



**ECONOMIC AND REVENUE  
IMPACTS OF COLLEGES  
AND UNIVERSITIES IN GLENDALE**

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**AUGUST 2013**

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## 1.0 INTRODUCTION

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Applied Economics was retained by the City of Glendale to prepare an economic impact analysis of five colleges and universities in and around Glendale to demonstrate the significant impacts that they create on the local economy. These schools include DeVry University, Midwestern University, Thunderbird Graduate School, Glendale Community College and ASU West.

Information was obtained from individual schools and from National Center for Education Statistics, Integrated Postsecondary Data System (IPEDS) including employment, payroll and enrollment that was used to estimate the impacts. Together these five schools employ nearly 3,700 people and have a combined payroll of \$204.3 million. They provide higher education to 38,000 full time and part time students in Glendale.

Over the past five years, employment at public and private colleges and universities has grown significantly in Greater Phoenix. Colleges and universities are not only important in terms of the educational services they provide for residents and workers, but they also create a significant economic impact. Future population increases in the metro area will spur continued growth in demand for higher education.

From an economic perspective, these institutions are just like other businesses or organizations. They hire people and pay wages, purchase goods and services from local and non-local suppliers, pay state and local taxes, and receive income from their “customers.” In addition to making higher education available locally, an educational institution has an economic impact on the community or region in which it is located.

Higher education is also a fundamental building block in terms of supporting economic development. Local businesses require a pool of educated workers from which to hire their employees, in addition they may require continuing education for their employees. Colleges and universities are a valuable resource. In particular, many of the colleges in this study offer undergraduate and graduate degree options for working adults and non-traditional students to support workforce development.

*The information and observations contained in this report are based on our present knowledge of the operations of the selected institutions, and of the current fiscal and socioeconomic conditions of the affected areas. Some estimates made in this report are based on assumptions. However, even if the assumptions outlined in this report were to occur, there will usually be differences between the estimates and the actual results because events and circumstances frequently do not occur as expected. This analysis is based on the best available information and is intended to aid the city in quantifying the impacts of higher education on the local economy. In no way will Applied Economics be held responsible or have any liability or be subject to damages as a result of this analysis. This report may be used only for the purposes that it was intended.*

## 2.0 IMPACT SUMMARY

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The operations of the five colleges and universities detailed in this analysis provide significant economic benefits to the City of Glendale. These positive impacts include the following:

- All total, the colleges and universities in this study have an annual economic impact of \$771 million on the Glendale economy. They support about 3,300 jobs and \$128 million in payroll *at other local businesses* supported by the schools, their employees and students. This is in addition to the employees and payroll generated by the schools directly. These colleges and universities also create significant economic impacts in other parts of the metro area through their employees and students that live outside Glendale.
- The schools in this study directly employ a staff approximately 3,700 people with a payroll of \$204 million annually. It is estimated that approximately 30 percent of these employees live in Glendale. These employees make a significant amount of local purchases generating an economic impact of \$61 million per year in Glendale. This amount of economic activity or sales supports about 300 jobs and \$13 million in payroll at other local businesses which is included in the total impact above.
- Another component of the economic impact is student spending. Although student incomes and spending are less than employee spending, the 38,000 students at the five schools create a sizeable economic impact of \$230 million per year. Through their local spending, students support 2,400 jobs and \$90 million in personal income at local businesses.
- These schools also make local purchases of goods and services. Local vendor spending generates an annual impact of \$85 million, supporting 600 jobs and \$24 million in payroll.
- Employee and student spending along with institutional purchases generate \$3.5 million in local sales and property tax revenues annually to the City of Glendale and \$1.7 million to the county and local school districts as well as \$16.6 million in state sales and personal income taxes each year. This is in addition to taxes paid by the schools directly which are not included here.

These five institutions not only provide a wide range of higher education alternatives for Glendale residents, but also support a significant amount of additional economic activity, jobs and payroll at related local supplier and consumer businesses in the city. They play an important role in helping Glendale achieve its economic development goals by enhancing the local business climate and by serving as foundational building blocks of the economy.

