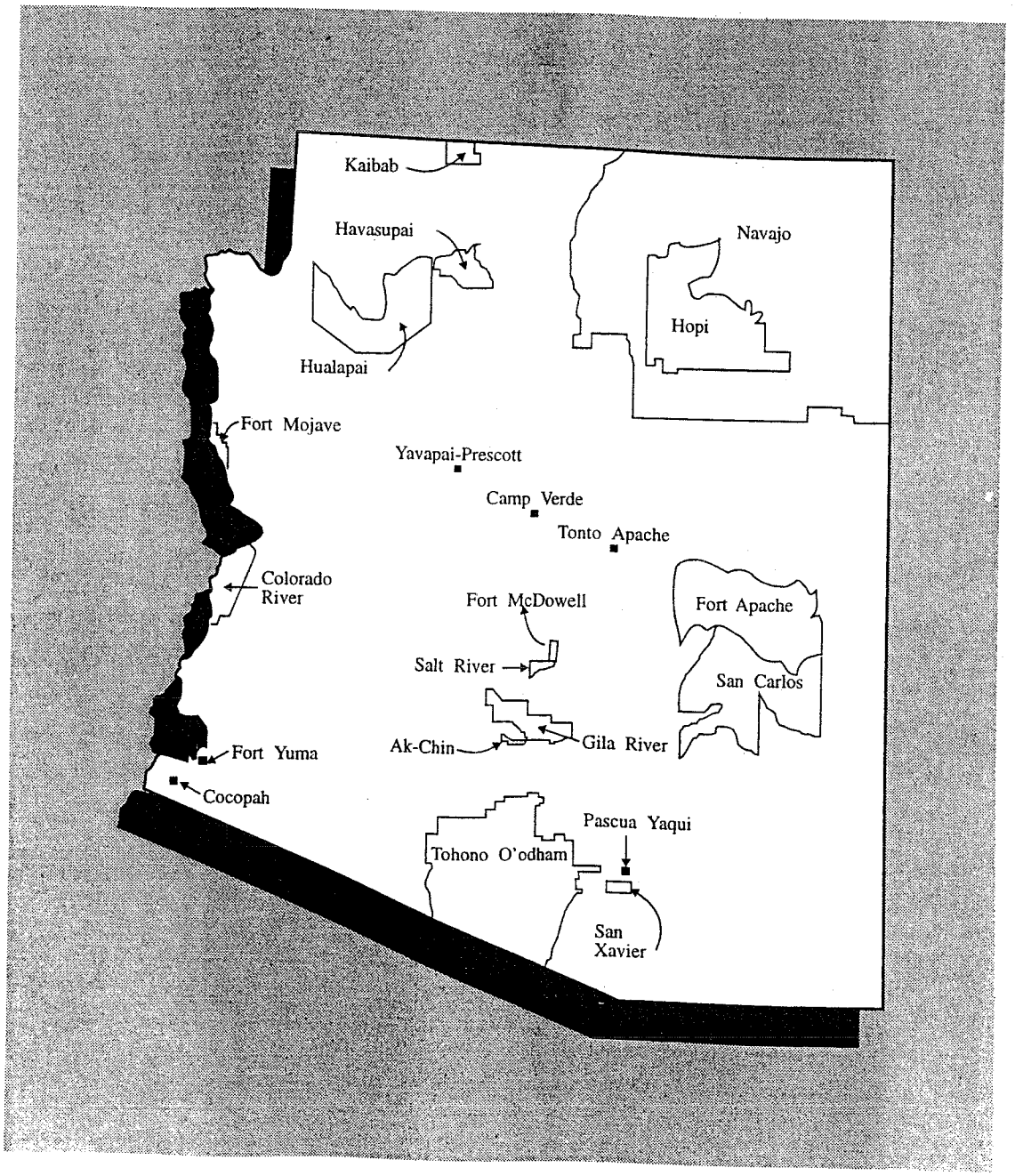
The Economic and Fiscal Importance of Indian Tribes in Arizona



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The Economic and Fiscal Impact of American Indian Reservations in Arizona

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PREFACE

This report has been prepared for the Arizona Department of Commerce under the general supervision of the Department's National Marketing Representative, Mr. Ruben Norris. The Arizona Department of Commerce has a special interest in promoting improved relations between Native American Indian tribes and the State. Under the direction of its current Director, Sara Goertzen, the Department has pursued a number of strategies to support and accelerate rural economic development, including development on Arizona's Indian reservations, where this is consistent with tribal government values and objectives.

The Department's development initiatives relating to Indian tribes and reservations focus on developing employment opportunities, attracting new industry to reservation lands, and expanding markets for goods and services produced on reservations in the State. Integral to this economic development mission of the Department of Commerce is the acquisition of data and information portraying the economic and fiscal relationships that exist between tribal governments and the State government; sound information is a basic prerequisite to meaningful "government to government" relations of tribes and the State. To this end, the Arizona Department of Commerce contracted with the Center for Applied Research to conduct the analysis contained in this report.

Conclusions presented in this report are those of the Center for Applied Research. This report does not seek to represent the positions, views or opinions of the Arizona Department of Commerce or any member of its staff. The Center for Applied Research is solely responsible for the data and analysis contained in this report.

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INTRODUCTION

American Indian Reservations in Arizona represent a unique source of economic growth and revenue for the State as a whole. There are important economic and fiscal benefits, in addition to the more widely appreciated cultural and aesthetic benefits, that accrue to the State due to the presence of Indian reservations. Many tribal government representatives are concerned about the lack of recognition and/or misconceptions that may prevail in Arizona regarding the economic and fiscal importance of reservation economies. It is basic a contention of tribal governments that reservation economies provide significant stimulus to the State economy, and further, that tax revenues from a variety of sources are received by the State each year due to the presence of Indian reservations. At the same time, it may be noted that tribal representatives often discount or may be unaware of the value of state services that are provided to reservation residents and reservation enterprises.

This report is intended to contribute to an improved understanding of the state-tribal economic and fiscal relationship in Arizona. Its two-fold purpose is to identify the nature and magnitude of the economic and fiscal impacts that can be attributed to Indian reservations in the State and to identify the specific costs the State incurs as a result of providing services to reservation residents.

I. APPROACH TO THE ANALYSIS

A principle objective of this analysis is to identify the impact that Indian reservation residents, reservation based economic enterprises, tribal governments and the sociocultural presence of the American Indian reservation population in Arizona have on the state economy and revenue system. The analysis is concerned with the total Indian reservation population in Arizona, which includes all Indian and non-Indian persons residing on 19 reservations in the State.[1] These include: Ak-Chin, Camp Verde, Cocopah, Colorado River, White Mountain, Fort McDowell, Fort Mojave, Gila River, Havasupai, Hopi, Hualipai, Kaibab, Pascue Yaqui, Salt River, San Carlos, Yavapai Prescott, Tonto Apache, Tohono O'odham and the Arizona based portion of the Navajo Nation.

The approach has been to analyze the state-tribal economic and fiscal relationship (as it prevailed in Fiscal Year 1993) in terms of five separate dimensions. These are described as follows.

A. Consumer Spending, Savings and Investments by Reservation Residents:

Indian reservations in Arizona are the source of over $480 million in annual disposable income. In this part of the analysis, U.S. Census data describing the economic characteristics of reservation households are utilized to calculate total household income of

[1]Normally there are references to 21 Indian reservations in Arizona, but in this analysis, Fort Yuma, because of its negligible population presence in Arizona, and the San Juan Paiute, because of the unclarified status of its land base, have been omitted.

the Indian Reservation population in the State. It is assumed that 60% of reservation household income is expended in the State for consumer goods and services off the reservation while 8% of reservation residents' disposable personal income is assumed to be expended on the reservation. The balance is remitted out-of-state and is thereby assumed to have no direct impact on the state economy or revenue system.

