

Lessons of recessions: sustainability education and jobs may be the answer

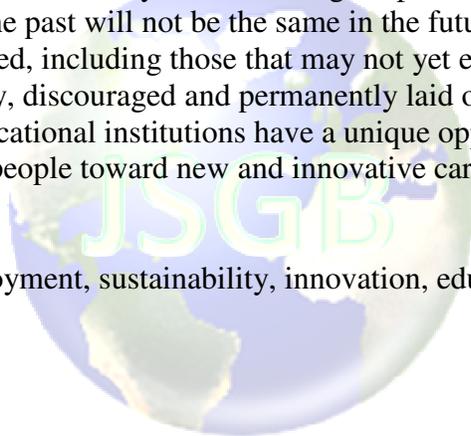
Elmer Hall
Warner University

ABSTRACT

The Great Recession that officially starting in December of 2007 has been painful, but a lot of good has, and will, come from it. It provides the framework and the incentives to innovate and retire old, obsolete and wasteful business models. It will allow the regulators to catch up with all of the people behaving badly; the wasteful and greedy unethical ones that helped fuel the bubbles that led to such a massive collapse of housing and complicated financial instruments based on over inflated asset valuations. Many aspects of this deep recession will take a long time to recover, especially the labor market.

This article discusses the cycles of the economy and possible paths of recovery. The job markets will be especially ugly for years to come. This is an opportunity and a challenge for higher education facilities. A major challenge is to provide education, training and support for the jobs that will exist in the new economy. The challenge is providing education and training when many of the jobs from the past will not be the same in the future. An emphasis on high-demand jobs must be considered, including those that may not yet exist such as sustainability related jobs. In addition, many, discouraged and permanently laid off employees will look toward entrepreneurship. Educational institutions have a unique opportunity, and a serious responsibility, to help re-tool people toward new and innovative careers that will help them, and the economy, flourish.

Keywords: recession, unemployment, sustainability, innovation, education, jobs



LESSONS OF RECESSIONS: THE GOOD, THE BAD, AND THE UGLY!

As of this writing, it is September of 2010, two years after the major meltdown of the world's financial markets. Labor Day on Monday the 6th is a time to celebrate for those people who are still securely and gainfully employed. The week, ending on Friday September 11th, is a stark reminder of what could happen if the world's financial systems totally seize up as they did for a couple weeks back in 2001.

It is fascinating to watch the once-in-a-lifetime event of this recession, what is being called the *Great Recession*. At least everyone hopes it is only once in a lifetime! Everyone older than 50 remembers the pain of stagflation, runaway inflation combined with contracting gross domestic product (GDP) from the Carter Era. They remember the Savings & Loan crash in the 1980s, and more; but this recession is astounding because of the size and scope. Make no doubt about it, the pain is not over yet!

This article is designed to outline the financial setting that confronts the USA and attempts to forecast where the economy will be in the next few years. The possibilities of a slow, and jobless, recovery will be analyzed with an indication of what are the types of things that the unemployed should be doing to improve their stead during what will likely be a very long and ugly job market. The sections to be covered are:

1. Dodging the financial bullet
2. Economic seasons
3. Recession watch
4. Likely scenarios for the next 5 to 10 years
5. Lessons in recessions
6. Years of painful unemployment
7. Unemployment and filling that embarrassing gap in the résumé
8. New jobs in conservation and innovation
9. Some good news
10. Conclusions

DODGING THE FINANCIAL BULLET

Three years ago, Jim Cramer from Mad Money fame (madmoney.CNBC.com) did the "They know nothing!" rant that was heard around the world ("[Cramer: Bernanke, Wake Up](#)", 2007). Cramer was mad at the Federal Reserve's inaction as the financial markets were starting to freeze up in the mortgage, credit, and banking markets.

One year later, in September 2008, the complete meltdown of financial markets, worldwide, occurred! There was a seizing up of the financial markets with a similar effect as happened during days after 9-11.

As the US government was grappling with what to do and how to intervene, they decided to let Lehman Brothers, overwhelmed with subprime mortgage losses, go bankrupt on Sept 15, 2008. With over \$600B in assets, it was the largest bankruptcy in US history. The Dow Jones industrial average dumped a record-breaking 500-plus points (4.4%) on September 15, 2008, the largest point drop in a single day since the days following 9-11 in 2001 (although an even larger drop occurred later in the month amid more financial carnage in the financial landscape).

