producers. Property taxes on utilities are assumed to be shifted 50 percent to consumers, while property taxes imposed on commercial property are shifted 67 percent to consumers.

The fiscal alternatives here are all "balanced budget" measures. Funds received from the public as tax revenues are returned to the economy through government spending, creating demand, earnings, and jobs. However, government spends on a different mix of goods and services than does the taxpaying public. As government spending replaces taxpayer spending, demand for certain types of goods and services falls, while other types of goods and services are increased in the economy.

The economic benefits of the expenditures programs are compared with the economic costs – lost jobs, earnings, and reduced demand – associated with each of the tax plans. The result is a computed net economic impact based on the net change in demand, earnings, and employment in the Arizona economy as a result of \$255 million in expenditures paid for with \$255 million in new tax revenues.

Overview of the Fiscal Alternatives

Each of the four alternative plans contains an identical increase in government expenditures of \$255 million. The expenditure categories are education (\$111 million), indigent health care (\$78 million), behavioral health care (\$25 million), and prison operation (\$41 million).

The government expenditures create demand for materials, supplies, equipment, services, and structures, as well as employment for teachers, doctors and other health professionals, corrections employees, and other workers. Funds injected into the

economy are spent and respent, creating final demand of \$484.8 million, earnings of \$374.7 million, and 22,788 jobs.

While each of the four plans is designed to raise \$255 million in revenues, the impacts of the plans vary due to differences in the types of taxes included, the incidence of the taxes, and the types of industries affected.

The plan with the most favorable economic impact on Arizona is Plan A (Table I). This plan also has the most diversity in its mix of taxes, including a minimum school tax (\$125 million), increased property tax revenues (\$58 million), new cigarette and beer taxes (\$40 million), additional corporate income tax revenues (\$10 million) and an increase in the mining severance tax (\$22 million).

The revenue proposals of Plan A reduce demand by \$340.9 million in the Arizona economy as revenues are transferred to government by business and consumers who decrease their private spending. Earnings in affected industries fall by \$296.3 million and 17,297 jobs are lost.

The net economic impact of Plan A – combining the jobs and income created with the jobs and income lost through taxation is \$143.9 million in demand, \$78.4 million in earnings, and 5,491 net increase in jobs. The favorable impact on the economy is obtained because (a) a substantial portion of the minimum school tax is paid by out-of-state utilities, and (b) cigarette and beer customers continue to consume these products and pay tax because of "inelastic demand."

Plan B has the second most favorable economic impact, with \$36.1 million additional final demand and \$20.7 million added to earnings in the state. However, Plan B would produce a net loss of 2,545 jobs. Since Plan B relies heavily on a personal income tax increase of \$145 million, the result is that consumers reduce their purchases in the retail products and personal services sectors, both major employment sectors in Arizona. In effect, retail and service workers would be replaced by a smaller number of workers in education, health, corrections, and the industries which serve these sectors.

TABLE I
SUMMARY: ECONOMIC IMPACTS OF FOUR FISCAL ALTERNATIVES

FISCAL CHANGE		ECONOMIC IMPACTS			
	Amount (millions)	Demand (millions)	Earnings (millions)	Employment (number of jobs)	
Expenditures					
Education	\$111	206.3	136.2	8,934	
Health Care	103	202.6	180.7	9,662	
Corrections	<u>41</u>	<u>75.9</u>	<u>57.8</u>	<u>4,192</u>	
Total:	255	484.8	374.7	22,788	
<hr/>					
Plan A Taxes	Revenues (millions)	Demand (millions)	Earnings (millions)	Employment (number of jobs)	
- Minimum School (14 dists)	\$125	\$134.2	\$116.4	5,236	
General Property	58	94.9	78.9	5,925	
Luxury	40	82.1	62.5	4,501	
Corporate Income	10	9.3	12.0	511	
Mining Severance	<u>22</u>	<u>20.4</u>	<u>26.5</u>	<u>1,124</u>	
	255				
	Total Economic Costs:	340.9	296.3	17,297	
	Net Economic Impact:	+143.9	+78.4	+5,491	
<hr/>					
Plan B Taxes	Revenues (millions)	Demand (millions)	Earnings (millions)	Employment (number of jobs)	
Personal Income	\$145	\$268.6	\$204.3	14,825	
General Property	<u>110</u>	<u>180.1</u>	<u>149.7</u>	<u>10,508</u>	
	255				
	Total Economic Costs:	448.7	354.0	25,333	
	Net Economic Impact:	+36.1	+20.7	-2,545	
<hr/>					
Plan C Taxes	Revenues (millions)	Demand (millions)	Earnings (millions)	Employment (number of jobs)	
Food Sales	\$127	\$235.2	\$178.9	12,984	
Service Sales	<u>128</u>	<u>230.4</u>	<u>172.8</u>	<u>14,972</u>	
	255				
	Total Economic Costs:	465.6	351.7	27,956	
	Net Economic Impact:	+19.2	+23.0	-5,168	
<hr/>					
Plan D Taxes	Revenues (millions)	Demand (millions)	Earnings (millions)	Employment (number of jobs)	
Sales	\$255	\$472.3	\$359.2	26,072	
	Total Economic Costs:	472.3	359.2	26,072	
	Net Economic Impact:	+12.5	+15.5	-3,284	

*\$150 mil
expenditures*

Substantially

14 on food sales

Plan C restores the sales tax on food (raising revenues of \$127 million) and imposes a tax on selected services (\$128 million revenue). Because consumers respond to higher sales taxes by reducing purchases of food and services, the jobs loss under plan C would be the greatest of the four alternatives. The greatest impact on employment is due to the loss of service sector jobs as consumers reduce spending. This is because the service sector is the most labor intensive – and the largest employment sector – of the Arizona economy.

Plan D involves an increase in sales taxes sufficient to raise \$255 million in revenues. This tax has effects similar to Plan C in that it is also paid primarily by consumers and impacts demand, earnings, and employment in the retail and wholesale trade sectors. Final demand is reduced by the greatest amount (\$472.3 million) under this plan. This plan also affects the retail sector heavily, causing a loss of 26,072 jobs in the Arizona economy. Similar to Plan C, the net job impact is negative for Plan D, with 3,284 jobs lost.

In summary, the most favorable economic impacts are obtained from Tax Plan A. Because of the mix of tax options in the plan and the taxpayers affected, this plan yields a positive net economic impact of \$143.9 million in final demand, \$78.4 million in additional earnings, and 5,491 net new jobs created.

With the slowing Arizona economy attracting attention from the national media, it is appropriate to briefly examine the impacts of tax increases on the Arizona business climate. The question at hand is whether increases in taxes will affect corporate relocations and economic development in the state.

In surveys of corporate executives regarding the importance of taxes vs. other factors in determining relocation decisions, a quality labor force and access to markets are the dominant factors mentioned first. In a survey conducted by the prestigious Conference Board, executives responsible for site location decisions for research and development facilities rated taxes the 18th most important factor to be considered. The

level of taxes was not mentioned at all in a University of Missouri survey of high technology firms producing innovative products. Quality of life was the number one determinant of relocation in a survey of Fortune 500 chief executives. Those employers most likely to be concerned about taxes are firms in the later stage of the product cycle, facing competitive markets for a standardized product, where small cost differences are critical. But even these firms rate labor productivity, transportation, and access to markets more highly than business taxes.

In the closely-followed Grant Thornton rankings, the highest rated factors include wages, availability of workforce, and unionization. Tax levels rank 9th on the latest Grant Thornton study, and change in taxes ranks 17th. Education, however, ranks 15th on the Grant Thornton list (which focuses primarily on manufacturing plant requirements), ahead of change in taxes. Arizona's lowest ratings in the current Grant Thornton study are found in the areas of education (31st), health care (32nd), and transportation (40th).

Analysis of the available business climate surveys shows that tax increases will have the smallest effect on high technology, research and development, and corporate headquarters relocations. In addition, these are the types of employers most interested in quality of life and public infrastructure, including education, health care, transportation, and public safety. If the assumption may be made that these are the most desirable types of relocations sought, then the conclusion is clear that Arizona's business climate will be unharmed, and perhaps even helped, by the proposed fiscal changes.

It would be incorrect to assume that a fiscal program pursued on a massive scale would yield similar positive benefits. The benefits of Plan A accrue largely due to the relatively high proportion of the tax that is shifted to out-of-state utilities. In general, modest balanced budget proposals like the ones examined in this study will essentially be neutral – the benefits of expenditures essentially offsetting the costs of taxes. This is no longer the case when programs become so large as to "crowd out" private sector

endeavors or create tax burdens that choke off business expansion. Our analysis reveals that the current proposals are simply not large enough to have an adverse effect on Arizona's economy.

PROJECT OVERVIEW AND PRIMARY RESULTS

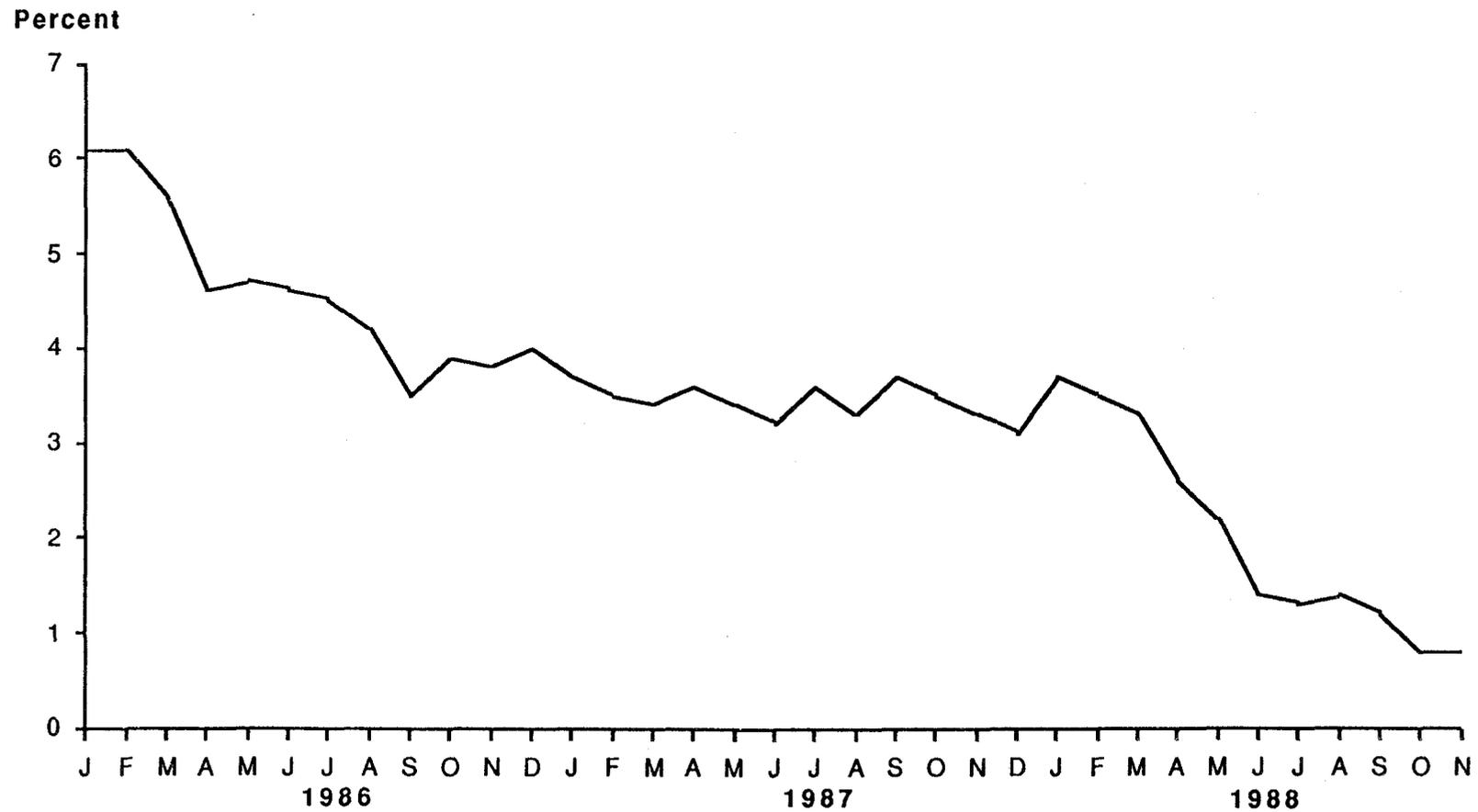
During 1987, new wage and salary jobs in the Arizona economy increased at a rate of growth of 3.4 percent. In 1988, the expansion of the Arizona economy slowed until, by year end, new jobs creation was taking place at a rate of less than one percent (Figure 0-1). While the overall Arizona economy is not in recession (defined as a negative rate of growth in total employment), industries linked to real estate and construction have experienced job losses and weakness has spread from these sectors to other parts of the general economy.

In light of the slowing of the Arizona economy and recent comparisons drawn by national media between the Arizona experience and downturns in Texas, it is appropriate to examine the potential impact of a \$255 million balanced budget tax and expenditure proposal on the Arizona business climate and economy. The question is how tax and spending changes of the magnitude and composition proposed effect (a) Arizona's business climate as measured by various rankings and surveys and (b) actual economic growth and development in the state.

After a review of factors influencing business climate rankings, an analysis of surveys of business executives with responsibility for corporate relocations, and an assessment of academic articles on the subject, the conclusion is clear that the proposed tax and expenditure increases will not result in a significant change in Arizona's business climate. The major findings of the business climate research are as follows:

1. The taxes and expenditures proposed will have offsetting effects in the annual Grant Thornton report, the most closely followed business climate ranking. Three factors – tax effort, change in tax effort, and change in government expenditures vs. change in state personal income – will be influenced in a

FIGURE 0-1
MONTHLY CHANGE IN ARIZONA EMPLOYMENT
(Percent Change from Same Month, Previous Year)
1986-88



Source: Arizona Department of Economic Security

negative direction. However, the expenditures undertaken will impact positively on two other factors – education and health care – which are among Arizona's lowest rated factors. Education has a higher weight in the Grant Thornton system than change in tax effort.

2. Any changes which do occur in the Grant Thornton rankings will not be evident for several years, since the rankings are based on taxes and expenditures made two to three years before. One variable, change in tax effort, is calculated over five years. Meanwhile, other states will undoubtedly be raising their taxes. Arizona's relative ranking in the Grant Thornton report is not expected to be significantly influenced by the tax increases proposed. Consequently, Arizona's business climate as measured by the well-known Grant Thornton study will not be substantially changed.

3. Arizona ranked number one in both 1987 and 1988 on another closely-watched business climate ranking, that produced by Inc. magazine. Since the Inc. ranking is based on (a) job growth (b) new business births and (c) number of "high growth" businesses, the change in taxes proposed will have no impact on Arizona's position in the Inc. ranking system.

4. In surveys of corporate executives regarding the importance of taxes and other factors in determining relocation, a significant pattern emerges. Labor force and access to markets are the two dominant factors considered first by most corporate executives contemplating relocation (Table 0-1). Depending upon the type of facility, taxes can be ranked as high as fourth (for a manufacturing plant), as low as 18th (for a research and development facility) or not mentioned at all (for high technology firms with innovative products in the early stages of development).

5. The proposed tax increase will have the greatest potential impact on plant relocations, especially for firms producing goods in the later stages of the product

**TABLE 0-1
CORPORATE RELOCATION SURVEY RESULTS**

Survey Source	Type of Facility	Top Rated Factors	Business Tax Rank
Fortune 500	Corporate Headquarters	Quality of Life Personal Preference	6/24
Fortune 500	Next Mainland Plant	Worker Productivity Transportation	4/26
Fortune 500	Previous Mainland Plant	Worker Productivity Markets	6/26
Executives	R & D Facilities	Near Headquarters Technical Personnel	18/20
High Tech Managers	High Tech Firms	Technical Personnel Financial Community	0/9
Executives	Office Facilities	Domestic Markets Labor Market	4/7
Executives	Manufacturing, Warehouse Distribution Facilities	Domestic Markets Site Availability	5/8

- Sources:
1. Why Corporate America Moves Where, Fortune, New York, 1982
 2. Locating Corporate R&D Facilities, The Conference Board, New York, 1986
 3. University of Missouri Survey, 1984
 4. Business America Real Estate Monitor, Cushman & Wakefield, Chicago, 1988

cycle. During this stage of the product cycle, output technology is standardized, markets are very competitive, and cost considerations at the margin are paramount. However, the implication is clear that labor force and market conditions are viewed first. If Arizona and another state are competitive on these two factors, then taxes will be considered as a "tie breaker." With higher taxes, Arizona will win some of these ties and will lose some of these ties, depending on the competing states (i. e. California or Nevada).

6. Analysis of executive surveys shows that the proposed tax increases will have the smallest effect on high technology firms, research and development facilities, and corporate headquarters relocations. If the assumption may be made that these are the most desirable types of relocations sought, then it is concluded that Arizona's business climate will be virtually unharmed by the proposed tax increases.

7. Most analysts of regional economic growth and development seem to agree with Roger Vaughn (1979) that "the level of business taxes has little impact on the local growth rate or on the interstate location decisions of firms." Seventeen statistical studies were reviewed relating economic growth to taxes and other business climate variables. In seven of these studies, no statistical correlation was found between taxes and economic growth variables. In 9 studies, mixed relationships were found, with taxes affecting some variables, but generally having little impact. In one study, a significant relationship was found between taxes and economic measures.

One final point must be addressed. If taxes are secondary to labor force variables and market considerations in determining business climate, why is so much emphasis placed on taxes in discussions of business relocation?

The answer lies in an understanding of business firm relocation dynamics. A study by James Miller shows that, during the six year period 1969 - 1975, only

two percent of all manufacturing firms relocated, and only one half of one percent of all firms relocated across state lines. Three fourths of all manufacturing relocations involved movements to nearby counties in the same state.

This tendency of firms to relocate nearby their current site explains why property and other taxes are considered by some to be crucial in the relocation decision. By moving to a neighboring locality, a firm may retain its current markets, suppliers, and labor force, but possibly lower its taxes. Thus, taxes are the "swing factor" because other key determinants of costs and revenues stay unchanged after most relocations.

The implications for Arizona are worth noting. In seeking corporate relocations as a major source of new employment, the state is asking firms to make the extremely risky decision of abandoning workers, markets, suppliers, and lines of credit in exchange for what Arizona can offer in replacement. Thus, to assess the role of taxes in business climate, it must be recognized that the attractions Arizona offers in its business climate package must be competitive on a broader range of fronts than states in the East who are only seeking to lure firms a short distance. In brief, low taxes may be crucial in luring a firm across the river but may not be particularly important in luring that same firm across the country.

Methodology

Four plans are reviewed. Each has a common component – government expenditures totalling \$255 million. The four plans differ in the revenue proposals included to increase revenues by \$255 million.

The economic impact of expenditures and the tax plans is analyzed through examination of three indicators – demand, earnings, and employment. The

economic impact consists of direct effects, multiplier effects, and long run incidence effects.

The direct effects are the immediate effects of a change in fiscal policy on final demand for goods and services, earnings, and employment in Arizona. The multiplier effects are the effects of a change in fiscal policy as it works its way through the economy. Multipliers for each industry examined in this study were computed for Arizona by the Bureau of Economic Analysis of the U.S. Department of Commerce. Long run incidence refers to the effects of a change in fiscal policy due to owners of firms shifting their share of the tax burden to other resource owners, particularly workers. The burden of any tax is often different from the legal impact of the tax due to shifting.

The personal income tax, sales taxes, and residential property taxes are borne by individual consumers. The corporate income tax is shared between owners of capital and consumers. The severance tax is assumed to be borne entirely by producers. Property taxes on utilities are assumed to be shifted 50 percent to consumers, while property taxes imposed on commercial property are shifted 67 percent to consumers.

The fiscal alternatives here are all "balanced budget" measures. Funds received from the public as tax revenues are returned to the economy through government spending, creating demand, earnings, and jobs. However, government spends on a different mix of goods and services than does the taxpaying public. As government spending replaces taxpayer spending, demand for certain types of goods and services falls, while other types of goods and services are increased in the economy.

The economic benefits of the expenditures programs are compared with the economic costs – lost jobs, earnings, and reduced demand – associated with each of the tax plans. The result is a computed net economic impact based on

the net change in demand, earnings, and employment in the Arizona economy as a result of \$255 million in expenditures paid for with \$255 million in new tax revenues.

Primary Results

Each of the four alternative plans contains an identical increase in government expenditures of \$255 million. The expenditure categories are education (\$111 million), indigent health care (\$78 million), behavioral health care (\$25 million), and prison operations (\$41 million).

The government expenditures create demand for materials, supplies, equipment, services, and structures, as well as employment for teachers, doctors and other health professionals, corrections employees, and construction workers. As shown in Table 0-2, funds injected into the economy are spent and respent, creating final demand of \$484.8 million, earnings of \$374.7 million, and 22,788 jobs.

While each of the four plans is designed to raise \$255 million in revenues, the impacts of the plans vary due to differences in the types of taxes included, the incidence of the taxes, and the types of industries affected. The economic costs and benefits of each proposed tax plan are summarized below.

Tax Plan A

The plan with the most favorable economic impact on Arizona is Plan A. This plan also has the most diversity in its mix of taxes, including a minimum school tax (\$125 million), increased property tax revenues (\$58 million), new cigarette

**TABLE 0-2
THE ECONOMIC IMPACT OF
A \$255,000,000 INCREASE IN STATE EXPENDITURES**

	Increase in Final Demand for Goods & Services (millions)	Increase in Earnings (millions)	Increase in Employment (number of jobs)
Direct	\$255.000	\$196.353	11,982
Multiplier	229.817	178.320	10,806
Total	484.817	374.673	22,788

and beer taxes (\$40 million), additional corporate income tax revenues (\$10 million) and an increase in the mining severance tax (\$22 million).

The proposed **minimum school tax** is to levy a tax equal to the appropriate qualifying tax rate on all properties located in school districts that do not currently qualify for state assistance. The economic impact of this tax is based on an estimate of \$125 million in additional tax revenues.

The proposed **property tax** increase is to increase the state's general property tax rate to yield an additional 58 million dollars. Using 1988 rates and assuming a 5% appreciation in net assessed value for 1989, this would require the state to increase the rate from 47¢ per \$100.00 net assessed value to 76¢ per \$100.00 net assessed value. Accordingly, the average primary rate for combined state and local property taxes – based on 1988 rates – would increase from \$7.84 per \$100.00 net assessed value to \$8.13. Thus, property tax payers would experience a 3.7% increase in overall property tax rates as a result of the proposal.

The proposed increase in **luxury taxes** is: (i) to increase the tax rate per pack of cigarettes from \$.15 to \$.25; and (ii) to increase the tax rate per gallon of malt liquor from \$.16 to \$.26. No change in the method of administering these taxes is offered in the current proposal. The economic impact of the cigarette tax is based on projections of 350 million packs sold in 1989/90 at current tax rates. Only 30 million dollars additional revenue will accrue due to the tax after market demand adjustments and up to 5 million additional Indian reservation sales. The economic effect of the beer tax is based on projections of 104 million gallons sold in 1989/90 at current tax rates. The net revenue after minor demand adjustments is expected to be 10 million dollars.

The proposed change in the **corporate income tax** code is to remove the 80/20 exclusion, the Possessions exclusion and the Foreign Tax Credit from the

Arizona Corporate Income Tax Code. The economic impact of these taxes assumes that the current provisions yield 10 million dollars in FY 89/90 corporate liability.

The proposed change in the **mining severance tax** is to raise the rate on the severance tax and alter the distribution formula so that proceeds from the increased tax accrue entirely to the General Fund. The rate increase examined in this report is from 2-1/2% to 5% on the "net severance base." The actual proposal may contain a provision that ties the tax rate to the price of copper. This would help alleviate the burden of this tax on the mining firms during cyclical downturns in copper demand. The economic impact of this proposal is based on estimates of the FY 89/90 net severance base of 880 million dollars so the additional tax would raise 22 million in revenue.

The economic impact of Tax Plan A is summarized in Table 0-3. The revenue proposals of Plan A reduce demand by \$340.9 million in the Arizona economy as revenues are transferred to government by business and consumers who decrease their private spending. Earnings in affected industries fall by \$296.3 million and 17,297 jobs are lost.

The net economic impact of Plan A – combining the jobs and income created with the jobs and income lost through taxation is \$143.9 million in demand, \$78.4 million in earnings, and 5,491 net increase in jobs. The favorable impact on the economy is obtained because (a) a substantial portion of the minimum school tax is paid by out-of-state utilities, and (b) cigarette and beer customers continue to consume these products and pay tax because of "inelastic demand."

We also examined Plan A using the assumption that owners of firms passed 100% of their own tax burdens directly to employees. This reduced the net gain in earnings to \$37.9 million and employment to 2,092 jobs. This scenario is less

**TABLE 0-3
THE ECONOMIC IMPACT OF TAX PLAN A**

Proposed Tax Changes and Revenues:

Minimum school tax	\$125,000,000
An increase in general property tax rates	58,000,000
Increases in luxury goods tax rates	40,000,000
Adjustments in corporate income tax deductions and credits	10,000,000
An increase in the mining severance tax rate	22,000,000

Total Revenues Generated: **\$255,000,000**

Total Economic Benefits:

Increase in final demand for goods and services	\$484,817,000
Increase in earnings	374,673,000
Increase in employment	22,788 jobs

Total Economic Costs:

Decrease in final demand for goods and services	\$340,880,000
Decrease in earnings	296,335,000
Decrease in employment	17,297 jobs

Net Economic Benefits:

Net increase in final demand for goods and services	\$143,937,000
Net increase in earnings	78,338,000
Net increase in employment	5,491 jobs

likely in our opinion but it establishes a lower bound to the net employment/earnings gains of Plan A.

In addition, as a result of the tax changes embodied in Plan A, consumers of electricity will pay about \$.00153 more per kilowatt hour or, for an Arizona household consuming 1,000 kilowatt hours per month, about \$1.50 more per month; residential property owners will pay, on average, \$18 more per year; consumers of cigarettes will pay \$.10 more per pack or, for a 1-pack per day smoker, \$36.50 per year; and consumers of beer will pay slightly less than \$.01 per can of beer or for an individual consuming two 6-packs per week, about \$5.85 per year.

Tax Plan B

The proposed tax changes for Plan B are to eliminate the special subtraction designed originally to "avoid" any windfall that might have accrued to the state due to the Federal Tax Reform Act of 1986 and to increase the state's general property tax. The economic analysis of the special subtraction assumes that about \$145 million will be raised. The economic analysis of the general property tax assumes an increase in the state's general property tax rate to yield an additional 110 million dollars. Using 1988 rates and projecting a 5% increase in net assessed value for 1989, this would require the state to increase the rate from 47¢ per \$100.00 net assessed value to \$1.02 per \$100.00 net assessed value. Accordingly, the average primary rate for combined state and local property taxes – based on 1988 rates – would increase from \$7.84 per \$100.00 net assessed value to \$8.39. Thus, property tax payers would experience a 7.0% increase in overall property tax rates as a result of the proposal.

The economic impact of Tax Plan B is summarized in Table 0-4. Plan B has the second most favorable economic impact, with \$36.1 million additional final demand and \$20.7 million added to earnings in the state. However, Plan B would produce a net loss of 2,545 jobs. Since Plan B relies heavily on a personal income tax increase of \$145 million, the result is that consumers reduce their purchases in the retail products and personal services sectors, both major employment sectors in Arizona. In effect, retail and service workers would be replaced by a smaller number of higher paid workers in education, health, corrections, and the private sector industries which serve these agencies.

In addition, as a result of these tax changes, residential property owners will pay, on average, \$35 more per month.

Tax Plan C

Plan C restores the sales tax on food (raising revenues of \$127 million) and imposes a tax on selected services (\$128 million revenue). Because consumers respond to higher sales taxes by reducing purchases of food and services, the jobs loss under Plan C would be the greatest of the four alternatives. The greatest impact on employment is due to the loss of service sector jobs as consumers reduce spending. This is because the service sector is the most labor intensive – and the largest employment sector – of the Arizona economy. The economic impact of Tax Plan C is summarized in Table 0-5.

Tax Plan D

Plan D involves an increase in sales taxes sufficient to raise \$255 million in revenues. This tax has effects similar to Plan C in that it is also paid primarily by

TABLE 0-4
THE ECONOMIC IMPACT OF TAX PLAN B

Proposed Tax Changes:	
Eliminate the windfall tax credit	\$145,000,000
An increase in general property tax rates	110,000,000
Total Revenues Generated:	\$255,000,000
Total Economic Benefits:	
Increase in final demand for goods and services	\$484,817,000
Increase in earnings	374,673,000
Increase in employment	22,788 jobs
Total Economic Costs:	
Decrease in final demand for goods and services	\$448,682,000
Decrease in earnings	354,020,000
Decrease in employment	25,333 jobs
Net Economic Benefits:	
Net increase in final demand for goods and services	\$36,135,000
Net increase in earnings	20,653,000
Net increase in employment	-2,545 jobs

TABLE 0-5
THE ECONOMIC IMPACT OF TAX PLAN C

Proposed Tax Changes:	
Levy a 5% sales tax on food for at home consumption	\$127,000,000
Levy a 5% sales tax on selected services	128,000,000
Total Revenues Generated:	\$255,000,000
Total Economic Benefits:	
Increase in final demand for goods and services	\$484,817,000
Increase in earnings	374,673,000
Increase in employment	22,788 jobs
Total Economic Costs:	
Decrease in final demand for goods and services	\$465,629,000
Decrease in earnings	351,715,000
Decrease in employment	27,956 jobs
Net Economic Benefits:	
Net increase in final demand for goods and services	\$19,188,000
Net increase in earnings	22,958,000
Net increase in employment	-5,168 jobs

consumers and impacts demand, earnings, and employment in the retail and wholesale trade sectors. Table 0-6 summarizes the economic effects of Tax Plan D. Final demand is reduced by the greatest amount (\$472.3 million) under this plan. This plan also affects the retail sector heavily, causing a loss of 26,072 jobs in the Arizona economy. Similar to Plan C, the net job impact is negative for Plan D, with 3,284 jobs lost.

Impact on Arizona's Relative Tax Burden

The proposed taxes will generally have little impact on Arizona's tax burden per capita when compared with other states. Using data compiled in the 1987 ACIR comparison of Fiscal Federalism, Arizona's relative burden increases from 26th highest to 23rd highest among all states due to the additional 183 million (125 + 58) in property taxes proposed in Plan A. The tobacco and alcohol burdens per capita increase from 37th to 22nd and 21st to 18th respectively. The corporate tax burden per capita ranking is not affected by the 10 million dollar increase in Plan A.

The increased burdens induced by the Plan B proposals increase Arizona's ranking from the 33rd highest individual income tax per capita to 29th and the 26th highest general property tax to 24th. The sales tax proposals in Plans C and D each result in an increase in Arizona's sales tax per capita burden from 6th to 3rd.

Interestingly, Arizona would remain one of the lowest ranking residential property tax states even after the proposals. The Plan A \$58 million general property tax would increase the residential burden from 45th highest to 43rd highest. The Plan B proposal would increase the residential burden to the 42nd highest among all states.

TABLE 0-6
THE ECONOMIC IMPACT OF TAX PLAN D

Proposed Tax Changes:

An increase in the general sales tax \$255,000,000

Total Revenues Generated:

\$255,000,000

Total Economic Benefits:

Increase in final demand for goods and services \$484,817,000

Increase in earnings 374,673,000

Increase in employment 22,788 jobs

Total Economic Costs:

Decrease in final demand for goods and services \$472,311,000

Decrease in earnings 359,240,000

Decrease in employment 26,072 jobs

Net Economic Benefits:

Net increase in final demand for goods and services \$12,506,000

Net increase in earnings 15,433,000

Net increase in employment -3,284 jobs

Summary

In summary, the most favorable economic impacts are obtained from Tax Plan A. Because of the mix of tax options in the plan and the taxpayers affected, this plan yields a positive net economic impact of \$143.9 million in final demand, \$78.4 million in additional earnings, and 5,491 net new jobs created.

With the slowing Arizona economy attracting attention from the national media, it is appropriate to briefly examine the impacts of tax increases on the Arizona business climate. The question at hand is whether increases in taxes will affect corporate relocations and economic development in the state.

In surveys of corporate executives regarding the importance of taxes vs. other factors in determining relocation decisions, a quality labor force and access to markets are the dominant factors mentioned first. In a survey conducted by the prestigious Conference Board, executives responsible for site location decisions for research and development facilities rated taxes the 18th most important factor to be considered. The level of taxes was not mentioned at all in a University of Missouri survey of high technology firms producing innovative products. Quality of life was the number one determinant of relocation in a survey of Fortune 500 chief executives. Those employers most likely to be concerned about taxes are firms in the later stage of the product cycle, facing competitive markets for a standardized product, where small cost differences are critical. But even these firms rate labor productivity, transportation, and access to markets more highly than business taxes.

In the closely-followed Grant Thornton rankings, the highest rated factors include wages, availability of workforce, and unionization. Tax levels rank 9th on the latest Grant Thornton study, and change in taxes ranks 17th. Education,

however, ranks 15th on the Grant Thornton list (which focuses primarily on manufacturing plant requirements), ahead of change in taxes. Arizona's lowest ratings in the current Grant Thornton study are found in the areas of education (31st), health care (32nd), and transportation (40th).

Analysis of the available business climate surveys shows that tax increases will have the smallest effect on high technology, research and development, and corporate headquarters relocations. In addition, these are the types of employers most interested in quality of life and public infrastructure, including education, health care, transportation, and public safety. If the assumption may be made that these are the most desirable types of relocations sought, then the conclusion is clear that Arizona's business climate will be unharmed, and perhaps even helped, by the proposed fiscal changes.

It would be incorrect to assume that a fiscal program pursued on a massive scale would yield similar positive benefits. The benefits of Plan A accrue largely due to the relatively high proportion of the tax that is shifted to out-of-state utilities. In general, modest balanced budget proposals like the ones examined in this study will essentially be neutral – the benefits of expenditures essentially offsetting the costs of taxes. This is no longer the case when programs become so large as to "crowd out" private sector endeavors or create tax burdens that choke off business expansion. Our analysis reveals that the current proposals are simply not large enough to have an adverse effect on Arizona's economy.

INTRODUCTION

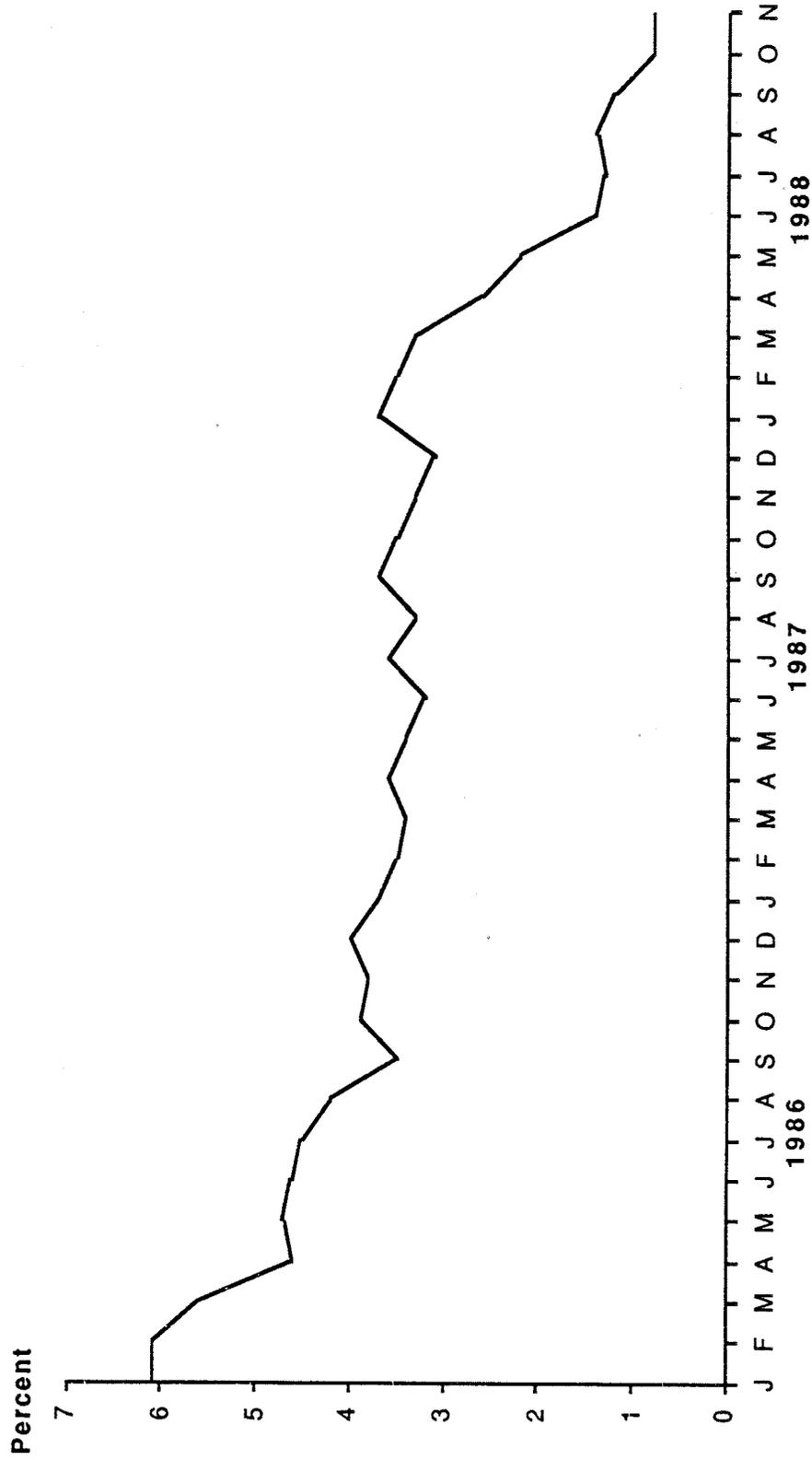
The Arizona economy expanded vigorously from 1983 through 1987, adding more than 320,000 workers to Arizona payrolls. During this period, the state ranked among the national leaders in the rate of economic growth. These were years of strong net immigration and record levels of building in multifamily, industrial, and commercial structures.

As newly built inventory began to accumulate, growth in construction employment peaked in 1986. By December of 1988, the industry experienced a string of 25 unbroken months of job losses relative to year-ago employment levels. Weakness in construction gradually spread through the economy. By the end of 1988, total Arizona nonagricultural employment was growing at a rate of less than one percent (Figure 1), and Arizona ranked among the slowest growing states.

The current weakness in the Arizona economy has caused some to question whether the downturn is a cyclical reaction to overbuilding that will soon be reversed or an ominous signal of a significant change in the vitality of the Arizona economy. Items in the national press have suggested that unusual elements are present which will impact the future potential growth of Arizona.

The widely held view of economists in both the private and public sectors is that the current ailments of the Arizona economy can be attributed to (a) overbuilding, which led to reduced construction and real estate activity and (b) the relative good economic health of competing states and the Midwest, usual suppliers of jobseekers for Arizona. In retrospect, the vigorous population flows and rapid rates of job growth of the recent past were not sustainable. Arizona businesses accustomed to rapidly-growing customer bases have postponed expansion plans and reduced employee rolls, further reducing local job gains.

FIGURE 1
MONTHLY CHANGE IN ARIZONA EMPLOYMENT
 (Percent Change from Same Month, Previous Year)
 1986-88



Source: Arizona Department of Economic Security

The prognosis among economists is that – in the absence of a national recession – a return to levels of growth approximating the long term Arizona average will be experienced within 18-24 months. The current outlook for 1989 calls for the coming year to be very similar to 1988 in terms of overall growth. The annualized rate of job creation is expected to be in the range of 3 percent, about one half that of the long run Arizona average rate of job growth.

In light of the slowing of the Arizona economy and recent comparisons drawn by national media between the Arizona experience and downturns in Texas, it is appropriate to examine the potential impact of a \$255 million balanced budget tax and expenditure proposal on the Arizona business climate and economy. The essential question at hand is how tax increases and government expenditures of the magnitude proposed will effect (a) Arizona's business climate as measured by various rankings and surveys and (b) actual economic growth and development in the state.

After a review of factors influencing business climate rankings, an analysis of surveys of business executives with responsibility for corporate relocations, and an assessment of academic articles on the subject, the conclusion is clear that the proposed tax increase and expenditures will not result in a significant change in Arizona's business climate. The major findings of the business climate research are as follows:

1. The taxes and expenditures proposed will have offsetting effects in the annual Grant Thornton report, the most closely followed business climate ranking. Three factors – tax effort, change in tax effort, and change in government expenditures vs. change in state personal income – will be influenced in a negative direction. However, the expenditures undertaken will impact positively on two other factors – education and health care – which are among Arizona's

lowest rated factors. Education has a higher weight in the Grant Thornton system than change in tax effort.

2. Any changes which do occur in the Grant Thornton rankings will not be evident for several years, since the rankings are based on taxes and expenditures made two to three years before. One variable, change in tax effort, is calculated over five years. Meanwhile, other states will undoubtedly be raising their taxes. Arizona's relative ranking in the Grant Thornton report is not expected to be significantly influenced by the tax increases proposed. Consequently, Arizona's business climate as measured by the well-known Grant Thornton study will not be substantially changed.

3. Arizona ranked number one in both 1987 and 1988 on another closely-watched business climate ranking, that produced by Inc. magazine. Since the Inc. ranking is based on (a) job growth (b) new business births and (c) number of "high growth" businesses, the change in taxes proposed will have no impact on Arizona's position in the Inc. ranking system.