Indian reservation residents who buy taxable goods and services in Arizona off the reservation are subject to the same business taxes that non-reservation consumers are. Reservation residents for example, pay Transaction Privilege (sales) taxes on taxable purchases made off the reservation. Based on consumer expenditures data compiled by the Bureau of Labor Statistics,[2] 85% of Indian reservation household expenditures that are made in the State are assumed to be taxable. It is assumed further, that 20% of these expenditures translate into corporate income which is taxable at a rate of 9.3%. (See Appendix.)

In addition to State Transaction Privilege (sales) tax revenues and Corporate Income tax revenues, the economic impact of Indian reservation household spending on the State economy is calculated in terms of the state-wide jobs and income it creates. A portion of the consumer spending by the reservation resident becomes wage and salary income at the non-reservation businesses that are patronized. This is classified as a direct economic impact of the consumer spending by reservation residents.

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[2]See BLS Handbook of Methods, Consumer Expenditures Survey, Bureau of Labor Statistics, U.S. Department of Labor, Bulletin 2414, September, 1992.

The proprietors and employees of Arizona businesses being supported by the consumer spending of reservation residents also spend a portion of their earned income at Arizona business establishments. Thus, additional wage and salary income and employment is stimulated due to the spending and re-spending of the earned income of consumers in the State. This secondary or induced effect of the initial consumer spending by reservation residents is described in terms of both income and employment and is estimated by applying an economic analytical technique known as "multiplier" analysis.[3]

In the analysis that follows, both direct income and employment, and induced income and employment (resulting from the "multiplier" effect associated with subsequent rounds of consumer spending) have been estimated.

B. Reservation Based Economic Enterprises:

Indian reservations in Arizona are the location of commercial, industrial and agricultural activities that support job creation and income throughout the State. There are two kinds of reservation enterprises of interest in this analysis: Indian-owned and non-Indian-owned. This distinction in ownership is important because the State is currently taxing certain non-Indian-owned enterprises operating within the sovereign jurisdiction of Indian reservations, even though some of these enterprises are also legally taxed by tribal governments.[4] As in the

[3]See Appendix.

[4]This alludes to the phenomenon of "dual taxation", (i.e., taxation by both the State and an Indian tribe). Dual taxation is a matter of great concern to tribal governments, in part because tribal governments are legally constituted, sovereign jurisdictions with fiduciary and service obligations for their reservations, and in many tribes' view, all or part of the tax revenue collected from reservation based enterprises should logically be

case of personal consumer spending by the Indian reservation population, the analysis of reservation enterprises includes an assessment of both the fiscal (revenue) and economic (income and employment) impact in the State as a whole.

C. Tourism:

American Indian reservations in Arizona are closely linked, both contemporaneously and in terms of their historical legacy, with tourism in the State. Indian culture, which is nurtured and maintained by the Indian reservations in the State, has become an attraction for tourists from all over the world. To assess the economic and fiscal impact of tourism, an estimate has been made by the Center for Applied Research of the total number of tourists (and tourist expenditures) in Arizona that can be attributed exclusively to the Indian reservation population in the State.[5] The state-wide economic and fiscal impact of Indian reservation generated tourist activity is calculated in terms of tourist spending for lodging, meals, transportation, goods and services off the reservation.

D. Tribal Government Expenditures:

Every year, each tribal government in Arizona enacts a budget containing appropriations for various services, reservation programs and other obligations. The General Fund of the tribal government budget is in most respects, directly analogous to the General Fund of a city, county, or state. General Fund revenues and expenditures are distinguished in this analysis

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returned or shared with the tribal governments to defray the cost of tribal governance. See "State-Tribal Taxation Conflicts in New Mexico"; Robert F. Robinson; 1993.

[5]The estimating procedure is described in the Appendix.

from other tribal revenues and expenditures, such as those associated with federal funds received through grants.

Tribal governments appropriate and expend a portion of their General Fund budgets for supplies, materials, equipment and services. Tribal government expenditures for these operating and maintenance purposes (whether made on or off the reservation) are not subject to taxation by the State, however, they do have a direct economic impact by supporting jobs and income in establishments across the State. These State-wide employment and income impacts of tribal government spending are of primary interest in the analysis.

E. Federal Government Expenditures in Arizona and the Impact of Transactions Involving Federal Agencies and Tribal Governments:

The federal government to tribal government relationship in Arizona gives rise to a wide array of federal expenditures, and a succession of positive impacts on the State's economy. The annual expenditures made by four federal departments for wages and salaries and goods and services have been identified in this analysis. Federal expenditures analyzed include those of the Department of Housing and Urban Development (HUD); Health and Human Services (HHS) (which includes the Indian Health Services (IHS)); the Department of the Interior (DOI); and the Department of Labor (DOL). The Department of Education also interacts with Indian Tribes, however, its importance in the State is primarily of a fiscal nature and this is assessed in Section VIII below.

These federal departments make substantial expenditures in the course of their interactions

with Indian tribes in the State. Care has been taken in the analysis to avoid double counting (overestimating the impact of) federal expenditures made by these departments in their interaction with tribes, since some of the expenditures of these federal agencies also emerge as household income on the reservations.

F. Comparing State and General Fund Revenues Attributed to Reservations with State Expenditures:

The Indian reservation population in Arizona, and the unique legal status of Indian reservation lands pose distinct fiscal benefits (and distinct fiscal costs and accounting requirements) for the State. The State for example, incurs both revenue and expenditure impacts due to Indian reservation children who are beneficiaries of the Public School State Aid (equalization) segment of the State General Fund. This analysis utilizes local school districts' average per pupil cost data and school district tabulation of enrolled American Indian school children, as well as other sources showing federal payments to the State for payment in lieu of taxes (PILT), in order to estimate the net costs to the State for education of reservation school children. Similar cost calculations for Medicaid and other State services are also made.

The incidence and magnitude of costs incurred by State government in serving the Indian reservation population are estimated from State General fund budgeted expenditures for the 1992-1993 period. Interviews were also conducted with responsible State agency personnel to determine the amount and nature of State spending (exclusive of pass through federal transfer payments) that can be attributed to the Indian reservation population.

II. A PROFILE OF THE AMERICAN INDIAN POPULATION IN ARIZONA

The total 1993 American Indian population in Arizona is estimated at 237,000. The total 1993 Indian reservation population (both Indian and non-Indian) is estimated at 179,176. This total 1993 Indian reservation population, which accounts for 4.5% of the State's total population, is the population base that is used in this analysis to evaluate the economic and fiscal relationship of State Government and Indian reservations in Arizona. (See figure 1.)

There are an estimated 40,080 Indian reservation households in the State, and the total 1993 Indian reservation household income is estimated at $480.3 million. This pool of household income serves as the basis for estimating the value of consumer spending by Indian reservation households and the impact this spending has on the State's economy and revenue system.

All 1993 reservation population counts, household and income estimates used in this analysis are derived by the Center for Applied Research using U.S. Census data (see Appendix).

Table 1
1993 Demographic and Economic Profile of the State of Arizona
(Source: The Center for Applied Research, 1994; The Arizona Department of Economic Security, 1994.)

