# THE ECONOMIC SITUATION

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## September 2008

- **The gasping economy that won't give up…yet.**
- **Employment weakness spreads across the states.**
- **Globalization and America's great industrial machine.**
- **Recession watch: Still not in the data.**
- **Building a knowledge economy index for South Carolina and the 50 states.**

## The Coughing, but still Smiling, U.S. Economy

**Sub-prime and commodity prices: Double trouble.**

With gasps and sputters, the U.S. 2008 economy has surprised even the more optimistic forecasters, but in spite of unusually positive GDP growth estimates for 2Q2008, the prospects for pleasant surprises seem to be getting dimmer. The weakened housing sector, though showing some signs of turning positive, is seriously dragging the economies of four states—California, Nevada, Arizona, Florida—and, because of related credit market effects, crimping activity in all of the other states and beyond the national borders. Unfortunately, there is more negative data to consider. Driven by lax monetary policies, pure politics, and now, a deep disturbance in pipeline-rich Georgia, higher oil and food prices are hitting consumers with a combined double whammy. Of the two shocks—credit markets and commodity prices, I believe the latter pose the greater difficulty. Meanwhile, as credit markets tighten, financial institutions worldwide are grappling with the task of rebuilding capital. Europe, once running ahead of the U.S., is now slowing. The dollar, once in the cellar, is now getting stronger. While oil prices improve, exports will weaken.

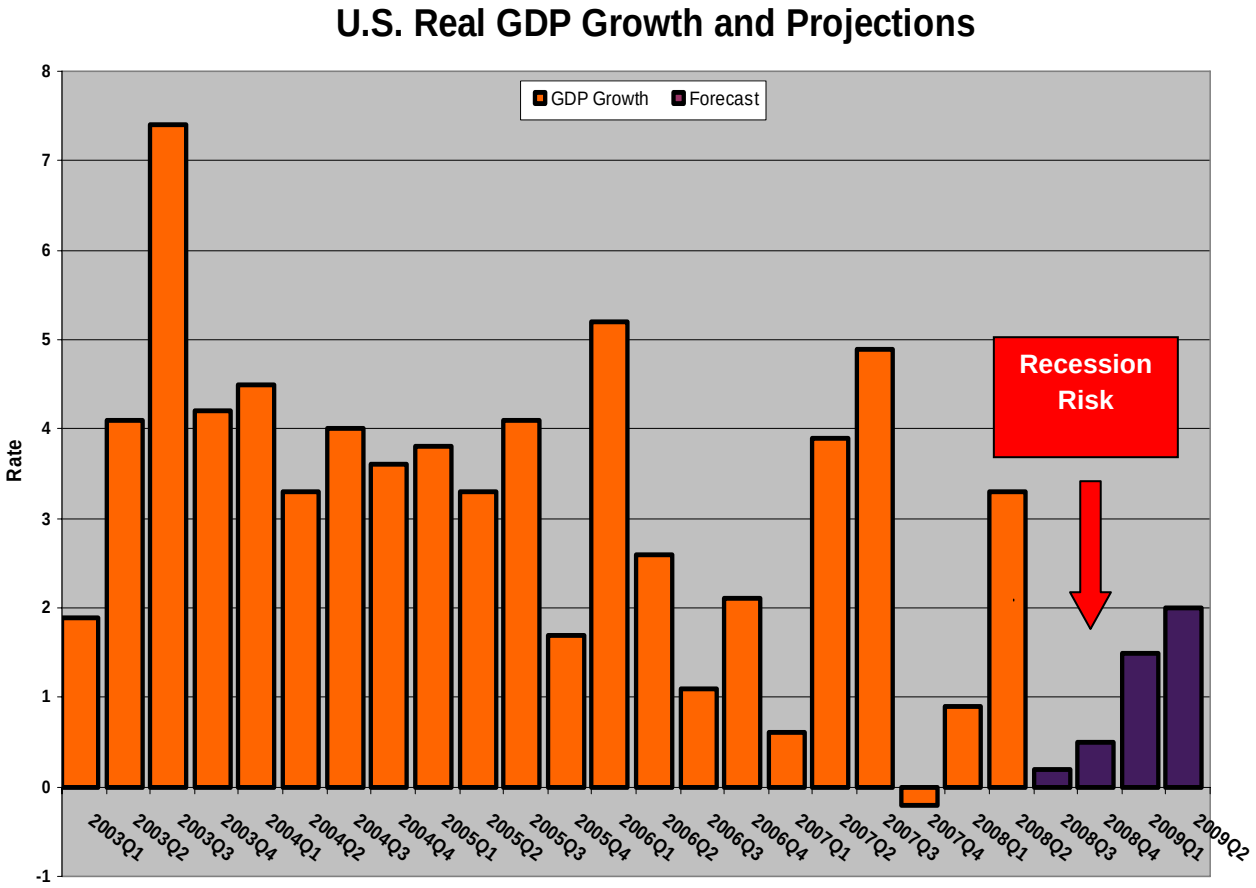
What has this done to U.S. GDP growth? And what are the short-run prospects?

When the GDP counters revised the U.S. numbers recently, they assigned a negative value to 4Q2007 real growth but raised the estimate for 1Q2008 from a pale 0.6% increase to a weak 0.9%. They put a happier face on 2Q2008 with a preliminary growth rate estimate of 1.9%. Now 1.9% is pretty weak stuff, but the announcement was greeted as though an economic Lazareth had rattled

forth from the grave. Of course, we all recall the $90 billion flurry of government checks that may have helped nudge this Lazareth forward.

Then, when revised GDP data arrived in late August, Lazareth almost danced! The 1.9% growth rate was raised to 3.3%! Some 1.2% of that growth was attributed to personal spending. The $90 billion taxpayers lent to themselves made a one-time difference that mattered. (We are all Keynesians now, or so it seems.)

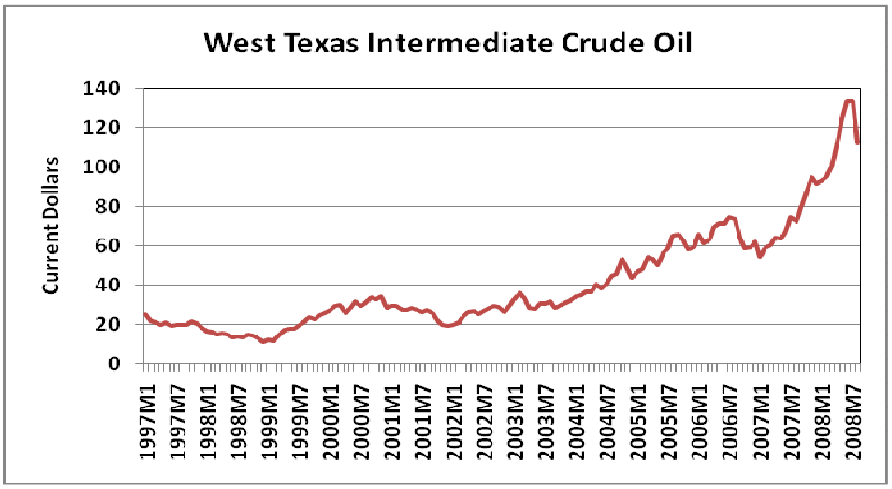
With no more government green in the works, at least for now, we see a projected sputtering economy in the accompany chart. I call attention to serious weakness (Recession?! ) across the next two quarters. I join the growing ranks of those who believe we will count ourselves lucky if the economy begins to run smoothly by mid-2009.




