Current Conditions and Outlook for the U.S. and Connecticut Economies: 2009-2011

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A Note of Thanks to CERC

The Office of Research would like to thank Jeff Blodgett and the Connecticut Economic Resource Center (CERC) for their generous offer to hold the Economists' Panel at CERC's facility at Rocky Hill.

And, Thank You to the Economists' Panel

To critique and advise in setting the assumptions for the economic outlook and Connecticut's Short-Term Industry Employment forecasts, a panel of economists from the Office of Research, and from outside the agency, from business, academia, and the non-profit sector, convenes every year in the Spring to assess the current and near future conditions and prospects for the U.S. and Connecticut economies. The Office of Research thanks them for their time and effort in participating in this process. As always, any errors are the responsibility of the author of this outlook.

Economists Panel (April 2010 Participants)

MEMBERS-Office of Research: Amy Drukenmiller, Economist; Patrick Flaherty, Economist; Dana Placzek, Research Analyst; and Daniel W. Kennedy, Ph.D, Senior Economist.

MEMBERS-Outside Panelists: Jeff Blodgett, VP-Research, CERC; Edward Deak, Ph.D., Professor of Economics, Fairfield University, CT. Model Manager, NEEP, and Governor's Economic Council; Steven Lanza, Ph.D., J.D., Executive Editor, *The Connecticut Economy*, University of Connecticut, and Governor's Economic Council.

FOREWORD

What follows is the outlook for the U.S. and Connecticut economies for 2010 and 2011, which is prepared by the Office of Research, Connecticut Labor Department (CTDOL). After review by a panel of economists from academia, business, non-profits, and government, the U.S. and Connecticut outlooks are revised, updated, and then used as the basis for setting the assumptions for the next round of Short-Term Connecticut, Industry-Employment Forecasts, and is posted on the CTDOL Website. In addition, every year the U.S. and Connecticut outlooks are forwarded, as required, to the U.S. Labor Department.

As this is written, in June 2010, it is approaching three years since the collapse of the Asset-Backed Commercial Paper (ABCP) market in August 2007. This ushered in the financial panic of 2007 and 2008, which came on the heels of the collapse of the housing bubble between June 2006 (based on the Case-Shiller composite), and 2007Q2 (based on the Federal Housing Finance Agency's U.S. Index). This was the second asset bubble to pop in as many decades, and the first banking panic since the banking panics of the 1930's during the Great Depression. In many respects the current crisis is reminiscent of the Panic of 1907 in which a shadow banking system collapsed. In 1907, the bank-run was ushered in by the collapse of the Knickerbocker Trust Company; one century later, the collapse of the ABCP market would begin the 21st Century's version of the good old-fashioned bank run ushering in the collapse of another shadow banking system. The panic peaked in the last quarter of 2008 with the collapse of Lehman Brothers, followed by the nationalization of AIG. A quick, though ad hoc, response by the Fed and U.S. Treasury averted another Great Depression—so far. Though it did not prevent the unemployment rate from topping out above 10%, the *American Recovery and Reinvestment Act* (ARRA) of 2009 probably prevented it from getting any higher, and also probably contributed to the recovery in GDP in the last half of 2009, and the apparent jobs recovery in the final month of 2009. However, the question remains: in the wake of the Fed's withdrawing liquidity from the financial system, and the Federal government's fiscal stimulus winding down, can the economy generate a self-sustaining recovery—especially in light of the growing fiscal crisis in the states? Further, there are still some shoes that could drop with

regard to financial system. In 2010 and 2011, $1 trillion in Adjustable-Rate Mortgages (ARM), including option ARM's, originated in 2005 and 2006 will re-set. Another shoe that could drop is that of the expected spike in the delinquency rate on Commercial Mortgage-Backed Securities (CMBS) in 2011, and some are warning of a private-equity debt crisis in 2011. And, of course, there is the sovereign debt crisis, centered around Greece in the EU In other words, will are still not out of the proverbial woods.

Though the housing bubble and bust did not impact Connecticut to the extent it did other areas of the country, particularly the epicenter regions, such as Phoenix and Las Vegas, Connecticut was still affected, and in particular, certain regions of the state. However, Connecticut is still significantly exposed to the current crisis due to the large presence of the financial services industry in the state, particularly in Fairfield County. Further, Connecticut also faces large numbers of ARM re-sets in 2010 and 2011. And, the troubles in Europe and its cloudy growth prospects are of concern to Connecticut since, after Canada, France and Germany are the two largest destinations for the State's exports. Clearly, the next two years, which coincide with this outlook's forecast horizon, are going to be very critical in determining the fate of the Connecticut, U.S., and World economies for decades to come.

Both, the U.S. and Connecticut economic outlooks, which follow, and the critique and recommendations formulated in the Economists' Panel process set the assumptions for the Connecticut Short-Term Employment Forecasts.

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VOLUME 1

Current Conditions and Outlook for the U.S. Economy: 2009-2011

August 2010

EXECUTIVE SUMMARY

CURRENT U.S. ECONOMIC CONDITIONS: Spring 2010-- As the current, tentative recovery proceeds strong crosscurrents are pulling the economy, both up and down at the same time. At the time of writing, Spring/Summer 2010, there are still some critical macroeconomic series subject to revision. Given the "wait-and-see" stance by the National Bureau of Economic Research (NBER), in the Dating Committee's April meeting, and given the data, what point on the cycle best describes the current state of the economy? GDP-growth and job growth have both cooled coming into the middle of 2010. Though private-sector job-growth has been steady, but modest, the hiring and firing of temporary workers for the 2010 Census, has resulted in large swings in Government Employment. The U.S. Economy faces some strong crosscurrents as it struggles to recover from the worst financial and economic crisis since The Great Depression.

READING THE SIGNALS: What is the Economy Telling Us?-- In order to determine where things may be heading in the first half of 2010, this section turns to reading the signals, in the form of macroeconomic indicators of economic activity.

GROWTH AND OUTPUT

Recession and Panic—Defining the "normal" recession phase as the period December 2007, when the NBER declared that the U.S. had entered recession, to August 2008, The Panic Phase as September 2008 when the collapse of Lehman Brothers, followed by the nationalization of AIG. And, the Post-Panic period would then be defined as the period beginning with March 2009, when the stock market recovered to July 2009, when GDP growth returned to positive territory. Given these definitions, the "normal" recession period looks similar to Post-Cold War Era recessions. Government spending and consumer spending both made positive, and equal, contributions to the growth in Nominal GDP, while Gross Private Domestic Investment (GPDI) and Net Exports were both subtractions. It is over the Panic Phase that the contributions to the change in Nominal GDP were atypical. Consumer spending actually subtracted from GDP-growth,

as did Government spending. Not so atypical, was the subtraction from growth by GPDI. The only positive contribution to Nominal GDP growth was Net Exports (NX). In the Post Panic Phase, Government Spending, once again, contributed to GDP growth, while Net Exports continued its positive contribution. And, though the contribution to GDP growth, by consumer spending turned positive, with the end of the panic phase, it essentially remained flat. GPDI, which continued to be the only component subtracting from GDP growth, in the Post-Panic phase, was once again, a large subtraction.

Switching to the chained, or constant-dollar GDP, and its components, and to the compounded, annualized growth-rates reinforced much of the behavior observed in the current-dollar components. Real GDP declined at an annualized rate of 2.45% over the recession phase, it then accelerated to a nearly 6%, annualized decline, over the Panic Phase, and then declined to a 0.74% rate in the Post-Panic Phase. But what really stands out is the steep contraction in GPDI, which declined at an annualized rate of 38.71% over the Panic Phase, and continued to contract at a 24% annualized rate in the Post-Panic Phase. Government spending grew at an annualized rate of 3.68% over the Recession Phase, and then actually contracted at a 0.74% rate over the Panic Phase. Real Government spending then grew at a strong 6.72% annualized rate over the Post-Panic Phase. PCE actually declined over all segments, as well as the entire span of the recession/crisis. This is unusual for, especially, Post Cold War Era business cycles. Also of note, the decline in PCE was slightly steeper, on a compounded, annualized basis, over the Recession Phase than it was over the Panic Phase.

Recovery?— As noted in the introduction, the NBER has still not called a turning point for the recent (current?) recession. GDP-growth turned around in 2009Q2. However, it should be noted that GDP is not a major contributor to determining turning points in the business cycle. NBER puts the most weight on higher-frequency data (i.e., monthly data) so that they can call the month of the turn. In addition, GDP numbers are subject to subsequent revisions. Both Nominal and Real U.S. GDP began growing again in 2009Q2. The "bounce-back" in 2009Q2-to-2009Q3 seems to have been led by PCE, with a small contribution by Government spending. The biggest subtraction was from Net Exports

(NX), with a small contraction contributed by GPDI. The composition of the contribution to the change in Nominal GDP was quite different over the 2009Q3-Q4 Period. The largest contributor to growth was GDPI, followed, again, by PCE. Government made a very small contribution to growth. Once again, NX subtracted from growth. In the first quarter of 2010, PCE, once again led the way in contributing to the growth in Nominal GDP, followed by GPDI. Government made a slightly larger, but still small, contribution to growth, while NX, once again, subtracted from growth. Inventory rebuilding dominates the growth in GPDI over the three quarters since the turn-around in GDP-growth in 2009Q2. This is typical of Post Cold War ERA recoveries. In fact, Fixed Investment actually subtracted from the growth in Nominal GPDI. This is also characteristic of Post Cold War recoveries.

RESOURCE UTILIZATION

Recession and Panic— The Capacity Utilization Rate (CUR) for the U.S. Manufacturing Sector was 65.19% in May 2009 its lowest of the entire Post World War II Era, surpassing the previous low of 68.56%, in November 1982. As of April 2010, CUR in manufacturing had recovered to 71.25%, far below the 1972-09 average of 79.2%.

Recovery?— Even if recovery is underway, the steep contraction in the CUR probably implies that added capacity will not pick up any time soon over the current cycle. Given weakness in demand, the significant portion of domestic demand filled by imports, in conjunction with the accelerating trend in outsourcing, it is not expected that there will be a turnaround in the growth in manufacturing capacity until much later in the current cycle.

BUSINESS CONDITIONS

Excluding the volatile transportation sector, from June 2008 to January 2009, New Orders had the steepest drop (-24.9%) over the whole NAICS range of the series (1992 to 2010). After a slight bounce in February, new orders then bottomed in March 2009. By March 2010, new orders were up 18.4% from their trough one year earlier. However, New Orders declined by 0.5% from March to April. Interestingly, it appears that after the

drop coming into the current crisis, the path of new orders has continued along the same track, as before the drop, but at a lower level. That is, it is as if there has been a downward shift in the vertical intercept, as the new trend line continues along its new, lower, path parallel to the old one.

New Orders for Non-Defense Manufacturing Goods (Excluding Transport) had their steepest drop for the 1992-2010 NAICS Series, declining by 26.1%. And like New Orders (excluding Transport), discussed above, after a bounce in February, non-defense orders bottomed out in March 2009. By April 2010, New Orders for Manufacturing Goods (excluding Defense) had bounced back more strongly than New Orders (excluding Transport), increasing by 19.5%.

Retail Sales have followed the same pattern as the New Orders series. After steep drops of 10.5% and 10.4%, between July and December 2008, US. Food and Retail Sales and U.S. Retail Sales (both excluding Motor Vehicles) recovered and began increasing again on a Month-to-Month (MTM) basis. Food and Retail Sales had a setback in March 2009, and both series had small declines in July and October 2009. However, there was a substantial decline in MTM sales for both series in May 2010. Food and Retail (excluding Motor Vehicles) declined by 1.10% in May, and Retail Sales (excluding Motor Vehicles) declined by 1.27%. This was the largest decline in both series in over a year.

Motor Vehicle sales peaked in July 2005 and then declined by 32% by December 2008. Boosted by “Cash-for-Clunkers” Motor Vehicle sales then grew by 12.4% between December 2008 and August 2009, and then dropped by 14.1% in September. Motor Vehicle sales then turned around again and grew 16.1% by April 2010, with a slight decline in May’s sales, which still left U.S. Motor Vehicle sales 24.8% below their peak in July 2005.

HOUSEHOLDS: Consumer Spending Support

Recession and Panic-- Real Disposable Personal Income (RDPI) declined by two-thirds of a percent, on a compounded, annualized basis, over the recession segment, and by one-half percent over the Post-Panic segment (first half of 2009). However, during the Panic phase, RDPI actually increased at a 1.20% rate. Though nominal DPI actually declined over the fourth quarter of 2008, the general price level also declined (whether measured by the CPI or the PCE Price Index). Since the rate of deflation exceeded the rate of decline in nominal income, real income actually increased. Transfer Payments made a larger contribution to the growth in Nominal DPI over the Recession and Post-Panic segments than they did over the Panic segment.

Recovery?— The QTQ growth-rate in Real Disposable Personal Income (RDPI) has been oscillating (i.e., from positive to negative, and back to positive) since the first quarter of 2008. In the quarter of the turnaround in GDP-growth, 2009Q2, RDPI had a 6.20% (not annualized) spurt in growth, only to be followed by a 3.60% contraction in 2009Q3. There was no change in RDPI in the fourth quarter, but then in 2010Q1, RDPI grew, but only at a modest 1.90% rate (not annualized).

With the onset of financial panic, in 2007 and 2008, and the deterioration of households' balance sheets after the collapse of the asset bubble in housing, the savings rate climbed rapidly in 2009. After peaking at 5.4% in 2009Q2, the quarter in which GDP-growth turned around, the savings rate of U.S. Households has since declined. By 2010Q1, the savings rate was 3.4%, though lower than during the recession/panic, it was still more than double the 1.2% rate in 2008Q1.

HOUSEHOLD BALANCE SHEETS: A Drag on Recovery –As the housing bubble rapidly deflated, the value of U.S. Households' balance sheets suffered a loss of $7.260 trillion in wealth, and represents a 31.6% loss in housing wealth. This is a significant negative wealth effect, and a major explanation of the assets-side hit to Net Worth. By 2010Q1, HHs' housing wealth had rebounded slightly by 5.25%, or $823.2 billion

between 2009Q1 and 2010Q1. Nevertheless, this still left the value of HH RE $6.436 trillion below its peak in 2006Q4.

The other big hit to HHs' balance sheets, was in Financial Assets, particularly, Corporate Stocks. The peak in Corporate Equities wealth occurred two quarters after the peak in HH's RE wealth in 2007Q2, at $10.170 trillion, however, the relative contraction in value was steeper. HH's value of Corporate Equities declined by 49.24% between 2007Q2 and 2009Q1, and then recovered by 49.13% by 2010Q1. But this still left the value of Corporate Equities at 51% of their value at the peak of the expansion/bubble in 2007Q2.

With onset of the Housing Bust and financial panic, brining about a collapse in asset values, along with accumulated high levels of debt, the Household Sector's Assets-to-Liabilities Ratio set a Post World War II record low of 4.61 in 2008Q4. By 2010Q1 it had recovered somewhat to 4.91, but still in record low territory. Further, the Liabilities-to-DPI Ratio hit, and surpassed 1.00, for the first time since available data on the Flow-of-Funds beginning in 1952Q1, in 2000Q3. After hitting a record high 1.38 in 2008Q1, it has declined to 1.26 in 2010Q1, but still at record levels. In a final note on the balance-sheet effects governing this recession, panic, and possible recovery, there are only two instances in which U.S. households' debt exceeded 100% of GDP: 1929 and 2006.

LABOR MARKETS: Current Conditions, Context, and Implications

To most Americans the most important indicator of how the U.S. Economy is doing is the jobs market. Many other economic indicators seem remote or abstract. This section turns to assessing the current conditions, and the effects of the recent recession/crisis, affecting the U.S. Labor Market.

CLAIMS FOR UNEMPLOYMENT INSURANCE – The most-timely signal that observers turn to for an indicator of current labor-market conditions is Initial Claims. Because both Initial and Continued Claims are high-frequency series they tend to have their signals masked by a lot of statistical noise. To filter the noise, both series are usually analyzed in terms of their four-week moving averages (4-WMA).

U.S. Initial Claims, seasonally adjusted, peaked the week of April 4, 2009 at 658,750 from a cyclical low of 305,500 the week of May 26, 2007, seven months before going into recession. Initial Claims were at a level of 454,250 the week of May 15, 2010.

Continued Claims pretty much display the same behavior as Initial Claims, except that Continuing Claims peaked two months later in June 2009 at 6.8 million (4WMA). Since then Continued Claims have steadily declined throughout 2009 and into the first five months of 2010. The 4WMA of Continued Claims was 4.6 million the week of May 15, 2010.

THE UNEMPLOYMENT RATE – The trough of the Unemployment Rate (UR) over the last expansion occurred in the second quarter of 2007 when the UR averaged a low of 4.40%, ½ percentage-point higher than the December 2000 trough. So far, over the current cycle, the UR has peaked at 10.10% in October 2009. Though it has fallen below 10% in 2010, the UR, nevertheless, has remained above 9.5% for the first half of 2010.

JOBS – *Recession/Panic*—Between December 2007 and December 2009, the U.S. Economy lost 8.4 million Non-Farm jobs. If, in fact, the NBER declares December 2009 the trough of the recession then that would make the recent recession/panic 24 months in length, the longest of the Post World War II Era. The largest contributor to U.S. job-losses over the 24-month recession/panic period was the Manufacturing Sector, accounting for 26.2% of jobs lost, followed by Construction, which accounted for 21.5% of jobs lost. Construction also suffered the steepest decline, contracting by 24%. The Retail Sector accounted for 14.4% of all jobs lost. Another major contributor to job-losses was Administration, Support and Waste Management (hereafter Admin-Support), which accounted for 13.3% of lost jobs. This sector also had the third steepest contraction (-13.3%) behind Construction and Manufacturing (-16%). Driving the behavior of the Admin-Support Sector is the Employment Services Industry—particularly, Temporary Help. This point is further elaborated on below.

JOBS – *Recovery? Current Conditions*--U.S. Non-Farm Employment turned around after December 2009, ending 24 months of decline. Between December and May 2010, the U.S. Economy created 982,000 net, new jobs. However, one-half of those jobs were created in the Public Sector, and virtually all by the Federal Government, as state and local governments actually subtracted jobs over the five-month period. Many of the 571,000 Federal jobs created are related to the 2010 Census. They are thus, temporary jobs and will be eliminated when the census is completed. Total U.S. Non-Farm jobs grew by 076% between December 2009 and May 2010, while Public Sector jobs grew by 2.17%, Private Sector jobs grew by only 0.46%. Four private-sector NAICS sectors have made significant contributions to job-growth over the December 2009-May 2010 Period. Manufacturing had a net increase of nearly 13%, and continuing to add jobs as it did even during the recession/panic, Health Care and Social Assistance (HCSA) grew by 11.4%. Accommodation and Food Service and Retail each had increases of more than 9% in net, new jobs.

Looking at the contributions to job-growth from December 2009 to May 2010, by NAICS sector, again, it is the Public Sector that is the largest contributor, accounting for one-half of all net new jobs created over the apparent recovery, followed by Administration Support and Waste Management (hereafter, Admin-Support), which contributed 19% of the new jobs since December 2009. Admin-Support is strongly driven by the Employment Services Industry, which includes contingent workers and its largest component: Temporary Help.

TEMPORARY HELP AND LABOR-MARKET "FLEXIBILITY" – When the cyclical behavior of Non-Farm Employment from January 1990 to May 2010, is compared to that of Temporary Help Employment, the size of the amplitude of Temporary-Help jobs over the cycle is much greater. This indicates that there is a much greater response to the business cycle by Temporary Help than for Total Non-Farm Employment. This "flexibility" of hiring and firing temporary workers in response to changes in the phase of the business cycle has become more pronounced from about the mid-to-late 1980's onward, and especially over the current decade. This is particularly true over the current

cycle. Further, as the 2000's progressed, the hiring of temps is less likely to be followed by the hiring of permanent staff, as the trend in outsourcing accelerates. And, in fact, the YTY swings in temp-help have been quite large over this cycle. The surge in temporary job-growth over the apparent, current recovery has been the driver of job-growth in the Admin-Support Sector In fact, on a MTM basis, temporary-help job-growth turned positive in October 2009, two months before the turnaround in Non-Farm Employment. However, after November 2009, the MTM growth-rate in Temporary Help, though still positive, began to rapidly decelerate. The upshot: temporary jobs can disappear as fast as they are created.

THE HOUSING AND MORTGAGE MARKETS: Is the Post-Bubble Stabilization Sustainable?---Based on the latest Existing Homes Sales data from the National Association of Realtors, the recovery in the sale of existing homes throughout 2009, appeared to be abruptly reversed in the first quarter of 2010. Keeping in mind that one quarter's worth of data does not make a trend, the first-quarter data, nevertheless, is troubling. Existing Home Sales increased by 29.50% between 2009Q1 and 2009Q4, that trend was either interrupted, or reversed, in 2010Q1, when Existing Home Sales declined by 13.95%--an annualized, rate of -45.18%. For comparison, between 2005Q3 and 2009Q1, as the housing bubble was popping, Existing Home Sales declined at a rate of 11.89% per year. And, other housing-activity indicators seem to confirm this trend. The median number of months that a house was on the market before it was sold has continued to climb as the housing bubble popped, and reached 14.5 months in March 2010, has remained a record plateau level (above 14 months) throughout the first half of 2010. Housing Permits bottomed out in April 2009 at 523,000, then, they began to slowly increase until March 2010, peaking at 685,000. However, they have declined to 574,000 by May. Further, builders' confidence in the market for newly built, single-family homes declined for the second consecutive month in July to its lowest level since April of 2009, according to the National Association of Home Builders/Wells Fargo Housing Market Index.

WHERE THE HOUSING MARKET GOES FROM HERE – The U.S. Census Bureau announced that new home sales dropped by 12.4% in July 2010, compared to June, and were down by 32.4% from July 2009. In July there were 9.1 months of supply of new homes on the market, and according to the National Association of Realtors (NAR) sales of existing houses plunged by a record 27%. The number of previously owned homes on the market rose 2.5% to 3.98 million. At the current sales pace, it would take 12.5 months to sell those houses, the highest since at least 1999 and, up from 8.9 months in June. The months' supply of single-family homes at 11.9 months was the highest since 1983. There are two key factors that will determine if the housing market can stand on its own two feet now that the $8,000 new homebuyer's tax credit has expired and the Fed has exited the RMBS market: (1.) the number of new mortgage defaults resulting from ARM re-sets in 2010 and 2011, and (2.) What happens to the Unemployment Rate (UR). In the final analysis, the key to jump-starting the housing market is strong economic growth, which would create jobs at a fast-enough rate to bring down the UR. Strong job-creation and income-growth will allow consumers to accelerate the repair of their balance sheets by brining down their debt loads (which, in and of itself, is a long process), which, in turn, would also bring down foreclosures, and eventually firm up housing prices, and generating the multiplier effects that go with an expanding housing market.

THE PANIC OF 2007-08: Back from the Brink?--

A 21st CENTURY BANKING PANIC – Kacperczyk and Schnabl (2010) divide the first 21st Century Financial Panic into two parts: (1.) A Liquidity Crisis ushered in by the events of July and August 2007 and the collapse of the Asset-Backed Commercial Paper (ABCP) market, and (2.) A Solvency Crisis, which was brought on by the collapse of Lehman Brothers and the events leading to the nationalization of AIG in September 2008 .A useful way of thinking about the two-part crisis is that the Liquidity crisis was sparked by the collapse of a shadow banking system, while the Solvency Crisis was the result of the collapse of, not only a shadow banking system, but also a shadow insurance industry and its complex interconnections.

FACTORS COMMON TO BANKING CRISES-The Signs of Impending Crisis Were There-- Rogoff and Rhienhart (2009) studied 800 years of financial crises. They found several factors that were common to all the banking crises that they studied.

A Deteriorating Current Account--The U.S. has been running large trade deficits since the 1980's, and the trade deficit has been subject of debate over the last three decades, especially the last one, when the U.S. Current Account deficit grew to unprecedented levels as Americans consumed more than they were producing.

Asset Price Inflation--It is the bursting of the 2000's housing bubble that ushered in the recent recession and financial crisis. Further, the collapse of the housing bubble came less than a decade after the collapse of the tech-driven stock market bubble in 2000.

Rapidly growing and unsustainable levels of Household Debt (Overleveraged Households)--U.S. households' debt burden grew to unsustainable levels over the last decade, especially. In fact there have only been two times over the last 100 years that U.S. household debt exceeded 100% of GDP: 1929 and 2006. This was facilitated by the expansion of credit through Greenspan's policies at the Fed, and the U.S. trade deficit, which sucked in capital to balance the current account.

Slowing Growth in Output--After recovering from the 2001 Recession and the September 9-11 Attacks, the YTY growth-rate in U.S. GDP surged from 2002 to 2004. But, after 2004Q2, the YTY, quarterly growth-rate in U.S. Real GDP decelerated until the economy entered recession at the end of 2007, and growth turned negative.

FINANCIAL REGULATION FOR THE 21st CENTURY -- Between the 1930's and 2007, there were no systemic banking crises in the U.S. There were failures of some sizable banks, such as Penn Square and Franklin National in the 1970's, and some regional problems. In the 1980's and early 1990's there was the looting and collapse of the savings and loans, which did strain the financial system. But, this resulted in the insolvency of a major sector of the financial system, but not the entire financial system.

The Panic of 2007-08 was the first time in the U.S., since the 1930's, that the entire financial system was perceived as insolvent. With the collapse of credit markets, real economic activity ground to a halt. Credit is the lubricant that greases the wheels of the real economy, when that lubricant dried up with the financial panic in 2007-08, the wheels of the real economy seized up, and economic activity came to a grinding halt.

Looking to TR: Anti-Trust and "Too Big to Fail"-- Teddy Roosevelt, the "Trust Buster", is certainly relevant for guidance on how to remedy the market distortions that brought us to the brink of Great Depression II. Over the last three decades, de-regulation of markets, including financial markets, has been the reigning philosophy, and it has been translated into policy. To the extent that anti-trust policy was even a consideration, the focus seemed to have been on *In-Market* concentration, rather than *Market-Extension*. There are actually two issues here, the first: "to big to fail", which, could be addressed by breaking up large institutions, using both criteria, in-market and market-extension concentration measures, to establish threshold ratios that would trigger anti-trust action (i.e., to break up "too-big" institutions). The second: "too interconnected" could be addressed by requiring transparency in Credit Default Swaps, and adequate capital coverage to cover potential claims on such credit-default insurance.

Looking to FDR: Addressing the Three Horsemen of Financial Crisis-- There are "three horsemen" of market failure that seem to be present in financial crises, they are: *Conflicts of Interest*, *Asymmetric/Hidden Information*, and *Principal-Agent Problems*. The financial regulation put into place in the 1930's was designed to mitigate the dangers posed by the "three horsemen". Two major pieces of legislation that addressed the excesses of the 1920's financial markets were passed by Congress and President Franklin Roosevelt signed into law the *Glass-Steagall Act* in 1933, and the *Securities Exchange Act of 1934*, in 1934. By 1980, deregulation (begun in the 1970's with the trucking and airline industries) had moved to the financial markets with the passage of *The Depository Institutions Deregulation and Monetary Control Act of 1980***,** which brought further assaults on Glass-Steagall, which was finally repealed in 1999 by the *Gramm-Leach-Bliley Act*.

Financial Reform in the 21st Century-- The financial reforms that were put in place after the onset of the Great Depression were, in large part, due to the work of the Pecora Commission. In May 2009, the bipartisan, Financial Crisis Inquiry Commission was instituted to investigate the circumstances surrounding the recent financial crisis. But, is this the 21st Century's Pecora Commission? A report of the Commission's findings is due to the Congress, President and, the American people on December 15, 2010. However, President Obama signed into law the *Wall Street Reform and Consumer Protection Act* on July 21, 2010. So, how does the Financial Crisis Inquiry Commission make recommendations to the President on financial reform in December when the financial reform bill has already been signed into law in July? Nevertheless, by signing this bill, President Obama implements the most sweeping reform of financial regulation since the New Deal. It Establishes an independent consumer bureau within the Federal Reserve to protect borrowers against abuses in mortgage and, credit-card lending; It grants the government new authority to seize and wind down large, troubled financial firms; It sets up a council of Federal regulators to monitor threats to the financial system; It mandates oversight of the vast market for derivatives; and it gives shareholders more say on how corporate executives are paid.

However, save a few exceptions, the legislation does not attempt to alter the fundamental shape of Wall Street. And, it stops short of breaking up the nation's megabanks, it leaves out a ban on trading certain derivatives, and it doesn't set firm limits on executive pay. Finally, it does not significantly streamline the financial regulatory framework.

THE SOVERIEGN DEBT CRISIS -- The current Greek fiscal crisis was brought on by the drop in tourism and shipping, the mainstays of the Greek economy, due to the recent World financial and economic crisis. But, in addition to structural problems in Greece itself, there are also contradictions in the structure of the European Union (EU), or Eurozone, which also must be resolved. Though the EU countries under the Euro have a single monetary policy through the European Central Bank (ECB), each country carries out its own fiscal policy. Not only is fear of contagion spreading throughout Europe, but it could spread far beyond Europe. Other countries' banking systems are large holders of

Greek sovereign debt and are vulnerable to credit crises, such a crisis could be participated by Greece restructuring its payments on its bonds leading to a partial default. If this were to result in the failure of a large European financial institution, it could precipitate a liquidity crisis, or even a solvency crisis, resulting in a European version of the Lehman Brothers collapsed in the United States, and like that event, could send shockwaves throughout the World's financial system. Further, the Greek debt crisis has implications for the U.S. After its two NAFTA partners Canada, which accounted for 34% of exports, and Mexico (21%), the Eurozone market is the third largest destination for U.S. Exports, accounting for 15% in the first half of 2010.

HAWKS, DOVES, AND CHICKENS: The U.S. Deficit and Debt-- As in the 1930's, the current financial and economic crisis has resulted in significant spending by governments as a result of the banking crisis, and the need to stimulate the economy in the wake of near financial collapse. Rogoff and Rhienhart (2009), in their study of 800 years of financial crisis found that, within three years of the onset of a banking crisis, the national debt of the nation, or nations, affected, increases, on average, by 86%. The deficit hawks tell us that balancing the Federal budget is the most prudent course for restoring growth and vitality to the economy. They compare the Federal budget to that of the family, who must tighten their belts in a time of austerity. The deficit doves argue that comparing the Federal budget to that of an individual family is committing the Fallacy of Composition (i.e., what is true for the individual parts does not necessarily hold for the whole). Further, they argue, running Federal deficits while there is significant excess capacity in the economy is not only not a vice but, rather a virtue, as the spender of last resort is the only way to break the vicious cycle of contracting employment, income, and output, which feeds on itself until the loop is broken by an outside agent (i.e., the government). The Chicken Littles tell us that the growing national debt is a sign that "the sky is falling" and that the debt will precipitate a Greek-style sovereign-debt crisis, and be a burden on our children. Who is right? What are the implications of Federal deficits and the debt.

FEDERAL BUDGET FORECAST— According to the Congressional Budget Office (CBO), there are three factors that have contributed to the recent growth in the U.S. national debt:

1. An imbalance between federal revenues and spending that predates the recent recession, and the exacerbation of that imbalance due to the financial crisis.

2. The sharply lower revenues and elevated spending that derive directly from the recession and panic.

3. The costs of various federal policies implemented in response to the recession and panic.

The CBO projects that over the 2011–2020 period, U.S. Federal deficits would total $9.8 trillion, or 5.2% of GDP during that period In 2011, CBO estimates, the deficit under President Obama's budget would decline to 8.9% of GDP and would total $1.3 trillion—$346 billion more than the deficit that CBO projects in its March baseline. The baseline assumes that the 2001 and 2003 Bush Tax Cuts will expire at the end of 2010. In its August 2010 update of the budget outlook, the CBO projected a recovery in total revenues, growing from 14.6% of GDP in 2010 to 17.5% in 2011 and 18.7%in 2012. However, these increases are predicated, in part, on the scheduled expiration of the 2001 and 2003 Bush tax cuts at the end of 2010, which includes temporary relief from the AMT that expired at the end of December 2009, and in part to the anticipated economic recovery, and by provisions of the recently enacted health care legislation. Together, they are estimated to increase receipts by growing amounts over the next few years, reaching 0.6% of GDP by 2020. In addition, the structure of the individual income tax will gradually raise receipts over time. Together, all of these factors are expected to push Federal revenues in the CBO, Baseline scenario to 21.0% of GDP by 2020, compared with an average level of about 18% of GDP over the past 40 years.

EXTENDING THE 2001 AND 2003 BUSH TAX CUTS AND THE DEFICIT— The CBO projects that if the all of the Bush tax cuts are permanently extended, the Federal Deficit (excluding debt service) will cumulatively increase by $1.123 trillion between 2011 and 2015, and by $2.652 trillion between 2011 and 2020. If all of the Bush tax cuts

are permanently extended, and if the Alternative Minimum Tax (AMT) is indexed for inflation, the CBO projects that the cumulative deficit between 2011 and 2015 will increase by $1.583 trillion, and increase by $3.893 trillion between 2011 and 2020. .

DOES THE U.S. RISK A SOVEREIGN-DEBT CRISIS?— Does the current and projected trajectory of the U.S. fiscal path put us on the road to a sovereign debt crisis, a sudden stop, or both? Could any of these scenarios be in the cards for the U.S.? One important consideration is political stability. Thus, the flight to U.S. Treasuries, even in the face of a run on the U.S. financial system as it faced insolvency in September 2008. Though investors showed a collapse of confidence in the U.S. and World financial systems, they, at the same time, showed complete confidence in the U.S. political system. This is not to succumb to hubris on this point, it is rather to consider the importance of political stability, as well as, an economy's capacity to carry a given level of debt, and its history of making payments of principal and interest on schedule, as an important factor in whether or not investors will purchase, especially the long-term, debt of a given country. An interesting feature of Greece's debt crisis is that it has been a perennial defaulter since it re-gained its independence from the Ottoman Empire in the early 1800's On the other hand, right from the beginning of the Republic, the young America decided to honor its debts, making the U.S. a member of a small club of nations that has never defaulted on its sovereign debt

Unlike Greece, the U.S., of course, has its own currency, and, so far, it is still the World's key currency (although some countries are now pegging their currencies to a basket of currencies that includes the dollar, the euro, and the yen). Clearly an episode or episodes, of political deadlock resulting in technical default by the U.S. Government on its debt, such as the Government shutdown in 1995, would, especially given the current shakiness of the U.S. and World financial markets, spook investors' confidence in the U.S. political system. That could make investors in U.S. debt nervous. Certainly the amount of U.S. debt that is foreign-owned presents more of a problem than the debt we owe ourselves (the internally owned part). The need for immediate and massive spending to mobilize for World War II drove U.S. Gross, or Total Debt to 121% of GDP, and the debt held by the

public to 109% of GDP by 1946. However, we owed most of that debt to ourselves. In that case, it was not a matter of reducing our standard of living in the future to pay back foreigners, but a problem of internal redistribution of future income to the bondholders. So, it is of some concern that, in June 2008, 28% of Gross, or Total, U.S. Government Debt, and 55% of U.S. Debt, held by the public, was owned by foreign investors.

In the final analysis, the critical factor is whether or not, in the long run, the U.S. Economy experiences weak or strong growth. Putting the economy on a sustained path of strong growth in Real, per capita GDP would reduce the Federal debt, held by the public, as a percent of GDP. Key to that is whether or not policies are implemented to bring idle resources into production and thereby putting the economy back on track to producing at its full potential. Focusing on deficit reduction too soon could be counterproductive.

WHERE DO WE GO FROM HERE? The Outlook for 2009-2011-- The momentum from the last half of 2009 and into the first half of 2010 seems to be dissipating going into the last half of 2010. Several factors seem to be asserting themselves and dragging the economy, if not down into a double-dip recession, at least into a significant slowing in the pace of recovery. The first, and most obvious is the loss of steam in the housing market. In addition to the relapse in the housing market, the American Reinvestment and Recovery Act (ARRA), known as "the stimulus" is set to wind down going into the last half of 2010 and into 2011. According to the Congressional Budget Office (CBO), the ARRA has accomplished the following in the second quarter of 2010:

- Raised Real GDP by 1.7%-4.5%.
- Lowered the UR by 0.7-1.8 percentage points.
- Increased the number of people employed by 1.1 million-3.3 million.
- Increased the number of FTE's by 2.0 million-4.8 million.

However, the CBO also notes that the effects of ARRA on output are expected to gradually diminish during the second half of 2010 and beyond. The effects of ARRA on

employment and unemployment are expected to lag slightly behind the effects on output; they are expected to wane gradually in 2011 and beyond. As Blinder and Zandi (2010) found in their study of the effects of the ARRA and the TARP, these programs certainly prevented the U.S. Economy from going into a second Great Depression, and also provided some initial boost to the economy, but, without a second stimulus, because of the Senate's scaling back of the House version of the bill, the ARRA is probably not big enough to carry the economy through from recovery to expansion and self-sustaining growth.

A BALANCE-SHEET RECESSION—What sets the recent crisis off from past Post-World War II, U.S. recessions is that this was not a "normal" downturn in the business cycle. The recent recession and panic came on the heels of the collapse of a credit-fueled asset bubble, and the simultaneous accumulation of unsustainable levels of household debt. In fact, there have been two times in the last 100 years when U.S. household debt exceeded 100% of GDP: 1929 and 2006. In this regard, it has much in common with the initial severe economic contraction that ushered in the Great Depression between 1929 and 1933, and the collapse of the asset bubble in Japan in 1989. The key to the length and severity of the process of households' rebuilding their balance sheets is how long it takes to bring debt down to acceptable, and sustainable, levels. Until that point is reached, this process will act as a tremendous drag on the economy.

THE SPENDER OF LAST RESORT—The nature of balance-sheet recessions, as compared to "normal" recessions has some significant implications for the outlook for 2010 and 2011. With the need for households to repair their balance sheets and re-build net worth (particularly with regard to bringing down unsustainably high levels of debt), and for financial institutions to shore up their capital and reserves, because toxic assets of uncertain value still remains on their books, aggregate demand is weak. In fact, it appears that credit markets are still down due to both, a lack of demand, and the unavailability of supply. Thus, with depressed household demand, in conjunction with restricted access to credit for, especially small, businesses, that leaves just one component of aggregate demand left to drive spending in the economy: the government—the spender of last

resort. However, with a second stimulus politically unlikely, and the inadequate size of the ARRA to propel the economy into self-sustaining recovery (although it did apparently prevent the worst-scenario outcome), the U.S. could be in for a Japan-style lost decade, if not a back-to-back, or double-dip recessions.

TABLE 1: Forecasters and Their Identifiers

IDENTIFIER	FORECASTER
CBO	Congressional Budget Office
IMF	International Monetary Fund
UMich	University of Michigan
Fair	Ray C. Fair
BCEI	Blue Chip Economic Indicators

THE OUTLOOK FOR THE U.S. ECONOMY: 2010 AND 2011—With balance sheets in tatters, housing market activity slowing again, it is expected that the U.S. Economy will lose momentum in the last half of 2010, and into 2011. In fact, of the five U.S. Macroeconomic forecasters presented in Table 1, four are expecting a deceleration in the growth-rate of Real GDP in 2011, compared to 2010. Only Ray C. Fair's forecast expects the Real GDP to grow faster in 2011 than in 2010. The average forecast is for U.S. GDP to grow by 3.07% in 2010, and 2.80% in 2011

Of the four out of five forecasters updated their forecasts for the U.S. Unemployment Rate (UR) for 2010 and 2011, on average, they expect the UR to average 29 basis points higher in 2010, compared to 2009. The average forecast expects the UR to increase from 9.30%, in 2009 to 9.59% in 2010. The average forecast projects that the average UR for 2011 will be 8.98%, a 61 basis-point decline from 2010. The average forecast for the price level by the three who had recent updated forecasts, was for the deflation in 2009 to turn to very low inflation in 2010 (a 1.57% increase in the CPI-U in 2010, compared to –0.40% in 2009). The average forecast expects a deceleration in the growth-rate of the CPI-U to 1.30% in 2011. Only the University of Michigan and Ray C. Fair had updated forecasts for jobs in 2010 and 2011. And, they had very divergent forecasts of the expected jobs outlook. UMich expects that, on an annual average basis, the U.S.

Economy will be down 500,000 in 2010, and then add 2.1 million jobs in 2011, for a net, cumulative increase of 1.6 million jobs over the 2010-11 forecast horizon. On the other hand, Ray C. Fair expects the U.S. Economy to add 1.6 million new jobs in 2010, and 2.9 million new jobs in 2011, for a cumulative total of 4.5 million new jobs over the 2010-11 forecast horizon.

Four of the five macro-forecasts expect a slowdown going into 2011. This seems like the most likely scenario as a slowdown may have already begun going into the last half of 2010. And, although the aid to the states from the bill signed by President Obama in July, 2010 will go a long way to alleviate the fiscal stresses into the last half of 2010 and into the beginning of 2011, it still leaves the states with a $140 billion gap to close in 2011. Thus, the requirement for most states to balance their budgets will still put a significant drag on the economy. Finally, the specter of deflation is of particular concern over the forecast period When looking at the less volatile Core CPI-U on a Year-to-Year basis, there is a slow, but persistent, secular decline in the YTY growth-rate of the Core CPI-U from September 2006 through June 2010. Although, the July release did show that the decline had leveled off after May, a return to deceleration would be cause for worry. Why the concern about deflation? As Fisher pointed out in his 1933 article in *Econometrica*, if the economy is facing declining asset values, in conjunction with high, unsustainable, levels of debt (both present in the 2010 U.S. Economy), then deflation pushes the economy into depression.

I. CURRENT U.S. ECONOMIC CONDITIONS: Spring 2010

On May 6, 2010, the Dow plunged nearly 1,000 points until "recovering" to close down 347.80 (-3.20%)[1] points—an unpleasant reminder of 2008. Despite the infamous "fat finger" glitch and model-driven threshold selling, the underlying driver of the market's gyrations was the sovereign debt crisis centered on Greece. It is a stark reminder that the World's financial system is still very fragile. On the other hand, the U.S. jobs report for April 2010, which came out the next day, showed that the national economy had added

[1] YAHOO FINANCE, http://finance.yahoo.com/q?s=^DJI Accessed on May 6, 2010.

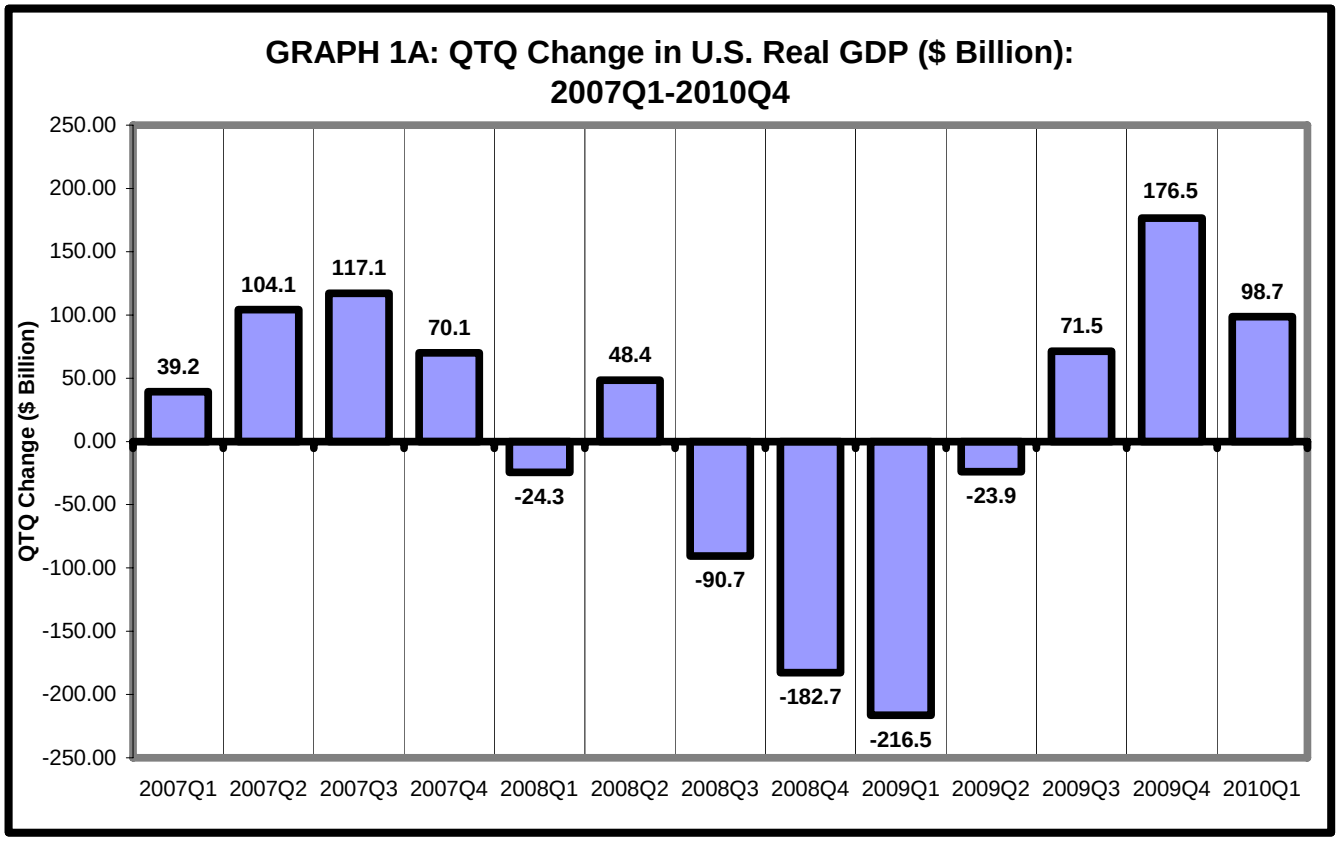
290,000 jobs in April[2]—the best monthly performance in four years. These two events highlight the strong crosscurrents that are simultaneously pulling the economy both up and down as this apparent turning point proceeds.

The operative word here is "apparent" as the National Bureau of Economic Research (NBER), in its April 8, 2010 meeting of the Business Cycle Dating Committee released a statement on April 12th indicating that:

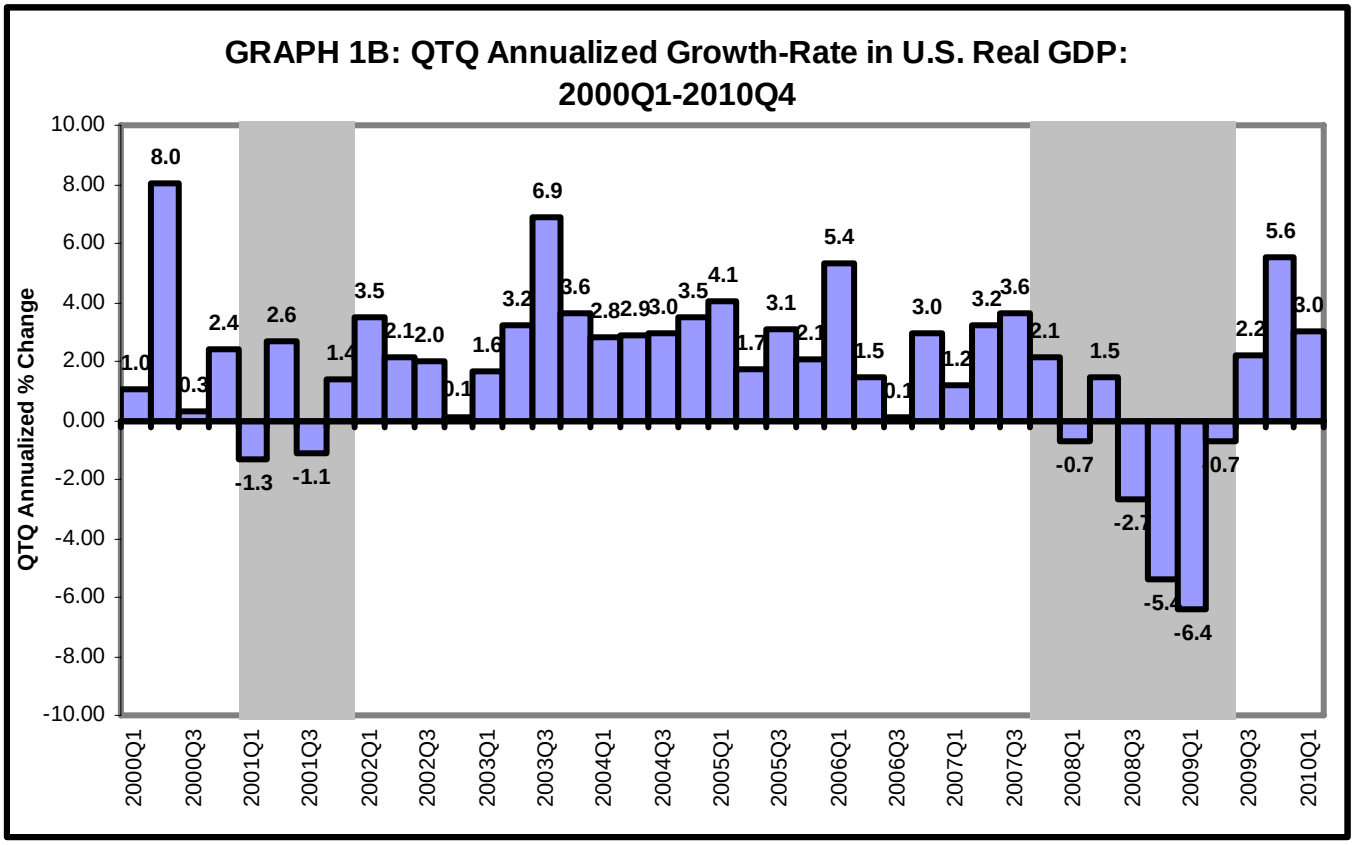
> Although most indicators have turned up, the committee decided that the determination of the trough date on the basis of current data would be premature. Many indicators are quite preliminary at this time and will be revised in coming months[3].

At the time of writing, Spring/Summer 2010, there are still some critical macroeconomic series subject to revision. Given the "wait-and-see" stance by the NBER, and given the data, as of May 2010, what point on the cycle best describes the current state of the economy? On May 27th, the U.S. Bureau of Economic Analysis (BEA) released its second estimate for the first quarter of 2010 (2010Q1). The second estimates shows that Real U.S. GDP grew by 3.0%, on an annualized basis, in 2010Q1, this was revised down from the advance estimate of 3.2%[4]. Graph 1A shows the quarter-to-quarter (QTQ) growth in Real U.S. GDP from 2007Q1 to 2010Q1. Since the recovery in Real GDP after 2009Q2, GDP has grown for three straight quarters. The last time the U.S. Economy had three straight quarters of growth was 2007. Though the recovery in GDP is a welcome development, the deceleration of growth in 2010Q1 is a worrisome sign. To get a slightly wider perspective on the recent rebound in GDP growth, Graph 1B depicts the QTQ, annualized percent change in Real U.S. GDP for the period covering 2000Q1 to 2010Q1.

[2] THE EMPLOYMENT SITUATION – APRIL 2010, U.S. BLS (May 7, 2010)
[3] National Bureau of Economic Research, NBER COMMITTEE CONFERS: NO TROUGH ANNOUNCED (April 12, 2010) Cambridge, MA.
[4] U.S. Bureau of Economic Analysis, GROSS DOMESTIC PRODUCT: FIRST QUARTER 2010 (SECOND ESTIMATE)-CORPORATE PROFITS: FIRST QUARTER 2010 (PRELIMINARY), (May 27, 2010)



SOURCE: U.S. BEA, with calculations by CT DOL-Research.



