Education in the Economy: Your Role

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Summer Technology Institute
J.F. Drake State Technical College  Huntsville, Alabama  June 11, 2012
Unemployment rates are lowest for degree holders

The incentive: It still pays to go to school

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**Education Pays**

<table>
<thead>
<tr>
<th>Unemployment rate in 2011 (in %)</th>
<th>Median weekly earnings in 2011 (in $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average: 7.6%</td>
<td>Average: $797</td>
</tr>
<tr>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>9.4</td>
<td></td>
</tr>
<tr>
<td>8.7</td>
<td></td>
</tr>
<tr>
<td>6.8</td>
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<tr>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>1,665</td>
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<tr>
<td>2.5</td>
<td>1,551</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td></td>
</tr>
<tr>
<td>Professional degree</td>
<td></td>
</tr>
<tr>
<td>Master’s degree</td>
<td>1,263</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>1,053</td>
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<tr>
<td>Associate degree</td>
<td>768</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>719</td>
</tr>
<tr>
<td>High school diploma</td>
<td>638</td>
</tr>
<tr>
<td>Less than high school diploma</td>
<td>451</td>
</tr>
</tbody>
</table>

Relative unemployment withstands recession

Unemployment Rates By Education Level

<table>
<thead>
<tr>
<th>Year, Sex &amp; Race</th>
<th>Total</th>
<th>&lt;HS</th>
<th>HS</th>
<th>Some College or Associate</th>
<th>Bachelor’s or higher</th>
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<tbody>
<tr>
<td></td>
<td>2000</td>
<td>3.0</td>
<td>6.3</td>
<td>3.4</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>4.0</td>
<td>7.6</td>
<td>4.7</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>8.2</td>
<td>14.9</td>
<td>10.3</td>
<td>8.4</td>
</tr>
<tr>
<td>Male</td>
<td>2000</td>
<td>2.8</td>
<td>5.4</td>
<td>3.4</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>3.8</td>
<td>6.4</td>
<td>4.6</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>8.9</td>
<td>15.0</td>
<td>11.3</td>
<td>9.0</td>
</tr>
<tr>
<td>Female</td>
<td>2000</td>
<td>3.2</td>
<td>7.8</td>
<td>3.5</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>4.2</td>
<td>9.7</td>
<td>4.8</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>7.4</td>
<td>14.6</td>
<td>9.0</td>
<td>7.8</td>
</tr>
<tr>
<td>White</td>
<td>2000</td>
<td>2.6</td>
<td>5.6</td>
<td>2.9</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>3.5</td>
<td>6.5</td>
<td>4.0</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>7.5</td>
<td>13.9</td>
<td>9.5</td>
<td>7.6</td>
</tr>
<tr>
<td>Black</td>
<td>2000</td>
<td>5.4</td>
<td>10.7</td>
<td>6.4</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>7.5</td>
<td>14.4</td>
<td>8.5</td>
<td>6.9</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>13.4</td>
<td>22.5</td>
<td>15.8</td>
<td>12.4</td>
</tr>
<tr>
<td>Asian</td>
<td>2000</td>
<td>2.7</td>
<td>5.7</td>
<td>3.0</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>3.5</td>
<td>5.5</td>
<td>4.6</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>6.8</td>
<td>11.1</td>
<td>7.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2000</td>
<td>4.4</td>
<td>6.2</td>
<td>3.9</td>
<td>3.2</td>
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<tr>
<td></td>
<td>2005</td>
<td>4.8</td>
<td>6.2</td>
<td>4.5</td>
<td>4.1</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>10.8</td>
<td>13.2</td>
<td>11.5</td>
<td>9.7</td>
</tr>
</tbody>
</table>
Economy = People + Institutions + Property = Private & Public Sectors

Economic Development = Higher/better quality of life

Human Capital Development = Education and Healthcare

Institutional Development = Better government, laws/regulations, culture

Physical Capital Development = Better infrastructure and environment

There is no economic development without education

*** Informal education is also important

Universities

Vocational and Community Colleges

Pre-Kindergarten to High School
Economic Development

In current practice, economic development is thought of as covering activities that grow the economy by raising GDP through

1. Industry recruitment
2. Existing business expansion and assistance
3. Workforce development

Typical metrics include jobs, exports, GDP, tax revenues

We need to add activities such as
- Research and development
- Community development
- Planning

And necessary metrics: income, educational attainment, health, etc.