The resulting financial tsunami made it abundantly clear that bankruptcy of such large financial institutions was not an option. If there had not been a concerted effort by the US government and by all other governments, this recession could easily have gone the way of the Great Depression (Pittenger, 2009). Basically, with concern that other banks may fail, the normal

transactions and interactions among banks was starting to seize up. The government lowered interest rates, expanded guarantees, and generally stepped in to support and backstop the financial markets. The US government stepped in to save AIG, Freddy Mac, Fanny Mae and others. It proctored shotgun weddings including Merrill Lynch to Bank of America and Bear Stearns to JPMorgan Chase.

Currently, in the summer of 2010, the financial markets are functioning pretty well, but still doing very little lending. The financial companies that took government Troubled Asset Relief Program (TARP) money are paying interest as well as repaying at an accelerated rate because they can, and because they are frustrated with partial government ownership of their businesses. Banks are lending, some, but not with the irresponsible zeal of earlier in the decade. There were 140 bank failures in 2009, up from only 25 in 2008, but 2010 is on pace for about 200 bank failures (FDIC, 2010; Pittenger, 2010). General Motors, also a huge recipient of government TARP money, is strong enough now to file for an initial public offering (IPO) in August with the SEC, a necessary prelude for the US Federal government to ultimately extract itself from its huge ownership position in the company (as they are doing by continuing to sell government-owned stock in CitiGroup).

The good news is that the US – and the world, for that matter – seems to have dodged the bullet. But it was probably a whole lot closer than many people realize, a reality that was reintroduced with the sovereign debt crisis in Europe (Pettenger, 2009). The global financial markets are shaky but working, which is a whole lot better than the alternative. The possibility of another dip, the dreaded *double-dip*, is still being discussed by economists as they try to gauge how weak the recovery might be (Hulbert, 2010). Fortunately, though, the possible horror of another Great Depression appear to have passed.

ECONOMIC SEASONS

Only a century ago, most people were attached to the land in the US, and each autumn was the time of bountiful harvest. Life marched in harmony with the seasons unless there was an act of God such as drought, hail, hurricane or locust to interrupt the normal cycle. And so it would go, with each new year, barring a catastrophic event, going pretty much the same as the last.

The modern US economy has seasons, too, that usually amplify the natural agricultural cycle. The biggest annual season in the US is based around Christmas. Norms dictate that massive amounts of money should be spent during the Christmas season for opulent consumption and gift giving. For many industries, a huge percentage of the annual sales occur during the Christmas season. Distributors must ship before the Christmas season; manufacturers must produce during the summer; and parts suppliers must produce in the spring. With the consumer under immense pressure, the Christmas season of spending is starting to change.

But capitalist markets have another cycle: an expansion and retraction cycle. A recession is what people get every few years – free! – from a free-market economy (Frank & Bernanke, 2009; Mankiw, 2009; McEachern, 2010). It is actually a rather healthy thing for the economy to take a rest from expansion every decade or so to allow the inefficient businesses to close, to encourage the best businesses to prevail, and to promote the emergence of new business models. Recessions help reallocate the resources of land, labor and capital within the economy. This can be referred to as destructive innovation; someone has to take their second foot off of the dock in order to leave the past and sail into the (bright new) future. Business models were introduced or perfected during a recessions, like Wal-Mart and CostCo stores, and products successfully

introduced, like Apple's iPod and Proctor & Gamble's Crest WhiteStrips (Anthony, & Feinzaig, 2008).

During the boom of 2006, bankers had proud moments where they funded loans to people buying large new houses and sparkling chrome-studded SUVs. Now, it is not such a fine moment when the bank has to take back the keys! Work is no fun for most businesses after more than two years of layoffs and day-to-day survival.

During the Greenspan (2007) era as Chairman of the Federal Reserve for 14 years, it appeared that the US had become immune to deep recessions. Super low interest rates helped to fuel a long run of construction expansion. Few people realized that the mortgages and the housing market had become a house of cards.

