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## Utah Economy

### Part 3: Educational Attainment, Productivity and Wages

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#### Introduction

Economists and business leaders often cite workers' education levels and productivity as the key elements to sustaining economic growth. The advent of the personal computer and subsequent innovations, such as the Internet, has been credited for increasing American workers' productivity to levels not seen before in history. In this article, the third part in a series on Utah's economy, we will examine the correlations between educational attainment, productivity, and earnings as well as how Utah has fared relative to other states.



#### Earnings Growth

From 1977 to 2005, earnings in the United States grew by 13.2 percent, from \$35,698 per worker to \$40,424 when adjusted for inflation. In Utah, earnings were lower than the national average and also grew at a slower rate. Average annual earnings in 1977 were \$32,337 when adjusted for inflation—ranking the state 29<sup>th</sup> in the nation. By 2005, earnings had only risen by \$952, or 2.9 percent, to \$33,289. Utah's ranking fell to 37<sup>th</sup> and its 2.9 percent growth rate was 40<sup>th</sup>. Additionally, of the eleven states with smaller earnings growth than Utah, seven had negative growth— Ohio, Michigan, Louisiana, Wyoming, Montana, West Virginia, and Alaska. With the exception of Ohio and Michigan, the states with negative growth had exceptionally high earnings in 1977 due to the demand for oil and other fossil fuels during the 1970s.

**Figure 1** highlights the ten states with the highest earnings in 1977, 2005 and those with the highest growth rates over the time period.

**FIGURE 1**

Rank	States with Highest Earnings 1977	States With Highest Earnings 2005	Largest Percent Growth in Earnings 1977-2005
1	Alaska	District of Columbia	District of Columbia
2	District of Columbia	Connecticut	Connecticut
3	Michigan	New York	Massachusetts
4	New York	New Jersey	New Hampshire
5	Illinois	Massachusetts	Virginia
6	California	California	New York

7	New Jersey	Delaware	New Jersey
8	Delaware	Illinois	Georgia
9	Washington	Maryland	Rhode Island
10	Ohio	Virginia	North Carolina

Source: US Bureau of Economic Analysis, Personal Income Series

Some of the growth in earnings in a few of these states can be accounted for by two factors—cost of living in excess of the average inflation rate and the expansion of major metropolitan areas into surrounding communities. For example, businesses often found north-east New Jersey to be a cost-effective alternative to locating within New York City. As costs in New Jersey have risen, businesses pushed further out. The suburbs of New York City now encompass much of northern New Jersey, most of Connecticut and have spilled over into Rhode Island. At the same time, Boston area suburbs have crept into New Hampshire and Rhode Island. As costs in these areas rise, so do earnings.

While this pattern is well documented and states that do not have a large metropolis worry about their ability to generate adequate income growth, Figure 1 also shows some interesting anomalies to the formula of urban growth equals income growth. North Carolina, for example, still does not have a large metropolitan city and, until the late 1980s, Atlanta was a mid-sized southern city with a decaying urban core. Boston, as well, was a declining city struggling with losses in the manufacturing, steel and ship-building industries. So what were the factors that helped launch North Carolina, Georgia and Massachusetts into the top ten fastest growing earnings states? During the 1980s and 1990s all three states focused economic development programs that centered around “spinning off” academic research into profitable business ventures as well as connecting businesses with talent on the state’s college and university campuses. These programs have become so well known that the description “research triangle”—referring to the area in North Carolina bordered by Raleigh, Chapel Hill and Durham and their resident academic institutions—has been borrowed to describe similar areas around the world. The series of tools used by policymakers in Massachusetts has become a template for other programs including Utah’s own USTAR initiative. While many are trying to replicate the success of these programs, the question becomes “how do we know it is working?”

## Productivity

One possible way to answer that question is to focus on productivity—the value of output per worker. In 1977, the three states listed above were in the low middle to bottom quartiles of all the states in terms of productivity. Georgia ranked 33<sup>rd</sup>, Massachusetts was 40<sup>th</sup> and North Carolina was 44<sup>th</sup>. By 2005, Massachusetts ranked 8<sup>th</sup> while Georgia was 15<sup>th</sup> and North Carolina was 19<sup>th</sup>. In comparison, Utah ranked 38<sup>th</sup> in 1977 and 35<sup>th</sup> in 2005. **Figure 2** highlights the top ten most productive states in 1977 and 2005, as well as the fastest growing states.