**SUMMARY OF IMPACTS**  
(millions of dollars)

	Total*
<b>Direct University Contributions to Glendale's Economy*</b>	
University Employees	3,673
University Payroll	\$204.31
Estimated Local Vendor Purchases	\$84.88
Total Enrollment	38,044
<b>Annual Economic Impacts**</b>	
Total Output	\$771.33
Total Personal Income	\$331.94
Total Jobs	6,996
<b>Annual State and Local Indirect Revenue Impacts***</b>	
<b>(dollars)</b>	
Property	\$0.75
Sales	\$12.43
Personal Income	\$8.52

Source: Applied Economics, 2013.

\* Includes DeVry University, Midwestern University, Thunderbird Graduate School, ASU West and Glendale Community College.

\*\* Includes impacts from vendor purchases as well as employee and student spending and university direct impacts.

\*\*\* Excludes taxes paid by universities directly.

### **3.0 ECONOMIC IMPACT ANALYSIS**

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Economic impact analysis is a means for identifying the nature of changes in jobs, personal income and business activity that can occur in a given area as a result of a business or other project that supports economic activity. Economic impacts shown here include direct and indirect jobs, personal income, and economic activity or output that is generated by the colleges and universities through their local operations. Indirect impacts are the result of the multiplier effect, and capture supported supplier and consumer businesses and employees in Glendale that benefit from higher education. Multiplier effects are a way of representing the larger economic effects on the local economy. In essence, the multiplier effect represents the recycling of local spending that, in turn, creates new business opportunities.

Direct impacts include employees and payroll at the five institutions as well as the value of educational services that are provided. Total jobs include local vendors from whom these institutions make purchases and local establishments where employees and students shop. These local establishments and their employees in turn make additional local purchases that are captured in the total impact estimates. The total impact includes both the direct impacts and the secondary impacts created by other local businesses and their employees. Additional purchases by both the institutions and their students and employees will also occur outside the city and are not represented here.

The colleges and universities in this study directly and indirectly create on-going impacts through the increases in demand they generate in the local and regional economy. University employees and students are purchasers of goods and services which, in turn, support many local businesses. The institutions themselves are also important purchasers in the local and regional market for supplies and services. All total, the higher education institutions in Glendale create the following annual impacts on the city.

- 7,000 jobs
- \$332 million in payroll
- \$771 million in sales of products and services

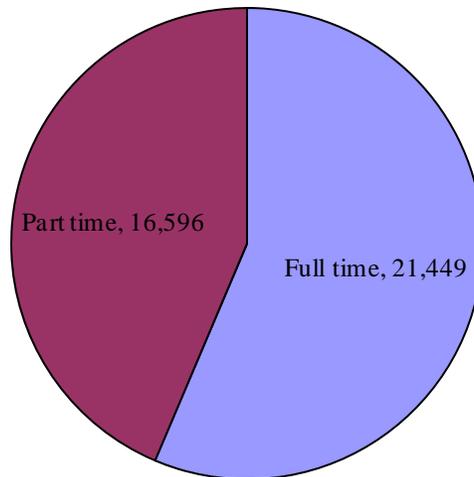
#### **3.1 Student Spending**

The largest component of the indirect and induced impacts created by higher education in Glendale comes from student spending. Last fiscal year, there were approximately 21,400 full time students and 16,600 part time students enrolled at the five institutions (Figure 1). Among the full-time students, approximately 21 percent live on-campus.<sup>1</sup> Of the remaining full and part time students living off-campus it is assumed that 30 percent live in Glendale. Spending impacts for students living outside Glendale are not included here.

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<sup>1</sup> On-campus housing is available at Midwestern, Thunderbird and ASU West.

**FIGURE 1**  
**STUDENT ENROLLMENT AT UNIVERSITIES IN GLENDALE**



Based on information provided by the institutions and from the IPEDS database, the average student living off-campus spends about \$24,000 per year on non-tuition expenses on housing, food, transportation, personal items, books, and other items. For on-campus students, only expenditures on personal items, books & supplies were included at an average of \$13,200 per year. For part-time students who live off-campus only half of their spending was attributed to their student status and included in the results.