Population	3,953,000
Employment	1,723,000
Total Wage and Salary Income	$40,705,000,000
Total Personal Income	$66,400,000,000
Average Annual Wage/Salary Income	$23,624

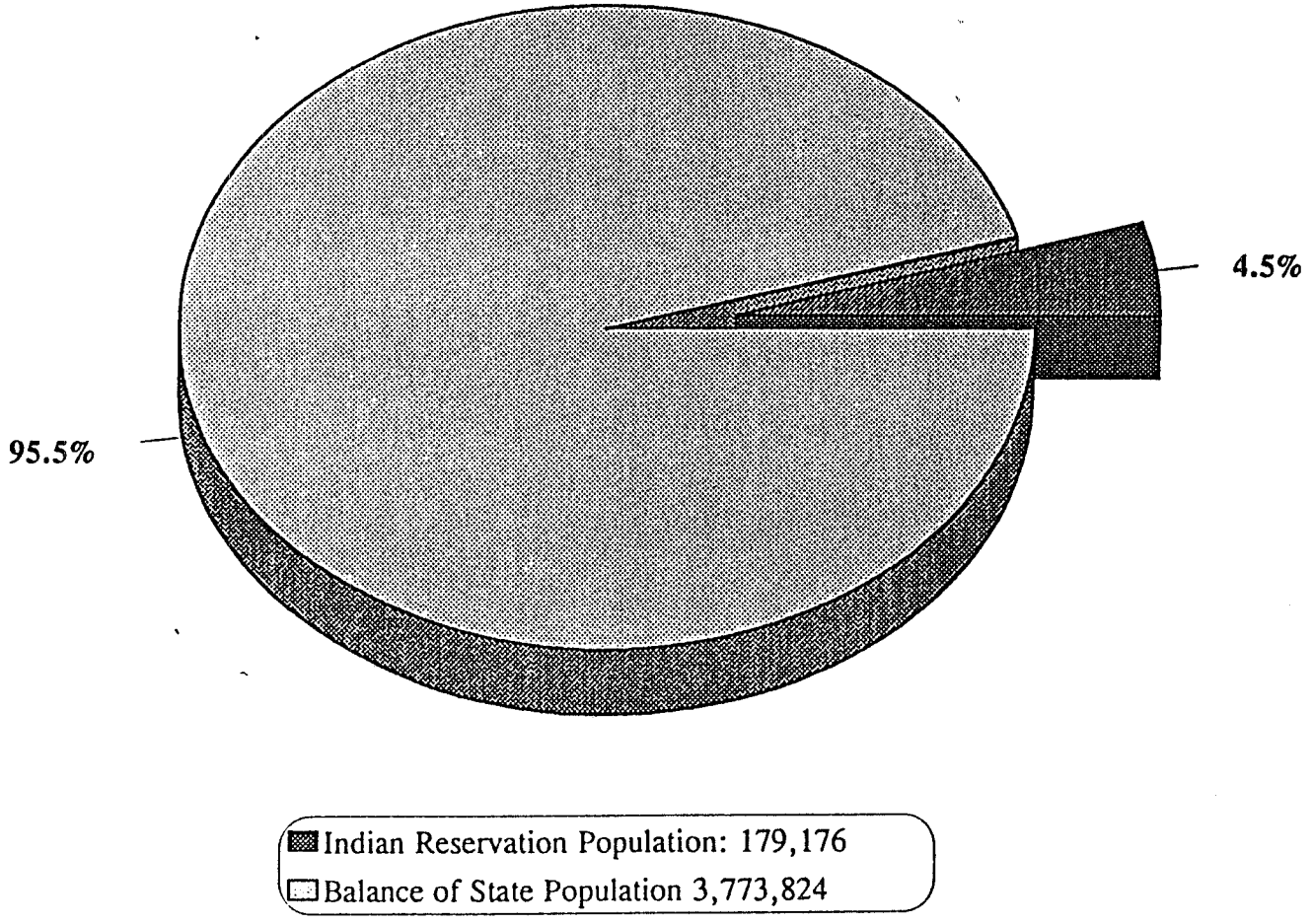
Table 2
1993 Demographic and Economic Profile of Arizona Indian Reservations
(Source: The Center for Applied Research, 1994; "1990 Census of Population Characteristics: Arizona"; "1990 Census of Social and Economic Characteristics: Arizona".)

Total Native American Population in Arizona	237,000
Total Reservation Population	179,176
Total Reservation Households	40,080
Median Reservation Household Income	$14,457
Total Reservation Household Income	$480,318,470

Figure 1

1993 Indian Reservation Population in Arizona

(Source: The Center for Applied Research, 1994; the U.S. Census Bureau, 1994.)



III. THE ECONOMIC AND FISCAL IMPACT OF CONSUMER SPENDING BY INDIAN RESERVATION HOUSEHOLDS

The consumer expenditures of the Indian reservation population in Arizona are, in terms of their composition, basically similar to those of the state-wide population.[6] As shown in Table 3, 1993 household expenditures by the Indian reservation population in the State are estimated at $288.2 million, 85% of which was subject to State Transaction Privilege tax. Consumer Expenditures by Indian reservation households in 1993 resulted in $17.6 million in State tax revenue from Transaction Privilege tax and Corporate Income tax revenue sources.[7]

In economic terms, expenditures by Indian reservation households accounted for approximately $270 million in direct and "induced" State income and 11,418 direct and "induced" jobs as shown in Table 3.

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[6]The analysis has relied on an "American Indian Household Expenditure Profile" developed by the Center for Applied Research from surveys on the Hopi and Navajo reservations in Arizona, U.S. Department of Commerce data, BLS Handbook of Methods, Consumer Expenditures Survey, Bureau of Labor Statistics, U.S. Department of Labor, Bulletin 2414, September, 1992, and consumption profiles from the 1992 American Demographics "Desk Services" Reference Publication.

[7]It is estimated that 20% of the total state-wide consumer expenditures of reservation residents results in corporate income which is taxable at a rate of 9.3%.

Table 3
The Economic and Fiscal Impacts of Consumer Spending by the Arizona Indian Reservation Population
(Source: The Center for Applied Research, 1994.)

	Total
Total Reservation Population	179,176
Total Reservation Households	40,080
Total Household Income	$480,318,470
In-State Household Expenditure Factor	60%
In-State Household Expenditures	$288,191,082
Taxable Expenditures	$244,962,420
STATE-WIDE FISCAL IMPACT	
Arizona Transaction Privilege Tax	$12,248,121
Arizona Corporate Income Tax	$5,360,354
Total Fiscal Impact	$17,608,475
STATE-WIDE ECONOMIC IMPACT	
Direct and Induced Income	$269,746,853
Direct and Induced Employment	11,418

IV. THE IMPACT OF RESERVATION BASED ENTERPRISES

Indian and non-Indian owned enterprises on reservations are the source of employment and income for both Indian and non-Indian residents of Arizona. They also contribute to the growth of income and jobs in the statewide economy because of the expenditures these enterprises make for supplies, materials, utilities, equipment and services. This analysis is concerned only with the economic and fiscal impact these enterprises have off the reservation, that is, their impact on the State economy and revenue system.

Reservation-based enterprises are quite varied in terms of their size and Standard Industrial Classification (SIC) codification.[8] Agricultural enterprises are prominent at Kaibab, Gila River, Colorado River, AK-Chin, White Mountain, Navajo and Tohono O'Odham; non-metalliferous mining is prominent at Hopi and Navajo, and sand and gravel operations occur at Gila River; manufacturing enterprises are important at Navajo, Hopi and Cocopah; timber related enterprises are operating at Navajo and White Mountain; and virtually all reservations have service and trade sector establishments oriented toward tourism and fine arts. Financial, real estate, banking and business related service establishments are conspicuously absent from Arizona's reservation economies.

Table 4, "Economic and Fiscal Impact of Reservation Enterprises", shows that Arizona Indian reservation-based enterprises are the source of an estimated $68 million in annual

[8]A comprehensive inventory of all Indian reservation enterprises in Arizona was not possible given the budgetary resources available for this study; estimates of the volume of economic activity associated with Indian reservations are considered to be conservative.

(1993) expenditures statewide for goods and services, resulting ultimately in the creation of $63.6 million in statewide income and 2,694 jobs in the State economy.

Table 4
The Economic and Fiscal Impacts of Reservation Based Enterprises
(Source: The Center for Applied Research, 1994 based on primary and secondary sources.)