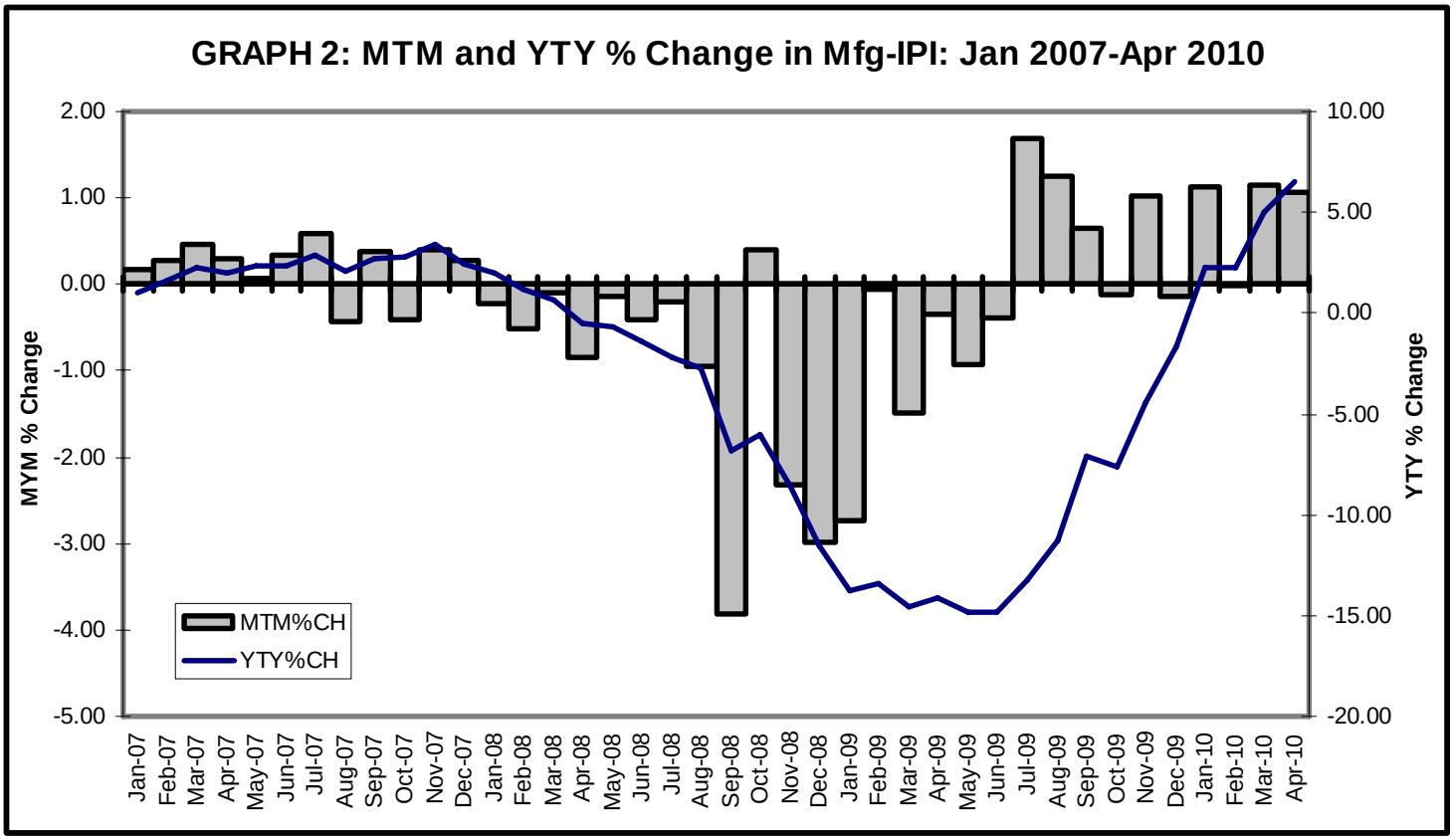
SOURCE: U.S. BEA, with calculations by CT DOL-Research.

As seen in Graph 1B, the growth-rate of Real GDP was a strong 5.6%, which was the strongest growth-rate since the 6.9% showing in 2003Q3. However, as revealed in Graph 1A, the growth-rate in GDP slowed to 3.0% in 2010Q1. The implications will be discussed in detail in the next section, which addresses the question: Are We Out of the Woods Yet? After introducing the current performance of GDP, or Value Added, to get another perspective on the current conditions with respect to output growth, Graph 2 presents the growth-rate in U.S. Manufacturing output, from the Gross Output perspective.

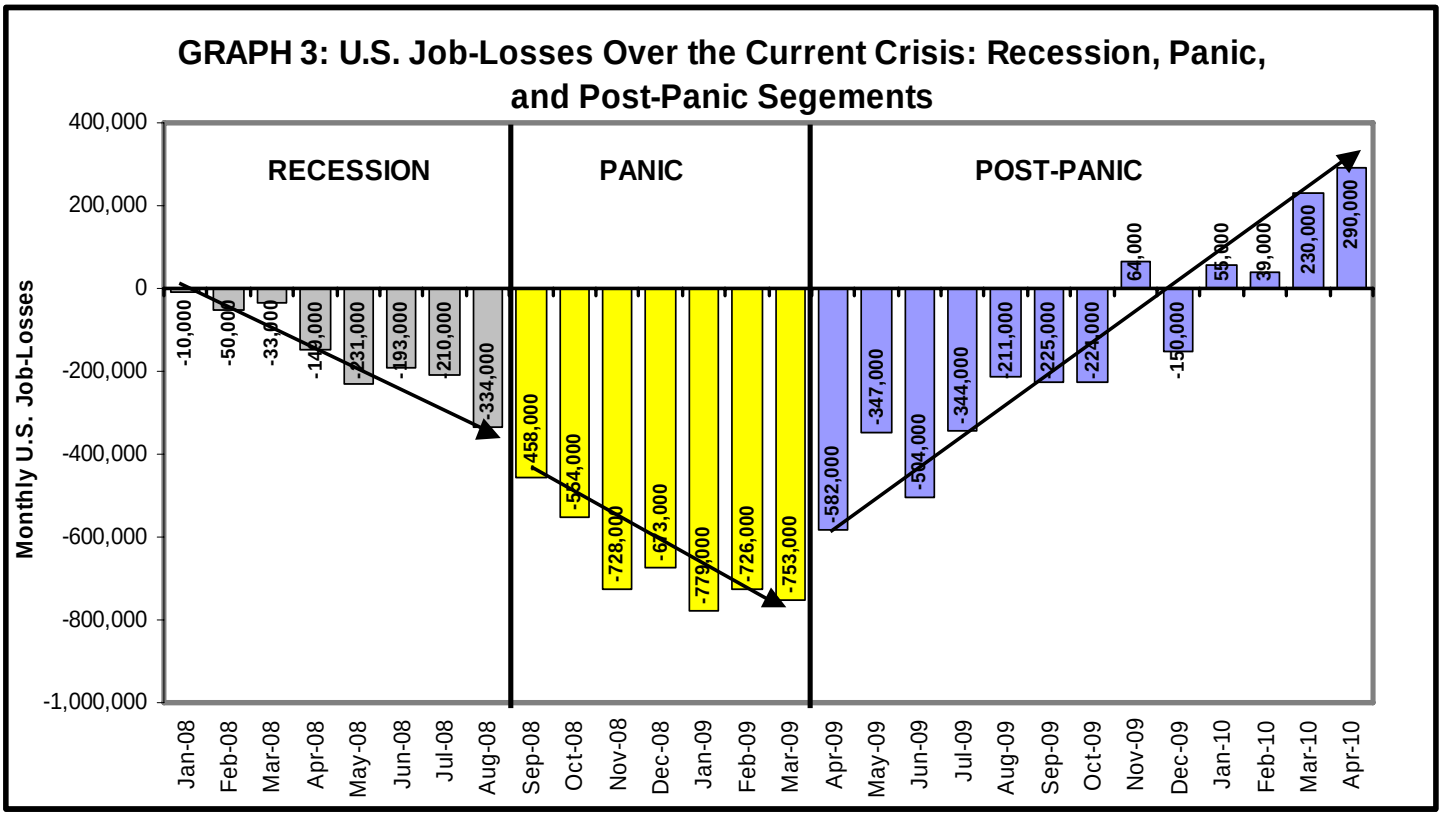
Graph 2 tracks the Month-to-Month (MTM), left vertical scale, and Year-to-Year (YTY), right vertical scale, growth-rates in the U.S. Manufacturing Industrial Production Index (IPI) from January 2007 to April 2010 (the most current month of data at the time of writing). MTM, U.S. manufacturing output saw its steepest decline in September 2008, (-3.83%, or 37.38% on an annualized basis) the quarter of the financial panic, and on a YTY basis, the decline in the Mfg IPI had its steepest decline in May 2009 (-14.82%). The level of manufacturing activity was at its lowest point the following month, June 2009. MTM growth turned positive in July 2009, with a couple of minor setbacks in October and December, and February 2010. YTY, growth turned positive again in January 2010, and accelerated to 6.50% in April. After GDP and manufacturing output tuned up in the middle of 2009, the turning point in the labor market lagged behind output, turning up in December 2009. Graph 3 tracks jobs over the recent crisis and current turning point.

For the first eight months of 2008, the U.S. Economy had been shedding jobs at a slowly accelerating rate with the beginning of recession in December 2007. Between December 2007 and August 2008, U.S. job-losses averaged 151,000 per month. Then, with the onset of financial panic in the 4th quarter of 2008, employment losses began hemorrhaging between November 2008 and March 2009 (when the stock market turned up), averaging 779,000 jobs per month. From April to October 2009, job-losses began to decelerate to a rate of 348,000 per month. Then in November 2009, for the first time since December

2007, there was positive net job creation (+64,000). After declining again in December, jobs have increased every month for the first four months of 2010, averaging 154,000 jobs per month, with an increase of 290,000 jobs in April, the largest increase since March 2006.



SOURCE: Federal Reserve Board and calculations by CTDOL-Research.



SOURCE: U.S. BLS and calculations by CTDOL-Research.

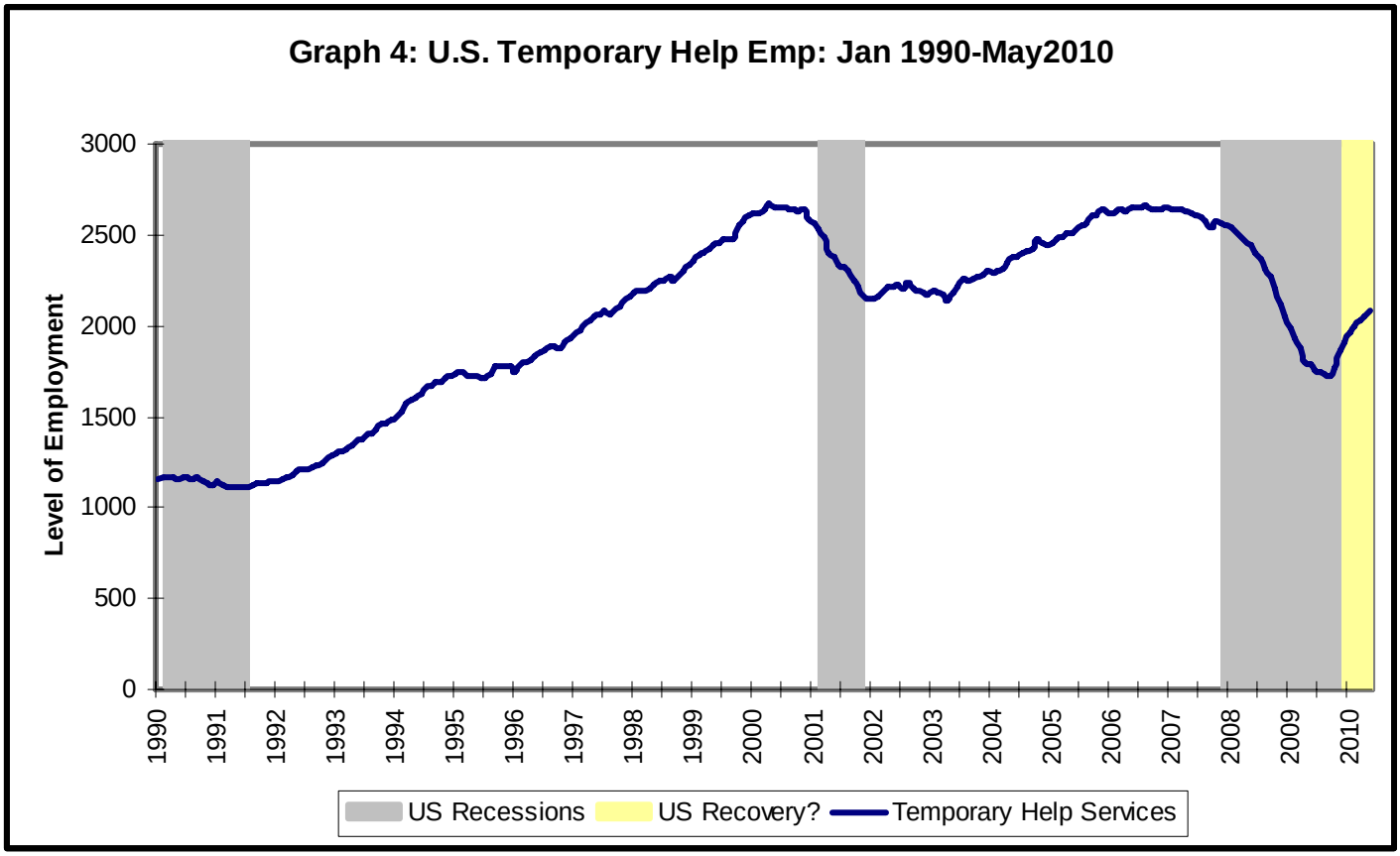
BOX 1: LABOR MARKET UPDATE

On Friday, June 4, 2010, the U.S. Bureau of Labor Statistics released *The Employment Situation* for May[5]. BLS reported that Total Non-Farm payroll employment grew by 431,000. However, this number also reflected the hiring of 411,000 temporary employees to work on Census 2010. Private-sector employment changed little (+41,000). Manufacturing, temporary help services, and mining added jobs, while construction employment declined. The unemployment rate edged down to 9.7 percent.

Over the last three decades, beginning with manufacturing in the 1980's, and then including the service sector industries in the 1990's and 2000's, the U.S. Economy, as well as the other advanced economies, has seen a dramatic growth in the use of temporary and contingent workers. The data for U.S. Employment services jobs goes back to 1985, however, the Temporary Help breakout only goes back to 1990. Graph 4 shows the steep growth in temporary-help employment throughout the last decade of the

[5] U.S. Bureau of Labor Statistics, THE EMPLOYMENT SITUATION – MAY 2010 (June 4, 2010) U.S. Department of Labor: Washington.

20th Century up until the Tech Bust before the onset of the 2001 Recession. With recovery from recession, temporary help jobs grew again until the beginning of 2007.



SOURCE: U.S. BLS.

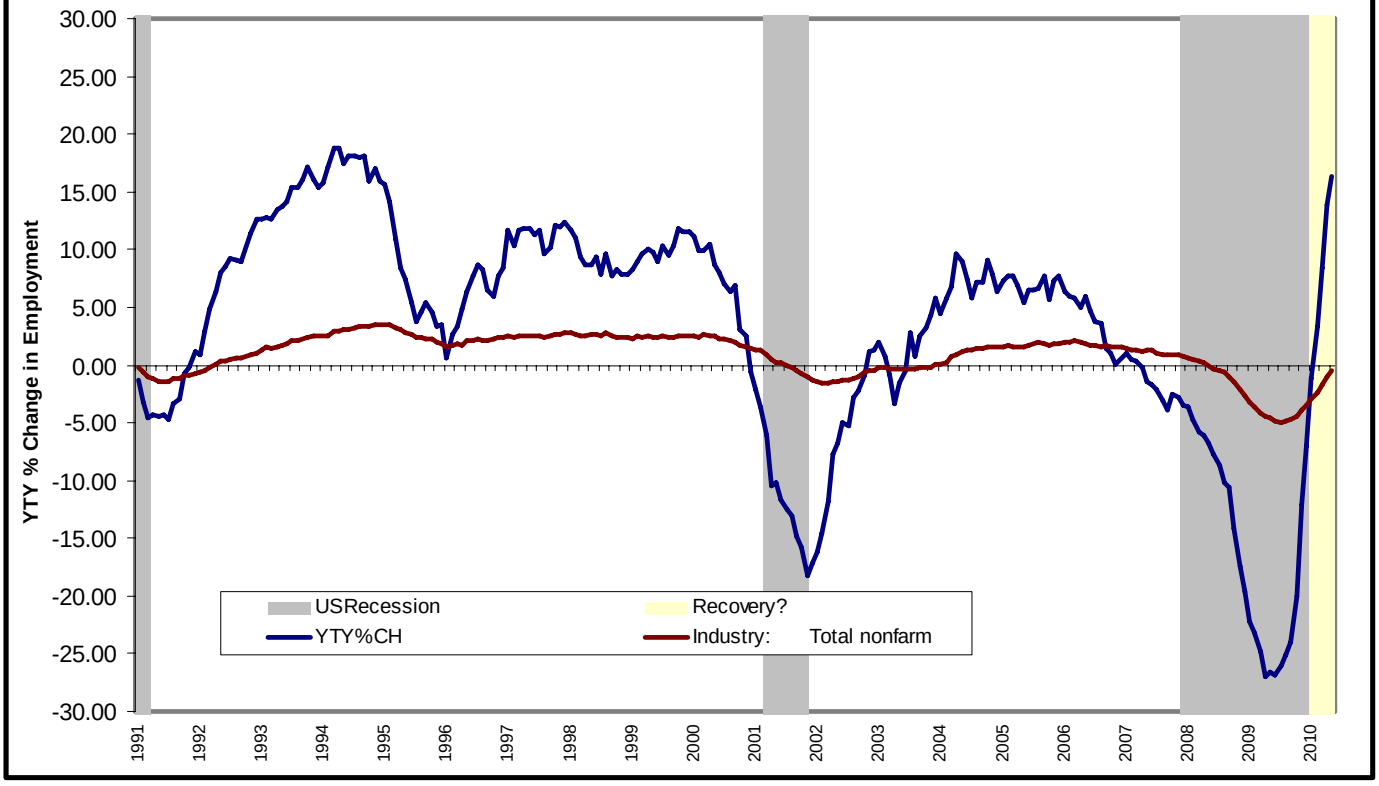
From Graph 4, and given the relatively short history to go on, it appears that temporary-help employment is a leading indicator going into recession, but a coincident indicator coming out of one. Temporary Help Employment turned down just before the 2001 recession, and just before the recent crisis. In both 2001 and in the recent crisis, temporary jobs turned by up again at the trough of both cycles. Graph 5 tracks the YTY growth-rate of Temporary Help jobs compared to Total Non-Farm Employment from January 1990 to May 2010. As is apparent, the amplitude of the Temporary Help cycle is much greater than that for the Non-Farm Employment series. Thus, the response to hiring and firing over the business cycle is much greater for the Temporary workers over the cycle as employers are much more flexible in their ability to take on, or reduce their temporary-help staff as business conditions change. This response has been especially

pronounced over the current cycle as it has displayed the greatest amplitude of any cycle over the range of the data. The growth-rate in Temporary-Help Employment over the current cycle, after its steepest decline of 27% in June 2009, (YTY), the YTY losses decelerated rapidly, and by May 2010, temporary-help jobs were grew at a YTY rate of 16.4%.

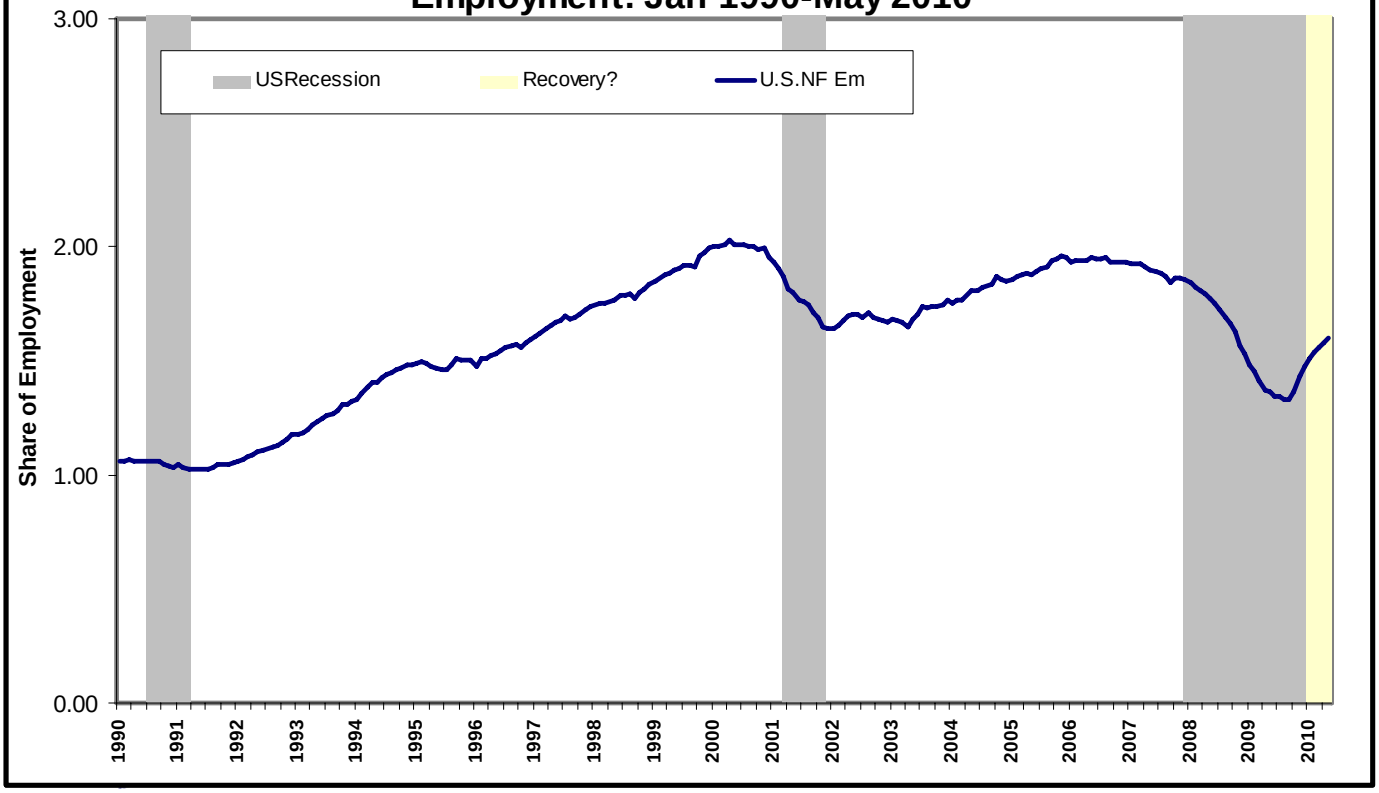
Graph 6 shows the dramatic rise of temporary employment as a share of total Non-Farm Employment, especially in the 1990's expansion. Over the 2001 and current/recent recessions temporary help's share declined, reflecting labor hoarding, in which firms tend to hold on to their most productive, full-time workers during a recession. This partly explains the fall in productivity going into a recession, and the burst in productivity growth coming out of a recession. That is, there is usually a surge in productivity as hoarded labor, the most productive, boosts output per worker, and per hour. Thus, a surge in productivity may signal a turning point.

The question is: Is the jump in the hiring of temporary workers signaling that the recovery is underway and that permanent jobs will follow? Or, are temporary workers going to be more permanent, and, in fact, do not portent the hiring of permanent workers? Further, is the surge in temporary workers a sign that the current, apparent recovery is not sustainable?

GRAPH 5: YTY % Change in U.S. NF and Temporary Help Employment: Jan 1990-May 2010

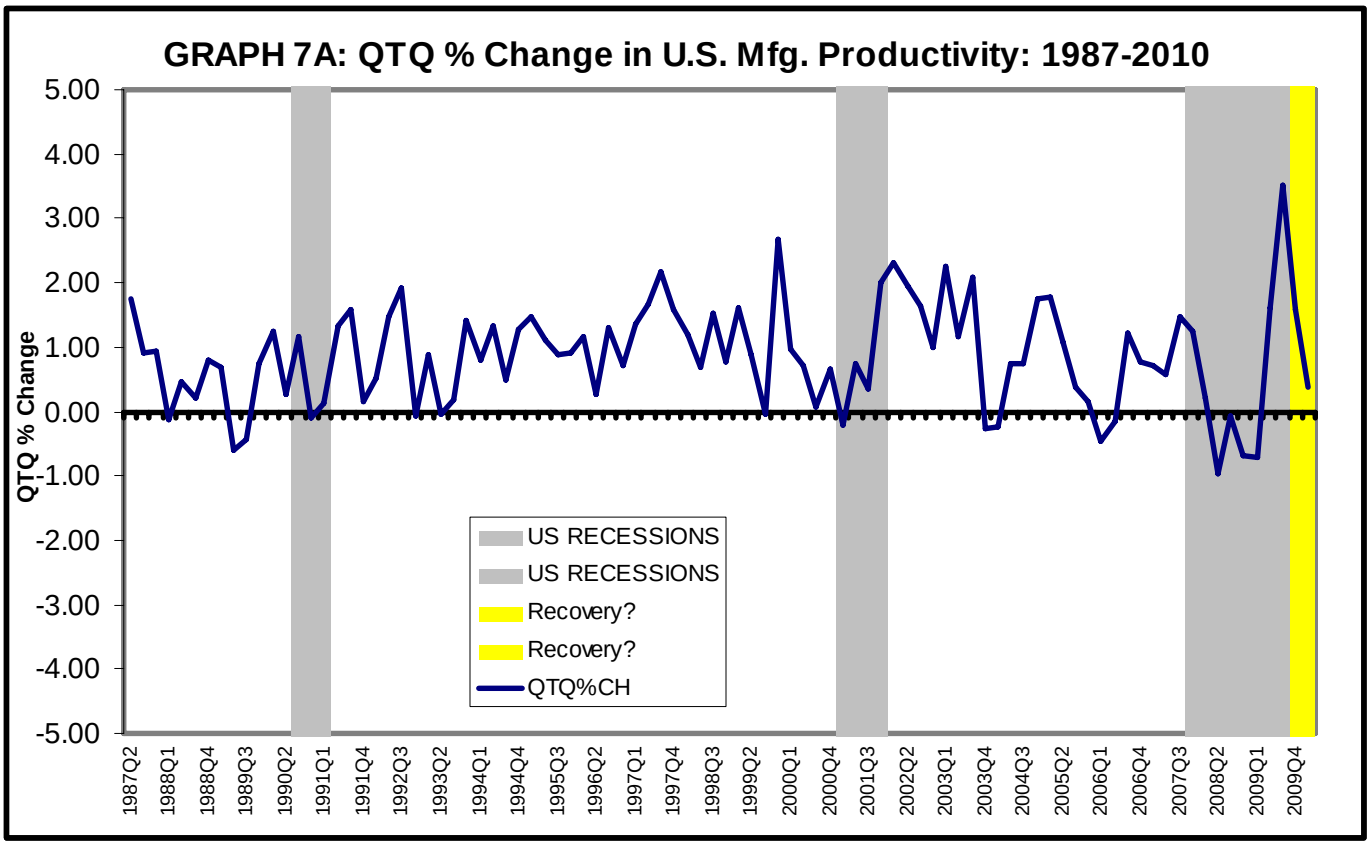


GRAPH 6: U.S. Temp Employment as a Share of U.S. NF Employment: Jan 1990-May 2010



What does productivity growth tell us about current conditions, with regard to the business cycle? As discussed above, when the economy comes out of a recession, there is Currently, data on U.S. Manufacturing productivity goes back to 1987. Graph 7A tracks the QTQ percent-change in manufacturing productivity, defined as output per hour, from 1987 to the first quarter of 2010. After turning positive in 2009Q2, manufacturing productivity surged by 3.51% in the third quarter. That represents a 14.8% annualized rate. This is the largest QTQ growth-rate over the entire range of data. The change in output per hour (Q/H) is equal to:

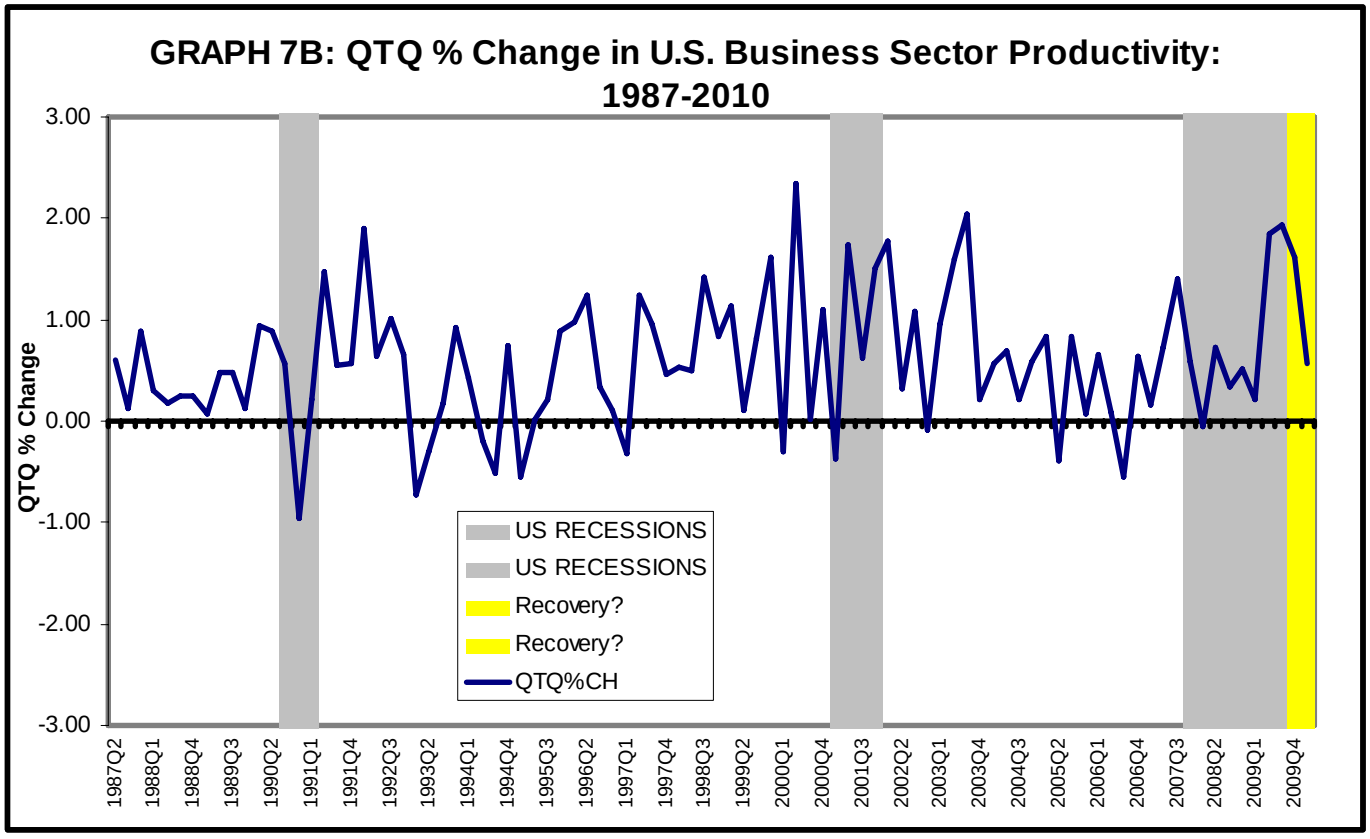
$$Q/H = \frac{Q = Output}{H = Hours} \qquad (1.)$$



SOURCE: U.S. BLS.

In 2009Q3, output increased by 2.18% (not annualized), while hours declined by 1.29% (not annualized), this did not seem to signal an increase in demand for workers. In the

fourth quarter, the growth-rate in output declined to 1.37%, while the growth in hours was slightly negative (-0.21%), but smaller than the third-quarter decline. Consequently, manufacturing productivity growth decelerated to 1.58% (6.5%, annualized) in 2009Q4. Productivity growth then decelerated further in 2010Q1, increasing by 0.37%. While output growth accelerated to 1.75% (not annualized), there was a surge in total hours, which increased by 1.37%, or 5.6% on an annualized basis. If the growth in manufacturing productivity that began in 2009Q3 has come to an end, what does this portent for the sustainability of the recovery?



SOURCE: U.S. BLS and calculations by CTDOL-Research.

Graph 7B tracks the QTQ growth-rate for the U.S. Business Sector from 1987 to 2010Q1. The QTQ growth-rate in Business Sector productivity has not matched the performance of manufacturing over the current cycle. Since the beginning of the series in 1987, the highest QTQ growth-rate in Business Sector productivity was 2.34% (9.69% annualized) in 2000Q2. In 2003Q, a 2% QTQ growth was exceeded again (8.41% annualized).

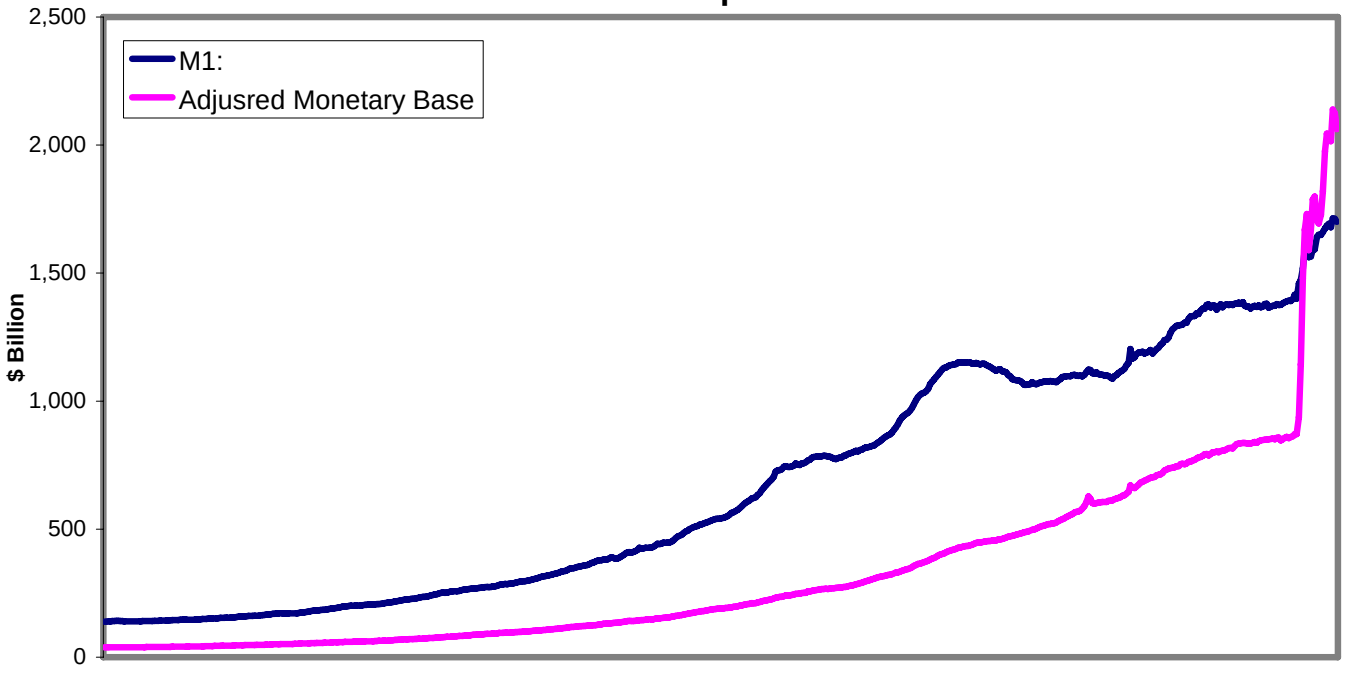
In 2009Q4, the U.S. Business Sector's productivity grew by 1.94% (8% annualized). And, the YTY growth-rates of 6.74% in 2009Q4 and 6.11% in 2010Q1 are the largest YTY productivity growth-rates recorded for the U.S. Business Sector since the beginning of the series in 1987. Nevertheless, the rapid deceleration in productivity growth in the first quarter of 2010 is reason for concern about the recovery.

Credit is still not being made broadly available. Growth in M1 continues to be below the growth in the Adjusted Monetary Base. Thus, the Money Multiplier (MM) continues to fall, and remains below one. This can be seen in Graph 8. At the height of the financial panic in the last quarter of 2008, with the Fed's injection of liquidity into the economy, the Monetary Base (MB) jumped from $871.5 billion in August 2008 to $1.7 trillion by January 2009. The level of the MB reached $2.1 trillion in April 2010. The level of M1, the basic monetary aggregate and a multiple of the MB, due to the credit creation process, was $1.4 trillion in August 2008, resulting in a MM of 1.61 at that time.

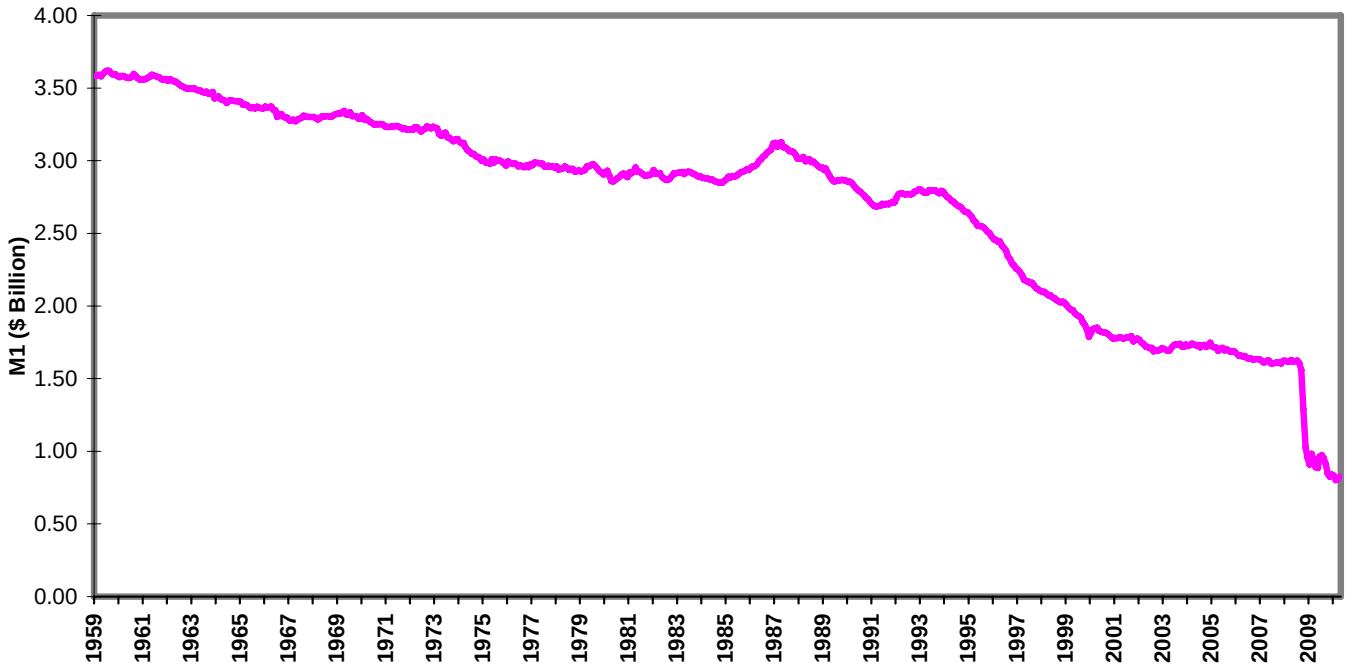
By December 2008, the level of the MB, at $1.7 trillion, passed above the level of M1 ($1.6 trillion) and for the first time since the availability of the data (1959), the MM fell below one. As of April 2010, the MM was 0.82.

GRAPH 8: Growth of M1, the Adjusted Monetary Base, and the M1 Multiplier

PANEL A: Growth of M1 vs. Growth in the Adjusted Monetary Base: Jan 1959-Apr 2010



PANEL B: Growth of M1 Multiplier: Jan 1959-Apr 2010



SOURCE: St. Louis Federal Reserve Bank and Federal Reserve Board.

Table 1 presents a simplified balance sheet for the aggregate banking sector. With the Fed's injection of liquidity into the financial system, the deposit and reserves necessary to create credit were greatly, and rapidly, expanded. But, the creation of credit takes place on the asset side of the aggregate balance sheet in Table 1. And, with the banking sector not making new loans, but instead, buying safe U.S. Treasuries and holding reserves, credit was not being created and the MM fell below one. In other words, the Fed was pumping liquidity into one end of the pipe, but it was not coming out the other. Thus, the Velocity of Money (V_M) was declining as the economy was heading toward a possible liquidity trap. This abated somewhat in the second quarter of 2009, however, as of April 2010, the Money Multiplier (MM) is still less than one, indicating that credit-creation is anemic.

TABLE 1: AGGREGATE BALANCE SHEET: U.S. Banking Sector

ASSETS	LIABILITIES
Long-Term Securities	Deposits
Loans and Leases	Borrowings
Short-Term Securities	Net Due (Related Foriegn Offices)
Interbank Loans	Other Liabilities
Cash Assets	
Other Assets	
TOTAL ASSETS	TOTAL LIABILITIES

SOURCE: Federal Reserve Board

So, where does that leave us? Are we out of the woods yet? The next section looks at the major sets of economic indicators to try to read the signals that the economy is sending us about where things are headed.

II. ARE WE OUT OF THE WOODS YET?

This section turns to reading the signals the economy is sending us about the current conditions of the U.S. Economy in the spring of 2010. The big question on everybody's mind at this point is: Where are we headed? Is there a double-dip in the near future? Are we facing a lost decade like that of Japan's in the 1990's, or the one we put off having after the collapse of the tech bubble by creating another bubble? Or, is there going to be a longer, halting, but real recovery from the first 21st Century banking panic.

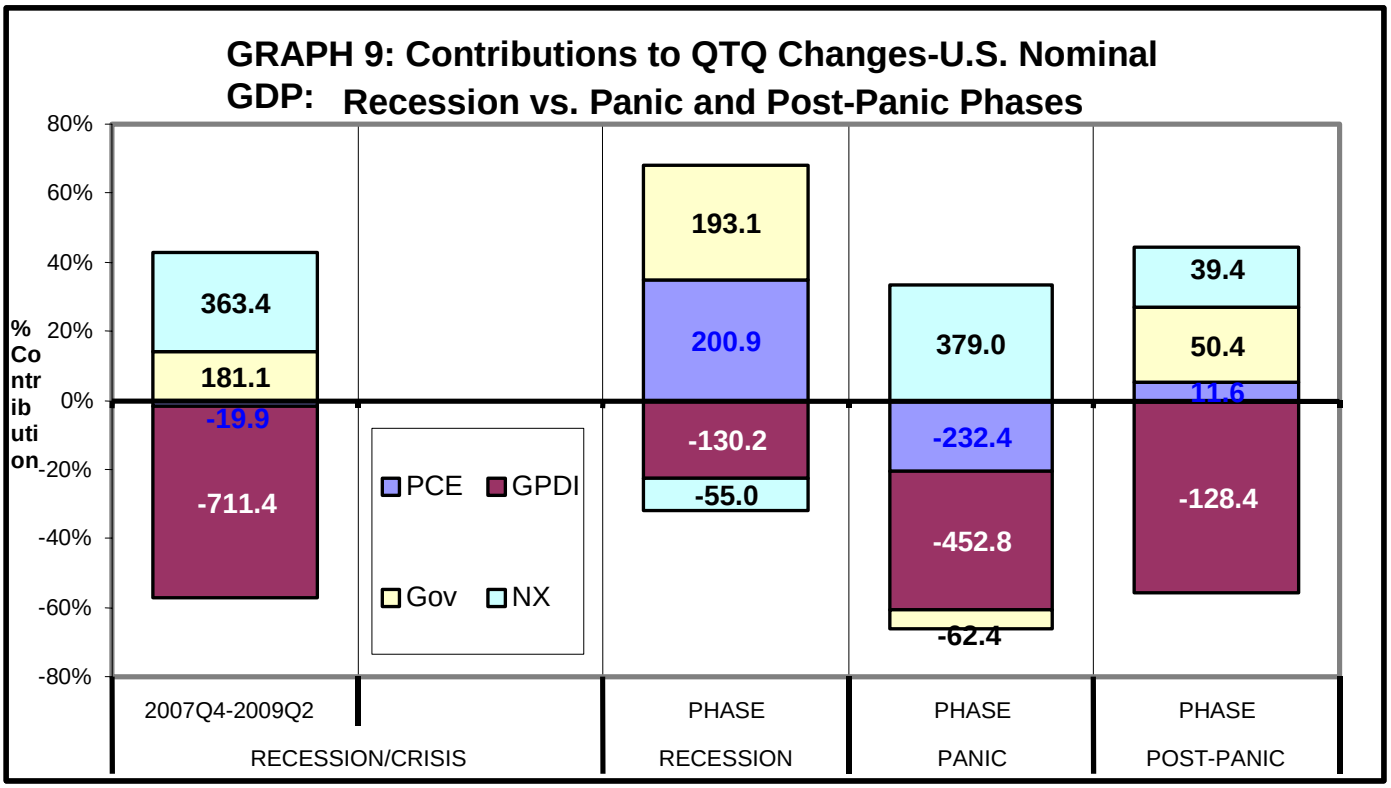
A. READING THE SIGNALS: What is the Economy Telling Us?

In order to organize our thoughts about assessing where the economy is in the spring of 2010 and where it might be going, the signals are categorized by major macroeconomic functions and activities in the form of macroeconomic indicators. First, the current readings on the indicators of growth and output are introduced. Next, the macroeconomy's use of physical resources is examined, followed by an analysis of the major components of Aggregate Demand (AD) beginning with current business conditions, then turning to households and consumer spending. The section closes with a look at current labor-market conditions and what might be expected in the near future.

B. GROWTH AND OUTPUT

Recession and Panic

Graph 9 decomposes the current recession/crisis into its Recession, Panic and Post-Panic phases. The "normal" recession phase covers the period December 2007, when the National Bureau of Economic Research (NBER) declared that the U.S. had entered recession, to August 2008, The Panic Phase begins in September 2008 when the collapse of Lehman Brothers, followed by the nationalization of AIG. The Post-Panic period covers March 2009, when the stock market recovered to July 2009, when GDP growth returned to positive territory.

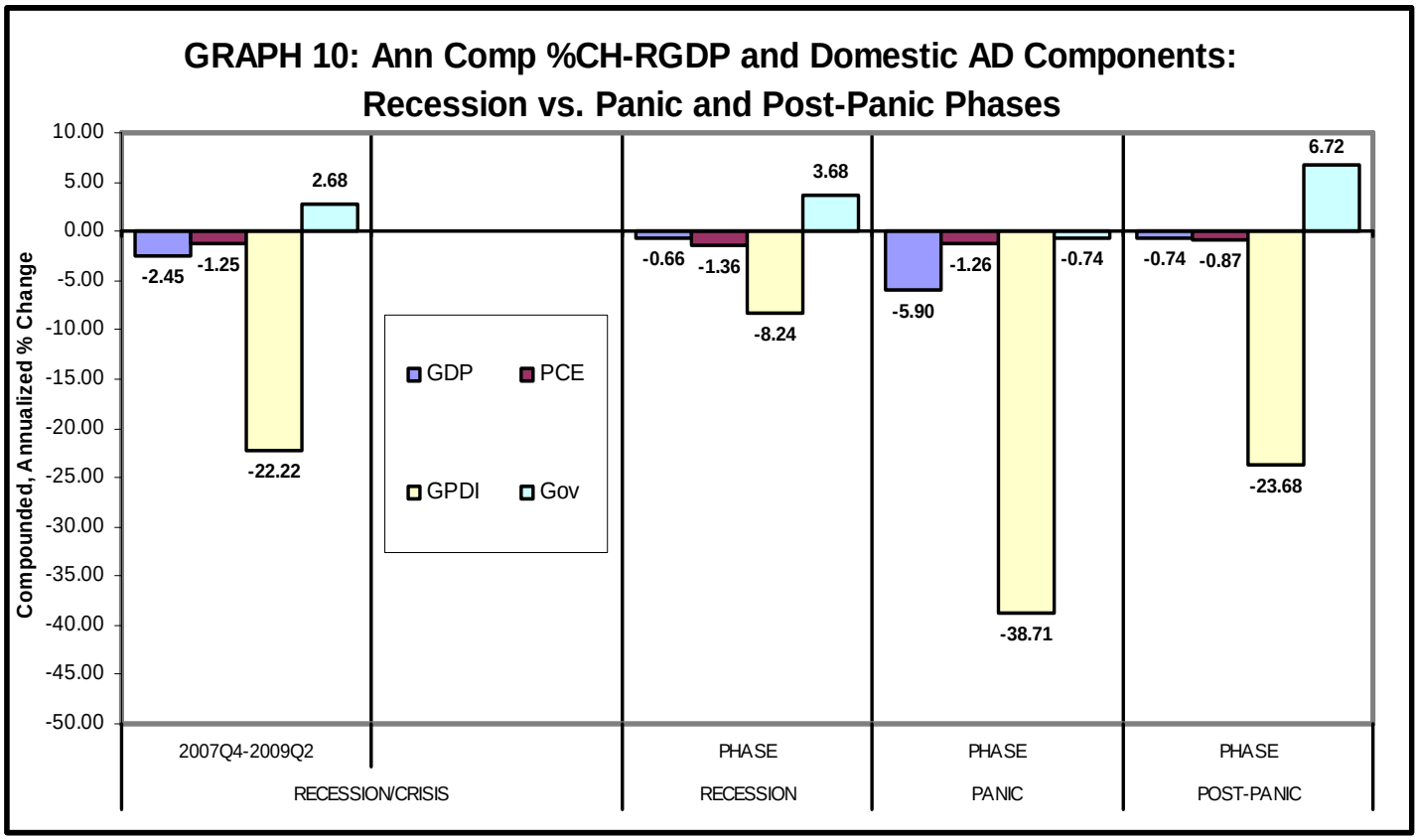


SOURCE: U.S. BEA and calculations by CTDOL-Research.

Over the entire 2007Q4-2009Q2 Period (left-most bar in Graph 9), the largest subtraction from Nominal GDP[6] growth was Gross Private Domestic Investment (GPDI), in addition, there was a small subtraction by Personal Consumption Expenditures (PCE). Both nominal Government Expenditures (Gov) and Net Exports (NX) made additions to Nominal GDP growth. In fact, NX made the largest positive contribution. Some interesting patterns emerge when the recession/panic is divided up into its various phases. The three bars on the right in Graph 9 divide the recession/panic into three phases: The Recession Phase, 2007Q4-2008Q3, The Panic Phase, 2008Q4-2009Q1, and the Post-Panic Phase, 2009Q1-2009Q2. Over the "normal" recession, the picture looks similar to Post-Cold War Era recessions. Government spending and consumer spending both made positive and roughly equal contributions to the growth in Nominal GDP. GPDI and Net Exports both subtracted from Nominal GDP growth. It is over the Panic Phase that the

[6] When looking at the contributions to the change in GDP, Nominal GDP will be used rather than Real GDP due to the problems in trying to add up chained-dollar values of GDP and its components.

contributions to the change in Nominal GDP are atypical. Consumer spending is actually a subtraction from GDP growth, as is Government spending. Not so atypical, is the subtraction from growth by GPDI. The only positive contribution to the change in Nominal GDP was Net Exports (NX). The negative contribution of household spending to GDP-growth was, of course, a reflection of the financial panic that accompanied the recession. In the Post Panic Phase, Government Spending and Net Exports both reestablish their positive contribution to GDP growth. And, though the contribution consumer spending to GDP growth turns positive, it is essentially flat. The only component subtracting from GDP growth is Gross Private Domestic Investment (GPDI).



SOURCE: U.S. BEA and calculations by CTDOL-Research.