The ugly truth is that millions of people and lots of businesses were to blame for the mortgage market collapse. The Federal Reserve held interest rates – and therefore mortgage rates – too low, too long. Government regulations encouraged mass homeownership, even for people who couldn't afford it. Banks and mortgage companies offered loans that had artificially low initial payments (at subprime interest rates). The banker or mortgage broker who made the loan was probably the only person who really knew if the applicant for the mortgage could actually repay it, but repayment was unimportant to the bank because the mortgages were immediately sold. Portfolios of mortgages were then repackaged and resold along with complex financial instruments including credit default swaps and mortgage-backed securities. Virtually all mortgages, then and now, were ultimately owned by three government-sponsored organizations (SGAs) that go by the friendly names of Fanny Mae, Freddie Mac and FHA. These companies had the implied backup support of the US Federal government. They were aggressively encouraged to lend, regulations were lax, and enforcement/oversight was weak.

Consumers, expecting that the value of property would go up at 20% to 30% per year indefinitely, jumped into large real estate purchases with loans that were at 100% of the inflated value and teaser interest rates that started far below prime rate – sub-prime mortgages.

Greed and people behaving badly resulted in a buildup of a housing bubble and a massive amount of carnage as the bubble popped, leaving people homeless, and leaving banks and SGAs holding a mostly-empty bag.

RECESSION WATCH

The recession began in the US, officially, in December of 2007. The usual definition of a recession is three consecutive quarters of declining Gross Domestic Product (GDP), but the official end of the recession was called to be in June 2009 by the official record keeper of recessions, the National Bureau of Economic Research's Business Cycle Dating Committee (Reddy, 2010). Figure 1 (Appendix) shows the US real GDP for the baby recession in 2001 and the real one in 2008-2009. This recession has been unlike any in decades. It has been broad based and affected most industries and regions. There was no place to hide from it, with most of the US and the world deeply bogged down in it (Economist, Jan. 9, 2010; Pittenger, 2009, 2010).

The good news is that the economy has been growing with the best showing in the 4th quarter of 2009. But it has been slowing since, with GDP growth likely to drop to about 2% for the last two quarters of 2010 (Jones, 2010). The federal stimulus money that has added at least 1% but likely 2% or more to the GDP growth will be winding down and that could put at least as much of a drag on the economy as the boost it gave. Fortunately, Germany and France have already returned to positive growth, although that might be in jeopardy (Meier & Doyle, 2010). China continues a strong growth of about 10% (but with some organized slowdown to bring growth down to single digit).

It would be great if the US economy could jump into rapid growth that often happens after a recession, the so-called V-shaped recovery. Unfortunately, economists give that victory-from-the-recovery scenario a very low likelihood (Jones, 2010).

LIKELY SCENARIOS FOR THE NEXT 5 TO 10 YEARS

The recession introduced a negative feedback loop, and it will continue to be a drag on the economy for some time (Economist, Jan. 9, 2010; Pittenger, 2009). Briefly, this loop has these components: unemployment is high; the unemployed can't pay their bills including their mortgages; people's wealth has been hammered by loss of equity in their home and plummeting values of all their investments; with the lack of income and reduced wealth people are buying less and saving more; credit is tight now, so it is harder for people to buy homes or businesses to build; with the reduced consumer spending, businesses produce less and try to improve efficiency and avoid hiring more people; and the cycle perpetuates itself. Governments have a similar negative cycle: property values are down and so are property tax revenues; sales are down and so are sales tax revenues; low income and losses result in low income taxes; while government spending is up including ever-extended unemployment benefits; resulting in governments having to raise taxes/fees and/or cut back services – including reducing government employees and contracts.

An attempt to break the negative feedback loop is the reason that Federal governments jumped in so aggressively; they wanted to minimize the downward plunge of the world economy and reverse the negative feedback loop. But, all of the massive government spending and involvement in the economy now requires that the government must devise a way to extract itself and pay back all of the massive debt. This is easier to do if the economy rises rapidly out of recession with the traditional, post-recession, 5% to 8% growth. But a V-shaped recovery is not materializing. It is very likely that the economy will recover slowly, something being called an L-shaped or U-shaped recovery. A year or two into the recovery, the Federal government has to start paying back much of the borrowed money or face inflationary forces. As the federal government raises taxes, reduces spending, or both, it will act as a drag on the economy as the reduction in federal spending acts as a depressant to GDP.