4. In surveys of corporate executives regarding the importance of taxes and other factors in determining relocation, a significant pattern emerges. Labor force and access to markets are the two dominant factors considered first by most corporate executives contemplating relocation (Table 1). Depending upon the type of facility, taxes can be ranked as high as fourth (for a manufacturing plant), as low as 18th (for a research and development facility) or not mentioned at all (for high technology firms with innovative products in the early stages of development).

5. The proposed tax increase will have the greatest potential impact on plant relocations, especially for firms producing goods in the later stages of the product cycle. During this stage of the product cycle, output technology is standardized, markets are very competitive, and cost considerations at the margin are

TABLE 1
CORPORATE RELOCATION SURVEY RESULTS

Survey Source	Type of Facility	Top Rated Factors	Business Tax Rank
Fortune 500	Corporate Headquarters	Quality of Life Personal Preference	6/24
Fortune 500	Next Mainland Plant	Worker Productivity Transportation	4/26
Fortune 500	Previous Mainland Plant	Worker Productivity Markets	6/26
Executives	R & D Facilities	Near Headquarters Technical Personnel	18/20
High Tech Managers	High Tech Firms	Technical Personnel Financial Community	0/9
Executives	Office Facilities	Domestic Markets Labor Market	4/7
Executives	Manufacturing, Warehouse Distribution Facilities	Domestic Markets Site Availability	5/8

- Sources:
1. Why Corporate America Moves Where, Fortune, New York, 1982
 2. Locating Corporate R&D Facilities, The Conference Board, New York, 1986
 3. University of Missouri Survey, 1984
 4. Business America Real Estate Monitor, Cushman & Wakefield, Chicago, 1988

paramount. However, the implication is clear that labor force and market conditions are viewed first. If Arizona and another state are competitive on these two factors, then taxes will be considered as a "tie breaker." With higher taxes, Arizona will win some of these ties and will lose some of these ties, depending on the competing states (i. e. California or Nevada).

6. Analysis of executive surveys shows that the proposed tax increases will have the smallest effect on high technology firms, research and development facilities, and corporate headquarters relocations. If the assumption may be made that these are the most desirable types of relocations sought, then it is concluded that Arizona's business climate will be virtually unharmed by the proposed tax increases.

7. Most analysts of regional economic growth and development seem to agree with Roger Vaughn (1979) that "the level of business taxes has little impact on the local growth rate or on the interstate location decisions of firms."

Seventeen statistical studies were reviewed relating economic growth to taxes and other business climate variables. In seven of these studies, no statistical correlation was found between taxes and economic growth variables. In 9 studies, mixed relationships were found, with taxes affecting some variables, but generally having little impact. In one study, a significant relationship was found between taxes and economic measures.

One final point must be addressed. If taxes are secondary to labor force variables and market considerations in determining business climate, why is so much emphasis placed on taxes in discussions of business relocation?

The answer lies in an understanding of business firm relocation dynamics. A study by James Miller shows that, during the six year period 1969 - 1975, only two percent of all manufacturing firms relocated, and only one half of one percent

of all firms relocated across state lines. Three fourths of all manufacturing relocations involved movements to nearby counties in the same state.

This tendency of firms to relocate nearby their current site explains why property and other taxes are considered by some to be crucial in the relocation decision. By moving to a neighboring locality, a firm may retain its current markets, suppliers, and labor force, but possibly lower its taxes. Thus, taxes are the "swing factor" because other key determinants of costs and revenues stay unchanged after most relocations.

The implications for Arizona are worth noting. In seeking corporate relocations as a major source of new employment, the state is asking firms to make the extremely risky decision of abandoning workers, markets, suppliers, and lines of credit in exchange for what Arizona can offer in replacement. Thus, to assess the role of taxes in business climate, it must be recognized that the attractions Arizona offers in its business climate package must be competitive on a broader range of fronts than states in the East who are only seeking to lure firms a short distance. In brief, low taxes may be crucial in luring a firm across the river but may not be particularly important in luring that same firm across the country.

THE ECONOMIC IMPACT OF FOUR FISCAL ALTERNATIVES

The economic impact on the Arizona economy of each of four alternative tax/expenditure plans is analyzed in this report. The four alternative tax plans are **revenue neutral** in that each is designed to raise approximately \$255,000,000 in additional revenues for Arizona's General Fund. The four expenditure proposals are identical.

The analysis begins by describing the methodology used to evaluate each of four proposed tax plans which is followed by a discussion of the economic implications of a specific \$255,000,000 in State expenditures. Next a detailed analysis of the economic impact of each proposed plan is undertaken. The analysis consists of a discussion of current tax rates as well as the business activity that serves as the base for each proposed tax change, a quantitative analysis of the direct and indirect economic effects of the proposed tax or expenditure changes, and a summary that includes a discussion of any relevant administrative issues regarding collection of the taxes as well as a discussion of how the proposed tax changes may affect Arizona's position relative to other states.

METHODOLOGY

The economic impact of a change in state fiscal policy consists of **direct effects, multiplier effects, and long run incidence effects**. The direct effects are the immediate effects of a change in fiscal policy on final demand for goods and services, earnings of Arizona workers, employment in Arizona, and retained earnings of Arizona firms. The multiplier effects are the effects of a change in fiscal policy as it works its way through the economy. The long run incidence

effects are the effects of a change in fiscal policy due to owners of firms shifting their share of the tax burden to other resource owners, in particular, to workers.

Tax Shifting

The degree to which a tax can be shifted from the point of legal impact to its final resting place on those who bear the economic costs is crucial to determining the burden of the tax. Whether a tax is borne by producers or consumers makes a difference. Table 2 gives the tax shifting assumptions used in this report. These assumptions are the standards currently used by economists to evaluate fiscal policy changes.

The traditional view of tax shifting for both general and selected sales taxes is that they are fully shifted to consumers. The individual income tax can not be shifted, in general, and is borne by taxpayers. The corporate income tax, on the other hand, is assumed to be borne by the owners of capital.

State severance tax revenues are derived from the extraction of natural resources, primarily copper in Arizona. The standard assumption is that this tax is shifted 100 percent to consumers; however, since copper producers in Arizona are essentially world price takers, in this report the mining severance tax is assumed to be borne entirely by producers. This, of course, increases the burden the tax places on the Arizona economy.

Property taxes are divided into three categories: public utilities, residential property, and all other property. Fifty percent of property taxes imposed on utilities are assumed to be shifted to consumers. While the precise degree to which this tax can be shifted depends on the extent to which the Corporation Commission allows rate increases, an equal sharing of the tax between producers and consumers is standard. Property taxes imposed on residential property

TABLE 2
INCIDENCE ASSUMPTIONS

State Tax	Incidence
General Sales Taxes	Consumers of taxed items
Selective Sales Taxes:	
Tobacco	Consumers of tobacco products
Alcohol	Consumers of alcoholic beverages
Individual Income Tax	Taxpayers
Corporation Income Tax	Owners of capital
Mining Severance Tax	Owners of capital
Property Tax:	
Public utilities	1/2 consumers, 1/2 owners of capital
Residential property	Households
Commercial/Industrial property	2/3 consumers, 1/3 owners of capital

Source: Phares, Donald, *Who Pays State and Local Taxes?*, Cambridge: Velgeschlayer, Gunn and Hain, Publishers, Inc., 1980.

owners is borne completely by households while 67 percent of property taxes imposed on all other property owners is shifted to consumers of goods and services (the assumed shifting by all other property owners is an average of the individual components).

Multipliers

In order to track the economic impact of a policy change as it ripples through the State's economy, some assumption must be made concerning how a change in final demand for goods and services affect earnings and employment in the economy. Table 3 gives the multipliers for Arizona that have been calculated by the Bureau of Economic Analysis, U.S. Department of Commerce. Column one gives the **output multiplier**. Each entry in column one represents the total dollar change in production that occurs in all Arizona industries for each dollar change in final demand for the goods or services produced by the industry corresponding to the entry. Column two gives the **earnings multiplier**. Each entry in column two represents the total dollar change in earnings of households employed by all Arizona industries for each dollar change in final demand for the goods or services produced by the industry corresponding to the entry. Column three gives the **employment multiplier**. Each entry in column three represents the total change in number of jobs in all Arizona industries for each one million dollars in final demand for the goods or services produced by the industry corresponding to the entry.

For example, consider the mining industry. The output multiplier is .8047 which means that a one million dollar increase in demand for copper produced in Arizona will generate an additional \$804,700 increase in final demand for goods and services throughout the State's economy. The earnings and employment

**TABLE 3
MULTIPLIERS FOR ARIZONA**

	Output (dollars)	Earnings (dollars)	Employment (number of jobs)
Mining	.8047	.5399	24.7
Retail Trade	.8522	.7606	55.2
Wholesale Trade	.8068	.6574	37.2
Health Services	.9665	.8922	47.7
Other Services	.8000	.7500	65.0
Education	.8588	.6601	43.3
Utilities	.4808	.2729	12.5

Source: Regional Input and Output Modeling system, Regional Economic Analysis Division, Bureau of Economic Analysis.

*Each entry in column one represents the total dollar change in production that occurs in all Arizona industries for each dollar change in final demand for the goods or services produced by the industry corresponding to the entry. Each entry in column two represents the total dollar change in earnings of households employed by all Arizona industries for each dollar change in final demand for the goods or services produced by the industry corresponding to the entry. Each entry in column three represents the total change in number of jobs in all Arizona industries for each one million dollars in final demand for the goods or services produced by the industry corresponding to the entry.

multipliers for the mining industry are .5399 and 24.7 respectively. Thus, the \$804,700 increase in final demand will generate additional incomes equal to $.5399 \times 804,700 = \$434,457$ for Arizona workers as well as an increase in employment equal to $24.7 \times .8047 = 20$ jobs.

A Hypothetical Example

The best way to illustrate the methodology used in this report to determine the economic impact of a change in fiscal policy, is to consider a hypothetical example. Suppose the State increases the property tax on all other property enough to raise one million dollars in additional revenues for the State's General Fund. What will be the economic impact of this tax change?

First consider the direct effects of the tax. Table 2 indicates that 67 percent of this property tax will be shifted to consumers of goods in Arizona which means that consumers have $.67 \times 1,000,000 = \$670,000$ less to spend on goods. Thus, the first direct effect is a reduction in final demand for goods produced in Arizona by \$670,000.

This reduction in final demand will also have an impact on earnings of Arizona workers as well as employment. Column two of Table 3 indicates that for the retail trade industry, a \$670,000 reduction in final demand for goods will generate a $.7606 \times 670,000 = \$509,602$ reduction in incomes of those employed in the retail trade sector of the Arizona economy. Column three of Table 3, on the other hand, indicates that for the retail trade industry a \$670,000 reduction in final demand for goods will lead to a reduction in the number of jobs available in Arizona of $55.2 \times .670 = 37$.

Another direct effect of the tax is the reduction in retained earnings of firms affected by the tax. In this example, firms pay an additional \$330,000 in taxes.

However, some of this tax burden may be shifted from owners of capital to other resource owners employed by the firm; in particular, labor. While there is no general consensus as to how much of the firms' burden can be shifted, a reasonable estimate is that a maximum of 50 percent can be shifted to workers. Thus, of the \$330,000, retained earnings will fall by \$165,000.

Next, consider the multiplier effects. As the initial \$670,000 reduction in final demand filters through the economy, Table 3 indicates that there will be an additional $.8522 \times 670,000 = \$570,974$ reduction in final demand for goods. This is the output multiplier effect. Further, both earnings and employment will be affected by this second round change in demand. When consumers spend \$570,974 less for goods, production falls which leads to a $.7606 \times 570,975 = \$434,283$ reduction in earnings (the earnings multiplier effect) and a $55.2 \times .570975 = 32$ reduction in the number of jobs available in Arizona (the employment multiplier effect).

Finally, consider the long run incidence effect. In the long run owners of firms, owners of capital, may shift some of their tax burden to other resource owners employed by the firm; in particular, to labor. As noted above, in this report it is assumed that 50 percent can be shifted to workers. This being the case, in this hypothetical example 50 percent of \$330,000 original borne by firms is shifted to workers. Thus, incomes of workers are reduced by an additional \$165,000.

This reduction in workers' incomes leads to a \$165,000 reduction in final demand and the long run incidence effect is determined in the same way we determined the direct and multiplier effects above. Using Table 3, a \$165,000 reduction in final demand for goods leads to an additional $.8522 \times 165,000 = \$140,613$ reduction in final demand which means that as a result of this further shifting of the tax burden the dollar value of production in Arizona falls a total of

$165,000 + 140,613 = \$305,613$. In addition, worker's incomes fall an additional $.7606 \times 305,613 = \$232,449$ and employment fall by 17 jobs.

The total economic impact of a hypothetical increase in property taxes that generate one million dollars in revenues is the sum of the direct, multiplier, and long run incidence effects: final demand for goods and services falls by \$1,546,487; workers' earnings fall by \$1,249,498; the number of jobs available to Arizona workers falls by 86; and retained earnings of firms falls by \$330,000. These calculations are summarized in Table 4.

EXPENDITURES

Each of the proposed tax plans discussed in this report are revenue neutral in that each is designed to generate approximately \$255,000,000 in additional revenues for the State of Arizona; thus, a choice between tax plans could be made simply by determining which plan will impose the smallest total economic cost on the State's economy. However, to fully understand the impact of each fiscal proposal on the Arizona economy, it is useful to determine not only the costs associated with each tax plan but also the benefits associated with the increase in State expenditures made possible by the tax. Comparing economic costs and benefits provides a clear picture of the net impact of any particular policy change on the State's economy.

The following analysis assumes that the additional revenues generated by any one of the proposed tax plans is to be expended as follows: \$78,000,000 on indigent health care, \$25,000,000 on behavioral health care, \$41,000,000 for prison operations, and \$111,000,000 on education.

The economic impact of these expenditures prior to the consideration of financing costs is shown in Table 5. The methodology discussed above is used

TABLE 4
THE ECONOMIC IMPACT OF A HYPOTHETICAL PROPERTY TAX
THAT GENERATES \$1,000,000 IN ADDITIONAL REVENUES

	Decrease in Final Demand for Goods & Services (millions)	Decrease in Earnings (millions)	Decrease in Employment (number of jobs)	Decreast in Retained Earnings (millions)
Direct	.670	.510	37	165,000
Multiplier	.571	.434	32	—
Long Run Incidence	.306	.306	17	—
Total	1.547	1.250	86	165,000

TABLE 5
THE ECONOMIC IMPACT OF
A \$255,000,000 INCREASE IN STATE EXPENDITURES

	Increase in Final Demand for Goods & Services (millions)	Increase in Earnings (millions)	Increase in Employment (number of jobs)
Direct	\$255.000	\$196.353	11,982
Multiplier	229.817	178.320	10,806
Total	484.817	374.673	22,788

to calculate each of the entries in this table. Column one gives the increase in final demand for goods and services, measured in millions of dollars, that arises because of increased spending. The total effect associated with a \$255,000,000 increase in government expenditures on health care, prisons, and education is an increase in final demand for goods and services of \$484,817,000. That is, every dollar spent on health care, prisons, and education generates, on average, a \$1.89 increase in final demand. For example, a dollar spent on health care increases the demand for physician's services by \$1.96; a dollar spent on prisons increases the demand for operations supplies by \$1.85; and a dollar spent on education increases the demand for educational services by \$1.86.

Column two gives the increase in earnings of those workers employed in businesses affected by the increase in final demand (the entries in this column are calculated using the earnings multipliers for other services, retail trade, and education shown in Table 3). In this instance, a \$484.817 million increase in final demand for goods and services will generate \$374,673,000 in additional incomes for Arizona workers. This means that, on average, every dollar spent by the state generates a \$1.47 increase in income.

Finally, column three gives the increase in employment associated with the increase in final demand (the entries in this column are calculated using the employment multipliers for services, construction, and education shown in Table 3). This expenditure program will generate approximately 22,788 new jobs for Arizona workers.

TAX PLAN A

Tax Plan A consists of five proposed changes in the existing tax code for Arizona: a minimum school tax, increasing the state wide property tax, an increase in luxury taxes, eliminating or reducing certain corporate income tax credits and deductions, and increasing the mining severance tax. Table 6(a) summarizes the results of the economic analysis described below. The net economic benefits of Tax Plan A are: an increase in final demand for goods and services of \$143,937,000; an increase in earnings of Arizona workers of \$78,388,000; and the addition of 5,491 jobs for Arizona workers.

As is discussed below, the entries in this table reflect the assumption that 50% of the tax burden is borne by customers, 25% by owners of firms, and 25% by the firms' employees, the most reasonable case. Table 6(b), on the other hand, reflects the most severe case. The entries in this table reflect the assumption that 50% of the tax is borne by customers and, ultimately, 50% by the firms' employees. This has essentially the same aggregate income and employment impact as if the tax was entirely passed through to utility customers.

Plan A – Minimum School Tax

Background – Minimum School Tax (Plan A)

Under the current Arizona State School Assistance Program, a school district qualifies for state aid only after levying property taxes at the minimum qualifying tax rate. At present, the minimum qualifying rate is \$2.36 per \$100 assessed valuation for elementary or high school districts and \$4.72 per \$100 assessed valuation for unified districts or districts without both elementary and secondary schools. State aid is then set equal to any shortfall that exists between each

TABLE 6(a)
THE ECONOMIC IMPACT OF TAX PLAN A

Proposed Tax Changes and Revenues:

Minimum school tax	\$125,000,000
An increase in general property tax rates	58,000,000
Increases in luxury goods tax rates	40,000,000
Adjustments in corporate income tax deductions and credits	10,000,000
An increase in the mining severance tax rate	22,000,000

Total Revenues Generated: **\$255,000,000**

Total Economic Benefits:

Increase in final demand for goods and services	\$484,817,000
Increase in earnings	374,673,000
Increase in employment	22,788 jobs

Total Economic Costs:

Decrease in final demand for goods and services	\$340,880,000
Decrease in earnings	296,335,000
Decrease in employment	17,297 jobs

Net Economic Benefits:

Net increase in final demand for goods and services	\$143,937,000
Net increase in earnings	78,338,000
Net increase in employment	5,491 jobs

TABLE 6(b)
THE ECONOMIC IMPACT OF TAX PLAN A:
TAX BURDEN SHIFTED 100% TO WORKERS AND CONSUMERS

Proposed Tax Changes:

- Minimum school tax
- An increase in general property tax rates
- Increases in luxury goods tax rates
- Adjustments in corporate income tax deductions and credits
- An increase in the mining severance tax rate

Total Revenues Generated: **\$255,000,000**

Total Economic Benefits:

- Increase in final demand for goods and services \$484,817,000
- Increase in earnings 374,673,000
- Increase in employment 22,788 jobs

Total Economic Costs:

- Decrease in final demand for goods and services \$444,837,000
- Decrease in earnings 336,802,000
- Decrease in employment 20,696 jobs

Net Economic Benefits:

- Net increase in final demand for goods and services \$39,980,000
- Net increase in earnings 37,871,000
- Net increase in employment 2,092 jobs

district's school budget limit and property taxes available at the qualifying rate in each school district.

While most school districts in Arizona levy property taxes equal to or greater than the minimum qualifying tax rate, a number of school districts are able to meet their school spending budgets by taxing property at rates far below the minimum qualifying rate and, thus, do not receive state assistance. These districts are "property rich" in the sense that the net assessed values per student are extremely high compared to districts throughout the rest of the state. Typically, the reason for high net assessed values per student is that large commercial or industrial parcels are located within the school district. For example, the Ruth Fisher Elementary School District contains the Palo Verde Nuclear Generation Station. This district currently levies a primary property tax of only \$.04 per \$100 assessed valuation. This low rate is sufficient to attain the school budget requirements in the district.

Tax Proposal – Minimum School Tax (Plan A)

Levy a minimum school tax equal to the appropriate qualifying tax rate, \$2.36 or \$4.72 per \$100 assessed value, on all properties located in school districts that do not currently qualify for state assistance. The districts that would be affected by this tax, along with their 1988 property tax rates and their qualifying tax rates, are shown in Table 7. The economic impact of this tax is based on an estimate of 125 million dollars that would be raised by increasing the tax rates in these districts to the qualifying tax rate.

Economic Impact – Minimum School Tax (Plan A)

In order to determine the economic impact of the minimum school tax, property owners in the school districts affected by the tax are divided into three

TABLE 7
CURRENT TAX RATES FOR DISTRICTS THAT DO NOT RECEIVE
SCHOOL ASSISTANCE FROM THE STATE

District	1988 "Primary" Tax Rate	Minimum Qualifying Tax Rate
Round Valley Unified	\$2.4848	\$4.72
St. Johns Unified	1.4813	4.72
Cochise Elementary	0.8457	4.72
Chevron Butte Unified	1.2177	4.72
Young Elementary	4.7620	4.72
Ruth Fisher Elementary	0.0384	4.72
Riverside Elementary	0.7985	2.36
Phoenix Union High School	2.9998	2.36
Madison Elementary	2.5190	2.36
Arlington Elementary	2.2019	2.36
Joseph City Unified	0.9059	4.72
Vail Elementary	2.6115	4.72
Continental Elementary	1.0715	4.72
Red Rock Elementary	2.0005	2.36
Champie Elementary	1.6424	4.72
Bouse Elementary	1.8639	2.36
Bicentennial Union High School	1.2925	2.36

categories: utilities, residential, and all other. As is shown in Table 8, of the \$125 million in new tax revenues approximately \$116 million will be paid by public utilities, \$1 million by residential property owners, and \$8.1 million by all other property owners.

First consider the economic effects of the tax on producers and consumers of electricity. As a result of the minimum school tax, utilities pay \$116,039,000 additional tax revenues per year to the State of Arizona. Of this \$116 million approximately \$94,276,000 will be paid by the owners of the Palo Verde Nuclear Generation Station. Since 53.41 percent of Palo Verde is owned by out-of-state firms, $.5341 \times 94,276,000 = \$50,353,000$ in tax burden will be exported out of the state. Thus, Arizona utilities will pay a total of \$65,686,000 in additional tax revenues.

While the point of legal impact of the additional \$65 million in tax payments is on the utilities, 50 percent of these additional taxes will be shifted to consumers of electricity (see Table 2). This being the case, consumers of electricity will pay \$32,843,000 more per year for electricity, about \$.00153 more per kilowatt hour (KWH), which is an average increase of 2.1 percent increase in the cost of electricity. For an Arizona household consuming 1,000 KWH of electricity per month, the cost of using electricity will increase by \$1.53 per month. If all of the tax is shifted to consumers, the burdens would be twice as great.

As a result of the increase in the cost of consuming electricity, demand for electricity will fall. How much demand falls depends on the price elasticity of demand which measures the relative responsiveness of quantity demanded to changes in price. As shown in Table 9, the price elasticity of demand for electricity is .1. This means that a one percent increase in the cost of electricity will cause a .1 percent fall in demand for electricity.

TABLE 8
MINIMUM SCHOOL TAX REVENUES
BY TYPE OF PROPERTY OWNER

	Tax Revenues (millions)
Utilities	\$116.039
Residential Property Owners	1.137
Commercial/Industrial Property Owners	8.100
TOTAL	\$125.276

Source: Arizona Department of Revenue.

TABLE 9
ELASTICITY ESTIMATES

Item	Elasticity
Cigarettes+35
Beer+70
Electricity+10
Food*21

+ Source: Browning, Edgar K. and Browning, Jacqueline M., *Microeconomic Theory and Applications*, 3rd. ed., Glenview, Illinois: Scott, Freeman and Co., 1989.

* Source: Nicholson, Walter, *Intermediate Microeconomics and Its Application*, 3rd ed., Chicago, Illinois; The Dryden Press, 1987.

Given a demand elasticity of .1, if the cost of electricity increases 2.1 percent then demand will fall by .21 percent. Currently, Arizona industrial, commercial, and residential consumers of electricity purchase 4,180 million KWH, 8,850 million KWH, and 10,790 million KWH per year respectively. Residential consumers pay an average price of .09277 per KWH, commercial consumers pay an average price of .08602 per KWH, and industrial consumers pay an average price of .09277 per KWH. As a result of the minimum school tax, the price of electricity purchased by residential, commercial, and industrial buyers will increase by 1.7 percent, 1.8 percent, and 2.7 percent respectively. Thus, final demand for electricity will fall by \$3.679 million per year.

Since consumers of electricity pay an additional \$32.843 million in taxes, disposable income falls by this amount and not only will final demand for electricity fall but so too will final demand for other goods traded in Arizona. Table 10 shows the reduction of final demand of goods and services other than electricity. Column one gives additional taxes paid by type of consumer. Column two gives the reduction in final demand for electricity by type of consumer. Column three gives the difference between Columns one and two and represents the reduction in final demand for other goods and services due to the fall in disposable income. That is, final demand falls by a total of \$29.164 million.

The \$3.679 million reduction in final demand for electricity and the \$29.164 million reduction in final demand for other goods and services yields a direct output effect of \$32.843 million. This, in turn, generates the direct earnings and employment effects; in particular, earnings of Arizona workers will fall by \$21.698 million and 1,553 jobs will be lost (these numbers are calculated using the retail trade, wholesale trade, and utilities multipliers for the changes in final demand attributed to residential consumers, all other consumers, and consumers of electricity respectively).

TABLE 10
REDUCTION IN FINAL DEMAND OF GOODS AND SERVICES
AS A RESULT OF AN INCREASE IN THE COST OF ELECTRICITY

	Additional Tax Revenues Paid (millions)	Reduction in Expenditures on Electricity (millions)	Reduction in Final Demand for Goods & Services (millions)
Residential Consumers	\$16.415	\$1.670	\$14.745
Commercial Consumers	12.484	1.376	11.108
Industrial Consumers	3.944	0.633	3.311
Total	32.843	3.679	29.164

Another direct effect of the tax is a reduction in retained earnings of firms affected by the tax equal to $.5 \times 32,843,000 = \$16.422$ million.

In addition to the direct effect of the tax increase, there will be multiplier and long run incidence effects. The multiplier effects are calculated using the multipliers given in Table 3. Final demand for goods and services in all industries will fall by \$25.968 million, earnings will fall by \$17.689 million, and 1,225 jobs will be lost.

The long run incidence effects are calculated assuming that utility owners shift 50 percent of their tax burden to workers. This being the case, disposable incomes of workers employed by the utility industry fall by $.5 \times 32,843,000 = \$16.421$ million. Using the retail trade multipliers in Table 3, this reduction in disposable income causes final demand for goods sold in Arizona to fall by \$30.415 million, earnings to fall by \$23.134 million, and employment to fall by 1,679 jobs.

Next consider residential property owners in the school districts affected by the minimum school tax. Residential property owners pay an additional \$1.137 million in property taxes as a result of the tax which is, on average, a \$61.11 per parcel increase in taxes. This means that disposable incomes of residential property owners falls by \$1.137 million which, in turn, leads to a direct output effect equal to a \$1.137 reduction in final demand for goods.

The \$1.137 million reduction in final demand will also generate a direct earnings effect equal to a $.7606 \times 1,137,000 = \$.864$ million fall in earnings and a direct employment effect equal to $55.2 \times 1.137 = 63$ lost jobs (see Table 3 for relevant multipliers).

In addition to the direct effect of the tax increase, there will be a multiplier effect (there is no long run incidence effect since the tax falls on residential property owners rather than firms). Using the retail trade multipliers given in

Table 3, final demand for goods will fall by another $.8522 \times 1,137,000 = \0.969 million, earnings will fall by $.7606 \times 969,000 = \$0.737$ million, and $55.2 \times .969 = 53$ jobs will be lost.

Finally, consider all other property owners in the affected school districts. As a result of the minimum school tax, all other property owners pay \$8.1 million additional tax revenues per year to the State of Arizona. While the point of legal impact of this additional \$8.1 million in tax payments is on firms, 67 percent of these additional taxes are shifted to consumers (see Table 1). This being the case, all other property owners will pay $.33 \times 8,100,000 = \$2.7$ million of the tax (about \$107 per parcel), while consumers in general will pay $.67 \times 8,100,000 = \$5.4$ million more per year for goods and services or about \$3.49 more per wage earner employed in the retail trade sector.

As a result of the increase in the cost of consuming goods and services, final demand for goods and services will fall. Since many goods and services are affected simultaneously, the standard assumption is that, on average, final demand will fall by the full amount of the tax burden borne by consumers. In this instance, final demand will fall by \$5.4 million per year which is the direct output effect of the tax. The \$5.4 million reduction in final demand will also generate direct earnings and employment effects; in particular, earnings of Arizona workers employed will fall by $.7606 \times 5,400,000 = \4.107 million and $55.2 \times 5,400 = 298$ jobs will be lost (see Table 3 for relevant multipliers).

Another direct effect of the tax is a reduction in retained earnings of firms affected by the tax equal to $.5 \times 2,700,000 = \$1.350$ million.

In addition to the direct effect of the tax increase, there will be multiplier and long run incidence effects. The multiplier effects are calculated using the multipliers given in Table 3 for retail trade. Final demand for goods and services

will fall by $.8522 \times 5,400,000 = \4.602 million, earnings will fall by $.7606 \times 4,602,000 = \3.500 million, and $55.2 \times 4.602 = 254$ jobs will be lost.

The long run incidence effects are calculated assuming that owners firms shift 50 percent of their tax burden to workers. This being the case, disposable incomes of workers employed in the retail trade sector falls by $.5 \times 2,700,000 = \$1.350$ million which causes final demand for goods sold in Arizona to fall by \$2.500 million, earnings to fall by \$1.902 million, and employment to fall by 138 jobs.

Table 11 contains a summary of the economic impact on Arizona workers of a minimum school tax designed to generate \$125 million of additional revenues for the State. As a result of levying this tax, final demand for goods and services will be reduced by \$134.249 million, earnings will be reduced by \$282 per worker employed in the utility and retail trade sectors, and employment in these sectors will fall 1.51 percent.

TABLE 11
THE ECONOMIC IMPACT OF A MINIMUM SCHOOL TAX
THAT GENERATES \$125,000,000 IN ADDITIONAL REVENUES

	Reduction in Final Demand for Goods & Services (millions)	Reduction in Earnings (per worker)	Reduction in Employment (% of wage earners)
Direct	\$39.380	\$76	.55%
Multiplier	31.539	63	.44
Long Run Incidence	63.330	143	.52
Total	134.249	282	1.51

Plan A – General Property Tax

Background: General Property Tax (Plan A)

The State currently taxes property at a primary rate of 47¢ per \$100 net assessed valuation. Rates from 1985 through 1987 averaged 39.3¢ per \$100 net assessed value.

Tax Proposal – General Property (Plan A)

Increase the state's general property tax rate to yield an additional 58 million dollars. Using 1988 rates and assuming a 5% appreciation in net assessed value for 1989, this would require the state to increase the rate from 47¢ per \$100.00 net assessed value to 76¢ per \$100.00 net assessed value. Accordingly, the average primary rate for combined state and local property taxes – based on 1988 rates – would increase from \$7.84 per \$100.00 net assessed value to \$8.13. Thus, property tax payers would experience a 3.7% increase in overall property tax rates as a result of the proposal.

Economic Impact – General Property Tax (Plan A)

In order to determine the economic impact of a general property tax increase, property owners are divided into two categories: residential and all other. Of the \$58 million in new tax revenues approximately \$17.185 million will be paid by residential property owners, or \$18.31 per parcel, and \$40.815 million by all other property owners, or \$39.08 per parcel.

First consider residential property owners. As a result of the tax, the disposable incomes of residential property owners falls by \$17.185 million which, in turn, leads to a direct output effect equal to a \$17.185 reduction in final demand for goods. This, in turn, generates a direct earnings effect equal to a .7606 X

17,185,000 = \$13.071 million fall in earnings and a direct employment effect equal to $55.2 \times 17.185 = 949$ lost jobs (see Table 3 for relevant multipliers).

In addition to the direct effect of the tax increase, there will be a multiplier effect (there is no long run incidence effect since the tax falls on residential property owners rather than firms). Using the retail trade multipliers given in Table 3, final demand for goods will fall by another $.8522 \times 17,185,000 = \14.645 million, earnings will fall by $.7606 \times 14,645,000 = \11.139 million, and $55.2 \times 14.645 = 808$ jobs will be lost.

Next, consider all other property owners. As a result of the property tax increase, all other property owners pay \$40.815 million additional tax revenues per year to the State of Arizona. While the point of legal impact of this tax is on firms, 67 percent of these additional taxes are shifted to consumers (see Table 2). This being the case, all other property owners will pay $.33 \times 40,815,000 = \13.469 million of the tax (about \$12.89 per parcel), while consumers in general will pay $.67 \times 40,815,000 = \27.346 million more per year for goods and services or about \$17.69 more per wage earner.

As a result of the increase in the cost of consuming goods and services, final demand for goods and services will fall. Since many goods and services are affected simultaneously, the standard assumption is that, on average, final demand will fall by the full amount of the tax burden borne by consumers. In this instance, final demand will fall by \$27.346 million per year which is the direct output effect of the tax. The \$27.346 million reduction in final demand will also generate direct earnings and employment effects; in particular, earnings of Arizona workers employed will fall by $.7606 \times 27,346,000 = \20.799 million and $55.2 \times 27.346 = 1,509$ jobs will be lost (see Table 2 for relevant multipliers).

Another direct effect of the tax is a reduction in retained earnings of firms affected by the tax equal to $.5 \times 13,469,000 = \$6.734$ million.

In addition to the direct effect of the tax increase, there will be multiplier and long run incidence effects. The multiplier effects are calculated using the multipliers given in Table 3 for retail trade. Final demand for goods and services will fall by $.8522 \times 27,346,000 = \23.219 million, earnings will fall by $.7606 \times 23,219,000 = \17.660 million, and $55.2 \times 23.219 = 1,281$ jobs will be lost.

The long run incidence effects are calculated assuming that owners firms shift 50 percent of their tax burden to workers. This being the case, disposable incomes of workers employed in the retail trade sector falls by $.5 \times 13,469,000 = \$6.734$ million which causes final demand for goods sold in Arizona to fall by \$12.474 million, earnings to fall by \$9.488 million, and employment to fall by 689 jobs.

Table 12 contains a summary of the economic impact of a property tax increase designed to generate \$58 million of additional revenues for the State. As a result of levying this tax, final demand for goods and services will be reduced by \$94.869 million, earnings will be reduced by \$261 per worker employed in the utility and retail trade sectors, and employment in these sectors will fall 1.90 percent.

Comparison with Other States – Property Tax (Plan A)

A ranking of state and local property tax revenue burdens expressed on a per capita basis and as a percentage of personal income appears in Table 13. In 1986 Arizona ranked 26th in property tax per capita burden and 24th in burden as a percent of personal income. After expressing the additional property taxes of 183 million dollars outlined in Plan A in comparable terms and discounting to 1986 dollars, the Arizona property tax burden would increase to 23rd on a per capita basis and 20th as a percent of personal income.

TABLE 12
THE ECONOMIC IMPACT OF A GENERAL PROPERTY TAX
THAT GENERATES \$58,000,000 IN ADDITIONAL REVENUES

	Reduction in Final Demand for Goods & Services (millions)	Reduction in Earnings (per worker)	Reduction in Employment (% of wage earners)
Direct	\$44.531	\$123	.89%
Multiplier	37.864	104	.76
Long Run Incidence	12.474	34	.25
Total	94.869	261	1.90

TABLE 13
STATE RANKINGS FOR
STATE AND LOCAL PROPERTY TAX REVENUES

Rank	State	1986	State	1986	State	Tax Plan A*	State	Tax Plan A*
		Per Capita Revenue		Revenue/ Personal Income		Per Capita Revenue		Revenue/ Personal Income
1	WY	\$1,173	WY	8.83%	WY	\$1,173	WY	8.83%
2	AK	1,084	AK	6.11	AK	1,084	AK	6.11
3	NJ	757	MT	5.88	NJ	757	MT	5.88
4	NY	748	OR	5.17	NY	748	OR	5.17
5	NH	738	NH	5.08	NH	738	NH	5.08
6	CT	731	MI	4.81	CT	731	MI	4.81
7	OR	651	NY	4.66	OR	651	NY	4.66
8	MT	650	VT	4.64	MT	650	VT	4.64
9	MI	650	WI	4.57	MI	650	WI	4.57
10	RI	624	RI	4.52	RI	624	RI	4.52
11	MA	601	NJ	4.43	MA	601	NJ	4.43
12	WI	600	NE	4.34	WI	600	NE	4.34
13	NE	579	S	4.28	NE	579	S	4.28
14	VT	556	IA	4.27	VT	556	IA	4.27
15	IA	544	CT	4.06	IA	544	CT	4.06
16	IL	539	ME	4.05	IL	539	ME	4.05
17	KS	533	TX	3.90	KS	533	TX	3.90
18	MN	529	KS	3.88	MN	529	KS	3.88
19	CO	521	MN	3.77	CO	521	MN	3.77
20	TX	517	MA	3.68	TX	517	<u>AZ</u>	<u>3.70</u>
21	ME	478	IL	3.66	ME	478	MA	3.68
22	SD	477	CO	3.56	SD	477	IL	3.66
23	CA	451	UT	3.54	<u>AZ</u>	<u>464</u>	CO	3.56
24	WA	442	<u>AZ</u>	<u>3.43</u>	CA	451	UT	3.54
25	MD	438	WA	3.22	WA	442	WA	3.22
26	<u>AZ</u>	<u>422</u>	IN	3.16	MD	438	IN	3.16
27	FL	411	FL	3.07	FL	411	FL	3.07
28	VA	396	ND	3.00	VA	396	ND	3.00
29	OH	394	OH	2.98	OH	394	OH	2.98
30	IN	393	PA	2.90	IN	393	PA	2.90
31	PA	388	CA	2.87	PA	388	CA	2.87
32	UT	366	MD	2.81	UT	366	MD	2.81
33	ND	364	VA	2.76	ND	364	VA	2.76
34	NV	340	ID	2.69	NV	340	ID	2.69
35	GA	329	GA	2.68	GA	329	GA	2.68
36	HI	314	SC	2.48	HI	314	SC	2.48
37	ID	299	MS	2.42	ID	299	MS	2.42
38	NC	265	NV	2.41	NC	265	NV	2.41
39	SC	260	NC	2.30	SC	260	NC	2.30
40	MO	243	HI	2.29	MO	243	HI	2.29
41	TN	235	TN	2.11	TN	235	TN	2.11
42	OK	234	WV	1.98	OK	234	WV	1.98
43	DE	223	OK	1.91	DE	223	OK	1.91
44	MS	221	MO	1.85	MS	221	MO	1.85
45	WV	203	KY	1.80	WV	203	KY	1.80
46	KY	195	AR	1.74	KY	195	AR	1.74
47	LA	189	LA	1.69	LA	189	LA	1.69
48	AR	182	DE	1.59	AR	182	DE	1.59
49	NM	143	NM	1.33	NM	143	NM	1.33
50	AL	118	AL	1.12	AL	118	AL	1.12
	US	\$463	US	3.37%	US	\$463	US	3.37%

*Assumes property tax increase of \$125,000,000 (Qtr.) plus \$58,000,000 general.

Another way of gauging the additional property tax burden embodied by Plan A would be to compare its impact on the average residential property owner with the burdens maintained by residential property owners in other states. Table 14 presents average effective property tax rates for all states in 1986. Arizona maintained the 45th highest rate in 1986. Expressing the additional property tax burden proposed by the 58 million dollar General Property Tax Plan A in 1986 dollars would result in a movement in Arizona's ranking to the 43rd position.

General Arguments – Property Tax (Plan A)

As indicated by Table 7 certain residential, commercial and industrial property owners will realize a substantial increase in property tax rates as a result of the property taxes proposed in Plan A. However, it is clear that properties throughout the state would be taxed equally after this provision is imposed. That is, no property tax advantages would exist due to the relatively arbitrary location of school district boundaries.

Attempts to extend the minimum school tax provision statewide to all districts would pose difficulties for some districts. A number of districts can justify state assistance based on established budget formulae and available net assessed value. Once the aid formula is established, however, these districts can seek local property tax relief by undertaking cost saving measures designed to reduce school budgets. With a statewide minimum qualifying tax rate, there would be no incentive for local districts to economize in this fashion. Indeed, the tax structure would encourage local school districts to overstate school budgets as much as possible since monies not spent on local schools will flow out of the district and into the State's general fund.

Finally, the state should also consider what types of resources will be required to administer this tax. Presumably, the tax will be collected in the same fashion

TABLE 14
AVERAGE EFFECTIVE PROPERTY TAX RATES,
EXISTING SINGLE FAMILY HOMES WITH FHA INSURED MORTGAGES,
BY STATE AND REGION, 1986

<u>State and Region</u>	<u>Effective Property Tax Rate, 1986</u>	<u>Rank (High = 1; Low = 50)</u>
U.S. Totals.....	1.16%	
New England		
Connecticut.....	1.46	12
Maine.....	1.21	20
Massachusetts.....	1.08	27
New Hampshire.....	1.55	10
Rhode Island.....	1.49	11
Vermont.....	NA	NA
Mideast		
Delaware.....	0.73	43
Washington, DC.....	1.17	21
Maryland.....	1.30	18
New Jersey.....	2.33	1
New York.....	2.22	6
Pennsylvania.....	1.37	16
Great Lakes		
Illinois.....	1.59	9
Indiana.....	1.28	19
Michigan.....	2.26	5
Ohio.....	1.08	26
Wisconsin.....	2.27	3
Plains		
Iowa.....	1.96	8
Kansas.....	1.06	29
Minnesota.....	1.03	31
Missouri.....	0.89	38
Nebraska.....	2.21	7
North Dakota.....	1.37	15
South Dakota.....	2.31	2
Southeast		
Alabama.....	0.39	49
Arkansas.....	1.09	25
Florida.....	0.89	39
Georgia.....	0.90	36
Kentucky.....	1.10	22
Louisiana.....	0.25	50
Mississippi.....	0.77	42
North Carolina.....	NA	33
South Carolina.....	0.70	44
Tennessee.....	1.04	30
Virginia.....	1.42	14
West Virginia.....	0.88	40
Southwest		
Arizona.....	0.68	45
New Mexico.....	1.01	32
Oklahoma.....	0.90	37
Texas.....	1.44	13
Rocky Mountain		
Colorado.....	1.09	24
Idaho.....	0.91	35
Montana.....	1.32	17
Utah.....	0.93	34
Wyoming.....	0.57	47
Far West		
California.....	1.06	28
Nevada.....	0.61	46
Oregon.....	2.26	4
Washington.....	1.10	23
Alaska.....	0.82	41
Hawaii.....	0.51	48

Source: Computed by ACIR staff from data contained in U.S. Department of Housing and Urban Development, Housing-FHA, Management Information Systems Division, Single Family Insured Branch, *Data for States and Selected Areas on Characteristics of FHA Operations Under Section 203(b)*, various years.

as the current general property tax. However, the state must investigate whether additional administrative difficulties might arise when some districts are assessed at the minimum qualifying tax rate while others establish their rates in the conventional fashion.