Gross Domestic Product (GDP) = Consumer Spending + Government Spending + Investment + Net Exports (exports – imports)

Development Policies must be Optimal, Fair, Flexible, Sustainable
The Need for Education in the Economy

- Change is always taking place at an accelerating pace
- Economic opportunities are coming and coming fast
- To take advantage of these opportunities requires KNOWLEDGE, including especially analytics
- Wisdom is the principal thing: *therefore* get wisdom; and with all thy getting get understanding (Proverbs 4:7, *The Holy Bible: King James Version*)
- With wisdom and understanding we build **knowledge**, the power that enables us to develop and leads us to progress. To get wisdom and understanding, we need **education**, both **formal** and **informal**. This is the reason why education and educators are so very important in this world.
More educated people are more likely to work and they earn more

Percent of Alabama Civilians Ages 25 to 64 Participating in the Workforce by Level of Education, 2000

- In the Civilian Workforce
- Not in the Civilian Workforce

<table>
<thead>
<tr>
<th>Education Level</th>
<th>In the Civilian Workforce</th>
<th>Not in the Civilian Workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than High School</td>
<td>52.7</td>
<td>47.3</td>
</tr>
<tr>
<td>High School</td>
<td>69.2</td>
<td>30.8</td>
</tr>
<tr>
<td>Some College</td>
<td>77.0</td>
<td>23.0</td>
</tr>
<tr>
<td>Associate's Degree</td>
<td>81.6</td>
<td>18.4</td>
</tr>
<tr>
<td>Bachelor's Degree</td>
<td>83.4</td>
<td>16.6</td>
</tr>
<tr>
<td>Graduate Professional/Degree</td>
<td>86.7</td>
<td>13.3</td>
</tr>
</tbody>
</table>

Source: NCHEMS
The Importance of Education, 2010

More educated people are more likely to work and they earn more

Percent of Alabama Civilians Ages 25 to 64 Participating in the Workforce by Level of Education, 2010

## UA Education as Private Investment (Class of 2010)

<table>
<thead>
<tr>
<th>Degree/Diploma</th>
<th>High School</th>
<th>Some College</th>
<th>Bachelor’s</th>
<th>Master’s</th>
<th>Doctorate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Starting Salary ($)</td>
<td>18,398</td>
<td>24,047</td>
<td>36,861</td>
<td>52,870</td>
<td>82,888</td>
</tr>
<tr>
<td>Total Cost of Degree (2010 $)</td>
<td>58,962</td>
<td>161,526</td>
<td>243,367</td>
<td>390,142</td>
<td></td>
</tr>
<tr>
<td>Incremental Income (2010 $)</td>
<td>380,156</td>
<td>726,721</td>
<td>734,862</td>
<td>1,088,947</td>
<td></td>
</tr>
<tr>
<td>Real Annual Return on Investment</td>
<td>10.9%</td>
<td>13.3%</td>
<td>19.0%</td>
<td>18.3%</td>
<td></td>
</tr>
<tr>
<td>Real Return Relative to High School</td>
<td>10.9%</td>
<td>10.8%</td>
<td>11.5%</td>
<td>11.3%</td>
<td></td>
</tr>
<tr>
<td>Lifetime Earnings (Current $)</td>
<td>2,256,900</td>
<td>3,053,897</td>
<td>4,450,691</td>
<td>5,678,831</td>
<td>7,773,980</td>
</tr>
<tr>
<td>Incremental Income (Current $)</td>
<td>796,997</td>
<td>1,396,793</td>
<td>1,318,141</td>
<td>2,005,149</td>
<td></td>
</tr>
</tbody>
</table>

Note: Rounding effects may be present. Total cost of degree is the direct cost of the education (tuition, room and board, books, etc.), as well as forgone earnings while in school.

Source: Center for Business and Economic Research, Culverhouse College of Commerce, The University of Alabama.
Real Annual Rates of Return of UA Education by Degree (Class of 2010)

Source: Center for Business and Economic Research, Culverhouse College of Commerce, The University of Alabama.
• State appropriations = $138.5 million
• Net state investment = $87.6 million (state tax receipts only)
• Net state investment = $57.1 million (state & local tax receipts)

• Additional taxes over working life = $1.034 billion
  ($725.1 million state and $308.5 million local)

• ROI (state receipts only) = 10.4 percent annual rate
• ROI (state and local receipts) = 13.4 percent

• There are additional tax and other government revenues that are not considered here such as property taxes and vehicle registration and tag fees.
Perspective on Politics: We’re all Concerned Citizens

If you

Like economic growth, low taxes, and limited government

Then you are a Republican & Democrat & Independent

Like economic growth and social support

Democrat & Independent & Republican

Believe you can think for yourself on economic and other policy issues

Independent & Republican & Democrat

Go with all of the above

Concerned Citizen
U.S.: Recession, Recovery, Expansion

NBER definition: A recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in

- Real GDP
- Real income
- Employment
- Industrial production
- Wholesale-retail sales

After every recession is a recovery

- The BCDC dates peaks and troughs using hard data not forecasts
- The usual state of the economy is in expansion mode.
The U.S. economy has been in recession for 122 out of 803 months after WWII