TYPE OF ENTERPRISE	
Agriculture and Forestry	$15,000,000
Construction	$16,000,000
Mining, Oil, and Gas	$265,000,000
Manufacturing	$14,000,000
Services	$12,000,000
Trade	$18,000,000
TOTAL OF ALL SALES	$340,000,000
TOTAL FISCAL IMPACT	$17,825,200
Taxable Sales (mining only)	$264,000,000
Arizona Transaction Privilege Tax on Sales	$8,250,000
In-State Expenditures by Reservation Based Enterprises	$68,000,000
Arizona Transaction Privilege Tax on Enterprise Expenditures	$3,400,000
Corporate Income Tax Resulting from Sales and Expenditures	$6,175,200
TOTAL ECONOMIC IMPACT	
Direct and Induced Income	$63,648,000
Direct and Induced Employment	2,694

V. THE ECONOMIC AND FISCAL IMPACT OF TOURISM

Tourism is not a single industry in and of itself, but rather a collection of trade and service sectors that are typically and logically grouped together for analytical purposes. Lodging, eating and drinking establishments, certain recreational services (including gaming), transportation, and various wholesale and retail trade sectors comprise a large portion of the "tourism" industry. American Indian reservations in the State, as the fountainhead of Native American culture, attract a number of tourists annually that have an impact on the State economy.

It is difficult to assign a specific portion of the total value of tourism in Arizona to Indian reservations in the State. The varied tourism resources of Arizona are inextricably bound; distinguishing the tourist "draw" or attraction value of Indian culture for example, from the superlative physical features of the State, or from other components of its rich cultural and historical milieux would require a research effort well beyond the scope of this analysis. The importance of Indian culture to the overall tourist industry in Arizona however, (and the importance of reservations in sustaining Indian culture) is evident from the omnipresence of American Indian themes which find expression in many aspects of the State's tourism "portfolio": recreation sites, fine arts, food, museums, intellectual history, historical monuments, fashions, literature, as well as the unique beauty and allure of a preserved land base (i.e., the reservations). It is difficult to imagine Arizona's charm and attraction without the powerful socioeconomic and physiographic presence of the Indian reservations in the State.

It is estimated that in 1993, 1,881,662 persons (or 470,415 tourists parties) visited Arizona as a result of American Indian reservations in the State Arizona.[9] In the analysis of tourist impacts attributable to the Indian reservation population, the Center for Applied Research makes the following assumptions:

- The average tourist party consists of four persons;
- The average tourist party spends $272 per day for food, lodging, transportation, retail purchases, and services;[10]
- The average tourist party stays four days in Arizona;

These estimates and assumptions serve as the basis for estimating the economic and fiscal impacts of tourism attributable to the Indian reservation population in the State. Economic and fiscal impacts of tourism are shown in Table 5, "The Economic and Fiscal Impacts of Tourism: Impacts Attributed to Indian Reservations in Arizona".

Table 5 shows the state-wide economic impacts of an estimated 470,415 tourist parties that visited Arizona reservations in 1993. Table 5 indicates that the Indian reservation population accounts for an estimated statewide tourist spending of $511.8 million. It is estimated that this state-wide tourist spending results in approximately $479,055,993 in direct and induced income and 20,278 direct and induced jobs. Table 5 also shows that the Indian reservation

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[9]See Appendix.

[10]It is instructive that the New Mexico Department of Tourism has documented that tourist expenditures in New Mexico approximate $70 per day per person. Based on this estimated range and other data from the U.S. Travel Data Center, it is assumed in the analysis that per person tourist expenditures (in a party of four) amount to $68.00 per day for a four day stay. This average expenditure factor is applied to all tourists, from campers to travelers staying with relatives, to destination resort patrons.

population accounts for $32.5 million in State revenue, $23 million of which came from Transaction Privilege tax sources and $9.5 million of which came from Corporate Income tax sources.

Table 5
The Economic and Fiscal Impacts of Tourism: Impacts Attributed to Indian Reservations in Arizona
(Source: The Center for Applied Research, 1994; Arizona Office of Tourism, 1994.)

1993 Arizona Tourists Drawn by Indian Reservations/Culture	1,881,662
Average Arizona Tourist Party (people)	4
1993 Arizona Tourist Parties Drawn by Indian Reservations/Culture	470,415
Average Arizona Tourist Party Expenditures per Day	$272
Average Stay of Arizona Tourist Party (days)	4
Average Arizona Tourist Party Expenditures per Stay	$1,088
Total 1993 Arizona State-Wide Tourist Expenditures Attributable to Indian Reservations/Culture	$511,811,958
Total Taxable Expenditures	$460,630,762
STATE-WIDE FISCAL IMPACT	
Arizona Transaction Privilege Tax	$23,031,538
Arizona Corporate Income Tax	$9,519,702
Total Fiscal Impact	$32,551,241
STATE-WIDE ECONOMIC IMPACT	
Direct and Induced Income	$479,055,993
Direct and Induced Employment	20,278

VI. THE ECONOMIC IMPACT OF TRIBAL GOVERNMENT EXPENDITURES

Tribal governments spend an estimated $43 million per year statewide, for supplies, equipment, and services as shown in Table 6. While not subject to taxation (the same is true for expenditures made by federal, state, and local governments as well), these tribal government expenditures contribute to income and employment in the State economy.

This analysis does not focus on the total value of the tribes' annual earnings and revenue or the operations and maintenance costs associated with tribal governance on the reservations. Table 6 only identifies outlays made by tribal governments for goods and services acquired from sources off the reservation; the objective is to assess the impact these tribal government expenditures have on the State economy.

Tribal government expenditures are distinguished from personal consumption expenditures made by reservation residents and expenditures made by reservation based enterprises. Tribal General Fund expenditures are shown in Table 6. These expenditures result in $40.2 million in direct and induced income and 1,704 jobs statewide.

Table 6 **The Economic Impact of Tribal Government Expenditures, Savings and Investments** (Source: The Center for Applied Research, 1994.)	
Tribal Government Expenditures in Arizona	$43,002,240
STATE-WIDE ECONOMIC IMPACT	
Direct and Induced Income	$40,250,097
Direct and Induced Employment	1,704

VII. THE IMPACT OF FEDERAL GOVERNMENT-TRIBAL GOVERNMENT TRANSACTIONS

Nearly all federal departments in Arizona have specific programs, activities or staff functions established to deal exclusively with reservation residents and/or Indian Tribal Governments. There are four federal departments with prominent segments of their budgets oriented to "government to government" transactions with Indian tribes. These are the Department of the Interior (DOI), the Department of Housing and Urban Development (HUD), the Department of Health and Human Services (HHS), and the Department of Labor (DOL). Total estimated expenditures by each department made in connection with tribal government transactions in the State are shown in Table 7.[11] Expenditures by each department for personnel directly related to tribal government transactions are also shown.[12]

The analysis shows that federal tribal government interactions in Arizona accounted for over 7,500 jobs and $11.6 million in State tax revenue in 1993.

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[11]Federal agency expenditures for 1991 were estimated by the Center for Applied Research in "The Economic and Fiscal Importance of Indian Tribes in Arizona"; January, 1993. Total expenditures for 1993 are inflated values based on the 1991 federal agency expenditures relating to tribal government transactions in the State. A growth rate of 6% per year is applied to the 1991 figures which is reflective of the annual rate of increase in the Unites States federal budget as a whole. This growth rate is applied to each individual department's 1991 tribal government related expenditures to obtain 1993 federal expenditures by department relevant to the analysis.

[12]1993 estimated expenditures for personnel by department are based on the percentage of each department's total 1991 wage and salary expenditures relative to total outlays for the same year. The respective percentages are then applied to each department's total expenditures related to tribal government interactions in 1993.

Table 7

The Economic and Fiscal Impacts of Federal Government Transactions with Tribal Governments in Arizona

(Source: The Center for Applied Research, 1994; U.S. Department of Commerce, Consolidated Federal Funds Report, 1993.)