Graph 10 switches to Real GDP and looks at the compounded, annualized growth-rates of GDP components of domestic AD over the various phases of the current crisis. Real GDP declined at an annualized rate of 2.45% over the entire recession/panic. However, it accelerated to a nearly 6%, annualized rate, over the Panic Phase, and then declined to a

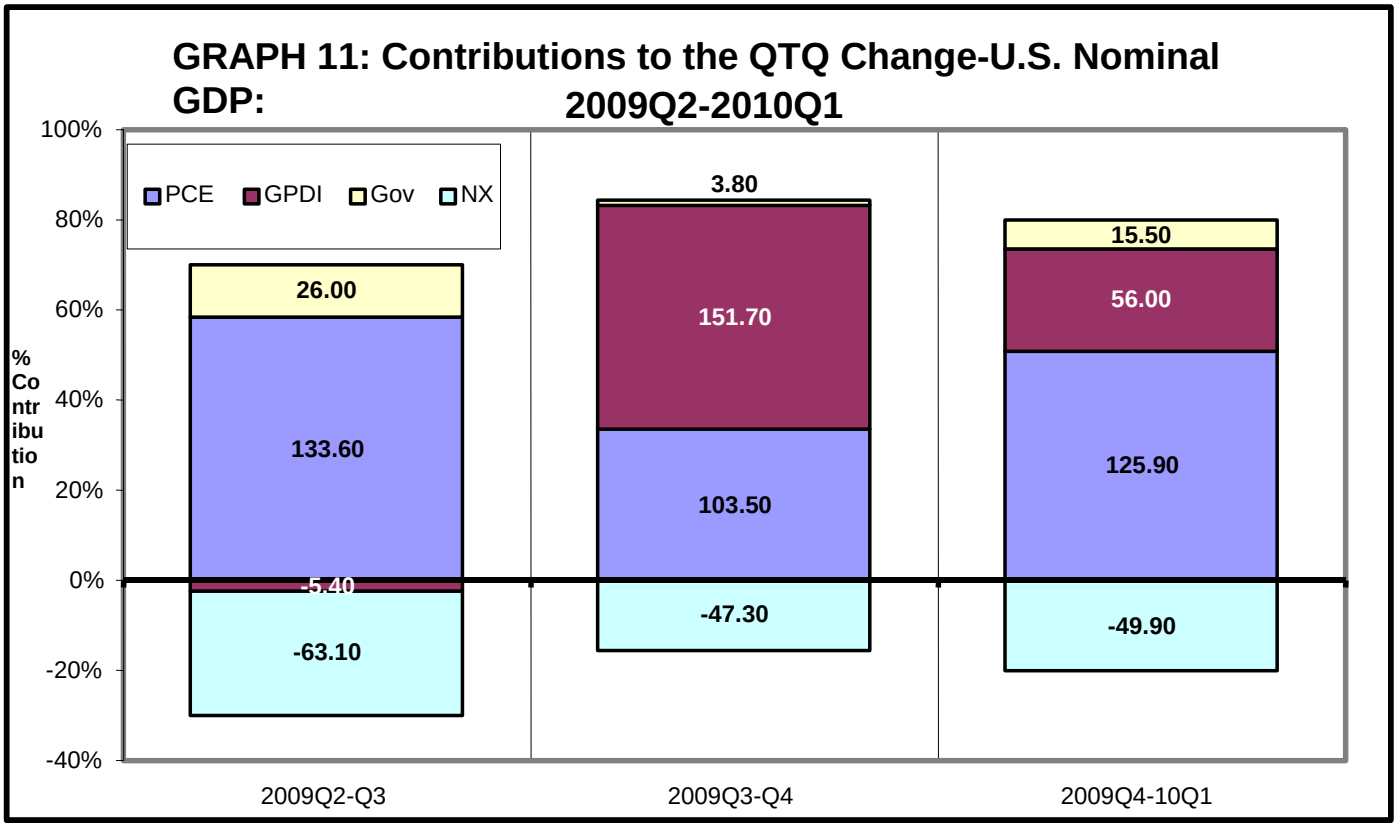
0.74% rate in the Post-Panic Phase. But what really stands out in Graph 10 is the steep contraction in GPDI, which declined at an annualized rate of 38.71% over the Panic Phase. GDPI was still contracting at a 24% annualized rate in the Post-Panic Phase. Government spending was growing at an annualized rate of 3.68% over the Recession Phase, and then actually contracted by 0.74% over the Panic Phase, on an annualized basis. Real Government spending grew at a strong 6.72% annualized rate over the Post-Panic Phase. PCE actually declined over all segments, as well as the entire span of the recession/crisis. This is unusual for, especially, Post Cold War Era business cycles. Also of note, the decline in PCE was slightly steeper, on a compounded, annualized basis, over the Recession Phase than it was over the Panic Phase.

Recovery? Current Conditions

As of August 2010, the time of writing, the NBER has still not called a turning point for the recent/current recession. GDP-growth turned around in 2009Q2. However, it should be noted that GDP is not a major contributor to determining turning points in the business cycle. First, the NBER puts the most weight on higher-frequency data (i.e., monthly data) so that they can call the month of the turn. In addition, GDP numbers are subject to subsequent revisions, including the quinquenial benchmark to the Input/Output (I/O) Table, which is released in years ending in "2" and "7". Thus, the "rule" that two consecutive quarters of declining Real GDP defines a recession is a myth. In fact, in the 2001 Recession, there were *no* two consecutive quarters of decline in Real GDP. Given that, the following looks at the period from when GDP began growing again up to the latest available GDP number: 2010Q1.

As depicted above in graphs 1A and 1B, both Nominal and Real U.S. GDP began growing again in 2009Q2. Graph 11 decomposes the major contributions to the growth in Nominal GDP from 2009Q2 to 2010Q1. The "bounce-back" in 2009Q2-to-2009Q3 seems to have been led by PCE by households, with a small contribution by Government spending. The biggest subtraction was from Net Exports (NX), with a small contraction contributed by GPDI. The composition of the contribution to the change in Nominal GDP

was quite different over the 2009Q3-Q4 Period. The largest contributor to growth was GDPI, followed, again, by PCE. Government made a very small contribution to growth.

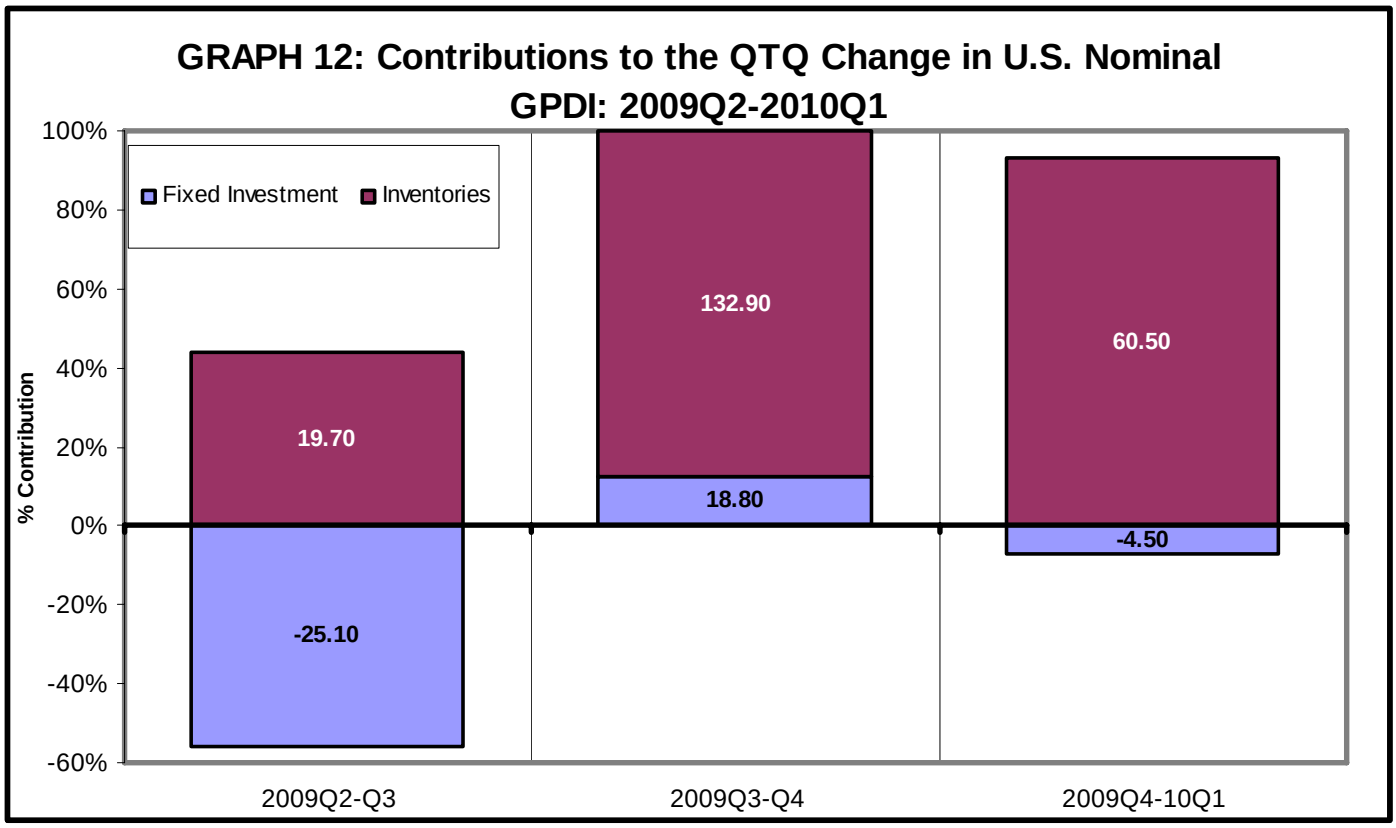


SOURCE: U.S. BEA and calculations by CTDOL-Research.

Once again, NX subtracted from growth.

In the first quarter of 2010, PCE, once again led the way in contributing to the growth in Nominal GDP, followed by GPDI. Government made a slightly larger, but still small, contribution to growth. And, once again, NX subtracted from growth.

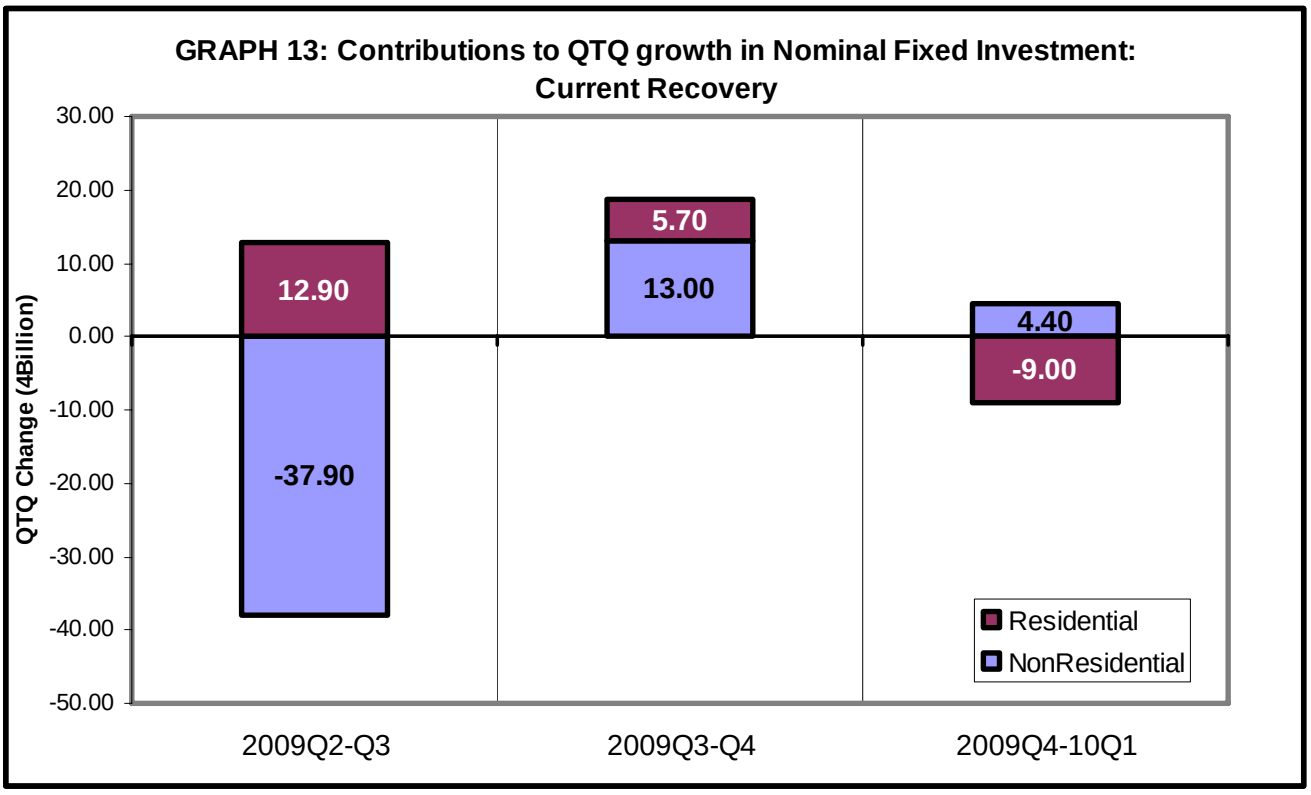
Graph 12 decomposes the growth in Nominal GPDI into its two major component parts: Inventory Change and Fixed Investment. As can be seen, Inventory rebuilding dominates the growth in GPDI over the three periods tracked in Graph 12. In fact, over the 2009Q2-Q3 and 2009Q4-10Q1 periods, Fixed Investment subtracted from the growth in Nominal GPDI.



SOURCE: U.S. BEA and calculations by CTDOL-Research.

Graph 13 breaks out Fixed Investment into its two major components: Residential and Non-Residential. The QTQ contributions to the growth in Fixed Investment are tracked over the current recovery period, 2009Q2-Q3, 2009Q3-Q4, and 2009Q4-10Q1. The growth in Nominal, Residential Investment actually made a positive contribution to the growth in Fixed Investment, while Non-Residential Investment subtracted from growth in Fixed Investment. After making another, small, contribution to the growth in Nominal Fixed Investment between 2009Q3 and 2009Q4, Residential Investment then subtracted from the growth in Fixed Investment in the first quarter of 2010. After making a steep subtraction from Fixed Investment over 2009Q2-Q3, it added to the growth in Fixed Investment over 2009Q3-Q4 and 2009Q4-10Q1. However, the contribution to growth in 2010Q1 decelerated from that of 2009Q4.

The discussion now turns to the behavior of Personal Consumption Expenditures (PCE) over the current expansion.

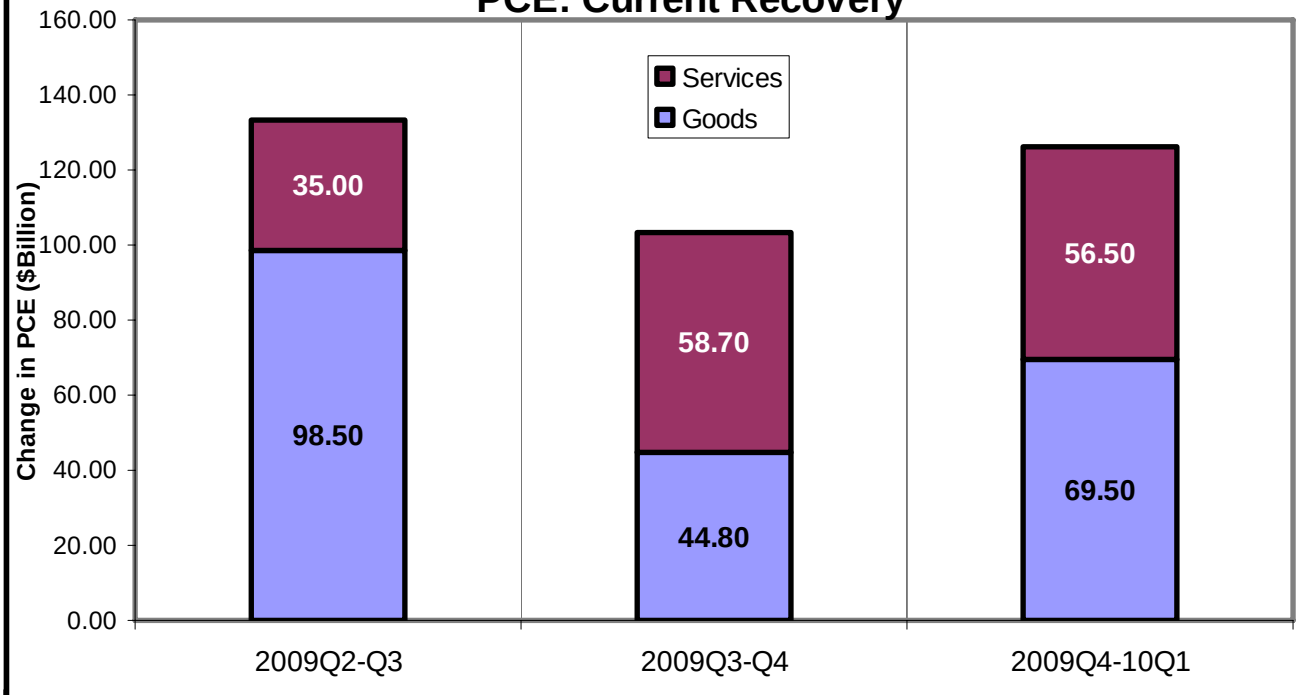


SOURCE: U.S. BEA and calculations by CTDOL-Research.

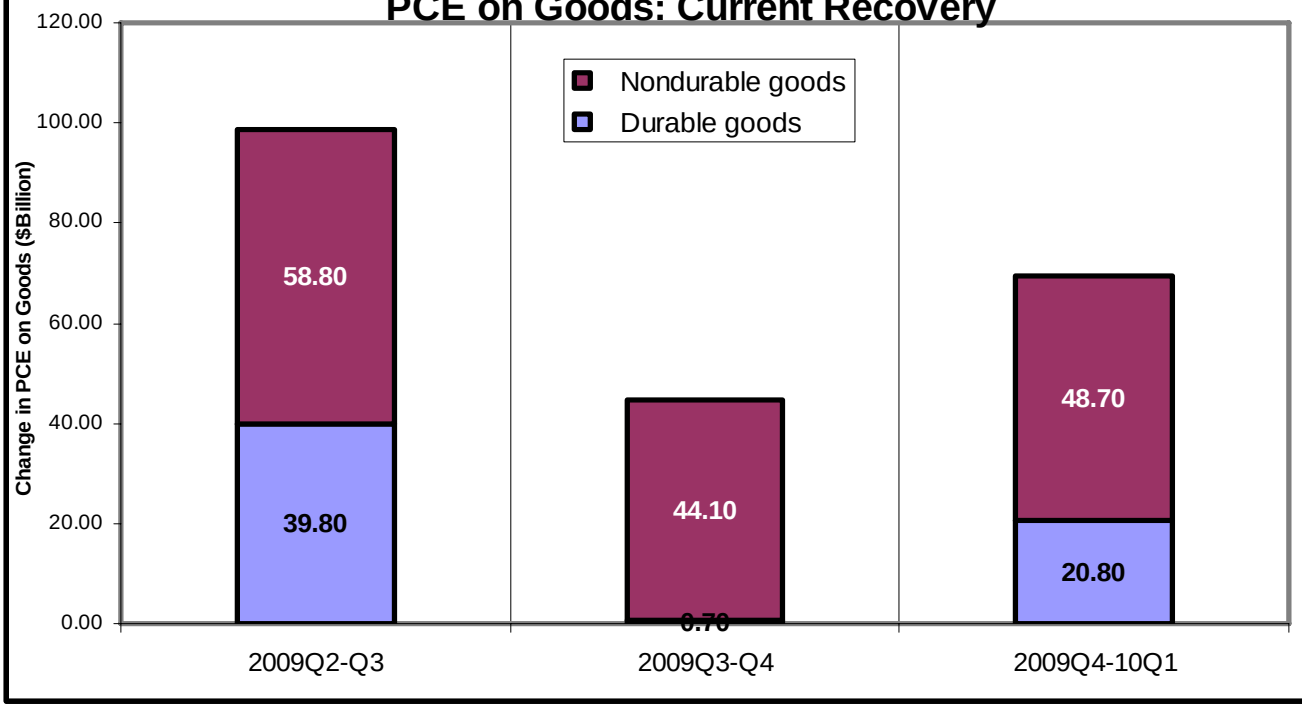
Graph 14 tracks the two major breakouts of PCE: spending on Goods and spending on Services. The largest contribution to the growth in Nominal PCE, in the first quarter of the turnaround in GDP growth in 2009Q2, was in spending on Goods. Then, over the 2009Q3-0Q4 Period, it was Services that made a larger contribution to the growth in PCE. From 2009Q4 to 2010Q1 spending on both Goods and Services drove the increase in PCE, with Goods spending making a slightly larger contribution.

Graph 15 breaks out Goods spending into its two major components: Durable Goods and Non-Durable Goods. As is clear from Graph 15, Non-Durable Goods have made the largest contributions to the growth in spending on Goods since the turnaround in U.S. GDP growth in 2009Q2. This is not surprising given the recent bump-up in oil and gasoline prices. In fact, when broken out by all expenditures and expenditures, excluding food and energy, it is clear from Graph 16 that Nominal Spending growth was not as robust as it appears before netting out food and energy.

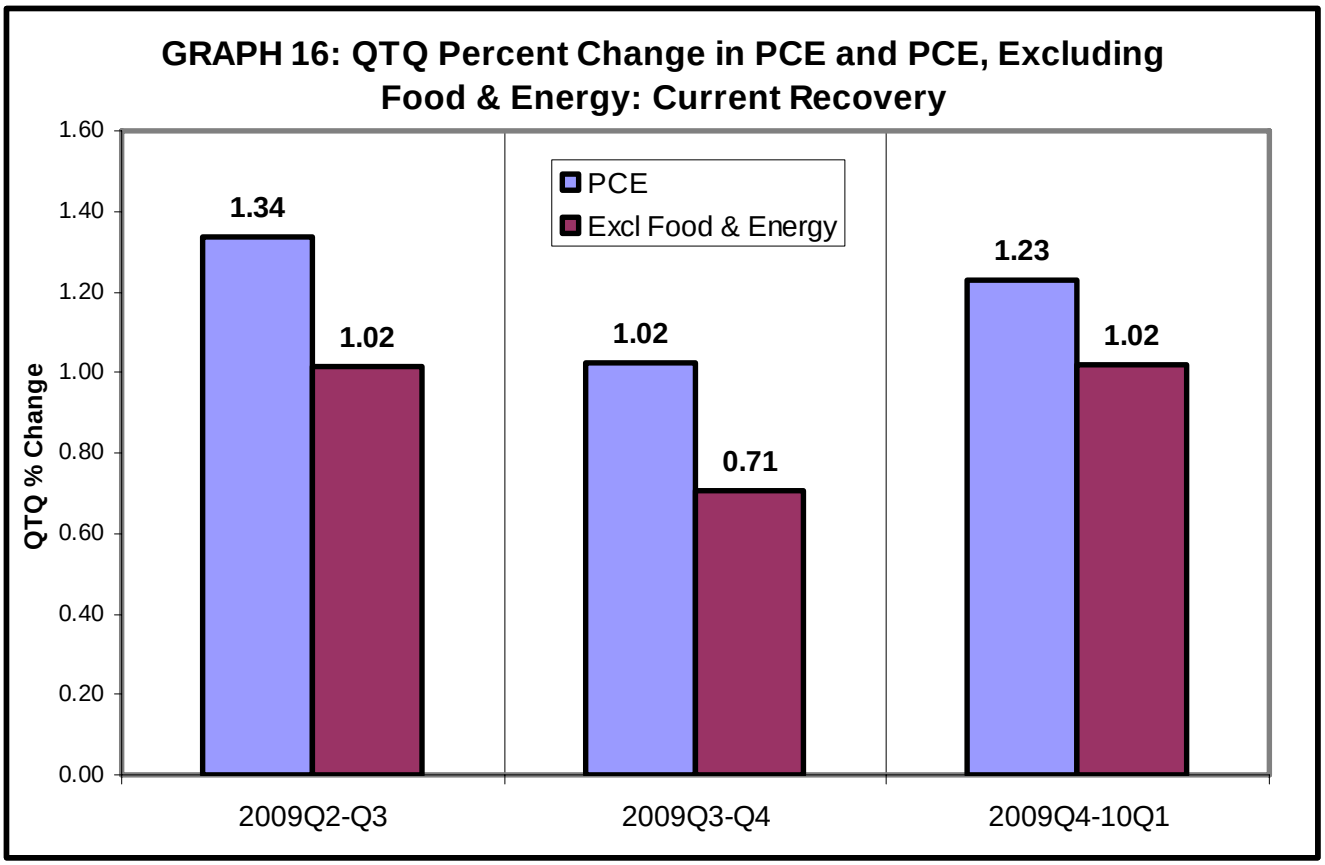
GRAPH 14: Contributions to the QTQ Growth in Nominal PCE: Current Recovery



GRAPH 15: Contributions to the QTQ Growth in Nominal PCE on Goods: Current Recovery

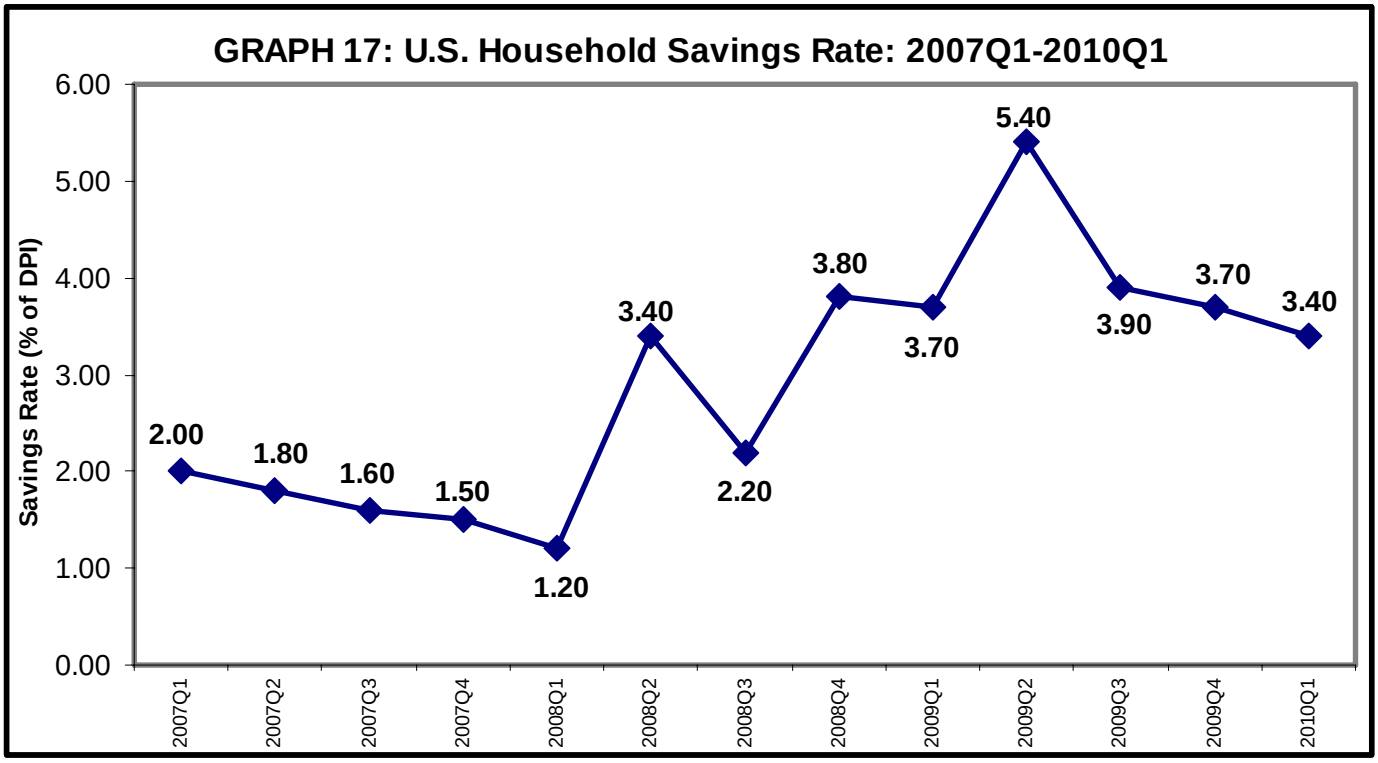


SOURCE: U.S. BEA and calculations by CTDOL-Research.

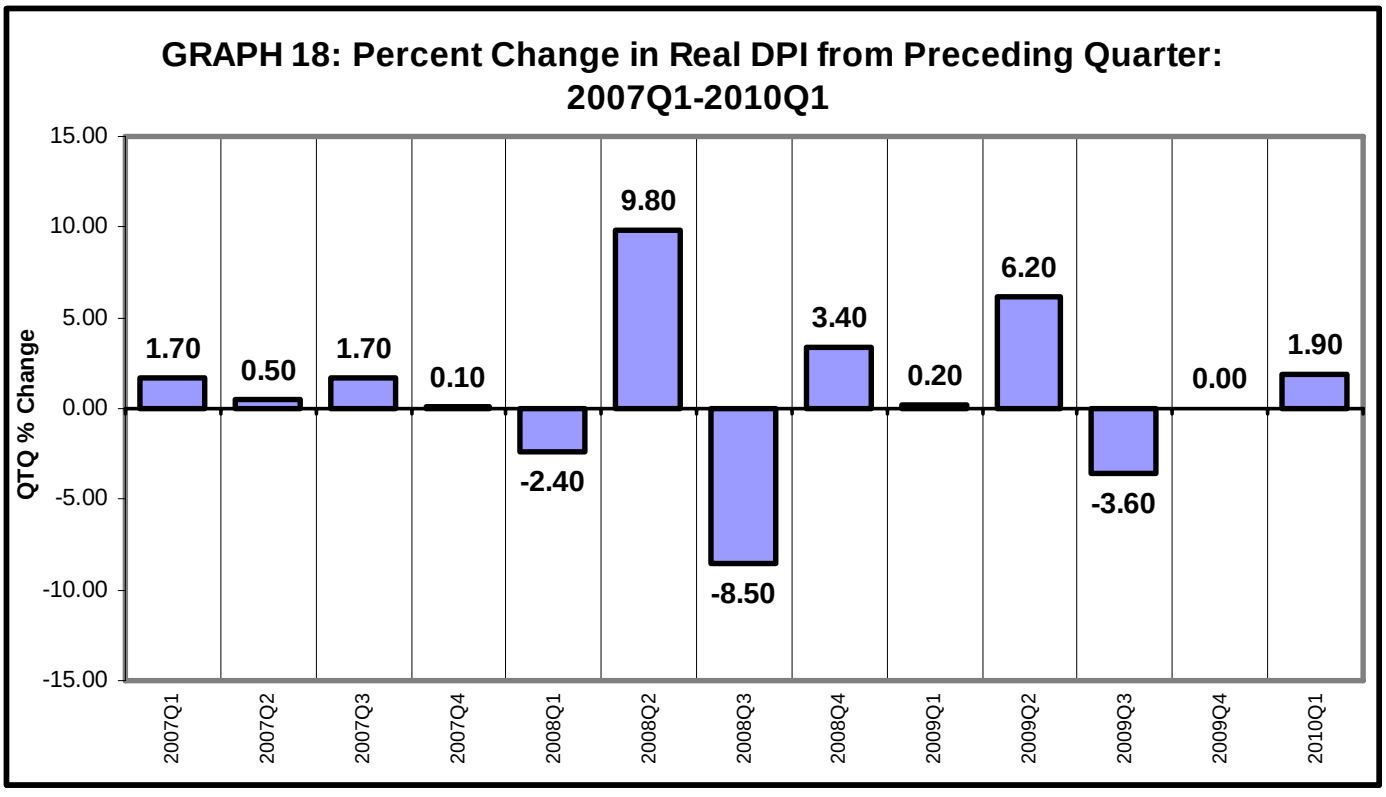


SOURCE: U.S. BEA and calculations by CTDOL-Research.

Since the beginning of recession the savings rate by households has increased, rising from 1.20% of DPI in 2008Q1 to a peak of 5.40% in 2009Q2, the quarter of the turn-around in GDP growth (see Graph 17). However, since then the savings rate has declined right through the first quarter of 2010, the most recent data point. At 3.40% it is back to its 2008Q2 level, which is still more than double the savings rate for 2007. As indicated in Graph 18, the growth in Real Disposable Personal Income (DPI) has been quite weak over the 2007Q1-2010Q1 Period, with three quarters of contraction, including the steep 8.50% contraction in RDPI in 2008Q3. The 9.80% boost in RDPI in 2008Q2 was in response to the Bush stimulus, which did not carry over into the third quarter, as RDPI steeply contracted (-8.50%). The next boost came on the heels of Obama's stimulus that first started to take effect in 2009Q2, in which RDPI increased by 6.20%, but then RDPI also declined in the subsequent quarter by 3.40%. After no growth in the fourth quarter, RDPI grew by a tepid 1.90% in 2010Q1 (see Graph 18).



SOURCE: U.S. BEA and calculations by CTDOL-Research.



SOURCE: U.S. BEA and calculations by CTDOL-Research.

Current conditions suggest that as of spring 2010, if we are in the recovery phase it will be slow and halting. This was evidenced by the disappointing U.S. jobs report for May. While employment grew by 431,000 workers, 411,000 of those jobs were temporary employees hired to work on the 2010 Census, the private sector only created 41,000 jobs[7]. It is again worth noting that as observed in *The Connecticut Economy's* Winter 2010 forecast, recessions accompanied by financial panics are steeper and last longer than those that are not, and they are followed by weaker recoveries[8]

The Historical Context

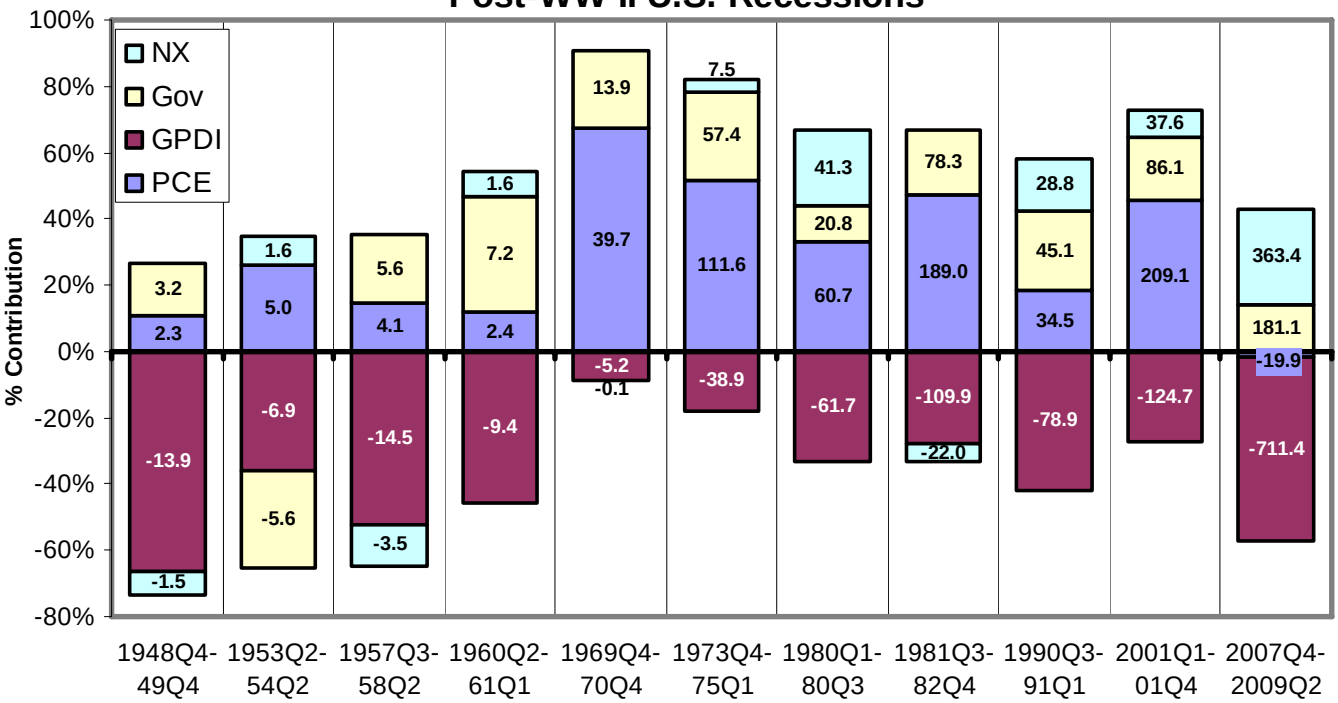
To get a perspective on the current cycle this section looks at the behavior of major economic indicators over the most recent business cycle and compares their performance to that of past cycles. This will allow us to get a sense of the historical context of the events that have unfolded over the last few years. First, the Recession/Panic is viewed within its historical context, then the current, apparent recovery is put into the context of history.

The Recession/Panic in Historical Context

Graph 19 puts the 2007-09 Recession/Panic into historical perspective. The first observation of note is that after the 1960 Recession, additions to Nominal GDP exceeded subtractions during recessions, until the recent crisis. Contributions to the change in Nominal GDP are presented for all Post World War II U.S. recessions. From the end of World War II up to the 1960 Recession, GPDI is by far the largest subtraction from Nominal GDP. This was especially true in 1948, when the U.S. Economy was re-tooling from a war economy to a peacetime economy. Consumer spending and Government Spending both made positive contributions to GDP-growth, in nominal terms, over recessions up to 1960.In 1953 and 1960, Net Exports also made positive contributions to GDP-growth over those recessions. The 1969-70 Recession is the first recession in which Consumer Spending accounts for the largest addition to GDP-growth. Further, the

[7] U.S. Bureau of Labor Statistics, THE EMPLOYMENT SITUATION – MAY 2010 (June 4, 2010) U.S. Department of Labor: Washington.
[8] Kennedy, Daniel W., *THE QUARTERLY FORECAST: Don't Pop the Corks Just Yet*, THE CONNECTICUT ECONOMY (Winter 2010) UConn Department of Economics: Storrs, CT, p. 22.

GRAPH 19: Contributions to the Change in U.S. Nominal GDP: Post-WW II U.S. Recessions



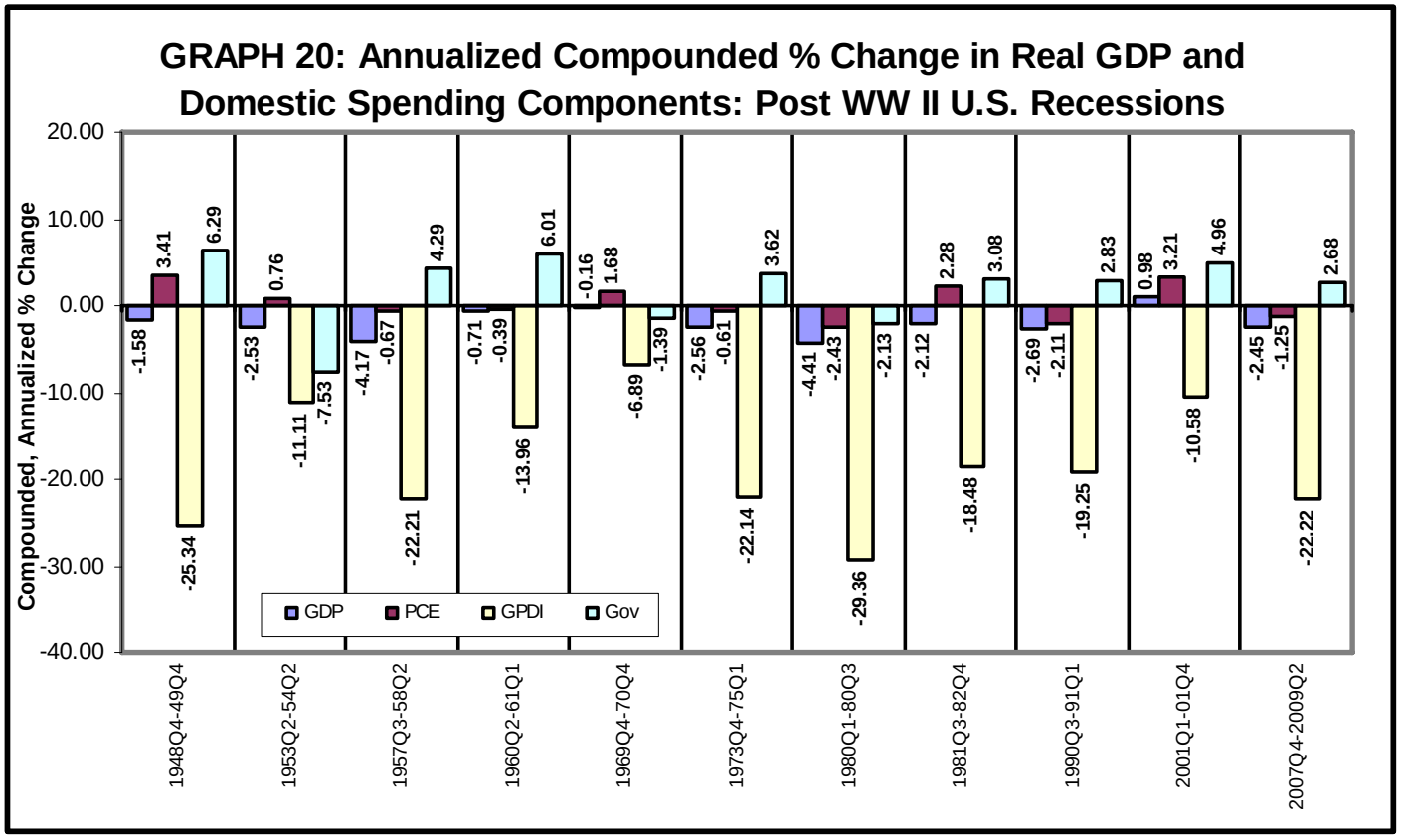
SOURCE: U.S. BEA and calculations by CTDOL-Research

subtraction from GDP-growth by GPDI was the smallest of any Post World War II recession.

From the 1973-75 Recession to the 1990 Recession, GPDI once again began making larger subtractions from GDP-growth over recessions. GPDI made a smaller subtraction from GDP-growth in the 2001 Recession, and then made a large subtraction in GDP-growth over the recent crisis comparable to that of, and even exceeding most of, the recessions from 1948 to 1960. Returning to Consumer Spending, over the recent crisis, for the first time in the Post World War II Era, Consumer Spending actually subtracted from the growth in Nominal GDP. And, interestingly, Net Exports made the largest addition to Nominal GDP over a recession, in the Post World War II Era, over the recent crisis.

Graph 20 switches to Real GDP, and, in order not to compare "apples and oranges" since recessions are of different length, presents the compounded, annualized growth-rates of the components of Real GDP. Within the Post World War II context, the 22.22% decline in Real GPDI is steep, but it has also been matched or surpassed in previous Post WW II

downturns (-29% in the 1980 Recession, -25% in the 1948-49 Recession, and –22% in the 1957-58 and 1973-75 recessions). However, as illustrated in Graph 10 (above), during the Panic Phase of the current crisis, Real GPDI plummeted by 38.71%, on a



SOURCE: U.S. BEA and calculations by CTDOL-Research.

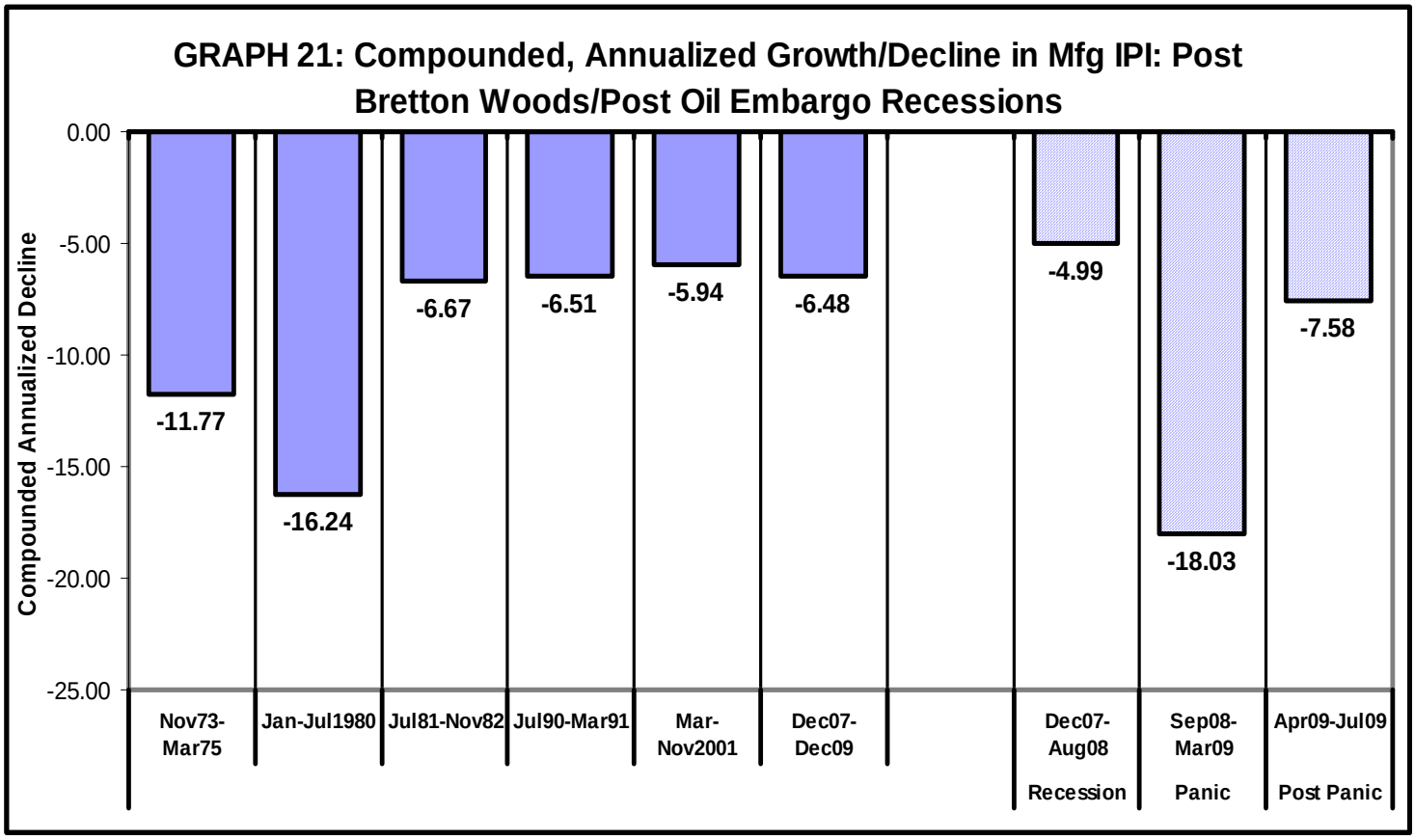
compounded, annualized basis, a rate of decline not seen since The Great Depression. The 2.68% annualized growth-rate of government spending over the recession is not that remarkable, when compared to other Post-WW II recessions. Although, it did grow by a 6.72% annualized rate over the Post Panic Phase of the recent crisis (see Graph 10 above) that, nevertheless, came off an annualized decline of 0.74% over the Panic Phase. Also, note that Real GDP did not decline on a compounded, annualized basis in the 2001 Recession, and the growth-rate in Real PCE, at a 3.21% annualized rate, was the strongest since the 1948-49 Recession (+3.41%). The growth-rate in real government spending was also strong at a 4.96% annualized rate, exceeded only by government

spending in the 1948-49 and 1960-61 recessions, which exceeded 6% on an annualized basis, in both cases.

Like GDP, manufacturing output also behaved differently over the three segments of the recent crisis. Graph 21 shows the compounded, annualized changes in the U.S. Industrial Production Index (IPI) for the Manufacturing Sector over the Post Bretton Woods/Post Oil Embargo recessions. Again, though short, the 1980 Recession was a steep cycle, in both the recovery/expansion and recession phases. On an annualized basis, the decline in manufacturing output in the 1980 Recession, at 16.24%, was the steepest of any recession since 1973. And, in fact, when looking at the annualized rate of decline in manufacturing output over the recent crisis, it does not look all that steep. However, when segmenting the recent crisis into three parts, the Recession Phase, the Panic Phase, and the Post-Panic Phase[9] (see the three bars on the right side of Graph 21), the magnitude of the 2008 Panic becomes quite clear. During the Recession Phase of the recent crisis, the U.S. Manufacturing IPI declined at an annualized rate of 6%. This was not an usually steep decline when compared to recessions from the 1981-82 Recession on onward. However, when isolating the decline in manufacturing output over just the Panic Phase, manufacturing output shows a decline of 18.03%, the steepest rate of decline in the Post World War II Era. Even the Post Panic Phase had a fairly steep rate of contraction (-7.58%), which would have made the manufacturing output decline steeper than any experienced since the 1980 Recession.

With the turnaround in manufacturing output in July 2009, GDP resuming growth in the second quarter of 2009, and jobs-growth from December 2009 on, it appears that an economy recovery may have begun. However, the NBER has still not called a trough for the recession's end (see Footnote 10, below). Assuming that a turning point may be called for sometime in the last half of 2009, the next section compares the current "recovery" to past recoveries to put it into historical context.

[9] As defined above, the Recession Phase is the period covering December 2007 to August 2008; the Panic Phase goes from September 2008, when Lehman Brothers collapsed and AIG was nationalized, to March 2009, when the stock market turned around, and the Post-Panic Phase is defined as March 2009 to July 2009, when manufacturing output turned up and when GDP stopped declining and turned up.



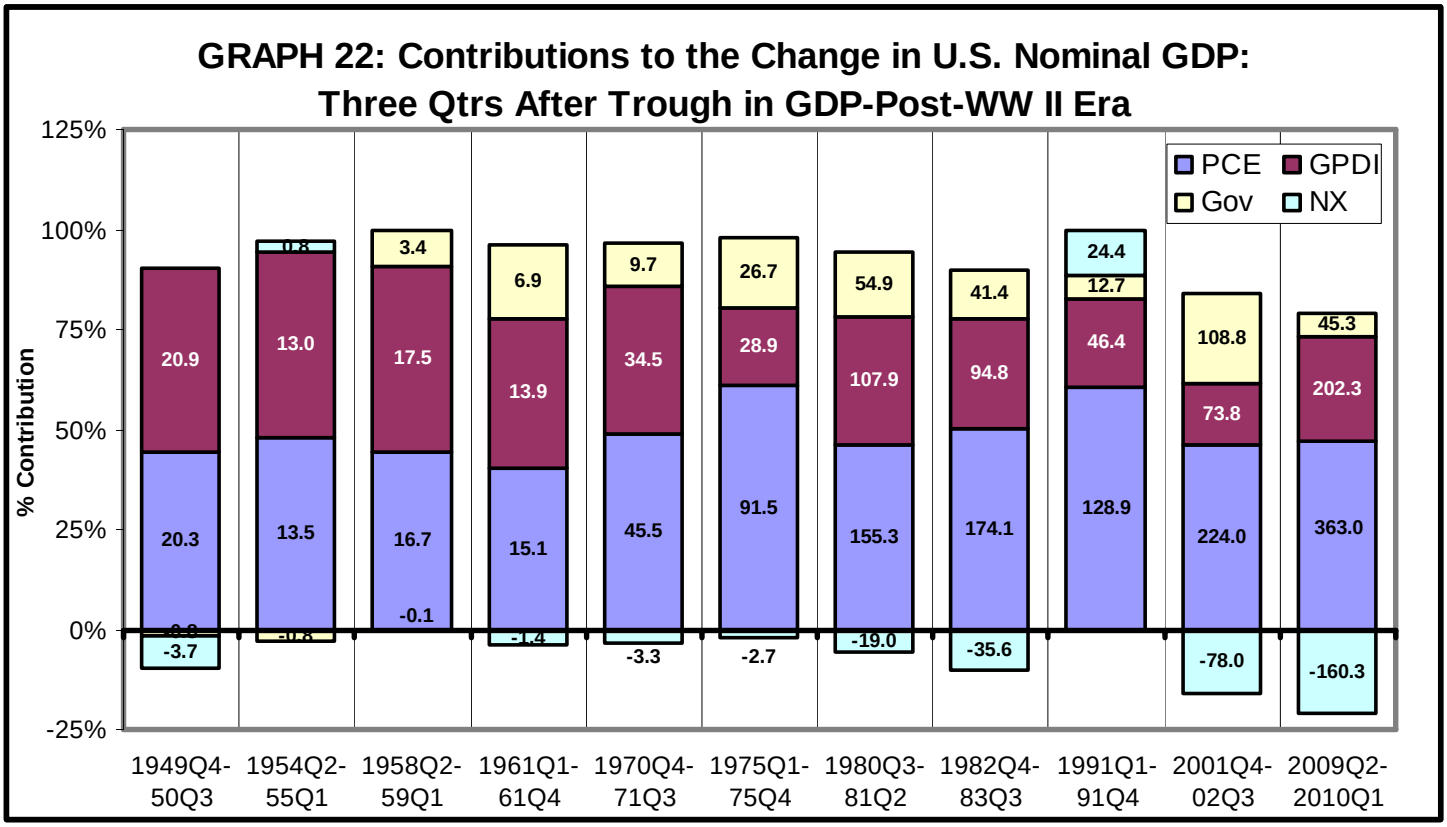
SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

The "Recovery" in Historical Context

If the return of growth in GDP after 2009Q2 marks a turnaround in the economy, then a recovery has occurred for three quarters (in terms of GDP Growth).[10] This section examines this three-quarter turnaround and compares it to previous periods when GDP-growth has proceeded for three consecutive quarters.