**Falling oil prices will help.**

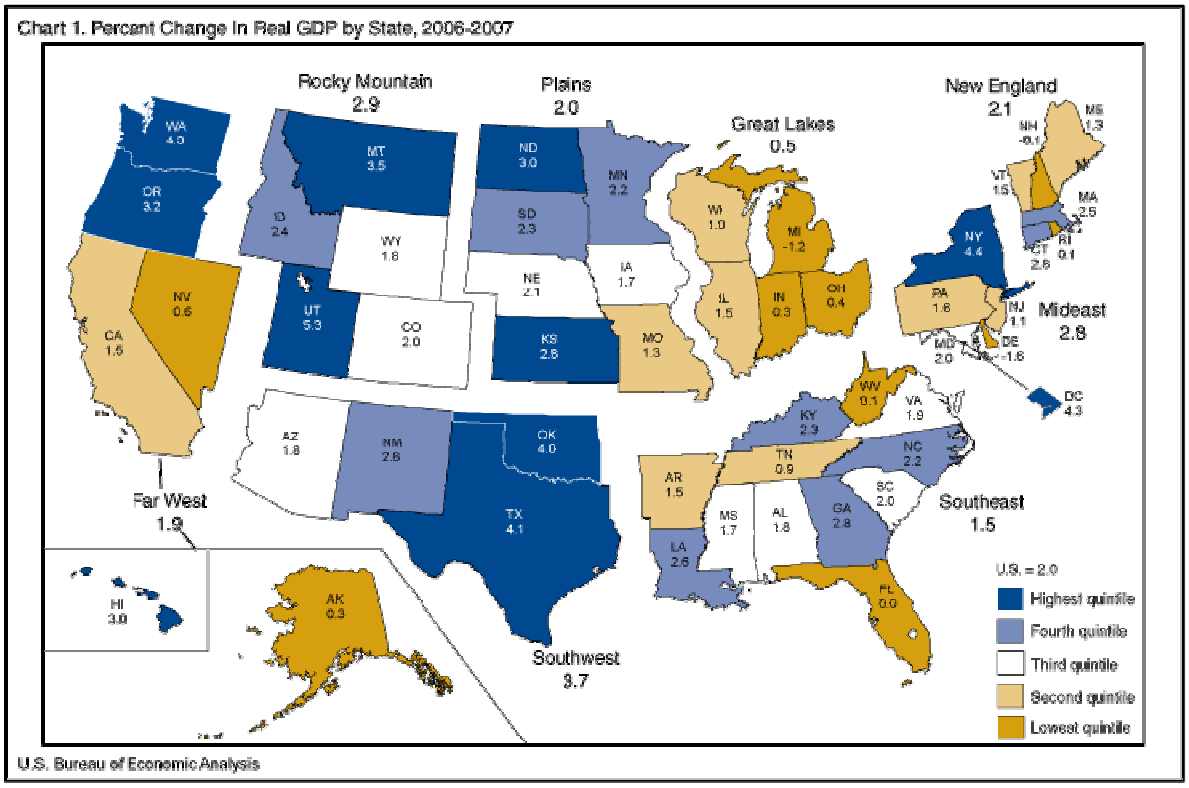
In last quarter's newsletter, I stepped out on a limb and indicated that we would see crude oil prices soon head toward $100. (At the time, crude was in the $122 range and rising.) For one of a handful of times, the data gods were with me. As shown in the next chart, crude oil moved to $111 before being pushed north again by hurricanes and the Russia/Georgia conflict.

Readers will recall that my forecast was based on an anomaly I observed in the technical relationship between the prices of gold and oil. Oil prices had raced ahead of gold instead of moving in a relative tight pattern. The observed movement was more than could be explained by the weakening dollar, even though higher oil prices in the U.S. have been driven heavily by currency relationships instead of real scarcity. From where I sit, it appears $100 oil is still in the cards. But be warned. There is a huge amount of geo-politics buried in these prices. Indeed, if by magic, the ugly politics were to be removed, by that I mean war and threats of war, we would see $60 oil.




**GDP growth and the states.**

The latest Commerce Department data on state real GDP growth across 2006-2007, illustrates the distributional effects of the slowing national economy. This was a year when Southwest was leading the nation, the Rocky Mountain region was surging, and the Pacific Northwest was showing strong growth. States to the east of the Mississippi were not doing quite so well, and some in industrial heartland were not doing well at all. A similar pattern is seen in the unemployment data that follow.



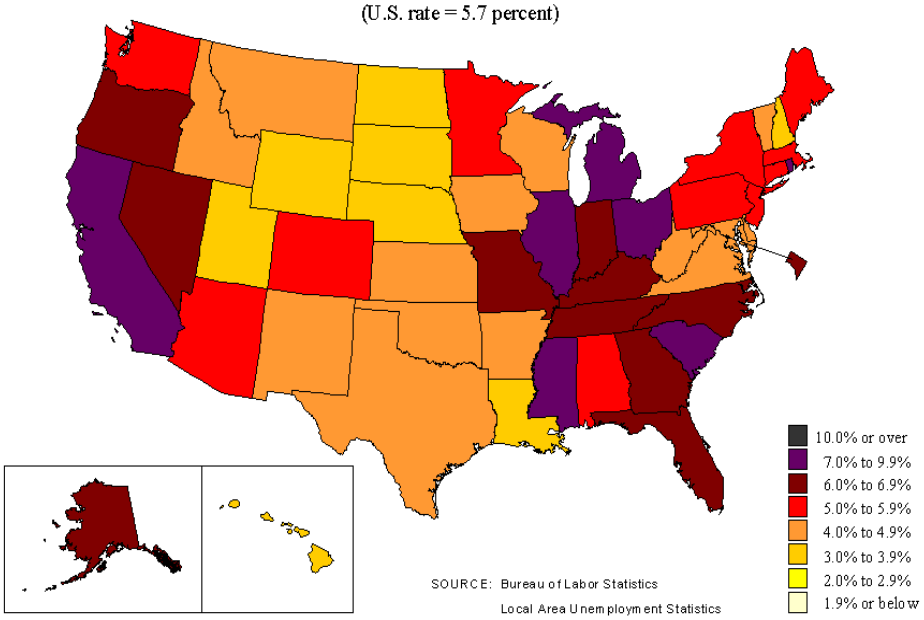

## The Labor Market Picture

**The deteriorated employment outlook.**

Sizable layoffs occurring in financial services and auto-related industries are beginning to affect a large swath of U.S. territory. Cutbacks by state and municipal governments add to the problem. The negative effects are best seen by comparing two state outline maps showing unemployment rates. As indicated in the next two charts, just since March, unemployment rates have fallen for large U.S. regions. The July 2008 numbers show six states with unemployment rates rising to 7% or better. These are California, Michigan, Mississippi, Ohio, Rhode Island, and South Carolina. (Note: apparently Rhode Island missed out on the purple ink when the Bureau of Labor Statistics did the chart.) Even that broad collection of golden states in the west is beginning to show a bit of weakness. Notice Colorado, Idaho, and Montana.