	DOI	HUD	IHS	DOL	Total
Total Federal Agency Expenditures on Indian Programs in 1993	$333,200,000	$44,800,000	$117,600,000	$36,960,000	$532,560,000
Ratio of Wage/Salary Expenditures to Total Outlays	80%	4%	9%	3%	17%
Wage/Salary Expenditures Related to Tribal Government Transactions in 1993	$267,111,487	$1,978,351	$10,526,933	$1,048,414	$280,665,185
In-State Consumer Expenditures Attributable to Federal Employees	$181,635,811	$1,345,279	$7,158,314	$712,922	$190,852,326
Taxable Expenditures	$154,390,440	$1,143,487	$6,084,567	$605,983	$162,224,477
STATE-WIDE FISCAL IMPACT					
Arizona Transaction Privilege Tax	$7,719,552	$57,714	$304,228	$30,299	$8,111,224
Arizona Corporate Income Tax	$3,378,426	$25,022	$133,145	$13,260	$3,549,853
Total Fiscal Impact	$11,097,948	$82,197	$437,373	$43,560	$11,661,077
STATE-WIDE ECONOMIC IMPACT					
Direct and Induced Income	$170,011,119	$1,259,181	$6,700,182	$667,295	$178,637,777
Direct and Induced Employment	7,197	53	284	28	7,562

VIII. STATE GENERAL FUND EXPENDITURES ATTRIBUTED TO THE INDIAN RESERVATION POPULATION

An analysis of Arizona's 1992 General Fund coupled with extensive interviews with State agency personnel were used to determine what State outlays are made expressly for the Indian reservation population in the State. The analysis focuses on the following State agencies where such expenditures are evident: the Department of Corrections; the Arizona Health Care Cost Containment System; the Arizona Department of Economic Security (the Divisions of Developmental Disabilities, and Children, Youth and Families); the Department of Health Services (the Divisions of Behavioral Health Services, Family Health Services, Disease Prevention); the Arizona Commission of Indian Affairs; the Department of Education; and the Department of Youth Treatment and Rehabilitation.

The results of the analysis of State expenditures are shown in Table 8, "State General Fund Expenditures Attributed to the Indian Reservation Population in Arizona" and are discussed further in the Appendix.

As can be seen from Table 8, a significant State expenditure for Medicaid is made on behalf of the Indian reservation population. This cost estimate may understate or overstate the actual expenditures made by the State in 1993. It is difficult to estimate the cost of Medicaid and attribute it to the Indian reservation population with confidence. Cost data associated with Indian reservation residents' use of Medicaid and the Arizona Health Care Cost Containment System (AHCSSS) are so intermingled with Indian Health Service payments that

allocating these expenses specifically to the Arizona General Fund is problematic. In this analysis, a simple per capita apportionment factor was used to estimate the portion of the State's 1993 total AHCSSS general fund budget ($470,352,600) that was incurred for service delivery to Indian reservation residents. The ratio of reservation population to total State population yields an imputed cost for reservation population State Medicaid services of $23.5 million.

Both the Department of Economic Security and the Department of Health Services provide services accessed by reservation residents. For example, the Department of Health Services can attribute $4,187,935 of its 1993 general fund budget to services provided to reservation residents.

The State also makes expenditures for public education; and this includes expenditures for school districts serving a portion of the reservation school age population. The amount of expenditures the State makes on behalf of the Indian reservation population (Indian and non-Indian) was calculated using a Department based per pupil cost factor of $1,865 which was then multiplied by the total (Indian and non-Indian) reservation school population. From this total the federal revenue received by the State expressly for tax exempt reservation lands and Indian education was subtracted, resulting in the net State cost for education that can be attributed to the Indian reservation population. Table 8 shows that an estimated $41 million in total FY 1993 State expenditures can be attributed to the Indian reservation population in the State.

Table 8
State General Fund Expenditures Attributed to the Indian Reservation Population in Arizona
(Source: The Center for Applied Research, 1994; State of Arizona Appropriations Report, 1993.)

Department/Division	Total
Corrections	$7,507,220
Arizona Health Care Cost Containment System	
• Medical Assistance (Medicaid)	$23,500,000
Arizona Department of Economic Security	
• Developmental Disabilities	$3,253,589
• Children, Youth and Families	$434,100
Sub Total	$3,687,689
Department of Health Services	
• Behavioral Health Services	$4,136,656
• Family Health Services	$1,710
• Disease Prevention	$49,569
Sub Total	$4,187,935
Arizona Commission of Indian Affairs	$153,300
Department of Education (Net of Federal Impact Aid)	$1,510,667
Department of Youth Treatment and Rehabilitation	$615,534
TOTAL STATE EXPENDITURES	**$41,162,345**

IX. SUMMARY OF THE ANALYSIS

Table 9 provides a summary of the economic (jobs and income) and fiscal (tax revenue) importance of American Indian reservations in Arizona. As a general observation it may be noted that both the fiscal and economic relationships between the 19 reservations selected for this analysis and the State is quite advantageous from the State's standpoint. In economic terms, over 43,000 jobs and $1 billion in annual personal income are generated state-wide by virtue of Indian reservation economic activities. In simplest fiscal terms, the State receives nearly $2 for every $1 it spends on the Indian reservation population. These impacts are illustrated in Figures 2 through 5.

Table 9
Summary Table:
The Economic and Fiscal Impacts of Indian Reservations in Arizona

(Source: The Center for Applied Research, 1994.)

State Expenditures Attributed to Arizona Indian Reservation Population	
Corrections	$7,507,220
AHCCCS	$23,500,000
Dept. of Economic Security	$3,687,689
Dept. of Health Services	$4,187,935
Commission of Indian Affairs	$153,300
Dept. of Education	$1,510,667
Dept. of Youth Treatment	$615,534
Total Expenditures	$41,162,345

State Revenue Attributed to Arizona Indian Reservation Population		State-Wide Employment Attributed to Arizona Indian Reservation Population	State-Wide Income Attributed to Arizona Indian Reservation Population
Consumer Spending	$17,608,475	11,418	$269,746,853
Reservation Enterprises	$17,825,200	2,694	$63,648,000
Tourism	$32,551,241	20,278	$479,055,993
Tribal Government Spending	N/A	1,704	$40,250,097
Federal Government Spending	$11,661,077	7,562	$178,637,777
TOTAL	$79,645,993	43,656	$1,031,338,720

Figure 2

1993 General Fund Expenditures Attributed to the Arizona Indian Reservation Population

(Source: The Center for Applied Research, 1994.)