So slow economic growth can be expected for several years to come (Jones, 2010). However, the L-shaped recovery is a far better alternative than the W-shaped recession which a few economists think is likely. A W-shaped – or double dip – recovery would occur if the economy claws its way out of this recession only to drop immediately back into another one (or better stated, back into more of the same big recession). The L-shaped recovery is considered most likely by economists. The best case and worst cases are probably pretty low, maybe about 10% to 15% likely, but still each is a very real possibilities.

LESSONS IN RECESSIONS

Most recessions have been pretty messy in the recovery period. Even milder recessions can be wrought with inflation, zero or negative economic growth, or both, called stagflation (Mankiw, 2009). Japan never recovered from the recession of the 90s, limping along with a weak government and a broken financial system; this lost decade may now become the lost two decades (Economist, Jan. 9, 2010)! A recession can take a long time for employment to return

and it can have high inflation, as was the case during the Carter era. The big housing recession of the 90s took 7 years for the single-family market to recoup and 13 years for condos (Pittenger, 2009).

The Federal Reserve wants to avoid deflation at almost any cost, so a little inflation is welcome. Gold prices shooting past \$1,200 per ounce is an indication of investors inflation concerns and the weak US dollar. As gold hits new highs against the dollar, this is welcome news for the Federal Reserve (Fed). If inflation starts heating up, however, the Fed will have to start raising interest rates to combat inflation earlier than anticipated while economic growth is still anemic. The higher interest rates will slow all aspects of the economy: housing, construction, business investment, business growth, and employment, along with the reduction in the dreaded high inflation. Paying back the huge Federal deficit is far easier if the economy is running on all cylinders, i.e., a positive feedback loop.

One thing that is a real possibility, but does not appear to be too likely, is the partial or full collapse of the dollar (Schiff & Schiff, 2010). A currency bubble has already been building based on artificially low interest rates. The US dollar could be replaced as the world's reserve currency and the currency used to denominate oil and conduct world trade. Geopolitical events, high inflation, the collapse of the dollar, or other events could, in the worst case, drop the US economy (and maybe even the world economy) back into recession. The European sovereign debt crises drove investors to the US treasury market as the best of the bad places to put money.

On the up-side, the rapid growth of globalization and strong emerging markets could draw the rest of the world out of recession faster than anticipated. Domestic economic policies from the Democratic administration might be much more benign to the economy than many economists anticipate (which actually seems to be reflected in the strong recovery in the US stock market).

Hopefully, everyone has learned a lot from the mistakes of the past recession. The government will have to gracefully extract itself from its pervasive involvement in businesses and also reel back in the massive deficit by increasing taxes, reducing spending or both. That will be easier to do if there is rapid growth out of the recession, but even then, it will be painful. And if growth is slow, it will be really painful (Economist, Jan. 9, 2010).

YEARS OF PAINFUL UNEMPLOYMENT

At the worst of the recession, the US economy was losing about three-fourths of a million jobs per month (BLS, 2010). Ouch! The US unemployment rate rose to 10.2% in October of 2009, but has dropped down just below 10%. Unemployment should likely go back up before stabilizing in early 2011. The temporary census workers should move back into the unemployed and the discouraged workers, who aren't counted in the official unemployment numbers will start moving back into the job market when there are actual jobs available.

The problem is that the official unemployment rate doesn't show the full picture. Figure 2 (Appendix), Measures of Unemployment & Underemployment, shows what the various levels of unemployment were during near-peak employment levels of 2008 (BLS, 2009). There are six levels of unemployment, with only the first three categories used by the office measure (U3). What is not measured is underemployed and discouraged people who simply gave up looking for work. If they have no hope of getting a job, and they have been trying for more than a year, it would be easy to see how discouragement could set in. Also, people may take a part-time job or a much lower-paying job if they have no other options. Or they could stay on unemployment

instead of accepting the harsh reality of a lesser job. Unemployment benefits even with Federal extensions are running out.