Graph 22 compares three-quarters after the trough following Post World War II recessions. For each three-quarter, recovery period the contributions to the growth in Nominal GDP by each of the major components of Aggregate Demand (AD) are shown.

[10] It should be noted that the National Bureau of Economic Research (NBER) bases its call of a turning point on a variety of indicators with heavier weight put on higher-frequency, monthly indicators. And, though GDP turned up after the second quarter, and, in fact industrial production turned up in July. However, jobs did not come back until December. When the NBER calls a turning point, it may well be a month in the third, or even fourth quarter of 2009, possibly the month of December, which would make the recession 24 months in length.



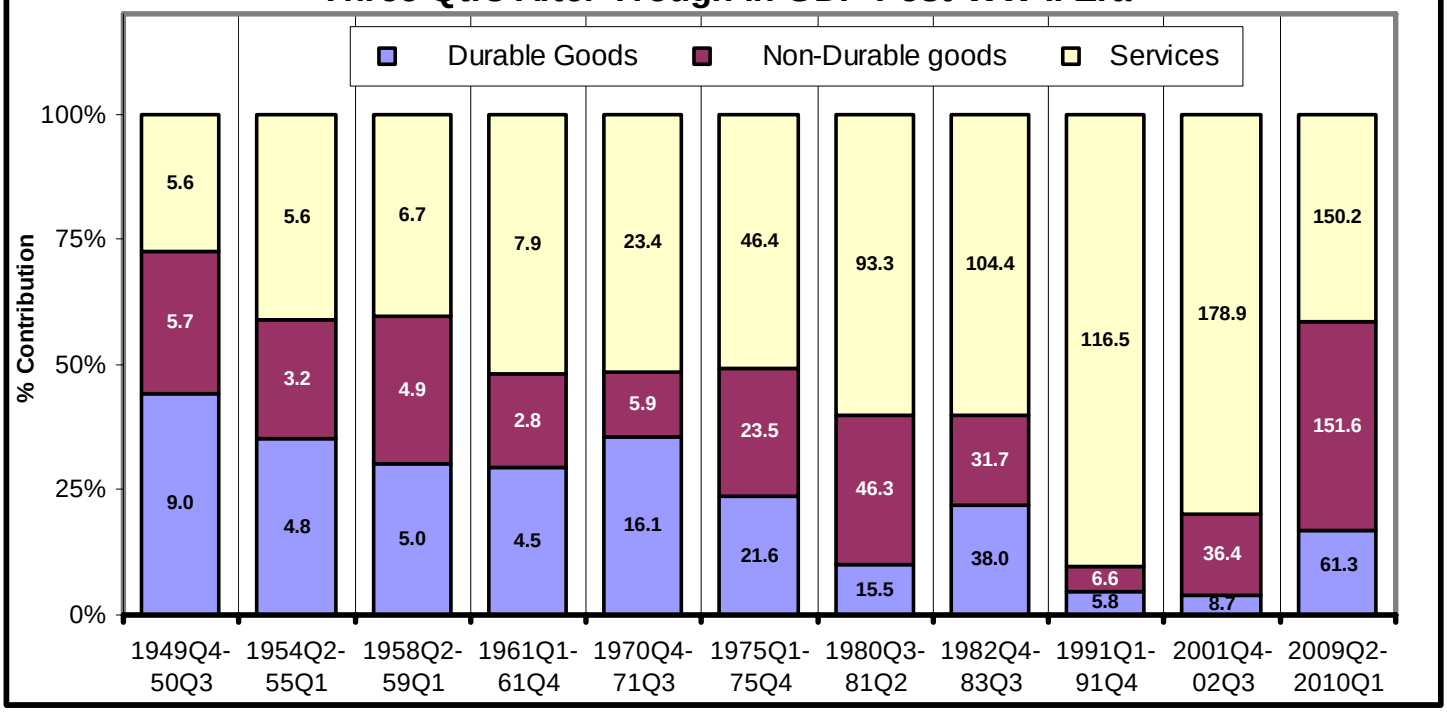
SOURCE: U.S. BEA and calculations by CTDOL-Research.

The first thing to note is that GPDI made a significant contribution made to the growth in Nominal GDP for the first three quarters of recovery following Post World War II recessions up to the recovery following the 1969-70 Recession. GPDI then made a much smaller contribution to the recovery in GDP growth following the 1973-75 Recession. GPDI's contribution increased again after the 1981-82 Recession, then declined coming out of the 2001 Recession, and over the current recovery in GDP, GPDI has once again made a more significant contribution to the growth in Nominal GDP. Another observation is the significant contribution that household's Personal Consumption Expenditures (PCE) to the growth in Nominal GDP in Post World War II recoveries. However, until the recovery from the 1973-75 Recession, the PCE contribution to the growth in GDP was matched or exceeded by the contribution by GPDI. This changed after the 1973-75 Recession, in the first recovery after the collapse of Bretton Woods and the oil embargo PCE began making a larger contribution to the growth in Nominal GDP than that of GPDI. Government spending started making more significant contributions to the growth in GDP during recoveries after the 1953-54 Recession. Over the current recovery, Government spending has made the smallest contribution to Nominal GDP growth since the recovery following the 1990-91 Recession. Interestingly, the recoveries

following the 1953-54 and 1990-91 recessions are the only instances in which Net Exports (NX) made a positive contribution to the growth in GDP three months into recovery. Over the current recovery, Net Exports have made the largest subtraction from GDP in any recovery over the Post World War II Era.

Given that household PCE and GPDI were the two largest contributors to the growth in Nominal GDP over the current recovery, it will be informative to break out these two components of AD into their component parts to identify those detailed spending and investment categories that have contributed to the turnaround in GDP-growth in 2009Q2, and importantly, whether or not these drivers are the basis for a self-sustaining recovery.

GRAPH 23: Contributions to the Change in U.S. Nominal PCE: Three Qtrs After Trough in GDP-Post-WW II Era



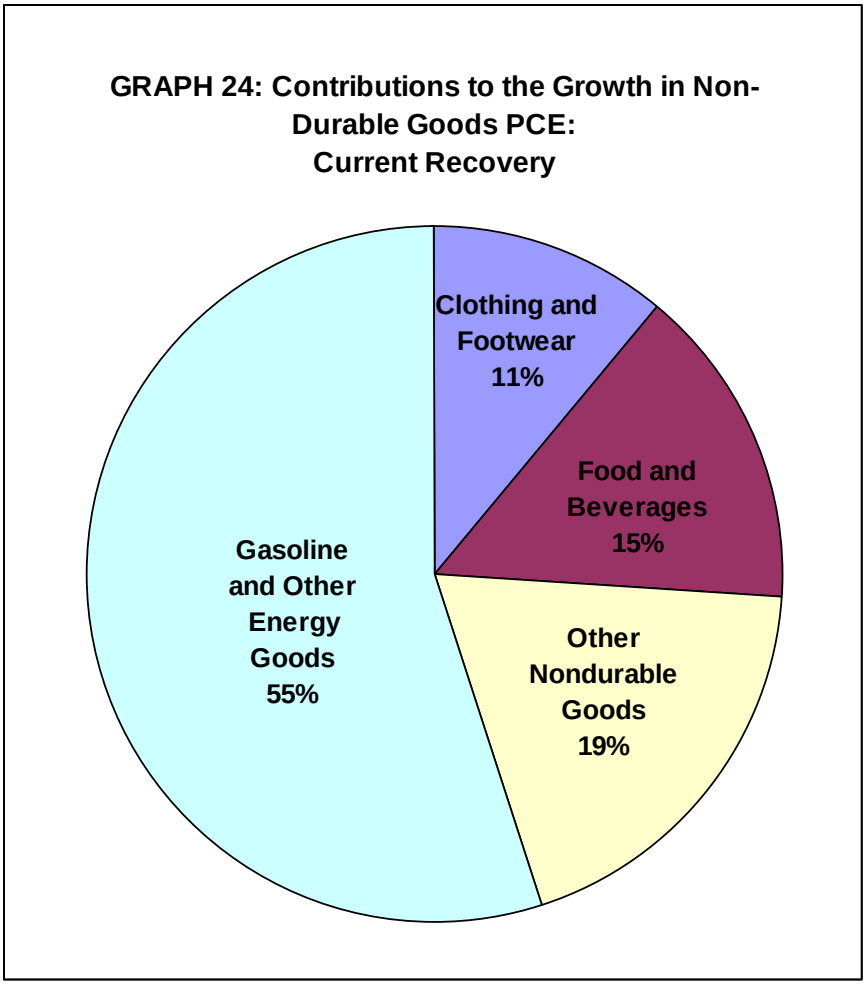
SOURCE: U.S. BEA and calculations by CTDOL-Research.

Graph 23 breaks out the major components of PCE to reveal those components that are driving the growth in consumer spending three quarters into recovery, following recessions over the Post World War II Era. The most obvious feature of Graph 23 is the

successive increases in the contributions of Services to the growth in PCE over the course of recoveries since World War II, until the current crisis. The second point to note about Graph 23 is the complete dominance in contribution of Services spending to the growth in Nominal PCE three quarters into recovery following the 1990-91 and 2001 recessions. This makes those two recoveries atypical, even given the trend toward the growth in spending on Services making ever-greater contributions to the growth in PCE in each Post-World War II recovery. Another trend, which follows, is the decline in the contribution of Goods-spending on the growth in PCE, following three quarters of recovery. And, in each successive recovery, Durable Goods played a smaller and smaller role in its contribution the growth in PCE over post-war recoveries. In fact, spending on Goods played almost no role in the growth of PCE following the 1990-91 and 2001 recessions. Importantly, the role of Goods spending in contributing to the growth in PCE has made a comeback over the current recovery. Over the current recovery, Goods have made the largest contribution to the growth in PCE since the recovery following the 1948-49 Recession. However, unlike the recovery following that first post-war recession, over the current recovery, Non-Durable Goods has made the largest contribution to the growth in PCE. So what is driving the growth in Non-Durable Goods spending?

Graph 24 breaks out the spending on Non-Durable Goods over the current recovery period (2009Q2 to 2010Q1, the last period of available data on GDP). A problem for the sustainability question is that 55% of Non-Durable Goods' contribution to the growth in Nominal GDP was due to spending on gasoline and energy goods. Thus, increases in petroleum-based energy-prices drove increases in energy expenditures, which ate up a lot of the growth in nominal expenditures.

Next, GPDI is further decomposed to explore the sustainability behind the contribution of this component of AD to the growth in Nominal GDP over the current recovery.

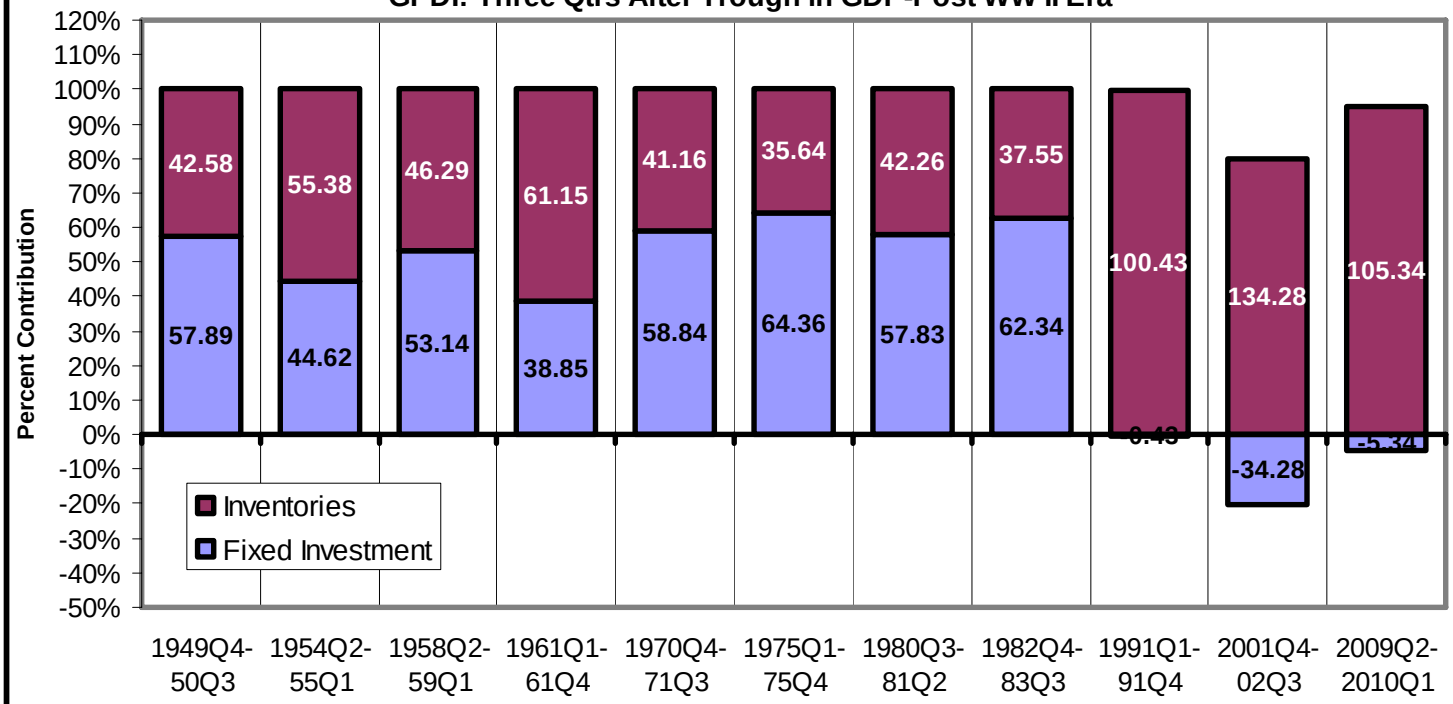


SOURCE: U.S. BEA and calculations by CTDOL-Research.

Graph 25 breaks out GPDI by Fixed Investment and Inventory Investment. What stands out right away in Graph 25 is the differences in the composition of the growth in GPDI over the Post Cold War Period, compared to the Cold War Era. In the Post Cold War Era, after three quarters of recovery in GDP growth, following a recession, the nominal growth in U.S. GPDI is dominated by the growth in inventories. In fact, there is a virtual collapse in the contribution of Fixed Investment to the recovery in GDP growth. Further, after three quarters of GDP growth after the current crisis, and coming out of the 2001 Recession, in nominal terms, fixed investment actually subtracted from the growth in GPDI. And, coming out of the 1990-91 Recession, fixed investment made almost no contribution to the growth in Nominal GPDI. This is a significant change in the composition of GPDI growth, three quarters into recovery, coming out of a recession,

from the Cold War Era. Even when fixed investment made smaller contributions to the growth in GPDI coming out of the 1957-58 and 1960-61 recessions, during the Cold War, it was never a subtraction from the growth in Nominal GPDI.

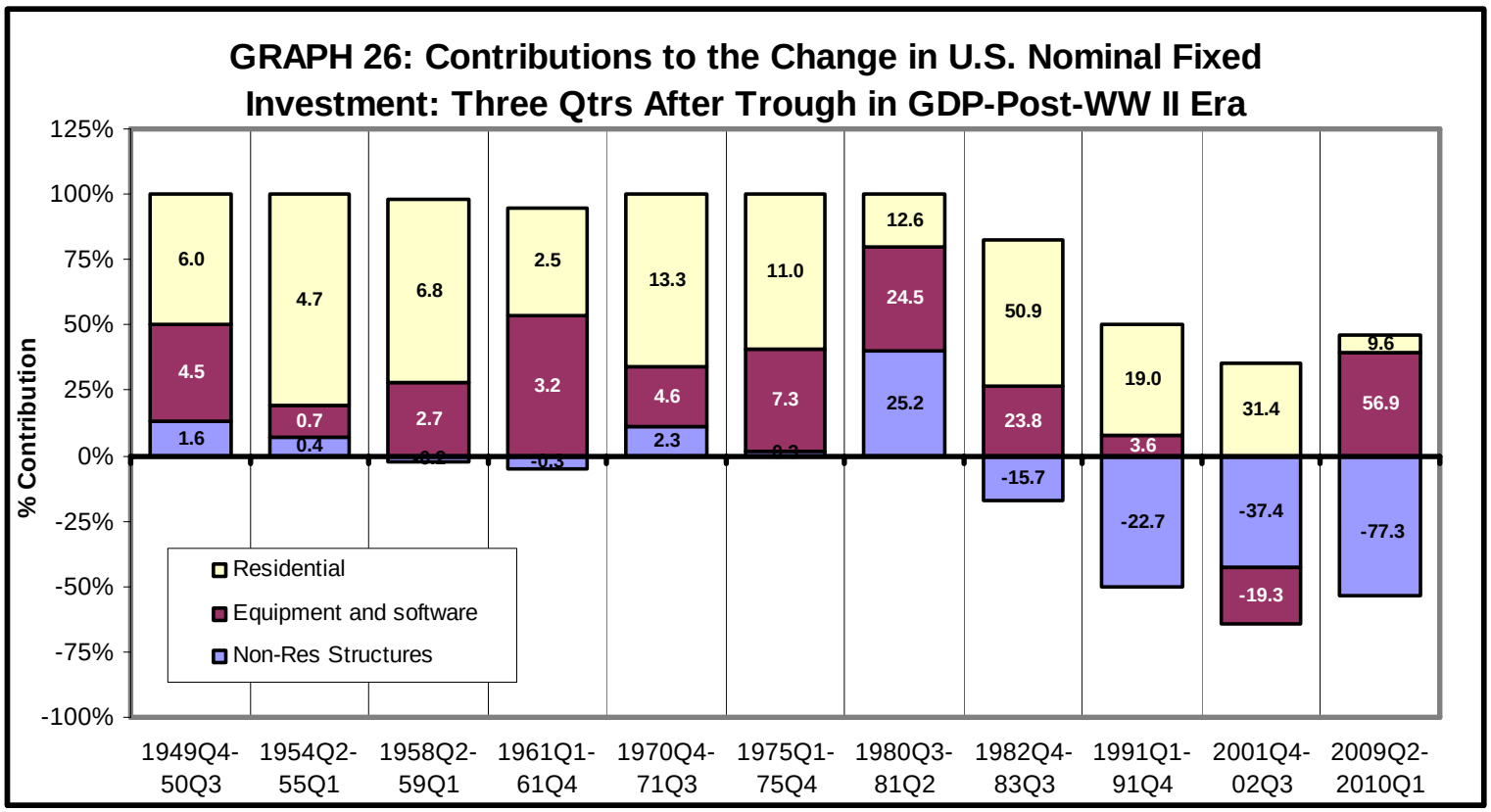
GRAPH 25: Relative Contributions of Fixed Investment and Inventories to Nominal GPDI: Three Qtrs After Trough in GDP-Post WW II Era



SOURCE: U.S. BEA and calculations by CTDOL-Research.

A major possible source of the virtual disappearance of Fixed Investment's contribution to GDP growth three months into recovery, in the Post Cold War Era, may be the rise in the demand for imports, which would imply a simultaneous decline in demand for domestically produced goods. This, in turn, would imply a decline in the demand for fixed investment by domestic firms to expand capacity, since demand is being met by foreign capacity. Digging Deeper to investigate what components of Fixed Investment might be most effected by the collapse of this source of AD as a contributor to growth coming out of a recession, Graph 26 breaks out the major components of Fixed Investment over the Post World War II Era The first insight revealed by Graph 26, is that, the most important contribution to the growth in Fixed Investment, within an historical context, is that of housing, which has been an important driver of the business cycle.

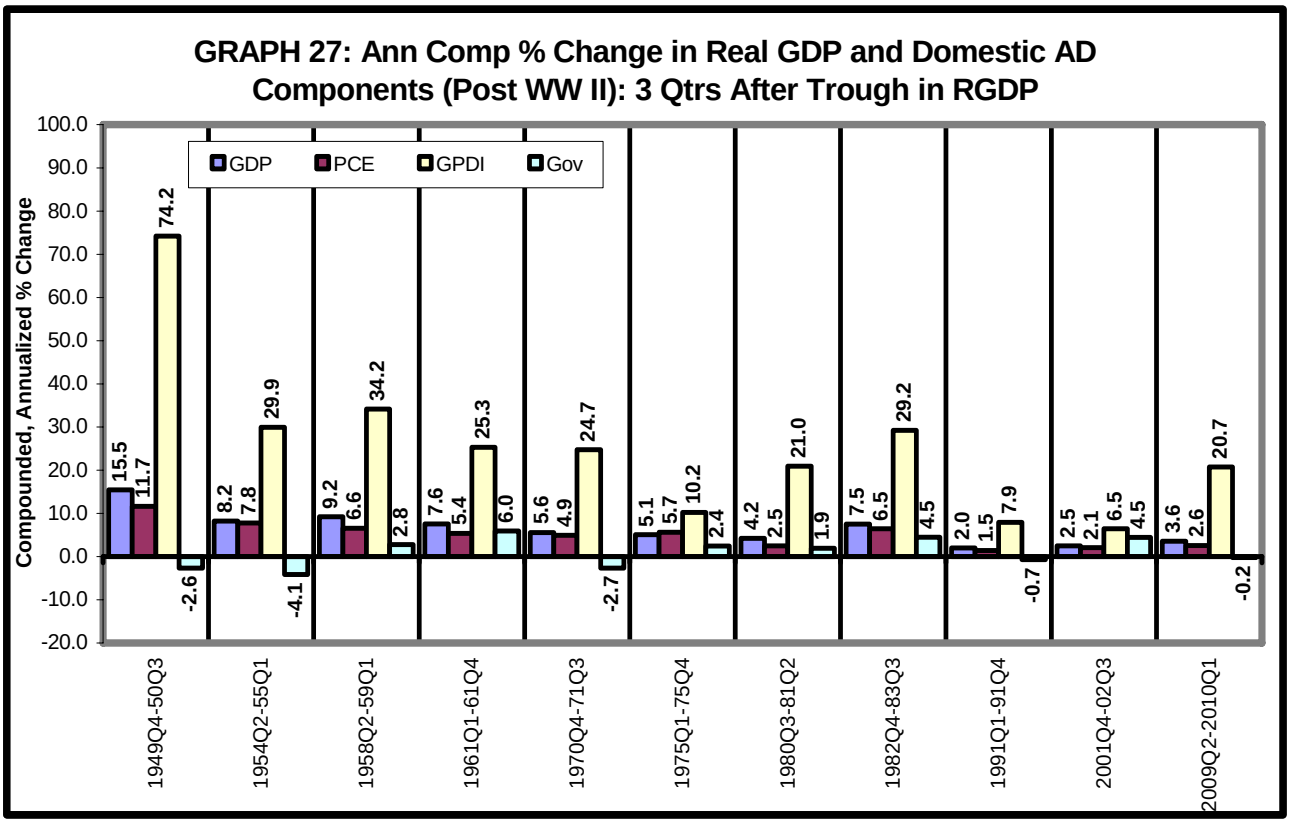
Residential investment gets little mention in business cycle texts, and save Dornburch, Fischer, and Startz (2006)[11], it gets *no mention* in macroeconomics texts. Also notable is the significant subtraction from the growth in Nominal Fixed Investment, three quarters into the recovery of GDP, by Non-Residential Structures, starting with the recovery from the 1981-82 Recession, and which becomes a large subtraction over the Post Cold War Era. Finally, as would be expected, the only instance in which investment in equipment and software subtracted from the growth in Nominal Fixed Investment was coming out of the 2001 Recession, which came on the heels of the tech bust and over-investment in the Telecom and related sectors. However, though making a positive contribution, growth in investment in equipment and software was weak, and made a very small contribution to the growth in Nominal Fixed Investment coming out of the 1990-91 Recession, and in fact, it made a rather modest contribution to the growth in Fixed Investment coming out of the 1981-82 Recession.



SOURCE: U.S. BEA and calculations by CTDOL-Research.

[11] Dornbush, Rudiger Stanley Fisher, and,Richard Startz, MACROECONOMICS 10th Ed. (2007) McGraw-Hill/Irwin: New York

Over the current recovery, of course, Residential Investment will not make the contribution to growth that it has in past post-war recoveries. In fact, coming out of the 2001 Recession, and on the eve of the recent housing bubble, housing made the only positive contribution to the growth in Nominal, Fixed Investment, three quarters into recovery. As would be expected, the contribution of Residential Investment to the current recovery is quite small, in nominal terms—the fact that it is positive at all is a surprise, nominally or otherwise. And, reflecting the bust in commercial real estate as well, Non-Residential Structures is a large subtraction from the growth in Fixed Investment three months into the current recovery. The largest positive contribution, three months into the current recovery, is in Equipment and Software.



SOURCE: U.S. BEA and calculations by CTDOL-Research.

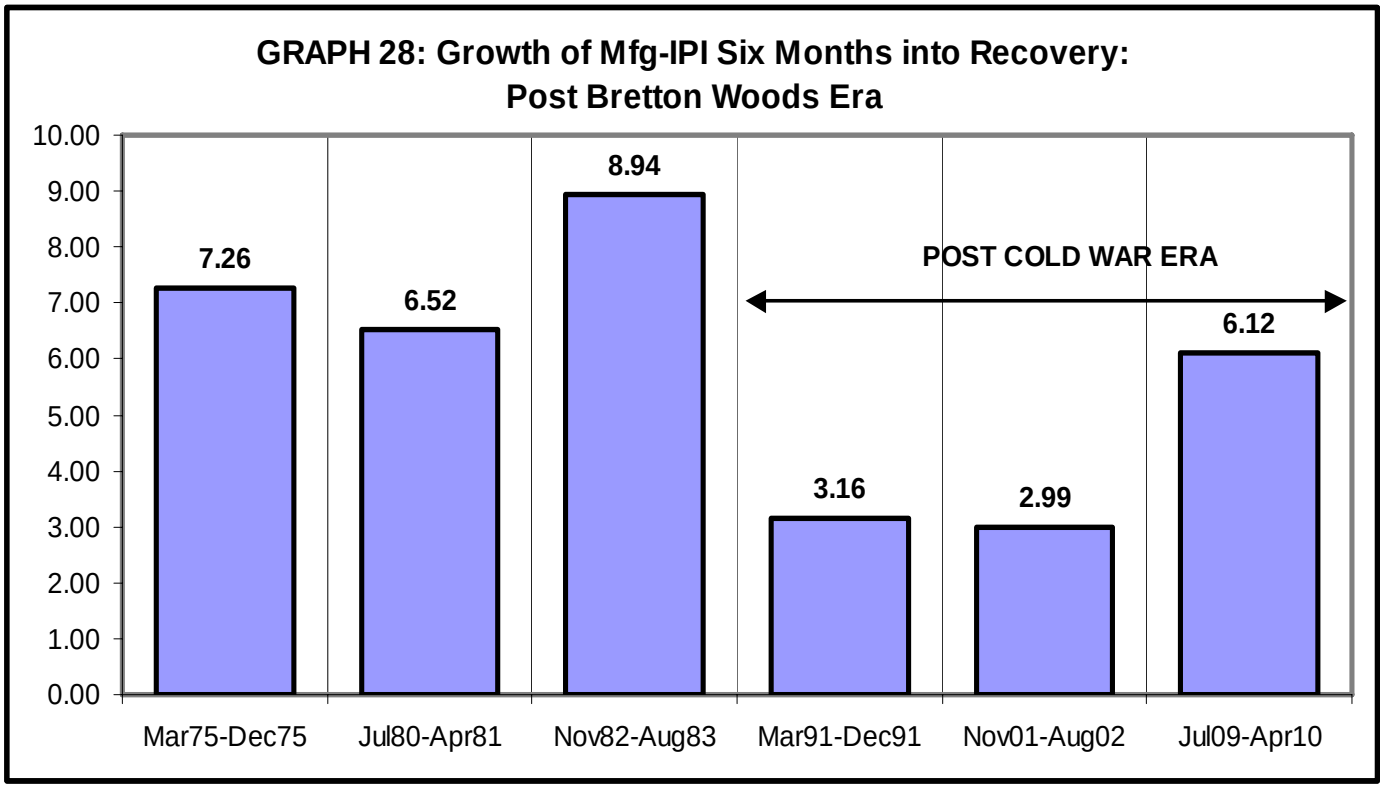
Switching to Real GDP and the components of AD, Graph 27 presents the annualized, compounded growth-rate in Real GDP and the major components of aggregate demand three quarters into the recovery of GDP-growth for the recoveries following the Post-World War II recessions. At a 3.6% annualized rate, Real GDP over the current recovery

has grown the strongest of any Post Cold War recovery, which have been much weaker than the recoveries following recessions during the Cold War. During the Cold War Era, the annualized growth-rate of Real GDP, three quarters into recovery, was typically twice the growth-rate of the current recovery. Reflecting the component with the largest amplitude over the business cycle, the strong growth in the Real GPDI component is quite apparent. Save the two previous Post Cold War recoveries, GPDI is the strongest growing component of the major sources of aggregate demand. The strongest spurt in the growth of GDPI came during the re-tooling from a military to civilian economy resulted in a 74.2% surge (on a compounded, annualized basis) in Real GPDI coming out of the 1948-49 Recession.

On an annualized basis, over the three-quarter turnaround in Real GDP growth (2009Q2-2010Q4), Real GPDI grew at a compounded, annualized growth-rate of 20.7%. This is the fastest growth in Real GPDI in the three quarters following a recession, in the Post Cold War Period. However, as noted above, for the most part, the growth in GPDI over the current recovery, like in previous Post-Cold War recoveries, is mostly inventory rebuilding. A sustainable recovery would likely have a stronger growth in Fixed Investment as well. But, the recovery is in its early stages, and if investment in Software and Equipment picks up then the recovery may take on the trappings of a more sustainable turnaround.

Manufacturing Output Growth nine Months (3 Quarters) into recovery, for the recoveries following the Post Bretton Woods/Oil Embargo recessions, is presented in Graph 28. Within this historical context, just as for the behavior of the components of aggregate demand, what stands out is the weaker performance over the Post Cold War Era. The weakest recovery in manufacturing output, nine months after the turnaround in GDP-growth, was the nine-month period following the 2001 Recession. Manufacturing output had only grown by 3% between November 2001 and August 2002. The current recovery period has seen a slight bounce-back in manufacturing output, at least compared to Post Cold War standards. Assuming the second quarter of 2009 was the beginning of a recovery, manufacturing output has grown by 6.12% between July 2009 (when it

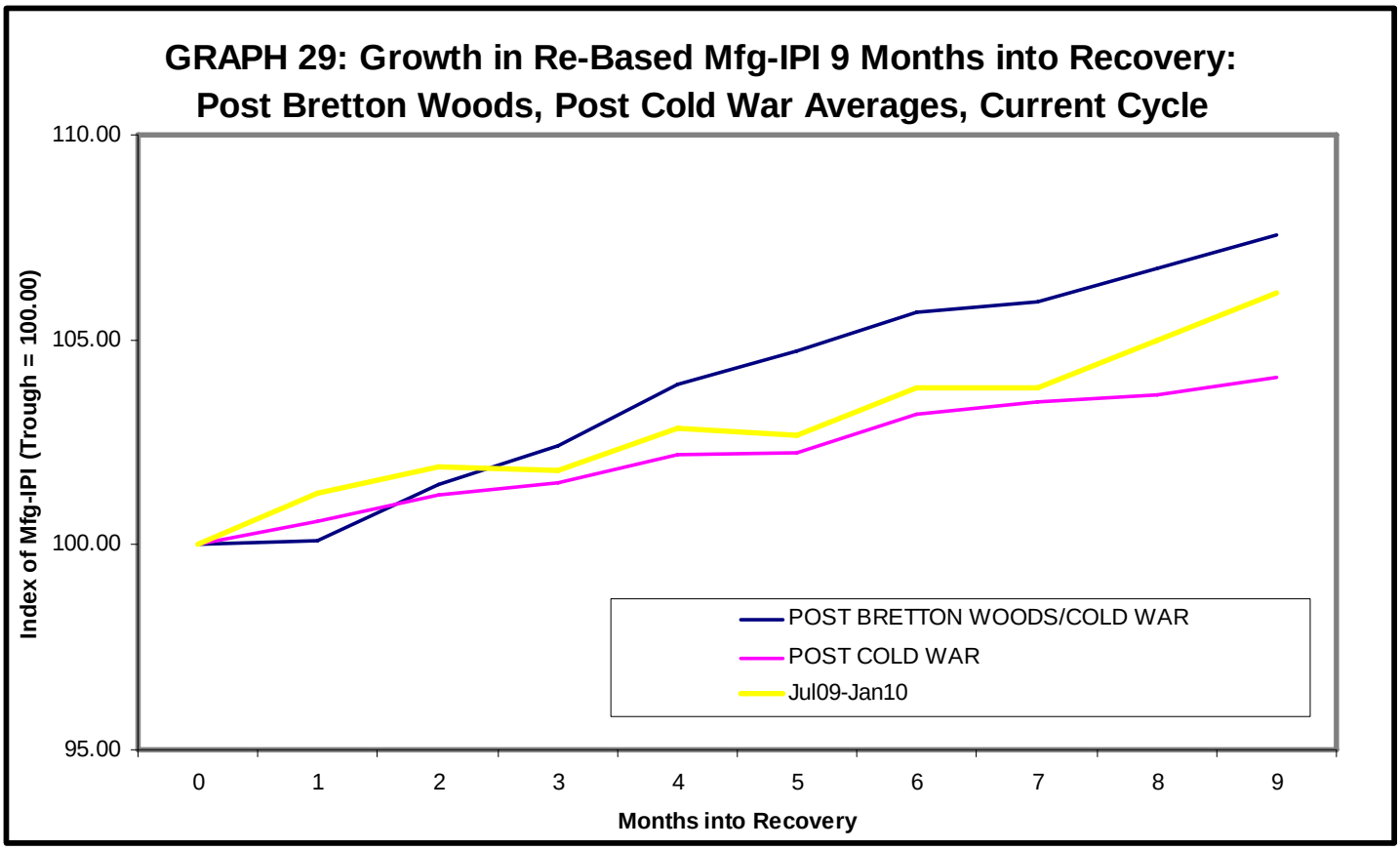
bottomed) and April 2010. This is nearly double the growth-rate in manufacturing output coming out of the 1990-91 Recession, and pales in comparison to the more robust growth-rates in manufacturing output usually observed by nine months after the beginning of recovery following recessions during the Cold War Period.



SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

Graph 29 plots the re-based manufacturing Industrial Production Index (IPI) average for the Post Bretton Woods/Cold War Period, the Post Cold War Period, and the current recovery, nine months into recovery. For past recessions, the NBER-declared trough date is based at 100.00 for the re-based index. The current "recovery" is pegged at July 2009, when manufacturing output turned around. From the bottom, and the first two months of recovery, manufacturing output was above the average output levels for the previous periods. After three months, current-recovery manufacturing output fell below the Cold-War Era average and closely paralleled the average manufacturing output performance of the Post Cold War Period. In other words, the rebound in manufacturing output, at first was strong, but weakened as the recovery progressed. Then over the last two months,

months 8 and 9 (March and April 2010 over the current recovery), manufacturing output began to pick up again.



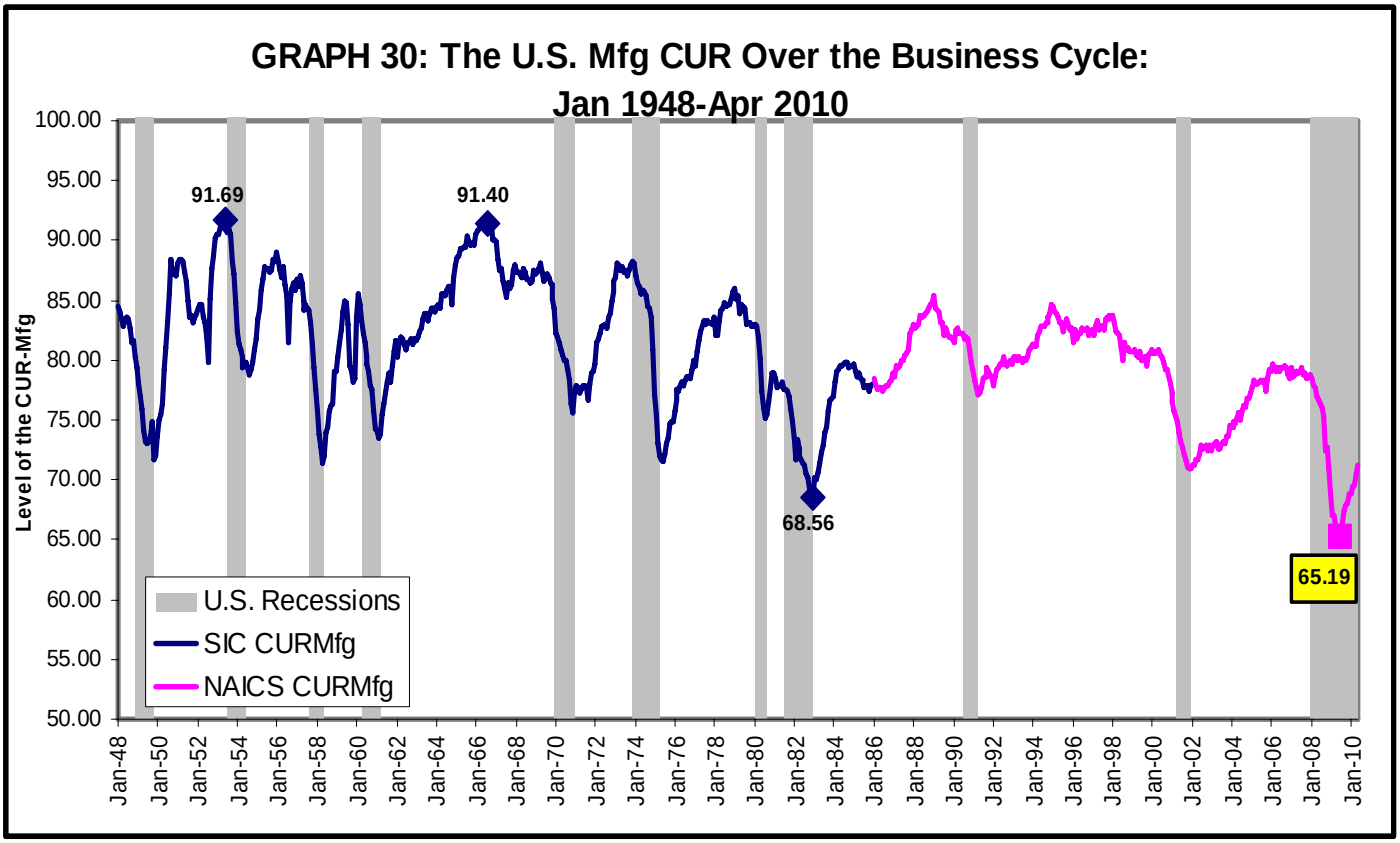
SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

C. RESOURCE UTILIZATION

This section looks at resource utilization over the recent crisis and puts the decline in the economy's use of its physical resources in historical perspective. This will allow us to get a sense of the historical context of the behavior of capacity utilization and capacity. First, the Recession/Panic is viewed within its historical context, then the current, apparent recovery is put into the context of history.

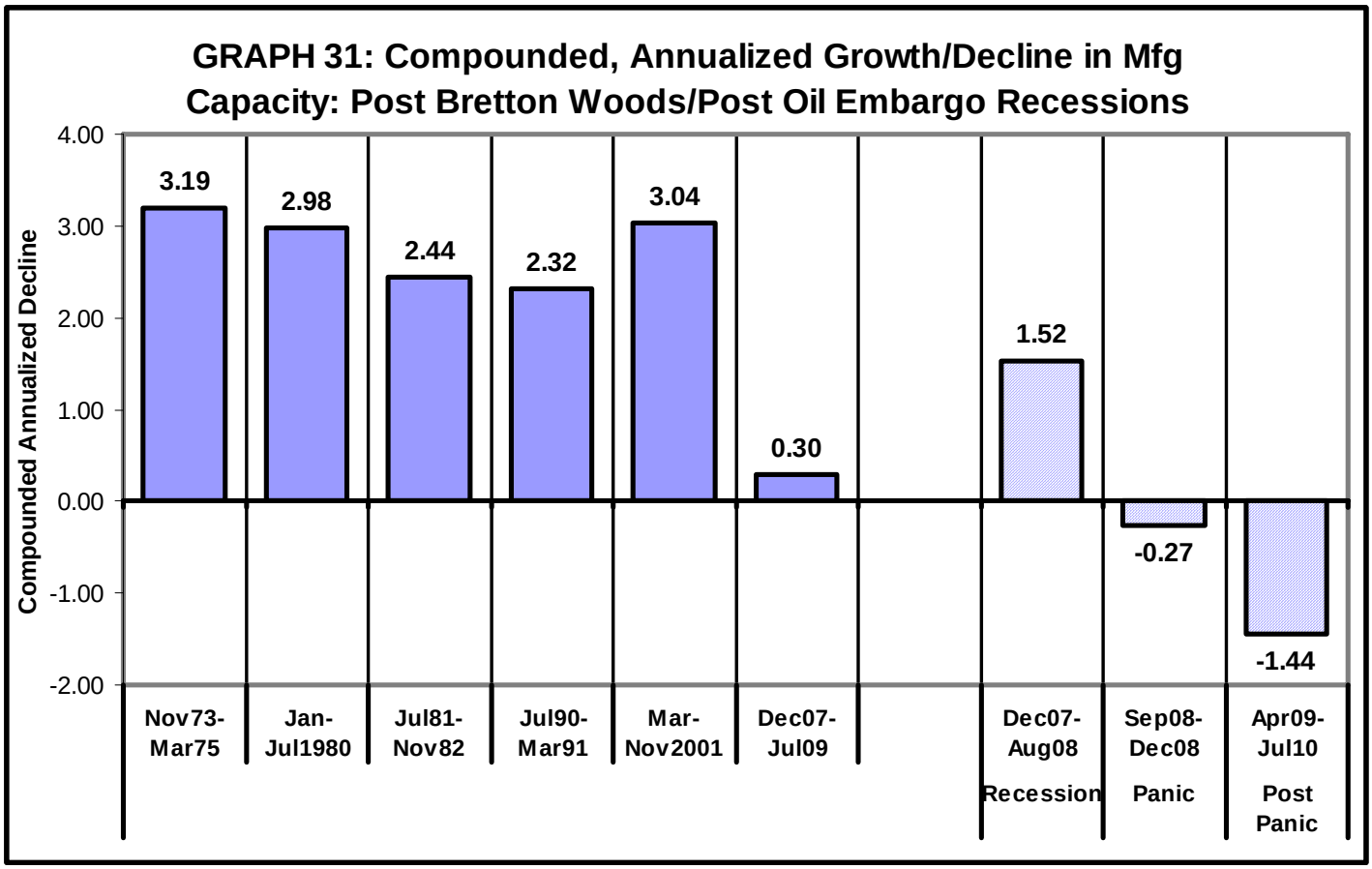
Recession and Panic

Graph 30 plots the Capacity Utilization Rate (CUR) of U.S. Manufacturing over the Post World War II Era. Before proceeding a note of caution is in order. Graph 30 strings together the SIC-based and NAICS-based CUR series for manufacturing to get an historical series back to 1948. This caution is also clearly noted on the graph.



SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

Given the caveat noted above, as flagged on Graph 30, the CUR of 65.19%, in May 2009, is the lowest of the entire Post World War II Era. The lowest before that was 68.56%, in November 1982, during the 1981-82 Recession. There is clearly significant slack in the economy, and save the introduction of new technology or replacement, the demand for new fixed investment is certainly inhibited in the face of significant excess capacity. As of April 2010, CUR in manufacturing had recovered to 71.25%.



SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

As illustrated in Graph 31, capacity contracted in the face of steeply declining utilization over the current crisis. The annualized growth in manufacturing capacity over each of the Post Bretton Woods/Oil Embargo recessions shows the capacity continued to increase even during a recession. And, capacity was still being added for a while even after the tech bust that preceded the 2001 Recession. For the entire recent, recession /crisis, the addition of capacity in the Manufacturing Sector slowed to a compounded, annualized rate of 0.30%, the weakest growth in the Post 1973 Era. When the recent recession/crisis is segmented into the Recession, Panic, and Post Panic segments, it reveals that added capacity declined at an annualized rate of 0.27% over the Panic Phase, and accelerated to a 1.44% annualized rate of contraction in manufacturing capacity over the Post Panic Phase.

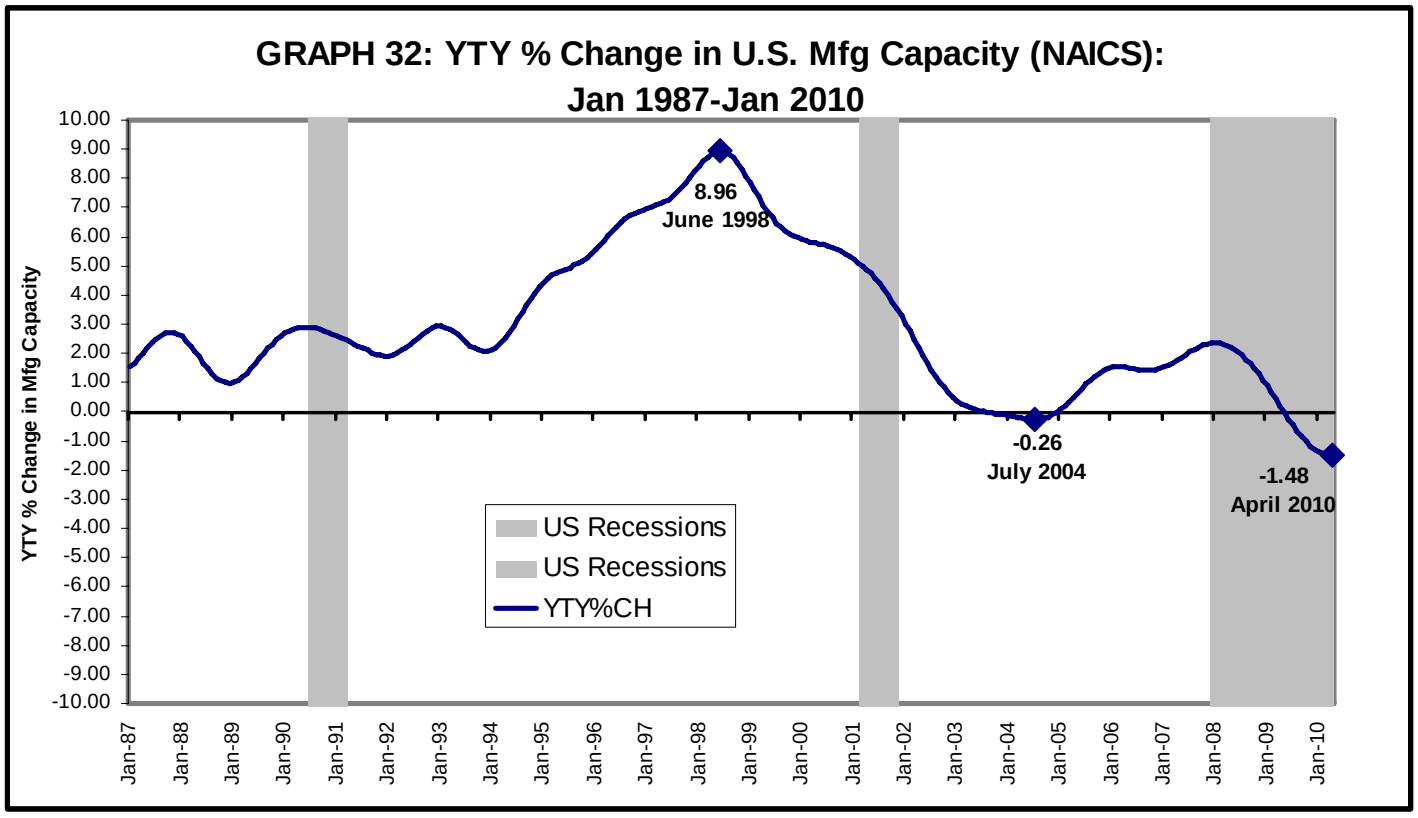
Recovery? Current Conditions

Even if recovery is underway, the steep contraction in the CUR probably implies that added capacity will not pick up any time soon over the current cycle. Given the lags in the response to the change in capacity, as evidenced by the behavior of added capacity over the 2001 Recession and the current cycle, as illustrated in Graph 31, and given the significant portion of domestic demand filled by imports, in conjunction with the accelerating trend in outsourcing, it is not expected that there will be a turnaround in the growth in manufacturing capacity until much later in the current cycle.

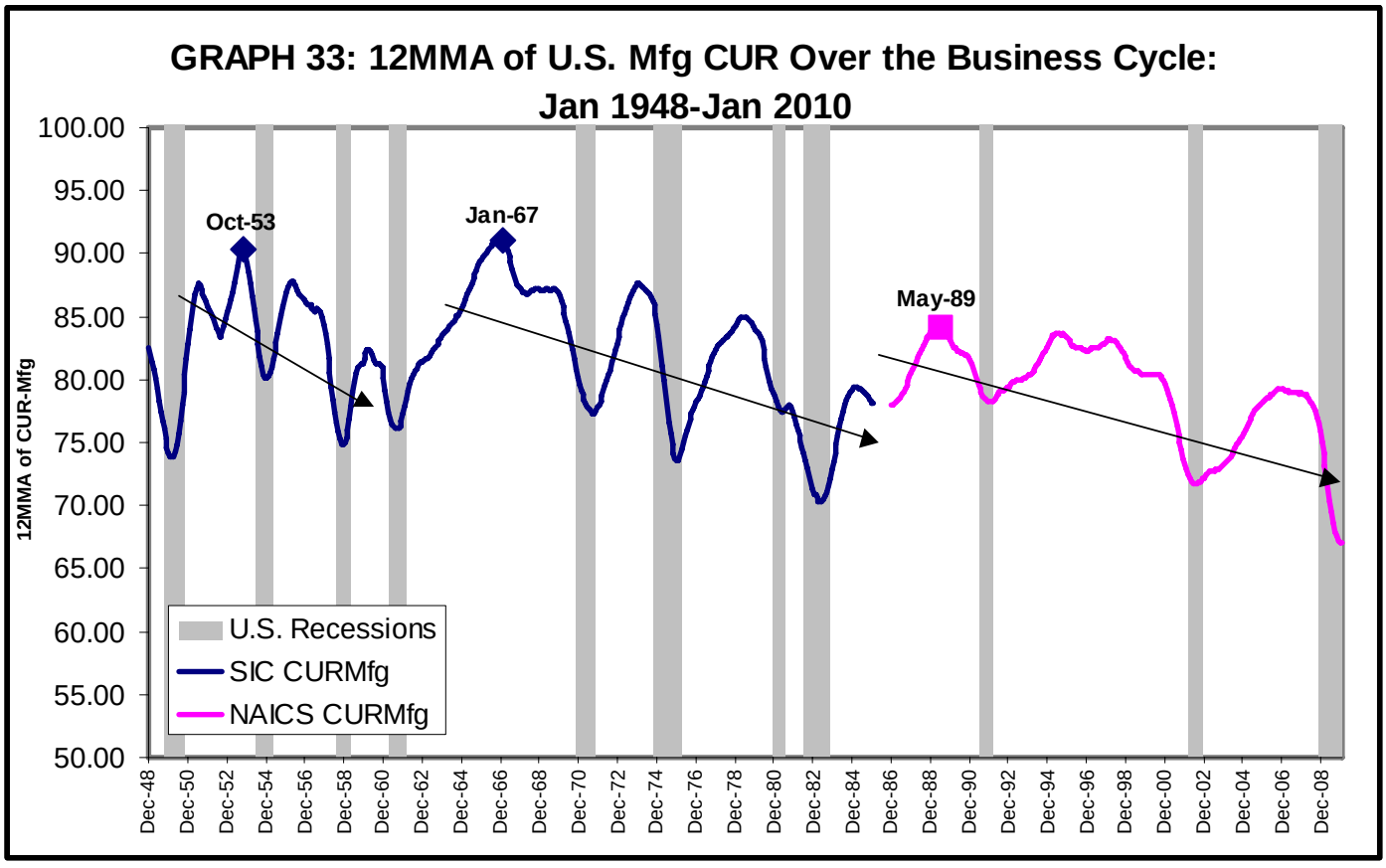
The Recession/Panic in Historical Context

Graph 32 tracks the Year-to-Year (YTY) growth-rate in manufacturing capacity over the NAICS capacity series from 1987 to 2010. After peaking at 8.96% during the tech bubble in June 1998, the YTY growth-rate in manufacturing capacity continually decelerated until July 2004, when it contracted by 0.26%. The YTY growth-rate then trended back up and peaked at 2.36% in January 2008. From May 2009 onward, U.S. Manufacturing capacity began contracting on a Year-to-Year (YTY) basis. From July onward, the YTY contractions were consecutively the steepest over the entire range of the data (i.e., 1987-2010) In April 2010, the last period of available data, manufacturing capacity contracted by 1.48%, on a YTY basis, which is the steepest YTY contraction over the entire series.