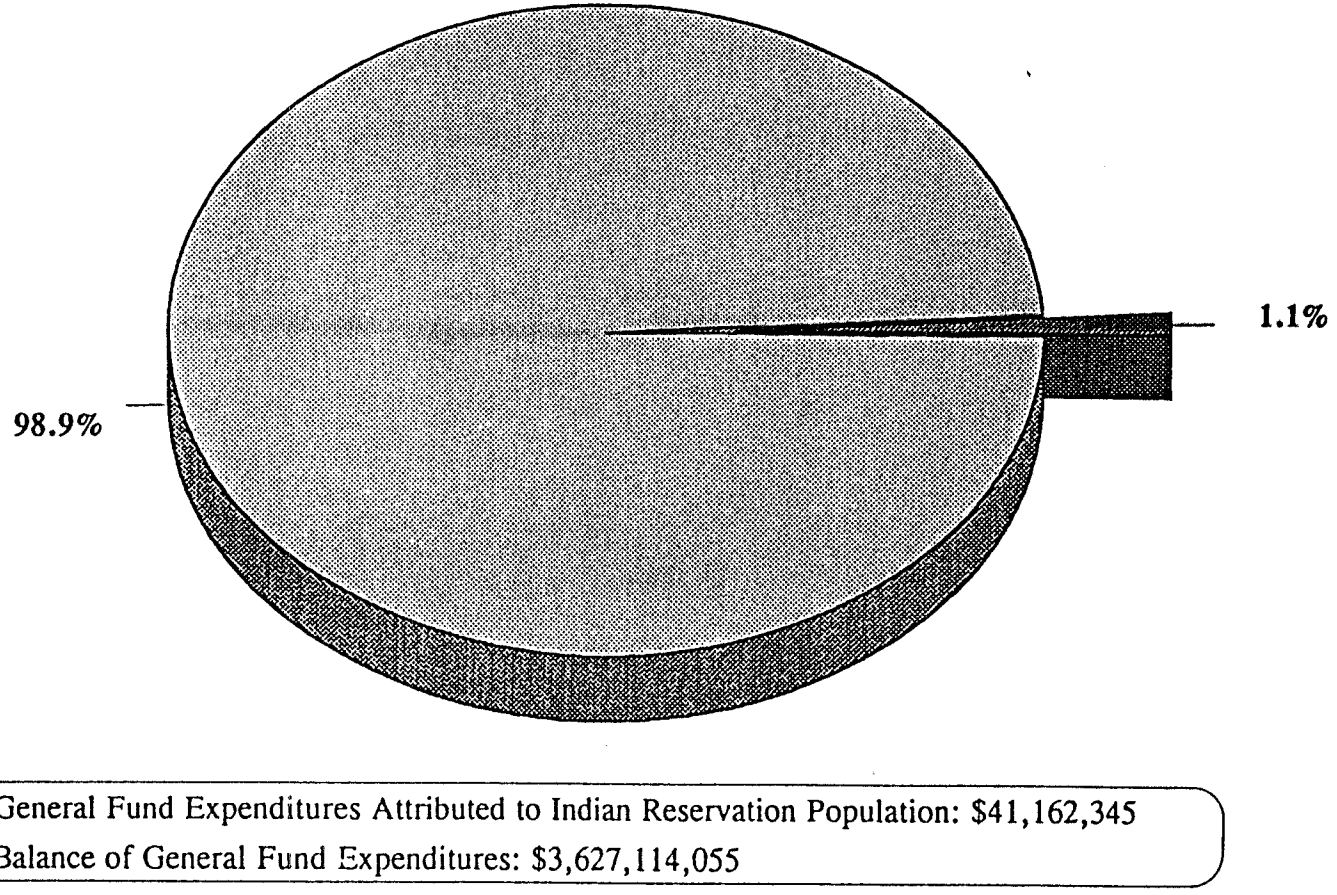


Figure 3

1993 General Fund Revenue Attributed to the Arizona Indian Reservation Population

(Source: The Center for Applied Research, 1994.)

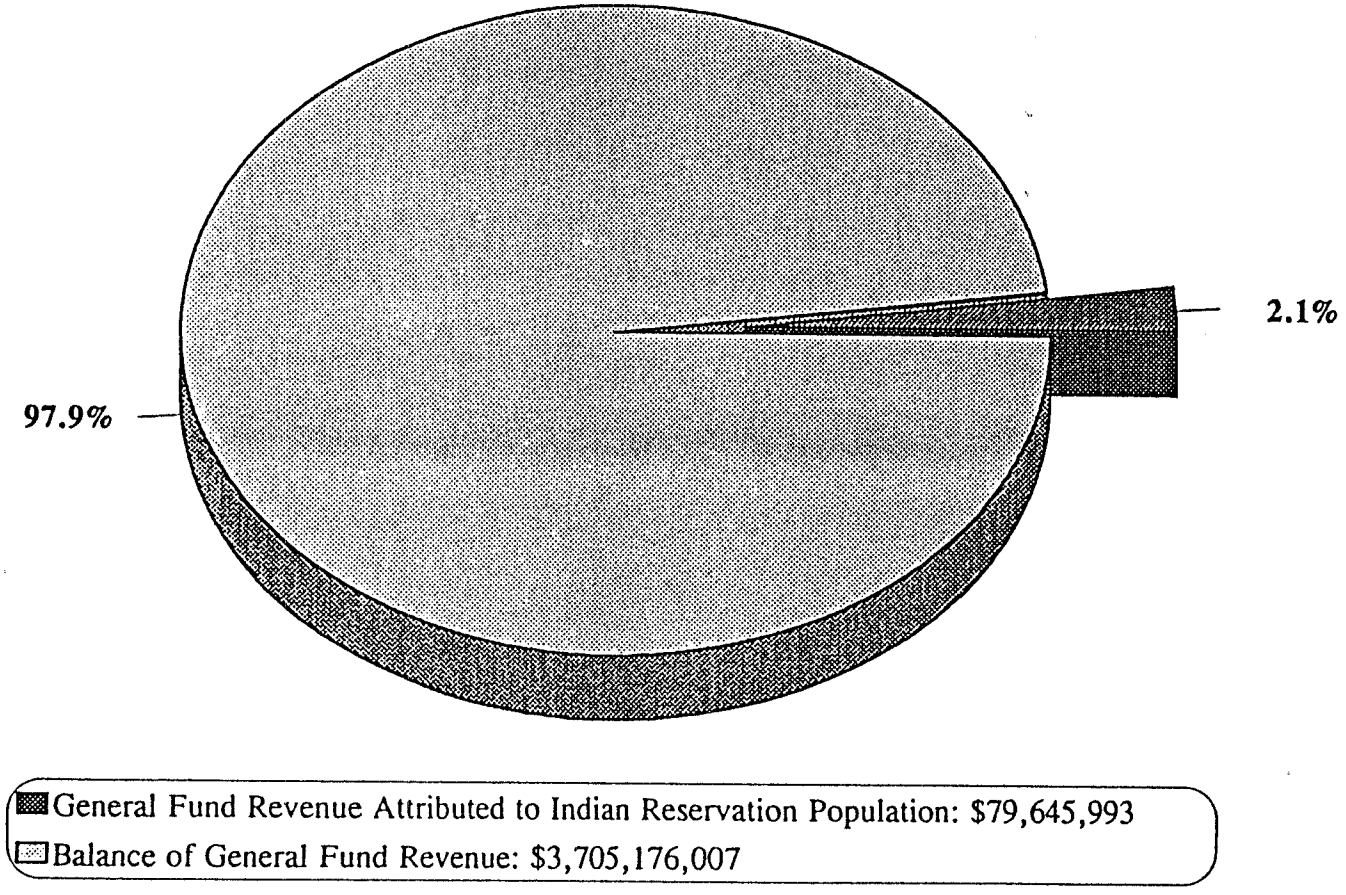


Figure 4

1993 State-Wide Employment Attributed to the Arizona Indian Reservation Population

(Source: The Center for Applied Research, 1994.)