Plan A – Luxury Taxes: Cigarettes and Beer

Background – The Cigarette Tax (Plan A)

At present the Arizona state tax rate per pack of twenty cigarettes is \$.15 per pack (this is in addition to the federal excise tax of \$.16 per pack). The tax is levied on distributors of cigarettes and is administered by requiring cigarettes sold at retail outlets in the state to carry stamps issued by the Arizona Department of Revenue upon payment of the tax. The rate may, in fact, be slightly less than \$.15 per pack since stamps purchased in amounts greater than \$30,000 are sold at a 3-4% discount.

Tax Proposal – The Cigarette Tax (Plan A):

Increase the tax rate per pack of cigarettes from \$.15 to \$.25. No change in the method of administering the tax is offered in the current proposal. The economic impact of this tax is based on projections of 350 million packs sold in 1989/90 at current tax rates. The tax would conceivably raise \$35 million dollars based on anticipated FY 89/90 consumption levels. However, we estimate that minor demand reduction and increased incentive for Indian reservation purchases will result in approximately \$300 million in taxable cigarette pack sales – or \$30 million in additional revenues.

Economic Impact – The Cigarette Tax (Plan A)

While the point of legal impact of the additional \$.10 per pack tax payment is on the owners of firms selling cigarettes, 100 percent of the tax increase is shifted to cigarette consumers (see Table 2) in the form of higher prices for cigarettes. This means that consumers of cigarettes will pay, on average, 7.7 percent more for a pack of cigarettes. For a smoker consuming one pack of cigarettes per day, the annual cost of purchasing cigarettes will increase by \$36.50.

As a result of the increase in the cost of consuming cigarettes, demand for cigarettes will fall. Table 8 indicates that the price elasticity of demand for cigarettes is .35. This means that a 7.7 percent increase in the price of cigarettes will cause a $.35 \times 7.7 = 2.695$ percent fall in demand for cigarettes. Currently, Arizona consumers purchase 350 million packs of cigarettes per year at an average cost of \$1.30 per pack. Thus, consumers will purchase $.02695 \times 350,000,000 = 9.432$ million fewer packs of cigarettes per year and revenues generated by the tax will be $.1 \times 340,568,000 = \34.057 million (as noted above, up to \$5 million of these revenues will be lost because of increased purchases from Indians).

As a result of the tax increase, final demand for cigarettes will fall by $1.30 \times 9,432,000 = \12.262 million. In addition, since consumers of cigarettes pay an additional \$34.057 million in taxes, final demand for other goods and services traded in Arizona falls by \$21.795 million. Since retail trade multipliers are used for both the cigarette industry and other goods, final demand for goods and services falls by \$34.057 million, which is the direct output effect. This reduction in final demand generates direct earnings and employment effects equal to a \$25.903 million reduction in earnings of Arizona workers and a job loss of 1,847 jobs (see Table 3 for relevant multipliers).

In addition to the direct effect of the tax increase, there will be multiplier effects (since the tax is shifted 100 percent to consumers, there are no long run incidence effects). The multiplier effects are calculated using the multipliers given in Table 3 for retail trade. Final demand for goods and services in all industries will fall by $.8522 \times 34,057,000 = \29.024 million, earnings will fall by $.7606 \times 29,024,000 = \22.075 million, and $55.2 \times 29.024 = 1,602$ jobs will be lost.

The total effect of the tax on cigarettes will be to raise approximately \$30 million in additional revenues, to reduce final demand for goods and services by \$63.081 million, to reduce earnings by \$47.978 million (\$174 per worker), and to reduce employment by 3,449 jobs (1.25 percent).

Background – The Beer Tax (Plan A)

At present the State of Arizona levies a \$.16 per gallon tax on malt liquor (this is in addition to the federal tax of \$.29 per gallon). The tax is paid by wholesalers of malt liquor and administered by the Arizona Department of Revenue.

Tax Proposal – The Beer Tax (Plan A)

Increase the tax rate per gallon of malt liquor from \$.16 to \$.26. No change in the method of administering the tax is offered in the current proposal. The economic impact of this tax is based on projections of 104 million gallons sold in 1989/90 at current tax rates. The net revenue after minor demand adjustments is expected to be 10.3 million dollars.

Economic Impact – The Beer Tax (Plan A)

As was the case for cigarettes, even though the point of legal impact of the additional \$.10 per gallon tax payment is on the owners of firms selling beer, 100 percent of the tax increase is shifted to beer consumers (see Table 2) in the form

of higher prices for beer. This means that consumers of beer will pay, on average, 1.62 percent more for a gallon of beer or slightly less than \$.01 more per can of beer. For a beer drinker consuming two six-packs of beer per week, the annual cost of purchasing beer will increase by \$5.85.

As a result of the increase in the cost of consuming beer, demand for beer will fall. Table 8 indicates that the price elasticity of demand for beer is .70. This means that a 1.6 percent increase in the price of beer will cause a $.70 \times 1.62 = 1.13$ percent fall in demand for beer. Currently, Arizona consumers purchase 104 million gallons of beer per year at an average cost of \$6.19 per gallon. Thus, consumers will purchase $.0113 \times 104,000,000 = 1.175$ million fewer gallons of beer per year and revenues generated by the tax will be \$10,283 million.

As a result of the tax increase, final demand for beer will fall by \$6.995 million. In addition, final demand for other goods and services will fall by $(10.283 - 6.995) = \$3.288$ million. Since retail trade multipliers are used for both the beer industry and other goods, final demand for goods and services falls by \$10.283 million, which is the direct output effect. This, in turn, leads to a \$7.821 reduction in earnings of Arizona workers and a job loss of 1.052 jobs (see Table 3 for the relevant multipliers).

In addition to the direct effect of the tax increase, there will be multiplier effects (since the tax is shifted 100 percent to consumers, there are no long run incidence effects). The multiplier effects are calculated using the multipliers given in Table 3 for retail trade. Final demand for goods and services in all industries related to the beer industry will fall by $.8522 \times 10,283,000 = \8.763 million, earnings will fall by $.7606 \times 8,763,000 = \6.665 million, and $55.2 \times 8.763 = 484$ jobs will be lost.

The total effect of the tax on beer will be to raise approximately \$10 million in additional revenues, to reduce final demand for goods and services by \$19.046

million, to reduce earnings by \$14.486 million (\$52 per worker), and to reduce employment by 1,052 jobs (.386 percent).

Table 15 contains a summary of the economic impact of increases in luxury goods taxes designed to generate \$40 million of additional revenues for the State. As a result of levying these taxes, final demand for goods and services will be reduced by \$82.127 million, earnings will be reduced by \$226 per worker, and employment will fall 1.63 percent.

Comparison with Other States – Luxury Taxes (Plan A)

Table 16 presents a ranking of the total state and local alcohol products tax revenue burdens expressed on a per capita basis and as a percent of personal income. In 1986 Arizona ranked 21st on a per capita basis and 14th as a percent of personal income. After expressing the additional beer taxes of 10 million in comparable terms and discounting to 1986 dollars, the Arizona alcohol products tax would increase to 18th on a per capita basis and 10th as a percent of personal income.

Table 17 presents a 1988 state-by-state comparison that separates beer tax rates from other alcohol tax rates. With the proposed tax on beer the Arizona rate would be 26¢, the 17th highest tax rate among all states.

A ranking of state and local tobacco products tax burdens expressed on a per capita basis and as a percent of personal income appears in Table 18. In 1986 Arizona ranked 37th in Tobacco products tax burden per capita and 36th as a percent of personal income. After expressing the additional cigarette taxes in Plan A on comparable terms and discounting to 1986 dollars, the Arizona tobacco products tax burden would increase to 22nd on a per capita basis and 19th as a percent of personal income.

TABLE 15
THE ECONOMIC IMPACT OF INCREASES IN LUXURY GOODS TAX RATES
THAT GENERATE \$40,000,000 IN ADDITIONAL REVENUES

	Reduction In Final Demand for Goods & Services (millions)	Reduction In Earnings (per worker)	Reduction In Employment (% of wage earners)
Direct	\$44.340	\$122	.88%
Multiplier	37.787	104	.75
Total	82.127	226	1.63

TABLE 16
STATE RANKINGS FOR
ALCOHOL PRODUCTS TAX REVENUES

Rank	1986		1986		Tax Plan A*		Tax Plan A*	
	State	Revenue Per Capita	State	Revenue/ Personal Income	State	Revenue Per Capita	State	Revenue/ Personal Income
1	FL	\$37.28	AK	0.32%	FL	\$37.28	AK	0.32%
2	AL	34.38	SD	0.29	AL	34.38	SD	0.29
3	GA	31.99	GA	0.28	GA	31.99	GA	0.28
4	SC	30.64	HI	0.26	SC	30.64	HI	0.26
5	HI	28.11	TX	0.23	HI	28.11	TX	0.23
6	VT	27.37	VA	0.23	VT	27.37	VA	0.23
7	ME	26.86	MD	0.23	ME	26.86	MD	0.23
8	TN	25.92	ID	0.21	TN	25.92	ID	0.21
9	AK	25.42	ND	0.19	AK	25.42	ND	0.19
10	WA	21.78	WV	0.16	WA	21.78	AZ	0.16
11	NC	21.29	UT	0.16	NC	21.29	WV	0.16
12	TX	20.93	NE	0.16	TX	20.93	UT	0.16
13	KS	18.20	MO	0.15	KS	18.20	NE	0.16
14	MT	17.27	AZ	0.14	MT	17.27	MO	0.15
15	VA	16.89	KY	0.13	VA	16.89	KY	0.13
16	OK	15.73	OR	0.13	OK	15.73	OR	0.13
17	NV	14.66	ME	0.12	NV	14.66	ME	0.12
18	LA	13.91	LA	0.12	AZ	14.64	LA	0.12
19	MS	13.48	WA	0.12	LA	13.91	WA	0.12
20	KY	13.01	NY	0.11	MS	13.48	NY	0.11
21	AZ	12.32	TN	0.11	KY	13.01	TN	0.11
22	MN	12.19	NH	0.10	MN	12.19	NH	0.10
23	SD	12.16	CA	0.10	SD	12.16	CA	0.10
24	MA	12.13	AL	0.10	MA	12.13	AL	0.10
25	NM	12.01	AR	0.10	NM	12.01	AR	0.10
26	PA	11.36	VT	0.10	PA	11.36	VT	0.10
27	NH	10.73	MS	0.09	NH	10.73	MS	0.09
28	AR	10.56	IL	0.09	AR	10.56	IL	0.09
29	NY	10.50	RI	0.08	NY	10.50	RI	0.08
30	MI	10.32	MN	0.08	MI	10.32	MN	0.08
31	UT	10.03	MI	0.07	UT	10.03	MI	0.07
32	CT	10.03	NJ	0.07	CT	10.03	NJ	0.07
33	ID	9.56	OH	0.07	ID	9.56	OH	0.07
34	NE	9.14	NV	0.07	NE	9.14	NV	0.07
35	ND	8.56	NC	0.07	ND	8.56	NC	0.07
36	WI	8.32	WY	0.06	WI	8.32	WY	0.06
37	IL	7.98	FL	0.06	IL	7.98	FL	0.06
38	DE	7.95	SC	0.06	DE	7.95	SC	0.06
39	RI	7.91	DE	0.06	RI	7.91	DE	0.06
40	NJ	7.69	WI	0.06	NJ	7.69	WI	0.06
41	CO	7.29	IN	0.05	CO	7.29	IN	0.05
42	IN	6.62	IA	0.05	IN	6.62	IA	0.05
43	OH	6.49	CT	0.05	OH	6.49	CT	0.05
44	MD	6.29	OK	0.05	MD	6.29	OK	0.05
45	WV	5.67	NM	0.04	WV	5.67	NM	0.04
46	IA	5.20	KS	0.04	IA	5.20	KS	0.04
47	CA	4.96	MA	0.04	CA	4.96	MA	0.04
48	MO	4.90	MT	0.04	MO	4.90	MT	0.04
49	OR	4.01	PA	0.03	OR	4.01	PA	0.03
50	WY	2.82	CO	0.03	WY	2.82	CO	0.03
	US	\$13.78	US	0.10%	US	\$13.78	US	0.10%

*Note: Assumes increase in beer tax of 10¢/gallon.

TABLE 17
STATE EXCISE TAX RATES ON BEER AND CIGARETTES: 1988

<u>State and Region</u>	<u>Cigarette Rate*</u> <u>(dollars per pack)</u>	<u>Beer Rate</u> <u>(dollars per gal.)</u>
U.S. Median.....	\$.18	\$.16
New England		
Connecticut.....	.26	.10
Maine.....	.28	.35
Massachusetts.....	.26	.11
New Hampshire.....	.17	.30
Rhode Island.....	.27	.06
Vermont.....	.17	.265
Mideast		
Delaware.....	.14	.06
Washington, DC.....	.17	.08
Maryland.....	.13	.09
New Jersey.....	.27	.03
New York.....	.21	.055
Pennsylvania.....	.18	.08
Great Lakes		
Illinois.....	.20	.07
Indiana.....	.155	.115
Michigan.....	.21	.20
Ohio.....	.18	.08
Wisconsin.....	.30	.06
Plains		
Iowa.....	.34	.19
Kansas.....	.24	.18
Minnesota.....	.38	.15
Missouri.....	.13	.06
Nebraska.....	.27	.23
North Dakota.....	.27	.16
South Dakota.....	.23	.27
Southeast		
Alabama.....	.165	1.05
Arkansas.....	.21	.16
Florida.....	.24	.48
Georgia.....	.12	.32
Kentucky.....	.03	.08
Louisiana.....	.16	.32
Mississippi.....	.18	.43
North Carolina.....	.02	.53
South Carolina.....	.07	.77
Tennessee.....	.13	.125
Virginia.....	.025	.26
West Virginia.....	.18	.18
Southwest		
Arizona.....	.15	.16
New Mexico.....	.15	.18
Oklahoma.....	.25	.36
Texas.....	.205	.19
Rocky Mountain		
Colorado.....	.20	.08
Idaho.....	.18	.15
Montana.....	.16	.14
Utah.....	.23	.355
Wyoming.....	.08	.19
Far West		
California.....	.35	.04
Nevada.....	.20	.09
Oregon.....	.27	.085
Washington.....	.31	.09
Alaska.....	.16	.35
Hawaii.....	40%	.50

*Note: State tax rates are *in addition* to the federal tax of \$.16.

Source: Cigarette data: ACIR staff compilations from Commerce Clearing House, *State Tax Review*. Beer data: ACIR staff compilation from *Public Revenues from Alcohol Beverages, 1986-87*, Distilled Spirits Council of the United States, Inc.; unpublished compilation from the *Wine Institute*, San Francisco; Commerce Clearinghouse, *State Tax Reporter, Sales Taxation: State and Local Structure and Administration*, John F. Due and John L. Mikesell, Johns Hopkins University Press, 1983.

TABLE 18
STATE RANKINGS FOR
TOBACCO PRODUCTS TAX REVENUES

Rank	1986		1986		Tax Plan A*		Tax Plan A*	
	State	Per Capita Revenue	State	Revenue/Personal Income	State	Per Capita Revenue	State	Revenue/Personal Income
1	ME	\$32.13	ME	0.27%	ME	\$32.13	ME	0.27%
2	NH	31.87	AR	0.26	NH	31.87	AR	0.26
3	RI	30.14	MS	0.23	RI	30.14	MS	0.23
4	MA	29.56	NH	0.22	MA	29.56	NH	0.22
5	NJ	28.11	RI	0.22	NJ	28.11	RI	0.22
6	CT	27.57	OR	0.22	CT	27.57	OR	0.22
7	OR	27.40	WI	0.20	OR	27.40	WI	0.20
8	NY	27.03	AL	0.20	NY	27.03	AL	0.20
9	NV	26.96	IA	0.20	NV	26.96	IA	0.20
10	AR	26.61	NV	0.19	AR	26.61	NV	0.19
11	WI	26.57	SD	0.19	WI	26.57	SD	0.19
12	IA	25.35	OK	0.19	IA	25.35	OK	0.19
13	FL	24.50	VT	0.19	FL	24.50	VT	0.19
14	KS	24.12	FL	0.18	KS	24.12	FL	0.18
15	MN	24.06	MA	0.18	MN	24.06	MA	0.18
16	WA	23.99	WV	0.18	WA	23.99	WV	0.18
17	MI	23.93	MI	0.18	MI	23.93	MI	0.18
18	IL	23.56	KS	0.18	IL	23.56	KS	0.18
19	OK	22.78	WA	0.17	OK	22.78	AZ	0.17
20	TX	22.70	MN	0.17	TX	22.70	WA	0.17
21	VT	22.33	TX	0.17	VT	22.33	MN	0.17
22	AL	21.21	NY	0.17	AZ	22.26	TX	0.17
23	SD	21.14	NJ	0.16	AL	21.21	NY	0.17
24	MS	20.67	LA	0.16	SD	21.14	NJ	0.16
25	MO	20.43	IL	0.16	MS	20.67	LA	0.16
26	PA	19.64	MO	0.16	MO	20.43	IL	0.16
27	DE	19.42	TN	0.15	PA	19.64	MO	0.16
28	NE	19.31	CT	0.15	DE	19.42	TN	0.15
29	HI	18.59	PA	0.15	NE	19.31	CT	0.15
30	LA	18.44	MT	0.14	HI	18.59	PA	0.15
31	WV	18.42	NE	0.14	LA	18.44	MT	0.14
32	ND	17.51	ND	0.14	WV	18.42	NE	0.14
33	TN	17.10	DE	0.14	ND	17.51	ND	0.14
34	OH	17.03	HI	0.14	TN	17.10	DE	0.14
35	MT	16.04	OH	0.13	OH	17.03	HI	0.14
36	CO	15.59	AZ	0.12	MT	16.04	OH	0.13
37	AZ	15.31	GA	0.12	CO	15.59	GA	0.12
38	GA	15.11	IN	0.11	GA	15.11	IN	0.11
39	MD	15.00	CO	0.11	MD	15.00	CO	0.11
40	AK	14.55	MD	0.10	AK	14.55	MD	0.10
41	IN	13.75	NM	0.09	IN	13.75	NM	0.09
42	NM	9.98	ID	0.09	NM	9.98	ID	0.09
43	ID	9.87	SC	0.08	ID	9.87	SC	0.08
44	CA	9.62	AK	0.08	CA	9.62	AK	0.08
45	WY	9.35	UT	0.08	WY	9.35	UT	0.08
46	SC	8.88	WY	0.07	SC	8.88	WY	0.07
47	UT	7.91	CA	0.06	UT	7.91	CA	0.06
48	VA	6.36	KY	0.05	VA	6.36	KY	0.05
49	KY	4.91	VA	0.04	KY	4.91	VA	0.04
50	NC	2.62	NC	0.02	NC	2.62	NC	0.02
	US	\$19.29	US	0.14%	US	\$19.29	US	0.14%

*Note: Assumes increase in cigarette tax of 10¢/pack.

Table 17 presents a 1988 comparison of cigarette tax rates across all states. With a rate of 25¢ per pack proposed in Plan A, Arizona would have the 17th highest tax rate on cigarettes.

General Issues – Luxury Tax (Plan A)

Most analyses of expenditure profiles reveal that cigarette and beer taxes are regressive (lower income earners bear a higher burden – rate of tax as a percent of income). At the same time, it is easy to demonstrate the high costs that excessive consumption of beer and cigarettes can impose on society. Revenues raised by taxing these items can help offset some of these higher costs.

Luxury taxes such as those proposed in Plan A provide an opportunity for nonresident visitors to the State to pay for services provided by State government. Unfortunately, no data on nonresident consumption of beer and cigarettes is currently available. We have assumed in our analysis that the burden of the tax is borne by Arizona residents – thus overstating the actual resident burden of the luxury tax increase. Of course the employment effects that occur as a result of the tax would not be affected by distinguishing resident and nonresident consumers.

Plan A – Corporate Income Tax

Background – Water's Edge Definition

The provisions of the Arizona Tax Code that are to be affected by the proposed change in the Arizona definition of "water's edge" for establishing corporate liability are discussed in a recent memo drafted by an analyst of the Arizona Department of Revenue:

80/20 Corporation – A company incorporated in the United States and taxed through the Internal Revenue Code. The U.S. and most states also define it as a company with 80 percent or more of its property, payroll, and sales in foreign countries. Arizona defines it as a company deriving 80 percent or more of its gross revenues from foreign countries.

"Possessions" Corporation – defined in IRC Section 936 as a company incorporated in the United States that derives 80% or more of its gross revenues from a U.S. Possession (Puerto Rico, etc.). Arizona uses the IRC definition. This corporation is taxed through the Internal Revenue Code.

Under Arizona law (ARS Section §43-1132). A combined return is a group of corporations that operate as a single, unitary business. Since 80/20 and Possessions corporations are often part of a unitary business, their incomes are not subject to Arizona tax. Therefore a business could legally structure itself so that profits from foreign sales could escape Arizona taxation, even though the sales force and a portion of the sales offices are located in the US.

Further, the statutes require that any expenses attributable to income from an 80/20 or Possessions corporation that may be in the remaining Arizona return must be removed (ARS Section §43-1132). Such expenses could include research and development and accounting, legal, and pension expenses. However, it presents a difficult audit situation to determine the exact amount and is generally not being done on the returns when filed.

The "water's edge" debate has raged at two levels among states that levy corporate income taxes. The primary debate involves early 1980 attempts by several states to require that combined "worldwide" income appear on the state corporate return. Tax liability of a multi-national corporation in each state that adopted such a "worldwide" combination provision was established by comparing the personnel, property and payroll that the firm maintained in the state with the "worldwide" profits of all its affiliates. Originally twelve states – labeled the "dirty

dozen" by multi-national corporations – experimented with "worldwide" combining. Arizona, along with the remaining states, "piggy-backs" the Federal Corporate tax code and therefore does not allow "worldwide" combining. Recently, all but one of the twelve states that originally experimented with "worldwide" combining of corporate income have liberalized their corporate tax structure so as to define a "water's edge" to the state tax liability of a multi-national corporation.

While the debate over worldwide combinations was underway, domestic corporations sought an opportunity to reduce their state liabilities by seeking exclusion of "80/20 income" or "possession" income defined in the memo. Along with this effort in 1985 the State of Arizona began exempting the net income of "80/20" or "possessions" corporations. This exemption places Arizona in a position that is very favorable to large multi-national corporations that have the capacity to benefit from "80/20" exclusions. The best example of a firm that enjoys the benefits of this statute is a "Fortune-500" conglomerate that operates in Arizona. Foreign sales from this firm are channeled through a separate corporation that is also typically a member of the conglomerate. Practical examples of firms that fit this example in Arizona are "high-tech" multi-nationals such as Motorola, Digital, Intel, etc. Due to confidentiality restrictions we are not able to confirm that these types of conglomerates do indeed benefit from the "80/20" provision. However, it is common knowledge that IBM lobbied actively for "80/20" exclusions in 1985. Hence, we will presume that the affected firms are mainly engaged in "high tech" or other forms of manufacturing. Financial service firms would then typically not be affected.

As the memo indicates, these firms benefit from the "80/20" or "possessions" provision since virtually all costs of production can be used to offset taxable domestic profits while considerable net foreign income is exempted by the "80/20" or "possessions" provision. No assistance is provided by IRS corporate auditors

in clarifying this situation since the "80/20" or "possessions" firm is treated as "domestic" by the IRS and all income is subject to taxation.

The provision regarding the deduction of Foreign Tax Credits ARS §43-1122.4 is discussed in a recent memo written by an analyst of the Department of Revenue.

This Law allows a deduction on the Arizona return for that portion of the federal Foreign Tax Credit used to offset the federal income tax liability if the foreign income generating the tax credit is taxed by Arizona.

Apparently this section was an attempt to incorporate the Arizona Appeals Court's Anderson-Clayton Decision into the Law. If so, it was inadequate and the federal tax deduction is still computed under the guidelines of that case. The Anderson-Clayton case required the amount of Foreign Tax Credit used to reduce the federal income tax liability to be added back to the net federal liability when computing the federal tax deduction for Arizona income tax purposes. This allows a portion of the Federal Foreign Tax Credit to flow through as part of the federal tax deduction. The direct deduction of Foreign Tax Credit provided in §43-1122.4 is also allowed, this provides a double deduction of the Foreign Tax Credit if the intent was to compute the correct federal tax deduction under the Anderson-Clayton Formula.

Another rationale of this section is that it provides a deduction of related expenses if Arizona Taxes foreign income.

Section §43-1121.3 disallows the deduction of all income taxes paid to other states or foreign countries based on the premise that all income generating those taxes is apportioned outside Arizona.

With the adoption of UDITPA apportionment factors in 1984, the foreign income generating the Federal Foreign Tax Credits is effectively apportioned outside Arizona. With this

foreign income no longer taxed by Arizona, the deduction of the related Foreign Tax Credits is not justified.

The "double-counting" referenced in the memo could occur in the following manner. A multi-national firm can deduct a portion of the foreign credit (the proportion determined by the multi-state apportionment formula) on Line B6 of the corporate form. In addition the "Arizona portion" of Federal corporate income tax is deducted on line 16. This Federal tax burden would typically not be "net" of foreign credits obtained on the Federal form. Hence, a multinational corporation may obtain a deduction twice – once directly via line B6 and second indirectly through the Federal tax deduction.

As indicated above our access to detailed corporate data is restricted to protect the confidentiality of each firm. However, it is obvious that the initial effect of this tax will be felt by multinational corporations that file Arizona Corporate Income Tax returns.

Tax Proposal – Corporate Income Tax (Plan A)

Remove the 80/20 exclusion, the Possessions exclusion and the Foreign Tax Credit from the Arizona Corporate Income Tax Code. The economic impact of these taxes assumes that the current provisions yield 10 million dollars in FY 89/90 corporate liability.

Economic Impact – Corporate Income Tax (Plan A)

As noted above, eliminating the 80/20 exclusion, the Possessions exclusion, and the Foreign Tax Credit will generate \$10 million in tax revenues which, in turn, reduces corporate income by the same amount. As shown in Table 2, in this report it is assumed that corporate income taxes are not shifted forward to

Arizona consumers. This assumption is made primarily because the firms affected by this tax change typically sell their goods in worldwide markets. Thus, the direct effect of removing of these deductions and credits is simply the reduction in corporate income and owners of capital bear the tax burden in the form of a lower rate of return to investment (there are no direct earnings or employment effects and there are no multiplier effects since the profit maximizing rate of production is not affect by the change in the tax code).

It can be argued, however, that in the long run owners of firms located in Arizona may shift their burden of the tax to workers; that is, that there are long run incidence affects. These would occur, for example, if corporate operations located in Arizona had some required profit margin and had to cut payroll costs as a result of a greater tax burden.

The long run incidence effects are calculated assuming that owners firms shift 50 percent of their tax burden to workers. This being the case, disposable incomes of workers employed in the corporate sector fall by $.5 \times 10,000,000 = \$5.000$ million. Using the retail trade multipliers given in Table 3, the \$5 million reduction in disposable incomes causes final demand for goods sold in Arizona to fall by \$9.261 million, earnings to fall by \$7,044 million or \$26 per worker, and employment to fall by 511 jobs or .19 percent. These results are summarized in Table 19.

Comparison with Other States – Corporate Income Tax (Plan A)

Table 20 presents a ranking of the Corporate Income Tax burdens expressed on a per capita basis and as a percent of personal income. In 1986 Arizona's corporate tax burden ranked 26th on a per capita basis and 29th as a percent of personal income. After expressing the additional corporate income taxes of 10 million in comparable terms and discounting to 1986 dollars the relative corporate

TABLE 19
THE ECONOMIC IMPACT OF ADJUSTMENTS IN
CORPORATE INCOME TAX DEDUCTIONS AND CREDITS
THAT GENERATE \$10,000,000 IN ADDITIONAL REVENUES

	Reduction in Final Demand for Goods & Services (millions)	Reduction in Earnings (per worker)	Reduction in Employment (% of wage earners)
Total	\$9.261	\$26	.19%

TABLE 20
STATE RANKINGS FOR
CORPORATION INCOME TAX REVENUES

Rank	1986		1986		Tax Plan A*		Tax Plan A*	
	State	Per Capita Revenue	State	Revenue/Personal Income	State	Per Capita Revenue	State	Revenue/Personal Income
1	AK	\$332.87	AK	1.88%	AK	\$332.87	AK	1.88%
2	CT	193.42	MI	1.17	CT	193.42	MI	1.17
3	NY	187.87	NY	1.17	NY	187.87	NY	1.17
4	MA	183.13	MA	1.12	MA	183.13	MA	1.12
5	MI	158.51	CT	1.07	MI	158.51	CT	1.07
6	CA	142.07	DE	1.00	CA	142.07	DE	1.00
7	DE	140.48	CA	0.90	DE	140.48	CA	0.90
8	NJ	125.31	NJ	0.73	NJ	125.31	NJ	0.73
9	NH	96.46	NC	0.70	NH	96.46	NC	0.70
10	MN	87.16	ND	0.68	MN	87.16	ND	0.68
11	WI	85.18	NH	0.66	WI	85.18	NH	0.66
12	ND	82.93	WI	0.65	ND	82.93	WI	0.65
13	PA	81.02	MT	0.65	PA	81.02	MT	0.65
14	NC	80.89	MN	0.62	NC	80.89	MN	0.62
15	IL	74.41	PA	0.60	IL	74.41	PA	0.60
16	MT	71.53	KY	0.58	MT	71.53	KY	0.58
17	RI	69.39	GA	0.56	RI	69.39	GA	0.56
18	GA	68.50	LA	0.52	GA	68.50	LA	0.52
19	KS	63.53	IL	0.51	KS	63.53	IL	0.51
20	KY	62.64	RI	0.50	KY	62.64	RI	0.50
21	OR	59.94	TN	0.50	OR	59.94	TN	0.50
22	LA	58.61	OR	0.48	LA	58.61	OR	0.48
23	VT	56.43	VT	0.47	VT	56.43	VT	0.47
24	MD	56.09	KS	0.46	MD	56.09	KS	0.46
25	TN	55.93	AR	0.46	TN	55.93	AR	0.46
26	AZ	51.50	NM	0.46	AZ	53.82	NM	0.46
27	NM	48.77	WV	0.45	NM	48.77	WV	0.45
28	IA	48.61	SC	0.42	IA	48.61	AZ	0.43
29	VA	48.52	AZ	0.42	VA	48.52	SC	0.42
30	AR	47.73	MS	0.41	AR	47.73	MS	0.41
31	WV	46.33	UT	0.39	WV	46.33	UT	0.39
32	OH	44.44	ID	0.38	OH	44.44	ID	0.38
33	SC	44.25	IA	0.38	SC	44.25	IA	0.38
34	ME	44.18	ME	0.37	ME	44.18	ME	0.37
35	ID	42.52	AL	0.37	ID	42.52	AL	0.37
36	FL	41.71	MD	0.36	FL	41.71	MD	0.36
37	HI	41.11	VA	0.34	HI	41.11	VA	0.34
38	UT	39.91	OH	0.34	UT	39.91	OH	0.34
39	AL	38.67	FL	0.31	AL	38.67	FL	0.31
40	MS	37.07	HI	0.30	MS	37.07	HI	0.30
41	CO	35.79	SD	0.30	CO	35.79	SD	0.30
42	MO	34.39	IN	0.27	MO	34.39	IN	0.27
43	NE	34.14	OK	0.27	NE	34.14	OK	0.27
44	SD	33.36	MO	0.26	SD	33.36	MO	0.26
45	IN	33.35	NE	0.26	IN	33.35	NE	0.26
46	OK	32.40	CO	0.24	OK	32.40	CO	0.24
47	NV	0	NV	0	NV	0	NV	0
48	TX	0	TX	0	TX	0	TX	0
49	WA	0	WA	0	WA	0	WA	0
50	WY	0	WY	0	WY	0	WY	0
	US	\$82.76	US	0.60%	US	\$82.76	US	0.60%

*Assumes \$10,000,000 additional corporate income tax revenues.

burden would remain 26th on a per capita basis and increase only one notch to 28th on a percent of personal income basis.

It is noteworthy that in FY 85/86, the year used to form the ranking discussed above, Arizona received approximately 200 million dollars in corporate revenue. In FY 87/88 corporate revenues had fallen to about 150 million dollars and current estimates for 1989/90 – despite a purported 29 million dollar tax increase call for revenues to remain less than 200 million dollars. Without data from other states it is impossible to confirm, but it is conceivable that Arizona's relative corporate burden has actually declined in the last several years. Regardless, we find that an increase in the corporate sector on the order of 10 million in additional revenue will have no appreciable effect on our relative corporate burden.

General Issues – Corporate Income Tax (Plan A)

There is little doubt that the experiments with "worldwide" combination of corporate income had an adverse effect on business climate. Specific examples of "lost" direct foreign investment by Japanese corporations have been cited as reasons for the limiting "water's edge" legislation. However, elimination of 80/20, Possessions or Foreign Tax Credits need not impede the flow of foreign direct investment in the same manner as did "worldwide" combining. Yet, firms affected by this provision may make this claim.

It is noteworthy that Arizona's current 80/20 provision is more liberal with respect to businesses than that adopted by the IRS. The IRS bases the Federal definition on the relative proportion of property, payroll and sales in foreign countries while Arizona focuses exclusively on sales. Also, the Arizona treatment of multi-national firms is as favorable as any state that taxes corporate income and more favorable than most of its southwestern neighbors. California does not exempt 80/20 income, Utah exempts 50% of 80/20 income, Colorado exempts

80/20 income unless the firm claims a deduction or credit for foreign taxes. In this case a portion of 80/20 income is subject to tax. New Mexico exempts 80/20 income. In addition, all these states have adopted the narrow Federal definition that focuses on the 80% of property, payroll and sales located abroad – not 80% of sales revenues as in Arizona.

It is difficult to assess the impact of the "80/20," "possessions" or foreign tax credit provisions on the decision to locate a specific firm in Arizona. As we discussed earlier, firms base relocation decisions on a vector of factors – including but not limited to State tax burdens. However, it would seem that if a firm was offered two alternative sites with all amenities (education, labor force, climate, etc.) identical, the decision may indeed turn on the treatment of foreign earnings. The liberal 80/20 policy enacted in 1985 may also have sent a signal to firms that Arizona has no intention of combining worldwide profits. In this case, the current tax code offers a very favorable business climate for US-based multinational corporations. If the 80/20 exclusions are eliminated and foreign credits disallowed, effort should be undertaken to ensure foreign based corporations that the Arizona policy toward "worldwide" combining with regard to foreign based corporations is intact.

From another perspective, the analysis in section I above suggests that businesses will relocate to Arizona only if – for example – we improve health care facilities or provide a better educated work force. Minor changes in state tax treatment do not seem to be of substantial concern. The most telling example in this regard may be IBM's decision to close its Tucson facility in 1987 after arguing successfully for 80/20 exclusions in 1985. The operations of the Tucson facility were then relocated to a state that does not exempt 80/20 income!

It is also possible that the existence of the most liberal 80/20 policy in the region actually prevents business expansion in Arizona. To maintain the 80/20 or

Possessions exclusion, firms must locate their sales staff outside the state of Arizona (viz. Los Angeles). If located in Arizona the firm would establish sufficient presence or have "nexus" in Arizona and must forgo the 80/20 exemption.

Without the 80/20 provision, no such disincentive for locating a sales staff in the state would exist.

In sum, perhaps the most interesting aspect of the Arizona treatment of 80/20 or Possessions income is the focus on gross sales. Unlike most states, a firm (by linking a separate foreign sales division to a parent corporation) can locate the majority of its personnel and property in Arizona – reaping the advantages of state services; education, health care, etc. – without contributing its share of revenue to support these services.

The tax can be administered quite easily by removing the 80/20, Possessions, and Foreign Tax Credit lines from the Arizona Corporate Income Tax form. No additional resources would be required by the tax. Indeed, altering these provisions would possibly be cost and time saving since auditors need no longer distinguish the foreign sales of domestic based corporations.

Plan A – Mining Severance Tax

Background – Mining Severance Tax (Plan A)

At present, the severance tax is levied on the "net severance base." This base is the greater of (1) "weighted mineral value" or (2) a specified percentage of the old sales tax base (50% of the difference between the gross value of production less out-of-state processing costs). This is known as the "Arizona value." The weighted mineral value is obtained by dividing mining costs by total production costs and multiplying by the gross value of production. The tax is levied at a rate of 2-1/2% of the net severance base. In FY 87/88, the net

severance base was 770.7 million dollars and yielded 19.3 million in total sales tax collections.

Tax Proposal – Mining Severance Tax (Plan A)

Raise the rate on the severance tax and alter the distribution formula so that proceeds from the increased tax accrue entirely to the General Fund. The rate increase examined in this report is from 2-1/2% to 5% on the "net severance base." The actual proposal may contain a provision that ties the tax rate to the price of copper. This would help alleviate the burden of this tax on the mining firms during cyclical downturns in copper demand.

The economic impact of this proposal is based on estimates of the FY 89/90 net severance base of 880 million dollars so the additional tax would raise 22 million in revenue.

Economic Impact – Mining Severance Tax (Plan A)

The proposed increase in the mining severance tax will generate \$22 million in tax revenues. Since mining firms in Arizona are "price takers" in that world prices are not affected by production costs incurred by these firms, an increase in the mining severance tax reduces corporate income by the same amount. As shown in Table 2, in this report it is assumed that mining severance taxes are not shifted forward to Arizona consumers. This is a valid because mining firms produce an intermediate product sold to other firms primarily outside of Arizona. Thus, the direct effect of increasing the severance tax is simply the reduction in corporate income and owners of capital bear the tax burden in the form of a lower rate of return to investment.

It can be argued, however, that even in the short run owners of mining firms located in Arizona may shift their burden of the tax to workers. This shifting would

occur if, for example, mining firms located in Arizona are required by the parent firm to operate with a given profit margin which means that costs must be cut as a result of a greater tax burden.

These short run effects are calculated assuming that owners of mining firms shift 50 percent of their tax burden to workers. This being the case, disposable incomes of workers employed in the mining sector fall by $.5 \times 22,000,000 = \$11$ million. Using the retail trade multipliers given in Table 3, this reduction in disposable incomes causes final demand for goods sold in Arizona to fall by \$20.374 million, earnings to fall by \$15.497 million or \$56 per worker, and employment to fall by 1,124 jobs or .41 percent. These results are summarized in Table 21.

Comparison with Other States – Severance Tax (Plan A)

Table 22 presents a comparison of non-fuel mineral severance tax rates for a number of states. Arizona's effective tax rate in 1985 was a modest .64 percent – the 10th highest of the 16 listed states.

The severance tax outlined in Plan A proposes an additional 22 million dollars tax on a base that yielded about 19.3 million in FY 87/88. This would increase the effective rate sharply though the rate increase would be mitigated by the considerably higher production value associated with copper prices in excess of \$1.00 per pound. The 1985 copper price reflected in the 1985 production value averaged 67¢ per pound. At copper prices of \$1.25 per pound we estimate that the effective severance tax rate under the proposal in Plan A would remain below the 1985 national average rate – 1.5% of production value.

TABLE 21
THE ECONOMIC IMPACT OF AN INCREASE
IN THE MINING SEVERANCE TAX
THAT GENERATES \$21,200,000 IN ADDITIONAL REVENUES

	Reduction in Final Demand for Goods & Services (millions)	Reduction in Earnings (per worker)	Reduction in Employment (% of wage earners)
Total	\$20.374	\$56	.41%

TABLE 22
EFFECTIVE SEVERANCE TAX RATE
FOR NON-FUEL MINERALS: 1985*

State	Value of Production (millions)	Tax Revenue (to nearest million)	Effective Tax Rate (in percent)
Arizona**	\$1568	\$10	.64%
Arkansas	271	2	.74
Colorado	427	2	.47
Florida	1564	84	5.37
Idaho	404	1	.25
Louisiana	487	6	1.23
Minnesota	1599	80	5.00
Montana	225	2	.89
Nevada	601	3	.50
New Mexico	673	30	4.46
Ohio	570	1	.18
South Dakota	197	4	2.03
Texas	1943	4	.21
Utah	389	1	.26
Wisconsin	123	1	.81
Wyoming	629	7	<u>1.11</u>
Ave. Rate			1.51

*Source: U.S. Department of the Interior: Bureau of Mines.