**FIGURE 2**

Rank	Most Productive States 1977	Most Productive States 2005	Largest Percent Growth 1977-2005
1	Alaska	Delaware	Connecticut

2	Wyoming	Connecticut	Delaware
3	Louisiana	District of Columbia	District of Columbia
4	New Mexico	New York	Massachusetts
5	Texas	New Jersey	Rhode Island
6	Washington	Alaska	New Hampshire
7	North Dakota	California	New Jersey
8	New York	Massachusetts	New York
9	Kentucky	Texas	North Carolina
10	Illinois	Colorado	Minnesota

Source: Federal Reserve Bank of San Francisco, CSIP

Again, in 1977, the chart is dominated by extractive industry states that had high levels of production to meet demand for oil, natural gas and coal. By 2005, the list was dominated by states that are leaders in pharmaceuticals, chemical, business or financial services and the “high-tech” economy. Note that Massachusetts ranked 8<sup>th</sup> in 2005 and was the 4<sup>th</sup> fastest growing state, while North Carolina ranked as the 9<sup>th</sup> fastest growing state.

### Educational Attainment

Another possible indicator would be the percentage of workers with at least a bachelor’s degree. While degree attainment is rising everywhere, it seems there is some correlation between economic development programs and educational attainment. Although Massachusetts is home to Harvard University and the Massachusetts Institute of Technology, as well as a host of smaller public and private institutions of higher education, the state only ranked 12<sup>th</sup> in 1970 for the percentage of residents age 25 and older with at least a bachelor’s degree, with 12.0 percent of its population in that category. In contrast, Utah ranked 4<sup>th</sup> with 14.0 percent of its population 25 and older holding at least a bachelor’s degree. By 2005, Massachusetts ranked 2<sup>nd</sup> in the nation with 36.9 percent of its population with at least a bachelor’s degree. On the other hand, Utah ranked 17<sup>th</sup>, with 27.9 percent of the population holding at least a bachelor’s degree. Like Massachusetts, Georgia and North Carolina also made tremendous strides in the percentage of population with at least a bachelor’s degree as shown in **Figure 3**.

**FIGURE 3**

Rank	States with Highest Educational Attainment 1970	States With Highest Educational Attainment 2005	Largest Growth in Attainment 1970-2005

1	District of Columbia	District of Columbia	Rhode Island
2	Colorado	Massachusetts	Maine
3	Alaska	Colorado	North Dakota
4	Utah (tie)	Connecticut	Pennsylvania
5	Hawaii (tie)	Maryland	North Carolina
6	Maryland	New Jersey	Georgia
7	Connecticut	Virginia	Massachusetts
8	California	Vermont	New Hampshire
9	Delaware	New Hampshire	New Jersey
10	Washington	New York	South Dakota

Source: US Census Bureau, Decennial Census and American Community Survey

## Utah

So what does all this mean for Utah? Earnings within the state have been flat since 1977 and while productivity has grown, the gains were modest—24.0 percent over the time period. This is a smaller gain than the national average and only raised the state three spots in the rankings—from 38<sup>th</sup> to 35<sup>th</sup>. Beyond the large national picture, Utah is falling behind its neighbors in earnings and productivity. In 2005, only Idaho and Montana were less productive than Utah, generating \$70,653 and \$61,535 in GSP per worker, respectively. Only Idaho, Montana and New Mexico had lower earnings per worker. Finally, the percent of residents obtaining bachelor's and graduate degrees also hasn't grown as quickly as other states; Utah's ranking has fallen every decade since the 1960s.

Education is the key. As more and more jobs demand higher levels of education, Utah must compete or those jobs and their higher wages will go elsewhere. The Utah Department of Workforce Services estimates that 28.6 percent of "five star jobs" (high paying jobs with large numbers of openings from now until 2014) will require at least a bachelor's degree. If employers cannot find qualified personnel in Utah to fill them, these jobs will go elsewhere.

In order to keep these positions in Utah, as well as generate innovation and profitable businesses from that innovation, the state needs to continue the steps it has taken with USTAR and work harder to integrate higher education with the business community; otherwise, the state will continue to fall behind.

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