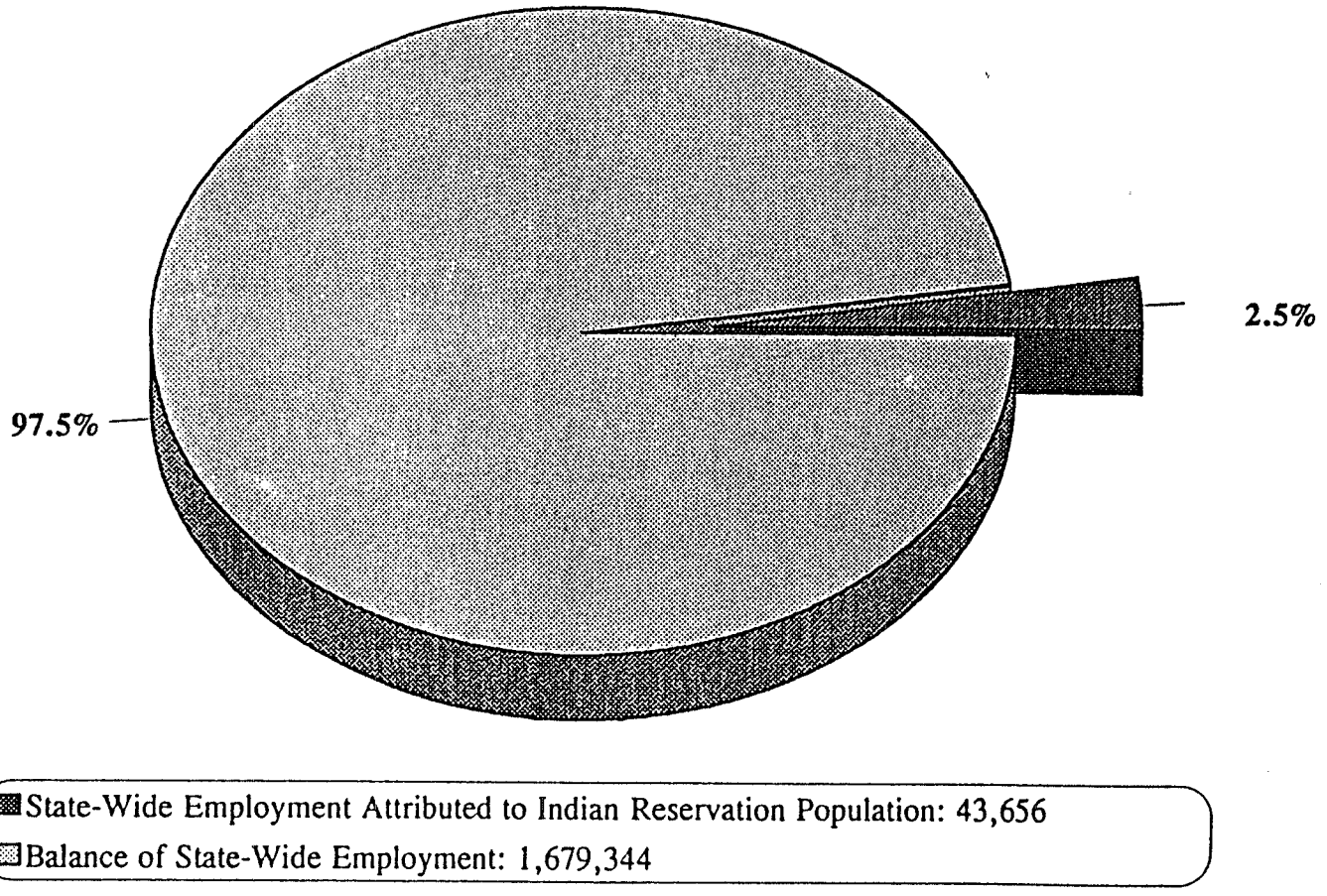
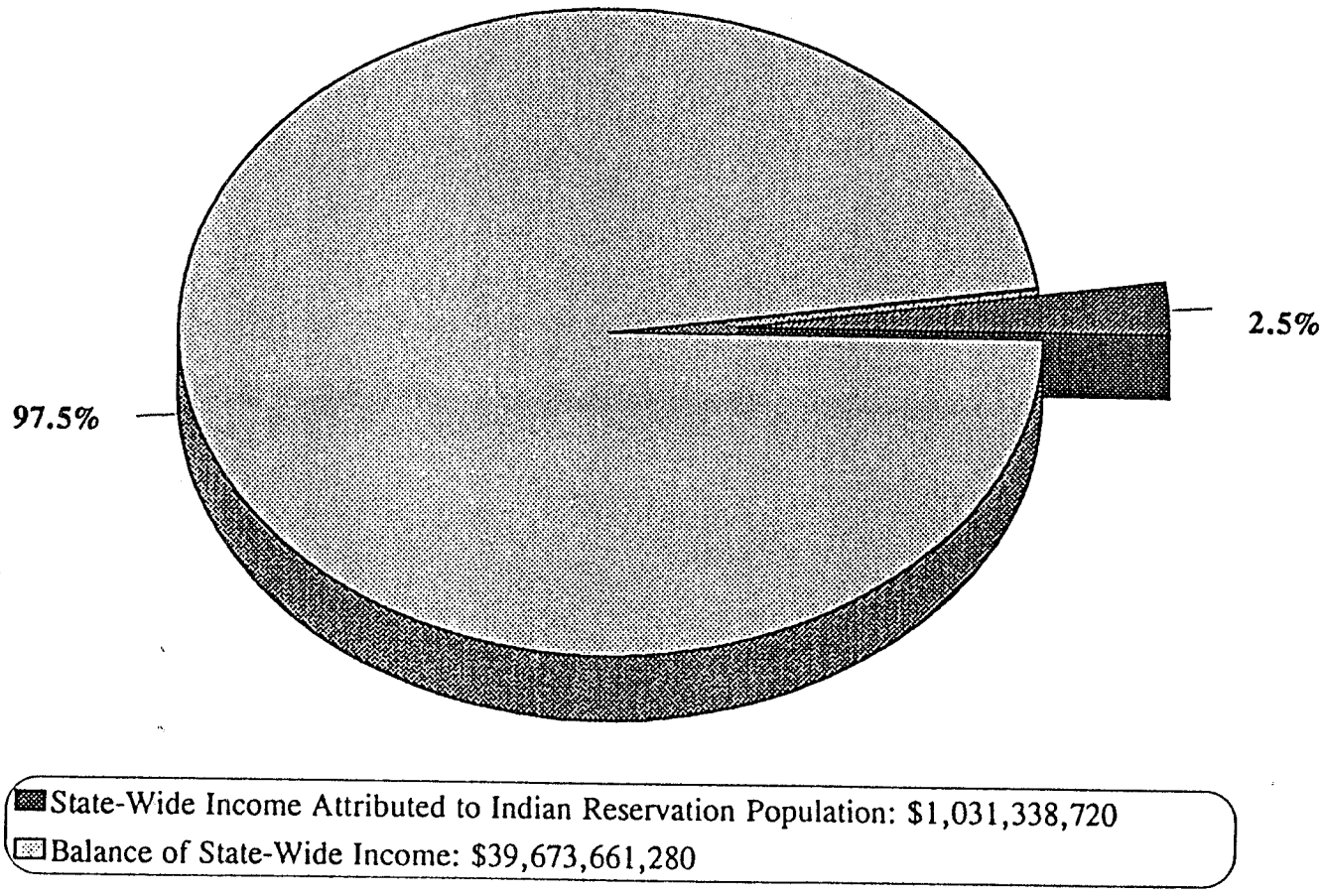


Figure 5

1993 State-Wide Income Attributed to the Arizona Indian Reservation Population

(Source: The Center for Applied Research, 1994.)



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Appendix

The Economic and Fiscal Impact of American Indian Reservations in Arizona

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Research Methodology

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October, 1994

INTRODUCTION

This document provides a more detailed explanation of the research methodology, data sources and assumptions that are referenced in "The Economic and Fiscal Impact of Indian Reservations in Arizona", a report prepared by the Center for Applied Research. The purpose of the research was to identify the direct (or primary) and the "induced" (or secondary) impacts on Arizona's economy that are attributable to the American Indian reservations in the State.

The analysis quantifies economic impacts in terms of employment and income.[1] Fiscal impacts are expressed in terms of State General Fund revenue and State General Fund expenditures in the 1993 fiscal year.

ECONOMIC IMPACTS

The concept of "induced" employment and income refers to the full ramifications (the "multiplier" effects) of any addition to State personal income, such as that which is occasioned by reservation activities. The multiplier concept is a basic tenant of Keynesian equilibrium analysis and conventional macroeconomic theory. It essentially describes the "chain" of spending and re-spending and expanded output that flows from an initial increase in income, savings and investment.

For example, a $1,000 expenditure by an individual Indian reservation consumer in Phoenix will

[1] A third factor, the value of savings and investment spawned by reservation residents, tribal governments and reservation-based economic activities, is also identified, however it is not dealt with explicitly in the impact analysis.

cause income in the State to increase by $1,000. A portion of this $1,000 will be saved, a portion remitted out of State, and a portion "re-spent" in the State economy.