**In 1985, 75% of the value was attributable to copper.

General Issues – Mining Severance Tax (Plan A)

Table 23 reveals a recent history of copper prices. It suggests that while an average price of \$1.25 per pound is not inconceivable, it would be the highest average price in the last five years and nearly twice as high as the 1985/86 levels. This picture strongly supports a tax structure that would be tied to copper prices. Interestingly, the copper cycle need not be correlated with the general business cycle so that severance revenues would not necessarily decline when the state could least afford to lose the revenue.

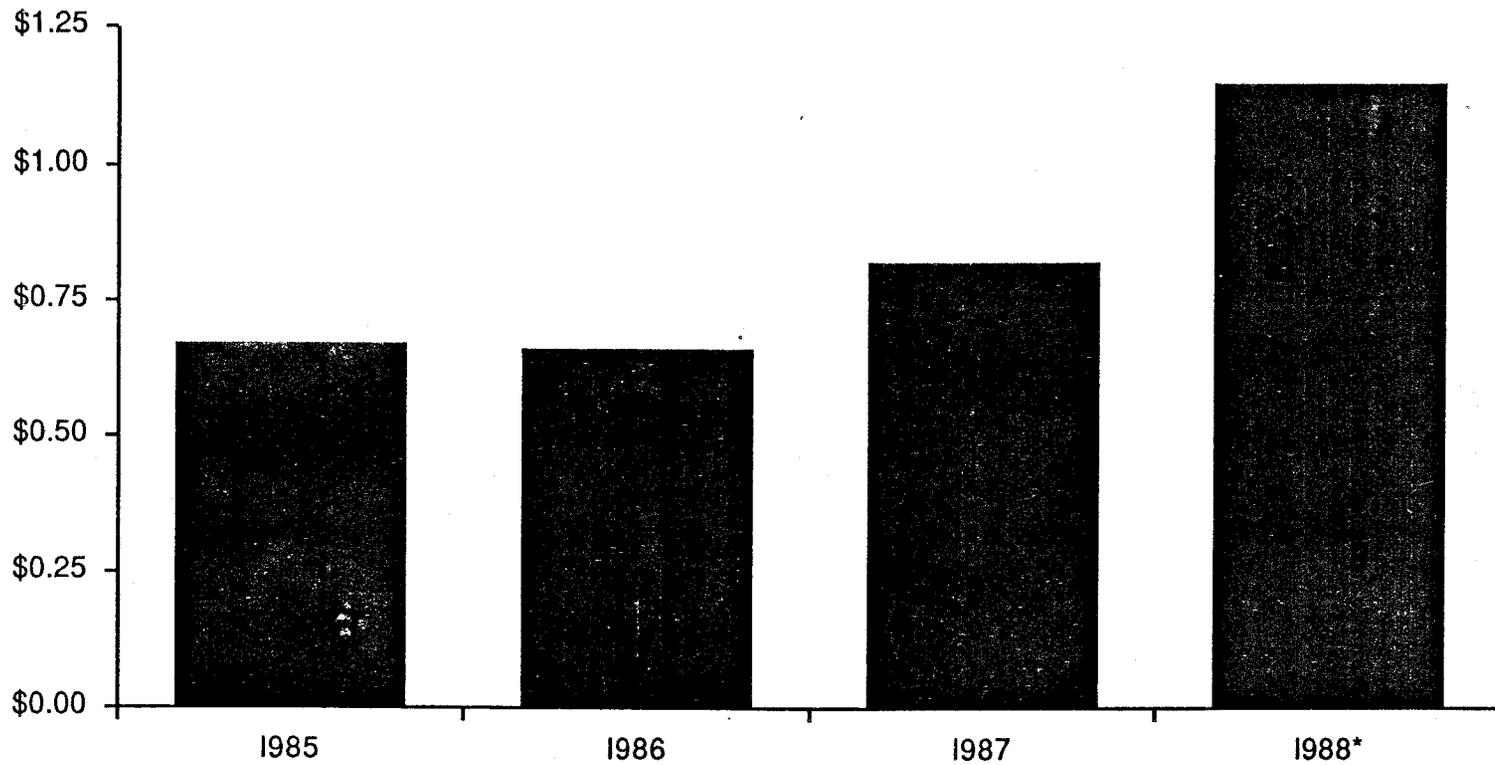
TABLE 23
AVERAGE QUOTED PRICE OF
ELECTROLYTIC COPPER WIREBAR
DOMESTIC, DELIVERED
(cents per pound)

Year	Price
1988.....	\$1.15
1987.....	.66
1986.....	.67
1985.....	.68

* Estimated

Source: Metals Week

**AVERAGE QUOTED PRICE OF
ELECTROLYTIC COPPER WIREBAR
DOMESTIC, DELIVERED**



Source: Metals Week

*Estimate

TAX PLAN B

Tax Plan B consists of two changes in the existing tax code for Arizona: repeal the special subtraction designed to avoid any "windfall" from the Federal Tax Reform Act of 1986 and, increase the state's general property tax. Table 24 summarizes the results of the economic analysis described below. The net economic benefits of Tax Plan B are: an increase in final demand for goods and services of \$36.135 million; an increase in earnings of Arizona workers of \$20.653 million; and a loss of 2,545 jobs.

Plan B – Individual Income Tax

Background – Individual Income Tax "Windfall" Provision (Plan B)

As a result of the 1986 Federal tax reform act, a special subtraction was set up to offset any "windfall" that might accrue to Arizona. The subtraction was designed to return all of this expected windfall to Arizona filers. Specifically, the Federal legislation resulted in the following adjustments:

For tax year 1987:

1. Put in FAGI (Federal Adjusted Gross Income) adjustments necessary for allowing capital gains adjustment.
2. Removed moving expenses, employee business expenses and 2 wage earner deduction.
3. Put in FAGI conditions necessary for allowing IRA adjustment.
4. The medical deduction floor is increased to .075.
5. Removed sales tax deduction from Schedule A.

TABLE 24
THE ECONOMIC IMPACT OF TAX PLAN B

Proposed Tax Changes:

Eliminate the windfall tax credit	\$145,000,000
An increase in general property tax rates	110,000,000

Total Revenues Generated:

\$255,000,000

Total Economic Benefits:

Increase in final demand for goods and services	\$484,817,000
Increase in earnings	374,673,000
Increase in employment	22,788 jobs

Total Economic Costs:

Decrease in final demand for goods and services	\$448,682,000
Decrease in earnings	354,020,000
Decrease in employment	25,333 jobs

Net Economic Benefits:

Net increase in final demand for goods and services	\$36,135,000
Net increase in earnings	20,653,000
Net increase in employment	-2,545 jobs

6. Interest phase out to 65% on Schedule A.
7. Moved moving expenses and employee business expenses to Schedule A.
8. New standard deductions and personal exemptions.
9. Make adjustments for changes in Federal income tax rates.

For tax year 1988:

1. Increase standard deduction \$50.
2. Continue interest phase out.
3. Make adjustments for changes in Federal income tax rates.

Analysts at the Department of Revenue quantified the effects of these changes using estimates of the impact of the 1986 tax bill. These estimates were provided by the IRS and circulated to the states to assist efforts designed to gauge the impact of the law. These estimates are the basis for the subsequent "windfall" subtraction provided to Arizona taxpayers who file after January 1, 1987. The overall "windfall" originally estimated for Arizona was 125.2 million – and more recent estimates have placed the figure as high as 145 million. By all accounts, the special subtraction in 1987 resulted in returning between 125-130 million to 1987 filers.

Current information suggests that original estimates of the "windfall" may have been overstated. If so, Arizona individual income taxpayers actually received a tax "cut" in 1987 as a result of the special subtraction. This evidence comes from two sources. One, growth in aggregate liability reported on 1987 140 and 140A returns filed in the spring of 1988 was sharply lower than in any of the past four years. Table 25 reveals this liability decline and highlights the income levels most affected. Table 26 reveals the drastic decline that occurred in average liability in

TABLE 25
FOUR YEAR ARIZONA TAX LIABILITY
Growth by Federal Adjusted Gross Income (in percent)*

Thousands (FAGI)	Percent Change in Tax Liability			
	84/83	85/84	86/85	87/86**
0-5	-8.9	-13.2	-7.1	-19.6
5-10	-5	-7.1	-7.2	-10.1
10-15	3.6	-7	-4.6	-6.0
15-20	8.5	3.5	-1.3	-2.6
20-25	3.6	2.0	.9	-4.2
25-30	4.2	2.1	.8	-8.7
30-35	6.9	4.2	.6	-9.1
35-40	9.8	5.8	4.3	-8.6
40-50	18.4	10.6	9.4	-5.6
50-75	34.4	23.8	21.6	12.9
75-100	35.6	24.6	35.1	22.3
100-150	34.3	14.2	30.9	15.9
150-200	25.8	20.6	40.1	11.5
200-500	28.4	12.7	49.8	30.0
500-1000	42.1	26.6	38.9	21.6
1000+	57.7	7.6	60.8	59.1
Overall				
<u>Ave</u>	<u>15.3</u>	<u>9.7</u>	<u>12.3</u>	<u>3.9</u>

*Numbers reflect the percent change in total tax liability reported on 140 and 140A returns filed as of 8 months after the close of each tax year - compared with the same number in the prior year.

**The 1987 numbers include the effect of the special windfall provision.

TABLE 26
TAX LIABILITIES PER FILER
STRATIFIED BY FEDERAL ADJUSTED GROSS INCOME
In 1986 and 1987 - computed With and Without the
Special Windfall Provision (in dollars)

FAGI (thous)	1986 Tax burden per filer	1987 Tax burden per filer	1987 Excluding Windfall Tax burden per filer
0-5	\$ 7.80	\$ 5.60	\$ 8.10
5-10	62.20	54.30	64.10
10-15	175.40	160.30	179.50
15-20	305.40	286.80	319.70
20-25	439.40	408.50	458.30
25-30	585.80	532.10	604.60
30-35	743.70	671.20	768.20
35-40	914.10	816.60	937.60
40-50	1189.20	1064.00	1226.80
50-75	1773.20	1601.60	1877.20
75-100	2776.10	2448.90	2955.00
100-150	4051.20	3574.60	4403.30
150-200	6083.40	5304.00	6664.40
200-500	10625.60	9394.10	11951.90
500-1000	26347.10	24497.20	29638.90
1000+	68883.90	75080.70	92764.80

*Numbers reflect 140 and 140A forms filed by 8 months after the end of each tax year.

1987. Only those filers with FAGI above 1 million dollars experienced an increase in average liability. Column three in Table 25 reveals the effect on average burdens if no "windfall provision" had been legislated.

The effects of the windfall provision reveal a decrease in tax liability of 118.6 million in 140 and 140A filers (this excludes impacts on non-permanent residents and late filers) had the provision not been legislated. Hence, liability growth would have been 21.8% in 1987 without the special provision. With personal income growth at 8% in 1987, the implied elasticity would have been about 2.75 – substantially higher than the historical average of about 1.2. Still, with observed liability growth at only 3.9% with the provision, we find that the 1987 liability elasticity was very low – $3.9/8.0$ or only .49. An estimate of the amount that the windfall provision "overcorrected" for federal tax law changes can be obtained by examining the revenue associated with a liability elasticity of 1.2 – the historical average. Using the 8% personal income growth that occurred in 1987, this would have projected a 9.6% increase in liability. A more conservative estimate would be obtained by setting the elasticity at 1.1 – since 1987 was a slower growth year and the liability elasticity does appear to move with the business cycle. Under this scenario, we might have expected an 8.8% growth in liability for 1987. At an elasticity of 1.2, liabilities (final tax bills) would have been 37.9 million higher than was observed in 1987. The more conservative elasticity of 1.1 implies an aggregate tax liability that is some 32.6 million higher than was observed.

A second piece of information that suggests the "windfall" is overstated comes from the early reactions of other states who attempted to quantify the windfall and return it to their taxpayers. For example, analysts in New York are now suggesting that original estimates of the capital gains provisions provided by the IRS caused them to drastically overestimate the "windfall." The capital gains provisions constitute an important part of the "windfall" total and substantial effort

was undertaken to provide accurate estimates. Still, predicting these values is tantamount to forecasting movement in securities prices. It will take several years of income tax data to know whether the capital gains calculations were correct. However, given the experience of New York State, coupled with the slow growth in liability last spring, it is reasonable to suspect that Arizona's allowance for windfall revenue as a result of capital gains tax liability was indeed overstated.

Proposal – Individual Income Tax (Plan B)

Eliminate the special subtraction designed originally to "avoid" any windfall that might have accrued to the State due to the Federal Tax Reform Act of 1986. The economic impact analysis is based on the assumption that the current "windfall" provision would reduce individual income tax liabilities by about 145 million dollars in FY 89/90.

Economic Impact – Individual Income Tax (Plan B)

The economic impact of eliminating the windfall tax credit is summarized in Table 27. Disposable incomes of Arizona taxpayers fall \$145.000 million which reduces final demand by \$268.569. As a result, earnings fall by \$204.274, or \$740 per worker, and 14,825 jobs are lost (5.4%).

Comparison with Other States – Individual Income Tax (Plan B)

Table 28 presents a ranking of the state and local individual income tax burdens expressed on a per capita basis and as a percent of personal income. In 1986, Arizona's Individual Income Tax burden ranked 33rd on a per capita basis and 32nd as a percent of personal income. After expressing the additional 145 million in revenues that would be generated by removing the windfall provision in

TABLE 27
THE ECONOMIC IMPACT OF GENERATING \$145,000,000
BY ELIMINATING THE WINDFALL TAX CREDIT

	Reduction in Final Demand for Goods & Services (millions)	Reduction in Earnings (per worker)	Reduction in Employment (% of wage earners)
Direct	\$145.000	\$400	2.9%
Multiplier	123.569	340	2.5
Total	268.569	740	5.4

comparable terms and discounting to 1986, the relative income tax burden would increase to 29th on a per capita basis and 28th as a percent of personal income.

Different reactions to the 1986 tax reform act of 1986 may have resulted in substantial changes in the relative ranking across the states since 1986. Table 29 summarizes these reactions – indicating that no less than 28 states kept at least a portion of the "windfall." Interestingly, the majority of states that maintained a lower relative burden than Arizona in Table 28 were among those that increased taxes by keeping the Federal tax windfall. Hence, Table 28 may substantially "overstate" the relative income tax burden carried by Arizona income tax payers.

Plan B – General Property Tax

Background – General Property Tax (Plan B)

The State currently taxes property at a primary rate of 47¢ per \$100 net assessed valuation. Rates from 1985 through 1987 averaged 39.3¢ per \$100 net assessed value.

Tax Proposal – General Property Tax (Plan B)

Increase the state's general property tax rate to yield an additional 110 million dollars. Using 1988 rates and projecting a 5% increase in net assessed value for 1989, this would require the state to increase the rate from 47¢ per \$100.00 net assessed value to \$1.02 per \$100.00 net assessed value. Accordingly, the average primary rate for combined state and local property taxes – based on 1988 rates – would increase from \$7.84 per \$100.00 net assessed value to \$8.39. Thus, property tax payers would experience a 7.0% increase in overall property tax rates as a result of the proposal.

TABLE 28
STATE RANKINGS FOR PERSONAL INCOME TAX REVENUES

Rank	1986			1986			Tax Plan B*		
	State	Per Capita Revenue	State	Revenue/Personal Income	State	Per Capita Revenue	State	Revenue/Personal Income	
1	NY	\$755	NY	4.70%	NY	\$755	NY	4.70%	
2	DE	651	DE	4.64	DE	651	DE	4.64	
3	MD	633	MD	4.05	MD	633	MD	4.05	
4	MA	620	MA	3.79	MA	620	MA	3.79	
5	WI	468	WI	3.56	WI	468	WI	3.56	
6	MN	462	OR	3.52	MN	462	OR	3.52	
7	OR	442	MN	3.30	OR	442	MN	3.30	
8	HI	440	HI	3.21	HI	440	HI	3.21	
9	CA	421	NC	3.04	CA	421	NC	3.04	
10	MI	394	OH	2.92	MI	394	OH	2.92	
11	OH	386	MI	2.91	OH	386	MI	2.91	
12	VA	376	CA	2.68	VA	376	CA	2.68	
13	PA	349	VA	2.62	PA	349	VA	2.62	
14	NC	349	UT	2.62	NC	349	UT	2.62	
15	GA	319	PA	2.61	GA	319	PA	2.61	
16	IA	303	GA	2.59	IA	303	GA	2.59	
17	VT	297	KY	2.57	VT	297	KY	2.57	
18	RI	294	SC	2.56	RI	294	SC	2.56	
19	CO	293	VT	2.48	CO	293	VT	2.48	
20	ME	287	ME	2.44	ME	287	ME	2.44	
21	KY	278	WV	2.42	KY	278	WV	2.42	
22	UT	271	IA	2.38	UT	271	IA	2.38	
23	NJ	269	ID	2.29	NJ	269	ID	2.29	
24	SC	269	RI	2.13	SC	269	RI	2.13	
25	IN	262	IN	2.11	IN	262	IN	2.11	
26	ID	255	AR	2.06	ID	255	AR	2.06	
27	MO	253	CO	2.00	MO	253	CO	2.00	
28	WV	249	MO	1.92	WV	249	AZ	1.94	
29	KS	237	MT	1.90	AZ	245	MO	1.92	
30	IL	229	AL	1.87	KS	237	MT	1.90	
31	NE	220	AZ	1.72	IL	229	AL	1.87	
32	AR	215	KS	1.72	NE	220	KS	1.72	
33	AZ	212	OK	1.70	AR	215	OK	1.70	
34	MT	210	NE	1.65	MT	210	NE	1.65	
35	OK	208	NJ	1.58	OK	208	NJ	1.58	
36	AL	198	IL	1.56	AL	198	IL	1.56	
37	ND	108	MS	1.14	ND	108	MS	1.14	
38	MS	104	LA	0.91	MS	104	LA	0.91	
39	LA	102	ND	0.89	LA	102	ND	0.89	
40	CT	94	NM	0.65	CT	94	NM	0.65	
41	NM	69	CT	0.52	NM	69	CT	0.52	
42	NH	24	NH	0.17	NH	24	NH	0.17	
43	TN	14	TN	0.13	TN	14	TN	0.13	
44	AK	0	AK	0	AK	0	AK	0	
45	FL	0	SD	0	FL	0	SD	0	
46	NV	0	TX	0	NV	0	TX	0	
47	SD	0	FL	0	SD	0	FL	0	
48	TX	0	NV	0	TX	0	NV	0	
49	WA	0	WA	0	WA	0	WA	0	
50	WY	0	WY	0	WY	0	WY	0	
	US	\$309	US	2.25%	US	\$309	US	2.25%	

*Plan B assumes \$145 million in personal income tax revenues.

TABLE 29
REACTIONS OF STATES TO "WINDFALL"
DUE TO INDIVIDUAL INCOME TAX REFORM ACT OF 1986

State	Action	"kept" Est. Amt.
Alabama	kept windfall	\$ 20m
Arizona	avoided windfall	
Arkansas	kept portion of windfall	26m
California	avoided windfall	
Colorado	kept portion of windfall	117m
Connecticut	avoided windfall	
Delaware	kept portion of windfall	4m
Georgia	avoided windfall	
Hawaii	avoided windfall	
Idaho	kept windfall	7m
Illinois	kept windfall	100m
Indiana	kept windfall	50m
Iowa	kept portion of windfall	37m
Kansas	kept windfall	143m
Kentucky	kept portion of windfall	25m
Louisiana	kept windfall	30m
Maine	avoided windfall	
Maryland	kept portion of windfall	57m
Massachusetts	kept windfall	NA
Michigan	kept windfall	NA
Minnesota	avoided windfall	
Missouri	kept windfall	157m
Mississippi	kept windfall	10m
Montana	kept windfall	25m
Nebraska	kept portion of windfall	6m
New Mexico	kept windfall	54m
New York	avoided windfall	
North Carolina	kept windfall	25m
North Dakota	kept windfall	NA
Ohio	kept windfall	NA
Oklahoma	kept windfall	121m
Oregon	kept portion of windfall	7m
Pennsylvania	kept windfall	NA
South Carolina	kept windfall	21m
Utah	kept windfall	55m
Virginia	avoided windfall	
West Virginia	avoided windfall	

Source: National Conference of State Legislatures, State Budget Actions in 1987, Denver, August 1987.

Economic Impact – General Property Tax (Plan B)

In order to determine the economic impact of a general property tax increase, property owners are divided into two categories: residential and all other. Of the \$110 million in new tax revenues approximately \$32.592 million will be paid by residential property owners, or \$34.72 per parcel, and \$77.408 million by all other property owners, or \$74.12 per parcel.

First consider residential property owners. As a result of the tax, the disposable incomes of residential property owners falls by \$32.592 million which, in turn, leads to a direct output effect equal to a \$32.592 reduction in final demand for goods. This, in turn, generates a direct earnings effect equal to a $.7606 \times 32,592,000 = \24.789 million fall in earnings and a direct employment effect equal to $55.2 \times 32.592 = 1,799$ lost jobs (see Table 3 for relevant multipliers).

In addition to the direct effect of the tax increase, there will be a multiplier effect (there is no long run incidence effect since the tax falls on residential property owners rather than firms). Using the retail trade multipliers given in Table 3, final demand for goods will fall by another $.8522 \times 32,592,000 = \27.775 million, earnings will fall by $.7606 \times 27,775,000 = \21.126 million, and $55.2 \times 27.775 = 2,111$ jobs will be lost.

Next, consider the other all other property owners. As a result of the property tax increase, all other property owners pay \$77.408 million additional tax revenues per year to the State of Arizona. While the point of legal impact of this tax is on firms, 67 percent of these additional taxes are shifted to consumers (see Table 2). This being the case, all other property owners will pay $.33 \times 77,408,000 = \25.545 million of the tax (about \$24.45 per parcel), while consumers in general will pay $.67 \times 77,408,000 = \51.863 million more per year for goods and services or about \$33.55 more per wage earner.

As a result of the increase in the cost of consuming goods and services, final demand for goods and services will fall. Since many goods and services are affected simultaneously, the standard assumption is that, on average, final demand will fall by the full amount of the tax burden borne by consumers. In this instance, final demand will fall by \$51.863 million per year which is the direct output effect of the tax. The \$51.863 million reduction in final demand will also generate direct earnings and employment effects; in particular, earnings of Arizona workers employed will fall by $.7606 \times 51,863,000 = \39.447 million and $55.2 \times 51.863 = 2,862$ jobs will be lost (see Table 3 for relevant multipliers).

Another direct effect of the tax is a reduction in retained earnings of firms affected by the tax equal to $.5 \times 24,450,000 = \$12.773$ million.

In addition to the direct effect of the tax increase, there will be multiplier and long run incidence effects. The multiplier effects are calculated using the multipliers given in Table 3 for retail trade. Final demand for goods and services will fall by $.8522 \times 51,863,000 = \44.198 million, earnings will fall by $.7606 \times 44,198,000 = \33.617 million, and $55.2 \times 44.198 = 2,439$ jobs will be lost.

The long run incidence effects are calculated assuming that owners firms shift 50 percent of their tax burden to workers. This being the case, disposable incomes of workers employed in the retail trade sector falls by $.5 \times 25,545,000 = \$12.772$ million which causes final demand for goods sold in Arizona to fall by \$23.658 million, earnings to fall by \$17.994 million, and employment to fall by 1,307 jobs.

Table 30 contains a summary of the economic impact of a property tax increase designed to generate \$110 million of additional revenues for the State. As a result of levying this tax, final demand for goods and services will be reduced by \$180.113 million, earnings will be reduced by \$496 per worker employed, and employment will fall 3.81% in the affected industries.

TABLE 30
THE ECONOMIC IMPACT OF A GENERAL PROPERTY TAX INCREASE
THAT GENERATES \$110,000,000 IN ADDITIONAL REVENUES

	Reduction in Final Demand for Goods & Services (millions)	Reduction in Earnings (per worker)	Reduction in Employment (% of wage earners)
Direct	\$84.455	\$233	1.69%
Multiplier	71.973	198	1.65
Long Run Incidence	23.658	65	.47
Total	180.113	496	3.81

Comparison with Other States – Property Tax (Plan B)

A ranking of state and local property tax revenue burdens expressed on a per capita basis and as a percentage of personal income appears in Table 31. In 1986 Arizona ranked 26th in property tax per capita burden and 24th in burden as a percent of personal income. After expressing the additional property taxes of 183 million dollars outlined in Plan B in comparable terms and discounting to 1986 dollars, the Arizona property tax burden would increase to 24th on a per capita basis and 20th as a percent of personal income.

Another way of gauging the additional property tax burden embodied by Plan B would be to compare its impact on the average residential property owner with the burdens maintained by residential property owners in other states. Table 14 presents average effective property tax rates for all states in 1986. Arizona maintained the 45th highest rate in 1986. Expressing the additional property tax burden proposed by Plan B in 1986 dollars would result in a movement in Arizona's ranking to the 42nd position.

TABLE 31
STATE RANKINGS FOR
STATE AND LOCAL PROPERTY TAX REVENUES

Rank	State	1986	State	1986	State	Tax Plan B	State	Tax Plan B
		Per Capita		Revenue/		Per Capita		Revenue/
		Revenue		Personal		Revenue		Personal
				Income				Income
1	WY	\$1,173	WY	8.83%	WY	\$1,173	WY	8.83%
2	AK	1,084	AK	6.11	AK	1,084	AK	6.11
3	NJ	757	MT	5.88	NJ	757	MT	5.88
4	NY	748	OR	5.17	NY	748	OR	5.17
5	NH	738	NH	5.08	NH	738	NH	5.08
6	CT	731	MI	4.81	CT	731	MI	4.81
7	OR	651	NY	4.66	OR	651	NY	4.66
8	MT	650	VT	4.64	MT	650	VT	4.64
9	MI	650	WI	4.57	MI	650	WI	4.57
10	RI	624	RI	4.52	RI	624	RI	4.52
11	MA	601	NJ	4.43	MA	601	NJ	4.43
12	WI	600	NE	4.34	WI	600	NE	4.34
13	NE	579	S	4.28	NE	579	S	4.28
14	VT	556	IA	4.27	VT	556	IA	4.27
15	IA	544	CT	4.06	IA	544	CT	4.06
16	IL	539	ME	4.05	IL	539	ME	4.05
17	KS	533	TX	3.90	KS	533	TX	3.90
18	MN	529	KS	3.88	MN	529	KS	3.88
19	CO	521	MN	3.77	CO	521	MN	3.77
20	TX	517	MA	3.68	TX	517	MA	3.68
21	ME	478	IL	3.66	ME	478	IL	3.66
22	SD	477	CO	3.56	SD	477	AZ	3.60
23	CA	451	UT	3.54	CA	451	CO	3.56
24	WA	442	AZ	3.43	AZ	447	UT	3.54
25	MD	438	WA	3.22	WA	442	WA	3.22
26	AZ	422	IN	3.16	MD	438	IN	3.16
27	FL	411	FL	3.07	FL	411	FL	3.07
28	VA	396	ND	3.00	VA	396	ND	3.00
29	OH	394	OH	2.98	OH	394	OH	2.98
30	IN	393	PA	2.90	IN	393	PA	2.90
31	PA	388	CA	2.87	PA	388	CA	2.87
32	UT	366	MD	2.81	UT	366	MD	2.81
33	ND	364	VA	2.76	ND	364	VA	2.76
34	NV	340	ID	2.69	NV	340	ID	2.69
35	GA	329	GA	2.68	GA	329	GA	2.68
36	HI	314	SC	2.48	HI	314	SC	2.48
37	ID	299	MS	2.42	ID	299	MS	2.42
38	NC	265	NV	2.41	NC	265	NV	2.41
39	SC	260	NC	2.30	SC	260	NC	2.30
40	MO	243	HI	2.29	MO	243	HI	2.29
41	TN	235	TN	2.11	TN	235	TN	2.11
42	OK	234	WV	1.98	OK	234	WV	1.98
43	DE	223	OK	1.91	DE	223	OK	1.91
44	MS	221	MO	1.85	MS	221	MO	1.85
45	WV	203	KY	1.80	WV	203	KY	1.80
46	KY	195	AR	1.74	KY	195	AR	1.74
47	LA	189	LA	1.69	LA	189	LA	1.69
48	AR	182	DE	1.59	AR	182	DE	1.59
49	NM	143	NM	1.33	NM	143	NM	1.33
50	AL	118	AL	1.12	AL	118	AL	1.12
	US	\$463	US	3.37%	US	\$463	US	3.37%

TAX PLAN C

Tax Plan C embodies two measures designed to broaden the existing sales tax base. One proposal is to repeal the sales tax exemption of food for home consumption. The second element of the plan is an extensive tax on a number of professional, business, and personal services. Table 32 summarizes the results of the economic analysis below. The net economic benefits of Tax Plan C are: an increase in final demand for goods and services of \$19.188 million; an increase in earnings of Arizona workers equal to \$22.958 million; and a reduction in employment equal to 5,168 jobs.

Plan C – Sales Tax on Food

Background – Food Tax (Plan C)

By virtue of the Laws of 1980; 2nd Special Session; Ch. 8, the state transaction privilege tax on food items intended for "home consumption" was repealed. The estimates of "lost" sales tax revenue as a result of the "food exemption" is 179.1 million dollars in FY 88/89. Using the current distribution formula, this would have generated about 133.5 million in General Fund revenue in FY 88/89.

Proposal – Food Tax (Plan C)

Re-establish the food tax at the 5% retail rate and adjust the distribution formula to retain all collections in the State's General Fund. The 1980 law and subsequent amendments already provides for reimbursement to cities and counties for their share of "lost" food tax revenue. At the same time, institute a program of food tax credits to appear on individual income tax forms. The

TABLE 32
THE ECONOMIC IMPACT OF TAX PLAN C

Proposed Tax Changes:	
Levy a 5% sales tax on food for at home consumption	\$127,000,000
Levy a 5% sales tax on selected services	128,000,000
Total Revenues Generated:	\$255,000,000
Total Economic Benefits:	
Increase in final demand for goods and services	\$484,817,000
Increase in earnings	374,673,000
Increase in employment	22,788 jobs
Total Economic Costs:	
Decrease in final demand for goods and services	\$465,629,000
Decrease in earnings	351,715,000
Decrease in employment	27,956 jobs
Net Economic Benefits:	
Net increase in final demand for goods and services	\$19,188,000
Net increase in earnings	22,958,000
Net increase in employment	-5,168 jobs

economic impact analysis is based on FY 89/90 estimates of 182.6 million total revenues after all market adjustments could be raised by the tax. The credits assumption is 55.6 to mitigate the potential regressivity of the food tax. Hence, a net 127 million would accrue to the General Fund as a result of this tax.

Economic Impact – Sales Tax on Food (Plan C)

As a result of the increase in the cost of consuming food, demand for food will fall. Table 8 indicates that the price elasticity of demand for food is .21. This being the case, a 5 percent increase in the price of food will bring about a 1.05 percent fall in demand for food. Currently, Arizona consumers purchase \$3,690 million of food per year. Thus, as a result of the tax, food sales will fall by \$38.745 million, gross revenues generated by the tax will be \$182.563 million, and net revenues will be \$128 million after credits. As a result of the tax increase, final demand for food will fall \$38.745 million. In addition, since disposable incomes are lower, final demand for other goods falls by \$88.255 million. Since retail trade multipliers are used in each instance, final demand for all goods and services falls by \$127 million, which is the direct output effect. This, in turn, leads to a \$96.596 million reduction in earnings of Arizona workers and a loss of 7,010 jobs.

In addition to the direct effect of the tax increase, there will be multiplier effects (since the tax is shifted 100% to consumers, there are no long run incidence effects). The multiplier effects are calculated using the multipliers given in Table 3 for retail trade. Final demand will fall \$108.229 million, earnings will fall \$82,319 million, and 5,974 jobs will be lost.

The total effect of the tax on food will be to raise approximately \$127 million in additional tax revenues, to reduce final demand by \$235.229 million, to reduce

earnings by \$178.915 million (\$648 per worker), and to reduce employment by 12,984 jobs (4.71%).

Plan C – Service Taxes

Background – Service Taxes (Plan C)

The Arizona transactions privilege tax exempts nearly all "service" transactions. The Department of Revenue estimates that about \$3,100 million in "selected" service-based business activity was exempt from "taxable sales" in 1986/87. Table 33 illustrates that this could have generated about 155 million in FY 86/87 sales tax collections at a tax rate of 5%.

Assuming a conservative three year nominal growth rate of 8% we would project that FY 89/90 gross revenues available from these categories would reach approximately 167.4 million dollars.

Proposal – Service Taxes (Plan C)

Assign a 5% tax rate to the business service categories listed above. This estimate assumes that no distribution to cities and counties will occur as a result of this tax. At the same time initiate a program of service tax credits to appear on individual income tax forms. The economic impact analysis is based on an assumption of 167.4 million in FY 89/90 gross revenue that would be generated by this tax. We estimate that 39.4 million dollars would be set aside to help mitigate the potential regressivity of this tax. The service tax would then "net" 128 million in FY 89/90 General Fund revenues.

**TABLE 33
SERVICES IDENTIFIED FOR SALES TAXES**

	FY 86/87	Estimates FY 89/90
<i>Professional Services:</i>		
Legal Services.....	\$22,626,837	
Engineering Services.....	11,901,591	
Architectural Services.....	4,771,596	
Surveying Services.....	769,656	
Accounting, Auditing and Bookkeeping Services.....	<u>9,573,501</u>	
	49.67	52.65
<i>Business Services:</i>		
Advertising.....	4,161,528	
Services to Dwellings and Other Buildings.....	6,466,102	
Management, Consulting and Public Relations.....	11,431,619	
Credit Reporting.....	1,539,026	
Blueprinting and Photocopying Services.....	1,601,606	
Commercial Photography, Art and Graphics.....	2,138,708	
Stenographic Services and Reproductive Services.....	594,868	
Personal Supply Services.....	6,565,212	
Research and Development Laboratories.....	1,039,727	
Testing Laboratories and Facilities.....	716,348	
Detective Agencies and Protective Services.....	4,848,426	
Photofinishing Laboratories.....	1,549,715	
Interior Designing.....	556,853	
Telephone Answering Service.....	602,938	
Automobile Parking.....	918,177	
Automotive repair Shops.....	16,428,781	
Automotive Services, Except Repair.....	1,967,886	
Electrical and Electronics Repair Shops.....	3,641,417	
Reupholstery and Furniture Repair.....	751,036	
Other Repair Shops.....	<u>8,252,122</u>	
	75.55	80.08
<i>Personal Services:</i>		
Laundry Cleaning and Garment Services.....	7,319,858	
Photographic Studios, Portraits.....	1,311,357	
Beauty Shops and Barber Shops.....	6,836,559	
Shoe Repair, Shoeshine and Hat Cleaning.....	166,716	
Funeral Service and Crematories.....	1,923,994	
Miscellaneous Personal Services.....	3,130,721	
Commercial Sports.....	3,468,613	
Other Amusement and Recreation Services.....	2,424,567	
Correspondence Schools and vocational Schools.....	<u>3,446,667</u>	
	154.98	164.3

Note: These figures reflect FY 1986-87 revenues at a 5% tax rate. It is quite reasonable to assume that in FY 1989-90, these revenues would be greater than \$158 million.

Economic Impact – Services Taxes (Plan C)

It is assumed that regardless of its initial incidence, the sales tax on services is ultimately passed on 100 percent to consumers (see Table 2); thus, disposable incomes fall by \$128 million. Assuming that each dollar of lost disposable income reduces final demand by one dollar, the direct output effect is a reduction in final demand of \$128 million. This, in turn, leads to a \$96 million reduction in earnings of Arizona workers and a loss of 8,320 jobs.

In addition to the direct effect of the tax increase, there will be multiplier effects (since the tax is shifted 100% to consumers, there are no long run incidence effects). The multiplier effects are calculated using the multipliers given in Table 3 for retail trade. Final demand will fall \$102.4 million, earnings will fall \$76.8 million, and 6,652 jobs will be lost.

The total effect of the tax on services will be to raise approximately \$128 million in additional tax revenues, to reduce final demand by \$230.4 million, to reduce earnings by \$172.8 million (\$488 per worker), and to reduce employment by 14,972 jobs (4.23%). Table 34 summarizes the economic impact of increasing the sales tax on food and services. As a result of these taxes, final demand falls \$465.629 million, earnings fall \$1,136 per worker, and employment falls 8.947 percent.

TABLE 34
THE ECONOMIC IMPACT OF GENERATING \$255,000,000
BY IMPOSING A 5 PERCENT SALES TAX
ON FOOD AND SELECTED SERVICES

	Reduction in Final Demand for Goods & Services (millions)	Reduction in Earnings (per worker)	Reduction in Employment (% of wage earners)
Direct	\$255.000	\$621	4.89%
Multiplier	210.629	515	4.05
Total	465.629	1,136	8.94

TAX PLAN D

Tax Plan D proposes an increase in the general sales tax rate by 20% – essentially adding one cent to the general sales/use tax rate. Table 35 summarizes the impact of Tax Plan D. As a result of the tax, final demand for goods and services increases by \$12.506 million; earnings increase by \$15.433 million; and employment falls by 3,284 jobs.

Background – Sales Tax (Plan D)

General Fund revenues from sales taxes are obtained by identifying taxable (non-exempt) business activities, assigning appropriate rates to each activity, and apportioning the state's "share" of revenues using the legislated distribution formula. Table 36 illustrates current rates and distribution factors.

Proposal – Sales Tax (Plan D)

Increase the sales tax rate by 20% on all taxable business activity bases. Alter the distribution formula so that all revenues that accrue as a result of the tax be retained by the General Fund except approximately 28% of gross revenues would be returned in the form of low income credits on the Arizona Income Tax return in order to mitigate regressivity. The economic impact analysis below is based on an estimate of 35,500 million in FY 89/90 taxable sales. The tax would generate about 355 million in additional gross revenue of which 100 million would be credited to low income Arizona residents. This would generate 255 million in additional General Fund revenues.

TABLE 35
THE ECONOMIC IMPACT OF TAX PLAN D

Proposed Tax Changes:	
An increase in the general sales tax	\$255,000,000
Total Revenues Generated:	\$255,000,000
Total Economic Benefits:	
Increase in final demand for goods and services	\$484,817,000
Increase in earnings	374,673,000
Increase in employment	22,788 jobs
Total Economic Costs:	
Decrease in final demand for goods and services	\$472,311,000
Decrease in earnings	359,240,000
Decrease in employment	26,072 jobs
Net Economic Benefits:	
Net increase in final demand for goods and services	\$12,506,000
Net increase in earnings	15,433,000
Net increase in employment	-3,284 jobs

**TABLE 36
CURRENT TAXABLE ACTIVITIES**

	Distribution Base	Non-Shared State	Other	Total Rate
Non-Metal Mining, Gas & Oil Prod.	20.00%	80.00%		5%
Utilities	20.00%	80.00%		5%
Communications	20.00%	80.00%		5%
Railroads & Aircraft	20.00%	80.00%		5%
Private Car - Pipelines	20.00%	80.00%		5%
Publishing	20.00%	80.00%		5%
Printing	20.00%	80.00%		5%
Restaurants & Bars	40.00%	60.00%		5%
Amusements	40.00%	60.00%		5%
Rentals of Real Property	53.33%	46.67%		5%
Rentals of Personal Property	40.00%	60.00%		5%
Contracting (Mtrl. only)	20.00%	80.00%		5%
Feed Wholesale	53.33%	46.67%		.46875%
Retail	40.00%	60.00%		5%
Severance: Metaliferous Mining	80.00%	20.00%		2.5%
Severance: Timbering	80.00%	20.00%		1.5%
Pre-5/84 Contracting	25.00%	75.00%		4%
Hotel-Motel	50.00%	50.00%		5.5%
Pre-7/74 Contracting	26.67%	73.33%		3.75%
Rental Occupancy Tax	66.67%	33.33%		3%
Use Tax	0	100.00%		5%
Use Inventory Tax	0	100.00%		5%
911 Emergency	0	0	100%	.5%
License Fees	0	100.00%		—
Telecommunications Devices	0	0	100%	.2%

Economic Impact – Sales Tax (Plan D)

As a result of the increase in the cost of goods and services, net final demand falls by \$255.000 million. Using the retail trade multipliers, this reduction in final demand leads to a \$193.953 reduction in earnings of Arizona workers, and a 14,076 reduction in the number of jobs.

In addition to the direct effect of the tax increase, there will be multiplier effects (since the tax is shifted 100% to consumers, there are no long run incidence effects). The multiplier effects are calculated using the multipliers given in Table 3 for retail trade. Final demand will fall \$217.311 million, earnings will fall \$165.287 million, and 11,996 jobs will be lost.

The total effect is a \$472.311 million reduction in final demand for goods and services, a \$359.240 million reduction in earnings (\$1,302 per worker), and the loss of 26,072 jobs (9.45%). These results are given in Table 37.

Comparison with Other States – Sales Taxes (Plans C and D)

Table 38 presents relative sales tax burdens across all states expressed on a per capita basis and as a percent of personal income. In 1986 Arizona ranked 4th on a per capita basis and maintained the 6th highest burden as a percent of personal income. After expressing the 255 million additional sales taxes proposed in Plans C and D on comparable terms and discounting to 1986 dollars, the Arizona per capita sales tax burden would be the 3rd highest among all states. This conclusion is the same whether per capita or the percent of personal income criterion is used as a basis for comparison.

Table 39 compares the various sales exceptions that exist across the states. At present 28 states exempt food. Only seven states presently maintain the type of broad service tax proposed in Plan C and only three states tax professional services.