There is an interesting pattern that comes through in Graph 33, over both the SIC and NAICS segments for the 12MMA of the manufacturing CUR series. There appears to be a recurring bump up in capacity utilization, followed by longer downward trends in the CUR in manufacturing. As of May 1989, the manufacturing CUR seems to have begun another downward trend, which has continued over the current cycle. This followed a steep upward trend that began in February 1983. At this point, there is no way of knowing whether or not there is something to this apparent behavior of the CUR.



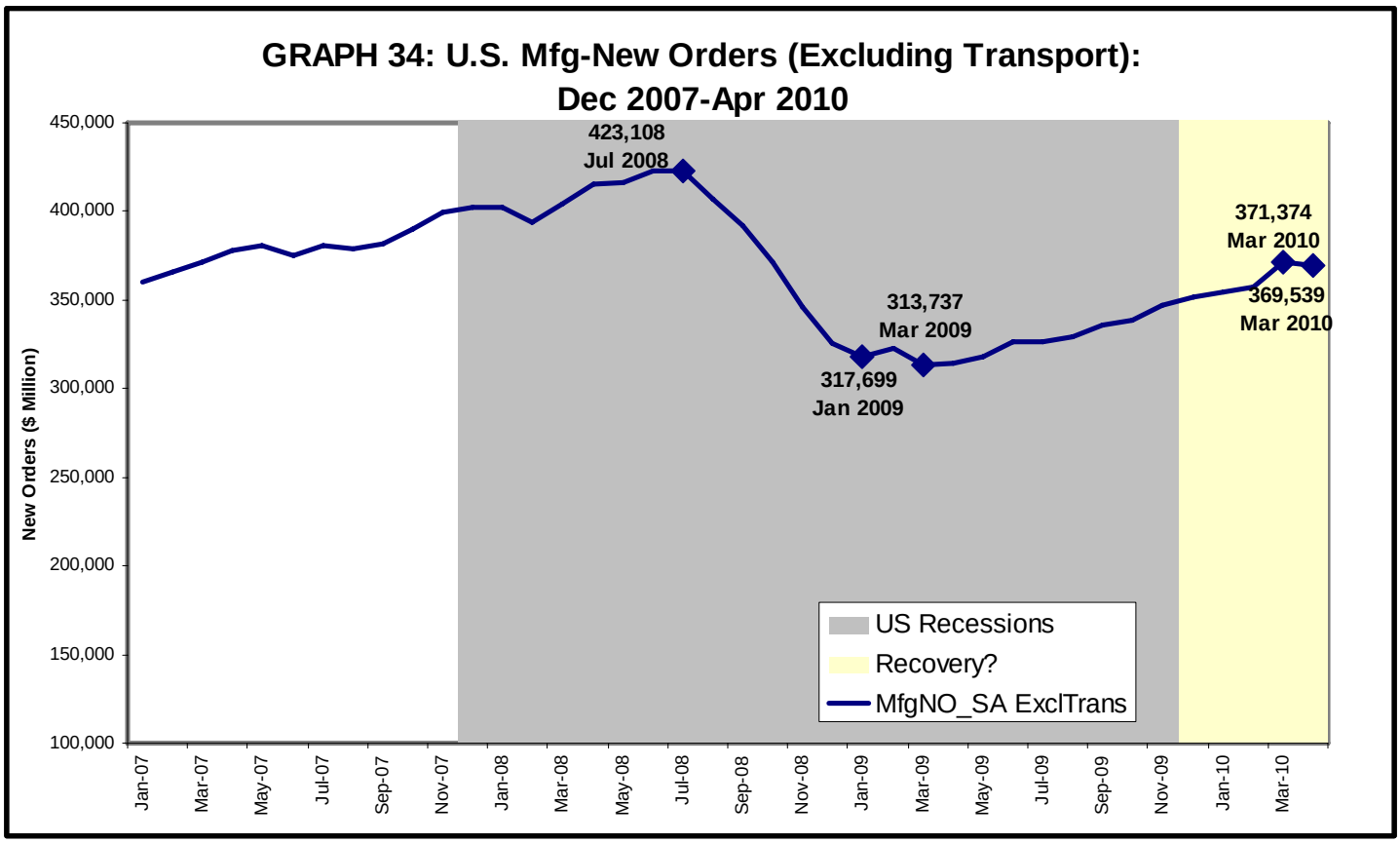
SOURCE: Federal Reserve Board and calculations by CTDOL-Research.



SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

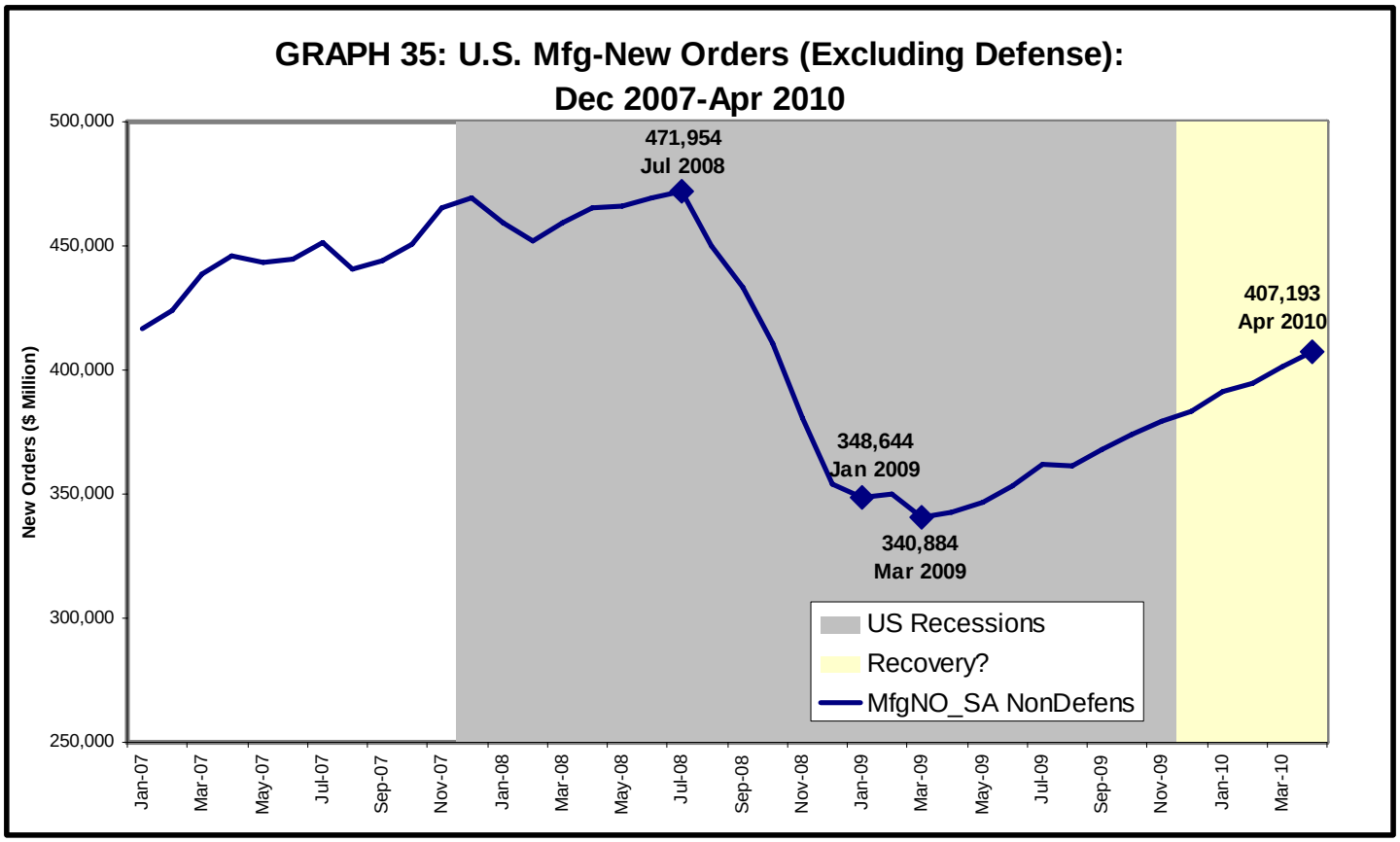
D. BUSINESS CONDITIONS

Graph 34 tracks New Orders for manufacturing goods, excluding the volatile transportation sector. From June 2008 to January 2009, New Orders (excluding transport) had the steepest drop (-24.9%) over the whole NAICS range of the series (1992 to 2010). After a slight bounce in February, new orders then bottomed in March 2009. By March 2010, new orders were up 18.4% from their trough one year earlier. By comparison, 12 months after new orders bottomed in January 2002, they were only up by 4.8% in January 2003 However, New Orders (excluding Transport) declined by 0.5% from March to April.. Interestingly, it appears that after the drop coming into the current crisis, the path of new orders has continued along the same track, as before the drop, but at a lower level. That is, it is as if there has been a downward shift in the vertical intercept, as the new trend line continues along its new, lower, path parallel to the old one.



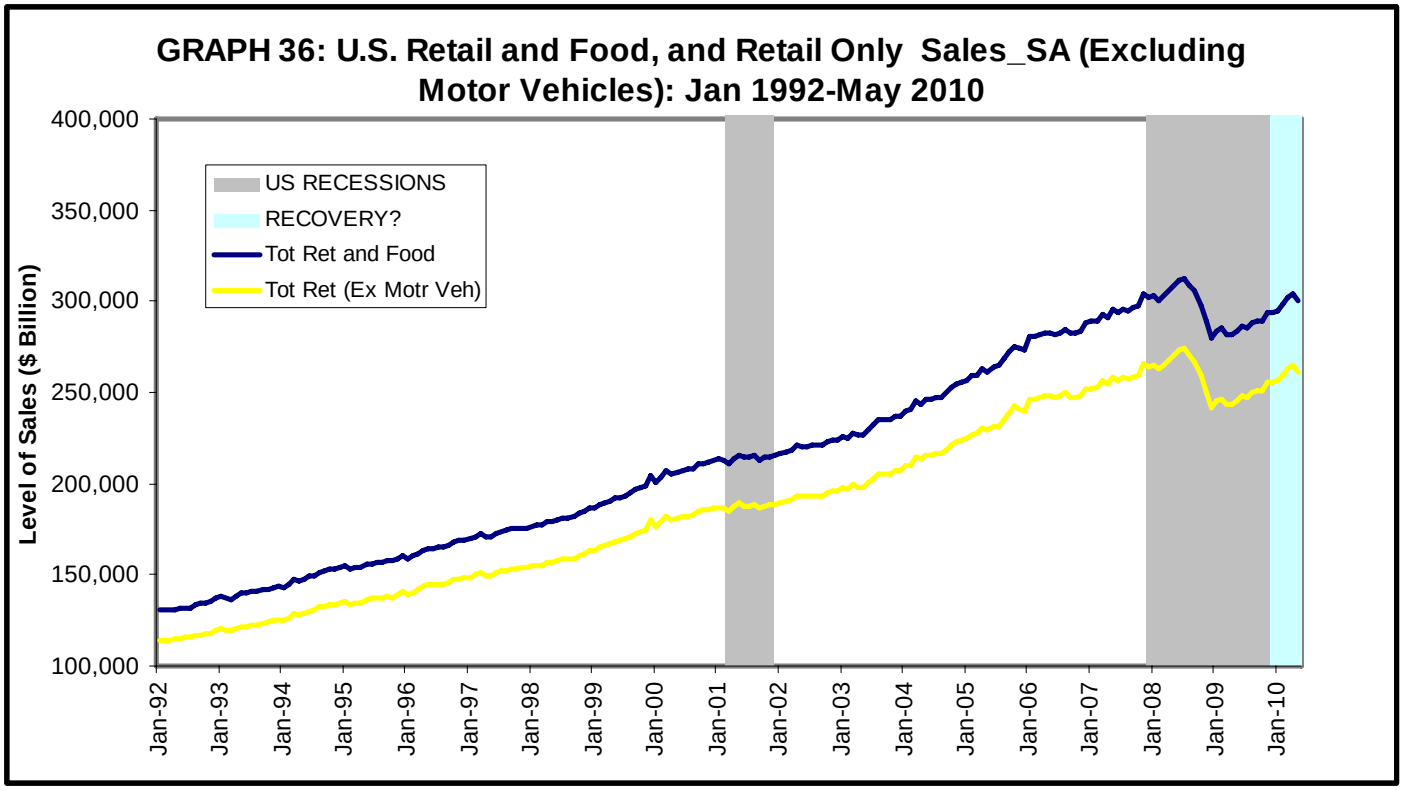
SOURCE: U.S. Census Bureau and calculations by CTDOL-Research.

New Orders for Non-Defense Capital Goods (Excluding Transport) Also from July 2008 to January 2009, New Orders for Non-Defense Manufacturing Goods (Excluding Transport) had their steepest drop for the 1992-2010 NAICS Series, declining by 26.1%, as depicted in Graph 35. And like New Orders (excluding Transport) after a bounce in February, non-defense orders bottomed out in March 2009. By April 2010, New Orders for Manufacturing Goods (excluding Defense) had bounced back more strongly than New Orders (excluding Transport), increasing by 19.5%.



SOURCE: U.S. Census Bureau and calculations by CTDOL-Research.

Retail Sales have followed the same pattern as the New Orders series in graphs 34 and 35. That is, after a sudden, and steep, drop coming into the current crisis, the path of the Retail Sales series has continued along the same track, as before the drop, but at a lower level. Again, as if there has been a downward shift in the vertical intercept, as the new trend line continues along its new, lower, path parallel to the old one.



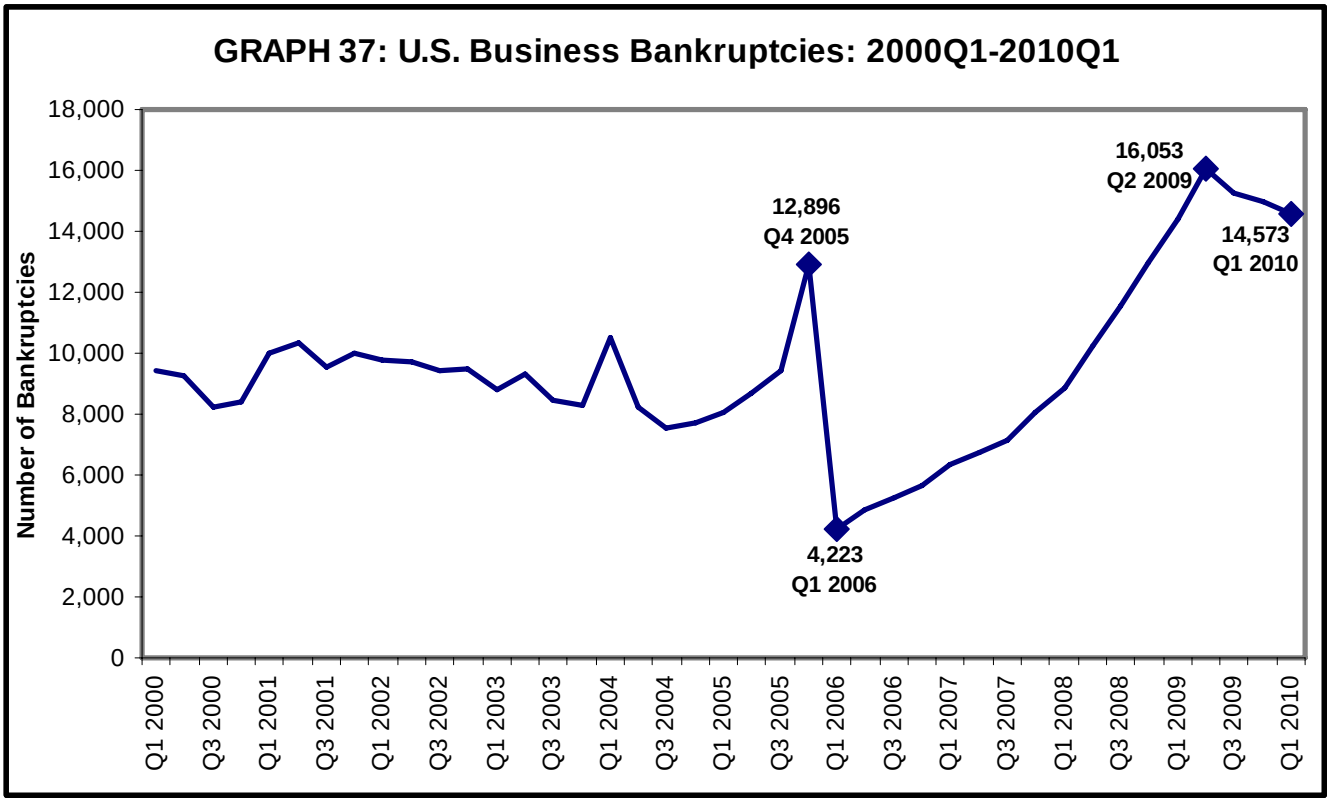
SOURCE: U.S. Census Bureau and calculations by CTDOL-Research.

After steep drops of 10.5% and 10.4%, between July and December 2008, US. Food and Retail Sales and U.S. Retail Sales (both excluding Motor Vehicles) recovered and began increasing again on a Month-to-Month basis. Food and Retail Sales had a setback in March 2009, with a 1.25% MTM decline, while Retail Sales declined by 1.30%. Both series had small declines (less than 1% on a MTM basis) in July and October 2009. However, there was a substantial decline in MTM sales for both series in May 2010. Food and Retail (excluding Motor Vehicles) declined by 1.10% in May, and Retail Sales (excluding Motor Vehicles) declined by 1.27%. This was the largest decline in both series in over a year. The May numbers are clearly disappointing and could be a sign of trouble for the struggling recovery. Of course, one month does not make a trend so the jury is certainly out until the June and July numbers come in.

Motor Vehicle sales peaked in July 2005 and then declined by 32% by December 2008. Boosted by "Cash-for-Clunkers" Motor Vehicle sales then grew by 12.4% between December 2008 and August 2009, and then dropped by 14.1% in September. Motor

Vehicle sales than turned around again and grew 16.1% by April 2010, with a slight decline in May's sales. In May 2010, U.S. Motor Vehicle sales were still 24.8% below their peak in July 2005.

The first thing to note on Graph 37 is the dramatic effect the 2005 Bankruptcy Act had on the ability of individuals to file for bankruptcy, particularly in their ability to file under Chapter 7. U.S. Bankruptcies dropped by two-thirds from 12,896 in 2005Q4 to 4,223 in 2006Q1. However, they climbed steadily after that, and increased by 380% to 16,053 in 2009Q2 over the recent crisis. By 2010Q1, bankruptcies had subsided to 14,573, a 9.2% decline since the peak in 2009Q2.

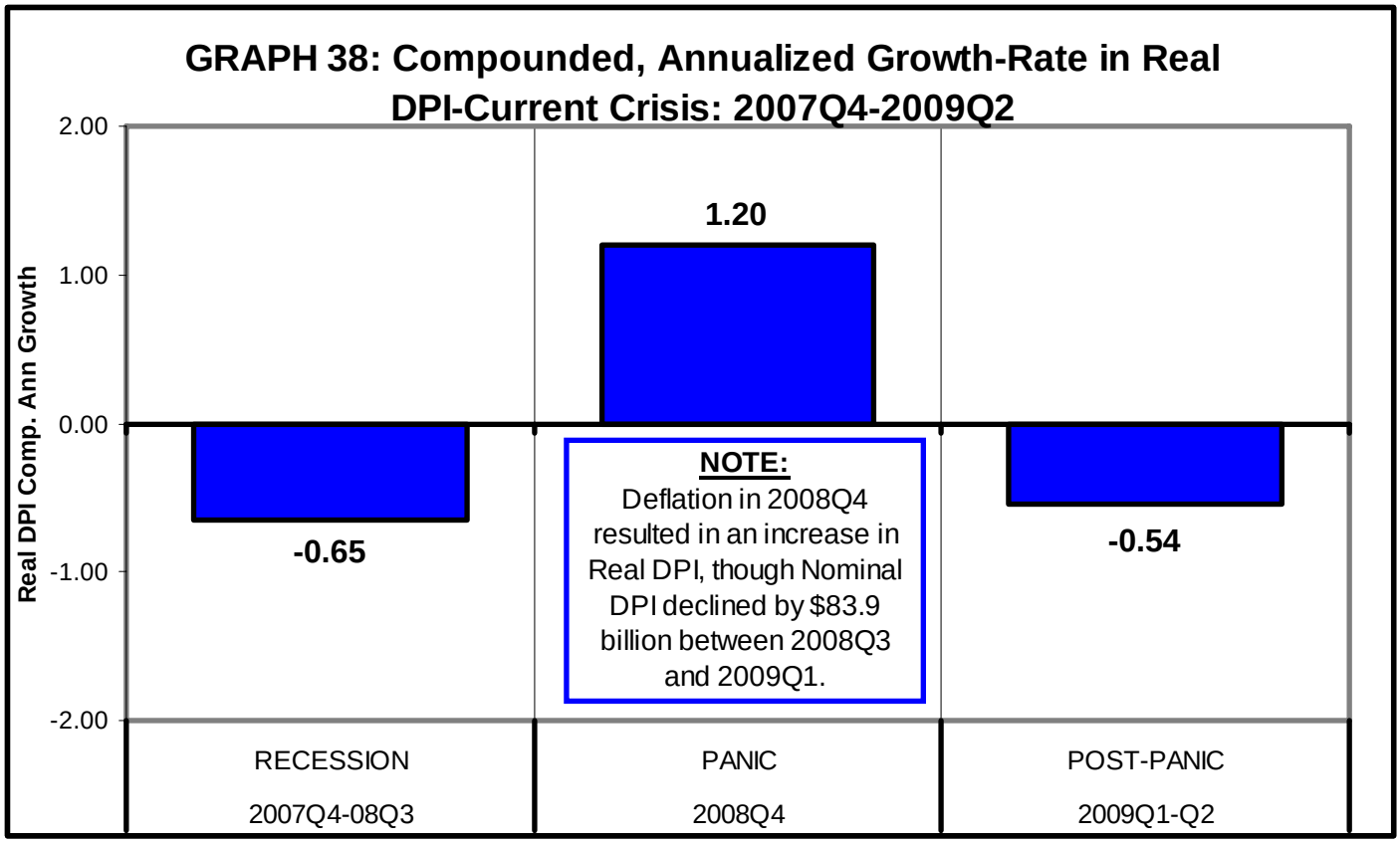


SOURCE: Credit-to-Cash Advisor.Com, Admin. Office-U.S. Courts)

E. HOUSEHOLDS: Consumer Spending Support

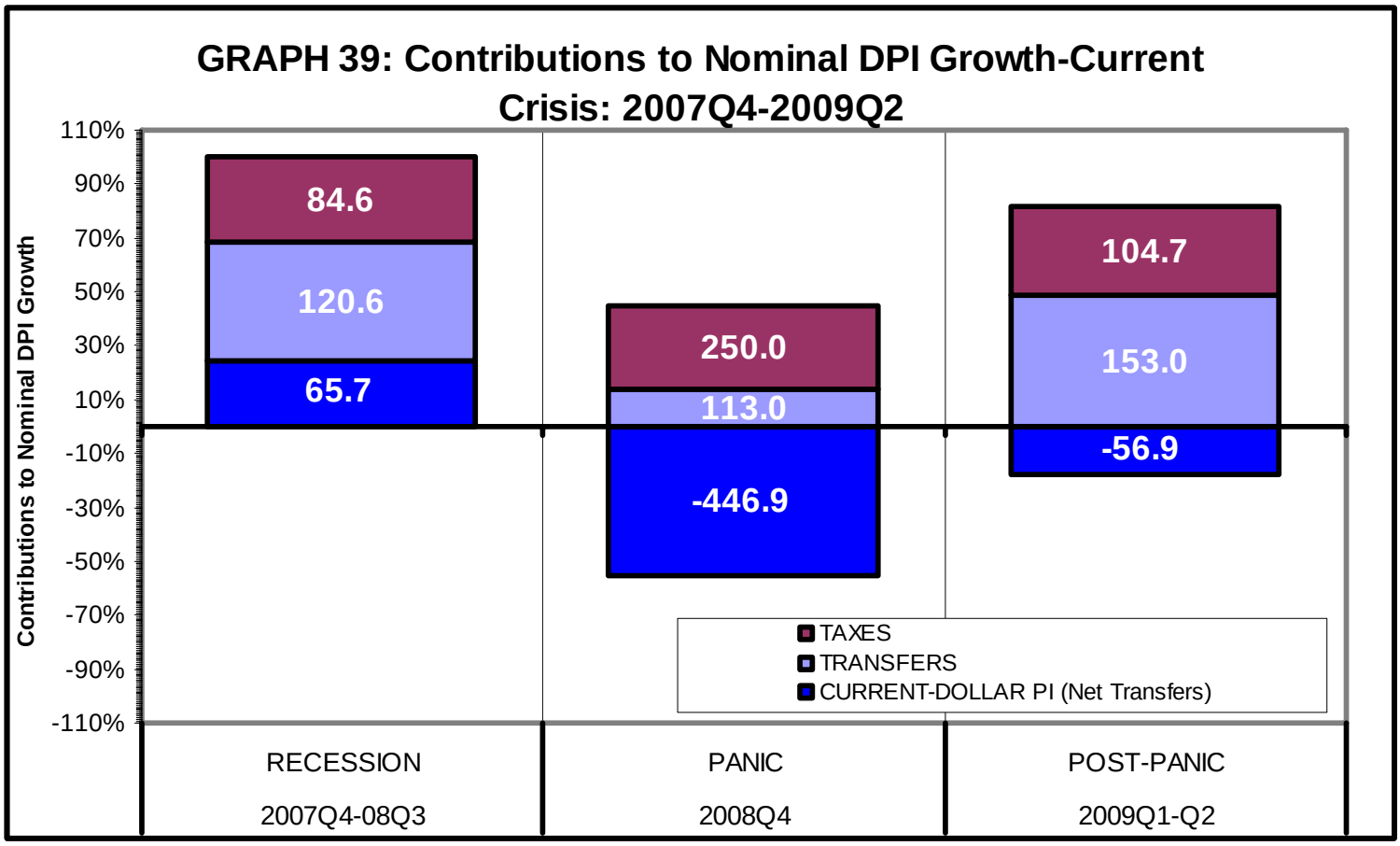
Recession and Panic

Households' Income Over the Current Crisis-- Graph 38 decomposes the current recession/crisis into three segments: Recession, Panic, and Post-Panic. As illustrated in Graph 38, Real Disposable Personal Income (RDPI) did decline by two-thirds of a percent, on a compounded, annualized basis, over the recession segment, and by one-half percent over the Post-Panic segment (first half of 2009). However, it was during the Panic itself that RDPI actually increased at a 1.20% rate. Though nominal DPI actually declined over the fourth quarter of 2008, the general price level also declined (whether measured by the CPI or the PCE Price Index). Since the rate of deflation exceeded the rate of decline in nominal income, real income actually increased.



SOURCE: U.S. BEA and calculations by CTDOL-Research.

Graph 39 decomposes the contributions to the change in Nominal DPI over the three segments of the 2007-09 recession/panic. As illustrated in Graph 39, Nominal Personal Income (net Transfer Payments) declined, and therefore subtracted from Nominal DPI growth, both in the Panic segment (2008Q4) and in the Post-Panic segment (2009Q1-2009Q2), but added to Nominal DPI growth over the Recession segment. Since taxes fell faster than income over all three segments, they made a positive contribution to the growth in Nominal Disposable Personal Income (DPI). Interestingly, Transfer Payments made a larger contribution to the growth in Nominal DPI over the Recession and Post-Panic segments than they did over the Panic segment.



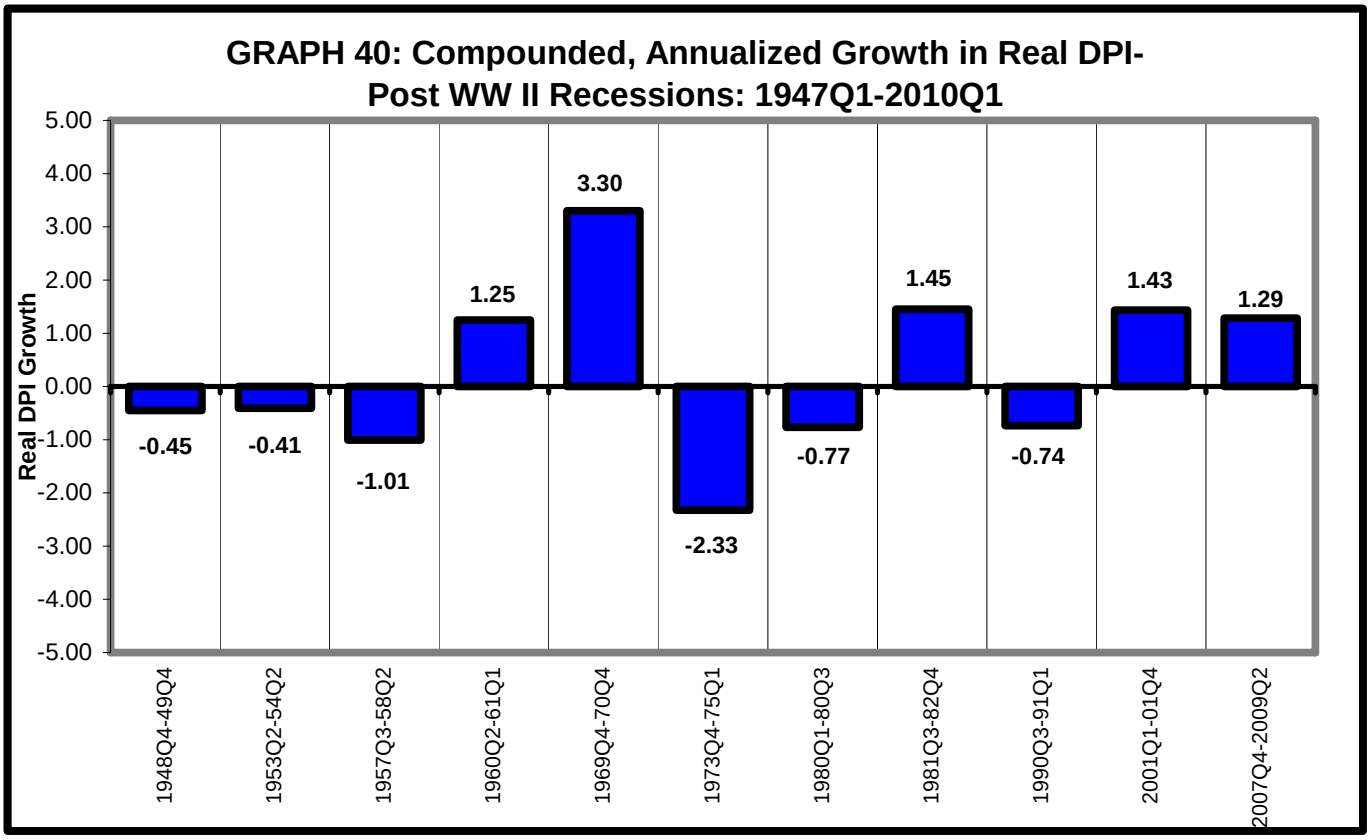
SOURCE: U.S. BEA and calculations by CTDOL-Research.

Recovery? Current Conditions

As shown above in Graph 18, the QTQ growth-rate in Real Disposable Personal Income (RDPI) has been oscillating (i.e., from positive to negative, and back to positive) since the first quarter of 2008. In the quarter of the turnaround in GDP-growth, 2009Q2, RDPI had a 6.20% (not annualized) spurt in growth, only to be followed by a 3.60% contraction in 2009Q3. There was no change in RDPI in the fourth quarter, but then in 2010Q1, RDPI grew, but only at a modest 1.90% rate (not annualized). How does the performance of DPI-growth stack up against other periods three months into recovery after the trough of a recession (assuming we are in the recovery phase)? To get a perspective on how DPI is performing over this cycle, compared to other Post World War II recoveries, the next sub-section compares the current performance of DPI to that of other periods, after three months of recovery from a recession, in the Post 1945 Era.

The Recession/Panic in Historical Context

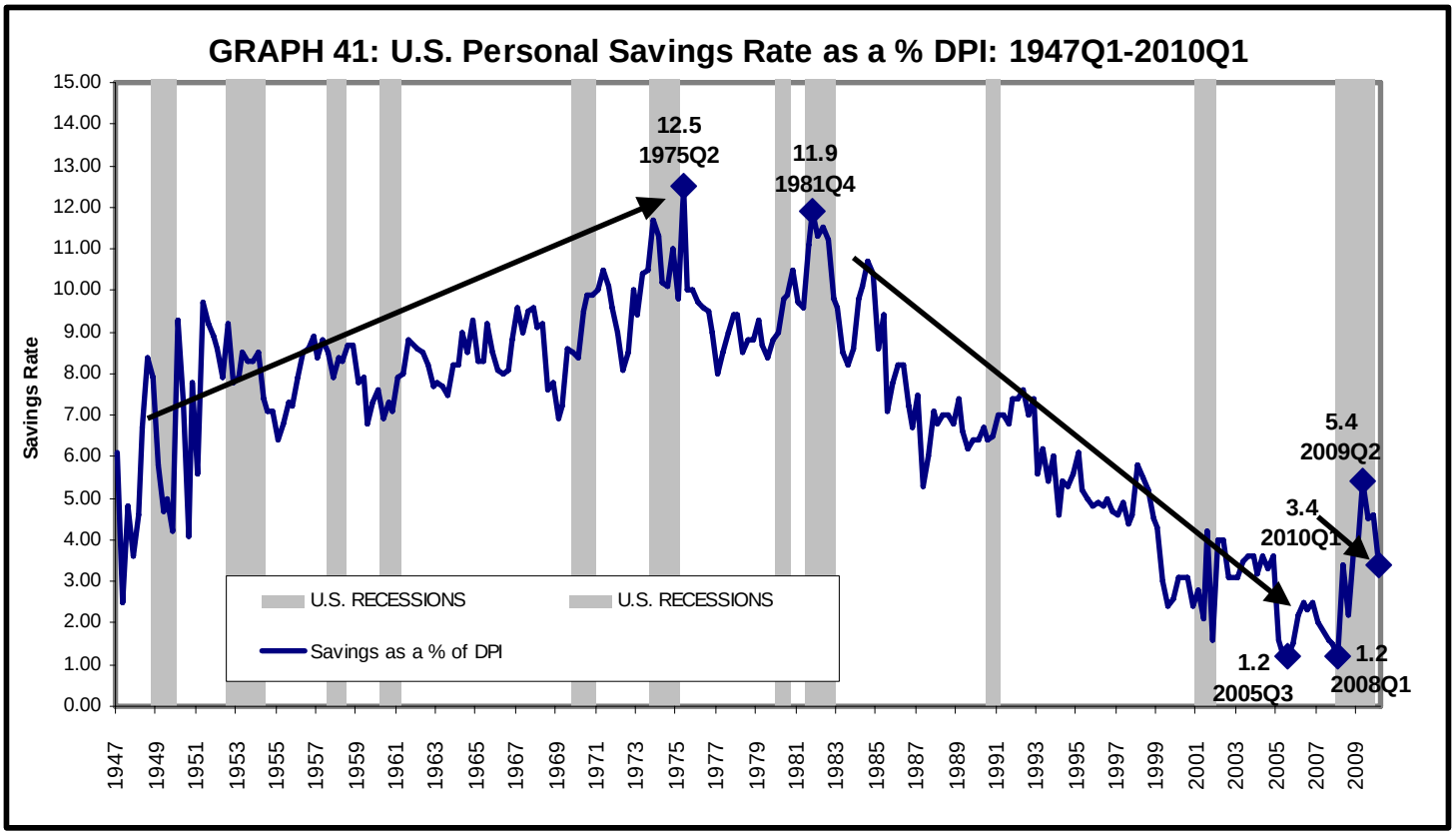
Disposable Personal Income--As depicted in Graph 40, the NBER has declared 11 recessions over the Post World War II Era. To put the comparisons on the same basis, since recessions are of different length, Graph 40 compares the compounded, annualized growth-rates of Real Disposable Personal Income (RDPI) over the 11 recessions. Over six of the Post World War II recessions, RDPI declined. The steepest decline was the 2.33% compounded, annualized rate over the 1973-75 Recession. However, in five of those recessions, including the current one, RDPI actually increased. The strongest growth was the 3.30% annualized growth-rate over the 1969-70 Recession. The weakest growth was the 1.25% rate over the 1960-61 Recession. The compounded, annualized growth-rate over the current recession/crisis is 1.29%, which is not as strong as the 1.43% rate over the last recession (2001).



SOURCE: U.S. BEA and calculations by CTDOL-Research.

U.S. Households' Savings Rate--As illustrated in Graph 41, the U.S. savings rate grew throughout the Post Word War II Era under the Bretton Woods regime. With the end of Bretton Woods and the fixed-exchange rate system, and rising energy prices, the U.S. savings rate hit a plateau between 1975 and 1981. From the fourth quarter of 1981, onward, with the onset of the twin deficits, and the consequent rise in the value of the dollar as the U.S. sucked in capital to finance the shortfall, the current account began a long, secular deterioration. With the explosion in imports, due to the consequent decline in the prices of imports, the U.S. savings rate began to plummet as domestic consumers began spending more than the domestic economy was producing (i.e., domestic absorption exceeded domestic output). Then, in 2009, savings rate climbed rapidly. The collapse of the housing market asset bubble contributed to this rate increase as it decimated household balance sheets. The onset of financial panic further influenced savings rate increases. After peaking at 5.4% in 2009Q2, the quarter in which GDP-

growth turned around, the savings rate of U.S. Households has since declined. By 2010Q1, the savings rate was 3.4%, though lower than during the recession/panic, it was still much higher than the 1.2% in 2008Q1.

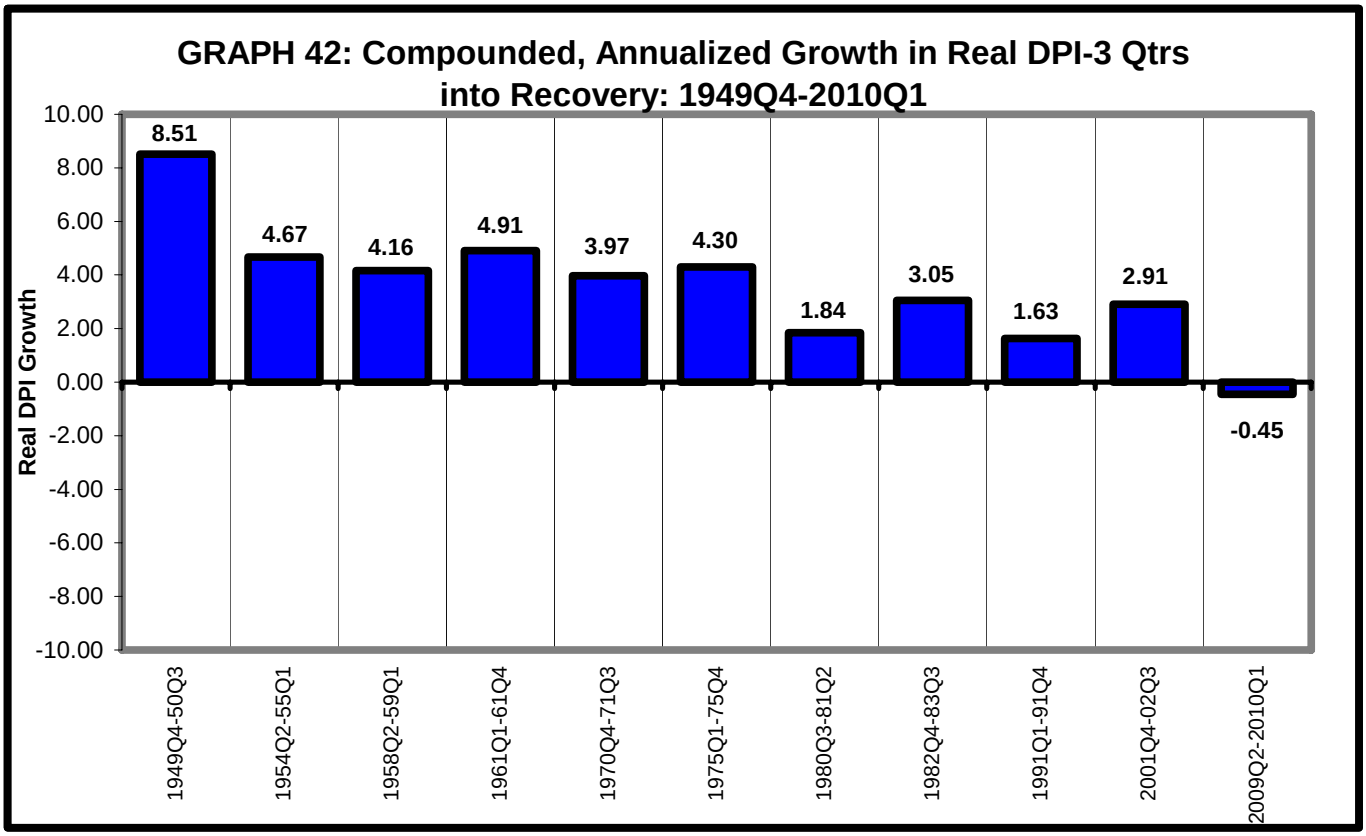


SOURCE: U.S. BEA and calculations by CTDOL-Research.

The "Recovery" in Historical Context

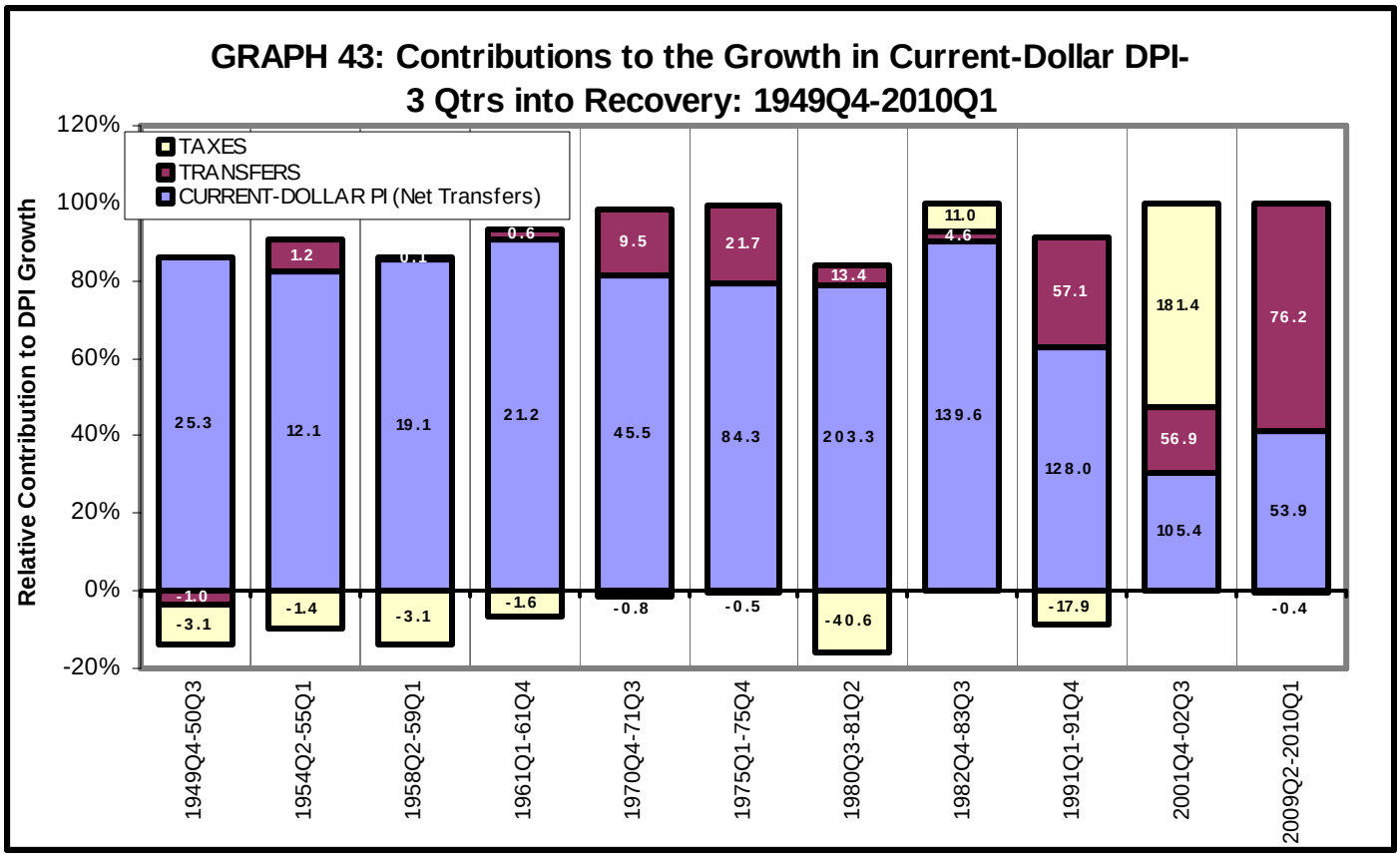
The above sub-section looked at the current cycle, particularly, the recession/panic phase, within the historical context of the post-war period. The discussion now turns to the apparent recovery phase, and how it measures up against similar recoveries in the Post World War II Era. Particularly, how does the performance of household DPI over the first three months of this recovery, assuming, in fact, we are in a recovery, compare to the first three months of past Post World War II recoveries, into their first three months. Graph 42 presents the compounded, annualized growth-rate in Household DPI three quarters after the Recovery in GDP-growth. So far, as depicted in Graph 42, the compounded, annualized growth-rate in RDPI, three quarters after the recovery in Real GDP-growth, is

the weakest in the Post World War II Era, which is not surprising given that this period follows the most series worldwide financial panic since the Great Depression. No other Post World War II recession, save the recent recession/panic, was accompanied by a financial panic There were only two periods following Post-1945 recessions in which the compounded, annualized growth-rate was less than 2% three quarters into recovery. first instance was that of the three quarters following the 1981-82 Recession, which was a steep contraction brought on by shutting off the flow of credit to the economy to bring down inflation. The second instance of sub-2% post-recession growth occurred after the 1990-91 Recession. This result is not surprising as this period followed a "mini" financial panic brought on by the Savings & Loan Crisis.



SOURCE: U.S. BEA and calculations by CTDOL-Research.

An observation of interest to note is the strong growth in RDPI the first three quarters after coming out of the steep contraction resulting from the retooling from a wartime to a peacetime economy in the late 1940's.



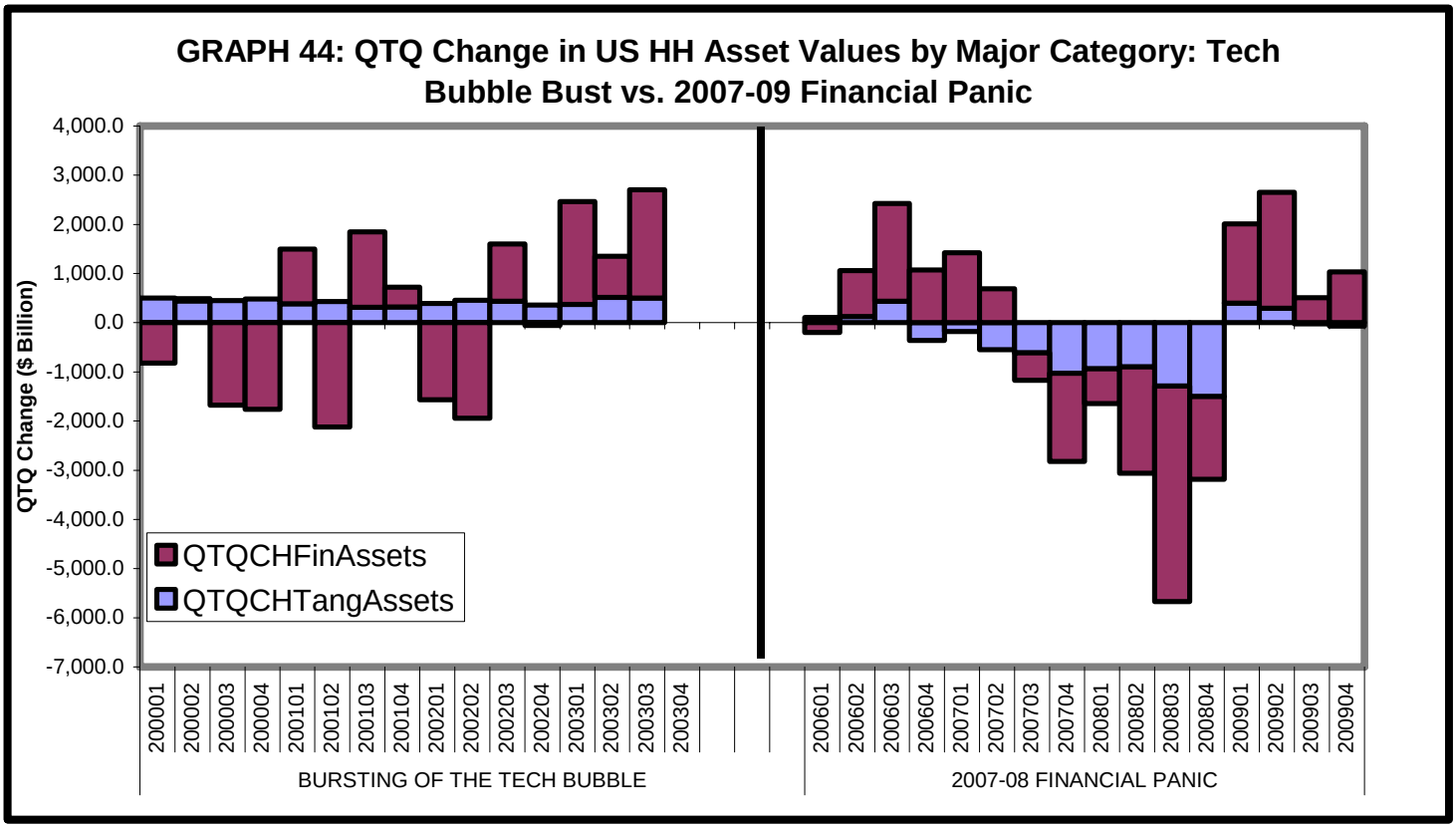
SOURCE: U.S. BEA and calculations by CTDOL-Research.