The recipients of this second round of consumer spending in the State will in turn, spend a portion of their new income, effectuating yet another round of spending. The cumulative effect of this chain of spending and re-spending is what is referred to as "induced income". Induced income is divided by Arizona's 1993 average annual wage/salary income ($23,624) to compute the State-wide employment that theoretically corresponds to the total induced income amount.

A multiplier value of 1.4 has been used throughout the analysis to estimate the induced or secondary economic effects of reservation-based economic activities. This multiplier value is used based on a review of the series of multipliers compiled in the U.S. Department of Commerce, Regional Industrial Multiplier System (RIMS) which is based on Bureau of Economic Analysis national input-output tables. (National Technical Information Service, PB-168-865).

The Center for Applied Research has adjusted downward the final induced income amount derived from the multiplier analysis. Because the RIMS regional multiplier of 2.4 has been determined indirectly through regional surveys, the Center for Applied Research presumes the value of 2.4 reflects some degree of urban bias, thereby overstating the multiplier effects that could be associated with rural consumer spending.

For the purposes of this analysis, all multiplier effects have been adjusted downward by 60%

to single out these effects of rural spending patterns.

Thus, total income (from which total employment is derived) is computed as the initial direct increase in spending plus the multiplier induced value. Increased spending resulting from reservation activities is then multiplied by 2.4 (the value of the initial spending (1.0) plus the multiplier value 1.4) to arrive at total direct and induced income and employment. This total is then reduced by 60% to reflect the rural economic setting and market environment described above.

ETHNICITY VS. PLACE SPECIFIC ANALYSIS

Because the analysis is concerned with the relationship of two distinct and sovereign geopolitical jurisdictions, the State and Indian reservations, (or more specifically, the economic and fiscal impact that that relationship has on the State's economic and fiscal status), reservation boundaries are more important than the ethnic composition of the reservation. The analysis is less concerned in other words, with the interaction of two ethnic groups than with the economic and fiscal "flows" across two sovereign jurisdictions. It is clear that, reservations are logically perceived and defined in terms of their tribal, ethnic composition, not simply in geopolitical terms. But in this analysis it is the nature of an economic and fiscal relationship, a relationship between jurisdictions or places, that is being investigated.

RESERVATION POPULATION COUNTS, HOUSEHOLD COUNTS AND HOUSEHOLD INCOME MEASUREMENTS OF ARIZONA INDIAN RESERVATIONS

Most Indian tribes in Arizona understandably question the accuracy of the U.S. Census. Some claim that an undercount in the 1990 Census of up to 15% was experienced; others speculate that an overcount occurred. This analysis, because of its focus on BIA defined reservations, utilizes, out of necessity, one uniform measure of population, namely the 1990 U.S. Census final count adjusted for growth between 1990 and 1993 for reservations and U.S. Census population projections for the 1993-2000 period.[2]

Although Census data are useful because enumerations are extensive and Census data are widely accepted, limits to the scope of Census surveys exist and these ultimately affect the reliability and availability of data. It is important to note these limits for a full understanding of the data used in this study.

Census Surveys of income characteristics are relatively lengthy and more comprehensive than are those of population characteristics. In such thorough surveys, not all persons in an area can be questioned. Some responses must be estimated or "written-in" by the Census Bureau. Consequently, the data that results is subject to some degree of variability. Surveys that contain written-in responses are referred to by the U.S. Census Bureau as "3A" or "Sample data". On

[2]The analysis also relies on *median* measures of household income not *mean* (or average) measures. Each of the measures of central tendency (the mean, mode, median, mid-range, etc.) presents a unique set of errors when used to represent an entire distribution. But in skewed distributions (such as the type likely to be associated with household income on the reservation) the *median* is by far, the preferred descriptive measure. The source of median household income is the 1990 U.S. Census adjusted for income growth in the intervening years, 1990-1993.

the other hand, data which is obtained through shorter, less comprehensive surveys of population characteristics are 100% reliable. This is due to the fact that the shorter surveys have required no responses to be "written-in". Subject to no sampling variability, the Census Bureau refers to such data as "1A" or "100% data".

To attain the most reliable results in this study, the Center for Applied Research has used population counts from the 1A short form and household counts and income measurements from the 3A long form. Although household counts are available through 1A surveys, the Census Bureau recommends using 3A household counts when they will be considered in relation to household income measurements.[3] Using this approach, comparability of the data is maintained in the analysis.

Limits to the scope of Census surveys also affect the availability of certain data specific to the smaller areas surveyed. More specifically, certain small-scale breakdowns of data by Indian reservation are unavailable. Reservation household income measurements for example, only reflect the incomes of those households which are Native American. The household incomes of other races and ethnicities residing on the reservation are not measured. The same holds true for reservation household counts. Reservation population counts, however, reflect all persons living on reservations, regardless of race or ethnicity.

[3]Source: U.S. Bureau of the Census; Denver, Colorado; 1994.

Although Census data in different forms ultimately subjects the analysis to some degree of bias upward or downward, the approach taken here using two sets of U.S. Census data preserves the quality of uniformity across reservations in that the survey methods used are consistent for all areas/Reservation household counts and reservation household income measurements obtained from other sources such as individual reservations would sacrifice this quality.

PERSONAL CONSUMPTION EXPENDITURES BY RESERVATION POPULATION

The key assumptions that 85% of personal consumption expenditures are subject to Transaction Privilege tax and that 20% of business income is subject to Corporate Income tax are based on descriptions of taxable items contained in the 1993 State of Arizona Department of Revenue Annual Report.

RESERVATION ENTERPRISES

The value of output (gross receipts) generated by Indian owned reservation-based enterprises was obtained through primary and secondary research efforts; this included a review of tribal government data, key informant interviews among tribal, state and county officials and the acquisition of data from the BIA.

Data on non-Indian owned reservation-based enterprises were also obtained from primary and secondary sources. These included the U.S. Minerals Management Service, the U.S. Energy Information Administration, and the Federal Energy Regulatory Commission.

State published reports were the exclusive source for State tax revenue and expenditures data. Transaction Privilege tax revenue is calculated by applying a 5% rate (3.125% for mining) to the estimated value of gross receipts. Corporate income tax is calculated at a rate of 9.3% of taxable income, which is assumed to be equal to 20% of gross income.

TRIBAL GOVERNMENT EXPENDITURES

Tribal government expenditures in the State were estimated on the basis of consultation with tribal government representatives and prior research by the Center for Applied Research among tribal governments in the State of Arizona. A per capita estimate of $240 was utilized to calculate the $43 million in tribal government expenditures shown in Table 6 (tribal government O. and M. costs = $240 x 179,176, the total reservation population).

FEDERAL GOVERNMENT EXPENDITURES

Impacts on the State economy due to federal expenditures were limited to the wage and salary and program expenditures of four federal departments in Arizona.

TOURISM

The Hopi Office of Research and Planning has estimated that 90,000 persons visit the Hopi

reservation annually.[4] Based on this estimate, it is assumed in the analysis that the ratio of Hopi visitors to the 1993 Hopi reservation population can be applied to the aggregated number of reservation visitors to the 1993 population of all Arizona Indian reservations.

STATE EXPENDITURES

The analysis of state expenditures focused on General Fund expenditures and revenues only, ignoring federal revenues (other than in the special case of Education where ethnicity does figure in federal payments to the State which supplement State General Fund revenues).

It appears that Medicaid services accessed by reservation residents constitutes a source of costs to the State but it is unclear whether these costs are above or below those planned on and accounted for in the Federal Medical Assistance Matching Ratio. While Indian reservation Medicaid recipients may contribute to AHCCCS costs, the complexity and circuitous nature of State reimbursement for IHS related services makes it virtually impossible to assign an impact cost with confidence to the reservation population. The estimated AHCCCS cost that appears in Table 9 is probably high.

[4]Source: Hopi Tourism Management Studies; The Hopi Tribe; Office of Research and Planning; 1991.)