TABLE 37
THE ECONOMIC IMPACT OF GENERATING \$255,000,000
BY INCREASING THE SALES TAX TO 6%

	Reduction in Final Demand for Goods & Services (millions)	Reduction in Earnings (per worker)	Reduction in Employment (% of wage earners)
Direct	\$255.000	\$703	5.10%
Multiplier	217.311	599	4.35
Total	472.311	1,302	9.45

TABLE 38
STATE RANKINGS FOR
COMBINED STATE AND LOCAL GENERAL SALES TAX REVENUES

Rank	State	1986	1986	Tax Plans C&D		Tax Plans C&D		
		Per Capita Revenue	Revenue/ Personal Income	State	Revenue	State	Revenue/ Personal Income	
1	WA	\$783	WA	5.71%	WA	\$783	WA	5.71%
2	HI	703	HI	5.13	HI	703	HI	5.13
3	NV	545	NM	4.69	AZ	586	NM	4.69
4	AZ	<u>527</u>	TN	4.54	NV	545	AZ	<u>4.67</u>
5	CT	510	MS	4.30	CT	510	TN	4.54
6	TN	506	AZ	<u>4.29</u>	TN	506	MS	4.30
7	NM	502	LA	4.22	NM	502	LA	4.22
8	NY	495	WV	4.11	NY	495	WV	4.11
9	CA	483	UT	3.93	CA	483	UT	3.93
10	LA	473	NV	3.87	LA	473	NV	3.87
11	WY	444	WY	3.34	WY	444	WY	3.34
12	FL	435	FL	3.25	FL	435	FL	3.25
13	CO	428	IN	3.16	CO	428	IN	3.16
14	WV	423	AR	3.15	WV	423	AR	3.15
15	UT	408	SD	3.15	UT	408	SD	3.15
16	MO	399	SC	3.14	MO	399	SC	3.14
17	MS	393	NY	3.08	MS	393	NY	3.08
18	IN	393	CA	3.07	IN	393	CA	3.07
19	IL	389	MO	3.04	IL	389	MO	3.04
20	GA	356	AL	2.95	GA	356	AL	2.95
21	SD	351	CO	2.92	SD	351	CO	2.92
22	NJ	343	GA	2.90	NJ	343	GA	2.90
23	OK	330	CT	2.83	OK	330	CT	2.83
24	SC	329	ME	2.77	SC	329	ME	2.77
25	AR	328	OK	2.70	AR	328	OK	2.70
26	ME	327	IL	2.64	ME	327	IL	2.64
27	OH	325	NC	2.56	OH	325	NC	2.56
28	MN	325	OH	2.46	MN	325	OH	2.46
29	TX	323	WI	2.46	TX	323	WI	2.46
30	WI	323	TX	2.44	WI	323	TX	2.44
31	AL	313	MN	2.32	AL	313	MN	2.32
32	RI	299	ID	2.24	RI	299	ID	2.24
33	MA	295	KY	2.19	MA	295	KY	2.19
34	NC	294	MI	2.17	NC	294	MI	2.17
35	MI	294	ND	2.17	MI	294	ND	2.17
36	KS	289	RI	2.16	KS	289	RI	2.16
37	PA	273	IA	2.12	PA	273	IA	2.12
38	IA	270	KS	2.10	IA	270	KS	2.10
39	MD	267	PA	2.04	MD	267	PA	2.04
40	ND	264	NJ	2.01	ND	264	NJ	2.01
41	NE	255	NE	1.91	NE	255	NE	1.91
42	ID	250	MA	1.81	ID	250	MA	1.81
43	VA	237	MD	1.71	VA	237	MD	1.71
44	KY	236	VA	1.65	KY	236	VA	1.65
45	VT	182	VT	1.52	VT	182	VT	1.52
46	AK	103	AK	0.58	AK	103	AK	0.58
47	DE	0	DE	0	DE	0	DE	0
48	MT	0	MT	0	MT	0	MT	0
49	NH	0	NH	0	NH	0	NH	0
50	OR	0	OR	0	OR	0	OR	0
	US	\$376	US	2.74	US	\$376	US	2.74

TABLE 39
MAJOR FEATURES OF STATE SALES TAX
(effective 1988)

State and Region	States Exempting				States Granting	Degree of Taxation of Services ¹	State
	Food	Prescription Drugs	Consumer Electric and Gas Utilities	Clothing	Related Income Tax Credit		
U.S. Median Rate	28	45	32	8	7		
New England							
Connecticut	X	X	X	X		4	CT
Maine	X	X	X			5	ME
Massachusetts	X	X	X	X		5	MA
New Hampshire			No State Sales Tax				NH
Rhode Island	X	X	X	X		5	RI
Vermont	X	X	X		X	5	VT
Mideast							
Delaware			No State Sales Tax				DE
Washington, DC	X	X				3	DC
Maryland	X	X	X			3	MD
New Jersey	X	X	X	X		3	NJ
New York	X	X	X			3	NY
Pennsylvania	X	X	X	X		3	PA
Great Lakes							
Illinois+	X	X				5	IL
Indiana	X	X				5	IN
Michigan	X	X				5	MI
Ohio+	X	X	X			3	OH
Wisconsin+	X	X	X			3	WI
Plains							
Iowa+	X	X				2	IA
Kansas+		X	X		X	3	KS
Minnesota+	X	X	X	X		5	MN
Missouri+		X	X			5	MO
Nebraska+	X	X				5	NE
North Dakota+	X	X	X			5	ND
South Dakota+		X			X	1	SD
Southeast							
Alabama+		X				5	AL
Arkansas+		X	X			3	AR
Florida+	X	X	X			1	FL
Georgia+		X				5	GA
Kentucky+	X	X	X			5	KY
Louisiana+	X	X	X			3	LA
Mississippi		X				3	MS
North Carolina+		X	X			4	NC
South Carolina		X	X	X		4	SC
Tennessee+		X	X			3	TN
Virginia+		X	X			5	VA
West Virginia	X	X	X			2	WV
Southwest							
Arizona+	X	X				4	AZ
New Mexico+					X	1	NM
Oklahoma+		X	X			5	OK
Texas+	X	X	X			3	TX
Rocky Mountain							
Colorado+	X	X	X			5	CO
Idaho+		X	X		X	5	ID
Montana			No State Sales Tax				MT
Utah+		X	X			3	UT
Wyoming+		X			X	3	WY
Far West							
California+		X	X	X		5	CA
Nevada+	X	X	X			5	NV
Oregon			No State Sales Tax				OR
Washington+	X	X	X			2	WA
Alaska			No State Sales Tax				AK
Hawaii		X			X	1	HI

See notes on next page.

TABLE X (cont.)

X = Exempt

+ = Additional local sales tax rates may be additional. See *Table 61* for local rates.

¹Degree of state taxation of professional and personal services other than utilities, admissions, and transient accommodations is divided into five (5) categories:

1. General taxation of most services (includes most professional and personal services);
2. Broad taxation of services (may include taxation of repairs; investment counseling; bank service charges; barber and beauty shops; carpentry; laundry and cleaning; photography; rentals; interior decorating; printing; packing; parking; and bookkeeping and collection services);
3. Substantial taxation of services (may include taxation of repair services; bookkeeping and collection services; laundry and dry cleaning; cable T.V.; parking; and landscaping);
4. Narrow taxation of services; (may include taxation of advertising selected business services, and laundry and dry cleaning); and
5. No (or little) taxation of services.

Sources: ACIR staff compilations of rates, food and drug exemption information as of October 1987, based on Commerce Clearing House, *State Tax Guide*. Remaining exemption data from John F. Due and John L. Mikesell, *Sales Taxation: State and Local Structure and Administration*, Johns Hopkins University Press, 1983, as updated in the *Washington Post*, May 3, 1987, p. H-3.

Table 40 presents a current picture of the combined state and local sales tax rates in selected cities throughout the nation. The rates in Phoenix and Tucson – 6.7 and 7.0 respectively – appear to be only slightly above average. With the proposal in Plan D the rates in these cities would be 7.7 and 8.0 percent respectively.

Arizona's relative sales tax burden is by far the highest among the various Arizona state taxes. Still, sales or excise taxes may offer a logical alternative in states like Arizona that are frequented by a high number of visitors.

General Issues – Sales Tax (Plans C and D)

Though the sales tax burden on Arizona is relatively high, the sales tax provides a convenient avenue for taxing nonresident visitors. Using winter visitor surveys we estimate that approximately 10 million of the additional food tax revenue would come from nonresident visitors to the state, 5 million of the service tax increase would come from nonresident visitors, and about 20 million dollars of the 20% increase in the general sales tax would come from nonresident visitors. These amount to rather substantial proportions of the "net" revenue raised in these proposals since nonresidents would not be eligible for low income credits. Of course the employment effects measured about are not affected by distinguishing resident and nonresident consumers.

TABLE 40
COMBINED STATE-LOCAL GENERAL SALES TAX RATES, SELECTED CITIES,
OCTOBER 1987 (revised through October 1988)

<u>State and Region</u>	<u>City Name (county)</u>	<u>State Tax</u>	<u>County Tax</u>	<u>City Tax</u>	<u>Other Tax</u>	<u>Combined State-Local Sales Tax Rate</u>
New England						
Massachusetts	No local general sales taxes	5.0%			5.0%	
Mideast						
New Jersey	No local general sales taxes*	6.0			6.0	
New York	New York City*	4.0		4.0	0.25	8.25
Pennsylvania	No local general sales tax*	6.0				6.0
Great Lakes						
Illinois	Chicago (Cook)	5.0	1.0	1.0	1.0	8.0
Indiana	No local general sales tax*	5.0				5.0
Michigan	No local general sales tax*	4.0				4.0
Ohio	Cincinnati (Hamilton)	5.0	0.5			5.5
	Cleveland (Cuyahoga)	5.0	0.5		1.0	6.5
Wisconsin	Milwaukee (Milwaukee)	5.0				5.0
Plains						
Kansas	Kansas City (Wyandotte)	4.0	1.0	1.0		6.0
Minnesota	Duluth (St. Louis)	6.0		1.0		7.0
	Minneapolis (Hennepin)	6.0		0.5		6.5
Missouri	Kansas City (Jackson)*	4.225	0.5	1.0	0.5	6.225
	St. Louis City*	4.225		1.375	0.5	6.100
North Dakota	Grand Forks (Grand Forks)	5.5		1.0		6.5
Southeast						
Alabama	Birmingham (Jefferson)*	4.0	1.0	2.0		7.0
	Montgomery (Montgomery)	4.0	2.0	2.0		8.0
Arkansas	Fayetteville (Washington)	4.0	1.0	1.0		6.0
	Little Rock (Pulaski)	4.0	1.0			5.0
Florida	No local general sales tax*	6.0				6.0
Georgia	Atlanta (Fulton)	3.0	1.0		1.0	5.0
Kentucky	No local general sales tax*	5.0				5.0
Louisiana	Baton Rouge (E. Baton Rouge)	4.0	3.0			7.0
	New Orleans (Orleans)	4.0	5.0			9.0
North Carolina	Greensboro (Guilford)	3.0	2.0			5.0
Tennessee	Memphis (Shelby)	5.5	2.25			7.75
Virginia	Richmond (No County)	3.5		1.0		4.5
West Virginia	No local general sales taxes*	6.0				6.0
Southwest						
Arizona	Phoenix (Maricopa)	5.0		1.2	0.5	6.7
	Tucson (Pima)	5.0		2.0		7.0
New Mexico	Albuquerque (Bernalillo)	4.75		0.25		5.0
Oklahoma	Oklahoma City (Canadian)	4.0		2.0		6.0
	Tulsa (Tulsa)	4.0		3.0		7.0
Texas	Austin (Travis)	6.0		1.0	1.0	8.0
	Dallas (Dallas)	6.0		1.0	1.0	8.0
	Houston (Harris)	6.0		1.0	1.0	8.0
Rocky Mountain						
Colorado	Denver (Denver)	3.0		3.5	.6	7.1
Utah	Salt Lake City (Salt Lake)	5.0938		0.91	0.25	6.253
Wyoming	Cheyenne (Laramie)	3.0	2.0			5.0
Far West						
California	Los Angeles (Los Angeles)*	4.75	1.25		0.5	6.5
	San Francisco (San Francisco)*	4.75	1.25		0.5	6.5
Nevada	Las Vegas (Clark)	5.75	0.25			6.0
	Reno (Washoe)	5.75	0.25		0.25	6.25
Washington	Seattle (King)	6.5		1.4		7.9
	Spokane (Spokane)	6.5		1.3		7.8

*Local income tax is imposed.

APPENDIX A
THE ARIZONA ECONOMY:
STRUCTURE, PERFORMANCE, OUTLOOK

Although once dependent upon extractive and resource-based economic activity, the Arizona economy of today is similar in general composition to the national economy (Figure A1). Services and trade provide nearly one half of all jobs in Arizona and in the general economy. However, construction is more important in Arizona than in the nation as a whole, indicating the growth orientation of the Grand Canyon state.

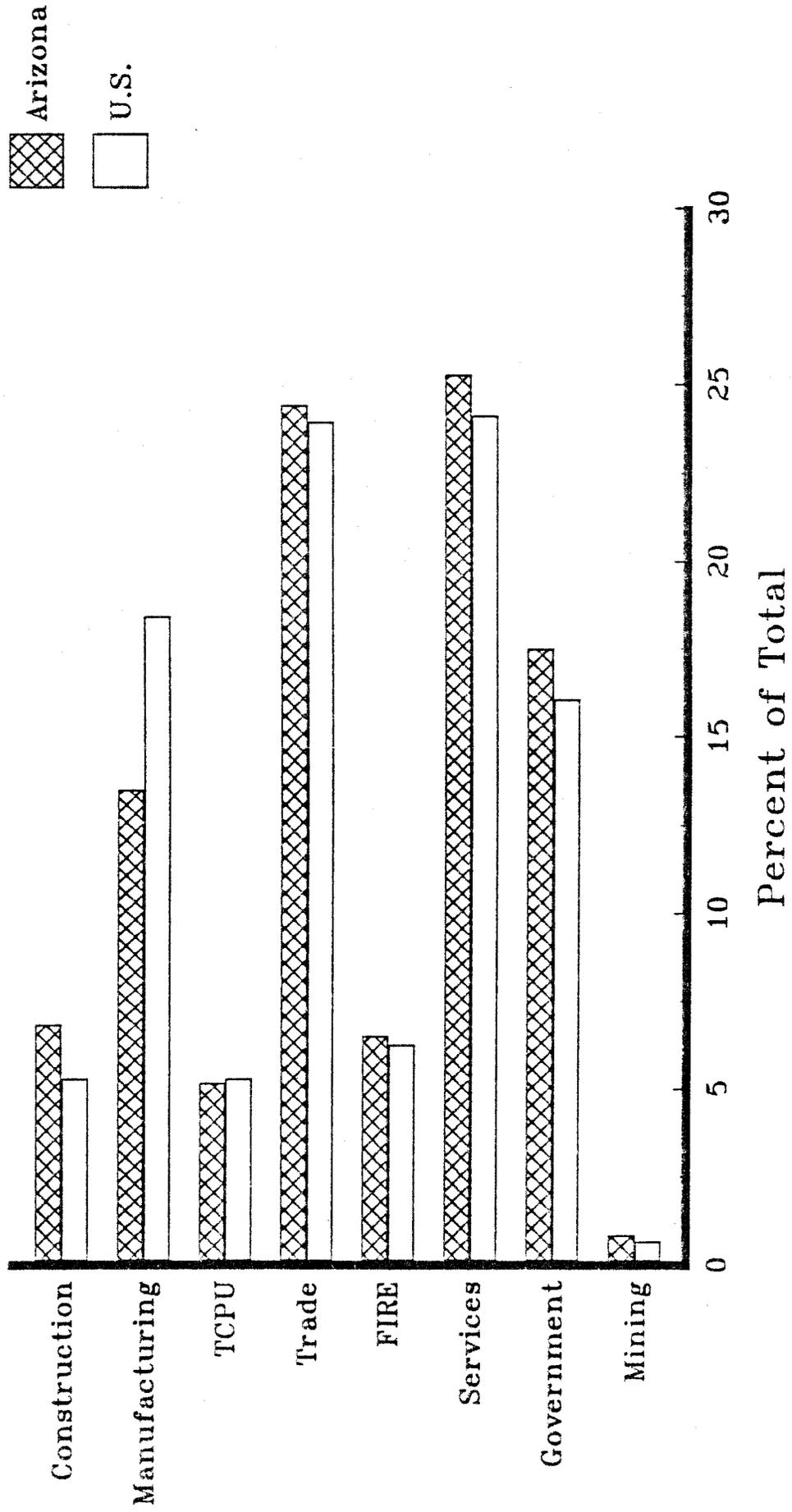
One additional major difference between Arizona and the nation is that Arizona manufacturing accounts for less than 15 percent of all employment, while manufacturing provides nearly 20 percent of all jobs at the national level. However, the composition of Arizona manufacturing differs sharply from the nation as a whole: the share of high technology manufacturing in Arizona is much larger than nationally, accounting for nearly one half of all manufacturing activity.

The modern structure of the Arizona economy as a source of jobs, income, and output arranged by major sectors is shown in Table A1. Percentage shares of the state totals are set out in Table A2. Mining and agriculture, sectors which once accounted for a major proportion of Arizona economic activity, now contribute about 5 percent of gross state product and provide approximately 4 percent of all jobs.

Largest Industries

As the Arizona economy has evolved in recent decades, much has been written concerning the relative importance of various industries. One problem

Figure A1
 Employment Sectoral Shares
 Arizona vs. U.S.
 1988



Source: Center for Business Research,
 College of Business, Arizona State University

TABLE A1
PERSONAL INCOME, TOTAL EMPLOYMENT, GROSS STATE PRODUCT
INDUSTRIAL DIVISIONS, ARIZONA

	Agricul- ture*	Mining	Construc- tion	Manufac- turing	TCPU**	Trade	FIRE***	Services	Govern- ment	Total
1987 Personal Income (Billions of dollars).....	.88	.53	2.88	5.58	2.09	5.66	2.71	8.09	6.05	34.47
1986 Total Employment (Thousands).....	45.5	13.3	136.1	190.8	66.4	362.4	166.3	447.9	264.3	1693.1
1986 Gross State Product (Billions of dollars).....	1.51	1.42	3.46	8.68	4.52	9.53	10.01	9.87	7.55	56.55

Note: "Personal income" is the "earnings by place of work" component.

*Includes farm; agricultural services; forestry and fisheries

**Transportation, communications and Public Utilities

***Finance, Insurance and Real Estate

Source: U.S. Department of Commerce, Bureau of Economic Analysis (personal income and total employment) and Center for Business Research, College of Business, Arizona State University.

TABLE A2
PERSONAL INCOME, TOTAL EMPLOYMENT, GROSS STATE PRODUCT
INDUSTRIAL DIVISIONS, ARIZONA
Sectoral Shares

	Agricul- ture*	Mining	Construc- tion	Manufac- turing	TCPU**	Trade	FIRE***	Services	Govern- ment
1987 Personal Income.....	2.6%	1.5%	8.3%	16.2%	6.1%	16.4%	7.9%	23.5%	17.5%
1986 Total Employment.....	2.7	0.8	8.0	11.3	3.9	21.4	9.8	26.5	15.6
1986 Gross State Product.....	2.7	2.5	6.1	15.4	8.0	16.9	17.7	17.4	13.4

*Includes farm; agricultural services; forestry and fisheries

**Transportation, communications and Public Utilities

***Finance, Insurance and Real Estate

Source: U.S. Department of Commerce, Bureau of Economic Analysis (personal income and total employment) and Center for Business Research, College of Business, Arizona State University.

with such comparisons is that industries such as tourism include components from services, retail trade, transportation, and government. Arizona's 25 largest industries ranked by personal income and employment are shown in Tables A3 and A4. Government, business and health services, special trade contractors, eating and drinking places, and wholesale trade are among the largest industries, but banking, electronics and transportation equipment (primarily aerospace) are clearly important as well.

Geographic Distribution

Geographically, over 80 percent of Arizona economic activity is accounted for by the metropolitan areas, and two thirds of activity is attributable to Maricopa County. Fluctuations in mining are felt most in Greenlee, Pinal, and Pima county. Agriculture is most important as an income source in Yuma and La Paz counties.

Local vs. National Markets

Regional economic analysis recognizes a distinction between production of goods and services to serve the local population and economic activity which draws customers from throughout the nation. Industries which serve a national (or international) customer base traditionally are prized because they bring new injections of money into the state which then circulate within the local economy, creating jobs and income. Moreover, as a consequence of their national customer base, these industries are also able to pass on (or "export) taxes to non- Arizona residents who buy their products.

One way of measuring the ability of an industry to bring in outside money is to compute the location quotient. This ratio compares an industry's employment share in Arizona with its share nationally. A location quotient greater than one

TABLE A3
ARIZONA'S 25 LARGEST INDUSTRIES
 Ranked by 1986 Employment

Rank	Industrial Division	Employment	Share
1.	State and Local Government	184,483	10.9%
2.	Business Services	104,859	6.2
3.	Eating and Drinking Places	98,754	5.8
4.	Health Services	91,114	5.4
5.	Real Estate	90,259	5.3
6.	Special Trade Contractors	87,997	5.2
7.	Wholesale Trade	66,933	4.0
8.	Miscellaneous Retail**	49,456	2.9
9.	Food Stores	43,274	2.6
10.	Federal Government, Civilian	41,718	2.5
11.	Electric and Electronic Equipment	41,677	2.5
12.	Military	38,128	2.3
13.	Banking	37,577	2.2
14.	Miscellaneous Services	36,896	2.2
15.	Hotels and Other Lodging Places	35,495	2.1
16.	Automotive Dealers and Service Stations	33,885	2.0
17.	Personal Services	32,750	1.9
18.	General Merchandise Stores	32,225	1.9
19.	General Building Contractors	29,705	1.8
20.	Membership Organizations	28,862	1.7
21.	Transportation Equipment, excluding Motor Vehicles		
22.	Machinery, except Electrical	27,952	1.7
23.	Agricultural Services	24,337	1.4
24.	Auto Repair, Services, and Garages	24,293	1.5
25.	Farm	22,064	1.3
		20,762	1.2

*Finance, Insurance and Real Estate

Source: Center for Business Research, College of Business, Arizona State University; based on data from the U.S. Department of Commerce, Bureau of Economic Analysis.

TABLE A4
ARIZONA'S 25 LARGEST INDUSTRIES
Ranked by 1986 Personal Income

Rank	Industrial Division	Personal Income***	Share
1. State and Local Government	Government	\$3,906	12.1%
2. Health Services	Services	2,200	6.8
3. Special Trade Contractors	Construction	1,890	5.9
4. Wholesale Trade	Trade	1,624	5.0
5. Business Services	Services	1,576	4.9
6. Electric and Electronic Equipment	Manufacturing	1,235	3.8
7. Federal Government, Civilian	Government	1,062	3.3
8. Transportation Equipment, excluding Motor Vehicles	Manufacturing	1,021	3.2
9. Banking	FIRE**	971	3.0
10. Eating and Drinking Places	Trade	803	2.5
11. Machinery, except Electrical	Manufacturing	792	2.5
12. General Building Contractors	Construction	765	2.4
13. Miscellaneous Services	Services	747	2.3
14. Automotive Dealers and Service Stations	Trade	720	2.2
15. Food Stores	Trade	690	2.1
16. Legal Services	Services	597	1.8
17. Military	Government	589	1.8
18. Heavy Construction Contractors	Construction	573	1.8
19. Communication	TCPU*	534	1.7
20. Electric, Gas and Sanitary Services	TCPU*	523	1.6
21. Miscellaneous Retail Stores	Trade	506	1.6
22. Real Estate	FIRE**	430	1.3
23. Insurance Carriers	FIRE**	401	1.2
24. Hotels and Other Lodging Places	Services	393	1.2
25. Trucking and Warehousing	TCPU*	392	1.2

*Transportation, Communications and Public Utilities

**Finance, Insurance and Real Estate

***In millions of dollars

Source: Center for Business Research, College of Business, Arizona State University; based on data from the U.S. Department of Commerce, Bureau of Economic Analysis.

means a particular industry in Arizona is larger than required to serve the local population, and therefore also draws customers from outside the state.

Location quotients for Arizona industries are shown in Table A5. It should be no surprise that mining, electronics, transportation equipment, and the lodging industry have location quotients greater than one. In part, the greater-than-unitary location quotients for eating and drinking places, retailing, and food stores indicate the importance of seasonal out-of-state visitors to Arizona.

However, Arizona differs from many states in that construction, banking, business services, public utilities and real estate also have location quotients exceeding one. This indicates the importance of new migration to the Arizona economy. In normal times, the economy continually receives new residents and new businesses that bring financial assets, lines of credit, and new purchasing power into the state. Major portions of the Arizona economy are structured to serve not only current residents, but these newcomers who seek housing, office space, and various personal and business services. Thus, Arizona businesses actually serve a much broader range of customers than states which do not receive net inflows of people.

Importance of Population Growth to Arizona

Vigorous population growth has driven the modern expansion of the Arizona economy. Since 1960, the population has increased from 1.3 million persons to an estimated 3.6 million. Approximately one half of this population growth has resulted from net in-migration of persons seeking employment and improved quality of life. Between the years 1981 - 1987 net migration has averaged 64,000 persons and net natural increase has averaged 32,000. This inflow of population has caused Arizona to rank at or near the top of all states not only in the rate of

**TABLE A5
LOCATION QUOTIENTS - ARIZONA
INDUSTRIAL SUBSECTORS**

	1986 Total Employment	1986 Personal Income
AGRICULTURE.....	.75	1.03
Farm.....	.46	.90
Agricultural Services.....	1.79	1.80
Forestry, Fisheries.....	.25	.20
MINING.....	.91	1.13
Coal Mining.....	.40	.52
Oil and Gas Extraction.....	.19	.33
Metal Mining.....	14.00	15.57
Nonmetallic Minerals.....	.56	.30
CONSTRUCTION.....	1.52	1.56
General Building.....	1.28	1.41
Heavy Construction.....	1.60	1.77
Special Trade.....	1.60	1.56
MANUFACTURING.....	.73	.77
Nondurable Goods*.....	.40	.36
Durable Goods.....	.96	1.01
Lumber and Wood.....	.80	.84
Furniture and Fixtures.....	.57	.47
Primary Metal Industries.....	.77	.74
Fabricated Metal Products.....	.48	.40
Machinery, except Electrical.....	.87	.96
Electric and Electronic Equipment.....	1.46	1.56
Transportation Equipment, excluding Motor Vehicles.....	1.79	1.89
Motor Vehicles.....	.14	.10
Stone, Clay and Glass Products.....	.98	1.06
Instruments.....	1.14	1.21
Miscellaneous.....	.67	.67
TRANSPORTATION, COMMUNICATION, PUBLIC UTILITIES.....	.83	.85
Railroad.....	.62	.69
Trucking and Warehousing.....	.67	.72
Other Transportation.....	.95	.80
Communication.....	.92	.90
Electric, Gas and Sanitary Services.....	1.04	1.14
WHOLESALE TRADE.....	.81	.79
RETAIL TRADE.....	1.06	1.16
Building Materials and Farm Equipment.....	1.08	1.11
General Merchandise Stores.....	.97	1.03
Food Stores.....	1.01	1.35
Automotive Dealers and Service Stations.....	1.15	1.27
Apparel and Accessory Stores.....	.76	.72
Furniture and Home Furnishings Stores.....	1.14	1.28
Eating and Drinking Places.....	1.15	1.16
Miscellaneous.....	1.04	1.05

TABLE A5
LOCATION QUOTIENTS – ARIZONA
INDUSTRIAL SUBSECTORS
(continued)

	1986 Total Employment	1986 Personal Income
FINANCE, INSURANCE AND REAL ESTATE.....	1.29	1.06
Banking.....	1.08	1.24
Other.....	1.36	.97
Security and Commodity Brokers.....	.66	.50
Insurance Carriers.....	.85	.84
Insurance Agents.....	1.08	.99
Real Estate.....	1.73	1.80
Other Investment Companies.....	1.04	1.19
SERVICES.....	1.03	1.00
Hotels and Other Lodging Services.....	1.69	1.67
Personal Services.....	.92	1.07
Private Households.....	.79	.75
Business Services.....	1.10	.96
Auto Repair, Services and Garages.....	1.30	1.31
Miscellaneous Repair Services.....	1.16	1.11
Amusement and Recreation Services.....	.94	.74
Health Services.....	.92	1.01
Legal Services.....	.95	.98
Educational Services.....	.61	.49
Social Services.....	.96	.97
Museums, Botanical, Zoological Gardens.....	.75	.67
Membership Organizations.....	1.38	1.35
Miscellaneous.....	1.11	.94
GOVERNMENT.....	1.00	1.09
Federal, Civilian.....	1.00	1.00
Military.....	1.03	1.15
State and Local.....	1.00	1.11

*More detailed categories not shown when none have a location quotient greater than one.

Source: Center for Business Research, College of Business, Arizona State University, based on data from the U.S. Department of commerce, Bureau of Economic Analysis.

population growth, but also in the rate of growth of personal income and employment (Figures A2 -A4).

Population movement is a complex phenomenon. While population inflows are stimulated by employment opportunities, growth in population in Arizona has created many new jobs and caused rapid expansion of existing businesses. Business expansion, in turn, creates demand for additional labor, which stimulates further population inflow. In peak years, Arizona population growth has varied between 100,000 and 120,000 while job creation has been in the range of 80,000 - 100,000 per year (Figure A5).

Recessions on the national level are periods of reduced immigration to Arizona and slowing job growth. In addition, changes in those economies that compete with or supply migrants to Arizona can be important influences on the local economy. As the Texas economy stumbled in the mid-1980's, immigration to Arizona accelerated when people left Texas due to reduced economic opportunities. Similarly, the resurgence of the Rust Belt economies, the relative strength of other Western economies such as California and the slowing Arizona economy have combined in recent months to reduce immigration to Arizona.

Construction Slump Spreads Throughout the Economy

The Arizona economy led the nation in the rate of job creation in 1984 and 1985. These were years of strong net immigration and record levels of building in multifamily, industrial, and commercial structures. As newly constructed inventory began to accumulate, construction employment slowed. Between the summer of 1986 and December of 1988, the industry experienced a string of 25 unbroken months of job losses relative to the same month of the previous year (Figure A6). From a peak of 117,300 jobs in June of 1986 through the end of 1988, construction has lost approximately 20,000 jobs.

FIGURE A2
TOP FIVE STATES: PERSONAL INCOME GROWTH
1977-1987

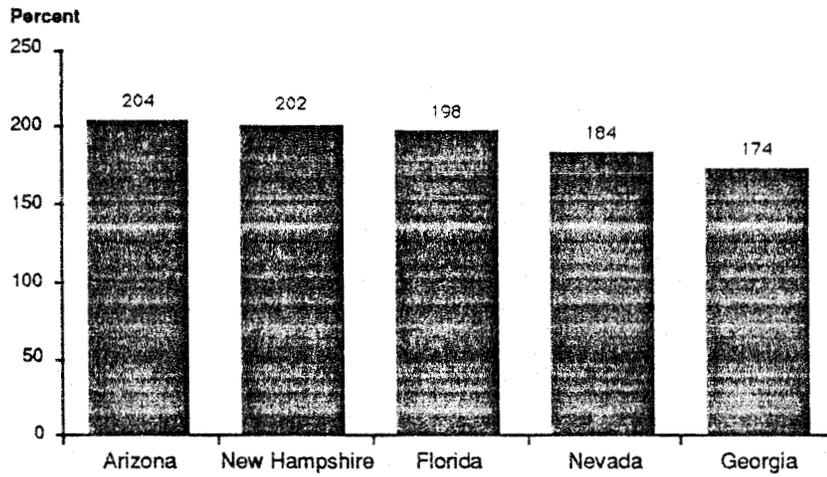


FIGURE A3
TOP FIVE STATES: EMPLOYMENT GROWTH
1977-1987

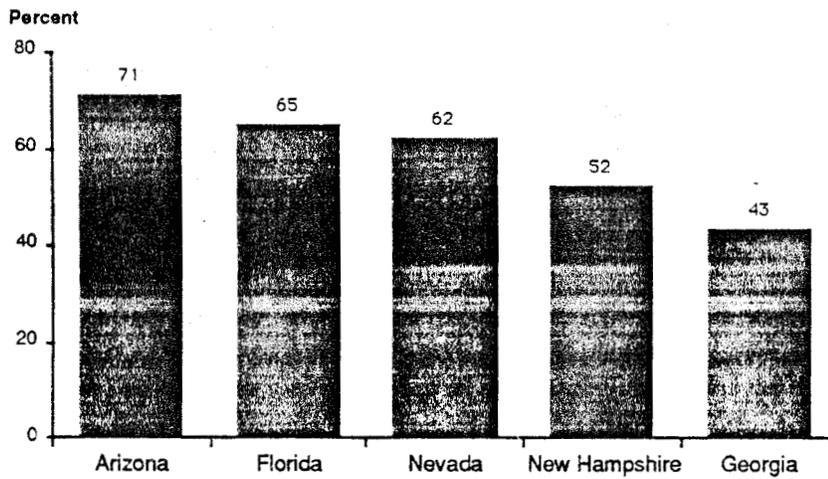
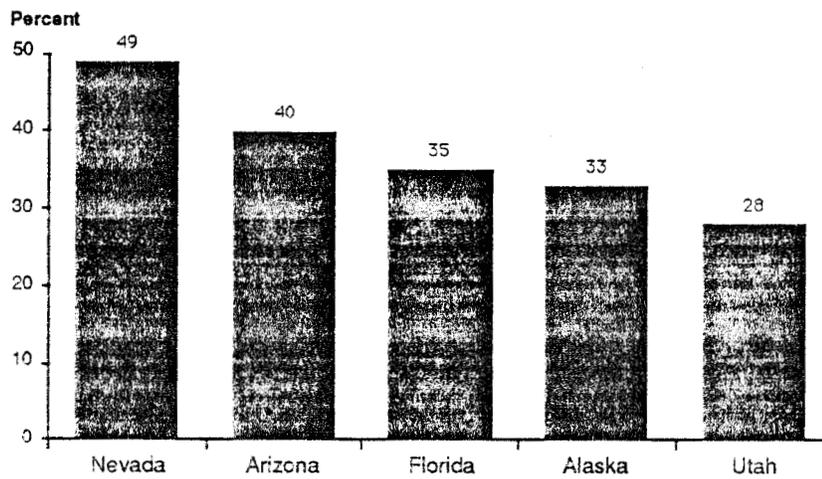


FIGURE A4
TOP FIVE STATES: POPULATION GROWTH
1977-1987



Source: Personal income and population data, U.S. Department of Commerce; employment data, U.S. Department of Labor.

Figure A5
 ARIZONA EMPLOYMENT GROWTH
 AND POPULATION FLOWS
 1971-1989

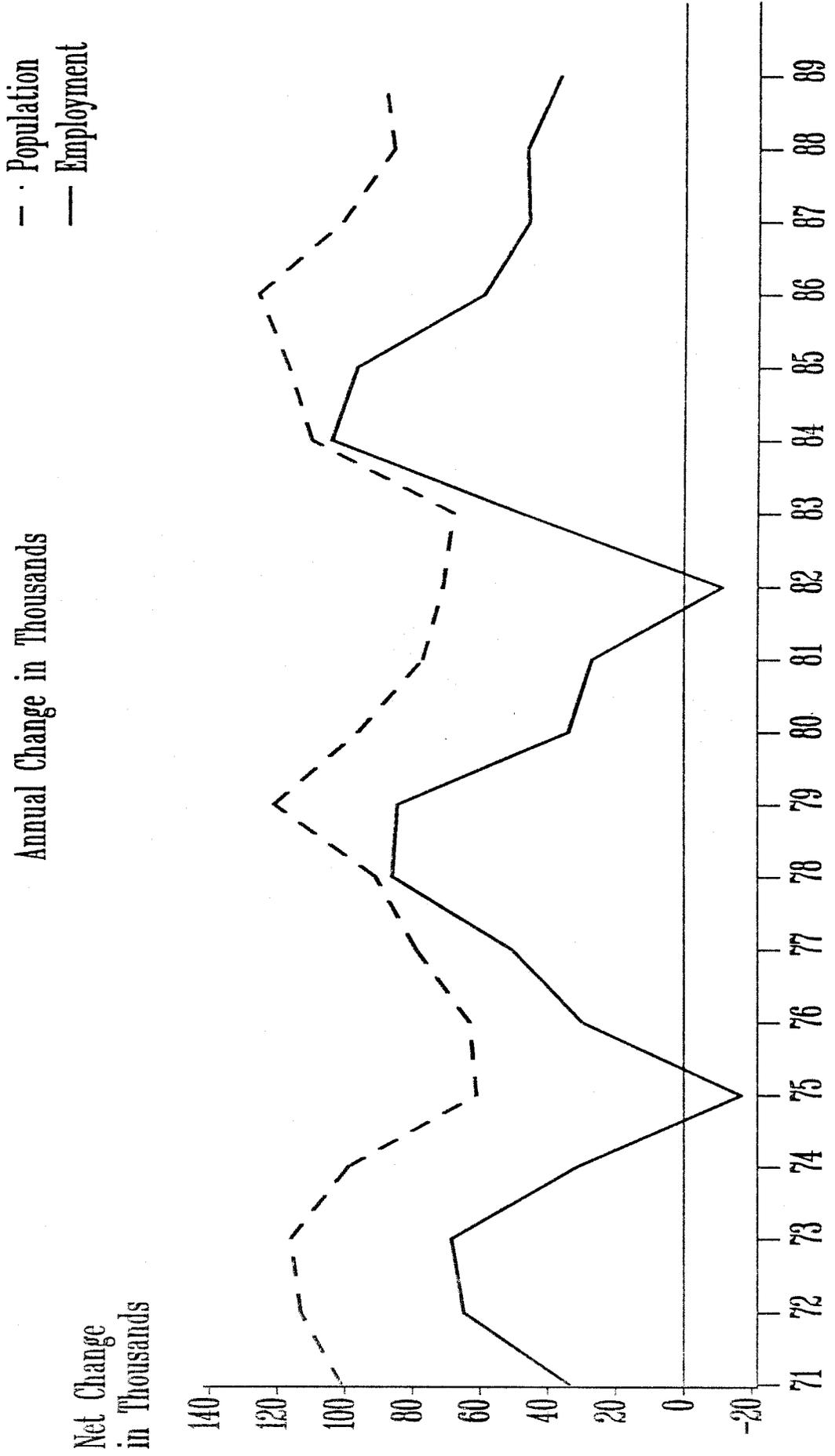
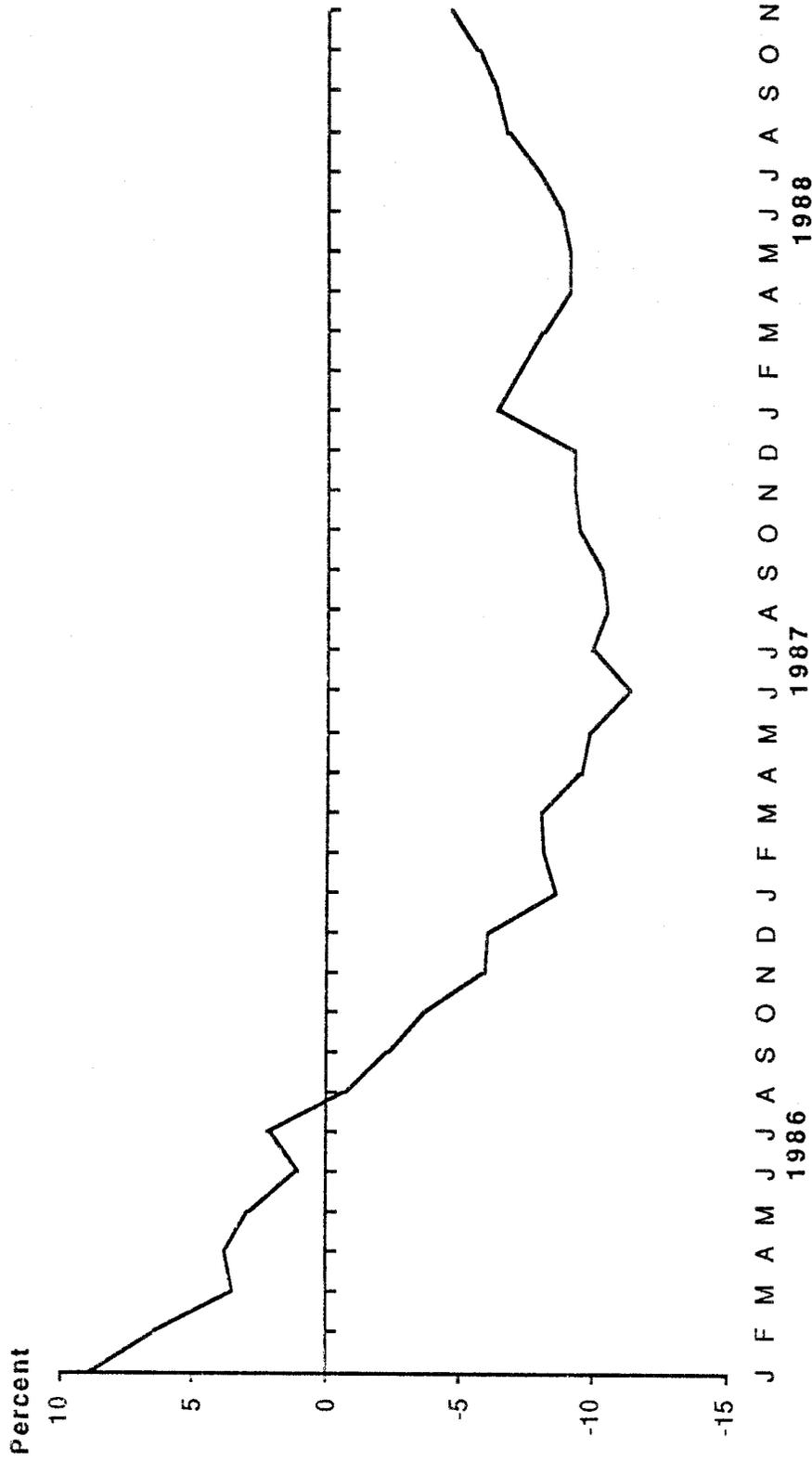


FIGURE A6
MONTHLY CHANGE IN ARIZONA CONSTRUCTION EMPLOYMENT
(Percent Change from Same Month, Previous Year)
1986-88



Source: Arizona Department of Economic Security

Weaknesses in construction gradually spread through the economy, with effects felt in finance-insurance and real estate and transportation-communication-public utilities in the second half of 1988. Total Arizona nonagricultural employment was growing at a rate of less than one percent by the close of 1988 (Figure A7). Based on data comparing employment in October 1988 with 12 months before, Arizona ranked among the 15 slowest growing states (Table A6).