Graph 43 switches from real to nominal disposable income. As discussed above, this is due to the adding-up problem in trying to sum together chained-dollar components. Thus, Graph 43 shows Households' Income-Contributions to the Growth in Nominal DPI three quarters After the Recovery in GDP-Growth. Graph 43 compares the current three-quarters after GDP-growth recovery to other similar periods in the Post World War II Era. The first point of note is the period coming out of the 2001 Recession. Personal Income (Transfer Payments netted out) made the smallest contribution to the growth in Nominal DPI, three quarters into recovery. Over the current period, PI is one of two major contributors to the growth in Nominal DPI. However, its contribution is the second smallest of the Post World War II Era, only the PI-contribution coming out of the 2001 Recession was smaller (see above). It also appears that Transfer Payments have made the largest contribution to Nominal DPI growth coming out of the recent crisis. In fact, Transfer Payments have made the largest contribution to the growth DPI coming out of

the recent recession/panic than in any other recovery in the Post World War II Era. This of course, reflects the unique set of circumstances surrounding the recent recession, panic and recovery. It is the first recession accompanied by a financial panic since the Great Depression. Taxes bring up a second characteristic unique to the period coming out of the 2001 Recession and the current recovery. Taxes made the largest contribution to post-2001 Recession, Nominal DPI-growth compared to any similar period in the Post Word War II Era. More recently, taxes have made no positive contribution to the growth in Nominal DPI over the three-quarters since the recovery in GDP-growth over the current cycle. This compares with six recoveries in the Post World War II Era when Taxes actually subtracted from the growth in Nominal DPI.

HOUSEHOLDS' BALANCE SHEETS--Asset Side (Asset Price Deflation and Negative Wealth Affects)—As the housing bubble rapidly deflated, the value of U.S. Households' (HHs') Real Estate (RE) fell from its peak of $22.944 trillion in 2006Q4 to $15.686 trillion by 2009Q1. This is a loss in value of $7.260 trillion in wealth, and represents a 31.6% loss in housing wealth. This is a significant negative wealth effect, and a major explanation of the assets-side hit to Net Worth. By 2010Q1, HHs' housing wealth had rebounded slightly to $16.502 trillion, a 5.25%, or $823.2 billion increase between 2009Q1 and 2010Q1. Nevertheless, this still left the value of HH RE $6.436 trillion below its peak in 2006Q4. The collapse in home values was the major contributor to the decline in the value of HHs' Tangible Assets. Further, at the beginning of the end for the Tech Bubble in 2000Q1, Tangible Assets (mostly HH RE) were 30% of Total Assets, by the beginning of the bursting of the Housing Bubble in 2006Q1, Tangible Assets accounted for 39% of Total Assets on the U.S. Household Sector's balance sheet.

The other big hit to HHs' balance sheets, was in Financial Assets, particularly, Corporate Stocks. The peak in Corporate Equities wealth occurred two quarters after the peak in HH's RE wealth in 2007Q2, at $10.170 trillion, however, the relative contraction in value was steeper. HH's value of Corporate Equity declined by 49.24% between 2007Q2 and 2009Q1, and then recovered by 49.13% by 2010Q1. But this still left the value of Corporate Equities at 51% of their value at the peak of the expansion/bubble in 2007Q2.



SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

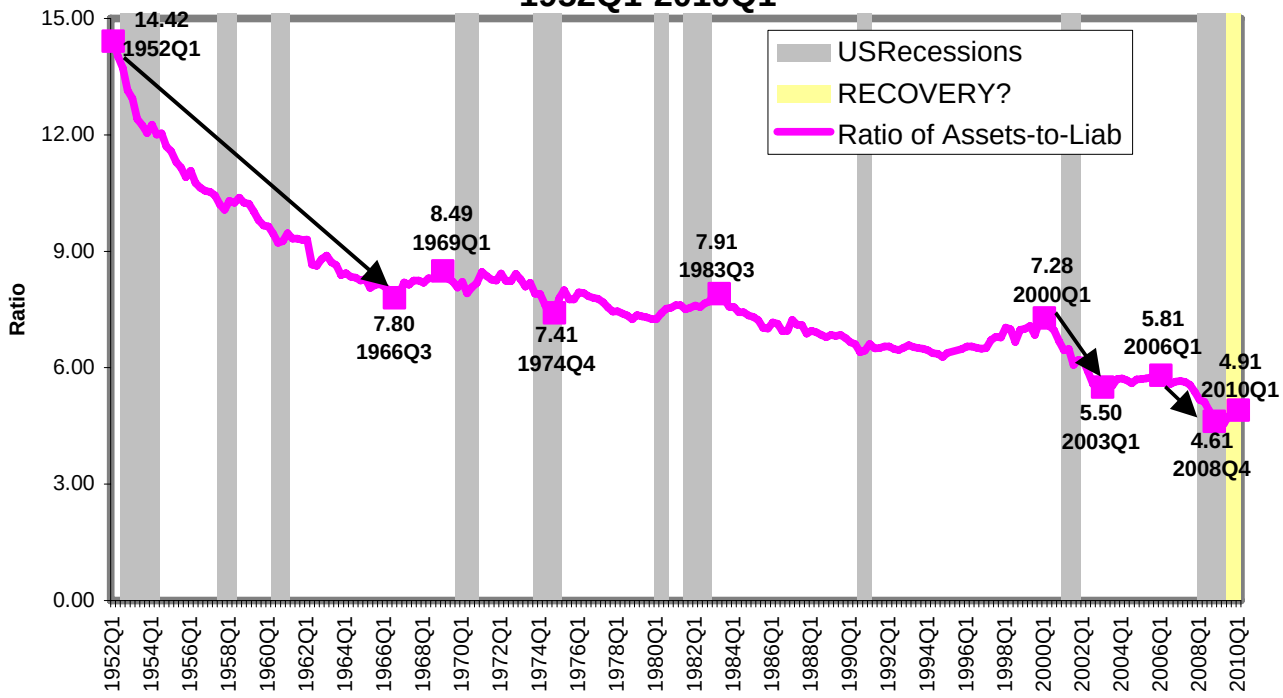
Graph 44 summarizes the behavior of the QTQ change in U.S. Households' assets over the Tech Bust from 2000Q1 and 2003Q4, and the 2007-09 Financial Panic on the heels of the Housing Bust from 2006Q1 to 2010Q1, the last period of available data. What stands out right away in Graph 44 is two observations: there was no decline in the value of Tangible Assets, all loss of value was confined to Financial Assets, and that there were six quarters of decline; one quarter of decline in 2000Q1, two consecutive quarters (2000Q2 and 2000Q3), one quarter of decline in 2001Q1, and finally, two consecutive quarters of decline in 2001Q4 and 2002Q1. By contrast, over the 2007-09 Housing Bust and Financial Panic, both, Tangible *and* Financial assets experienced significant declines in their value. Tangible Assets began subtracting from QTQ asset-growth in the fourth quarter of 2006. In 2007Q3, the quarter the stock market peaked, the value of Financial Assets also began to decline on a QTQ basis. Further, Total Assets also began to decline. And, though the recent panic also had six quarters of decline in Total Assets, unlike the Tech Bust decline, Total Assets declined for six consecutive quarters over the recent

crisis, with an unprecedented $5.7 trillion, QTQ decline, in the value of Households' Total Assets in the fourth quarter of 2008.

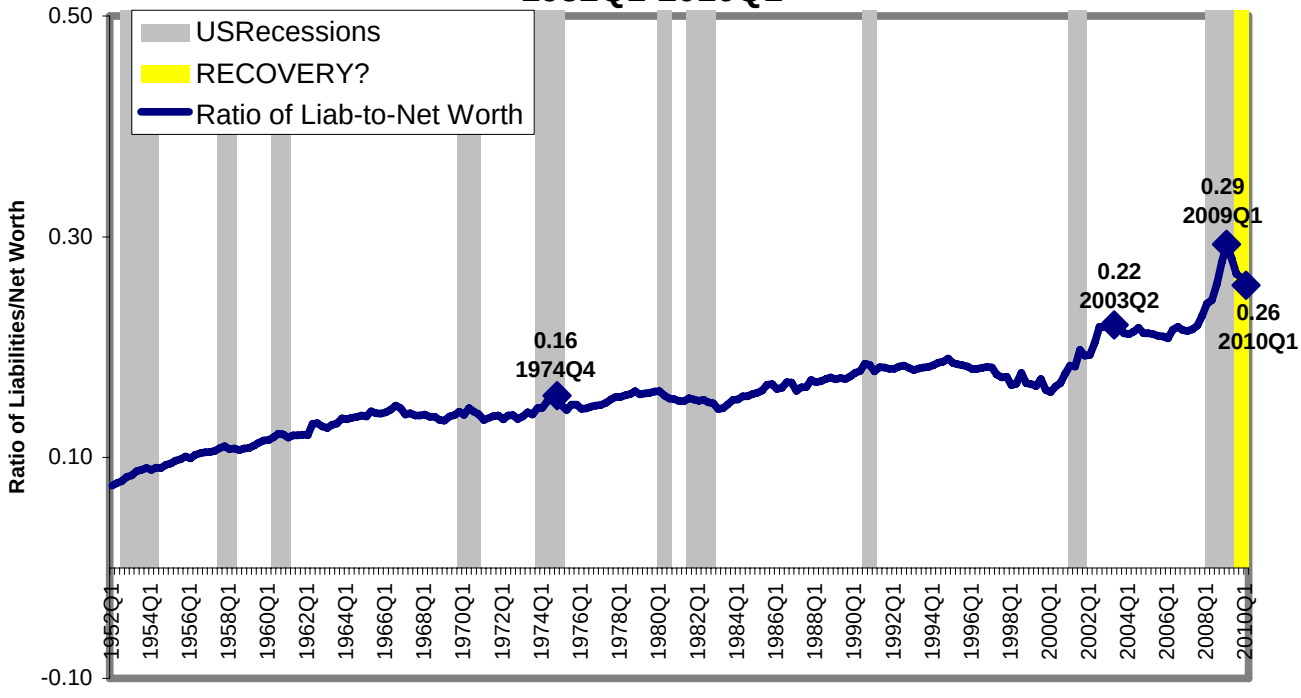
HOUSEHOLDS' BALANCE SHEETS--Liabilities Side (Leverage Ratios and Debt Burdens)—There are a family of ratios known as *Leverage Ratios* that gauge how much debt a business, household, non-profit, or government agency has relative to their ability to service it and meet their financial obligations In other words, they are indicators of the likelihood of facing insolvency (i.e., Assets – Liabilities < 0). Looking at financial indicators from the balance sheet, Graph 45 looks at a Leverage Ratio that calculates the ratio of Assets to Liabilities, and tracks it from 1952Q1 to 2010Q1. What is immediately obvious is the dramatic decline in the ratio of Assets-to-Liabilities from 14.42 in 1952Q1 to 7.80 in 1966Q3, indicating the Americans assumed higher and higher debt-loads from the end of World War II to the mid-1960's. This reversed somewhat until the onset of the 1969-70 Recession. The ratio remained over seven, but less than eight, up until the Tech Bust, 911, and the 2001 Recession. With the loss of wealth after the Tech Bust, in conjunction with the rise in sub-prime mortgages, Mortgage Equity Withdrawals (MEW), and the decline in homeowners' equity, the Assets-to-Liabilities Ratio fell to record lows in the Post World War II Era. With the onset of the Housing Bust and financial panic, brining about a collapse in asset values, along with accumulated high levels of debt the Assets-to-Liabilities Ratio set a post-war record low of 4.61 in 2008Q4. By 2010Q1 it had recovered somewhat to 4.91, but still in record low territory.

Another leverage ratio that conveys the ability to meet financial obligations is the Liabilities-to-Net Worth Ratio. Graph 46 covers the same period as Graph 45, but it tracks Liabilities-to-Net Worth from 1952Q1 to 2010Q1.

GRAPH 45: LEVERAGE RATIO: Assets-to-Liabilities: 1952Q1-2010Q1

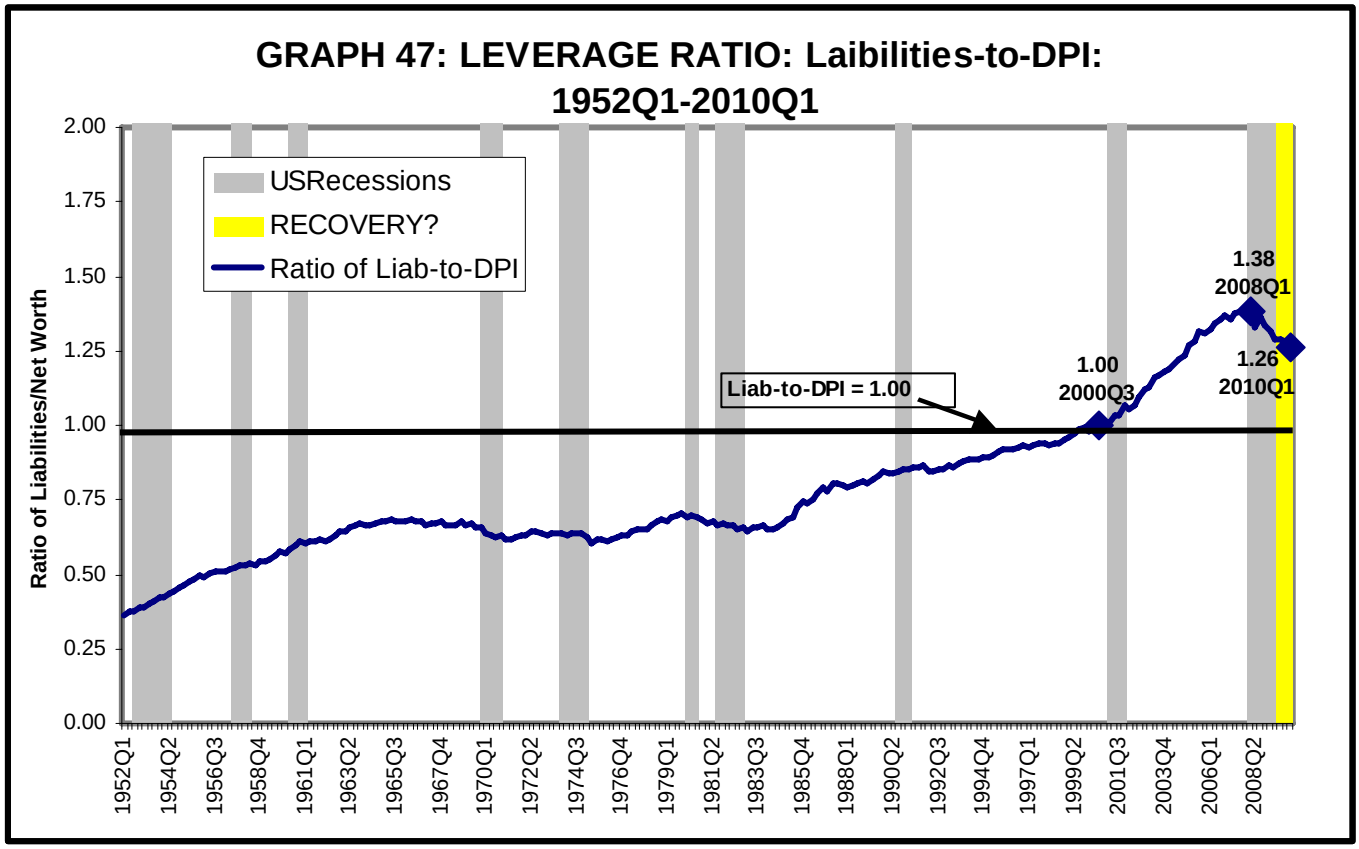


GRAPH 46: LEVERAGE RATIO: Laibilities-to-Net Worth: 1952Q1-2010Q1



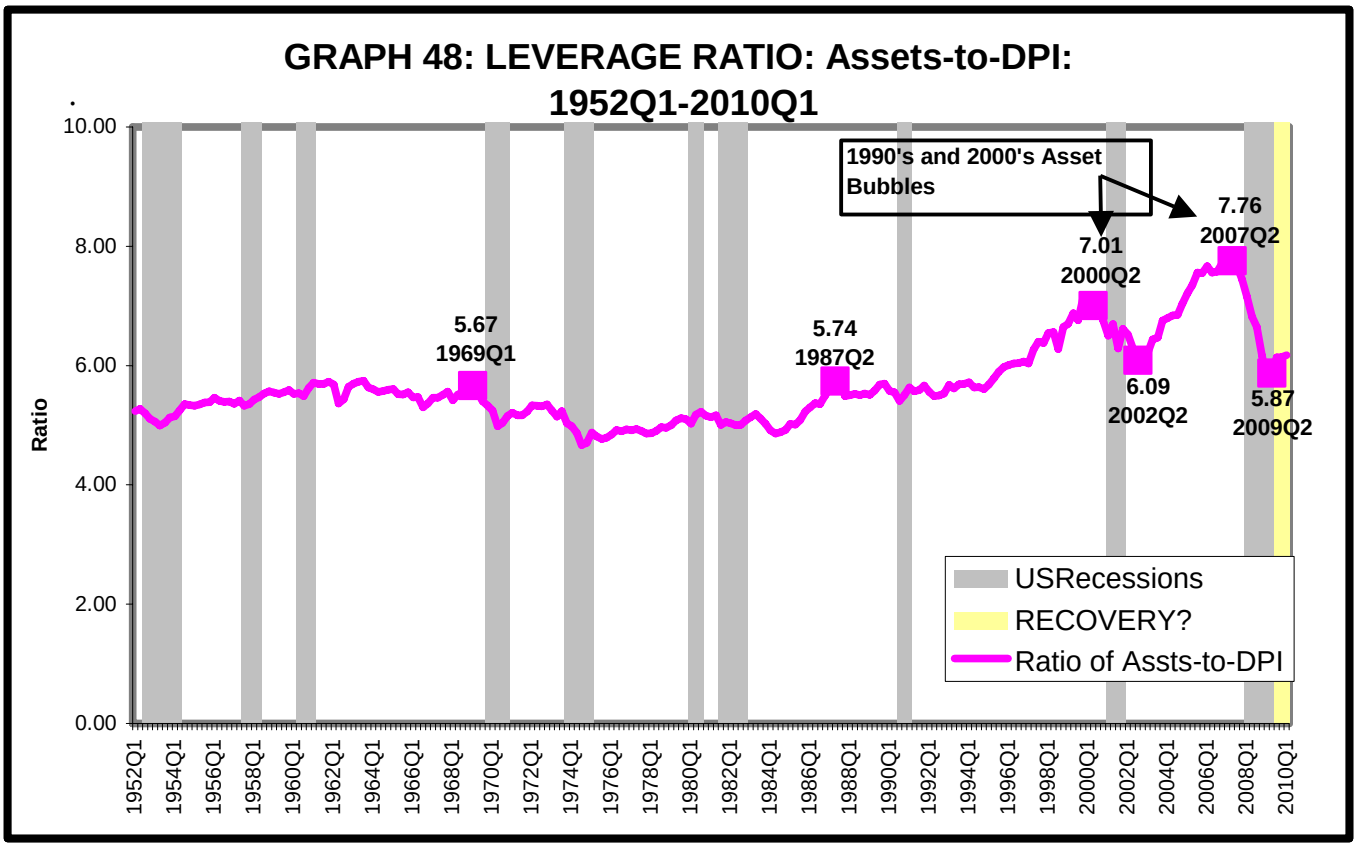
Again, it can be seen from this perspective too, in Graph 46, that U.S. Households' accumulation of debt was in record territory over the 2000's expansion/bubble. The Liabilities-to-Net Worth Ratio peaked at 0.29 in 2009Q1, and then declined somewhat to 0.26 in 2010Q1, but, like the Assets-to-Liabilities Ratio, the Liabilities-to-Net Worth Ratio is still in record territory—at least, for the Post World War II Era.

Another measurement of leverage takes Liabilities from the balance sheet and Disposable Personal Income (DPI) from the income statement. As depicted in Graph 47, the Liabilities-to-DPI Ratio shows that beginning in Q3 of 1984, U.S. households began to accelerate their accumulation of debt, relative to their DPI. This coincides with the beginning of the twin deficits associated with the acceleration in U.S. consumers' appetite for imports. In 2000Q3, the Liabilities-to-DPI Ratio hit and then surpassed 1.00 for the first time since available data on the Flow-of-Funds in 1952Q1. After hitting a record 1.38 in 2008Q1, it has declined to 1.26 in 2010Q1, which is still at record levels.



SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

Graph 48 demonstrates how the balance sheet can send misleading signals during an asset bubble with regard to the solvency of the entity and its ability to meet its financial obligations. Note the two bubbles in the Assets-to-DPI Ratio in Graph 48, one in the 1990's and one in the 2000's, each representing an asset bubble. In the 1990's the asset bubble was in stocks, particularly the so-called high-tech stocks centered on telecommunications and related industries during the Dot.Com craze. In the 2000's, the asset bubble was in housing. These are the only two periods over the entire range of data (1952Q1 to 2010Q1, that the Assets-to-DPI ratio exceeded seven. This gave the illusion that U.S. Households' balance sheets were particularly strong over these bubbles. Of course, once the bubbles popped, it was clear that balance sheets were, in fact, very weak, thus, the Assets-to-DPI Ratio can send misleading signals during an asset bubble resulting in "Wealth Illusion".



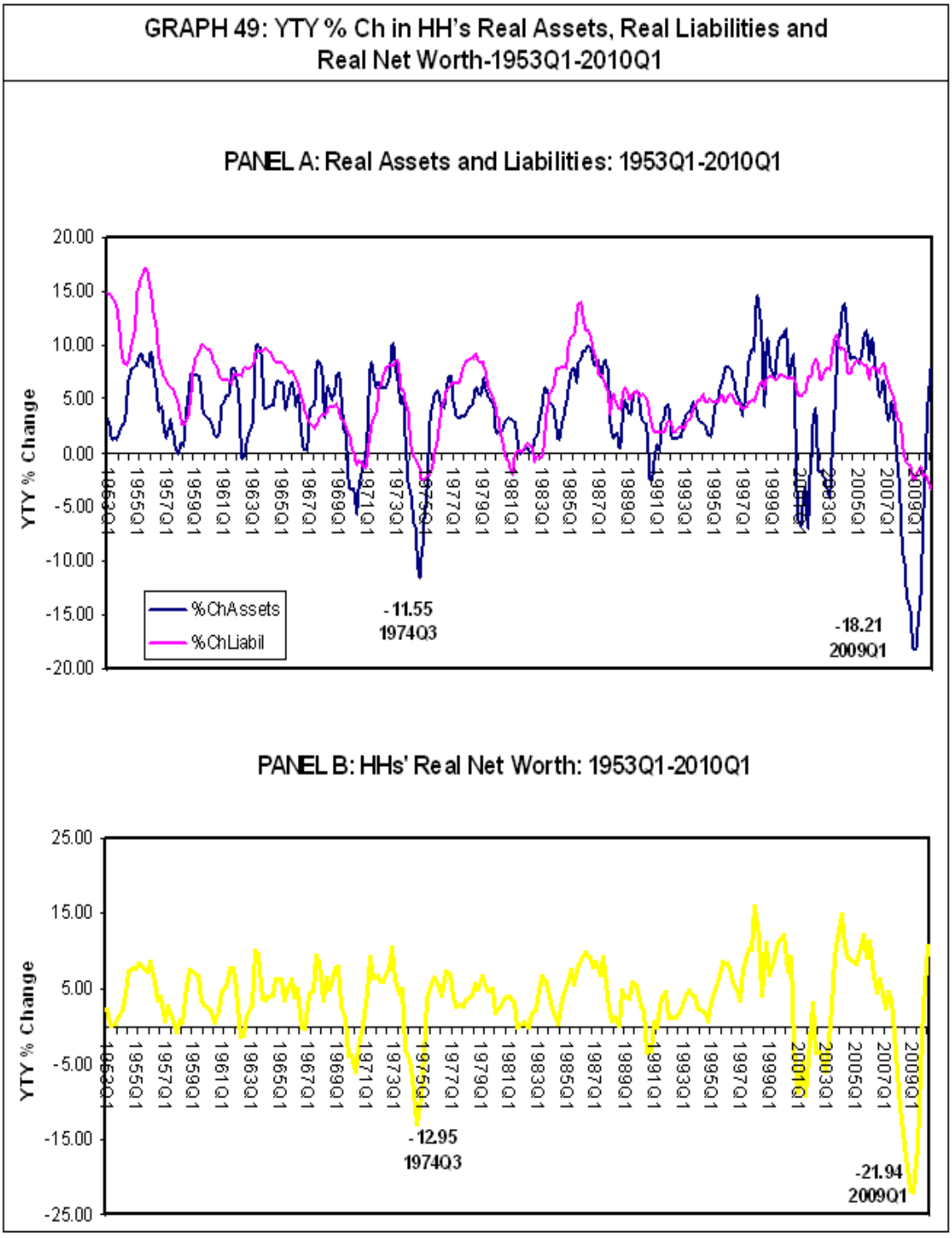
SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

Because of the noise in the data for the Quarter-to-Quarter (QTQ), percent-change, Graph 49 tracks the quarterly, Year-to-Year (YTY), percent-change from 1952Q1 to 2010Q1. Specifically, Graph 49 summarizes the behavior of the YTY percent-change in Real Assets and Real Liabilities from 1952Q1 to 2010Q1 in Panel A, and the consequent behavior in the YTY percent-change in Real Net Worth in Panel B. What stands out in Graph 49 is that changes in Net Worth appear to be driven by changes in the value of Assets. The rises and declines in the curve representing the YTY percent-change in Net Worth appears to be exactly in phase with the curve representing the YTY percent-changes in the value of households' Assets. In fact, the two curves appear to be parallel and coincident. This would imply that U.S. Households' Net Worth is driven by the rises and declines in Asset values. When balance sheets look deceivingly strong, as during asset bubbles, high levels of debt do not appear to present a problem in terms of households' meeting their financial obligations. However, the collapse of two asset bubbles two decades in a row has brought home the reality that balance sheets can deteriorate rapidly in the face of abrupt asset deflation. After this event, existing debt burdens suddenly become onerous.

As depicted in Panel A, there are only two periods in which Assets, and thus, Net Worth (see Panel B), suffered steep declines in value, on a YTY basis. Assets, on a YTY basis, declined by more than 10% twice over the Post World War II Era: in 1974Q3, when Asset-values declined by 11.55%, and in 2009Q1, when Asset-values declined by 18.21% (see Panel A). The decline in Net Worth exceeded 10% over the same two periods that it did in Asset values, as discussed above. Net Worth declined by 12.95% in 1974Q3, and by 21.94% in 2009Q1—the only time in the Post World War II Period when Net Worth declined by more than 20%. The only other period in which the decline in Net Worth approached 10% was in 2001Q3, when Net Worth dropped by 9.18%, on a YTY basis (see Panel B)

In addition, given the low-inflation, and even a couple of quarters of deflation, environment, the decline in assets with the accumulation of high debt burdens, implied that real debt burdens were becoming onerous—a situation reminiscent of the 1930's.

GRAPH 49: YTY % Ch in HH's Real Assets, Real Liabilities and Real Net Worth-1953Q1-2010Q1



SOURCE: Federal Reserve Board and calculations by CTDOL-Research.

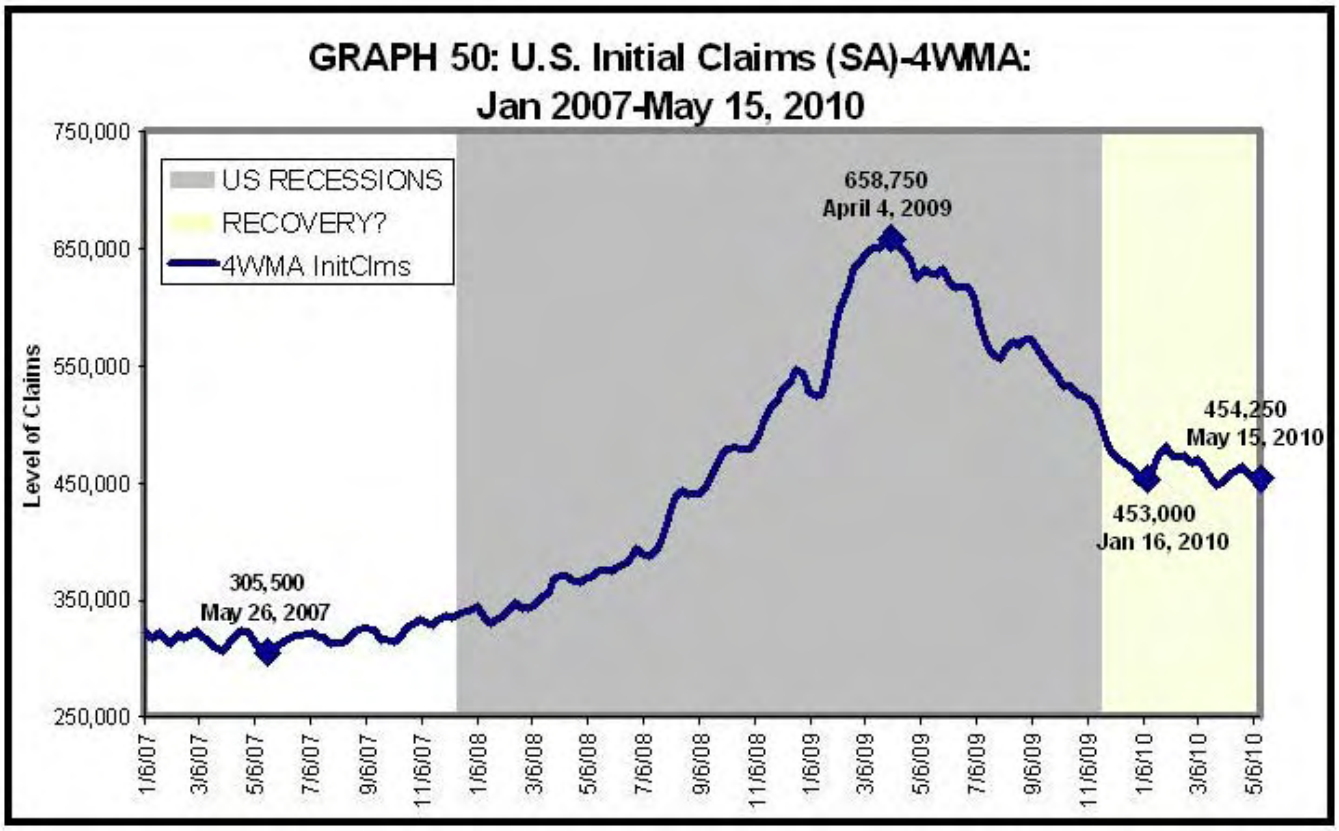
NOTE: Assets and Liabilities deflated by the PCE Price Index to obtain Real values.

F. LABOR MARKETS: Current Conditions, Context, and Implications

To most Americans, the Job market is the most important indicator of how the U.S. Economy is doing. Many other economic indicators seem remote or abstract. Having a good-paying job means having the income to pay the mortgage or rent, make the car payment, and to pursue other goals, including economic security. Politicians know too that if their constituents have good-paying jobs and confidence in the future then their lives are made that much easier, and more importantly for them, it increases their own job security. This section turns to assessing current economic conditions and the effects of the recent recession/crisis on the U.S. Labor Market. First, how the labor market fared as the economy descended into recession and panic is reviewed. Next, how job markets are performing, if we are in fact experiencing a recovery, is examined. The section then closes with an examination, in historical context, of the effects of the recent recession/panic and apparent recovery on the labor market.

Initial and Continued Claims

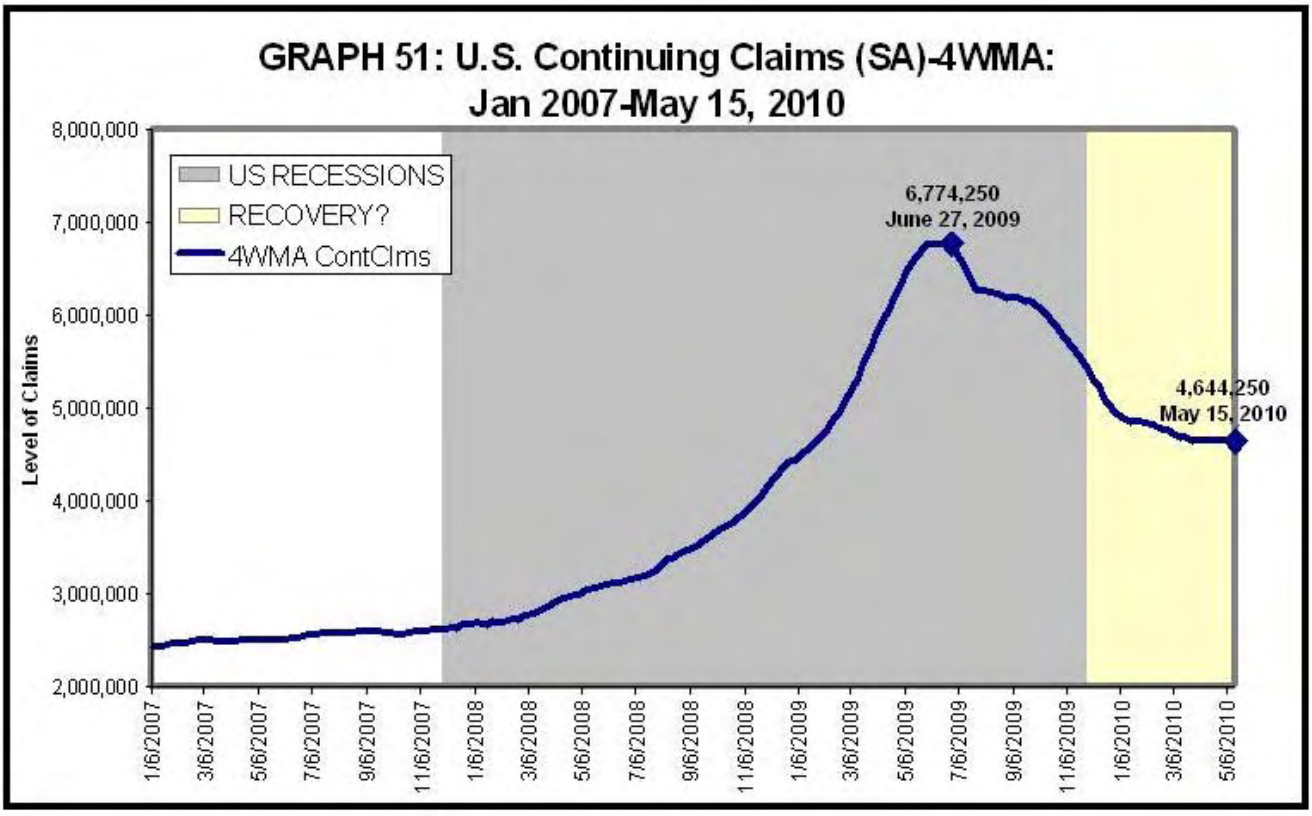
Recession and Panic—The most timely signal that observers turn to for an indicator of current labor-market conditions is *Initial Claims*. It is a high-frequency series available on a weekly basis. No other labor-market indicator, save Continued Claims, is available so frequently, with such a short lag-time .The other indicator, introduced above, also available on a weekly basis, and one that provides a rapid-turnaround signal, is *Continued Claims*. Initial Claims counts those who have received a first Unemployment Insurance (UI) check, while Continued Claims counts those who receive UI checks in weeks following the week in which their first-check was issued. Because both Initial and Continued Claims are high-frequency series they tend to have their signals masked by a significant amount of statistical noise. To filter the noise, even the seasonally-adjusted forms of both series are usually analyzed in terms of their four-week moving averages (4-WMA) to further filter out the noise and smooth the series.



SOURCE: U.S. ETS

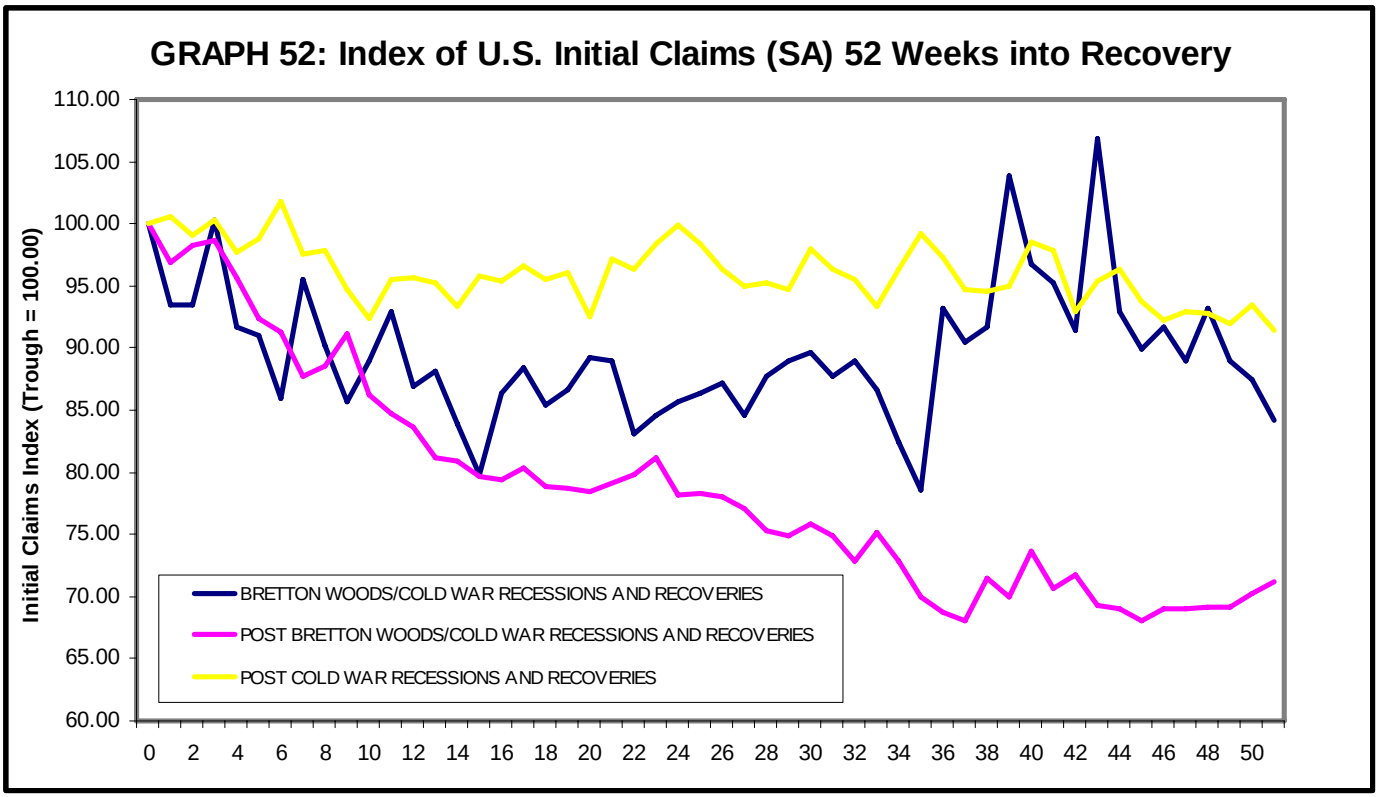
Graph 50 tracks U.S. Initial Claims from the first week of January 2007 to the week of May 15, 2010, the last week of data at the time of writing. The seasonally adjusted U.S. Initial Claims series peaked the week of April 4, 2009 at 658,750 from a low of 305,500 seven months before going into recession during the week of May 26,2007. That was an increase of 353,250 Initial Claims, which represented a 216% growth in the number of first-checks cut between the week of May 26, 2007 and the week of April 4, 2009, when Initial Claims peaked.

Graph 51 reproduces the same analysis as that in Graph 50, except it is for Continued Claims. Continued Claims in Graph 51 generally display the same behavior as Initial Claims in Graph 50, except that Continuing Claims peak two months later in June 2009 at 6.8 million (4WMA). Since then Continued Claims have steadily declined throughout 2009 and into the first five months of 2010. The 4WMA of Continued Claims was 4.6 million the week of May 15, 2010.



SOURCE: U.S. ETA

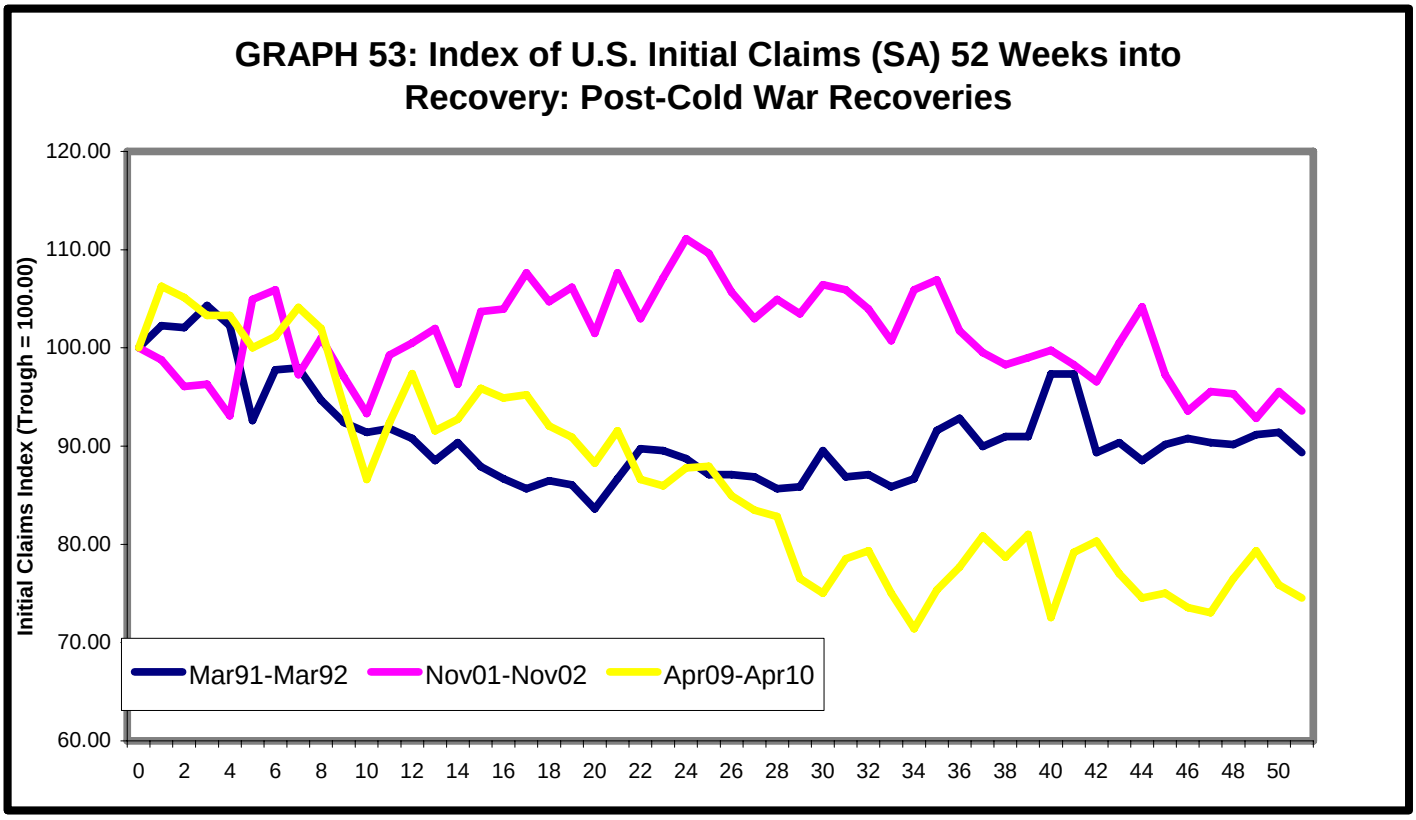
Recovery? Current Conditions—To put the behavior of Initial and Continued Claims in historical context, Graph 52 compares the behavior of U.S. Initial Claims 52 weeks into recovery from Post World War II recessions. To compare across recovery periods, an index was constructed with the base period (=100.00) being the period when NBER declared a trough, except for the current recovery period in which 100.00 is pegged the peak of initial claims since NBER has not yet declared a trough for the last recession. The average index values were constructed such that there is one for Bretton Woods/Cold War recoveries, one for Post-Bretton Woods/Cold War recoveries, and one for the two Post Cold War recoveries (i.e., not including the recent recession/crisis). Interestingly, it was the Post-Bretton Woods/Cold War Era when Initial Claims declined the most rapidly in the 52 weeks of recovery following a recession. What is also notable is that Initial Claims do not decline that much over the first 52 weeks of recovery for the two Post-Cold War recoveries.



SOURCE: U.S. ETA and calculations by CTDOL-Research.

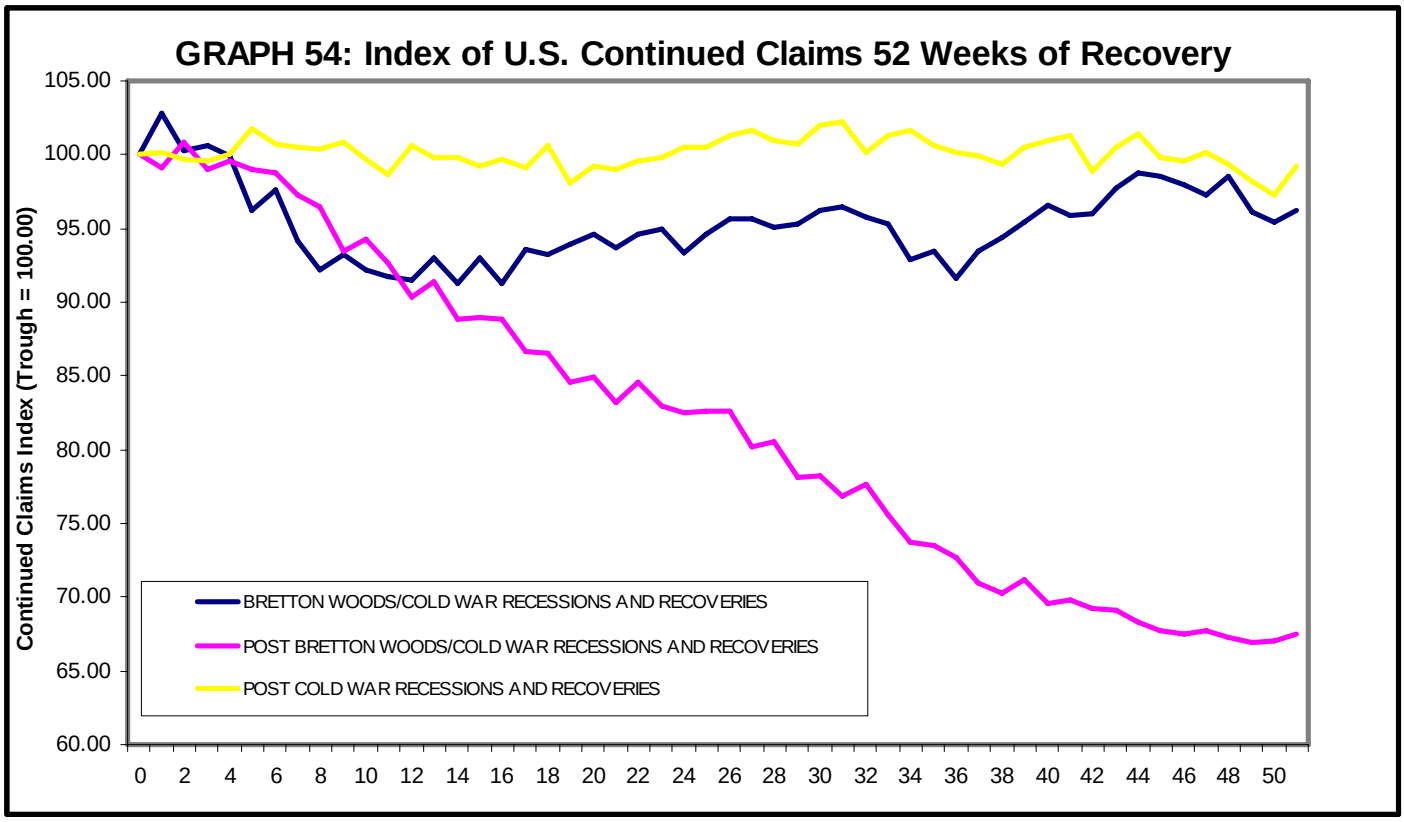
Another observation of interest from Graph 52 is that Initial Claims actually increase again after 35 weeks over the Bretton-Woods Era recoveries. In fact, there are two spikes in Initial Claims: one after 38 weeks and one after 43 weeks.

Graph 53 narrows in on the Post Cold War Era. It tracks the behavior of index values for Initial Claims for the individual recoveries in the Post Cold War Era, including the current cycle. Fifty-two weeks into the current, apparent recovery indicates that Initial Claims closely tracked the behavior of Initial Claims coming out of the 1990-91 Recession until week 22. At that time, the level of Initial Claims over the current cycle fell below the path of the Post-1990-91 recovery period In fact, the track of Initial Claims is significantly below that of the other two Post Cold War recovery periods, 52 weeks into recovery. After 52 weeks of decline, Initial Claims have declined by 25.45% over the current cycle, compared to 10.66% fifty-two weeks into recovery after the 1990-91 Recession, and 6.42% 52 weeks after the end of the 2001 Recession.



SOURCE: U.S. ETA and calculations by CTDOL-Research.

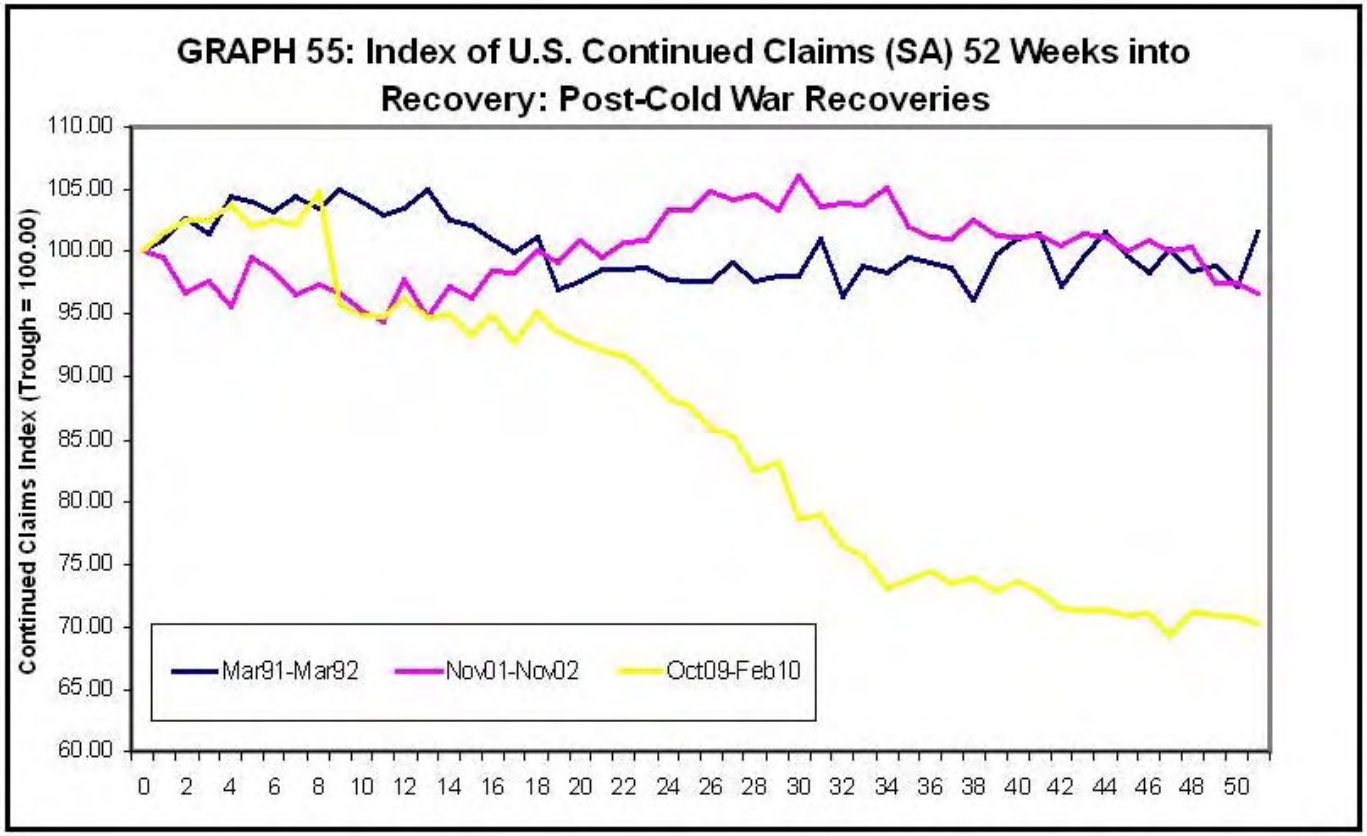
Graph 54 emulates the analysis of Graph 52 while substituting Initial Claims for Continued Claims. Both graphs display the same post-trough response behavior. During the Post-Bretton Woods/Cold War Era when Continued Claims declined the most rapidly in the 52 weeks of recovery following a recession. And, likewise, Continued Claims do not decline that much over the first 52 weeks of recovery for the two previous Post-Cold War recoveries.