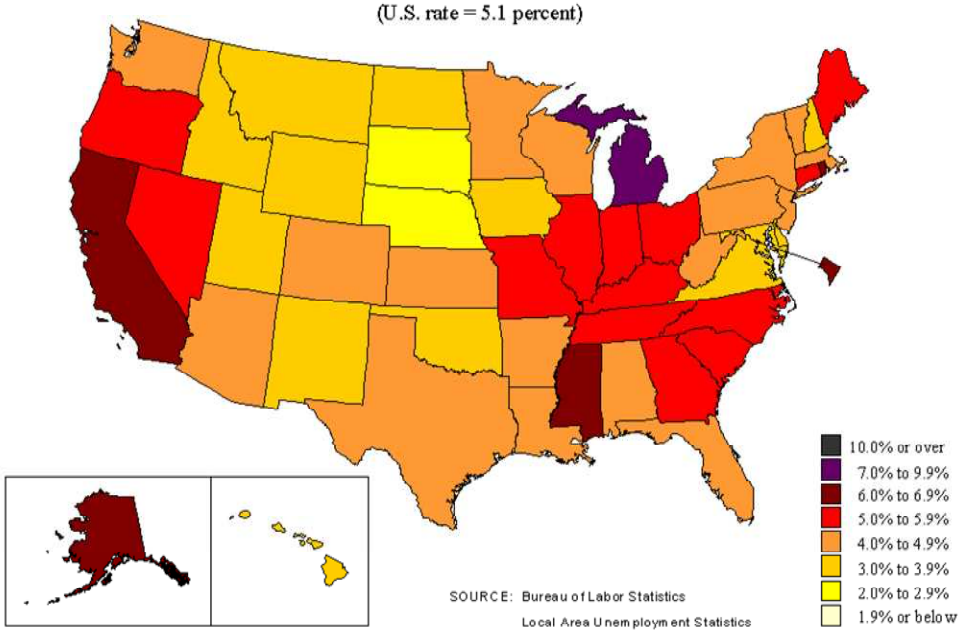
**Unemployment rates by state,**
**seasonally adjusted, July 2008**

(U.S. rate = 5.7 percent)

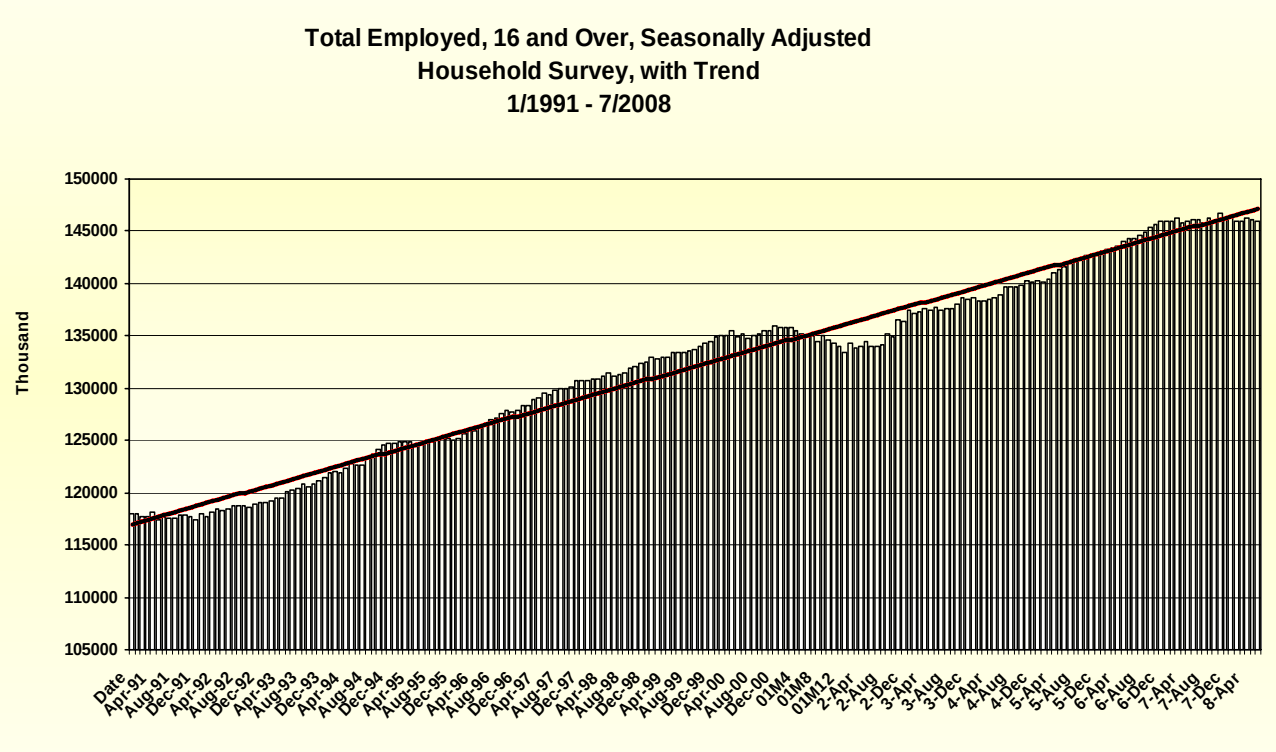



**Unemployment rates by state,**
**seasonally adjusted, March 2008**

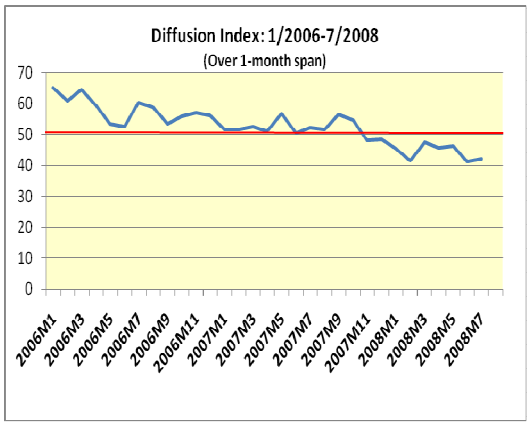
(U.S. rate = 5.1 percent)

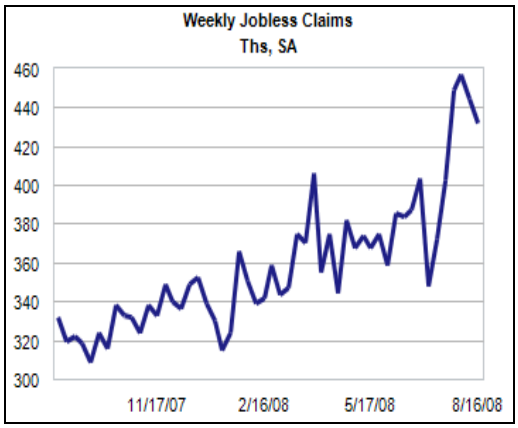


The softened employment outlook is also seen in the data for total household employment shown in the next chart. Notice the gap between the tops of the bars and the trend line. As can be seen, there has been one growth season to celebrate since December 2000; that was in the period from April 2006 to September 2007. But then, the good folks in Washington decided to pull the plug…, again. The current unemployment gap is beginning to widen a bit, but the falloff has not been as sudden as the one observed in the 2000-2001 recession.