In total, student spending for students living in Glendale is estimated at \$166.7 million per year (Figure 2). Although the amount of disposable income per student is significantly less than for employees, the sheer volume of students results in a sizeable amount of expenditures. Based on the specific categories of spending, this information can be used to estimate the economic impacts related to students. All total, the \$166.7 million in student spending generates a total economic impact of \$229.7 million, supporting about 2,400 jobs and \$90.1 million in personal income at local businesses.

**FIGURE 2  
STUDENT SPENDING**

	On-Campus	Off-Campus	Total
Housing	\$0	\$45,596,750	\$45,596,750
Food	\$0	\$30,895,351	\$30,895,351
Transportation	\$2,538,417	\$24,110,798	\$26,649,214
Personal	\$1,813,839	\$22,524,294	\$24,338,133
Books & Supplies	\$1,585,313	\$10,045,903	\$11,631,217
Health Insurance	\$1,750,892	\$2,578,851	\$4,329,742
Auto Insurance	\$1,354,735	\$17,263,001	\$18,617,735
Utilities	\$0	\$4,595,373	\$4,595,373
<b>Total</b>	<b>\$9,043,195</b>	<b>\$157,610,320</b>	<b>\$166,653,515</b>

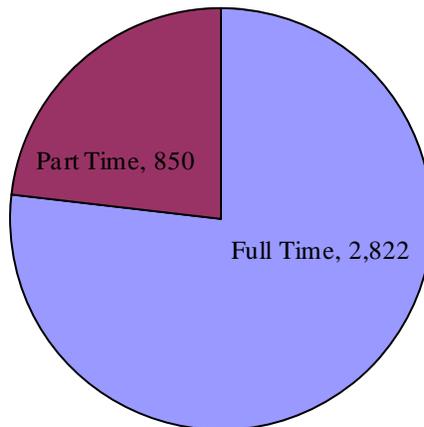
Note: Analysis assumes that only 30 percent of off-campus students live in Glendale.

### 3.2 Employee Spending

The next largest component of the indirect and induced impacts created by higher education institutions in Glendale comes from employee spending. These institutions employ about 3,700 people in Glendale with an annual payroll of \$204.3 million (Figure 3). This figure includes faculty and staff at the colleges and universities. The average wage per university employee is estimated at \$62,200 plus benefits, which is well above average wage levels in the region. These employees represent a substantial amount of purchasing power that supports additional jobs and payroll at local retail and service establishments in the city.

**FIGURE 3  
EMPLOYMENT AND PAYROLL**

*Total Annual Payroll: \$204.3 million*



Based on the Census Consumer Expenditure Survey, it is estimated that employees spend approximately 83 percent of their income on goods and services. Employee spending, adjusted for the share of employees living in Glendale, resulted in an estimated annual economic impact of \$61.2 million last year.<sup>2</sup> Through this spending, these institutions indirectly support about 300 jobs and \$13.2 million in personal income at local retailers and service providers in Glendale.

### 3.3 Vendor Spending

Local higher education institutions are also significant purchasers of local goods and services. Major local purchases by higher education institutions include food services, utilities, facilities maintenance services, professional services, office supplies, advertising, equipment and furniture (Figure 4). It is important to note that colleges and universities also make a considerable volume of non-local purchases that are not captured here.

As purchases are made from local vendors they, in turn, support jobs and payroll in Glendale. Local spending may also take place on behalf of the local vendors that supports additional jobs and payroll. Estimated local vendor purchases support an annual economic impact of \$84.9 million along with about 590 jobs at local vendors and their suppliers.

**FIGURE 4  
TYPICAL LOCAL PURCHASES**

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Food Service and Banquet
Utilities
Facilities Maintenance
Telecommunications
Insurance
Training
Legal Services
Office Supplies
Advertising
Professional Services
Rent
Equipment and Furniture
Books/Bookstore Merchandise
Printing/Promotional Materials
Janitorial Service
IT Related Services
Copier Maintenance
Security Service
Banking Fees and Charges
Clothing
Transportation

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<sup>2</sup> Analysis assumes that 30 percent of employees live in the City of Glendale based on Trip Reduction Survey data.