SOURCE: U.S. ETA and calculations by CTDOL-Research.

Graph 55 focuses in on the Post Cold War Era. It tracks the behavior of index values for Continued Claims for the individual recoveries in the Post Cold War Era, including the current cycle. What stands out in Graph 55 is the rapid drop in Continued Claims over the current recovery period. For the other two Post Cold War recovery periods, Continued Claims did not decline over the 52-week period following the recovery from recession. In fact, over the recovery period for the 2001 Recession, Continued Claims grew for 30 weeks before declining slightly. So is the rapid decline in Continued Claims over the current cycle cause for celebration? Maybe not: there have been political roadblocks to extending UI benefits, so this may reflect more being thrown off the roles rather than finding work, especially given the rapid deceleration in net, Private-Sector job-creation in May 2010, reflected in the June *Labor Situation*[12].

[12] U.S. Bureau of Labor Statistics, THE EMPLOYMENT SITUATION –MAY 2010 (June 4, 2010)

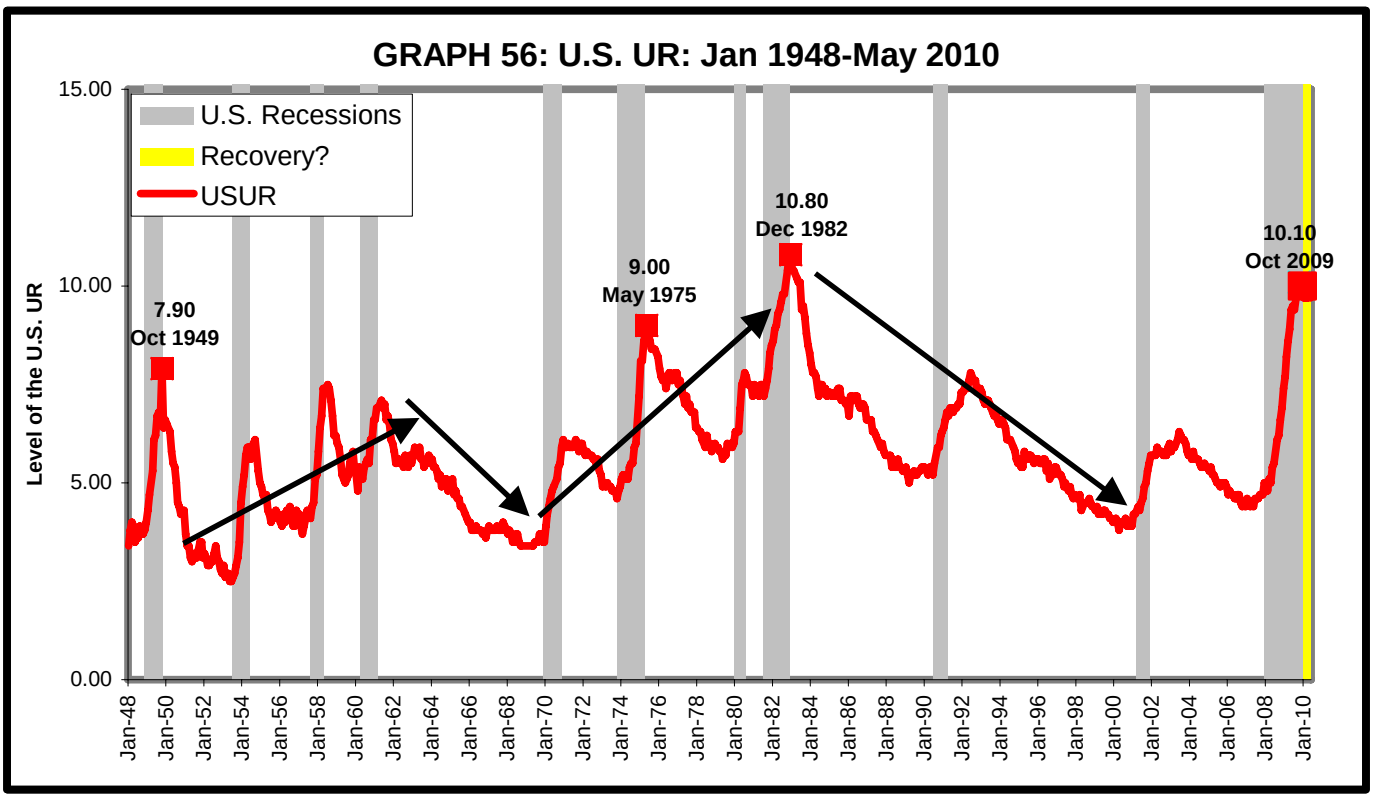


SOURCE: U.S. ETA and calculations by CTDOL-Research.

The Unemployment Rate: Is There a Long Wave?

What stands out in Graph 56 is what appears to be a "Long Wave" in the U.S. UR—at least, throughout the Post World War II Era. After peaking in December 1949, at 7.90%, the U.S. UR dropped to 2.60% in July 1953 before the onset of the 1953-54 Recession. From that point until the beginning of the 1960 Recession the U.S. UR began trending upward. Until the 1960 Recession, each peak in the UR was higher than the previous peak, and each trough was higher than the previous trough. Then, following the 1960 Recession and the subsequent nearly decade-long expansion until the last part of 1968/first part of 1969 when it bottomed at 3.40%. With the onset of recession in December 1969, it once again continued on an upward track until December 1982, when it reached 10.80%, the highest level in the Post World War II Era. It than began a steady decline, as both the peaks and the troughs in the UR cycle were successively lower until it bottomed out in December 2000, at 3.90%. With the onset of the Tech Bust, the 911 Attacks, and the 2001 Recession, the cycle was once-again, on the upswing. The trough of the UR cycle over the subsequent recovery/expansion occurred in the second quarter of 2007 when the UR averaged a low of 4.40%, ½ percentage-point higher than the December 2000 trough. So far, over the current cycle, the UR has peaked at 10.10% in

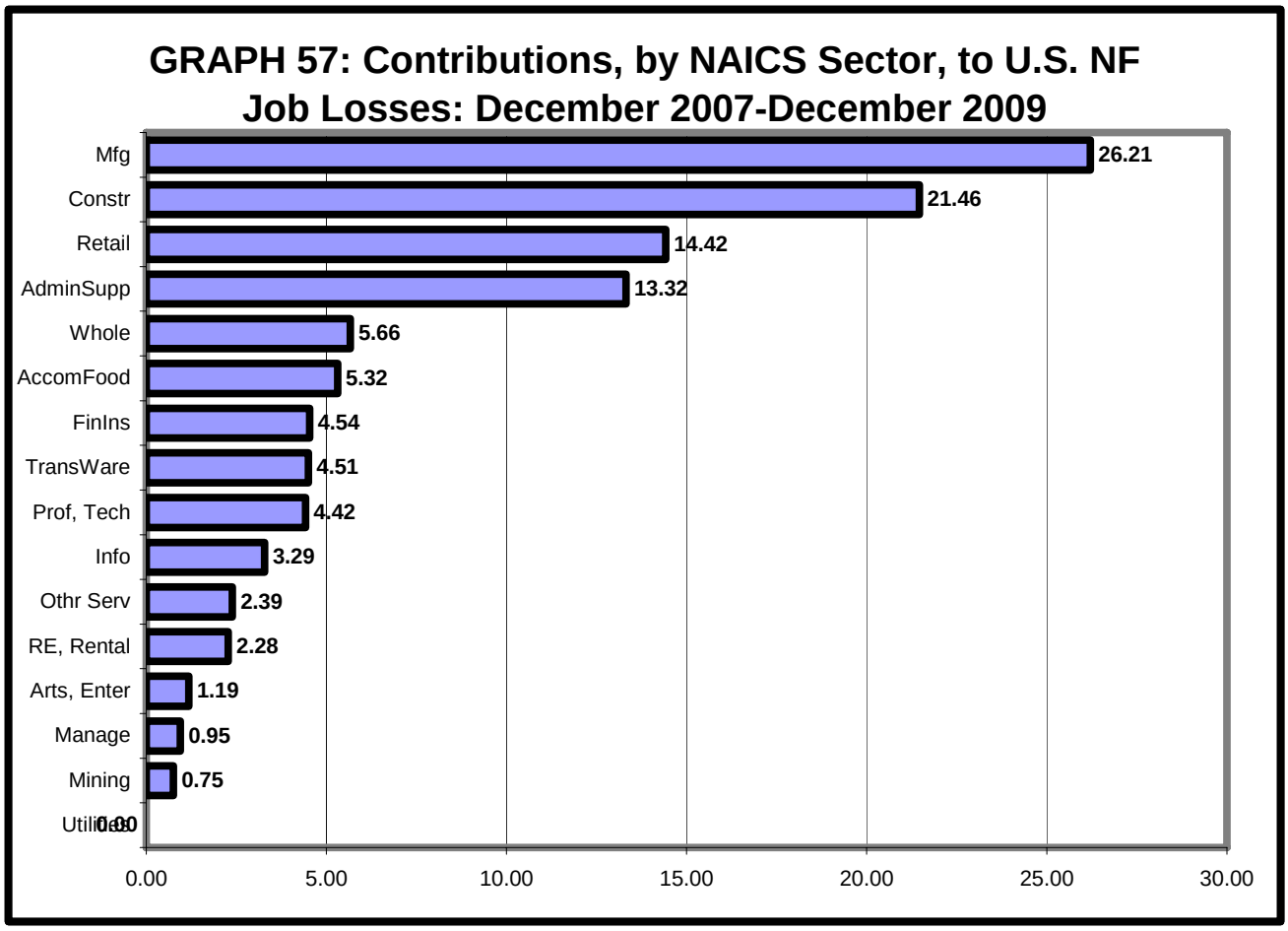
October 2009. Are we once again on the upside of a UR Long Wave? If so, this would portend an unprecedented level of the UR, in the Post-War Era. If a double-dip recession akin to that experienced during the 1980 and 1981-82 recessions occurs, UR may peak even more significantly.



SOURCE: U.S. BLS.

Non-Farm Jobs Over the Current Cycle

Recession/Panic—Between December 2007 and December 2009, the U.S. Economy lost 8.4 million Non-Farm jobs. If, in fact, the NBER declares December 2009 the trough of the recession then that would make the recent recession/panic 24 months in length, the longest of the Post World War II Era. Graph 57 presents the contributions to job-losses from December 2007 to December 2009, by NAICS sector, ranked from largest to smallest

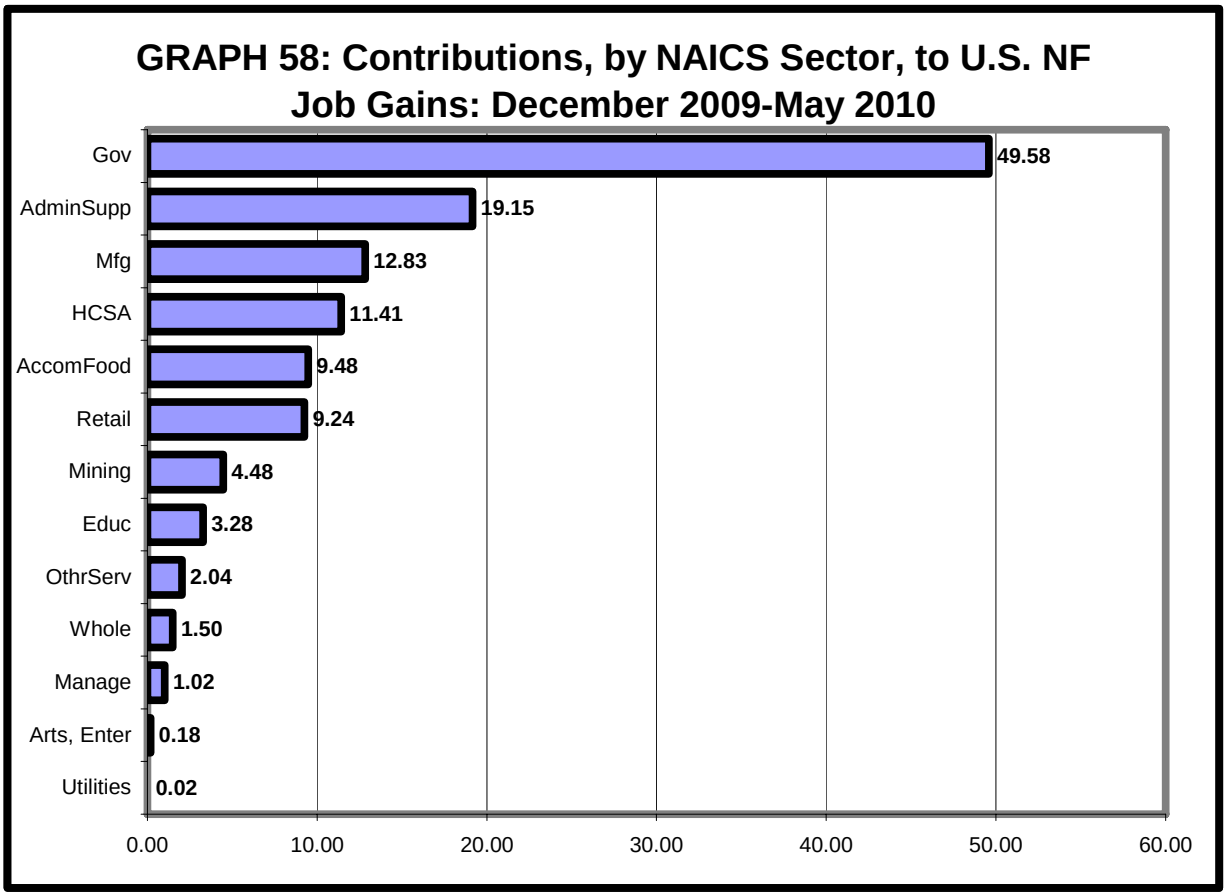


SOURCE: U.S. BLS and calculations by CTDOL-Research.

The largest contributor to U.S. job-losses over the 24-month recession/panic period was the Manufacturing Sector, accounting for 26.2% of jobs lost. Next came the Construction Sector, which accounted for 21.5% of jobs lost. Driven, of course, by the popping of the housing bubble, Construction also suffered the steepest decline, contracting by 24%. Retrenchment of consumers due to house-price deflation (which closed the ATM used to finance spending) and the consequent collapse of net worth coupled with income-declines due to job losses resulted in the Retail Sector accounting for 14.4% of all jobs lost. Another major contributor to the loss of jobs was Administration, Support and Waste Management (hereafter Admin-Support). This sector accounted for 13.3% of lost jobs. This sector also had the third steepest contraction (-13.3%) behind Construction (see above) and Manufacturing (-16%). Driving the behavior of the Admin-Support Sector is

the Employment Services Industry—particularly, Temporary Help. The Temporary Help Industry drove job-losses in the Admin-Support Sector over the recession, and it is driving this sector over the current recovery in jobs. This point is further elaborated on below in the discussion on the current recovery.

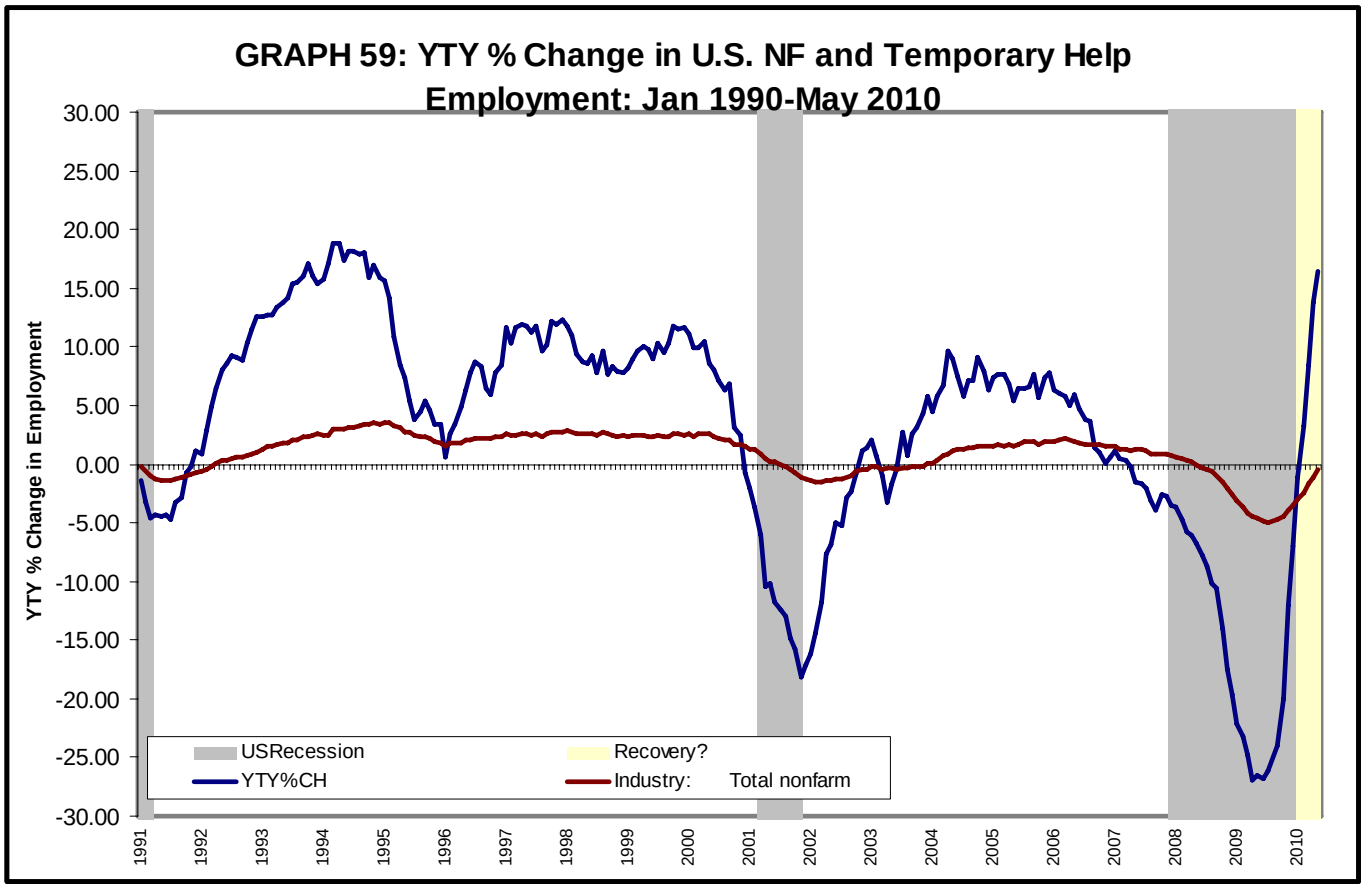
Recovery? Current Conditions--U.S. Non-Farm Employment turned around after December 2009, ending 24 months of decline. Between December and May 2010, the U.S. Economy created 982,000 net, new jobs. However, one-half of those jobs were created in the Public Sector, and virtually all by the Federal Government, as state and local governments actually subtracted jobs over the five-month period. Many of the 571,000 Federal jobs created are related to the 2010 Census. They are thus, temporary jobs and will be eliminated when the census is completed.



SOURCE: U.S. BLS and calculations by CTDOL-Research.

The result is that Total U.S. Non-Farm jobs grew by 0.76% between December 2009 and May 2010, but there is a marked difference when the growth-rates are split between the public and private sectors. While Public Sector jobs grew by 2.17%, Private Sector jobs grew by only 0.46%. As mentioned before, recoveries following recessions accompanied by financial panics are usually slower and weaker, and this seems to be no exception.

Graph 58 presents the contributions to job-growth from December 2009 to May 2010, by NAICS sector, ranked from largest to smallest. As discussed above, the Public Sector has contributed one-half of all net new jobs created over the apparent recovery, followed by Administration Support and Waste Management (hereafter, Admin-Support), which contributed 19% of the new jobs since December 2009. Admin-Support is strongly driven by the Employment Services Industry, which includes contingent workers and its largest component: Temporary Help.



SOURCE: U.S. BLS and calculations by CTDOL-Research.

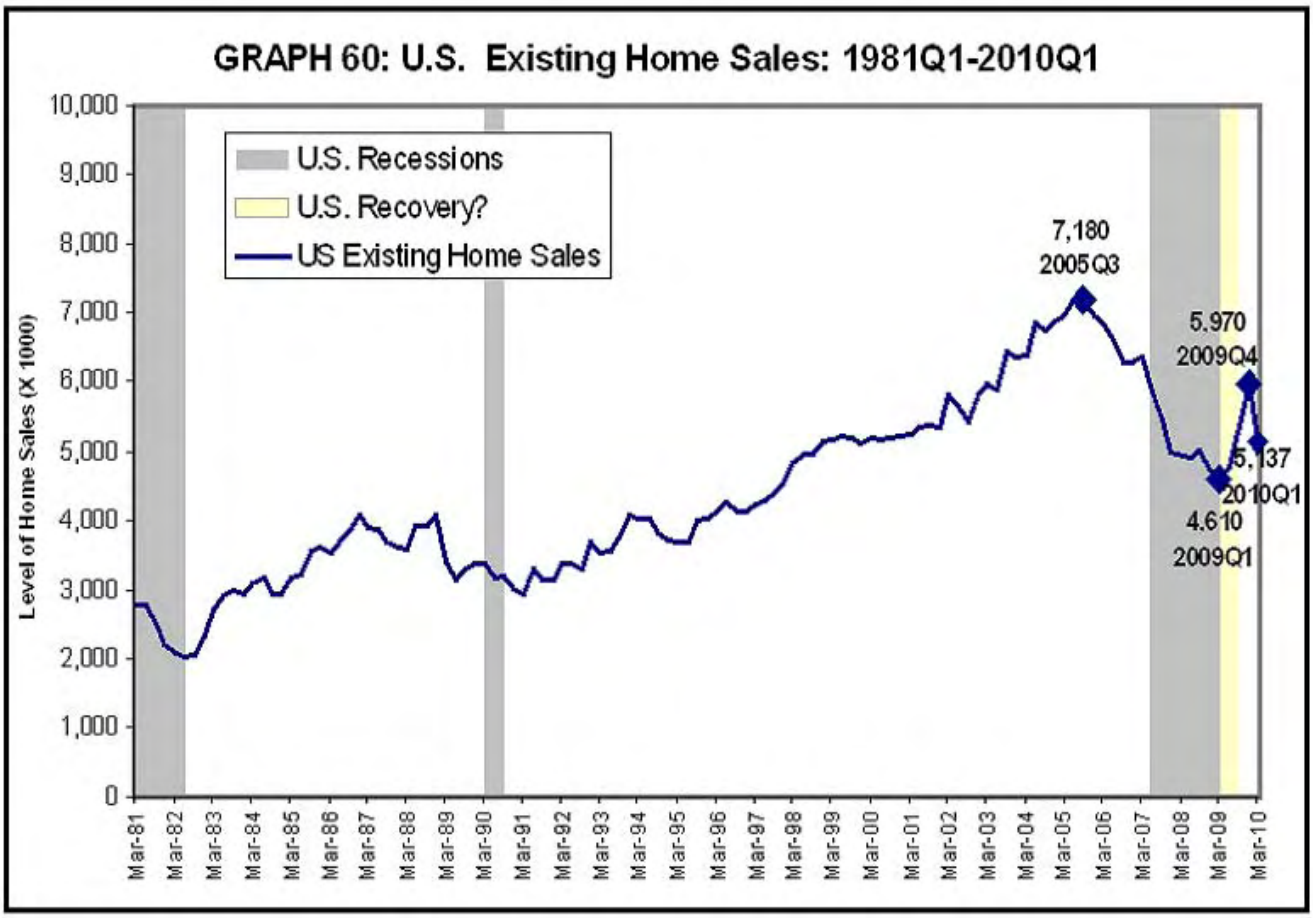
Graph 59 isolates the Temporary Help Industry in Admin-Support and tracks the monthly, YTY percent-change in temporary-help jobs and Non-Farm Employment from January 1990 to May 2010.

Note the size of the amplitude of Temporary-Help jobs over the cycle compared to that of Non-Farm Employment. This "flexibility" of hiring and firing temporary workers in response to changes in the phase of the business cycle has become more pronounced from about the mid-to-late 1980's onward, and especially over the current decade. This is particularly true over the current cycle. Further, as the 2000's progressed, the hiring of temps is less likely to be followed by the hiring of permanent staff, as the trend in outsourcing accelerates. As is dramatically apparent in Graph 59, the YTY swings in temp-help have been quite large over this cycle. The surge in temporary job-growth over the apparent, current recovery has been the driver of job-growth in the Admin-Support Sector In fact, on a MTM basis (not shown), temporary-help job-growth turned positive in October 2009, two months before the turnaround in Non-Farm Employment, and on a YTY basis, Temporary Help job-growth turned positive in February 2010. However, after November 2009, the MTM growth-rate in Temporary Help, though still positive, began to rapidly decelerate. The upshot: temporary jobs can disappear as fast as they are created.

Again referring to Graph 58, four other NAICS sectors have also made significant contributions to job-growth over the December 2009-May 2010 Period. Manufacturing jobs have had a net increase of nearly 13%, and continuing to add jobs as it did during the recession/panic, Health Care and Social Assistance (HCSA) grew by 11.4%. Accommodation and Food Service and Retail each accounted for more than 9% of net, new jobs.

III. THE HOUSING AND MORTGAGE MARKETS: Is the Post-Bubble Stabilization Sustainable?

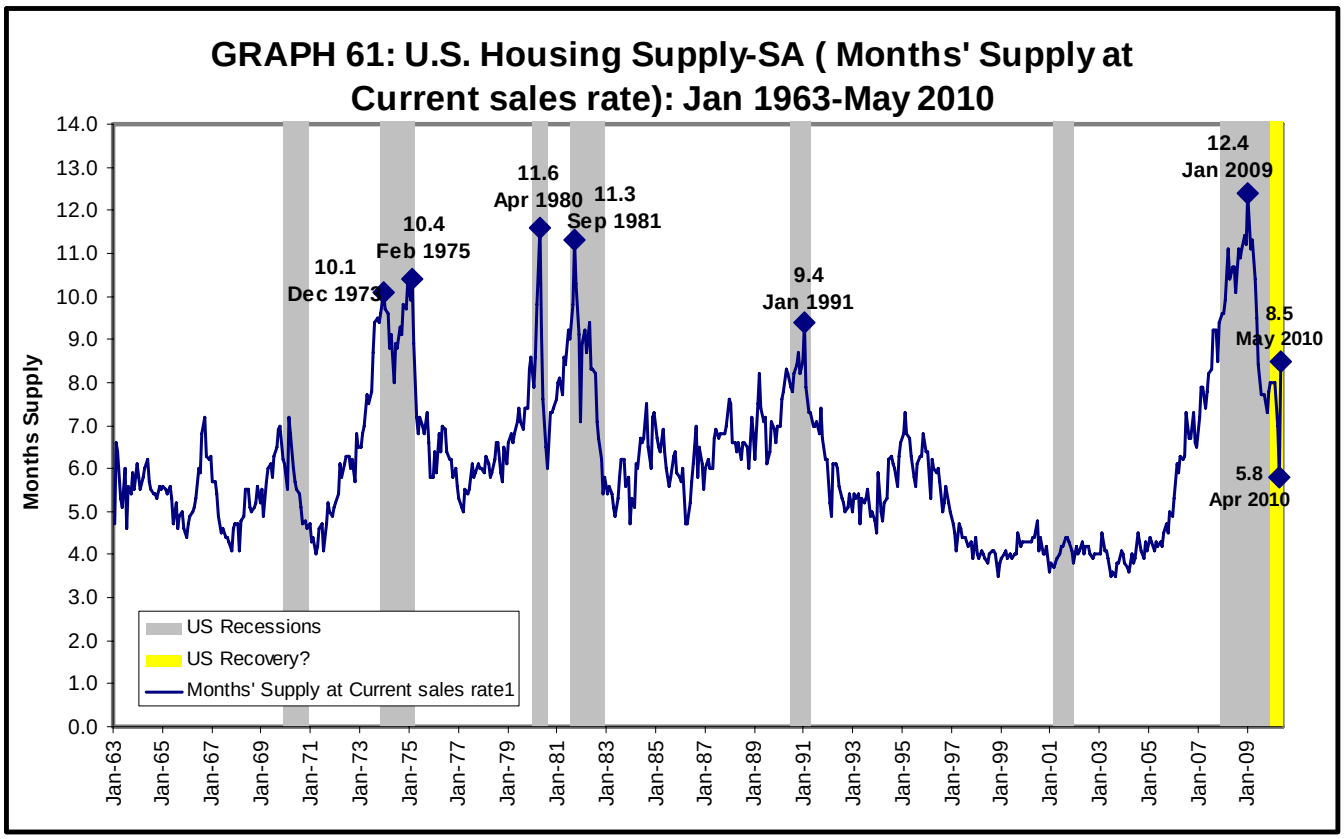
Based on the latest Existing Homes Sales data from the National Association of Realtors, the recovery in the sale of existing homes throughout 2009, appeared to be abruptly reversed in the first quarter of 2010. Keeping in mind that one quarter's worth of data does not make a trend, the first-quarter data, nevertheless, is troubling. Graph 60 plots U.S. Existing Home Sales from 1981Q1 to 2010Q1.



SOURCE: Boston Federal Reserve Bank, New England Economic Indicators.

The telegraphing of the peak of the housing bubble was the behavior of existing home sales, which signaled that the end was near. This indicator signaled decline, along with the decline in permits, and both preceded the decline in housing prices. After peaking in 2005Q3, in which 7.180 million existing homes changed hands, existing home sales

began a precipitous decline that continued for 14 quarters, and did not bottom out until 2009Q1 when the level of sales fell to 4.610 million. That represents a 35.79% decline. The remaining three quarters of 2009 seemed to signal a slight recovery in housing activity. Existing Home Sales increased by 29.50% between 2009Q1 and 2009Q4. However, that trend was either interrupted, or reversed, in 2010Q1. Between 2009Q1 and 2010Q1, Existing Home Sales declined by 13.95%. Annualized, that represents a steep rate of decline of 45.18%. For comparison, when put on an annualized basis, the decline between 2005Q3 and 2009Q1, as the housing bubble was popping, proceeded at a rate of 11.89% per year. Thus, the decline in the first quarter of 2010 is a very steep decline. And, other housing-activity indicators seem to confirm the signals being sent by Existing Home Sales.

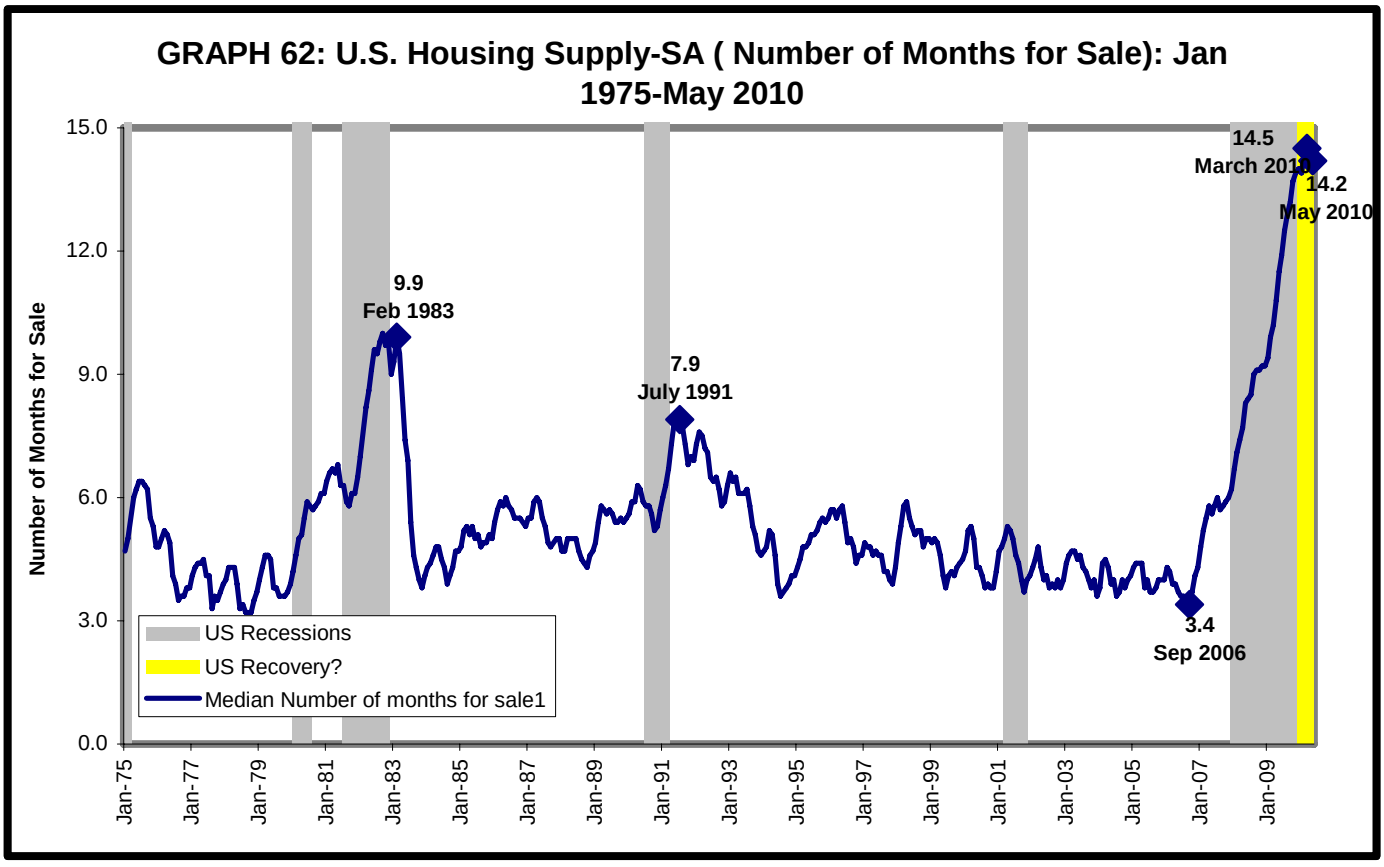


SOURCE: U.S. Census Bureau

Graph 61 tracks the supply of housing units on the market, given the current rate of sales. After a peak 12.4 months in January 2009 (the highest over the range of data, which goes

back to 1969), the number of months of supply fell to cyclical low of 5.8 months in April 2010. However, in May, it shot back up to 8.5 months—a 2.7-month jump.

The median number of months that a house was on the market before it was sold has continued to climb as the housing bubble popped, and has remained a record plateau level through the first half of 2010. Graph 62 tracks the median number of months that a house was up for sale before being sold over the period covering January 1975 to May 2010. In September 2006, a house was on the market only 3.4 months before being sold—the lowest since the 1970's. From that point on, the number of months a house was on the market climbed steeply, reaching a peak of 14.5 months in March 2010 (the highest over the range of data, which goes back to 1975). By May, it was still at 14.2 months.



SOURCE: U.S. Census Bureau

Permit activity is a more forward-looking indicator. However, they are not necessarily translated into starts. As discussed above, it was the decline, in both, Existing Home

Sales and Housing Permits that signaled the impending popping of the housing bubble. Of course, driving the behavior of those two indicators was the rising wave of sub-prime mortgage defaults as payments began to re-set at higher levels, pushing borrowers into default.

Graph 63-A tracks the level of U.S. Housing Permits from January 1960 to May 2010. The highest, annualized number of permits recorded over the span of the data is the 2.419 million permits issued in December 1972. After bottoming out at 786,000 permits in January 1991 in the last few months of the 1990-91 Recession and the collapse of the Savings & Loans, the number of housing permits began a steady, largely uninterrupted climb until they peaked at the height of the housing bubble, at a level of 2.264 million in September 2005. Though this peak was slightly lower than the 1972 peak, that peak was not the product of a credit bubble. However, in the 1970's, what are now called sub-prime mortgages were a small segment of the credit industry, relegated to what was considered to be the more unsavory elements of the home-loan business populated by the likes of Beneficial Finance, Household Finance, and other finance companies that targeted their loan business to those with weak credit histories that were mostly those with low income[13]. Further, in the 1970's the private secondary mortgage market did not exist. It came into being after the Reagan Administration's push to develop a private secondary mortgage market with Federal Reserve and SEC's rules changes in 1983, and the passage of the *Secondary Mortgage Market Enhancement Act of 1984*[14]. In addition, the current, more exotic species of mortgages did not yet exist. The first Adjustable Rate Mortgages (ARM's) did not appear on the scene until the late 1970's[15]. The more exotic variants of the ARM developed over the next two decades.

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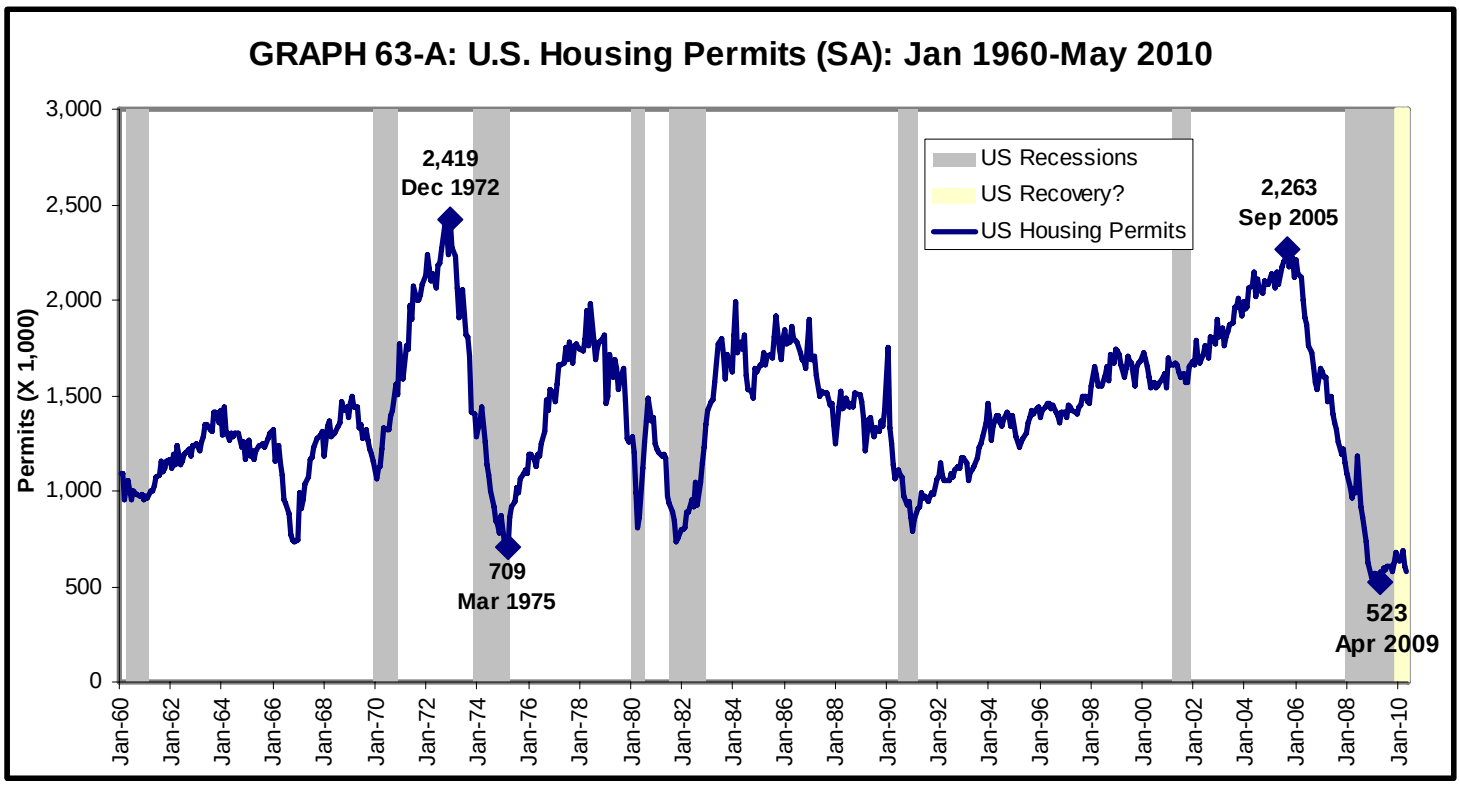
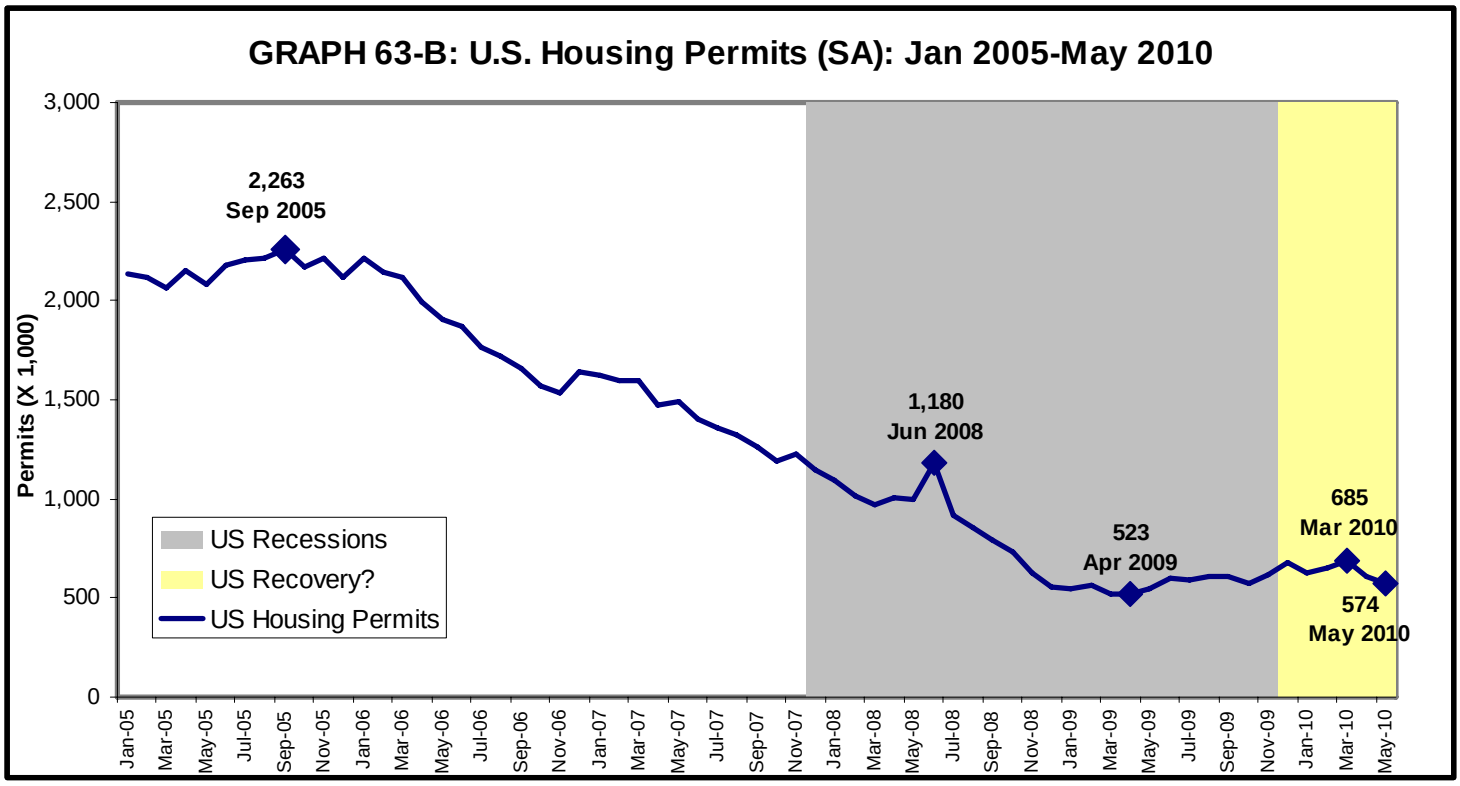
[13] For some histories of the rise of what is now called the sub-prime mortgage industry, see Muolo, Paul and Matt Padilla, CHAIN OF BLAME (2008) John Wiley & Sons: New York and Cassidy, John, HOW MARKETS FAIL (2009) Farrar, Straus and Giroux: New York

[14]Seiders, David F., CH. 18-*The Future of Secondary Mortgage Markets: Economic Forces and Federal Policies*, p. 344, in Florida, Richard L., Editor, HOUSING AND THE NEW FINANCIAL MARKETS (1986) Center for Urban Policy Research: New Brunswick, NJ,

[15] Kaufman, George G. and Eleanor Erdevig CH. 19-*Improving Housing Finance in an Inflationary Environment: Alternative Residential Mortgage Instruments*, pp. 362-366 in HOUSING AND THE NEW FINANCIAL MARKETS (1986)





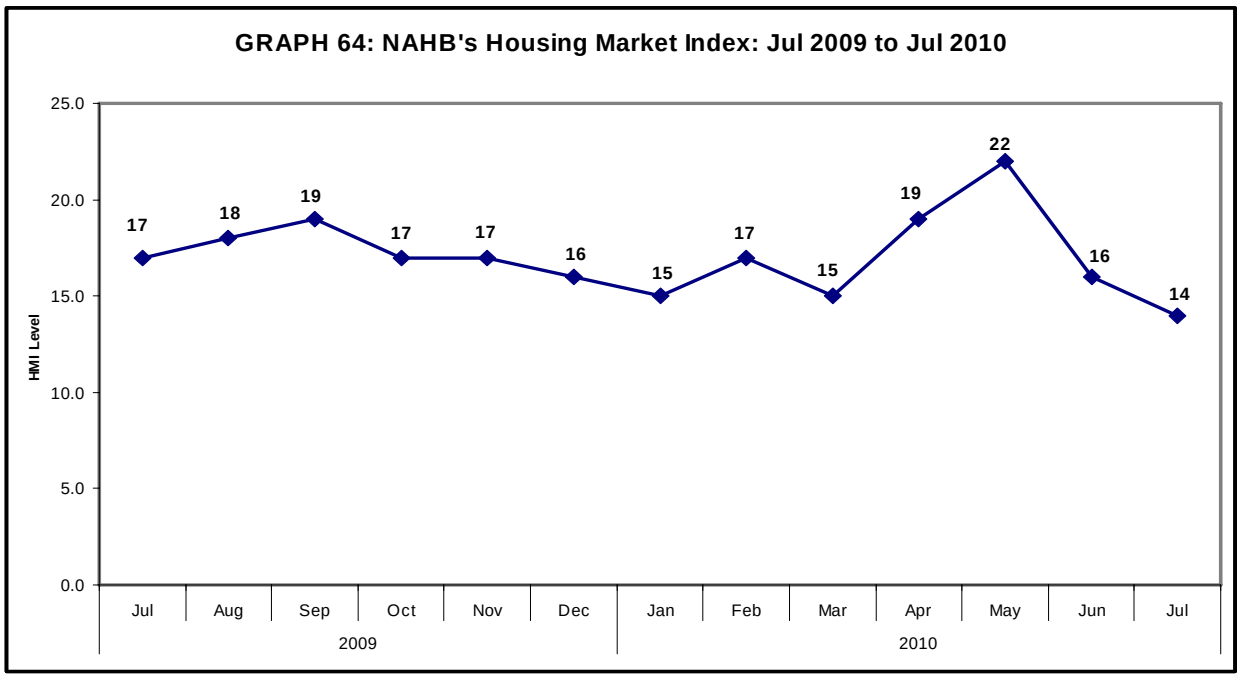
SOURCE: U.S. Census Bureau.

Graph 63-B zooms in on the 2005-2010 period. Save a mini-spike in June 2008, when permits jumped to 1.180 million, Housing Permits declined from September 2005 until April 2009 when they bottomed out at 523,000. Then, they began to slowly increase until March 2010. After peaking at 685,000 in March, Housing Permits had declined to 574,000 by May.

Further unsettling news from the housing market is the decline in builders' confidence. Builder confidence in the market for newly built, single-family homes declined for the second consecutive month in July to its lowest level since April of 2009, according to the National Association of Home Builders/Wells Fargo Housing Market Index (HMI)[16]. The HMI fell two points from a downwardly revised number in the previous month to 14 for July. Graph 64 tracks the HMI from July 2009 to July 2010. After rising seven points from March to May 2010, the HMI declined by eight points between May and July. The proverbial bottom line: the major indicators appear to be signaling that the tentative recovery in housing activity may be coming to an end.

Can the Housing Market "Stand on Its Own Two Feet"?—There are two key factors that will determine if the housing market can stand on its own two feet now that the $8,000 new homebuyer's tax credit has expired and the Fed has exited the RMBS market: (1.) the number of new mortgage defaults resulting from ARM re-sets in 2010 and 2011, and (2.) What happens to the Unemployment Rate (UR). As discussed above, the major indicators of housing activity seem to suggest that in fact, the housing market may not be quite ready to stand on its own two feet. As suggested above, two major tests of the housing markets' prospects of recovering in the immediate future are its ability to continue to recover in the face of the end of the $8,000 tax credit for fist-time homebuyers and the Fed's ending its purchases of Residential Mortgage-Backed Securities (RMBS), which contributed to keeping mortgage rates down. The big test may be the $1 trillion in ARM re-sets scheduled to take effect in 2010 and 2011.

[16] National Association of Homebuilders, *Builder Confidence Declines in July* (July 19, 2010) < http://www.nahb.org/news_details.aspx?sectionID=134&newsID=11078>



SOURCE: National Association of Homebuilders.

Will a Second Shoe Drop in the Housing Market?— Is what may be coming in the housing market due solely to the market's inability to recover without outside, government support? Or, are there other, even more worrisome events that may deliver another broadside to the housing market—not to mention another hit to the financial system via another meltdown in the value of mortgage-backed assets?[17] According to a post by Stacy-Marie Ishmael on the *Financial Times* Blog in March 2010, the potential time-bomb posed by the resetting of Option ARM's was first brought to the World's attention by a graph put together by analysts at Credit Suisse in 2007[18]. The chart showed that more than $1.1 trillion, of US Adjustable-Rate Mortgages (ARM), are scheduled to, either reset, or recast between 2010 and 2012.

[17] Ivry, Bob and Jody Shenn, *Exploding ARMs Roil Bernanke's Drive to Calm Markets (Update4)* (February 7, 2008) BLOOMBURG.COM < http://www.bloomberg.com/apps/news?pid=newsarchive&sid=akYNTEygRJH8&refer=home> Accessed on July 16, 2010.