Weakness in employment growth is seen again in the Bureau of Labor Statistics diffusion index, which tracks the relative expansion and contraction of employment across a wide swath of U.S. sectors. When employment growth is equally divided between contracting and expanding sectors, the index takes on a value of 50. Higher values denote growth is occurring on balance; lower values identify the reverse conditions. As seen here, the Index crossed 50 in October 2007 and has been headed south since then.



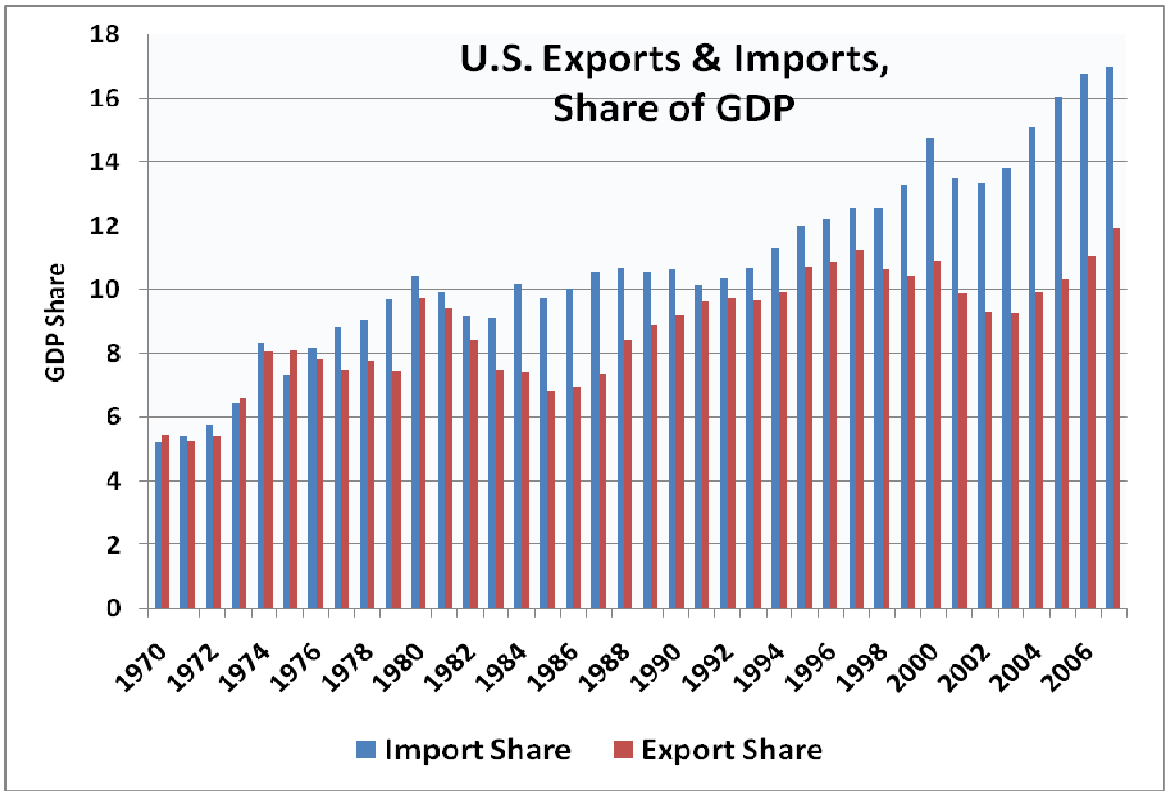

And finally, a glimmer of good news. For several weeks now, the number of people signing for unemployment benefits has fallen. Is three weeks a trend? I would not think so. But the economy.com chart on weekly claims looks like good news to me.

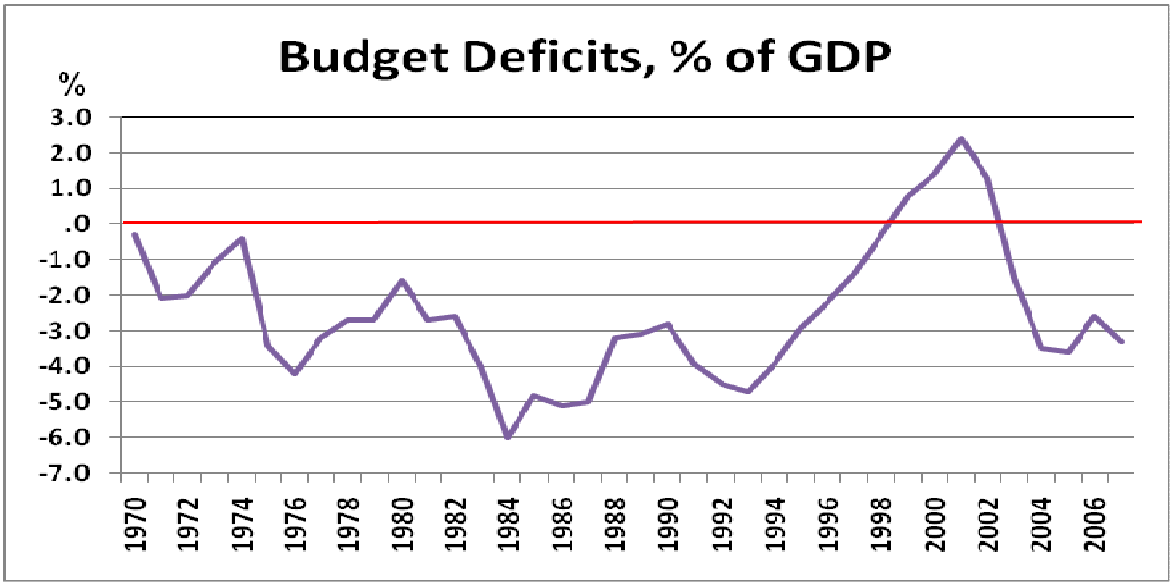
## Globalization and the Industrial Economy

### The fired up global sector

With interest rates lower in the U.S. and inflation higher than elsewhere, players in foreign exchange markets, on balance, skipped away from dollars, until recently, and bid up the relative value of other currencies. Shoppers in world markets found themselves preferring U.S. goods and services. The price was right. The effect of these monetary and other trends is buried in the export/import data shown in the next chart. The data here show exports and imports as a percentage of GDP. Notice that in 1970, the U.S. international sector accounted for about 5.5% of GDP. Today, exports account for about 12% of GDP; imports for almost 17%.