Therefore, the total measure of unemployment during the very best of times was really more like 8.9% using U6, not the official 4.8% using U3 (BLS, 2010). Doubling the measure is only a modest overstatement of the total unemployment combined with underemployment. Haver Analytics estimated the full unemployment rate to be more than 16% in full-time equivalent workers, not the official 10.2% for the Winter of 2009. The real problem is that many of the jobs lost are not lay-offs; they are jobs that will never come back. This has essentially never happened before in a recession; most people cannot simply wait out the recession and go back to doing their same manufacturing, construction, or services types of jobs. Many of those jobs will never return, at least not to the same levels.

The recession started much earlier in California and Florida and has been far more protracted. In Florida, the recession is approaching four years. Unemployment is just under 12% but it is much higher – from 13% to 20% – in many counties. According to research by the economist Pittenger (2009) the full U6 unemployment rate in Florida was about 25% for mid 2009, when the official levels of unemployment were roughly equal to the July 2010 rates. Floridians (and Californians too) are faced with high mortgages, high sub-prime mortgages, high insurance costs, high property taxes and high unemployment. In the face of this, many people have already left the state with Florida experiencing its decrease in population. Ouch!

With one of the worst property bubble in the nation, Florida has a very long way to go before the housing market adjusts. In mid 2009, Florida foreclosure rate, combined with 90 or more days delinquent, was more than 50% for sub-prime and approximately 25% for prime mortgages (Pittenger, 2009). The stigma of letting a house go into foreclosure is now pretty much gone, plus people need to go delinquent on their mortgage before the bank will start to renegotiate the mortgage. The housing market will be a drag on the economy for years to come. And, that is not considering other credit markets that could have a substantial impact on the economy, specifically consumer credit (credit cards), commercial real estate, and student loans (Sally Mae). Ouch! Ouch! And, Ouch!

UNEMPLOYMENT AND FILLING THAT EMBARRASSING GAP IN THE RÉSUMÉ

Considering the alternatives, an unemployed person has a very tough set of options. Moving to a better city or state is not much of an option. Other options are: continue looking for a job and take (almost) anything that comes along; start a business, although that is usually not advisable during a recession; or, going back to school.

Going back to school is probably a good choice for most people. See the Labor Market Statistics by Education Level in Table 1 (Appendix). This is a far better solution for most people than having a huge gap in their employment record that has be explained on a résumé – including establishing that the missing time was not spent in rehab or as an incarcerated guest of the state. People with higher degrees have a better chance of getting jobs and have higher labor force (LF) participation, by far, than those without. Plus, historically, they tend to make about \$10,000 more per additional year of education (Mankiw, 2009).

But what if there are no jobs on graduation with a Bachelor's degree? One solution is to go on even further for a graduate degree.

However, the job market may still be pretty tough. The graduate in one or two years may once again face a very ugly job market (Sasso, 2009). Possibly worse than the 2010 market. Ouch!

In short, high unemployment for several years is to be expected. It seems like investing in human capital – education and training – is a very good long-term solution for many individuals

and for the economy. But that is not enough. Every year that someone is unemployed is a man- or woman-year of lost productivity to the economy. Sitting around and waiting for the old jobs to come back is naïve at best, and irresponsible at worst. Everyone collectively need to get busy and use these years of restaging and recalibrating our economy well and wisely. Encouraging the baby boomers to retire would free up jobs. Surprisingly, given the glum job statistics today, the developed world can expect huge labor shortages starting in about 2020 because of demographics associated with the baby boomers. This is especially true for retirement areas like Florida (BLS, 2010; Hall, 2007).

NEW JOBS IN CONSERVATION AND INNOVATION

Education and training is not an easy solution. At a minimum, students and would be students need to understand the complexity of their decision to go to school. They must also understand that getting any degree does not necessarily improve their stead when they graduate. It generally takes much longer for people seeking more specialized and higher-paying jobs to get jobs. They should start to look carefully at their degrees and they should start to generate options (AP, 2010). What can they do in school and what can they do when they graduate? First, looking toward high-demand job areas is a start, such as health related and areas of engineering (see the BLS's Occupational Outlook Handbook at www.bls.gov/oco/). Volunteering and internships are a great possibility for gaining experience while in school and after graduation.