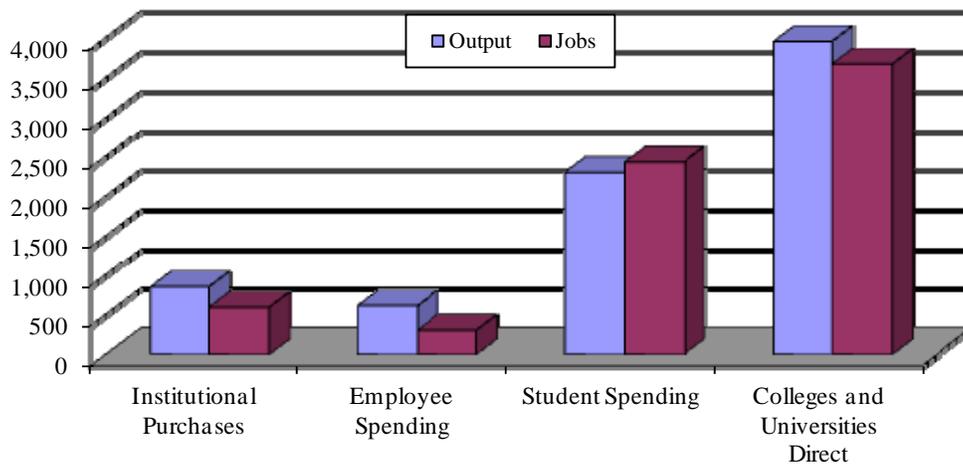
### 3.4 Overall Economic Impacts

The economic impact results presented here from the components detailed above are grouped into direct impacts and total impacts. Direct impacts include the jobs, payroll and value of services provided by the higher education institutions. Indirect impacts include local vendor spending. Induced impacts include spending by students and employees. Indirect and induced jobs represent employees at local supplier businesses where the institutions make purchases, as well as local consumer establishments where students and employees make purchases. These supplier businesses and their employees in turn make additional local purchases that are captured in the total impact estimates. The total impact includes the direct impacts of higher education institutions and the indirect and induced impacts created by other local businesses and their employees. All total, the operations of the five colleges and universities included here create a total economic impact of \$771.3 million in Glendale's economy each year, directly and indirectly supporting about 7,000 jobs and \$331.9 million in annual personal income (Figures 5 and 6).

**FIGURE 5  
ANNUAL ECONOMIC IMPACT OF  
HIGHER EDUCATION IN GLENDALE**

College/University	Output	Jobs	Personal Income
<b>Direct Impacts</b>	\$395,569,542	3,673	\$204,314,363
<b>Indirect Impacts</b>			
Local Vendor Purchases	\$84,881,807	592	\$24,390,473
<b>Induced Impacts</b>			
Employee Spending	\$61,202,772	305	\$13,182,186
Student Spending	\$229,675,356	2,427	\$90,054,114
Housing	\$53,037,511	366	\$9,160,127
Food	\$44,442,761	597	\$20,741,183
Transportation	\$39,253,208	410	\$18,530,139
Personal	\$34,266,127	533	\$15,528,951
Books & Supplies	\$16,873,908	213	\$7,329,495
Health Insurance	\$6,864,853	56	\$3,283,262
Auto Insurance	\$29,518,619	239	\$14,117,905
Utilities	\$5,418,370	14	\$1,363,053
<b>Total</b>	<b>\$771,329,477</b>	<b>6,996</b>	<b>\$331,941,136</b>

**FIGURE 6  
ANNUAL TOTAL ECONOMIC IMPACT OF  
COLLEGES AND UNIVERSITIES IN GLENDALE**



Note: Output in hundreds of thousands of dollars.

The secondary impacts of college and university expenditures, employee, student and visitor expenditures are called multiplier effects. Multiplier effects are a way of representing the larger economic effects on the local economy. The multiplier effects translate an increase in output (loosely defined for service industries as sales) into a corresponding increase in jobs and personal income. In essence, the multiplier effect represents the recycling of local spending. This recycling process creates new business opportunities.

The multipliers used in this analysis are from IMPLAN, a national vendor of economic impact software, and are specific to Glendale. Industry specific multipliers were used for higher education and for each category of student purchases. Household consumption multipliers were used to model employee spending. On average, the output multiplier for the institutions in this analysis is 1.95. This means that for every \$1 million of local purchases by a college or university in Glendale, an additional \$950,000 in additional economic activity is generated in the local economy. The nature of higher education, which supports not only employee and vendor spending associated with normal business operations but also student spending, results in a higher multiplier effect than many other types of industries.