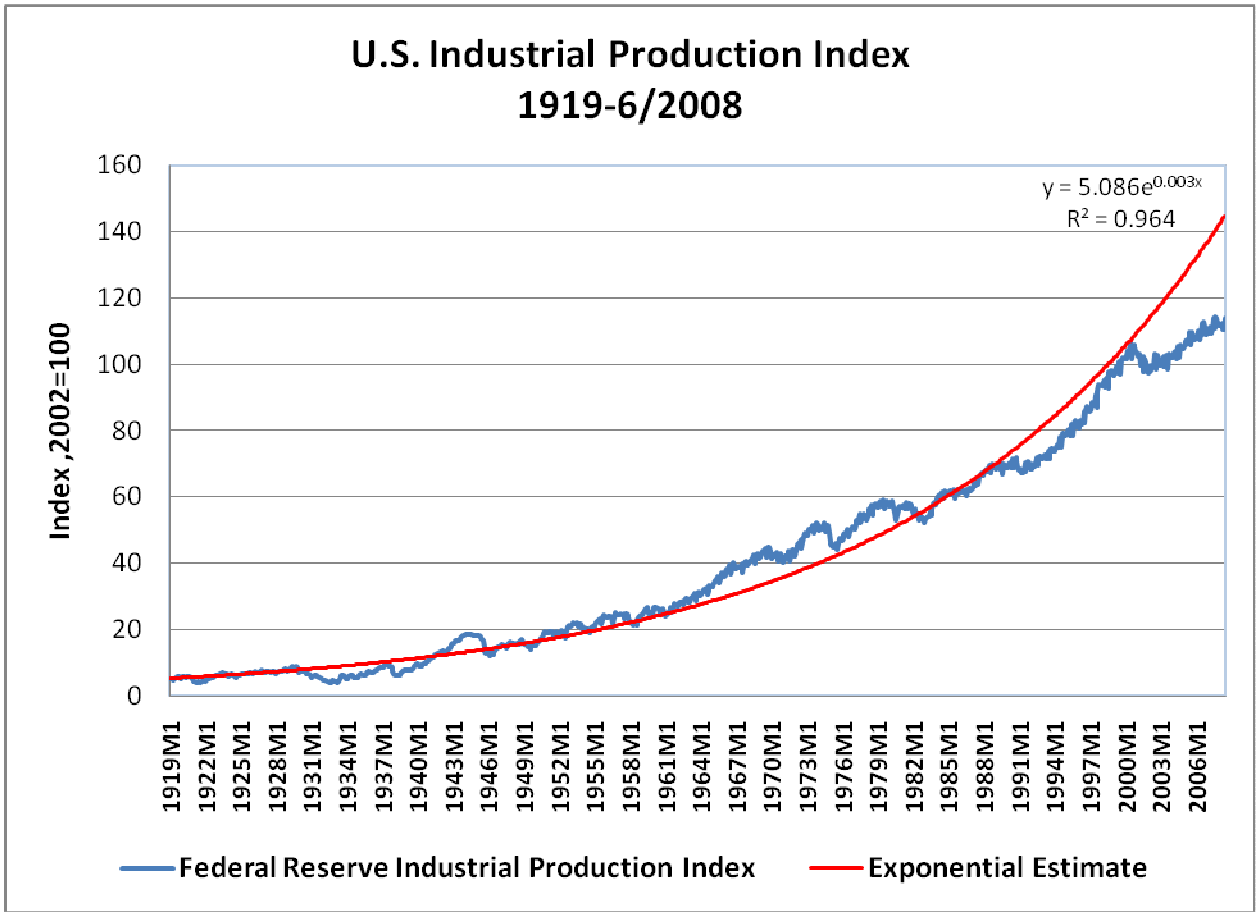
Why so many imports? First, in the most current period, the price of oil is a real pusher. But more fundamentally and for some time, the U.S. consumes more than the country produces with much of the excess consumption coming in the form of government deficits. When we consume more than we produce, people somewhere on earth must produce more than they consume. Indeed, some of those people are happy to hold our IOUs so that we can continue running budget deficits. Of course, there is private spending and saving to consider as well, along with the timing of debt finance. The federal budget deficit as a percentage of GDP is shown in the chart that follows the import/export data.


U.S. Exports & Imports,
Share of GDP
GDP Share
18
16
14
12
10
8
6
4
2
0
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
Import Share
Export Share

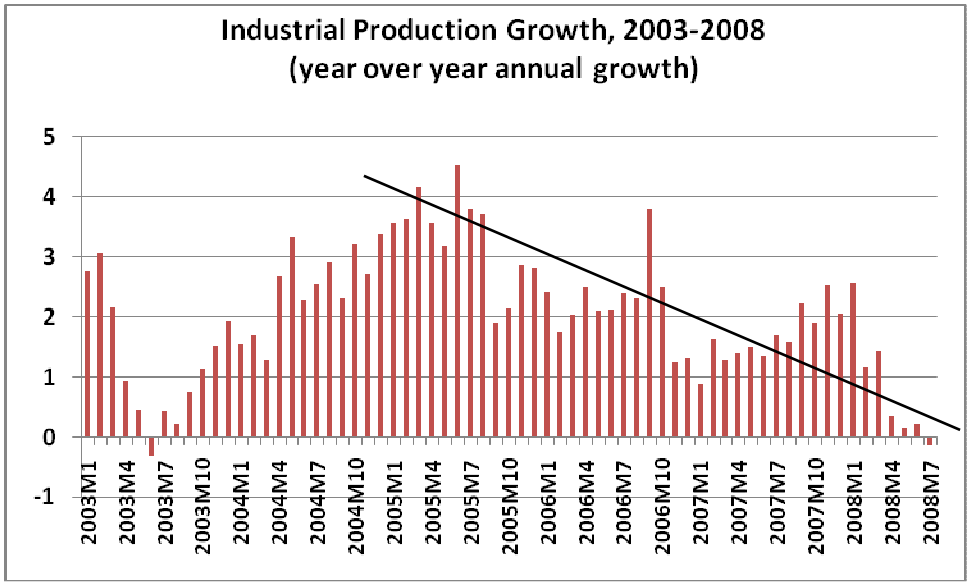

Budget Deficits, % of GDP
%
3.0
2.0
1.0
.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006

**The weaker industrial engine.**

In spite of the strong manufacturing nudge provided by the recently pale U.S. dollar, there is still an underlying weakness in America's world-leading industrial engine. As seen in the next chart, the U.S. experienced rapidly growing industrial production in the 1990s. Hammered by Federal Reserve policy actions taken in late 1999 and early 2000, which led to high interest rates, a strong dollar and noncompetitive goods in world markets, the industrial engine has yet to recover its footing. A gap of lost acceleration begins to form in 2000. Production is still growing, but at a diminished pace.