A very real possibility is related to sustainability (Hall, Zapalski, Taylor & Hall, 2009). Companies, organizations and governments all are going to have to start addressing sustainability issues. It helps that some of the best places to start are related to efficiencies and utility savings that could and should reap savings forever after (Creys, Granade, & Ostrowski, 2010). Plus, at the same time, it would help the environment. The US government will be mandating energy efficiency in all new and existing buildings; all multinational companies will be reporting sustainability; the nearly 1,000 cities in the US that have signed on to the Kyoto protocol will be taking sustainability steps; any vendor that (continues) doing business with Wal-Mart will have to report on their products, their packaging and their environmental foot-print (Hall et al., 2009).

Currently there are very few academic programs that start to provide students with sustainability-type education even though the need for it could be huge over the next decade (Hall et al., 2009). Many colleges and universities that traditionally offered environment science degrees continue to do so; however, they have generally not integrated the science with the business issues associated with auditing, measuring and accounting for carbon impacts.

Research by Pew Charitable Trust (McKillis, 2009), McKinsey (Creys, Granade, & Ostrowski, 2010) and others suggests that the energy efficiency component of sustainability is a potential cure for the recession. The McKinsey study estimated that energy efficiency in the US could easily save \$1T over 10 years. For this to work, there must be an increase in the general level of understanding and appreciation for the issues of earth systems and sustainability, followed by a general acceptance of more sustainable practices in homes, businesses and government. It is easier to compete for a job when the candidate can argue that sustainability education and training makes the candidate uniquely qualified to assist with cost and environmental impact reductions, probably resulting in savings above and beyond their salary (Hall et al., 2009). That is a compelling argument to be the top candidate for a job. That is good for the employee, good for the environment, and good for the company. Pew Charitable Trusts

(McGillis, 2009) found that green jobs grew about two times faster over the last decade, and that they were generally higher paying.

As opposed to facing unemployment and a tough job market, it might be possible to launch a business, i.e., people can create their own job. This might be something that can serve as more of a hobby now, but can be converted to a full business once the economy recovers. Unfortunately, starting a business takes capital at the worst possible time for most unemployed people.

Pittenger (2010) summarized several studies that demonstrated the horrendous impact that long-term unemployment has on individual and their families. Success and mental health in later life is dramatically impacted by long-term unemployment in younger life. The impact spills over to the children; children of a long-term unemployed parent earning 9% less.

To avoid long-term inactivity, people could make plans for a year or more volunteer activities such as the Peace Corp or a mission to a developing country (which could provide more education and personal growth than two years of academic study). Whatever they do, people need to avoid non-productive gaps to explain in their résumés – and the associated atrophy of skills.

SOME GOOD NEWS

Aside from the fact that much of the news is getting to be less bad, there is one rather bright spot in the economy: company profits and the stock market. The major stock market bottom in March of 2009 accurately forecasted the end of the economic recession, probably preceding the likely bottom of the recession by about six months. At least part of the run-up in at the beginning of 2010 was associated with people from the sidelines jumping onboard, especially money managers that missed the first run. At the end of the summer money was fleeing the stock market again and huge amounts of global capital was going into bonds, especially US treasuries that are hitting all-time low yields for most maturities. The stock market could remain bumpy for some time.

Companies, and the economy in which they operate, need to get healthier before they can be given a clean bill of health and sent out to be presented to investors at full value. However, companies have been generally profitable, as the economy has bottomed out; this is impressive for a time where companies should still be bleeding red and slowly starting to move back into the black. But companies, especially larger companies, executed severe austerity measures include layoffs, so they are now able to operate profitably at the lower levels of production. The increases in productivity, and the reluctance to hire back quickly, will leave them operating lean for as long as possible. As an indication of how undervalued the stock market is that many companies are using their excess cash to buy back their own stock and to buy other companies. Even though this will add to slow job growth during the recovery, the profitability – especially international profitability – should go a long way toward stabilizing the economy. It should move the world and the US economy away from the double dip and into a slow, steady slog out of the Great Recession.

CONCLUSIONS

The good news is that the US seems to have dodged the bullet. The meltdown of the entire financial system, on a global basis, could have been catastrophic, resulting in this Great

Recession, actually being the Great Depression II. The depth and pervasiveness of the mortgage related financial problem was massive and built on a bubble supported by millions of naïve and complacent home buyers, irresponsible mortgage practices, and unethical business models. Government oversight – or more accurately, *undersight* – helped to duplicate the Saving & Loan crises from a couple decades earlier, but on a Titanic scale.