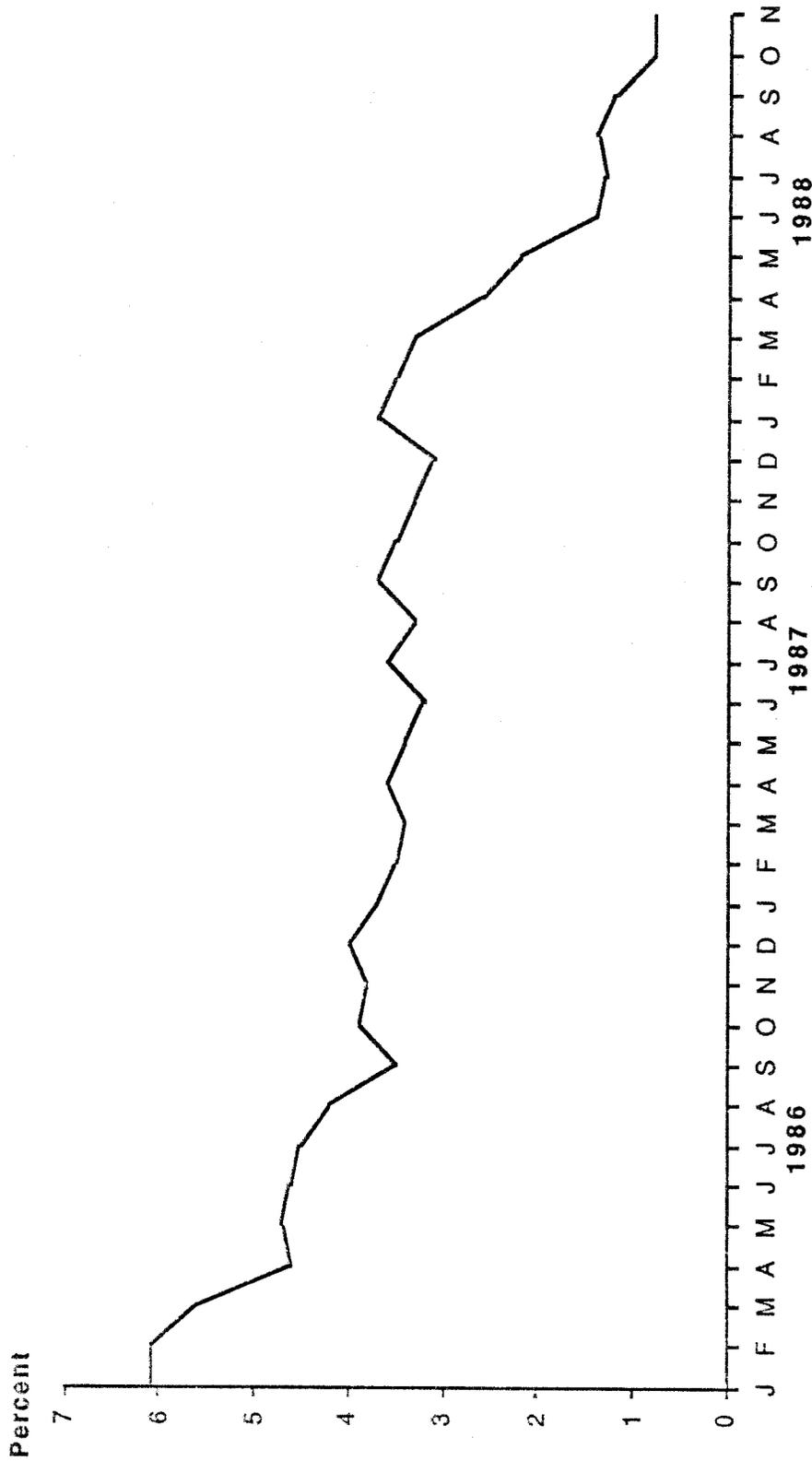
Population Inflows Sharply Reduced

As job opportunities have diminished, population inflows to Arizona from other states have slowed. From highs approaching 20,000 persons per quarter, net migration into the metropolitan Phoenix area has slowed to 20,000 per year. Reduced population flows are now affecting the various people serving business, including retail trade and personal services. As explained above, these and other Arizona industries have extra capacity (as shown by location quotients exceeding one in Table A5) in order to serve both current residents and new immigrants. Without growth fueled by population inflow, employment gains have been restricted in most industries (Figure A8). Troubled businesses have experienced layoffs, while bankruptcies and foreclosures have mounted.

Manufacturing Employment

In spite of the falling dollar, manufacturing has not been a source of stimulus for the Arizona economy (see Figure A9). The lack of growth in manufacturing is partially due to cost cutting efforts by electronics manufacturers intent on competing in world markets. In addition, after peaking in August of 1987, aerospace employment has been affected by defense cutbacks and employment has declined by over 2,000 jobs.

FIGURE A7
MONTHLY CHANGE IN ARIZONA EMPLOYMENT
 (Percent Change from Same Month, Previous Year)
 1986-88



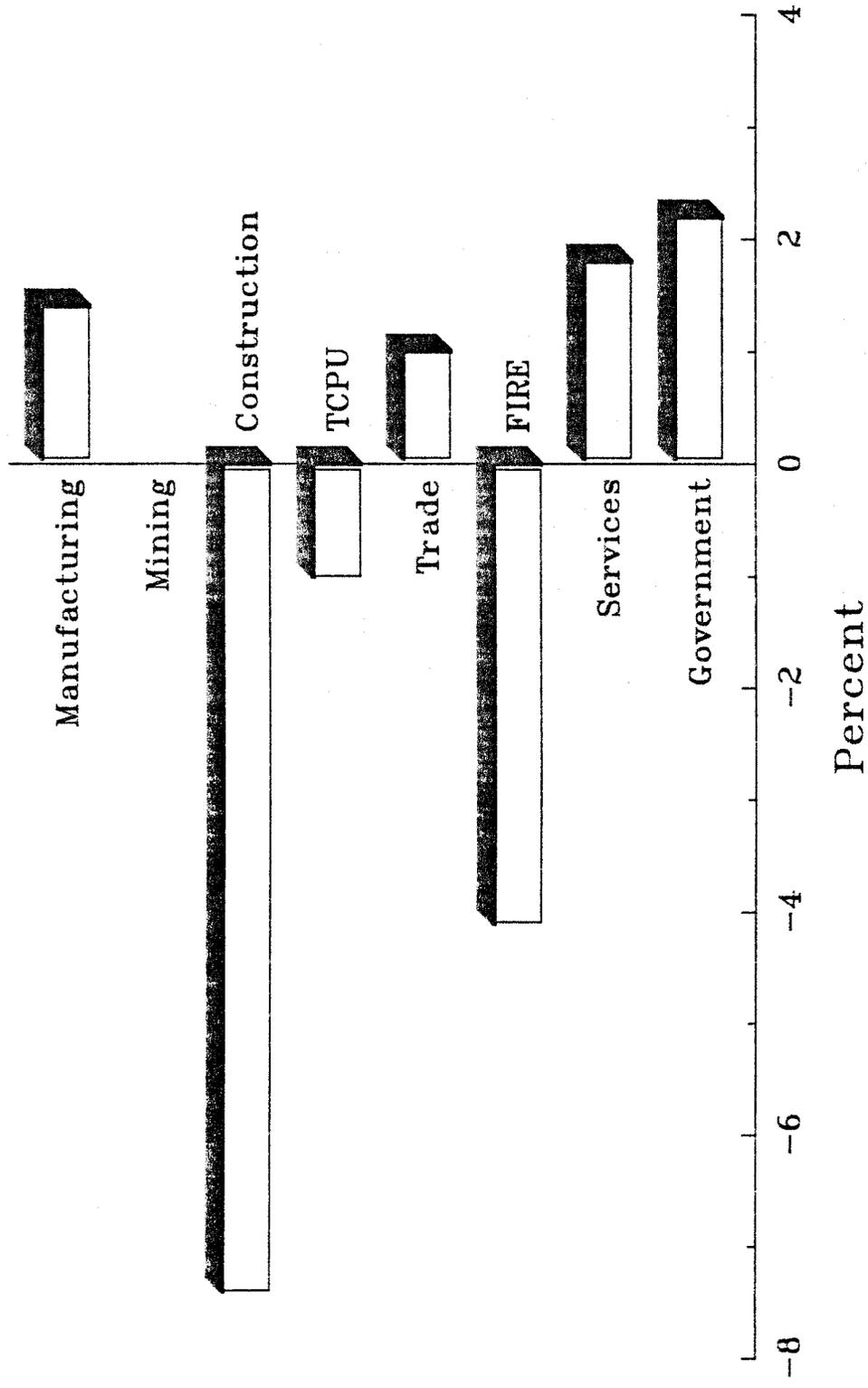
Source: Arizona Department of Economic Security

TABLE A6
JOB CREATION: OCTOBER 1988 OVER OCTOBER 1987

Rank		Percent Change
1	Nevada.....	6.59%
2	Oregon.....	4.92%
3	Washington.....	4.69%
4	New Hampshire.....	4.51%
5	Virginia.....	4.50%
6	Florida.....	4.01%
7	Indiana.....	3.85%
8	Vermont.....	3.77%
9	Maine.....	3.60%
10	California.....	3.49%
11	Utah.....	3.43%
12	Idaho.....	3.27%
13	Delaware.....	3.12%
14	Wisconsin.....	3.09%
15	Minnesota.....	3.04%
16	South Carolina.....	2.94%
17	North Carolina.....	2.69%
18	Iowa.....	2.55%
19	Ohio.....	2.43%
20	Illinois.....	2.39%
21	Kentucky.....	2.35%
22	Massachusetts.....	2.33%
23	New Mexico.....	2.24%
24	New Jersey.....	2.14%
25	Pennsylvania.....	2.11%
26	Arkansas.....	1.99%
27	New York.....	1.71%
28	Connecticut.....	1.63%
29	Hawaii.....	1.60%
30	South Dakota.....	1.54%
31	North Dakota.....	1.51%
32	Mississippi.....	1.46%
33	Texas.....	1.46%
34	Kansas.....	1.43%
35	Maryland.....	1.27%
36	Michigan.....	1.22%
37	Tennessee.....	0.98%
38	Nebraska.....	0.94%
39	Missouri.....	0.94%
40	ARIZONA.....	0.85%
41	Alabama.....	0.79%
42	Rhode Island.....	0.78%
43	Louisiana.....	0.75%
44	West Virginia.....	0.59%
45	Georgia.....	0.59%
46	Colorado.....	0.35%
47	Montana.....	0.32%
48	Alaska.....	0.05%
49	Oklahoma.....	-0.13%
50	Wyoming.....	-1.10%

Source: Economic Outlook Center, College of Business, Arizona State University; and U.S. Department of Labor.

Figure A8
 Arizona Employment
 Percent Change
 October 1988 over October 1987



Source: Center for Business Research,
 College of Business, Arizona State University

FIGURE A9
MONTHLY CHANGE IN ARIZONA MANUFACTURING EMPLOYMENT
(Percent Change from Same Month, Previous Year)
1986-88



Source: Arizona Department of Economic Security

Structural Change or Cyclical Downturn?

The current weakness in the Arizona economy has caused some to question whether the downturn is a signal of a significant change in the business environment or simply a cyclical downturn that will soon be reversed. Items in the national press have suggested that there are unusual elements present which will impact the future potential growth of Arizona. The most likely interpretation of the current weakness in the Arizona economy is that it is due primarily to overbuilding caused by favorable tax laws, availability of financing, and optimism nurtured by vigorous population inflows and rates of job growth which were not sustainable. The prognosis is that -- in the absence of a national recession -- a return to levels of growth approximating the long term Arizona average will be achieved within 18 - 24 months.

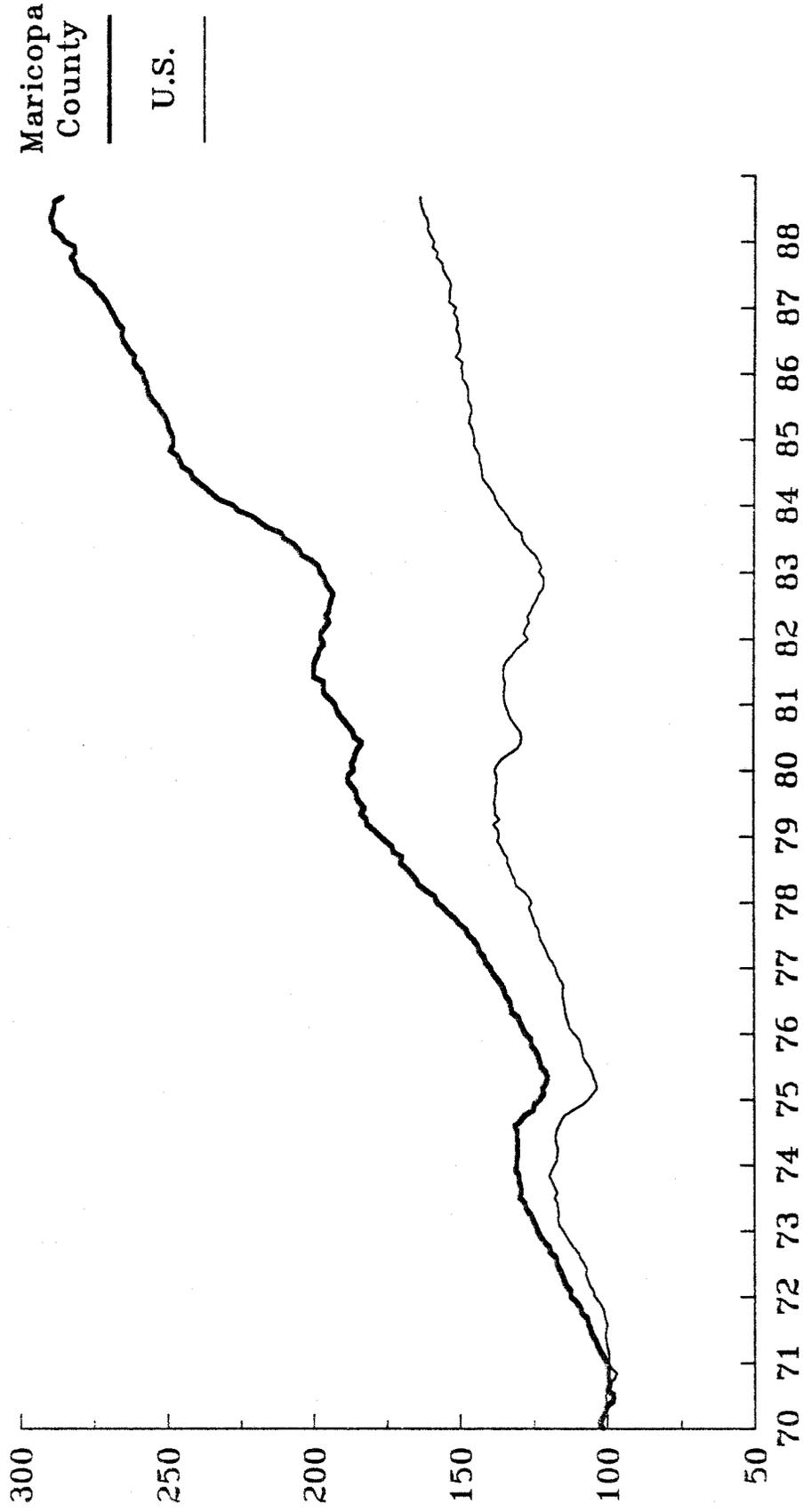
Long Run Cyclical Behavior of the Arizona Economy

The relationship between growth of Arizona and the national economy is illustrated by the paths of the coincident indexes of economic activity (Figure A10). Traced over nearly two decades beginning in 1970, the national coincident index has grown about 50 percent, while the Arizona index has tripled in value. Downturns are evident in both series during the recession of the mid 1970's and the early 1980's. On these long term figures, the current economic sluggishness appears as one of many other dips in the index.

Population

Although population flows have slowed, the current experience is similar to previous slow growth episodes (Figure A11). The typical period from trough to peak of migration activity is about four years, with a peak-to-peak span of about

Figure A10
 Maricopa County Coincident Index
 vs. National Coincident Index
 (1970=100)

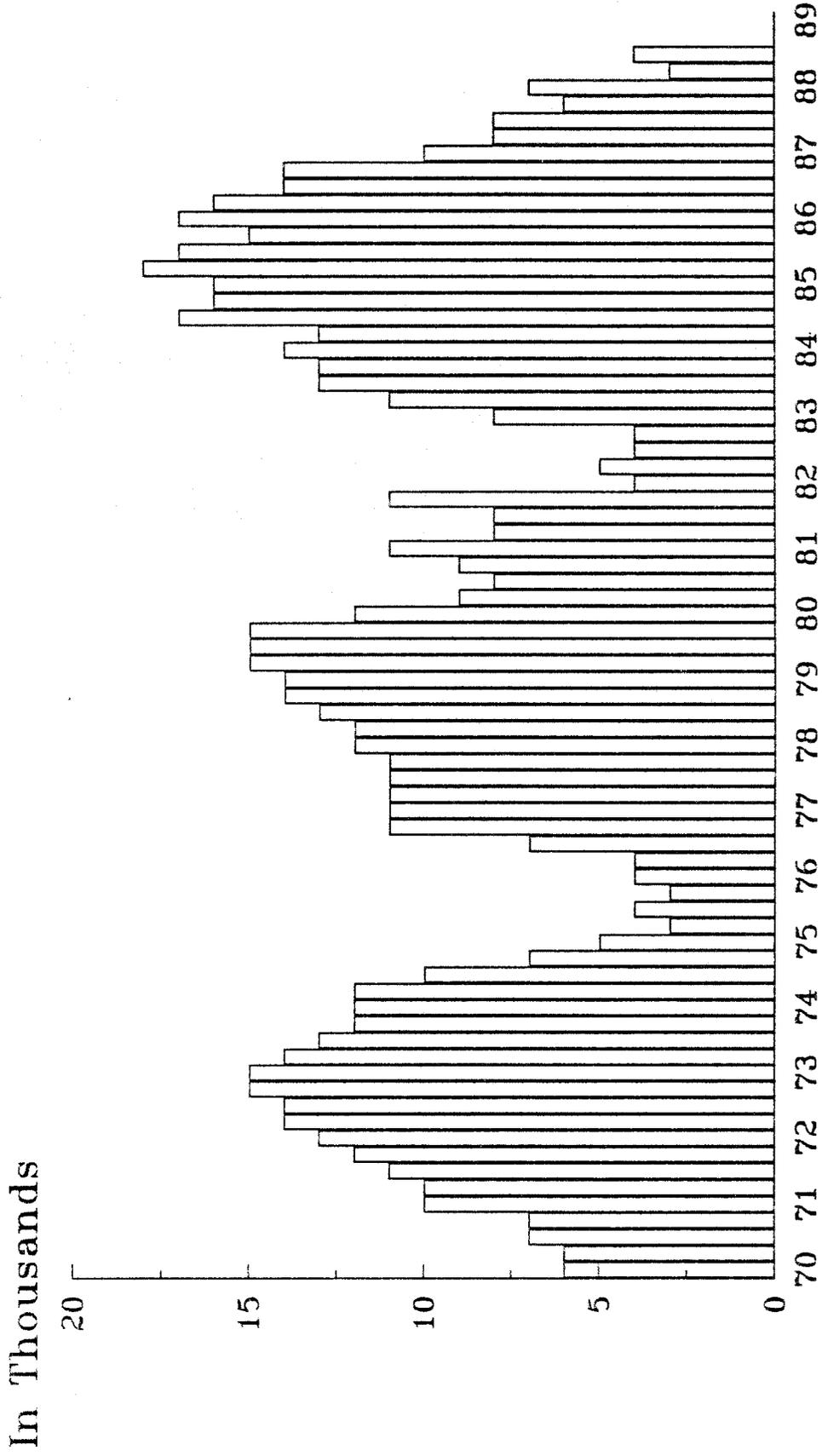


Source: Center for Business Research,
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Figure A11

Net Migration

Maricopa County



Source: Center for Business Research,
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eight years. The most likely situation in the current slowdown is thus two - three more quarters of weak population growth followed by gradual immigration increases after that.

Employment

Historical employment data seem to confirm this outlook (Figure A12). Peak-to-peak and trough-to-trough employment levels are observed at six- seven year intervals since 1970. The low point of 1982 was followed by a peak in 1984. It is likely the Arizona economy will "bottom out" in 1989 and move to a more expansionary mode during 1990.

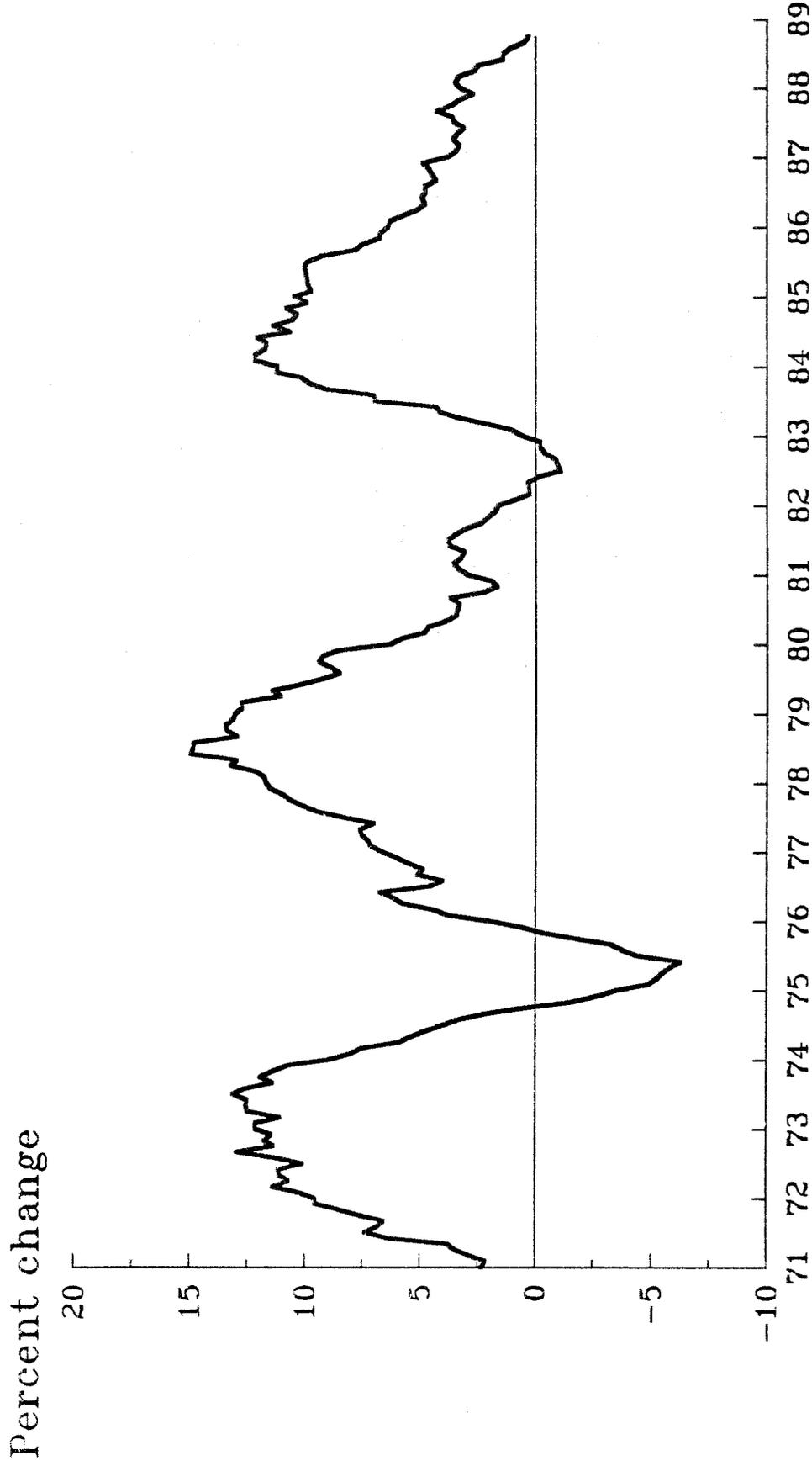
In summary, the diagnosis of the ailments of the Arizona economy is that (a) overbuilding led to reduced construction employment; (b) the recovery of the Midwest and diminished Arizona job opportunities combined to reduce population inflows; (c) Arizona industries structured to serve both local and newly arrived residents were forced to reduce activity levels; (d) the result was a cyclical downturn which will be reversed within the next 18-24 months and followed by a return to higher rates of population and job growth.

Consensus Forecast from Blue Chip Panel

The current outlook for 1989 by the Arizona Blue Chip panel of Arizona economic experts calls for the coming year to be very similar to 1988 in terms of overall growth (Table A7). Job creation is expected to be in the range of 3 percent, about one half that of the long run Arizona average rate of job growth.

The panel expects the construction sector, a key driver of the Arizona economy, to recover by 1990. However, some analysts predict an even longer period for surplus office, retail, and commercial space to be absorbed. Differing forecasts of net immigration underlie these alternative views. It is evident that

Figure A12
Total Non-Agricultural Employment
Metropolitan Phoenix
Percent Change from Same Month, Previous Year



Source: Arizona Department of Economic Security

**TABLE A7
ARIZONA BLUE CHIP FORECAST FOR 1989**

SOURCE:	ANNUAL PERCENT CHANGE 1989 FROM 1988										AVERAGE RATE FOR 1989		
	AZ Current \$ Personal Income	U.S. GNP Deflator	AZ Real Personal Income	AZ Retail Sales	AZ Wage & Salary Empl.	AZ Mfg. Empl.	AZ Housing Permits	AZ Pop. Growth	Metro Phx. CPI	U.S. 3-Mo. T-Bills	U.S. Aaa Bonds	AZ Unempl. Rate	
ASU - Economic Outlook Center	6.6	4.2	2.3	4.5L	2.5L	(0.4)L	(14.4)	2.2	4.8	7.4	10.1	6.8	
Department of Economic Security	7.0	4.1	2.7	6.0	2.7	1.6	—	3.6H	5.1	7.0	10.1	6.9	
Eggert Economic Enterprises	6.8	4.5	2.6	5.9	2.7	2.5	(3.0)	2.3	4.9	7.2	9.8	6.8	
Epic Enterprises Inc.	7.0	4.0	2.7	5.0	2.5L	2.0	(10.0)	2.5	5.0	7.5	10.4	6.8	
First Interstate Bank of Arizona	7.5	4.8	2.7	6.5	3.2	4.5H	5.0	2.5	5.2	7.5	10.5	6.8	
Joint Legislative Budget Committee	7.1	4.4	2.7	5.3	2.8	2.3	(10.0)	2.3	4.8	7.9H	10.4	6.8	
Moore Economic Research	6.5	4.6	3.0	5.3	2.8	2.5	(7.0)	2.5	5.5H	7.2	10.6H	6.6	
NAU - BBER	7.0	4.9H	2.1L	5.6	3.0	2.8	0.0	2.8	4.7	7.4	10.5	6.4	
Office of the Treasurer	6.6	3.6L	2.9	5.9	2.8	2.5	—	—	3.9L	5.9L	9.4L	6.9	
Phoenix Chamber of Commerce	7.5	4.1	3.3	6.2	3.5H	3.0	9.0	2.5	4.8	6.7	9.5	7.2H	
The Tanner Companies	7.8	4.3	3.6	—	3.3	3.5	15.0H	3.0	4.5	6.5	9.9	6.6	
U of A - DEBR	8.0H	4.2	3.8H	7.6H	3.1	2.2	(24.0)L	2.1L	5.3	7.7	10.3	6.8	
US West Communications	6.4L	4.5	3.4	—	3.2	2.2	9.6	3.4	4.6	6.3	9.8	6.0L	
Valley National Bank	7.2	4.2	3.0	6.0	2.8	3.0	(5.0)	2.4	5.0	7.5	10.5	7.0	
1989 Consensus - This Month	7.1	4.3	2.9	5.8	2.9	2.4	(2.9)	2.6	4.9	7.1	10.1	6.7	
- Last Month	7.0	4.4	2.7	5.9	2.9	2.6	(2.5)	2.7	4.9	7.1	10.1	6.7	
Range: Bottom 3 Avg.	6.5	3.9	2.3	5.3	2.7	1.1	(16.1)	2.2	4.3	6.1	9.6	6.3	
Top 3 Avg.	7.6	4.8	3.6	6.5	3.3	3.7	11.2	3.3	5.3	7.7	10.5	7.0	

Basic data sources:

(1) Arizona personal income in current \$'s, (2) Gross national product implicit price deflator, and (3) Arizona personal income in 1982 \$'s, Bureau of Economic Analysis; (4) Arizona retail sales, Arizona Department of Revenue; (5) Arizona total nonagricultural wage and salary employment, and (6) Arizona manufacturing employment, DES; (7) Arizona housing authorizations, ASU - CBR; (8) Arizona population; (9) Metropolitan Phoenix consumer price index, ASU - CBR; (10) 3-month Treasury bills, Federal Reserve Board; (11) Aaa Corporate bonds, Moody's Investor Service; (12) Arizona unemployment rate, DES.

population flows, business expansions, and new business births are crucial determinants of the rate of absorption of existing construction inventory.

Long term forecasts by the Department of Economic Security and the U.S. Census Bureau call for Arizona to be among the leading states in population growth during the next two decades. Population increases are anticipated to total approximately one million people, even under the lowest growth scenarios now available.

Although there exist differences of opinion on the exact timing, all analysts on the consensus panel believe the current sluggish economic growth in the Arizona economy will eventually give way to somewhat more rapid expansion as the construction industry recovers from current overbuilding problems. However, a return to the spectacular growth of the 1983-1987 period is not likely. The aging baby boomers will influence a population less inclined to migrate from state to state and the overall workforce will increase at a slower rate than in the past.

APPENDIX B

THE BUSINESS CLIMATE IMPACT OF PROPOSED TAX CHANGES

During 1987, new wage and salary jobs in the Arizona economy increased at a rate of growth of 3.4 percent. In 1988, the expansion of the Arizona economy slowed until, by year end, new jobs creation was taking place at a rate of less than one percent. While the overall Arizona economy is not in recession (defined as a negative rate of growth in total employment), industries linked to real estate and construction have experienced job losses and weakness has spread from these sectors to other parts of the general economy.

Need for Examination of Business Climate Impact

In light of the marked slowdown in Arizona, the rapid rise in bankruptcies and foreclosures, and the inevitable comparisons drawn by national media between the Arizona experience and downturns in Texas, it is appropriate to examine the potential impact of a \$255 million balanced budget tax and expenditure proposal on the Arizona business climate. The essential question at hand is how tax and expenditure changes of the magnitude and composition proposed will affect (a) Arizona's business climate as measured by various rankings and surveys and (b) actual economic growth and development in the state.

Business Climate and Relocation

The "business climate" is defined here to include those factors that influence business site location decisions for new facilities, whether branches, franchises, expansions or relocations of any other type. Facilities are broadly defined to include offices, manufacturing or assembly plants, warehouses, distribution centers, research and development installations, and corporate headquarters.

Factors examined are those included in business climate rankings (such as produced by Grant Thornton or Inc. magazine), or actually reported as important by business managers with knowledge of site location decisions. In addition, those business climate factors shown to be statistically associated with growth by research studies of economic development are reviewed. Given the purpose of this study, the specific role of taxes as a business climate factor will be emphasized.

Throughout the discussion, it is assumed that a loose ordering of priorities exists for facilities sought for Arizona. Corporate headquarters and research facilities are assumed highly desirable because they provide high incomes, little pollution, and a significant corporate commitment to the state. Firms in the early stages of the product cycle (development and expansion) are assumed desirable because of their potential for rapid growth as they move toward mass production with limited competition in national and international markets. Somewhat less desirable – but certainly welcome – are those firms with products in the final stages of the product cycle where output is highly standardized, cost structures are extremely competitive, and the potential for movement to offshore facilities is everpresent.

The Sources of New Jobs

As background to the general topic of determinants of growth and business relocation, the informed observer may be well aware that most jobs are created not by business relocations, but by firm births and expansion of existing firms. Not since the McDonnell-Douglas relocation has Arizona experienced a corporate relocation of major magnitude. Yet, the state has succeeded in creating some thirty to forty thousand jobs per year (over 1,000 per week during some periods), primarily through expansion of existing businesses and the start-up of new firms.

Business Relocation Data

In fact, it is no wonder that there have been few major corporate relocations into Arizona. Today, statistical studies show that a very small percentage of firms actually relocate in any given year. A study by James Miller reported that, over the period 1969-1975, only two percent of all manufacturing firms relocated, and only one half of one percent of all manufacturing firms relocated across state lines. Three fourths of all manufacturing relocations involved movements to nearby counties in the same state.

Why are Taxes Important in Relocation?

This tendency of firms to relocate nearby their current site explains why business taxes are considered by some to be crucial in the relocation decision. By moving to a neighboring locality, a firm may retain its current markets, suppliers, and labor force, but possibly lower its taxes. Thus, taxes are the "swing factor" because other key determinants of costs and revenues often stay unchanged after relocation.

Implications for Arizona

The implications for Arizona are worth noting. In seeking corporate relocations as a major source of new employment, the state is asking firms to make the extremely risky decision of abandoning workers, markets, suppliers, and lines of credit in exchange for what Arizona can offer in replacement. Thus, as a preface to assessing the role of taxes in business climate, it must be recognized that the attractions Arizona offers in its business climate package must be competitive on a broader range of fronts than states in the East who are only seeking to lure firms a short distance. In brief, low taxes may lure a firm

across the river but may not be significant in luring that same firm across the country.

Early Interest In Business Climate

Interest in factors influencing "business climate" seems to be traceable to the period immediately after World War II when industrial firms from the North accelerated their exodus to lower cost regions of the country. States and local areas in the South and West began to experiment with inducements to relocation such as revenue bonds, publicly provided infrastructure, and industry tailored vocational training programs. Local business and government officials have since been concerned with measuring business climate and comparing rankings of states on the basis of published business climate ranking. Yet, there is no clear definition of what business climate is or how to measure it.

Business Climate Factors

In the broadest sense, the business climate of a state is related to its attractiveness as a location for economic activity. Since the objective of firms ultimately is profit maximization, business climate must operationally be linked to factors which act to minimize costs or to enlarge revenues. Factors influencing costs include direct labor payments, degree of unionization, productivity of workers, manhours lost to strikes, energy costs, and such government controlled variables as taxes, unemployment compensation payments, and environmental controls.

On the revenue side, factors introduced often include population, population change, and income levels, to measure market conditions. In recent times, business climate studies have included factors which attempt to measure "quality

of life" such as education expenditures, health care, and quality of transportation services.

The Ranking Studies: Fantus, Grant, and Inc. Magazine

Development of business climate rankings became somewhat of an industry in itself in 1975, when the Illinois Manufacturers Association engaged the Fantus Company, a site location consulting firm, to undertake a study to "persuade the Illinois General Assembly to pass laws correcting the state's deteriorating manufacturing sector."

The objective was to compare the 48 states on 15 indicators, 10 of which reflected levels of state and local taxation. The resulting state rankings were thus closely related to the level of taxation in each state. The number one ranked state in this study was Texas, followed by Alabama.

The Fantus company refused to conduct a follow-up study, contending such studies were "unusable in the site selection process." The Alexander Grant company (now Grant Thornton), a Chicago-based accounting firm, continued the studies for the Illinois Manufacturer's association, publishing its first rankings in 1979.

Arizona's Grant Thornton Ranking

In the most recent Grant Thornton study, published in July of 1988, Arizona ranked seventh among "less manufacturing intensive states." States ranked above Arizona include North and South Dakota, Nebraska, Nevada, Kansas and Virginia (see Table B1). Arizona scored most highly on "change in tax effort," where we were second in the nation, and "unionization," where we were third (Table B2). Somewhat surprisingly for a state which prides itself on quality of life,

**TABLE B1
GRANT THORNTON
1987 STATE RANKINGS:
LOW MANUFACTURING INTENSITY**

State	Rank	Gov't. Controlled Rank	Non-Gov't. Controlled Rank
South Dakota	1	1	2
North Dakota	2	7	1
Nebraska	3	3	4
Nevada	4	4	6
Kansas	5	8	3
Virginia	6	2	14
Arizona	7	6	11
Colorado	8	13	7
Maryland	9	5	16
Utah	10	12	9
New Mexico	11	11	10
Iowa	13	14	8
Idaho	13	10	12
Washington	14	17	13
Minnesota	15	21	5
Kentucky	16	9	19
Oregon	17	15	18
Oklahoma	18	18	17
Wyoming	19	20	15
Montana	20	16	20
West Virginia	21	19	21

population growth, but also in the rate of growth of personal income and employment (Figures A2 -A4).

Population movement is a complex phenomenon. While population inflows are stimulated by employment opportunities, growth in population in Arizona has created many new jobs and caused rapid expansion of existing businesses. Business expansion, in turn, creates demand for additional labor, which stimulates further population inflow. In peak years, Arizona population growth has varied between 100,000 and 120,000 while job creation has been in the range of 80,000 - 100,000 per year (Figure A5).

Recessions on the national level are periods of reduced immigration to Arizona and slowing job growth. In addition, changes in those economies that compete with or supply migrants to Arizona can be important influences on the local economy. As the Texas economy stumbled in the mid-1980's, immigration to Arizona accelerated when people left Texas due to reduced economic opportunities. Similarly, the resurgence of the Rust Belt economies, the relative strength of other Western economies such as California and the slowing Arizona economy have combined in recent months to reduce immigration to Arizona.

Construction Slump Spreads Throughout the Economy

The Arizona economy led the nation in the rate of job creation in 1984 and 1985. These were years of strong net immigration and record levels of building in multifamily, industrial, and commercial structures. As newly constructed inventory began to accumulate, construction employment slowed. Between the summer of 1986 and December of 1988, the industry experienced a string of 25 unbroken months of job losses relative to the same month of the previous year (Figure A6). From a peak of 117,300 jobs in June of 1986 through the end of 1988, construction has lost approximately 20,000 jobs.

FIGURE A2
TOP FIVE STATES: PERSONAL INCOME GROWTH
1977-1987

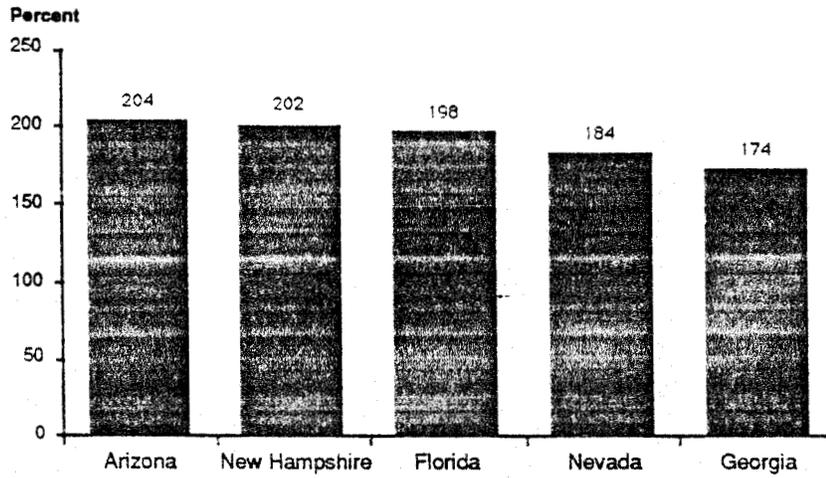


FIGURE A3
TOP FIVE STATES: EMPLOYMENT GROWTH
1977-1987

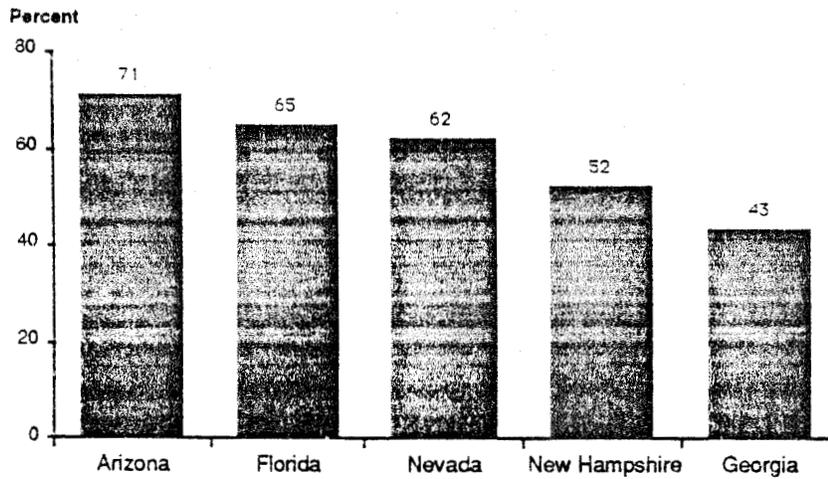
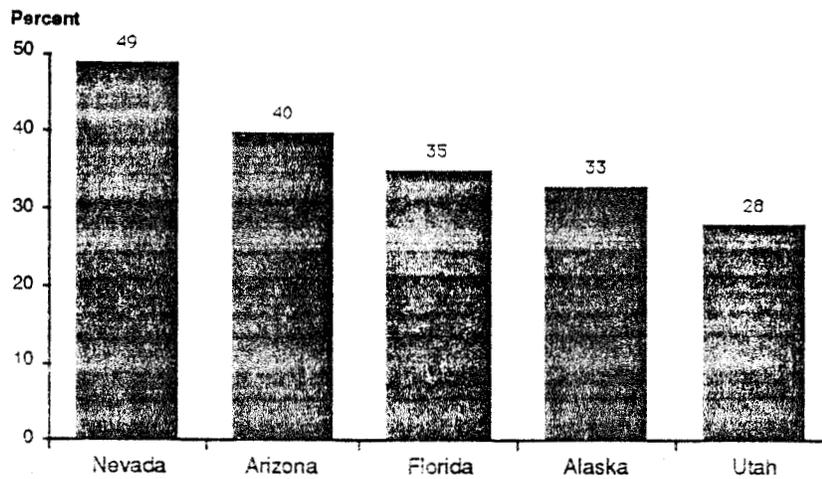


FIGURE A4
TOP FIVE STATES: POPULATION GROWTH
1977-1987



Source: Personal income and population data, U.S. Department of Commerce; employment data, U.S. Department of Labor.