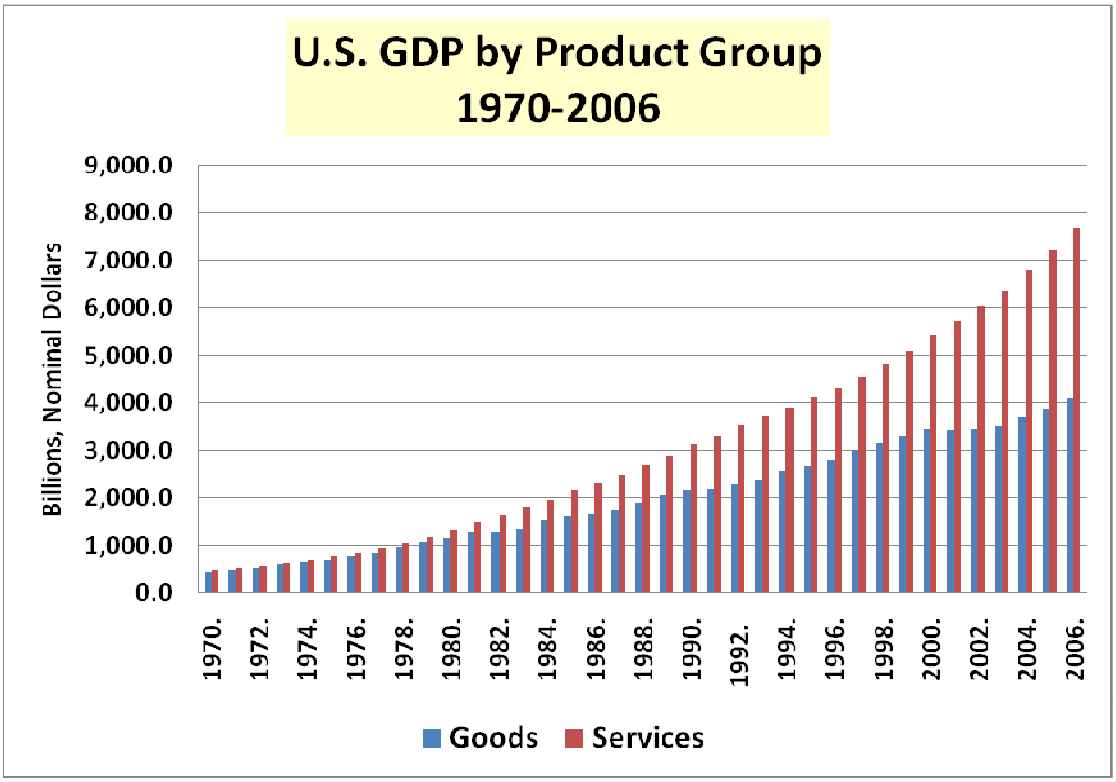



Industrial production is seen up close in the next chart. The trend line I have inserted shows industrial production growth has been in a state of decline since 2005. The growth data turned negative in July 2008.



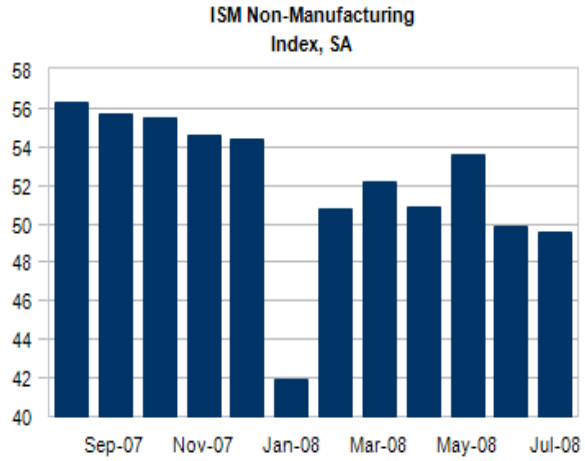

**Supplemented by services.**

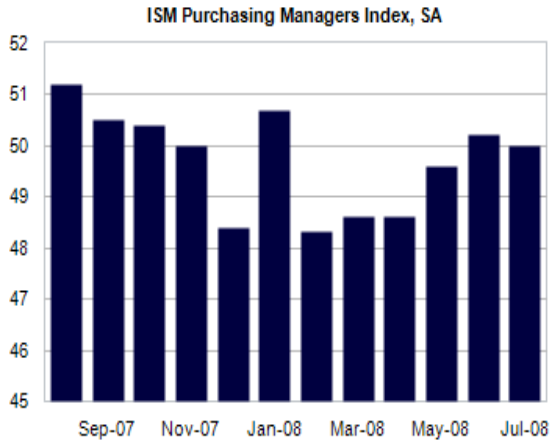
Of course, while the industrial engine forms a major part of the U.S. economy, services is the high growth and higher paying sector. The amazing pace of services growth is shown in the next chart, which reports data on the two major sectors—goods and services from 1970 forward. As seen there, the two sectors were running neck and neck from 1970 to 1980. Then, services accelerated; the sector is now almost twice as large as the goods sector.



**But how are the sectors performing now?**

Fortunately, the Institute of Supply Chain Management tracks both parts of the economy with monthly indexes. A value of 50 is the zero point for both indexes. Numbers larger than 50 indicate growth; smaller values tell us the sector is shrinking. The results are seen in the next two economy.com charts. If you want to see a recession, you may want to move on. Both indexes rest on or near 50. Both sectors are dead in the water, but not sinking.




## The Recession Watch Scoreboard

**Put it all together, does it spell RECESSION? No.**

Once again, I draw on data in this report to provide a 4-D diagnosis of recession prospects. As noted in the chart below, we have an economy that is bouncing between slow, neutral gear and reverse. So far, there is enough positive motion to rule out recession. So far. But the prospects for 2008's remaining months are getting dimmer.

## Recession Watch: The Four Ds

| D1: Depth | D2: Diffusion | D3: Duration | D4: Despair |
|---|---|---|---|
| January through July show drop in payroll employment. 1Q2008 retail sales are flat, but consumer spending jumps in 2Q2008 from stimulus effects. Industrial Production growth for the first seven months is positive but weak. 1Q2008 GDP growth is 0.9%. 2Q2008 is 3.3%. The first seven months are beyond the recession border, but weakness is spreading across the nation. | A reading less than 50 is a sign that job losses are expanding across sectors. Diffusion Index through July lies well below 50 and is falling. The ISM manufacturing index sits dead on 50, which means zero growth. The services index is just below 50. January through July barely qualify as recession months. | Weakness, though borderline, now seven months old and holding. Duration is there, but data are too strong to qualify as recession.. | Sharp decline in various consumer confidence indexes. Compares with previous recession periods. January through Julyl qualify as recession months. |