With a capitalistic system people can expect cycles and they can expect to see contractions. What is unexpected, though, is that so many people, business and regulators will contribute so much and in so many different ways to making this a Great Recession, not simply a normal economic correction. Even so, heroic efforts by lots of people, globally, resulted in avoiding something unimaginably worse. And lots of people everywhere are struggling to make the best of the resulting situation.

A recession presents challenges and opportunities. It is a great time to improve efficiency, to invest in capital equipment and to improve human capital skills through training and education (Hall et al., 2009). Surviving and innovating is the way to be competitive at the other side of the recession. See the *Refractive Thinker*, Volume V, Strategy in Innovation (Lentz, ed., 2010).

This will almost certainly be a long and painful, jobless recovery. Going to school is infinitely better than sitting around doing nothing for years. But the new economy after this recession may not have that many jobs for the traditional degrees. Colleges, universities and the students themselves need to work more aggressively than ever to make sure that education and training provides the best opportunities. Education should aim toward high-demand jobs, of course. But education could aim for jobs that will be in high demand in the future. A low carbon economy will have sustainability jobs. Even though the details of such jobs are uncertain, the types of things someone would need to know can be anticipated. Maybe a solution to being unemployed at graduation might be to launch a business venture so general skills for entrepreneurship and innovation can easily be an area for students to pursue.

Whatever the solution is, it will have to be unique to the people who are unemployed and help eliminate that unsightly blank spot on résumés. The average unemployment period right now is growing with more and more people exhausting all unemployment benefits. People not only need options – from the government workforce agencies and from the colleges – but they need to generate their own options. Maybe they can create their own job with companies that don't yet know they need that position – especially if the job might pay for itself, like in sustainability.

Each year of unemployment for 16 million people is 16 million work-years of gross domestic product lost. How aggressively everyone addresses this problem and how everyone innovates into a brand new economic era will be telling for quality of life, next year and for decades to come. If everyone waits around long enough, it will be a W-shaped recovery. Taking active steps now will help assure that it is more of a V-shaped recovery. Collectively, people, can shape the new economy into one that has different values than the economy that create this global mess.

There is good, bad and a lot of ugly in this recession. It is fascinating to watch news and statistics as the next phases of the Great Recession unfolds. But the pain is very real, and it will be with painful for years to come. The way in which everyone, individually and collectively, rises to this challenge will determine the full impact of it, and determines if the US remains the world leader, or slowly fades into mediocrity.

A time for recession is waning. It is now a time for innovation and growth.

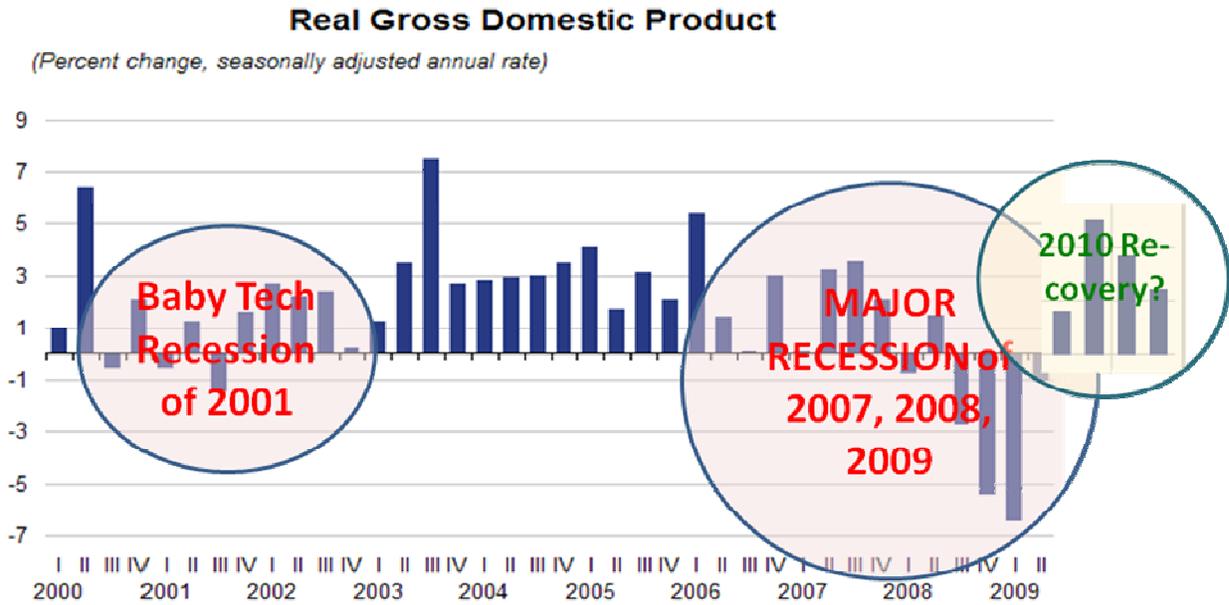
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APPENDIX