## 4.0 REVENUE IMPACTS

In addition to supporting jobs and output at related businesses in the city through multiplier effects, the schools in this analysis also generate significant state and local tax revenues. Although many of the colleges and universities are exempt from income, sales, and property taxes as non-profit or public institutions, employees and students generate state and local revenues. College and university employees pay personal income taxes on their earnings, as well as sales taxes on a portion of their local purchases and property taxes on their home. The same is true for employees at other local businesses that are supported by vendor spending and employee and student spending as shown in the economic impacts. All total, the higher education institutions in Glendale indirectly generate an estimated \$5.2 million in local tax revenues and \$16.6 million in state tax revenues per year (Figure 7).

**FIGURE 7  
INDIRECT REVENUE IMPACTS  
COLLEGES AND UNIVERSITIES IN GLENDALE**

	City		County		Schools	State		Total
	Property	Sales	Property*	Sales	Property	Sales	Personal Income	
Institutional Spending								
Supported Employees	\$7,315	\$65,781	\$14,037	\$52,927	\$42,462	\$423,419	\$599,706	\$1,205,648
Employees								
University Employees	\$45,399	\$551,036	\$87,122	\$443,362	\$263,536	\$3,546,897	\$5,468,757	\$10,406,110
Supported Employees	\$3,773	\$35,552	\$7,241	\$28,605	\$21,904	\$228,843	\$329,533	\$655,452
Students								
Direct Spending	\$0	\$2,498,683	\$0	\$283,953	\$0	\$2,271,624	\$0	\$5,054,260
Supported Employees	\$30,000	\$242,876	\$57,571	\$195,417	\$174,148	\$1,563,339	\$2,124,309	\$4,387,661
<b>Total</b>	<b>\$86,487</b>	<b>\$3,393,928</b>	<b>\$165,971</b>	<b>\$1,004,265</b>	<b>\$502,050</b>	<b>\$8,034,123</b>	<b>\$8,522,305</b>	<b>\$21,709,130</b>

\*County property tax includes community college and all other applicable special taxing districts.

Local primary and secondary property taxes to the city, county, school district and other local taxing districts are estimated at \$755,000 per year. Indirect property tax revenues are estimated based on per capita residential assessed value in Glendale times the average tax rate times the supported population. Property tax revenues were also adjusted for the share of employees living in Glendale.

Annual local and state sales taxes are projected at \$4.4 million and \$8.0 million, respectively.<sup>3</sup> Sales taxes includes consumer spending by direct and supported employees. City sales taxes are adjusted for the share of employees living in Glendale. Sales tax revenues also include student spending for books, utilities, rent and personal items. A sales tax rate of 2.9 percent was used for the City of Glendale, 0.7 percent of the county and 5.6 percent for the state.

University employees and supported employees at other local businesses also pay state income tax on their earnings. Based on the current personal income tax schedule in Arizona, it is estimated direct and support employees generate an estimated \$8.5 million in state income tax revenues each year.

<sup>3</sup> Sales taxes from employee spending are based on typical consumer expenditure patterns. According to the Census Bureau Consumer Expenditure Survey, approximately 31 percent of gross personal income is spent on taxable goods. Applying this assumption to personal income of college and university employees and other supported jobs at local businesses times the local sales tax rate yields local sales tax revenues from employee spending.

## **5.0 SUMMARY**

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Higher education is a significant contributor to the city's economy and has been a source of new job creation in the past several years when many other businesses were reducing their workforce. They provide the city and the region with a highly educated future workforce. They also provide high quality jobs to thousands of workers and support the local economy with millions of dollars each year in vendor purchases, creating a very significant economic impact in the city. In addition to jobs and vendor purchases that are generally associated with economic impacts created by local businesses, higher education institutions are unique in that they also create impacts through their students. They bring students to the area who would not otherwise be there and who generate significant demand for consumer goods and services. This results in jobs and economic activity in the city, as well as local and state tax revenues that would not have occurred were it not for the presence of these institutions.