# Building a Knowledge Economy: The Deeper Challenge

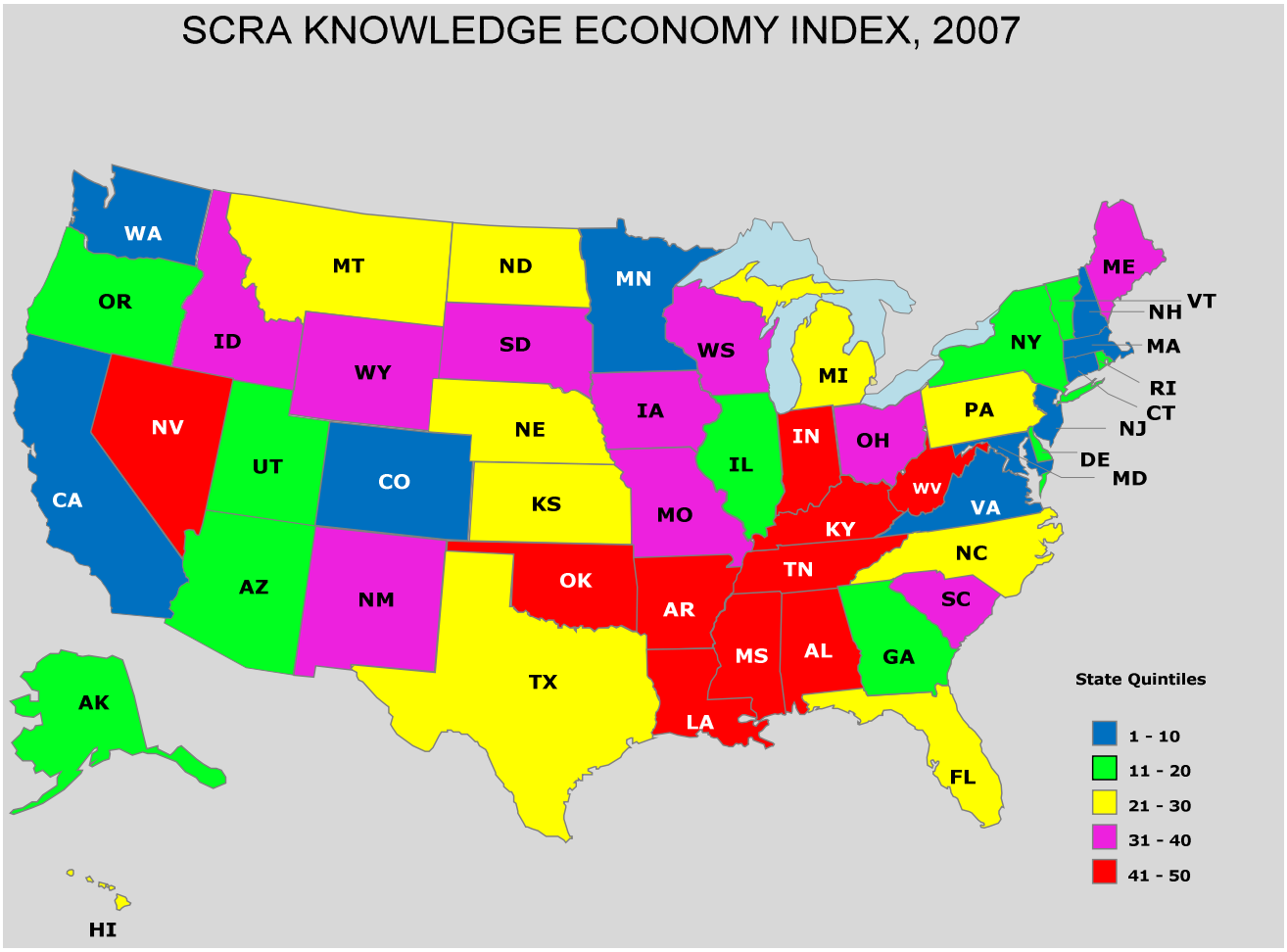
### How is South Carolina doing?

In 2007, the South Carolina Research Authority (SCRA) provided Clemson's Renaissance Center with funds to support a graduate student in a project I was leading. The project is focused on building a Knowledge Economy Index for the 50 states. The SCRA seeks to strengthen South Carolina's new economy, an economy built on brains and entrepreneurship; they wanted to know how the state was doing, and how the state compared with others in the nation and region.

Working together, Tate Watkins, a Clemson economics graduate student, and I built statistical models that ranked the 50 states. Our final model contained just four variables: a rich measure of educational attainment, private sector R&D expenditures, a count of fast growth—entrepreneurial firms, and the median age of the state population. Using our four-variable model, we were able to replicate work by others that included scores of variables. We linked the variables in our model to state per capita income. No one else has done this. Of the model's variables, education was far and away the most important. I will return to this point, but for now, consider the state rankings shown in the next chart and map.

# SCRA 2007 Knowledge Economy State Ranking

| State | Rank | State | Rank | State | Rank |
|---|---|---|---|---|---|
| Massachusetts | 1 | Oregon | 17 | Maine | 34 |
| Maryland | 2 | Georgia | 18 | Ohio | 35 |
| Virginia | 3 | Arizona | 19 | Iowa | 36 |
| Colorado | 4 | Alaska | 20 | South Dakota | 37 |
| Connecticut | 5 | Kansas | 21 | Missouri | 38 |
| New Jersey | 6 | Nebraska | 22 | **South Carolina** | **39** |
| New Hampshire | 7 | Hawaii | 23 | Wyoming | 40 |
| Minnesota | 8 | Michigan | 24 | Oklahoma | 41 |
| California | 9 | Texas | 25 | Indiana | 42 |
| Washington | 10 | Pennsylvania | 26 | Tennessee | 43 |
| New York | 11 | Montana | 27 | Alabama | 44 |
| Vermont | 12 | North Carolina | 28 | Nevada | 45 |
| Utah | 13 | North Dakota | 29 | Mississippi | 46 |
| Delaware | 14 | Florida | 30 | Kentucky | 47 |
| Rhode Island | 15 | New Mexico | 31 | Louisiana | 48 |
| Illinois | 16 | Idaho | 32 | Arkansas | 49 |
| | | Wisconsin | 33 | West Virginia | 50 |




As can be seen, South Carolina ranks 39th among the 50 states and is the weakest among the South Atlantic coast states. The weakness stems primarily from low education attainment. But consider the top ranked states. Some of these have invested heavily in education for decades, if not centuries! And some of the higher ranking states have attracted brains trained in other states. In other words, there is more than one way to build a brain-based economy.

The challenge for South Carolina, or any other state for that matter, is seen in data from one major sector: Education. While recognizing that the education data reflect a set of deep social condition, the common sense relationship between educational attainment and a knowledge economy is obvious. The first challenge is this: a knowledge economy requires knowledgeable people. Brains form the capital of the new economy. Connecting the brains for productive and peaceful endeavors is the second challenge.

What about progress? How has South Carolina performed in recent years? The next chart gives our results. In the chart we assigned 2007 a value of 100. In 2000, South Carolina stood at 86.3. Yes, South Carolina is making progress.

## Knowledge Economy Index
## South Carolina, 2000-2007

| Year | SC Index Score |
|---|---|
| 2007 | 100.0 |
| 2005 | 97.3 |
| 2003 | 96.9 |
| 2000 | 86.9 |

Tate Watkins' research report, which is his M.A. Economics master's thesis, can be viewed at http://business.clemson.edu/research. Just go to the research page and click the knowledge economic index button at the upper right-hand corner. A follow-up project is now underway that focuses on building an index for southern metropolitan areas. Kristine Koutout, another economics graduate student, is working with me on this second project.