Post World War II Recessions (source: NBER):
- Nov 1948 to Oct 1949 (11 months)
- Jul 1953 to May 1954 (10 months)
- Aug 1957 to Apr 1958 (8 months)
- Apr 1960 to Feb 1961 (10 months)
- Dec 1969 to Nov 1970 (11 months)
- Nov 1973 to Mar 1975 (16 months)
- Jan 1980 to Jul 1980 (6 months)
- Jul 1981 to Nov 1982 (16 months)
- Jul 1990 to Mar 1991 (8 months)
- Mar 2001 to Nov 2001 (8 months)
- Dec 2007 to Jun 2009 (18 months, longest and deepest)
Great Recession is truly over: Real GDP, real income, industrial production, wholesale & retail sales, and employment are all looking up

U.S. has had 11 recessions since WWII for 122 out of about 803 months; Great Recession is deepest, longest, and worst for jobs

Source: Bureau of Labor Statistics
Worst global recession in post-WWII era is over

U.S. recession is over and recovery is underway but slow

- GDP growth by quarter:
  - 2008 (-1.8%, 1.3%; -3.7%, -8.9)
  - 2009 (-6.7%, -0.7%, 1.7%, 3.8%)
  - 2010 (3.9%, 3.8%, 2.5%, 2.3%)
  - 2011 (0.4%, 1.3%, 1.8%, 3.0%)
  - 2012 (1.9%, to be revised)

- Government (fed, state, and local) revenues declining at slower pace or beginning to increase

- Wealth is gradually recovering and credit is slowly returning to normal

- Consumers are cautiously spending and unemployment is declining
Widening gaps between (i) government and consumer spending and (ii) between investment and trade balance.

Personal consumption at high levels while government expenditure share falls.

Trade deficit not a problem so long as investment adjusts appropriately (and with domestic savings).

Savings dropped sharply but starting to improve

Personal Savings as Percent of Disposable Personal Income

Source: U.S. Department of Commerce.
Average annual total government deficit share of GDP during selected periods:

- 1929-2011 (total 1.3%, federal 1.9%); 1970-2011 (2.6%, 2.8%); 1980-2011 (3.0%, 3.1%)
- 1990-2011 (2.9%, 2.9%); 2000-2011 (3.6%, 3.5%); 2009-2011 (8.8%, 8.4%).

Debt can be paid off over a set time period (e.g., 30, 45, 75 years); first eliminate deficit then pay debt using an optimal, sustainable, equitable, and flexible strategy.

![Government Debt as Percent of GDP](usgovernmentspending.com)
Correction must continue till OPTIMAL levels are reached; then they must be maintained

GDP = Consumer Spending ↓ ↓
  + Investment ↑ ↑
  + Government Spending ↑ ↑
  + Net Exports (exports – imports) ↓ ↓

Focus must be on both short-term (recovery) and long-term (investment) spending

Short term: Large increases in government spending has helped to stabilize and is improving the economy

For the long term CORRECTION, lower consumer spending, higher government spending (meaning eventual higher taxes), and higher savings (and debt repayment) are needed
United States: Some Economic Issues

- Simple and straightforward, but tough decisions await regarding debt, deficit, infrastructure, education, and possibly tax reform.
- Spending cuts to put pressure on growth
- Revenue increases, not spending cuts, are needed and can be phased in gradually (options include closing loopholes, rolling back tax cuts or letting them expire, broadening tax base, tax reform, and changing rates)
- Better management of government spending is sorely needed; demographics will dictate spending
- Better education will foster innovation and faster productivity gains
- Infrastructure-based fiscal stimulus will help (the American Society of Civil Engineers says we need to pump a trillion into infrastructure over the next 5 years)
United States: More Economic Issues

- Inflation not an issue, payroll tax deal may be extended another year, and possibly a step-wise attempt at tax reform

- Reasons for optimism: Long term productivity gains and infrastructure-based fiscal stimulus

- Reasons for pessimism: Unresolved issues from financial crisis and undesirable political actions; slow income growth and income inequality concerns

- In times of economic crises, stimuli are correct policy response; in times of plenty, savings and taxes are correct policy response

- Response to Great Recession: Congress C, Federal Reserve A
Your Role: Don’t worry, just do your best

- Improve yourselves and be civic minded
- The quality of Alabama’s and the nation’s future workforce depends on you to:
  - Provide the basics for skill development
  - Develop math and science skills of the youth
  - Interest the youth in math and science
  - Develop multiple and flexible career mind-set in the youth
  - Teach the importance of mastering various skills
- The future of Alabama and the United States of America is in your hands
The individual appears for an instant, joins the community of thought, modifies it and dies; but the species, that dies not, reaps the fruit of his ephemeral existence.

- A.S. Byatt, *Possession*

Thank You