Figure A5
 ARIZONA EMPLOYMENT GROWTH
 AND POPULATION FLOWS
 1971-1989

--- Population
 --- Employment

Annual Change in Thousands

Net Change
 in Thousands

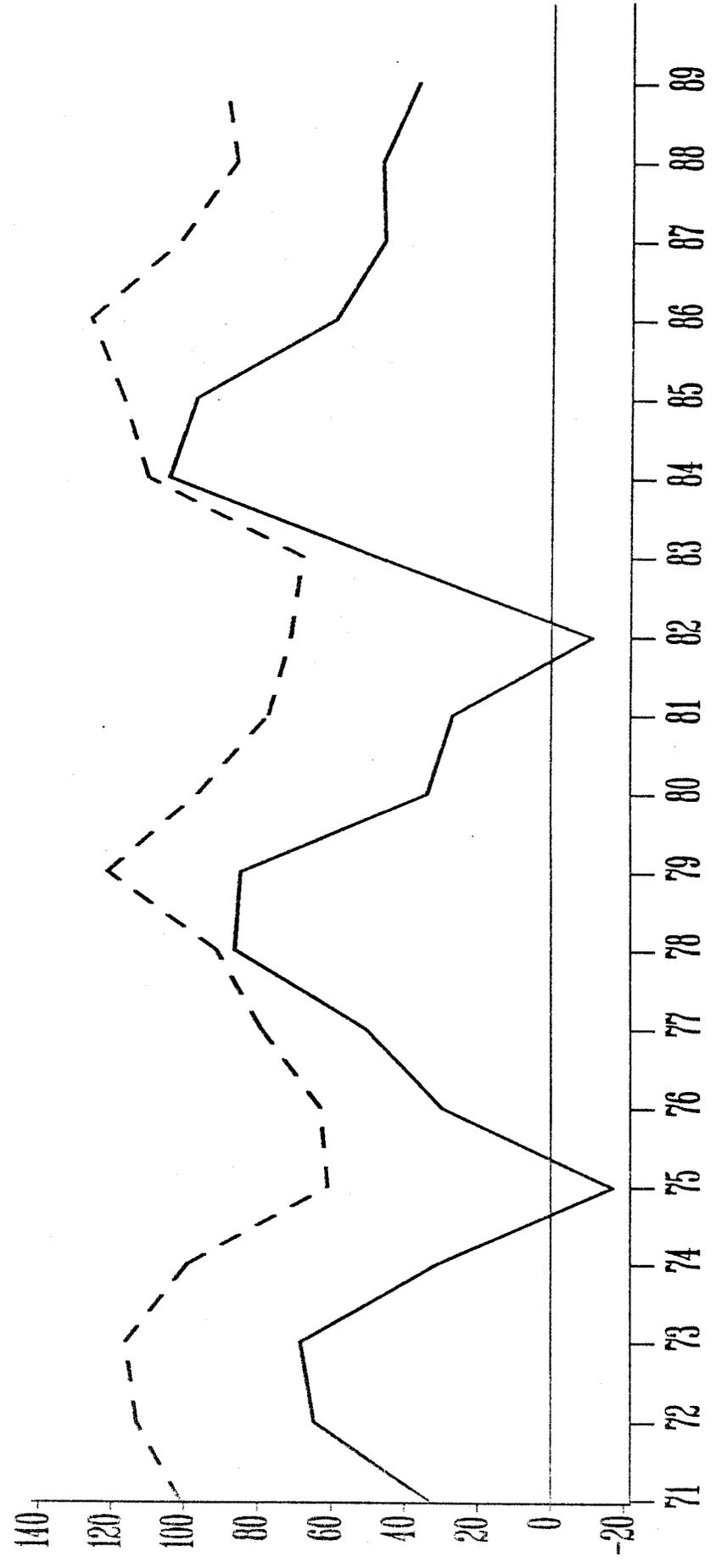
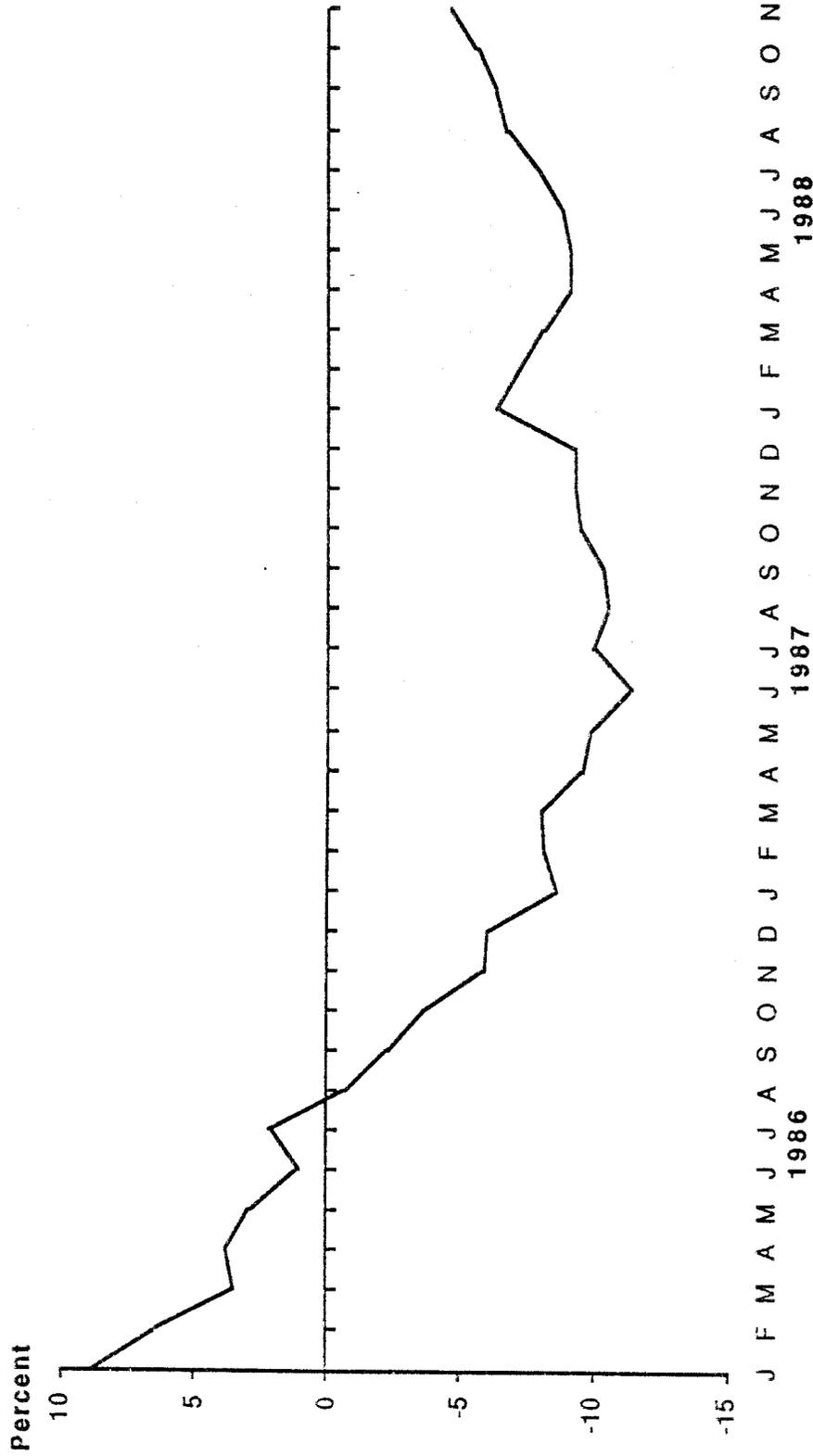


FIGURE A6
MONTHLY CHANGE IN ARIZONA CONSTRUCTION EMPLOYMENT
(Percent Change from Same Month, Previous Year)
1986-88



Source: Arizona Department of Economic Security

Weaknesses in construction gradually spread through the economy, with effects felt in finance-insurance and real estate and transportation-communication-public utilities in the second half of 1988. Total Arizona nonagricultural employment was growing at a rate of less than one percent by the close of 1988 (Figure A7). Based on data comparing employment in October 1988 with 12 months before, Arizona ranked among the 15 slowest growing states (Table A6).

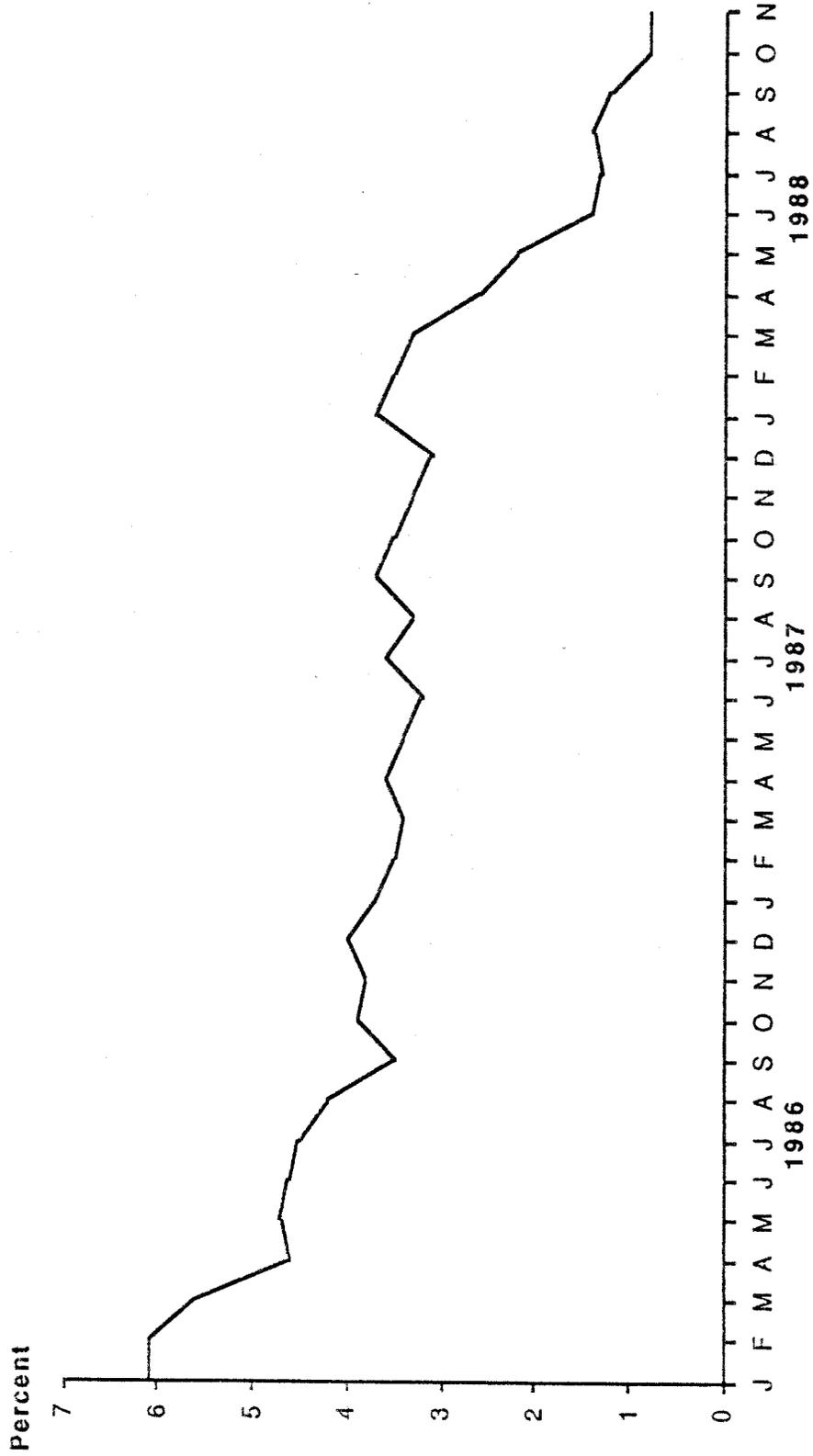
Population Inflows Sharply Reduced

As job opportunities have diminished, population inflows to Arizona from other states have slowed. From highs approaching 20,000 persons per quarter, net migration into the metropolitan Phoenix area has slowed to 20,000 per year. Reduced population flows are now affecting the various people serving business, including retail trade and personal services. As explained above, these and other Arizona industries have extra capacity (as shown by location quotients exceeding one in Table A5) in order to serve both current residents and new immigrants. Without growth fueled by population inflow, employment gains have been restricted in most industries (Figure A8). Troubled businesses have experienced layoffs, while bankruptcies and foreclosures have mounted.

Manufacturing Employment

In spite of the falling dollar, manufacturing has not been a source of stimulus for the Arizona economy (see Figure A9). The lack of growth in manufacturing is partially due to cost cutting efforts by electronics manufacturers intent on competing in world markets. In addition, after peaking in August of 1987, aerospace employment has been affected by defense cutbacks and employment has declined by over 2,000 jobs.

FIGURE A7
MONTHLY CHANGE IN ARIZONA EMPLOYMENT
(Percent Change from Same Month, Previous Year)
1986-88



Source: Arizona Department of Economic Security

TABLE A6
JOB CREATION: OCTOBER 1988 OVER OCTOBER 1987

Rank		Percent Change
1	Nevada.....	6.59%
2	Oregon.....	4.92%
3	Washington.....	4.69%
4	New Hampshire.....	4.51%
5	Virginia.....	4.50%
6	Florida.....	4.01%
7	Indiana.....	3.85%
8	Vermont.....	3.77%
9	Maine.....	3.60%
10	California.....	3.49%
11	Utah.....	3.43%
12	Idaho.....	3.27%
13	Delaware.....	3.12%
14	Wisconsin.....	3.09%
15	Minnesota.....	3.04%
16	South Carolina.....	2.94%
17	North Carolina.....	2.69%
18	Iowa.....	2.55%
19	Ohio.....	2.43%
20	Illinois.....	2.39%
21	Kentucky.....	2.35%
22	Massachusetts.....	2.33%
23	New Mexico.....	2.24%
24	New Jersey.....	2.14%
25	Pennsylvania.....	2.11%
26	Arkansas.....	1.99%
27	New York.....	1.71%
28	Connecticut.....	1.63%
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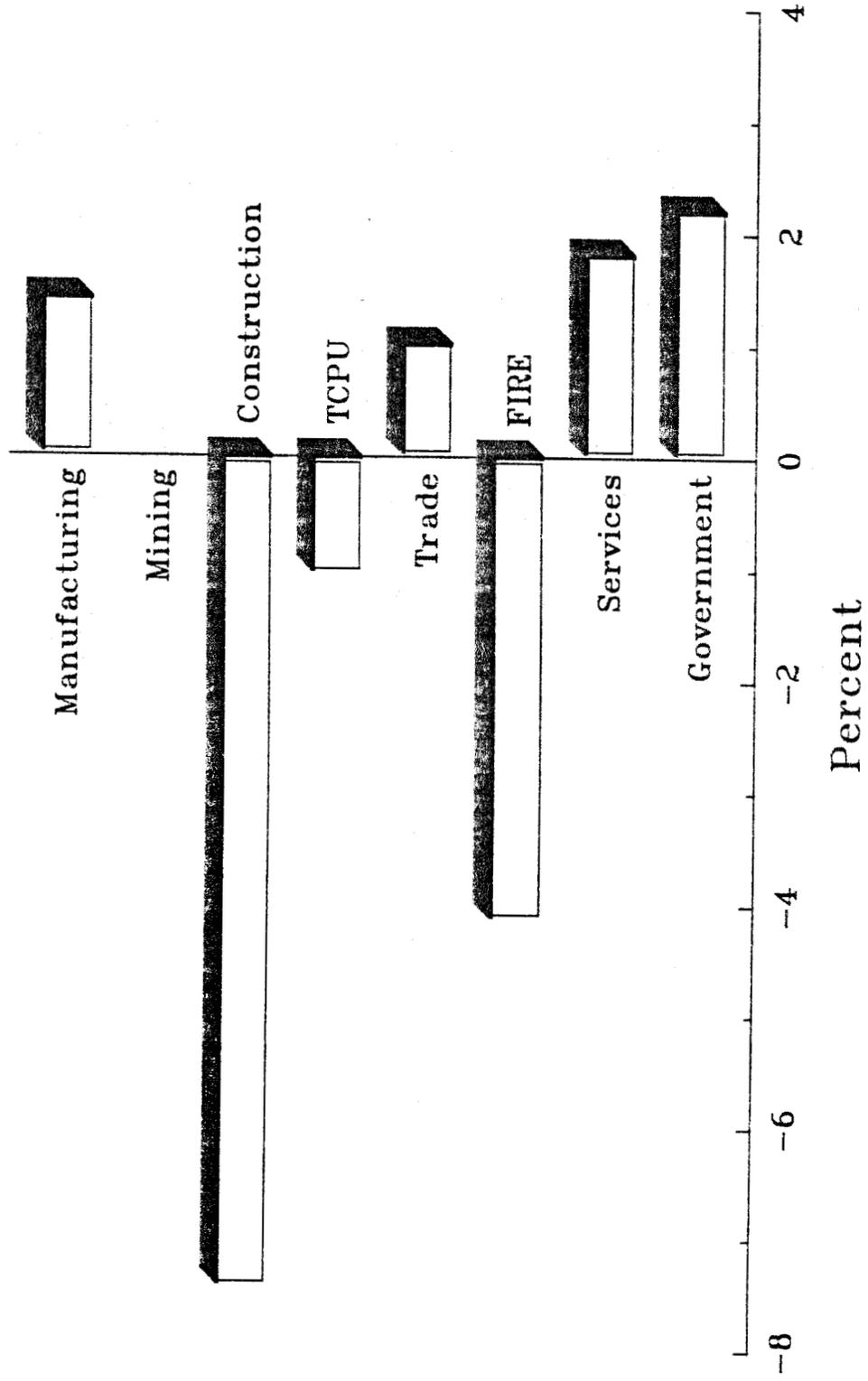
Source: Economic Outlook Center, College of Business, Arizona State University; and U.S. Department of Labor.

Figure A8

Arizona Employment

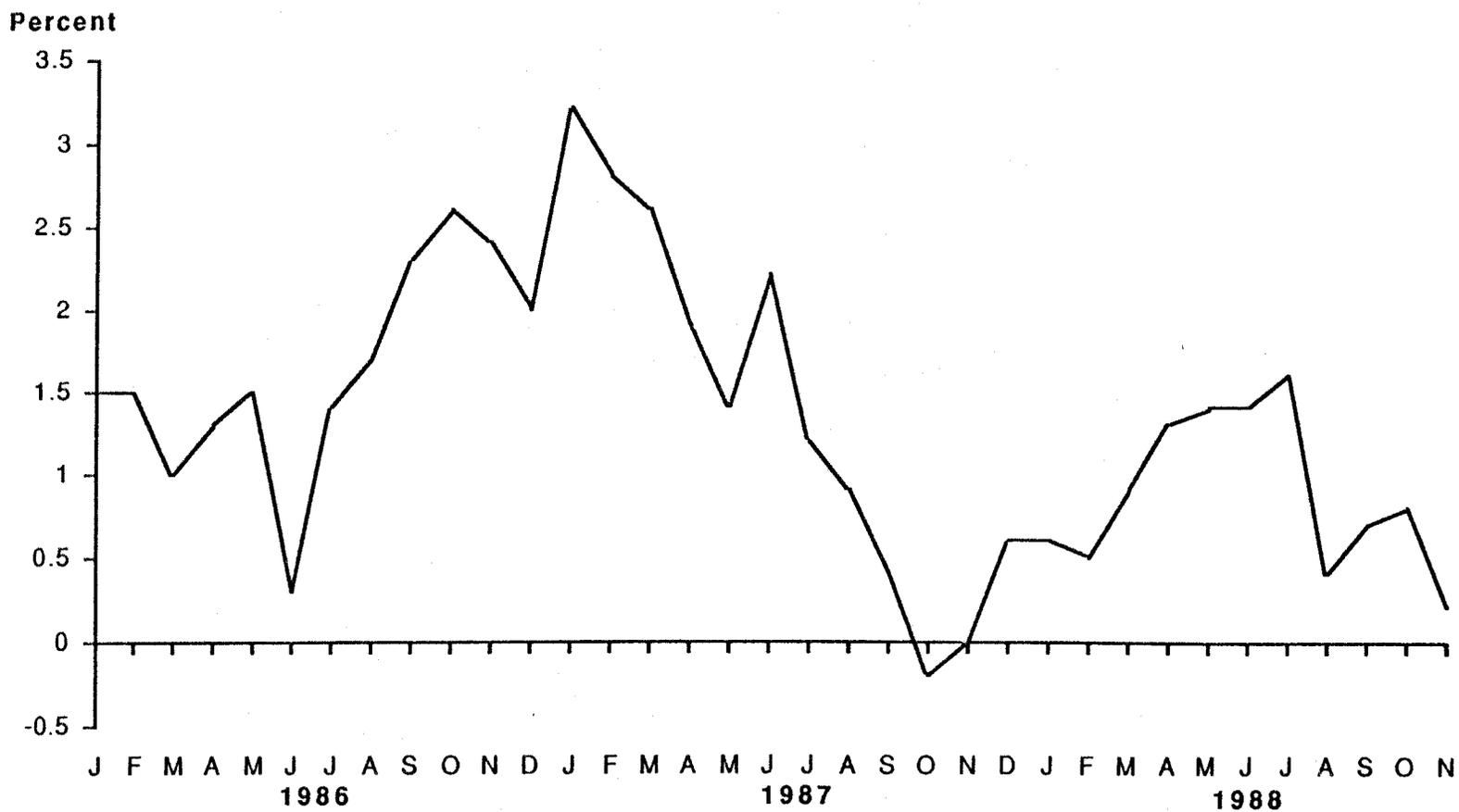
Percent Change

October 1988 over October 1987



Source: Center for Business Research,
College of Business, Arizona State University

FIGURE A9
MONTHLY CHANGE IN ARIZONA MANUFACTURING EMPLOYMENT
(Percent Change from Same Month, Previous Year)
1986-88



Source: Arizona Department of Economic Security

Structural Change or Cyclical Downturn?

The current weakness in the Arizona economy has caused some to question whether the downturn is a signal of a significant change in the business environment or simply a cyclical downturn that will soon be reversed. Items in the national press have suggested that there are unusual elements present which will impact the future potential growth of Arizona. The most likely interpretation of the current weakness in the Arizona economy is that it is due primarily to overbuilding caused by favorable tax laws, availability of financing, and optimism nurtured by vigorous population inflows and rates of job growth which were not sustainable. The prognosis is that -- in the absence of a national recession -- a return to levels of growth approximating the long term Arizona average will be achieved within 18 - 24 months.

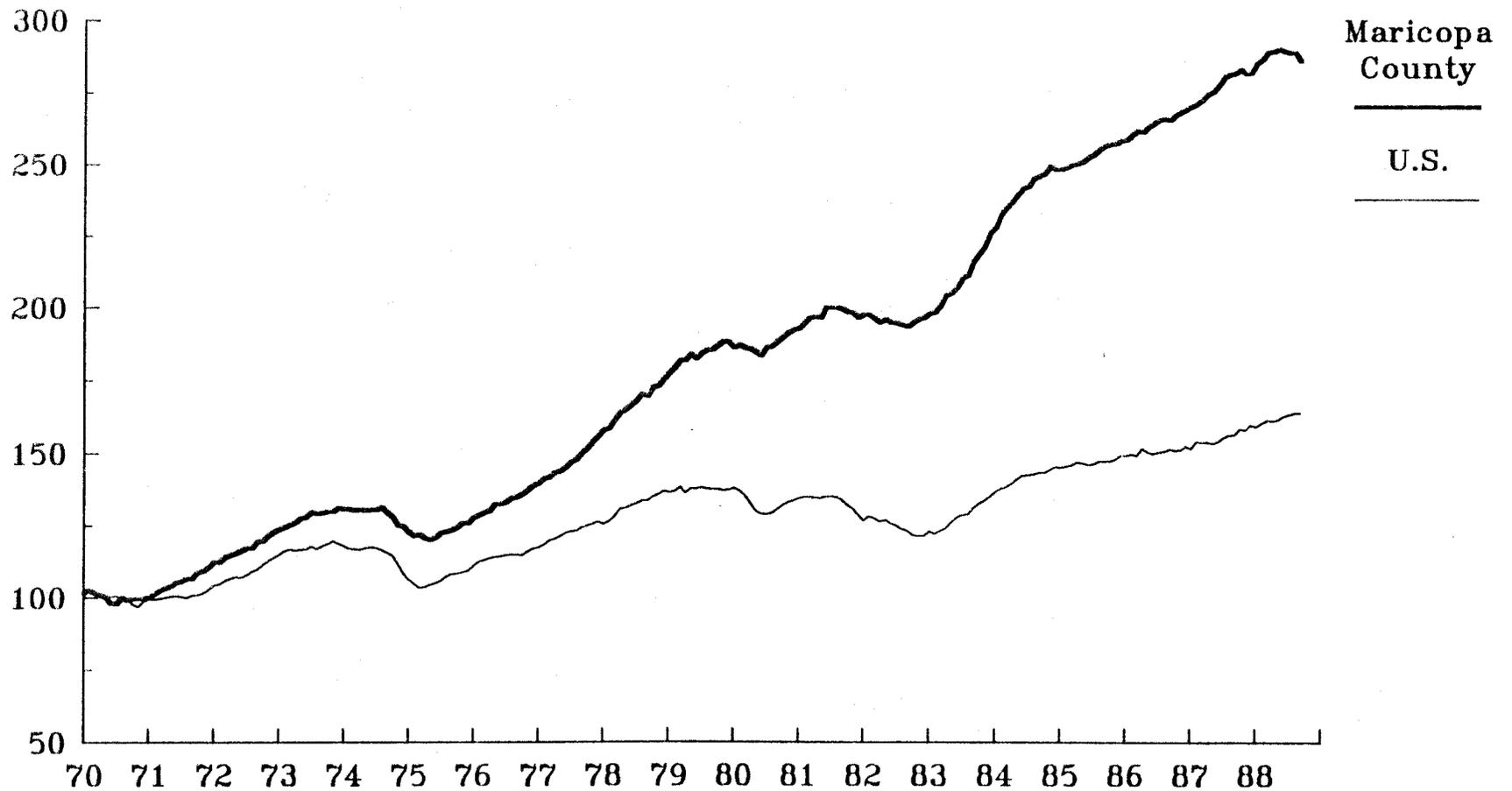
Long Run Cyclical Behavior of the Arizona Economy

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Population

Although population flows have slowed, the current experience is similar to previous slow growth episodes (Figure A11). The typical period from trough to peak of migration activity is about four years, with a peak-to-peak span of about

Figure A10
Maricopa County Coincident Index
vs. National Coincident Index
(1970=100)

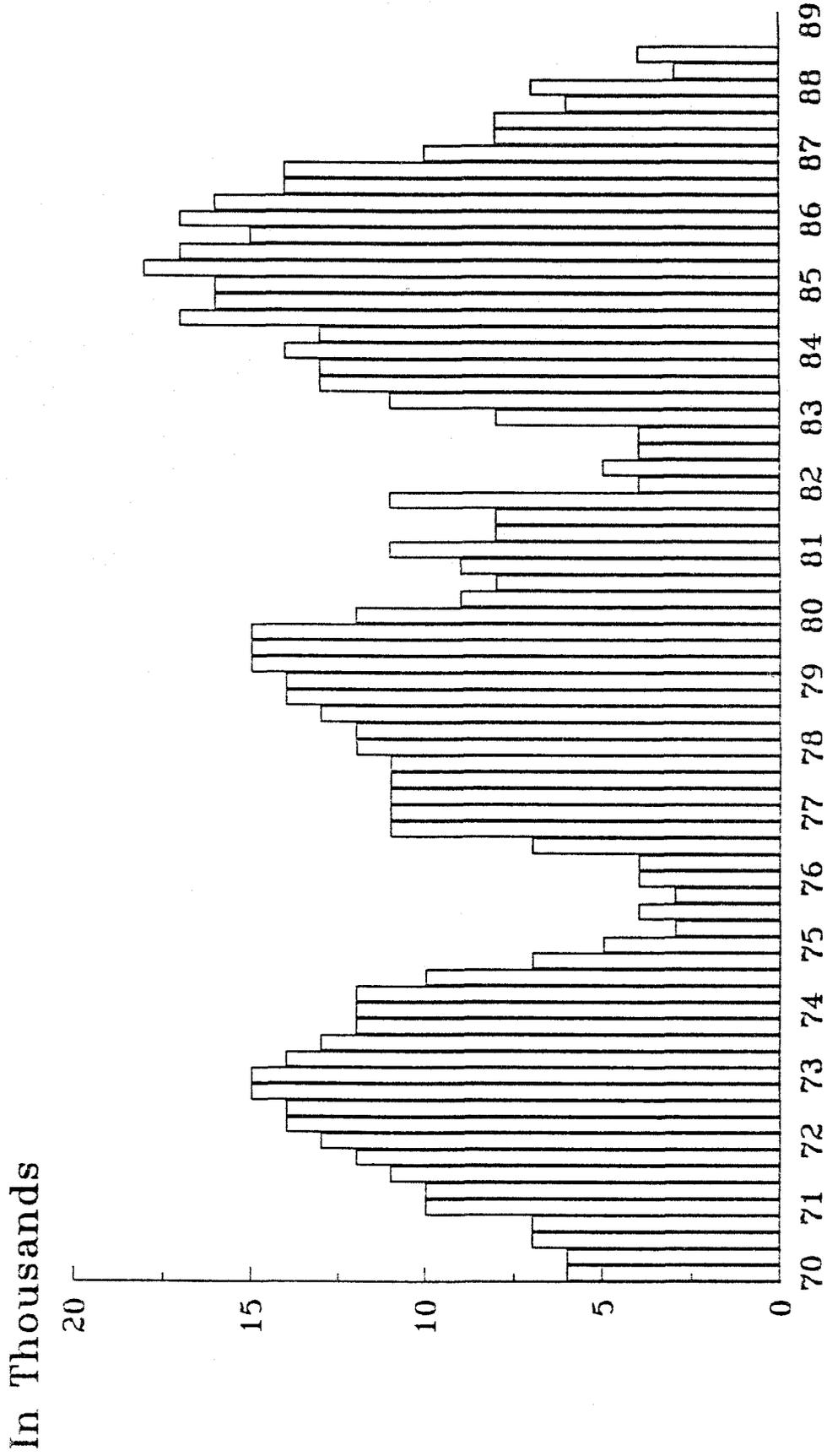


Source: Center for Business Research,
College of Business, Arizona State University

Figure A11

Net Migration

Maricopa County



Source: Center for Business Research,
College of Business, Arizona State University

eight years. The most likely situation in the current slowdown is thus two - three more quarters of weak population growth followed by gradual immigration increases after that.

Employment

Historical employment data seem to confirm this outlook (Figure A12). Peak-to-peak and trough-to-trough employment levels are observed at six- seven year intervals since 1970. The low point of 1982 was followed by a peak in 1984. It is likely the Arizona economy will "bottom out" in 1989 and move to a more expansionary mode during 1990.

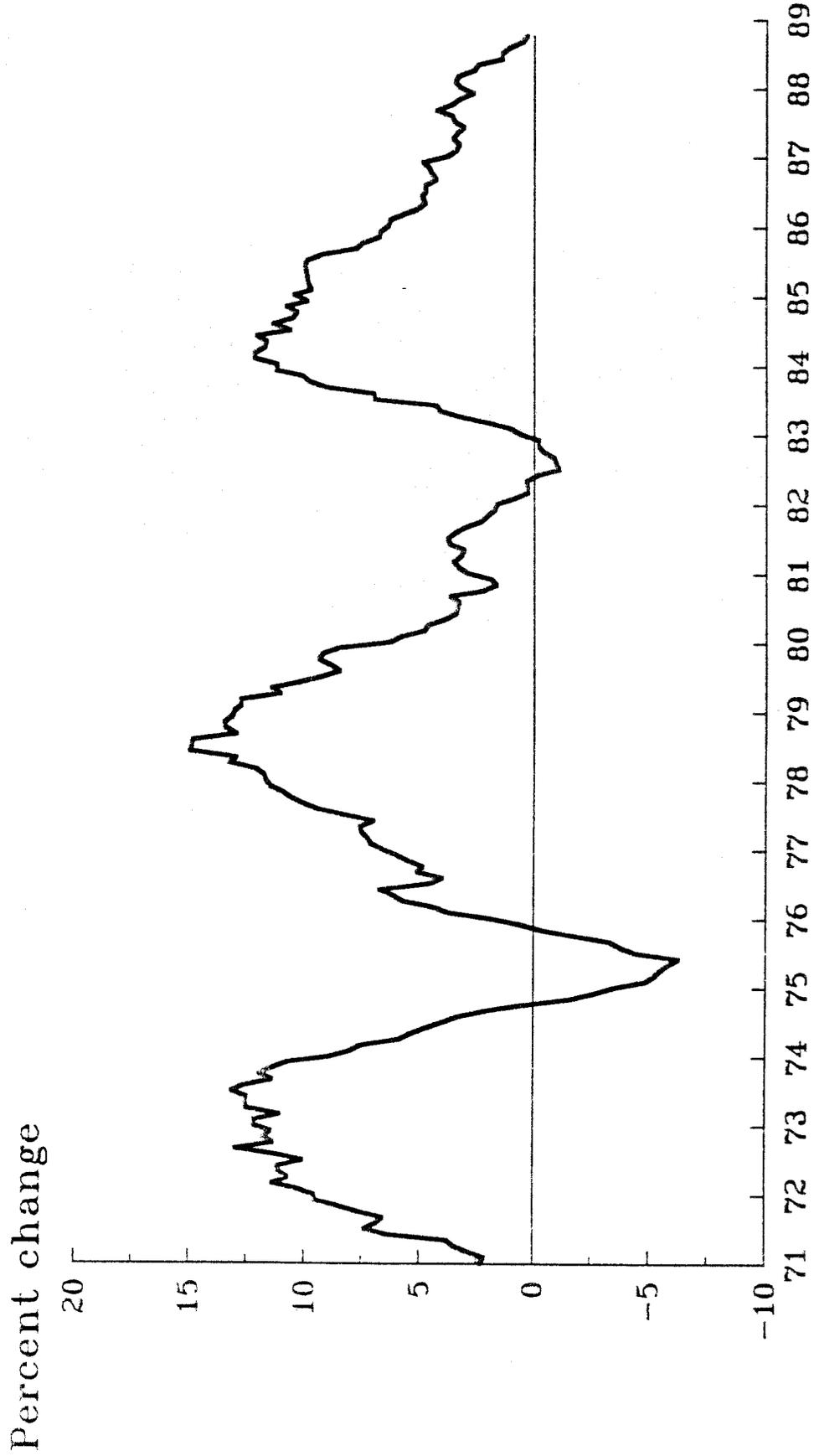
In summary, the diagnosis of the ailments of the Arizona economy is that (a) overbuilding led to reduced construction employment; (b) the recovery of the Midwest and diminished Arizona job opportunities combined to reduce population inflows; (c) Arizona industries structured to serve both local and newly arrived residents were forced to reduce activity levels; (d) the result was a cyclical downturn which will be reversed within the next 18-24 months and followed by a return to higher rates of population and job growth.

Consensus Forecast from Blue Chip Panel

The current outlook for 1989 by the Arizona Blue Chip panel of Arizona economic experts calls for the coming year to be very similar to 1988 in terms of overall growth (Table A7). Job creation is expected to be in the range of 3 percent, about one half that of the long run Arizona average rate of job growth.

The panel expects the construction sector, a key driver of the Arizona economy, to recover by 1990. However, some analysts predict an even longer period for surplus office, retail, and commercial space to be absorbed. Differing forecasts of net immigration underlie these alternative views. It is evident that

Figure A12
Total Non-Agricultural Employment
Metropolitan Phoenix
Percent Change from Same Month, Previous Year



Source: Arizona Department of Economic Security

TABLE A7
ARIZONA BLUE CHIP FORECAST FOR 1989

SOURCE:	ANNUAL PERCENT CHANGE 1989 FROM 1988										AVERAGE RATE FOR 1989		
	AZ Current \$ Personal Income	U.S. GNP Deflator	AZ Real Personal Income	AZ Retail Sales	AZ Wage & Salary Empl.	AZ Mfg. Empl.	AZ Housing Permits	AZ Pop. Growth	Metro Phx. CPI	U.S. 3-Mo. T-Bills	U.S. Aaa Bonds	AZ Unempl. Rate	
ASU - Economic Outlook Center	6.6	4.2	2.3	4.5L	2.5L	(0.4)L	(14.4)	2.2	4.8	7.4	10.1	6.8	
Department of Economic Security	7.0	4.1	2.7	6.0	2.7	1.6	—	3.6H	5.1	7.0	10.1	6.9	
Eggert Economic Enterprises	6.8	4.5	2.6	5.9	2.7	2.5	(3.0)	2.3	4.9	7.2	9.8	6.8	
Epic Enterprises Inc.	7.0	4.0	2.7	5.0	2.5L	2.0	(10.0)	2.5	5.0	7.5	10.4	6.8	
First Interstate Bank of Arizona	7.5	4.8	2.7	6.5	3.2	4.5H	5.0	2.5	5.2	7.5	10.5	6.8	
Joint Legislative Budget Committee	7.1	4.4	2.7	5.3	2.8	2.3	(10.0)	2.3	4.8	7.9H	10.4	6.8	
Moore Economic Research	6.5	4.6	3.0	5.3	2.8	2.5	(7.0)	2.5	5.5H	7.2	10.6H	6.6	
NAU - BBER	7.0	4.9H	2.1L	5.6	3.0	2.8	0.0	2.8	4.7	7.4	10.5	6.4	
Office of the Treasurer	6.6	3.6L	2.9	5.9	2.8	2.5	—	—	3.9L	5.9L	9.4L	6.9	
Phoenix Chamber of Commerce	7.5	4.1	3.3	6.2	3.5H	3.0	9.0	2.5	4.8	6.7	9.5	7.2H	
The Tanner Companies	7.8	4.3	3.6	—	3.3	3.5	15.0H	3.0	4.5	6.5	9.9	6.6	
U of A - DEBR	8.0H	4.2	3.8H	7.6H	3.1	2.2	(24.0)L	2.1L	5.3	7.7	10.3	6.8	
US West Communications	6.4L	4.5	3.4	—	3.2	2.2	9.6	3.4	4.6	6.3	9.8	6.0L	
Valley National Bank	7.2	4.2	3.0	6.0	2.8	3.0	(5.0)	2.4	5.0	7.5	10.5	7.0	
1989 Consensus - This Month	7.1	4.3	2.9	5.8	2.9	2.4	(2.9)	2.6	4.9	7.1	10.1	6.7	
- Last Month	7.0	4.4	2.7	5.9	2.9	2.6	(2.5)	2.7	4.9	7.1	10.1	6.7	
Range: Bottom 3 Avg.	6.5	3.9	2.3	5.3	2.7	1.1	(16.1)	2.2	4.3	6.1	9.6	6.3	
Top 3 Avg.	7.6	4.8	3.6	6.5	3.3	3.7	11.2	3.3	5.3	7.7	10.5	7.0	

Basic data sources:

(1) Arizona personal income in current \$'s, (2) Gross national product implicit price deflator, and (3) Arizona personal income in 1982 \$'s, Bureau of Economic Analysis; (4) Arizona retail sales, Arizona Department of Revenue; (5) Arizona total nonagricultural wage and salary employment, and (6) Arizona manufacturing employment, DES; (7) Arizona housing authorizations, ASU - CBR; (8) Arizona population; (9) Metropolitan Phoenix consumer price index, ASU - CBR; (10) 3-month Treasury bills, Federal Reserve Board; (11) Aaa Corporate bonds, Moody's Investor Service; (12) Arizona unemployment rate, DES.

population flows, business expansions, and new business births are crucial determinants of the rate of absorption of existing construction inventory.