U.S. Bureau of Economic Analysis

Figure 1. US Economic Growth and Recessions Since 2000



Measures of Unemployment & Underemployment

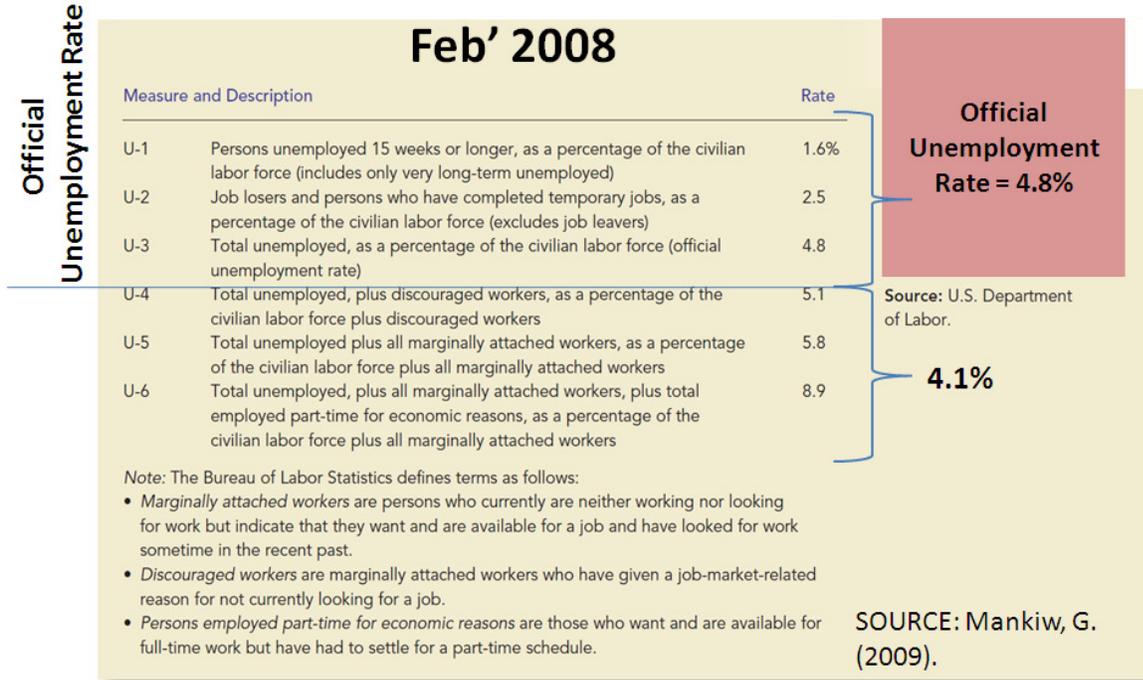


Figure 2. Measures of Unemployment and Underemployment (February 2008)

Table 2
Labor Market Statistics by Education Level
in June 2008

Adults (25 yrs & older)		
	<i>u-rate</i>	<i>LF part. rate</i>
Less than H.S.	8.7%	45.9%
H.S. diploma	5.1	62.8
Some college or AA degree	4.2	71.9
Bachelor's degree or more	2.3	78.1

SOURCE: Mankiw (2009) using Bureau of Labor Statistics data.