**And how is the United States performing?**

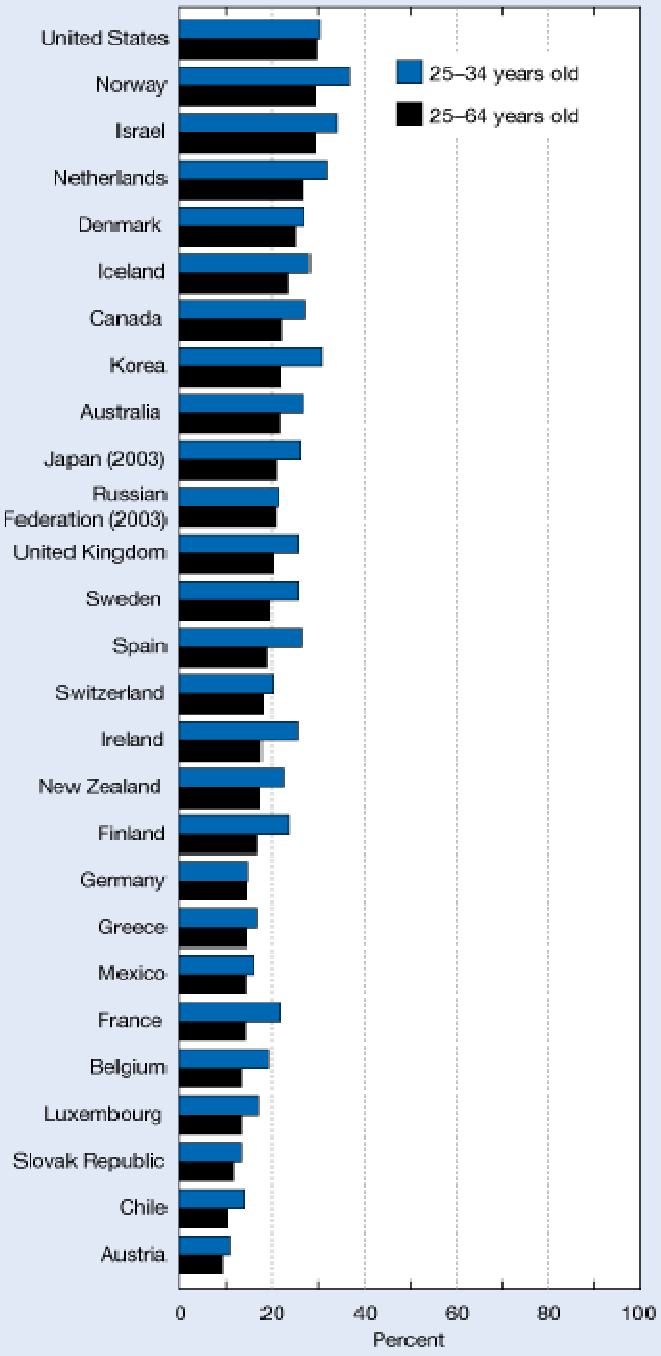
For three weeks in July, I was teaching with a Clemson team in a Fund for American Studies program in Prague. Our 140 students came from 28 primarily Eastern European countries. In preparing lectures on the emerging knowledge economy, I pulled together some information on education output for major countries of the world. The charts repeated here show 2004 data that suggest 1) the United States is not producing enough brains to replace the brains that will be retiring. (Tertiary education is what we think of as bachelor's programs.), 2) Asia is leading the world in production of undergraduate education in science and engineering (But of course, there are lots of people in Asia.), and 3) Europe was the 2004 leader in doctoral education in science and engineering.

My European students were excited to see their region leading the pack in science and engineering doctoral studies.

I reminded them that brains are necessary but not sufficient for building knowledge economies. For knowledge economies to function, the brains must be connected by entrepreneurial talent to the world of commerce and creativity.

The U.S. may lag the world in producing brains. Perhaps we can be a leader in producing entrepreneurial talent that will connect the brains to form high performing knowledge economies.

**Attainment of tertiary-type A and advanced research programs, by country and age group: 2004**

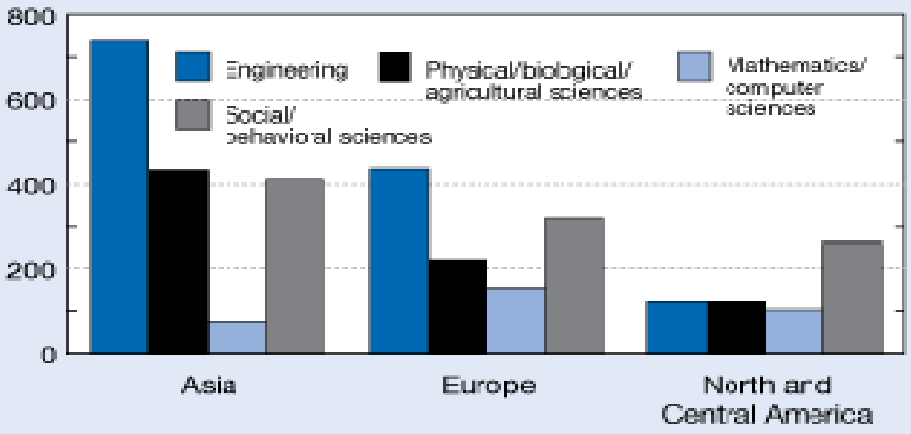



NOTES: Tertiary-type A programs (International Standard Classification of Education [ISCED] 5A) largely theory-based and designed to provide sufficient qualifications for entry to advanced research programs and professions with high skill requirements such as medicine, dentistry, or architecture and have a minimum duration of 3 years' full-time equivalent, although typically last ≥4 years. In United States, correspond to bachelor's and master's degrees. Advanced research programs are tertiary programs leading directly to award of an advanced research qualification, e.g., doctorate.

SOURCE: Organisation for Economic Co-operation and Development (OECD), Education at a Glance: OECD Indicators 2006 (2006).

*Science and Engineering Indicators 2008*

**First university S&E degrees in Asia, Europe, and North and Central America, by field: 2004**

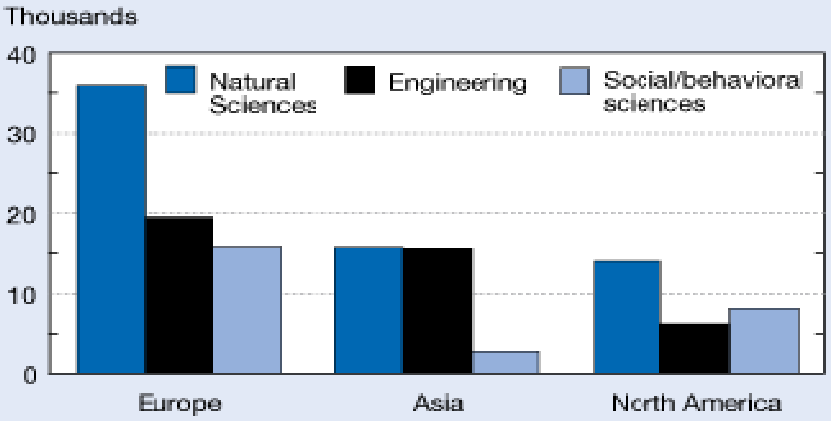



NOTE: Physical sciences include earth, atmospheric, and ocean sciences.

SOURCES: Organisation for Economic Co-operation and Development, Education Online Database, http://www.oecd.org/education/database/; United Nations Educational, Scientific, and Cultural Organization (UNESCO), Institute for Statistics, special tabulations (2006); and national sources. See appendix table 2-37 for countries/economies included in each region.

*Science and Engineering Indicators 2008*

**S&E doctoral degrees earned in Europe, Asia, and North America, by field: 2004 or most recent year**




NOTES: Natural sciences include physical, biological, earth, atmospheric, ocean, agricultural, and computer sciences and mathematics. Asia includes China, India, Japan, South Korea, and Taiwan. Europe includes Western, Central, and Eastern Europe. North America includes United States and Canada.

SOURCES: Organisation for Economic Co-operation and Development, Education Online Database; United Nations Educational, Scientific, and Cultural Organization (UNESCO), Institute for Statistics database, http://www.unesco.org/statistics, accessed 3 April 2007; and national sources. See appendix table 2-40.

*Science and Engineering Indicators 2008*