Long term forecasts by the Department of Economic Security and the U.S. Census Bureau call for Arizona to be among the leading states in population growth during the next two decades. Population increases are anticipated to total approximately one million people, even under the lowest growth scenarios now available.

Although there exist differences of opinion on the exact timing, all analysts on the consensus panel believe the current sluggish economic growth in the Arizona economy will eventually give way to somewhat more rapid expansion as the construction industry recovers from current overbuilding problems. However, a return to the spectacular growth of the 1983-1987 period is not likely. The aging baby boomers will influence a population less inclined to migrate from state to state and the overall workforce will increase at a slower rate than in the past.

APPENDIX B

THE BUSINESS CLIMATE IMPACT OF PROPOSED TAX CHANGES

During 1987, new wage and salary jobs in the Arizona economy increased at a rate of growth of 3.4 percent. In 1988, the expansion of the Arizona economy slowed until, by year end, new jobs creation was taking place at a rate of less than one percent. While the overall Arizona economy is not in recession (defined as a negative rate of growth in total employment), industries linked to real estate and construction have experienced job losses and weakness has spread from these sectors to other parts of the general economy.

Need for Examination of Business Climate Impact

In light of the marked slowdown in Arizona, the rapid rise in bankruptcies and foreclosures, and the inevitable comparisons drawn by national media between the Arizona experience and downturns in Texas, it is appropriate to examine the potential impact of a \$255 million balanced budget tax and expenditure proposal on the Arizona business climate. The essential question at hand is how tax and expenditure changes of the magnitude and composition proposed will affect (a) Arizona's business climate as measured by various rankings and surveys and (b) actual economic growth and development in the state.

Business Climate and Relocation

The "business climate" is defined here to include those factors that influence business site location decisions for new facilities, whether branches, franchises, expansions or relocations of any other type. Facilities are broadly defined to include offices, manufacturing or assembly plants, warehouses, distribution centers, research and development installations, and corporate headquarters.

Factors examined are those included in business climate rankings (such as produced by Grant Thornton or Inc. magazine), or actually reported as important by business managers with knowledge of site location decisions. In addition, those business climate factors shown to be statistically associated with growth by research studies of economic development are reviewed. Given the purpose of this study, the specific role of taxes as a business climate factor will be emphasized.

Throughout the discussion, it is assumed that a loose ordering of priorities exists for facilities sought for Arizona. Corporate headquarters and research facilities are assumed highly desirable because they provide high incomes, little pollution, and a significant corporate commitment to the state. Firms in the early stages of the product cycle (development and expansion) are assumed desirable because of their potential for rapid growth as they move toward mass production with limited competition in national and international markets. Somewhat less desirable – but certainly welcome – are those firms with products in the final stages of the product cycle where output is highly standardized, cost structures are extremely competitive, and the potential for movement to offshore facilities is everpresent.

The Sources of New Jobs

As background to the general topic of determinants of growth and business relocation, the informed observer may be well aware that most jobs are created not by business relocations, but by firm births and expansion of existing firms. Not since the McDonnell-Douglas relocation has Arizona experienced a corporate relocation of major magnitude. Yet, the state has succeeded in creating some thirty to forty thousand jobs per year (over 1,000 per week during some periods), primarily through expansion of existing businesses and the start-up of new firms.

Business Relocation Data

In fact, it is no wonder that there have been few major corporate relocations into Arizona. Today, statistical studies show that a very small percentage of firms actually relocate in any given year. A study by James Miller reported that, over the period 1969-1975, only two percent of all manufacturing firms relocated, and only one half of one percent of all manufacturing firms relocated across state lines. Three fourths of all manufacturing relocations involved movements to nearby counties in the same state.

Why are Taxes Important in Relocation?

This tendency of firms to relocate nearby their current site explains why business taxes are considered by some to be crucial in the relocation decision. By moving to a neighboring locality, a firm may retain its current markets, suppliers, and labor force, but possibly lower its taxes. Thus, taxes are the "swing factor" because other key determinants of costs and revenues often stay unchanged after relocation.

Implications for Arizona

The implications for Arizona are worth noting. In seeking corporate relocations as a major source of new employment, the state is asking firms to make the extremely risky decision of abandoning workers, markets, suppliers, and lines of credit in exchange for what Arizona can offer in replacement. Thus, as a preface to assessing the role of taxes in business climate, it must be recognized that the attractions Arizona offers in its business climate package must be competitive on a broader range of fronts than states in the East who are only seeking to lure firms a short distance. In brief, low taxes may lure a firm

across the river but may not be significant in luring that same firm across the country.

Early Interest In Business Climate

Interest in factors influencing "business climate" seems to be traceable to the period immediately after World War II when industrial firms from the North accelerated their exodus to lower cost regions of the country. States and local areas in the South and West began to experiment with inducements to relocation such as revenue bonds, publicly provided infrastructure, and industry tailored vocational training programs. Local business and government officials have since been concerned with measuring business climate and comparing rankings of states on the basis of published business climate ranking. Yet, there is no clear definition of what business climate is or how to measure it.

Business Climate Factors

In the broadest sense, the business climate of a state is related to its attractiveness as a location for economic activity. Since the objective of firms ultimately is profit maximization, business climate must operationally be linked to factors which act to minimize costs or to enlarge revenues. Factors influencing costs include direct labor payments, degree of unionization, productivity of workers, manhours lost to strikes, energy costs, and such government controlled variables as taxes, unemployment compensation payments, and environmental controls.

On the revenue side, factors introduced often include population, population change, and income levels, to measure market conditions. In recent times, business climate studies have included factors which attempt to measure "quality

of life" such as education expenditures, health care, and quality of transportation services.

The Ranking Studies: Fantus, Grant, and Inc. Magazine

Development of business climate rankings became somewhat of an industry in itself in 1975, when the Illinois Manufacturers Association engaged the Fantus Company, a site location consulting firm, to undertake a study to "persuade the Illinois General Assembly to pass laws correcting the state's deteriorating manufacturing sector."

The objective was to compare the 48 states on 15 indicators, 10 of which reflected levels of state and local taxation. The resulting state rankings were thus closely related to the level of taxation in each state. The number one ranked state in this study was Texas, followed by Alabama.

The Fantus company refused to conduct a follow-up study, contending such studies were "unusable in the site selection process." The Alexander Grant company (now Grant Thornton), a Chicago-based accounting firm, continued the studies for the Illinois Manufacturer's association, publishing its first rankings in 1979.

Arizona's Grant Thornton Ranking

In the most recent Grant Thornton study, published in July of 1988, Arizona ranked seventh among "less manufacturing intensive states." States ranked above Arizona include North and South Dakota, Nebraska, Nevada, Kansas and Virginia (see Table B1). Arizona scored most highly on "change in tax effort," where we were second in the nation, and "unionization," where we were third (Table B2). Somewhat surprisingly for a state which prides itself on quality of life,

**TABLE B1
GRANT THORNTON
1987 STATE RANKINGS:
LOW MANUFACTURING INTENSITY**

State	Rank	Gov't. Controlled Rank	Non-Gov't. Controlled Rank
South Dakota	1	1	2
North Dakota	2	7	1
Nebraska	3	3	4
Nevada	4	4	6
Kansas	5	8	3
Virginia	6	2	14
Arizona	7	6	11
Colorado	8	13	7
Maryland	9	5	16
Utah	10	12	9
New Mexico	11	11	10
Iowa	13	14	8
Idaho	13	10	12
Washington	14	17	13
Minnesota	15	21	5
Kentucky	16	9	19
Oregon	17	15	18
Oklahoma	18	18	17
Wyoming	19	20	15
Montana	20	16	20
West Virginia	21	19	21

**TABLE B2
GRANT THORNTON
SUMMARY OF ROUNDED FACTOR WEIGHTINGS**

Rank	Factors	1987 Factor Weight	1987 Arizona National Rank
1	C1: Wages.....	8.42%	23
2	D1: Available Workforce.....	6.14	21
3	C3: Unionization.....	5.83	3
4	B4: Workers' Compensation Insurance Levels*	5.74	33
5	D3: Value Added.....	5.20	18
6	C2: Change in Hourly Wages over Five Years	5.15	16
6	D4: Fuel and Electric Energy Costs.....	5.15	20
8	B1: Average Unemployment Compensation Benefits*	5.14	5
9	A1: Tax Effort*	4.90	28
10	A3: Expenditure vs. Personal Income Growth over Five Years*	4.89	32
11	A5: State Business Incentives*	4.86	19
12	B3: Statutory Average Workers' Compensation Cost per Case*	4.74	24
13	B2: Unemployment Compensation Trust Fund Net Worth*	4.62	16
14	D2: Manhours Lost.....	4.61	18
15	E1: Education*	4.34	31
16	C4: Change in Unionization over Five Years	4.19	32
17	A2: Change in Tax Effort over Five Years*	3.81	2
18	A4: Debt Growth vs. Personal Income Growth over Five Years*	3.32	37
19	E3: Cost of Living.....	3.28	31
20	E2: Health Care.....	3.01	32
21	E4: Transportation*	2.66	40
		100.00%	

*Indicates factor is controlled or strongly influenced by state or local governments.

Arizona was particularly low rated in the quality of life areas including education, health care, and transportation.

Criticisms of the Grant Thornton Rankings

Although widely followed, the Grant Thornton rankings have been subject to a number of harsh criticisms:

1. The various factors involved in the business climate rankings are weighted by representatives of state manufacturer's associations on the basis of what they believe should be important to business location. Factors that actually influence relocation and site selection, as determined by business managers and owners, are not included.

2. The emphasis on taxes, which can be traced to the original Fantus study, is disproportionate to the importance of taxes in total costs of operating a business firm. The costs of labor are many times the cost of taxes, but labor is weighted only about twice as great as taxes by the Grant Thornton panel (see Table B2).

3. Certain business climate factors which attempt to measure "quality of life" can only be obtained through tax revenue and government expenditures. But higher taxes and government expenditures are a "negative" while education, health care, and transportation outlays enter the factor list again as "positive" because they influence quality of life. Government spending and taxes are thus treated inconsistently.

4. The rankings have little or no predictive power. That is, there is no statistical correlation between a favorable business climate ranking and growth in employment or business relocation. States such as Mississippi, which often are highly rated, are usually at the bottom of rankings of job creation or new business growth, in spite of their "favorable" business climates.

TABLE B3
GRANT THORNTON: 1987
ARIZONA OVERALL RANKINGS
(Among Low Manufacturing Intensity States)

All Factors.....	7
Government Factors*.....	6
Non-Government Factors.....	11
Government Fiscal Policies	12
Employment Costs	17
Labor Costs	15
Use of Resources.....	12
Quality of Life	40

*Government factors identified on previous table by *

5. The Grant Thornton rankings are developed specifically for manufacturing, a sector which accounts for less than 15 percent of Arizona employment. They are not necessarily intended to yield insight into those the location decisions of such highly valued employers as research facilities, corporate headquarters, or a major business service firm proposing to locate a central information processing center.

6. The rankings neglect social and economic factors within the state which encourage formation of new business and expansion of existing business, the major source of employment opportunities.

The Inc. Magazine Ranking

In response to this last criticism, Inc. magazine has developed a business climate ranking which rates the states on job growth, new business births, and the proportion of new businesses which are high growth. In the most recent Inc. ranking (October 1988), Arizona is listed as number one among all states (Table B4). This is the second consecutive year in which Arizona ranked first in the Inc. business climate rankings.

Impact of Fiscal Changes on Grant Thornton Business Climate Rankings

The proposed change in taxes and expenditures of \$255 million would impact upon the Grant Thornton rankings in two ways. First, the tax effort and change in tax effort factors would increase. At present, Arizona ranks 28th in tax effort and 2nd in change in tax effort. Note that since the Grant Thornton rankings are relative, it is impossible to accurately quantify the change in rank resulting from the tax increase because it is not known what will be happening in the other states. Considered in isolation, the effect on the tax factors would be negative for the Arizona business climate ranking.

Table B4

**RATING THE STATES 1988:
NEW JOBS, NEW COMPANIES, AND THE CLIMATE FOR GROWTH**

Rank/State (1987 rank)	No. New Jobs (In thous.)	Growth In Jobs	Score	No. New Companies	Business Birthrate	Score	No. Fast- Growth Companies	% Fast- Growth Companies	Score	Total Score
	1	2	3	4	5	6	7	8	9	10
1. ARIZONA (1)	267.9	23.30%	31.77	1,769	2.67%	33.17	451	4.00%	29.08	94.03
2. NEW HAMPSHIRE (2)	95.6	22.72	31.26	499	2.32	24.63	131	4.46	33.33	89.21
3. MARYLAND (3)	273.1	15.71	24.95	1,965	2.55	28.20	558	4.30	31.85	85.00
4. FLORIDA (6)	936.4	22.70	31.23	6,540	2.88	33.33	1,606	3.06	20.40	84.96
5. VIRGINIA (5)	463.3	20.65	29.39	2,292	2.53	27.89	602	3.83	27.51	84.79
6. GEORGIA (4)	420.9	17.86	26.88	2,983	2.79	31.93	665	3.43	23.82	82.63
7. DELAWARE (7)	56.2	21.06	29.76	246	2.25	23.54	64	3.95	28.62	81.92
8. NEVADA (10)	102.3	25.03	33.33	498	2.57	28.51	104	2.87	18.64	80.49
9. CALIFORNIA (8)	1,573.4	15.27	24.55	12,352	2.37	25.40	3,459	3.59	25.29	75.25
10. TENNESSEE (11)	273.7	15.60	24.85	1,872	2.41	26.02	417	3.06	20.40	71.27
11. NORTH CAROLINA (13)	400.1	15.99	25.20	2,137	2.17	22.29	504	3.37	23.26	70.75
12. MASSACHUSETTS (9)	282.8	10.26	20.04	2,335	1.95	18.87	619	3.91	28.25	67.17
13. VERMONT (18)	39.4	18.67	27.61	205	1.69	14.83	53	3.48	24.28	66.72
14. NEW JERSEY (17)	365.6	11.39	21.06	3,237	2.09	21.05	794	3.33	22.89	65.00
15. MAINE (26)	82.0	19.29	28.16	359	1.64	14.06	92	3.26	22.25	64.47
16. SOUTH CAROLINA (14)	183.2	14.95	24.26	1,141	2.23	23.23	214	2.54	15.59	63.08
17. HAWAII (20)	55.8	13.60	23.04	414	2.0	19.65	106	3.00	19.84	62.54
18. CONNECTICUT (16)	168.5	11.43	21.09	1,241	1.88	17.79	338	3.40	23.54	62.42
19. ALABAMA (21)	156.2	11.53	21.18	1,235	2.17	22.29	231	2.54	15.59	59.07
20. TEXAS (12)	185.5	2.93	13.44	8,289	2.53	28.67	1,732	2.60	16.15	58.26
21. WASHINGTON (24)	251.8	15.69	24.92	1,624	1.73	15.46	427	2.59	16.06	56.43
22. UTAH (15)	56.9	9.81	19.64	642	2.08	20.90	144	2.56	15.78	56.31
23. MICHIGAN (19)	395.8	12.04	21.65	2,752	1.67	14.52	743	2.98	19.66	55.83
24. INDIANA (25)	254.0	12.34	21.91	1,636	1.75	15.77	361	2.77	17.72	55.39
25. OHIO (23)	444.0	10.76	20.49	3,240	1.66	14.37	889	2.96	19.47	54.33
26. RHODE ISLAND (27)	44.4	11.07	20.77	316	1.44	10.95	95	3.30	22.61	54.33
27. NEW YORK (28)	673.6	9.13	19.02	6,734	1.77	16.08	1,741	2.93	19.20	54.30
28. PENNSYLVANIA (32)	378.5	8.36	18.33	3,469	1.64	14.06	864	3.20	21.69	54.08
29. MINNESOTA (29)	210.2	12.05	21.65	1,396	1.54	12.50	411	2.88	18.74	52.88
30. KENTUCKY (34)	160.6	13.71	23.15	1,194	1.86	17.48	210	2.13	11.81	52.43
31. COLORADO (22)	38.5	2.84	13.37	1,670	2.26	23.69	365	2.34	13.75	50.81
32. OREGON (33)	131.2	13.47	22.93	958	1.53	12.35	274	2.46	14.86	50.13
33. WISCONSIN (35)	207.7	11.09	20.79	1,408	1.48	11.57	349	2.55	15.69	48.05
34. ILLINOIS (36)	350.1	7.67	17.71	3,788	1.61	13.59	938	2.65	16.61	47.91
35. MISSOURI (31)	205.2	10.43	20.19	1,677	1.59	13.28	376	2.37	14.02	47.49
36. NEW MEXICO (30)	41.7	8.53	18.48	482	1.86	17.48	94	1.96	10.24	46.19
37. KANSAS (38)	64.7	6.89	17.01	946	1.63	13.90	202	2.34	13.75	44.66
38. MISSISSIPPI (40)	71.3	8.85	18.77	664	1.73	15.46	103	1.69	7.74	41.97
39. ARKANSAS (37)	82.9	10.89	20.60	657	1.52	12.19	129	1.83	9.04	41.83
40. WEST VIRGINIA (41)	13.8	2.39	12.96	479	1.74	15.61	68	1.94	10.05	38.62
41. NEBRASKA (43)	52.6	8.68	18.61	461	1.19	7.06	124	2.05	11.07	36.74
42. LOUISIANA (44)	-77.7	-4.95	6.35	1,430	1.8	16.54	289	1.90	9.68	32.58
43. IDAHO (42)	15.2	4.79	15.12	291	1.36	10.02	52	1.47	5.71	30.84
44. IOWA (46)	72.4	6.93	17.04	657	1.05	4.89	141	1.65	7.37	29.30
45. OKLAHOMA (47)	-83.0	-7.08	4.43	1,211	1.64	14.06	227	1.53	6.27	24.75
46. ALASKA (39)	-9.6	-4.62	6.65	187	1.53	12.35	32	1.33	4.42	23.42
47. SOUTH DAKOTA (45)	13.9	5.88	16.10	149	0.9	2.55	34	1.33	4.42	23.07
48. MONTANA (48)	-1.8	-0.67	10.21	257	1.12	5.97	49	1.15	2.76	18.94
49. NORTH DAKOTA (49)	3.2	1.30	11.98	159	1.02	4.42	22	0.96	1.00	17.40
50. WYOMING (50)	-21.2	-10.90	1.00	105	0.8	1.00	25	0.97	1.09	3.09

Chart compiled by special projects editor Sara Baer-Sinnott.

Any changes, however, would not be recorded for several years. This is because the Grant Thornton study for a given year is based on data from two years before. Thus, changes made in the 1989-90 fiscal year would not affect the rankings until 1992. Therefore, an effect on the Grant Thornton business climate ranking would not be felt for some time, and during this time competing states may very well increase their taxes, lessening the effect on Arizona's relative ranking. The second impact of the fiscal changes proposed would be felt on the expenditure side. As government spending improved education, health care, and transportation, Arizona's ranking on these factors should be enhanced. Education, in particular, is important, since it is weighted more highly than change in tax effort. Again, there would be a two year lag before these variables enter the data set used for ranking. Positive results would be seen by 1992.

A third variable influenced is "expenditure vs. personal income growth," which would also rise. As with change in tax effort, this factor is measured over a five year period, so its effects are felt slowly. On net, three variables would move in an unfavorable direction and three would move in a positive direction.

Because of the higher weights of the tax effort and expenditure/income factors, the net effect is potentially a negative movement on the Grant Thornton ranking by 1992. However, it must be stressed that rankings are influenced by events in the 49 other states. The Grant Thornton ranking will definitely move unfavorably only if Arizona is the sole state to raise taxes. The most likely outcome is that the change in taxes and expenditures will not substantially change Arizona's Grant Thornton ranking, due to the offsetting influence of tax and expenditure factors, and actions by other states.

Impact on the Inc. Magazine Rankings

Since the Inc. magazine rankings are not based on fiscal variables, there would be no impact from the proposed tax changes on this business climate ranking.

Surveys of Factors Influencing Firm Relocation

Surveys of corporate executives and relocation professionals have been undertaken to attempt to determine those factors which actually influence business location decisions. Several of these are reviewed here to examine the possible consequences of higher Arizona taxes on executive decisions.

Surveys of Fortune 500 Executives

Major surveys of managers of the 500 largest manufacturing firms were conducted in 1976 and 1981. Executives were asked to rank factors which had influenced location decisions that had actually occurred during the past five years and those which would influence their decisions regarding the next facilities to be relocated.

Corporate Headquarters

The most important factor influencing the relocation of corporate headquarters was "quality of life for employees" (Table B5). This was followed by "personal preferences of executives" and "proximity to other facilities." Only one executive out of five listed "state and local attitude toward taxes on business and industry" as important in the location of corporate headquarters.

This survey indicates that Arizona will be competing for corporate relocations primarily on the basis of quality of life, transportation facilities, and the availability

TABLE B5
IMPORTANT FACTORS IN THE FUTURE LOCATION OF
CORPORATE HEADQUARTERS WITHIN NEXT FIVE YEARS

Factors	Percent Responding
1 Quality of life for employees.....	55%
2 Personal preferences of company executives.....	42
3 Proximity to other company facilities.....	34
4 Efficient transportation facilities for people.....	33
5 Availability of technical or professional workers.....	23
6 Business taxes.....	22
6 Costs of property and construction.....	22
8 Community receptivity to business and industry.....	20
9 Personal taxes.....	19
10 Calm and stable social climate.....	17
11 Availability of clerical workers.....	11
11 Productivity of workers.....	11
11 Proximity of customers.....	11
11 Financing inducements.....	11
15 Ample area for future expansion.....	8
16 Proximity to services.....	6
16 Availability of skilled workers.....	6
16 A growing regional market.....	6
19 Fiscal health of state and/or city.....	3
20 Availability of energy supplies.....	2
20 State and/or local posture on environmental controls and processing of Environmental Impact Reports.....	2
20 Proximity to raw materials, components, or supplies.....	2
20 Availability of unskilled or semi-skilled workers.....	2
24 Efficient transportation facilities for materials and products.....	-
24 Water supply.....	-
24 Adequate civic waste treatment facilities.....	-
No answer.....	16
(Companies which probably will relocate corporate headquarters in next 5 years = 100%)	(64)

Source: FORTUNE, *Why Corporate America Moves Where*, New York, N.Y. 1982.

of technically qualified workers. While taxes are important to executives, they are well down the list of factors influencing relocation.

These survey results do not seem to suggest that the proposed tax changes will adversely affect Arizona's chances of competing for corporate headquarters relocations. The Arizona "attitude" on taxation of business is not radically changed by the proposed tax increases, nor is a historical pattern of unjust or erratic tax changes present in the state.

Next Mainland Plant

Asked to rank factors influencing plant location in the future (see Table B6), the Fortune 500 executives listed "productivity of workers" as the number one concern. "Transportation" was second, tied with "community receptivity" to business. Business taxation was fourth while the "personal income tax structure" was 19th.

From this survey, it is evident that business taxes are more important to plant location than to relocation of corporate headquarters. However, the personal income tax structure is much less important for plant location than for corporate headquarters site change.

What is missing from the surveys is the weight placed on the relative components of worker productivity vs taxation levels. As mentioned above, since wage payments are many times larger than state and local taxes for a firm, it is likely that the weight for worker productivity significantly exceeds the weight given to tax variation.

Plant location may be affected in some cases by higher taxes in Arizona, but the survey results indicate that the state will lose such battles only to states that also have more productive work forces and better transportation facilities, as well as significantly lower taxes.

TABLE B6
COMPARATIVE IMPORTANCE OF FACTORS
IN LOCATING NEXT MAINLAND U.S. PLANT

Factors	Percent Responding	
	1981	1976
1 Productivity of workers.....	82	82
2 Efficient transportation facilities for materials and products.....	79	82
2 Community receptivity to business and industry.....	77	79
4 Business taxes.....	79	80
5 Availability of energy supplies.....	75	80
6 Ample area for future expansion.....	71	70
7 Costs of property and construction.....	70	71
7 Availability of skilled workers.....	70	65
7 Quality of life for employees.....	70	N/A
10 State and/or local posture on environmental controls and processing of Environmental Impact Reports.....	69	71
11 Water supply.....	66	68
11 Calm and stable social climate.....	66	62
13 Adequate civic waste treatment facilities.....	63	62
14 Availability of technical or professional workers.....	62	53
15 Financing inducements.....	61	51
15 Fiscal health of state and/or city.....	61	63
15 Proximity to customers.....	61	63
15 Availability of unskilled or semi-skilled workers.....	61	66
19 Personal taxes.....	60	60
20 Proximity to raw materials, components, or supplies.....	59	61
20 Proximity to services.....	59	60
20 Efficient transportation facilities for people.....	59	55
23 A growing regional market.....	57	55
24 Availability of clerical workers.....	49	47
25 Personal preferences of company executives.....	42	36
26 Proximity to other company facilities.....	37	37
N/A Style of living for employees.....	N/A	57

N/A: Not asked

Source: FORTUNE, *Why Corporate America Moves Where*, New York, N.Y. 1982.

Survey of Factors Actually Important in Plant Location

Fortune 500 executives were also asked to rank factors that had actually influenced a previous plant location decision. These results showed that "proximity to customers" and "availability of workers" were ranked higher than business taxes (Table B7). If this survey is strictly interpreted, it shows that, in order to lose a plant relocation on the basis of taxes, the competing states must also have more productive workers, better markets, larger labor pools, better transportation, and a community with a better attitude toward business.

Office Relocations

Similar results were obtained in a recent survey by Louis Harris and Associates for Cushman and Wakefield of Chicago. The Harris survey, conducted in the summer of 1988, asked executives what factors were "absolutely essential" in considering sites for locating office facilities. The responses listed access to markets first, followed by labor availability (Table B8). Tax policy was ranked fourth of seven factors and was listed as essential by 24 percent of executives.

Once again the weighting given to taxes vs. other factors is not known. (It would be incorrect to assume that, since no weightings are given, all factors are equally weighted.) However, the implication is clear that labor market considerations and market conditions are viewed first. If Arizona and another state are competitive on these two factors, then taxes will be considered by some executives as a "tie breaker." With higher taxes, Arizona will win some of these ties and will lose some of these ties, depending on the competing states (i. e. California or Nevada).

TABLE B7
MOST IMPORTANT FACTORS IN PICKING LOCATION FOR A PLANT
ACTUALLY LOCATED IN PAST 5 YEARS

Factors	Percent Responding	
	1981	1976
1 Productivity of workers.....	38	33
2 Proximity to customers.....	35	36
3 Efficient transportation facilities for materials and products.....	34	41
4 Availability of unskilled or semi-skilled workers.....	28	36
4 Community receptivity to business and industry.....	28	28
6 Business taxes.....	26	23
6 Availability of skilled workers.....	26	17
8 Proximity to raw materials, components, or supplies.....	23	26
9 Availability of energy supplies.....	21	33
9 A growing regional market.....	21	26
9 Costs of property and construction.....	21	22
12 Ample area for future expansion.....	17	17
12 Quality of life for employees.....	17	N/A
14 Financing inducements.....	16	11
15 Proximity to other company facilities.....	15	13
16 Availability of technical or professional workers.....	14	10
17 Water supply.....	13	11
17 State and/or local posture on environmental controls and processing of Environmental Impact Reports.....	13	11
19 Adequate civic waste treatment facilities.....	5	4
20 Calm and stable social climate.....	4	4
20 Personal taxes.....	4	2
22 Proximity to services.....	3	8
22 Fiscal health of state and/or city.....	3	4
22 Efficient transportation facilities for people.....	3	3
25 Personal preferences of company executives.....	2	2
26 Availability of clerical workers.....	1	1
N/A Style of living for employees.....	N/A	4
No answer.....	7	5
Average number of factors cited.....	4.6	4.5

(Companies which selected such a plant location in past 5 years = 100%)

N/A: Not asked

Source: FORTUNE, *Why Corporate America Moves Where*, New York, N.Y. 1982.

TABLE B8
"ABSOLUTELY ESSENTIAL" FACTORS
FOR LOCATING OFFICE FACILITIES

Rank	Factor	Percent Responding
1	Easy access to domestic markets, customers, or clients.....	51
2	The cost and availability of labor in the area.....	31
3	The cost, functionality, and expandability of available office space.....	28
4	The climate state and local government creates for business through tax policy and the extent of regulation.....	24
5	The quality of life for employees, such as the availability of housing, transportation, and recreational facilities.....	23
6	Easy access to international markets, customers, or clients.....	10
7	The economic development packages offered by locations you're considering.....	10

Source: *Business America Real Estate Monitor*, Cushman & Wakefield, 1988.

Other Facilities

The Louis Harris poll posed the same question to the same group of executives relative to site locations for manufacturing, warehousing, and distribution facilities. Once again markets and labor force were more important than taxes (Table B9). Tax policy was ranked fifth in importance.

If anticipated increases in population and labor force are experienced in Arizona during the decade of the 1990's (during which period Arizona will be among the two or three fastest growing states in the nation) it seems likely that Arizona will be competitive for office, manufacturing, warehousing, and distribution relocations in spite of the tax increases proposed, since the weightings given to markets and labor force most likely far exceed the weight of taxes in the actual location decision.

High Technology Facilities

A survey of more than 300 high technology businesses of "absolutely critical" factors influencing high tech site decisions failed to elicit any measurable response regarding taxation. Availability of technical personnel was the most often mentioned factor (Table B10), followed by "knowledgeable bankers." Interestingly, local wage levels ranked near the bottom, cited as absolutely critical by 2 percent of respondents. The Missouri researchers pointed out that the executives they interviewed were involved in innovative products still in the development stage. They drew a distinction between such firms and more traditional manufacturers, for whom "labor costs and tax incentives remain high on the list of priorities."

TABLE B9
"ABSOLUTELY ESSENTIAL" FACTORS FOR LOCATING
MANUFACTURING, WAREHOUSE, OR DISTRIBUTION FACILITIES

Rank	Factor	Percent Responding
1	Easy access to domestic markets, customers, or clients.....	51
2	The availability of sites with existing electricity, water, sewage, and roads.....	49
3	The cost and availability of labor in the area.....	48
4	Easy access to raw materials.....	28
5	The climate state and local government creates for business through tax policy and the extent of regulation.....	27
6	The economic development packages offered by locations you're considering.....	17
7	The quality of life for employees, such as the availability of housing, transportation, and recreational facilities.....	15
8	Easy access to international markets, customers, or clients.....	10

Source: *Business America Real Estate Monitor*, Cushman & Wakefield, 1988.

TABLE B10
"ABSOLUTELY CRITICAL" BUSINESS FACTORS
INFLUENCING HIGH-TECH SITE DECISIONS*

Rank	Factor	Percent
1	Availability of technical personnel.....	21
2	Knowledgeable bankers.....	18
3	University consultants nearby.....	14
4	Proximity to airports.....	13
5	One-day package delivery service.....	12
6	Number of suppliers.....	4
7	Proximity to interstates.....	3
8	Local wage levels.....	2
9	Availability of industrial sites.....	2

"ABSOLUTELY CRITICAL" QUALITY OF LIFE FACTORS
INFLUENCING HIGH-TECH SITE DECISIONS*

Rank	Factor	Percent
1	Quality of public schools.....	17
2	Clean environment.....	14
3	Positive government attitude toward industry.....	13
4	Crime rate.....	13
5	Climate.....	12
6	Traffic congestion.....	9

*Responses cited most frequently by executives of more than 300 technology-based businesses in nonmetro areas with universities.

Source: University of Missouri, 1984.

Location of Research and Development Facilities

More insight into the influence of taxes on the location of research facilities is available from review of survey results provided by the Conference Board. In a survey of executives regarding site location for corporate R&D facilities, the number one consideration was a location "near headquarters," followed by technical personnel and quality of life (Table B11). "Low taxes" was ranked 18th of 20 factors, while "good business climate" was ranked 8th.

Summary of Survey Results

Based on the surveys discussed above, it appears that labor force and access to markets are considered most important by corporate executives contemplating relocation. Depending upon the type of facility, taxes can be ranked as high as fourth (for a manufacturing plant), as low as 18th (for a research and development facility) or not mentioned at all (for high technology firms with innovative products in the early stages of development).

The proposed tax changes will have the greatest potential impact on plant relocations, especially for firms producing goods in the later stages of the product cycle, when output technology is standardized, markets are very competitive, and cost considerations at the margin are paramount. However, the implication is clear that, even for these firms, labor force and market conditions are viewed first. Taxes play a subordinate role in the relocation decision.

Analysis of the executive surveys shows that the proposed tax changes will have the smallest effect on high technology firms, research and development facilities, and corporate headquarters relocations. If the assumption is correct that these are the most desirable types of relocations sought, then it may be concluded that Arizona's business climate will not be harmed by the proposed fiscal policy changes.

**TABLE B11
SITE-LOCATION REQUIREMENTS
FOR R&D FACILITIES**

Rank	Requirement	Percent of weighted response*
1	Near headquarters.....	23%
2	Scientific, technical personnel.....	18
3	Quality of life.....	11
4	Near manufacturing.....	8
5	Near university or research center.....	8
6	Reasonable property costs.....	6
7	CEO's preference.....	5
8	Good business climate.....	2
9	Monetary incentives.....	2
10	Good labor climate and supply.....	2
11	Meets environmental requirements.....	2
12	Adequate transportation.....	2
13	Cooperative local government.....	1
14	Water supply and energy.....	1
15	Close to similar industries.....	1
16	Security considerations.....	1
17	Access to critical materials.....	1
18	Low taxes.....	1
19	Distant from competitors.....	1
20	Weather.....	0
	Other (not specified).....	5

*Details do not add to total because of rounding.

Source: The Conference Board, *Locating Corporate R&D Facilities*.

Statistical Studies of Taxes and Economic Growth

Most analysts of regional economic growth and development seem to agree with Roger Vaughn (1979) that "the level of business taxes has little impact on the local growth rate or on the interstate location decisions of firms."

Seventeen statistical studies were reviewed relating economic growth to taxes and other business climate variables. The studies, which span nearly three decades of research, are summarized in the attached bibliography. In seven of these studies, no statistical correlation was found between taxes and economic growth variables. In nine of the studies, mixed relationships were found, with taxes affecting some growth variables, but generally with a weak and inconsistent impact. In only one of the seventeen studies was a strong and consistently significant relationship found between taxes and economic measures of growth.

Overall Conclusion

After a review of factors influencing business climate rankings, an analysis of surveys of business executives with responsibility for corporate relocations, and an assessment of academic articles on the subject, the conclusion is clear that a fiscal package of the magnitude proposed will not result in a significant change in Arizona's business climate .

BIBLIOGRAPHY: STATISTICAL STUDIES OF BUSINESS CLIMATE VARIABLES AND ECONOMIC GROWTH

SOURCE	INDUSTRY & DATA	RESULTS
Thompson, Wilbur R. and John Mattila	* employment growth (absolute and percent) in 9 manufacturing industries	SIGNIFICANT: tax per employee in apparel
AN ECONOMETRIC MODEL OF POSTWAR STATE INDUSTRIAL DEVELOPMENT 1959	* state & local taxes as a percent of personal income * state & local taxes per nonagricultural employee	INSIGNIFICANT: all others
Campbell, A. "State and Local Taxes, Expenditures and Economic Development" STATE AND LOCAL TAXES ON BUSINESS 1965	* per capita income * per capita production * percent employment growth * per capita taxes	WRONG SIGN ON ALL TAXES (High taxes correlated with high employment growth)
Sacks, S. "State and Local Finances and Economic Development" STATE AND LOCAL TAXES ON BUSINESS 1965	* per capita production * per capita business & business property taxes * business taxes as a percent of all state & local tax revenue	WRONG SIGN ON ALL TAXES
Struyk, Raymond "An Analysis of Tax Structure, Public Service Levels, and Regional Economic Growth" NATIONAL TAX JOURNAL 1967	* per capita income * level and percent change of per capita state and local taxes	INSIGNIFICANT: all taxes

SOURCE	INDUSTRY & DATA	RESULTS
Hodge, J. "A Study of Industry's Regional Investment Decisions" FEDERAL RESERVE BANK OF NEW YORK 1978	<ul style="list-style-type: none"> * investment in three manufacturing industries * corporate income tax rate * local property tax rate 	<p>SIGNIFICANT: corporate in furniture property in apparel and furniture</p> <p>INSIGNIFICANT: all others</p>
Carlton, Dennis W. "Why New Firms Locate Where They Do: An Econometric Model" INTERREGIONAL MOVEMENTS AND ECONOMIC GROWTH 1979	<ul style="list-style-type: none"> * "births" of single establishment firms in three manufacturing industries * combined corporate and personal business income tax * property tax rate 	<p>no taxes significant</p> <ul style="list-style-type: none"> * no strong support that taxes are a major deterrent to new business activity * could not rule out the possibility that taxes could exert a negative impact on new location activity
Vaughan, Roger J. STATE TAXATION AND ECONOMIC DEVELOPEMENT DEVELOPEMENT 1979	<ul style="list-style-type: none"> * no new empirics * synthesizes the results of several studies 	<ul style="list-style-type: none"> * ...the level of business taxes has little impact on local growth rate or the firm location decision * intrastate differences in business taxes contribute to firm migration to the suburbs * "Payroll taxes exacerbate the problem of unemployment, particularly among the less skilled." * "Investment may be deterred by high local taxes." * net immigration of high income households is reduced by high income tax rates * high personal taxes discourage local economic growth * high property taxes in central cities encourage the affluent to move to the suburbs

SOURCE

INDUSTRY & DATA

RESULTS

Carlton, Dennis W.

"The Location and Employment Choices of New Firms: An Econometric Model With Discrete Continuous Endogenous Variables"
THE REVIEW OF ECONOMICS AND STATISTICS
1983

* employment size of branch plants in three manufacturing industries
* combined corporate and personal business income tax
* property tax rate

SIGNIFICANT:

combined taxes for fabricated plastic products

INSIGNIFICANT:

all others

Helms, L. Jay

"The Effect of State and Local Taxes on Economic Growth: A Time Series Cross Sectional Approach"
THE REVIEW OF ECONOMICS AND STATISTICS
1983

* growth of a state's personal income in constant dollars
* tax revenues as a percent of state personal income (property taxes, other state & local taxes, user fees)

ALL TAXES SIGNIFICANT

Newman, R. J.

"Industry Migration and Growth in the South"
REVIEW OF ECONOMICS AND STATISTICS
1983

* employment growth in 13 manufacturing industries
* aggregate employment growth for manufacturing
* corporate tax rate

SIGNIFICANT:

corporate tax rate for aggregate manufacturing and 5 of 13 industries

Plaut, Thomas R. and Joseph E. Pluta

"Business Climate, Taxes and Expenditures, and State Industrial Growth in the United States"
SOUTHERN ECONOMIC JOURNAL
1983

* percent change in real value added for overall growth
* percent change in employment for labor intensive growth
* percent change in real capital stock for capital intensive growth

SIGNIFICANT:

overall tax effort (for labor intensive growth)
Property taxes (for all) but wrong sign

INSIGNIFICANT:

all others

* overall tax effort
* corporate taxes
* property taxes
* sales taxes
* personal income taxes

SOURCE	INDUSTRY & DATA	RESULTS
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Steinnes, Donald N. "Business Climate, Tax Incentives, and Regional Economic Development" GROWTH AND CHANGE 1984	* manufacturing employment growth * population growth * service employment growth * trade employment growth * income tax * sales tax * property tax * franchise fee	NO CORRELATION FOUND
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Bartik, Timothy "Business Location Decisions in the United States: Estimates of the Effect of Unionization, Taxes and Other Characteristics of States" JOURNAL OF BUSINESS AND ECONOMIC STATISTICS 1985	* branch plant locations * corporate income tax * property tax rate * worker's compensation tax * unemployment insurance tax	SIGNIFICANT: corporate income tax INSIGNIFICANT: all others
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Benson, Bruce L. and Ronald N. Johnson "Capital Formation and Interstate Tax Competition" TAXATION AND THE DEFICIT ECONOMY 1985	* expenditures on plant & equipment by manufacturing firms relative to U.S. average * state & local tax revenue relative to U.S. average	* the current effect of a change in relative state and local taxes on capital expenditures is essentially nonexistent * but the lagged response is significantly negative, with the major portion of the long run
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SOURCE	INDUSTRY & DATA	RESULTS
Wasylenko, Michael and Therese McGuire "Jobs and Taxes: The Effect of Business Climate On States' Employment Growth Rates" NATIONAL TAX JOURNAL 1985	* percent change in overall employment and employment by sector * tax effort * sales tax * corporate taxes * personal income taxes	SIGNIFICANT: tax effort (overall, manufacturing, retail trade, and services) sales tax (wholesale trade) effective personal income taxes (wholesale trade, retail trade, a
		INSIGNIFICANT:
Wheat, Leonard F. "The Determinants of 1963-77 Regional Manufacturing Growth: Why the South and West Grow" JOURNAL OF REGIONAL SCIENCE 1986	* change in manufacturing employment (adjusted for employment rates) * state corporate net income taxes as a percentage of value added by manufacturing	taxes are insignificant and the wrong sign
Papke, James A. and Leslie E. Papke "Measuring Differential State-Local Tax Liabilities and Their Implications for Business Investment Location" NATIONAL TAX JOURNAL 1988	* capital investment per worker * new firm births in five manufacturing industries * tax differentials (net after-tax rate of return on a marginal investment in alternative locations)	* investment is sensitive to the level of capital taxation * the tax differential is significant for firm "births" -coefficient is negative in 3 of industries -significant in 2 of those 3