[18] Ishmael , Stacy-Marie, *Coming soon: $1,000bn resetting, recasting US ARMs* (March 2, 2010) FT Alphaville.Com < http://ftalphaville.ft.com/blog/2010/03/02/162856/coming-soon-1000bn-resetting-recasting-us-arms/> Accessed on July 16, 2010.

Commentators such as FRB Capital's Paul Miller have said that the ARM resets are a concern, but he sees no reason why it should be Part 2 of a mortgage meltdown[19] He said that while they remain very concerned about the impact of continued job losses on default rates, their analysis suggested that ARM resets should not be a problem, as long as the Federal Reserve can keep short-term rates at record lows. Further, borrowers may benefit from the rates resetting lower. There are a couple problems with this argument. The first harkens back to those who were arguing against the first round of the mortgage-default crisis. They also argued that interest rates were historically low, and, in fact, long-term rates, and the mortgage rates tied to them were at historically low levels. But what they missed is that in many instances when the sub-prime mortgages reset after the expiration of the teaser rate, they reset based on the London Inter-bank Offering Rate (LIBOR), which is the rate at which banks loan to each other in the Greater London market (although, now it extends far beyond the Greater London inter-bank loan market). This is a short-term rate (e.g., one-month, three-months, six-months, etc.). And, the LIBOR rate is significantly higher than conventional mortgage rates. Thus, thinking in terms of the level of rates usually linked to setting mortgage rates gave many a false sense of security with regard to the affects of ARM resets. With regard to the upcoming possible tsunami in ARM resets there is a slightly different twist to being deluded by focusing on low mortgage rates. A version of the "twist" was a player in the first foreclosure crisis, but a hybrid version of it may play a significant role in the potential, upcoming round. That is: the *Option ARM*. Option ARM's combine the features of an ARM with that of a *Negative Amortization* loan. Unlike Interest-Only mortgages, which leave the loan-balance unchanged, a Negative Amortization mortgage allows the borrower to increase the loan's principal by paying less than the current interest due. The remaining interest is added to the loan balance Future payments are re-calculated based on the increased principal. The borrower gets lower current payments, but at a cost of higher debt and future monthly payments[20].

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[19]Miller, Paul, *A comment on Option ARMs* , CalculatedRisk Blog, (September 2009) < http://www.calculatedriskblog.com/2009/09/comment-on-option-arms.html> Accessed on July 16, 2010.
[20] See Kennedy, Daniel W., *Current Conditions and Outlook for the U.S. and Connecticut Economies 2007-2009: Volume 1-The U.S. Economy* (January 2008) Office of Research, Connecticut Department of Labor: Wethersfield, APPENDIX, Table 1-A, p. 31.

The problem with the upcoming rests was summarized by Diana Olick: :

> Now here's my problem with Miller's thesis. Many of the ARMs that we're talking about are "pay option ARMs". These were those wonderfully innovative and unique loan products that enticed so many borrowers/investors during the height of the housing market to jump into loans they could never afford. Why? Because you can choose to pay whatever you like for a while. So guess what most borrowers chose? And then it comes back to bite you. Yes, many of these loans could reset to manageable rates, but they will also hit the limit, that is when the amount deferred hits a certain percentage of the total loan and then is required to be added on to the monthly payment. At that point the interest rate will have much less to do with the amount of the monthly payment[21].

Again, as noted above, while the focus is on interest rates, the real problem, as pointed out by Olick (2009), is the higher total loan amount and accompanying higher loan payments when the Option ARM resets—not necessarily the interest rate, per se. For example, a borrower could refinance an option ARM to a 30- year conventional loan at a 5.5% interest rate, and still have his, or her, payment going up 150%[22].

Once option ARM borrowers' loan balances reach a predetermined limit, called a *negative amortization cap*, usually 110 % to 120% of the mortgage amount, their payment rates immediately increase. They also automatically shoot up after five years[23]. Thus, the $1.1 trillion in Option ARMs originated in 2005 and 2006, at the peak of the housing bubble, are scheduled to reset in 2010 and 2011.

The rise in foreclosures, which drove the popping of the housing bubble, was actually driven by two reinforcing events: rising defaults on sub-prime loans and the rise in the Unemployment Rate (UR) with the on-set of recession in December 2007, and then the quantum jump in the UR following the financial panic. In addition to the $1.1 trillion dollars in ARM resets in 2010 and 2011, if the UR remains at high levels throughout 2010 and 2011, due to the slow and long recovery from the recent recession/panic, or if

[21] Olick, Diana, *ARM Payment Shock a Myth?* (22 Sep 2009) CNBC.Com < http://www.cnbc.com/id/32969091> Accessed on July 16, 2010.
[22] Ivry and Shenn (February 7, 2008).
[23] ibid.

the recovery comes to a standstill, or the economy goes into a double-dip, then higher, and possibly increasing, unemployment could, again, act as a reinforcing factor driving a new round of foreclosures. The proverbial bottom line here is that it will take years, not months, for the housing market to come back. That, in turn, is connected to the fate of households' balance sheets. Since, for most middle class and working class households, most of their wealth is based on the equity they have in their homes, the return of the housing markets, and the implied return to increases in home values, is critical to repairing the assets-side of households' balance sheets and, in conjunction with reducing debt-loads, in re-building net worth. This is particularly key to the recovery from a "Balance Sheet" recession (discussed below).

IV. THE PANIC OF 2007-08: Back from the Brink?

On February 27, 2007, the Shanghai stock market dropped 9%, which sent chills across the World's markets. When it opened, the Dow closed the day's trading session down more than 400 points[24]. The fact that it reverberated around the World may have been an indication that the drop in the Shanghai market was, in fact, a warning shot of things to come. Six months later, in August 2007, the collapse of the Asset-Backed Commercial Paper Market (ABCP) ushered in the 21st Century's first financial panic.

Commercial Paper (CP) played a pivotal role in brining about the Financial Crisis of 2007 and 2008. Particularly central to the financial panic was a specific type of CP known as *Asset-Backed Commercial Paper* (ABCP). Before the crisis, market participants regarded ABCP as a safe asset due to its short maturity and high credit rating, or what Gordon (2009)[25] refers to as an *Information-Insensitive* claim (more on this below). Two events changed this perception: (1.) First, was the event involving Bear Sterns on July 31, 2007 Two Bear Stearns' hedge funds that had invested in sub-prime

[24] Fallows, James, *Market Crash Day in Shanghai* (February 28, 2007) THEATLANTIC.COM < http://www.theatlantic.com/science/archive/2007/02/market-crash-day-in-shanghai/7537/> Accessed on July 14, 2010).
[25] Gorton, Gary B., SLAPPED BY THE INVISABLE HAND (2009) Oxford University Press, USA: New York

mortgages filed for bankruptcy, then, in the following week, other investors also announced losses on sub-prime mortgages; (2.) On August 7, 2007, BNP-Paribas suspended withdrawals from its three investment funds because it could no longer calculate the funds' Net Asset Values (NAV). This resulted from their inability to assess the value of the mortgages and other investments held by the funds. Given that similar assets served as collateral for the ACBCP category of commercial paper, many investors became reluctant to purchase ABCP. The total value of ABCP fell by 37% from $1.18 trillion in August 2007 to $745 billion in August 2008[26] As discussed below, these events ushered in what was basically the 21st Century version of a "good old fashioned" banking panic. Hubris, the tyranny of the conventional wisdom, and disaster myopia lulled market participants, regulators, and others into convincing themselves that we knew too much about the financial system today to make the mistakes of the past. In addition, it fostered a belief that markets would regulate themselves. As Rogart and Rhienhart (2009) put it in the title to their book on the history of sovereign-debt and banking crises: "This Time Is Different"[27].

A. A 21st CENTURY BANKING PANIC

In 1907, Knickerbocker Trust funds were used by then-president Charles T. Barney in a plan to drive up the cost of copper by cornering the market. This gamble came undone when millions of dollars of copper were dumped into the market to stop a hostile takeover in an unrelated organization. When this became public, on October 21, 1907 the National Bank of Commerce announced that it would no longer accept checks for the Knickerbocker Trust[28]. The subsequent run on the Knickerbocker Trust sparked the collapse of a shadow banking system, the trusts, and ushered in the Panic of 1907. One century later, the collapse of the Asset-Backed Commercial Paper (ABCP), in August 2007, would bring about the 21st Century version of a bank-run and the collapse of

[26] Kacperczyk, Marcin and Philipp Schnabl, *When Safe Proved Risky: Commercial Paper During the Financial Crisis of 2007-2009* (Winter 2010) J. OF ECONOMIC PERSPECTIVES, Volume 24: No. 1, pp. 29-50.
[27] Rogoff, Kenneth and Carmen M. Rhienhart, THIS TIME IS DIFFERENT (2009) Princeton University Press: Princeton, NJ.
[28] Knickerbocker Trust Company, Wikapedia. Accessed on June 28, 2010.

another shadow banking system, ushering in the Panic of 2007 and 2008 (in which a shadow insurance industry also collapsed).

Kacperczyk and Schnabl (2010) divide the first 21st Century Financial Panic into two parts: (1.) A *Liquidity Crisis* ushered in by the events of July and August 2007 and the collapse of the ABCP market (see above), and (2.) A *Solvency Crisis*, which was brought on by the collapse of Lehman Brothers and the events leading to the nationalization of AIG in September 2008[29]. A useful way of thinking about the two-part crisis is that the Liquidity crisis was sparked by the collapse of a shadow banking system, while the Solvency Crisis was, not only the result of the collapse of a shadow banking system, but also a shadow insurance industry and its complex interconnections.

PART 1: The Liquidity Crisis—The Liquidity Crisis was sparked by two events: First, on July 31, 2007 two Bear Stearns' hedge funds that had invested in sub-prime mortgages filed for bankruptcy, then, in the following week, other investors also announced losses on sub-prime mortgages; and, second, on August 7, 2007, BNP-Paribas suspended withdrawals from its three investment funds because it could no longer calculate the funds' Net Asset Values (NAV). This led to the collapse of the Commercial Paper (CP) market, specifically, the Asset-Backed Commercial Paper (ABCP) market. This, in turn, seized up the short-term credit markets, also known as the *Money Market*. In early 2007, this market was $5 trillion. CP accounted for $1.97 trillion dollars of outstanding short-term debt in 2007; next came U.S. Treasuries, which accounted for $940 billion[30]. Next in importance to the functioning of short-term credit markets are Time Deposits, Repurchase Agreements (Repos), Short-Term Notes, and Bankers Acceptances. The two major instruments of concern, for our purposes are, CP and Repos. Focusing on CP, there are three categories[31]:

1. Asset-Backed CP (ABCP)

[29] See the previous year's outlook, Kennedy, Daniel W., *Current Conditions and Outlook for the U.S. and Connecticut Economies 2008-2010: Volume 1-The U.S. Economy* (June 2009) Office of Research, Connecticut Department of Labor: Wethersfield, Section I: The Panic of 2008 and Its Aftershocks, p. 7.
[30] Kacperczyk, Marcin and Philipp Schnabl (2010), p. 30.
[31] ibid, p. 32.

2. Corporate, or Non-Financial CP
3. Financial CP

The growth in the CP market has been sparked by the development and growth in ABCP, which was first issued in the 1980's. In January 2007, ABCP accounted for 56.8% of the total CP market[32]. ABCP is issued by off-balance-sheet conduits of large financial institutions, where off-balance sheet means that the assets and liabilities of the conduit, are not included on the financial institution's balance sheet. However, the assets are under the control of the financial institution in the sense that the conduit is a shell company, which is managed by the financial institution[33]. The main investors in ABCP are Money Market Funds (MMF) and Mutual Funds.

A strong motivation for the growth in the ABCP market was the avoidance of capital requirements. There is an important relationship between the Return on Equity (ROE) and the Equity Multiplier (EM) via the Return on Assets (ROA) expressed as follows: ROE = ROA X EM[34]. Thus, boosting the value of the EM, holding ROA constant, raises ROE. One way of boosting the EM is to reduce the capital requirement. The lower the required capital, holding assets constant, the higher the Equity Multiplier (EM), which, in turn, raises the return on capital (equity), however, it also comes with a cost, as it also raises the risk of insolvency[35]. That is, there is an inverse relationship between capital requirements and the risk of insolvency: the higher the capital requirement, the lower the risk of insolvency; the lower the capital requirement, the higher the risk of insolvency (ceteris paribus, of course).

Until 2007, the two largest disruptions in the CP market involved Corporate CP. The first was in 1970 after the bankruptcy of Penn Central, and the second was in 2001 following the demise of Enron. The first Financial or ABCP crisis was that of 2007[36]. What brought

[32] ibid, p. 32.
[33] ibid, p. 33.
[34] Kennedy (2009), Footnote 87, p. 51.
[35] ibid, pp. 51-52..
[36] Kacperczyk, Marcin and Philipp Schnabl (2010), p. 37.

about the collapse of the CP and Repo markets in 2007, which brought on the Liquidity Crisis? It was the asymmetric and hidden information about the price of the assets used as collateral in the ABCP market, which in turn, was sparked by rising defaults in the sub-prime mortgages, which were the bricks used to construct the assets. This is the *Lemon Problem*, first identified by Akerlof (1970)[37]. As he pointed out in his landmark article, when asymmetric information becomes serve enough, markets collapse. Another way to think about the crisis is in terms of *Knightian Risk* versus *Knightian Uncertainty*[38]. Under Knight's framework, *Risk* is characterized as a situation in which one is faced with an unknown outcome from a known distribution, whereas, in a situation in which one faces *Uncertainty*, one faces an unknown outcome from an unknown distribution[39]. Until 2007, investors in ABCP perceived that they were participating in a market that was characterized by Knightian Risk. That is, they perceived a market in which there was information about the risk-adjusted price of the assets used as collateral to back up the ABCP issued. Once the default rate on sub-prime mortgages increased far beyond that assumed by the models used to price these assets, it became clear that the assets had not only been mis-priced, but, in fact, there was no information available for determining the price[40]. The result: an abrupt change in the psychology of investors demanding ABCP, as they realized, that, all along, they had been participating in a market characterized by Knightian Uncertainty, rather than one characterized by Knightian Risk. That is, they really had no information about the risk-adjusted price of the assets. This produced an immediate state-change in market psychology resulting in the collapse of the ABCP market just as Akerlof had predicted in his paper on the Lemon Problem. When asymmetric, or hidden, information becomes serve enough, markets collapse. Gordon

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[37] Akerlof, George, *The Market for Lemons: Quality, Uncertainty, and the Market Mechanism*, QUARTERLY JOURNAL OF ECONOMICS (1970) 80: 488-500.
[38] Knight, F.H, *Risk, Uncertainty, and Profit* (1921) Hart, Schaffner & Marx; Houghton Mifflin Company: Boston
[39] An example would be the roll of a fair die in which each outcome has a $1/6^{th}$ change of occurring, which produces a Uniform Distribution. However, if the die is fair, then the outcome of a given roll is not known. Thus, the distribution is known, but the outcome of a given roll is not, this is Knightian Risk. If neither the outcome nor the distribution is known, then it is a situation of Knightian Uncertainty.
[40] See Kennedy (January 2008) pp. 7-9.

(2010)[41] couches it in terms of *Information-Insensitive* versus *Information-Sensitive* claims, which is another, but also informative, way of stating the Lemon Problem. Looking at it this way gets at the heart of the nature of the crisis: at the heart of it, it was a banking crisis.

PART 2: The Solvency Crisis—The Solvency Crisis was sparked by the default of Lehman Brothers on September 8, 2008. Once Lehman Brothers failed it was discovered, to the surprise of investors, that one of the largest Money-Market Funds (MMF), Reserve Primary Fund, owned more than $785 million of Lehman's CP. This sparked an immediate run on the fund. On September 16th, the Reserve Primary Fund was forced to pay out $10.5 billion in redemptions. This was tantamount to a bank-run. And, the run spread quickly to other MMF's. Within a week institutional investors had pulled out another $175 billion. On September 19th, the U.S. Treasury announced temporary deposit insurance covering all MMF's, which stopped the run. This changed investors' views of CP, they viewed CP as being much more risky. While Part 1, The Liquidity Crisis, impacted the ABCP market, Part 2, The Solvency Crisis, hit the Financial CP market. Financial CP, outstanding, dropped by 29.5% between September 10th and October 22nd. At that point, MMF's decided to reduce their holdings of CP, and instead expanded their holdings of Government debt from 36.7% to 44.5% of their asset holdings. Because many financial intermediaries use CP to finance their lending activities, the collapse of the CP market would affect their ability to lend to businesses and individuals. This prompted the immediate intervention by the Fed and the U.S. Treasury[42] to primarily stabilize the ABCP and Financial CP markets.

The reason for the smaller-scale intervention in the collapse of the ABCP market in August 2007, and the much larger government intervention after the collapse of Lehman Brothers, and then AIG, is that the collapse of the ABCP market was viewed as a Liquidity Crisis (i.e., a lack of short-term financing), whereas, the bankruptcy of Lehman

[41] Gorton, Gary B., SLAPPED BY THE INVISIBLE HAND (2010) Oxford University Press: New York., p. 20.
[42] Kacperczyk, Marcin and Philipp Schnabl (2010), pp. 37-38.

Brothers was viewed as a lack of sufficient capital within the financial system to cover declines in asset values—a Solvency Crisis on a systemic level[43]. In other words, it was a solvency issue concerning the entire financial system, and not just a number of institutions or a segment of the financial system.

A 21st Century Banking Panic—The Liquidity Crisis in August 2007 was a bank-run. But, unlike banking panics in the 19th and 20th centuries, in which many people actually witnessed depositors lining up in the street to withdraw their money from a bank they feared would fail, and may themselves, have even participated in the panic by rushing to their bank to stand in line to withdraw their money. However, in the Panic of 2007 and 2008, most people had never heard of the ABCP market, or how it worked. As Gordon (2010) notes:

> Terms like subprime mortgage, asset-backed commercial paper conduit, structured investment vehicle, credit derivative, securitization, and repo market were meaningless. These markets were obscure and esoteric for most, including economists[44].

Up to this point, the term "bank" has been taken for granted. What is a "bank", or the "banking function"? As Gordon (2010)[45] points out, the need to redefine what a *Bank* is, is what allowed the shadow banking system to develop over the last 30 years. The essential function of *Banking* is to create a special kind of debt that is immune to adverse selection by privately informed traders. Such debt is very liquid because its value rarely changes. This debt can be traded without fear that some people have secret information about its value[46]. Gordon calls this *Information-Insensitive* debt[47]. The most important example of this kind of debt is *Demand Deposits*. Until recently, the only kind of Information-Insensitive debt was demand deposits. However, demand deposits are of no use to large firms, hedge funds, banks, and corporate treasures who may need to deposit

[43] ibid. p. 38.
[44] Gorton (2010), pp. 2-3.
[45] ibid. p. 170.
[46] ibid. p. 15.
[474747] ibid. p. 15.

large amounts of money, that far exceed demand-deposit insurance limits, for short periods of time. But, in the CP market, Repo market, or other short-term credit market, it can be "deposited" with a firm and collateralized with bonds, which the depositor receives, and which can be used elsewhere. Specifically, with regard to the Repurchase Agreement (Repo) market, unlike the CP market, many Repos are overnight, thus, like demand deposits Repos can be withdrawn at any time. The "bank" backs the deposits with bonds as collateral. Because the demand for collateral grew, it, at some point, began to include securitized products[48]. Gordon suggests that, from the standpoint of the rise and collapse of the shadow banking system, there were two important factors: (1.) The exponential rise of derivative securities in the last 25 years created an enormous demand for collateral (Information-Insensitive Debt), and (2.) the rapidly growing movement of massive amounts of loans, originated by banks, into the capital markets in the form of securitization and loan sales. Securitization is the process of creating, and issuing, tranches (particularly super-senior tranches rated AAA, and senior tranches rated AA) that came to be used extensively as collateral (explained below) in repo transactions. Unlike the CP market that typically has a 30-day maturity[49], the repo market involves a much-shorter, usually overnight, deposit of money on call, and backed by collateral[50]. After the collapse of the ABCP market in August 2007, there was then a run on the repo market when "depositors" required increasing "haircuts" (see Box 2) due to concerns about the value and liquidity of the collateral if the counterparty "bank" were to fail.

BOX 2: A HAIRCUT

A ***Haircut*** refers to the amount of collateral that exceeds the value of the loan taken out by a borrower. Such a loan is said to be *Overcollateralized.* For instance, if a firm (i.e., "depositor") in the repo market provides $90 in cash to the "bank" (i.e., counterparty firm in the repo), and receives $100 in bonds as collateral, then there is a 11% *Haircut*, or Margin. That is, the value of the collateral exceeds the loan amount by 11%.

[48] ibid. p. 15.
[49] Kacperczyk, Marcin and Philipp Schnabl (2010), p. 37.
[50] Gorton (2010), p. 16.

But, in addition to the collapse of a shadow banking system, the Panic of 2007 and, especially, Part 2 in 2008, was sparked by the collapse of a shadow insurance industry.

AIG and the Collapse of a Shadow Insurance Industry[51]—On September 15, 2008, the credit-rating agencies downgraded AIG's credit rating, as it was essentially bankrupt. In response, the Federal Reserve agreed to lend AIG $85 billion to facilitate the sale of its global assets in exchange for, essentially, all of the company's equity. The Fed took a 79.9% stake in AIG and essentially nationalized it. What happened? The short answer: the collapse of a shadow insurance industry. The center of the crisis was around *Credit Default Swaps* (CDS). A CDS is essentially an insurance policy on a bond. One party pays another, what is tantamount to insurance premiums for a fixed period of time (e.g., five years), and, in turn the counterparty agrees to cover the bond if the issuer defaults. CDS's are also known as *Debt Insurance Contracts*. The rise of CDS's enabled the rapid growth of the structured securitization of sub-prime mortgages. In order to make the assets created from bundled sub-prime mortgages more salable, a CDS would be purchased to insure against any possible default. CDS's were sold by banks, hedge funds, and insurance companies, including AIG. The Achilles Heel of this type of insurance is that, since it is unregulated, there is no requirement to hold adequate capital reserves to back up these policies in the event that claims have to be paid out. For many parties involved in CDS's, they were on both sides of the transaction, such that not only did they insure debt, but their debt was also insured. Thus, the positions of the parties and counterparties would offset each other and net each other out. However, AIG was only on one side of the transaction, there were no offsetting positions with counterparties. That is, they sold CDS's but never bought them. They, like others thought it was "free cash-flow". But, unlike others, AIG had no offsetting counterparty arrangements. Since AIG

[51] This section is based on Davidson, Adam, *How AIG fell apart* (September 18, 2008) REUTERS http://www.reuters.com/article/idUSMAR85972720080918 > Accessed on July 16, 2010; Aucamp, Mark, *The Collapse of AIG and Its Impact on the Mortgage and Banking System* (No date.) EZINEARTICLES.COM < http://ezinearticles.com/?The-Collapse-of-AIG-and-Its-Impact-on-the-Mortgage-and-Banking-System&id=1816126> Accessed on July 16, 2010; and Gilani, Shah, *Collapse of AIG: The Inside Story* (September 23, 2008) BX.BUSINESSWEEK.COM < http://bx.businessweek.com/aig/collapse-of-aig-the-inside-story/9351408406212665735-4650a488a400314b7ffd440b7464de2a/ > Accessed on July 16, 2010.

did not have the capital reserves to cover the claims made on it with the meltdown in the sub-prime mortgage market, it was bankrupt. Instead of a case of too big to fail (although AIG was the largest insurance company in the World), this was more of a problem of too *interconnected* to fail. The interconnections threatened the solvency of the entire financial system—hence, a *Solvency Crisis*.

B. FACTORS COMMON TO FINANCIAL CRISES-The Signs of Impending Crisis Were There

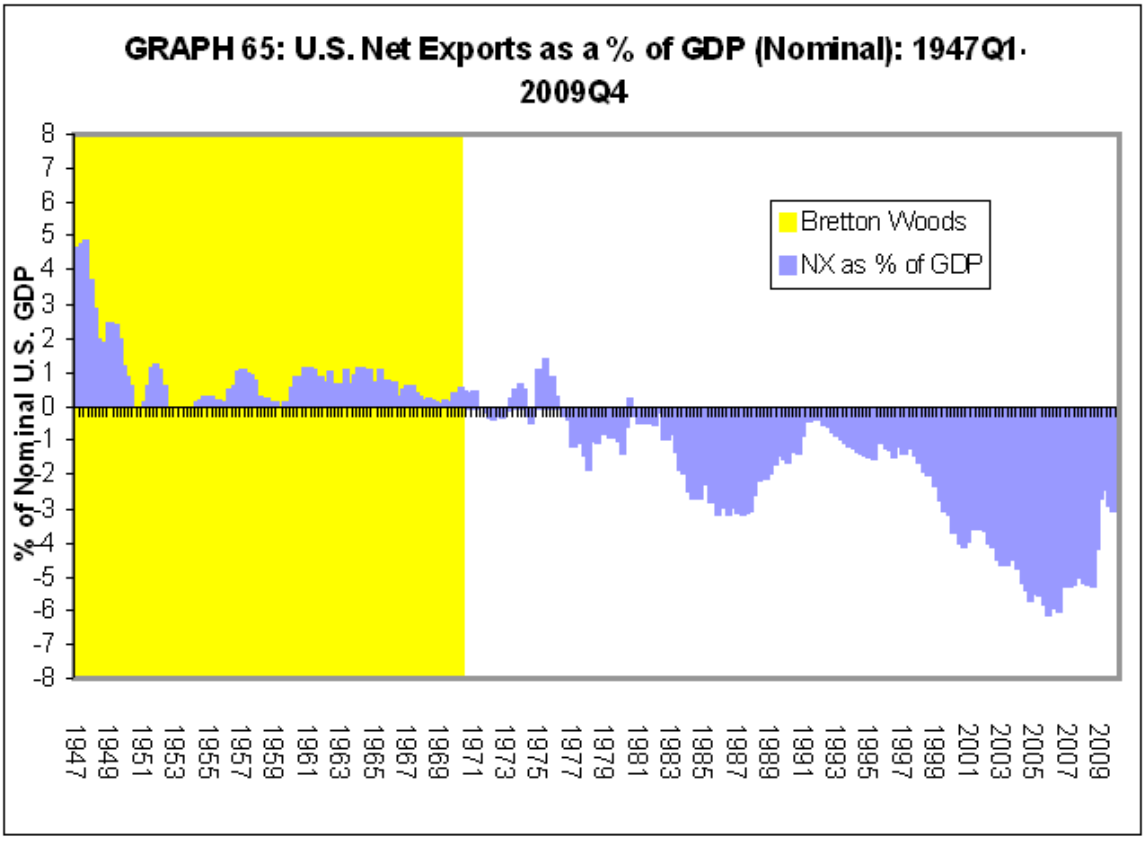
Were there signs that an impending financial crisis was on the horizon? Rogoff and Rhienhart (2009)[52] studied 800 years of financial crises. They were able to go back to 1200 in the case of sovereign debt crises, and back to 1600 in the case of banking crises. They found several factors that were common to all the banking crises that they studied. They included[53]:

- A Deteriorating Current Account
- Asset Price Inflation (Housing Bubble)
- Rapidly growing and unsustainable levels of Household Debt (Overleveraged Households)
- Slowing Growth in Output.

Looking at Rogoff and Rhienhart's first finding, *A Deteriorating Current Account*, as indicated on Graph 65, and the subject of debate over the last three decades, especially the last one, the U.S. Current Account deficit grew to unprecedented levels as Americans consumed more than they were producing. We avoided a day of reckoning, in which our current account would collapse causing a drop in output, a spike in interest rates and unemployment, with a collapse in the exchange rate, know as a *Sudden Stop*[54], because

[52] Rogoff, Kenneth and Carmen M. Rhienhart, THIS TIME IS DIFFERENT (2009) Princeton University Press: Princeton, NJ.
[53] ibid, p. 200
[54] See Mendoza, Enrique G., (2006) ENDOGENOUS SUDDEN STOPS IN A BUSINESS CYCLE MODEL CONSTRAINTS: A FISHERIAN DEFLATION OF TOBIN'S Q (October 2006) NBER Working Paper Series

we are the *Key Currency*[55]. Unlike non-key-currency countries, we will not run out of reserves because we can just print more money. And, we have no concern about exchange-rate risk, because our debt is dollar-denominated.



SOURCE: U.S. BEA and calculations by CTDOL-Research.

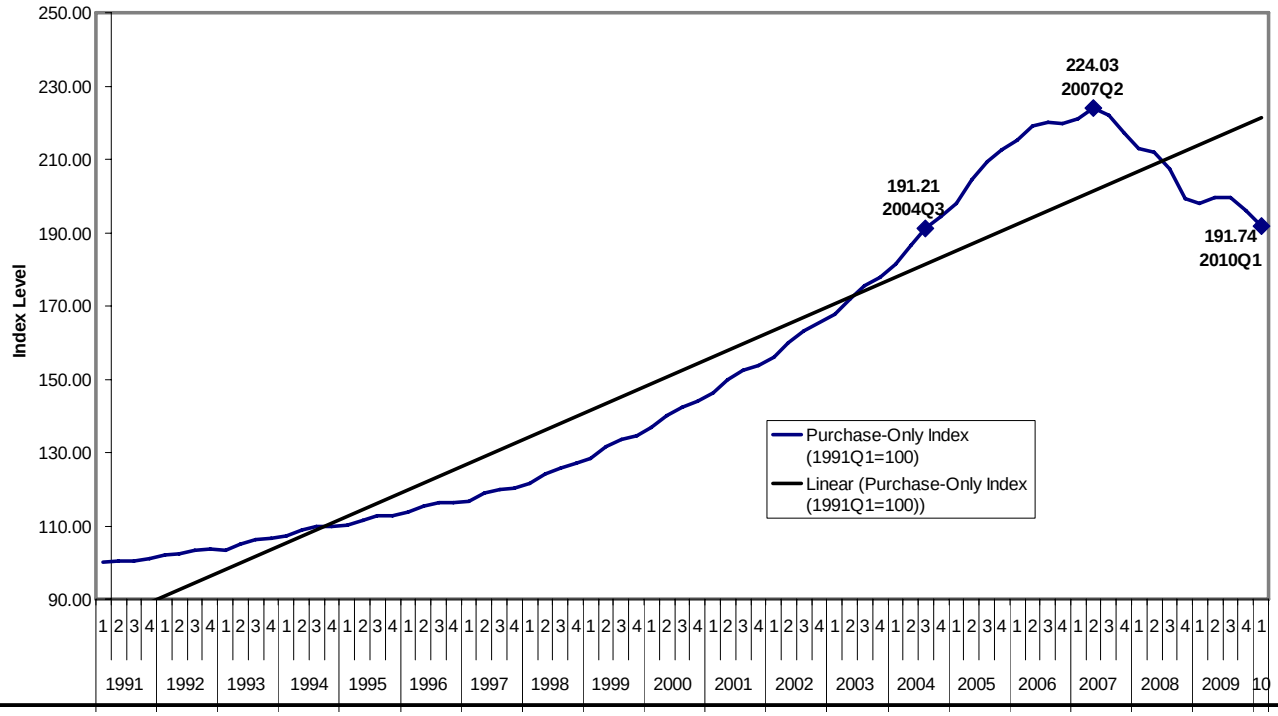
There seems to have been three successive, and ever-steeper, deteriorations in the U.S. Current Account deficit after the collapse of Bretton Woods, in 1971[56], and the imposition of the Oil Embargo during the Yom Kippur War in 1973. In each of the three successive waves there was a temporary subsiding of the trade deficit during recessions. But, as soon as recovery began, the trade deficit would grow even larger than it had been in the previous expansion. It is the Financial Account where the trade-imbalance is offset, and it is also the path by which capital was sucked into the U.S. that, along with

[55] Gray, H. Peter, THE EXHAUSTION OF THE DOLLAR (2004) Palgrave MacMillen: New York, and Kennedy (January 2008) p. 19.
[56] In August 1971, President Richard Nixon announced that the U.S. would no longer exchange dollars for gold. This essentially ended the Bretton Woods System.

Greenspan's policy at the Fed[57], provided the massive expansion of credit that fueled the Dot.Com and housing bubbles.

With regard to Rogoff and Rhienhart's second finding, *Asset Price Inflation*, it is the bursting of the 2000's housing bubble that ushered in the recent recession and financial crisis. Graph 66-A, tracks the Federal Housing Finance Agency's (FHFA) House Price Index (HPI), and a linear trend line, for the U.S. from 1991Q1 to 2010Q1. House prices peaked in 2007Q2, from that point on the asset-bubble, in housing, began bursting. By 2008Q2, the HPI had fallen back below the linear trend line, and by 2010Q1, the HPI had fallen back to its 2004Q3 level.

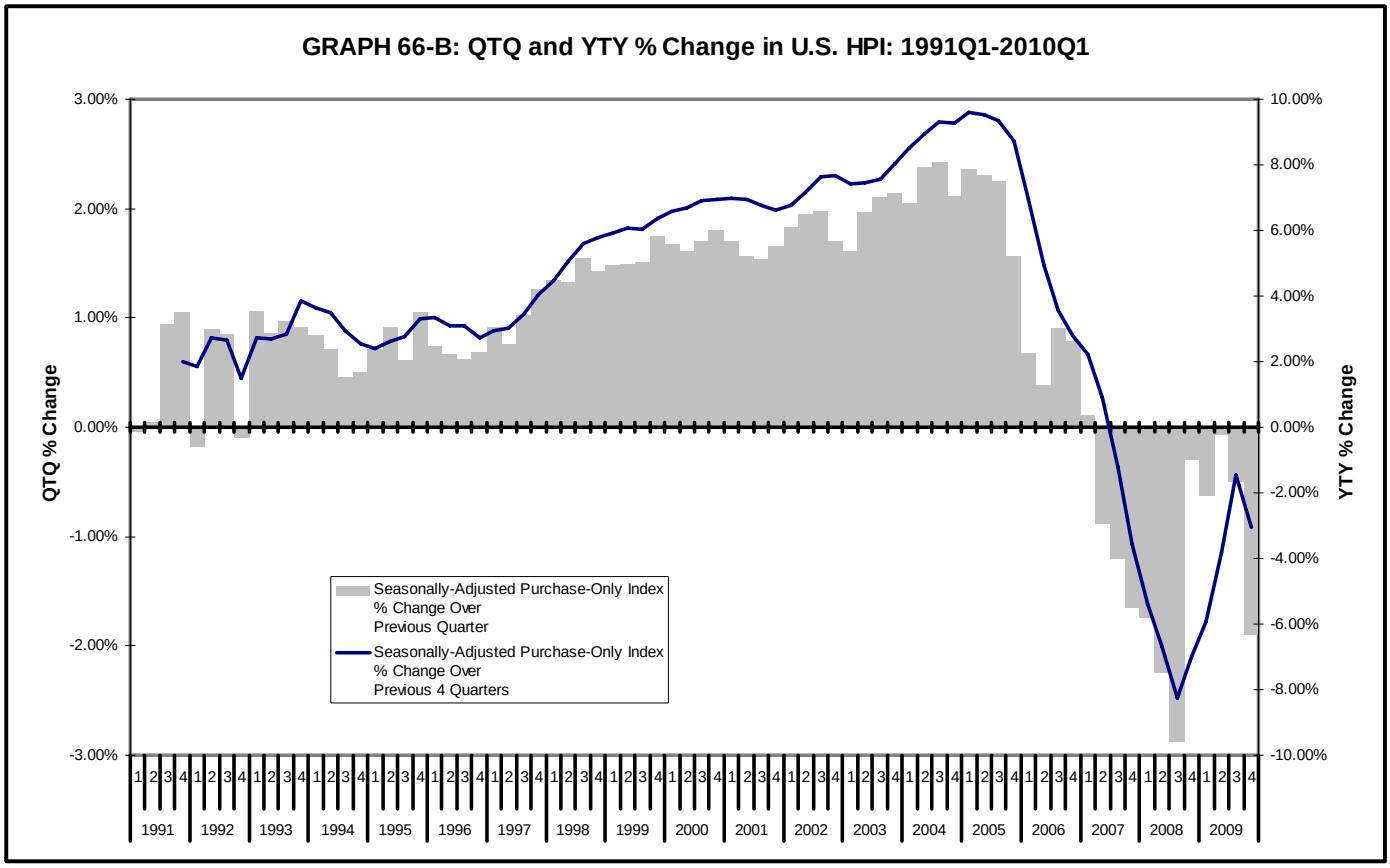
GRAPH 66-A: US HPI (Purchase-Only Index-SA): 1991Q1-2010Q1
(1991Q1=100)



SOURCE: Federal Housing Finance Agency.

[57] See Fleckenstein, William, with Frederick Sheehan, *GREENSPAN'S BUBBLES: The Age of Ignorance at the Federal Reserve* (2008) McGraw-Hill: New York

Graph 66-B presents the Quarter-to-Quarter (QTQ) and Year-to-Year (YTY) percent-change in the U.S. HPI from 1991Q1 to 2010Q1.



SOURCE: Federal Housing Finance Agency.

As can be observed in Graph 66-B, both the QTQ and YTY growth-rates began accelerating around 1997Q1. This coincides with several developments in the housing markets, and in particular, the securitization of sub-prime mortgages, as it was around this time when Collateralized Debt Obligations (CDO's) were first applied to the residential mortgage market[58]. The YTY growth-rate peaked in 2005Q2, and began to rapidly decline from then on.

As far as Rogoff and Rhienhart's third finding, *Rapidly growing and unsustainable levels of Household Debt (Overleveraged Households)*, graphs 46 and 47 above (pp. 64 and 65),

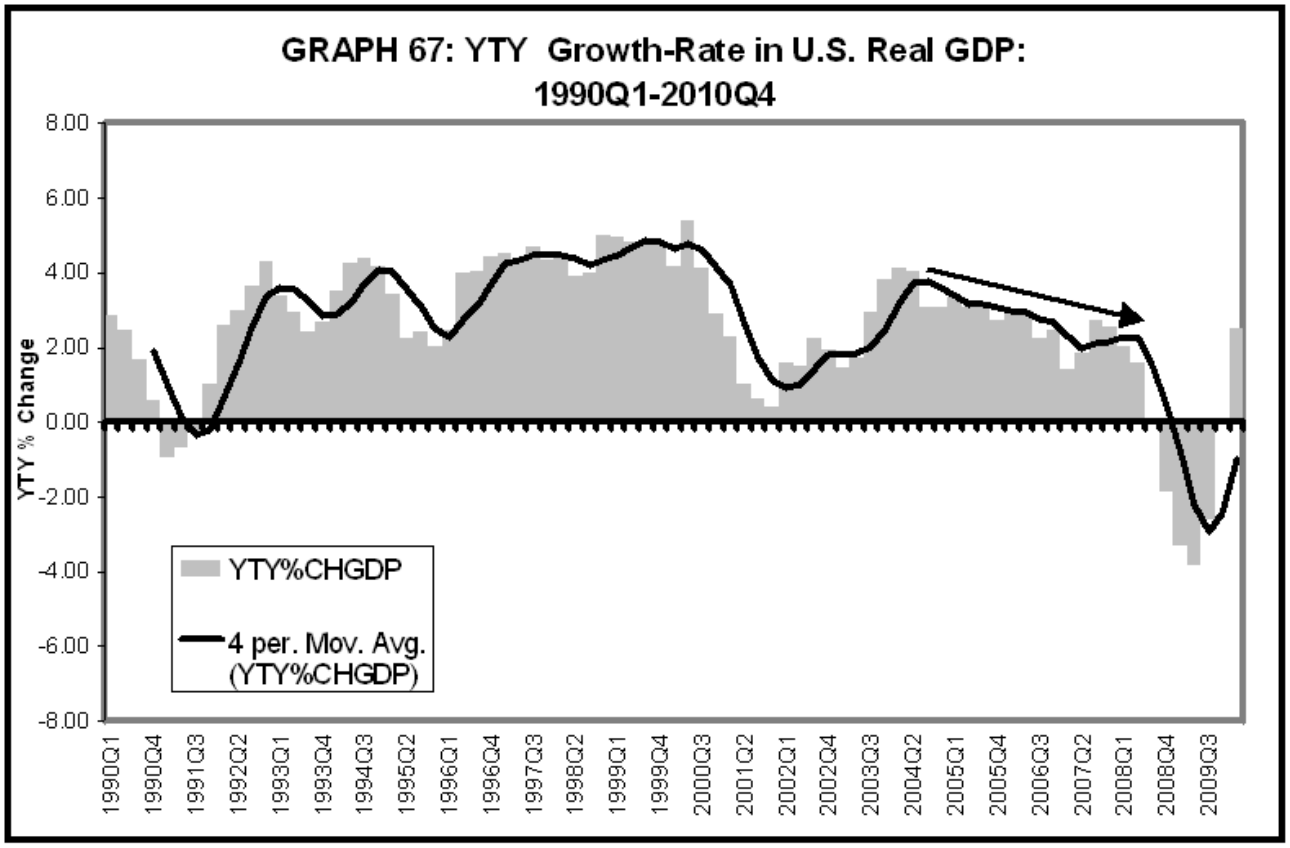
[58] Lucas, Douglas, Laurie S. Goodman, and Frank J. Fabozzio, COLLAREALIZEED DEBT OBLIGATIONS, 2nd Edition (2006) John Wiley & Sons: New York, p. 5

U.S. households' debt burden grew to unsustainable levels over the last decade, especially. This was facilitated by the expansion of credit through Greenspan's policies at the Fed (see Footnote 57) and the U.S. trade deficit (see discussion above on Rogoff and Rhienhart's first finding, and Footnote 55), which fueled the asset bubble in housing. Two factors drove the accumulation of debt by U.S. households. The first was homeowners' withdrawing equity from their homes through Mortgage Equity Withdrawals (MEW) and, the accumulation of massive credit card debt to finance consumption, as Americans consumed more than they produced (which was reflected in the chronic and accelerating trade deficits). But more fundamentally, the very nature of credit-creation itself creates debt. The issue surrounds the differences in the nature of *Inside Money* versus *Outside Money*. Outside Money is created by the government through its power of seignorage. Whereas, Inside Money is created by the banking system when it creates credit. Thus, as Minsky (1975) pointed out, Inside Money is endogenous, and further, unlike Outside Money, for every dollar of Inside Money created, there is a corresponding dollar of debt created[59]. Thus, a credit bubble necessarily implies a "debt bubble". As Fisher (1933) pointed out, the critical factor in the face of asset-price deflation is what is happening to real debt burdens[60]. That, in turn, is directly dependent on the growth in the general price level. Holding the nominal debt burden constant, and all other things constant, inflation decreases the real debt burden, while deflation increases the real debt burden. That is why Fisher noted that declining asset values, in conjunction with price deflation, which causes real debt burdens to increase, can result in a depression. The critical ingredient is whether or not households are carrying high levels of debt going into the deflation, especially following the collapse of an asset bubble. The crisis of 1973 to 1975 was a period in which there was no popping of an asset bubble. More importantly, real debt burdens were declining in the face of accelerating inflation. Over the recent crisis, not only had the credit bubble produced the high debt-levels carried by households, but there were actually periods of deflation (such as 2008Q4), in which real debt burdens were rising. Falling asset values,

[59] Minsky, Hyman, JOHN MAYNARD KEYNES (2006), McGraw-Hill: New York, originally published by Columbia University Press, 1975.
[60] Fisher, Irving, *Deb- Deflation Theory of Great Depressions*, ECONOMETRICA (1933) Vol. 1, No. 4, pp. 337-357

in conjunction with rising real debt burdens, result in deteriorating balance sheets, which leads to consumer retrenchment to repair net worth, or what Koo (2009) calls a *Balance-Sheet Recession*. This transmission mechanism is what probably played a significant role in the severity of the 1929-33 and 1937-38 contractions[61].

Finally, with regard to Rogoff and Rhienhart's fourth finding, *Slowing Growth in Output*, Graph 67 tracks the Year-to-Year (YTY) growth in U.S. Real GDP from 1990Q1 to 2010Q1. After recovering from the 2001 Recession and the 911 Attacks, the YTY growth-rate in U.S. GDP surged from 2002 to 2004. But, after 2004Q2, the YTY, quarterly growth-rate in U.S. Real GDP decelerated until the economy entered recession at the end of 2007, with the YTY growth-rate turning negative in the second half of 2008.



SOURCE: U.S. BEA and calculations by CTDOL-Research.

[61] See Mishkin, Fredrick C., *The Household Balance Sheet and the Great Depression*, J. OF ECONOMIC HISTORY (Dec. 1978) Vol. 38, No. 4, pp. 918-937

Rogoff and Rhienhart's (2009) also report a result that really surprised them. There were a number of factors shared by both developed, *and* undeveloped nations leading up to financial crisis. They included:

- A Capital-Inflow "Bonanza"

- A Run-Up in the Inflation-Adjusted Price of Housing Followed by a Bursting of the Asset Bubble

- Financial Liberalization, which Includes One, or More Of the Following:
  - Unrestricted Capital Flows
  - De-Regulation
  - Financial "Innovation"

- On average, the national debt increased by 86% three years after a banking crisis.

The first two factors common to both, developed and undeveloped nations, were discussed above with regard to the recent U.S. and World financial crisis[62]. As established, these factors were clearly present before the onset of the 2007 and 2008 financial panic. Rogoff and Rhienhart's third finding, shared by developed and undeveloped nations, was *Financial Liberalization*. One, two, or all of three forms were found to be present before the onset of financial crisis: *Unrestricted Capital Flows*, *De-Regulation*, and *Financial "Innovation"*.

Unrestricted Capital Flows --In August 1971, Richard Nixon announced that the U.S. would no longer accept dollars for gold. This ended the Bretton Woods System of fixed exchange rates. This would have profound implications for the U.S. and World economies in the 1970's. This is because, among other things, under a fixed exchange-rate system, with capital controls, fiscal policy is very effective, whereas monetary policy

[62] See pp. 99-103 above (this report).

is not very effective. Conversely, under a floating exchange-rate system, with free mobility of capital, fiscal policy becomes less effective, and it is monetary policy that becomes the most effective[63]. As a result of the collapse of Bretton Woods and the 1973 Oil Embargo, and the subsequent turbulence in the 1970's, capital controls were abolished. This was part of a broader counterrevolution that rejected Keynesianism and reinstated free-market economic theory as the reigning approach to policy. As a consequence, countries began abolishing their capital controls, starting between 1973 and 1974 with the U.S., Canada, Germany, and Switzerland. They were followed by Great Britain and Japan in 1979[64]. As illustrated above in Graph 65, it was after 1973, following the collapse of Bretton Woods, the 1973 Oil Embargo, and the removal of capital controls, that the U.S. began running chronic, and growing, trade deficits. Those deficits accelerated in the 1980's with the "Twin Deficits" problem. And, over each recovery/expansion since then, the trade deficit has had successive accelerations in its deterioration. As discussed above, the current account is balanced through the Financial (formally Capital) Account. Further, as also mentioned above, since the U.S. is the key current, it was able to avoid balancing the trade deficit with a drop in the exchange rate, resulting in prices for our goods falling on the international market, and rising import prices to domestic consumers, and thereby increasing exports, and reducing consumption of imports[65]. Without this path of adjustment, the only other path of adjustment open to the deficit nation, or region, is to sell off its assets. This was the route followed by the U.S. This, in turn, resulted in an inflow of capital flooding the domestic economy with excess reserves for expanding credit[66].

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[63] Dornbusch, Rudiger, Stanley Fischer, and Richard Startz, MACROECONOMICS, 10th Ed. (2007), McGraw-Hill/Irwin;: New York, pp. 295-309.
[64] Frankel, Jeffrey A, *Measuring International Capital Mobility: A Review* (1992) AMERICAN ECONOMIC REVIEW; and *Capital control*, Wkipedia.
[65] Although the Plaza Accord reached in 1985 did temporarily bring about an orderly decline in the dollar alleviating the Twin-Deficits problem, after recovering from the 1991 Recession, the U.S. Trade Deficit, once again, began growing as imbalances re-expressed themselves.
[66] The Fed could have counteracted this outcome on the domestic economy through *sterilization* policies to offset the expansionary nature of the current-account balancing. However, unregulated capital flows were part of the *Laizze Fairre* policy that dominated under Greenspan's Fed, and sterilization would have been interfering with the "free market".

Deregulation[67] --Although the increase in the volatility of the financial sector in the Post World War II Era can be traced back to the collapse the Bretton Woods system in 1971[68], the beginning of the modern era's march toward financial deregulation, in the U.S., can be traced back to *The Depository Institutions Deregulation and Monetary Control Act (DIDMCA) of 1980*[69] Commercial banking was then further deregulated with the passage of subsequent legislation that included the *Interstate Banking and Branching Efficiency Act of 1994*, which repealed the interstate provisions of the *Bank Holding Company Act of 1956* that regulated the actions of bank holding companies.

In response to the disintermediation in the Savings & Loans (S&L) sector, due to inflation, and high interest rates, in addition to eliminating Regulation Q, and in the free-market atmosphere of the early 1980's. Congress passed the *Garn - St Germain Depository Institutions Act of 1982*. This carried the above actions aimed at the disintermediation problem much further. And, for the first time, the government pursued measures intended to increase S&L profits as opposed to promoting housing and homeownership. Also in 1982, FHLBB eliminated the minimum number of stockholders restriction, and allowed a single-owner to own an S&L[70]. In response to the massive defections of state chartered S&Ls to the Federal system, the *Nolan Bill* passed in California in 1983. It allowed California-chartered S&Ls to invest 100% of deposits in any kind of venture. Deregulation of asset powers at the Federal level prompted a number of states to enact similar, or even more liberal, legislation. This "competition in laxity" has been attributed to a conscious effort by state legislatures to retain and attract state-chartered institutions that otherwise might apply for Federal charters, thereby reducing the states' regulatory roles and fee collections[71].

A critical piece of the march toward financial deregulation, and with the vigorous support of Alan Greenspan, was the *Gramm-Leach-Bliley Act of 1999* that repealed the

[67] This discussion draws on Kennedy (2009), Section III, pp. 39-44.
[68] Kindelburger Charles and Robert Aliber, MANIAS, PANICS, AND CRASHES: A History of Financial Crises (2005), Wiley Classics: New York, Ch. 1.
[69] See Kennedy (2009), Section III.
[70] FDIC, The S&L Crisis: A Chrono-Bibliography.
[71] HISORY OF THE 80's-LESSONS FOR THE FUTURE, p. 177.

Glass-Steagall Act of 1933, which established the Federal Deposit Insurance Corporation (FDIC) in the United States and included banking reforms, some of which were designed to control speculation. Among other things, it separated commercial from investment banking. The *Gramm-Leach-Bliley Act* (GLBA) allowed commercial and investment banks to consolidate. For example, Citibank merged with Travelers Group, an insurance company, and in 1998 formed the conglomerate Citigroup, a corporation combining banking and insurance underwriting services under brands including Smith-Barney, Shearson, Primerica and Travelers Insurance Corporation. This combination, announced in 1993 and finalized in 1994, would have violated the *Glass-Steagall Act* and the *Bank Holding Company Act* by combining insurance and securities companies, if not for a temporary waiver process (which Greenspan had been granting throughout the 1990's). The law was passed to legalize these mergers on a permanent basis. Historically, the combined industry has been known as the financial services industry[72].

Financial Innovation –At the same time that the financial services industry was being recreated through deregulation, both, driving, and being driven by, financial deregulation were new developments in the repackaging and supposed spreading of risk. This gave rise to structured securitization of pools of loans and the development of financial derivatives markets. The key to the development of the securitization of the secondary mortgage market was the Mortgage-Backed Security (MBS) first issued by FANNIE MAE in 1970. Known as a pass-through, mortgages are pooled together and pro rata bonds were issued using the mortgage-pool as collateral on the bonds. They were called "pass-throughs" because the principal and interest payments were passed through to investors who held the bonds.

A major innovation for the MBS market occurred in 1983 when Freddie Mac issued the first Collateralized Mortgage Obligations (CMOs). These new instruments appealed to investors with special maturity and cash-flow requirements. However, the first CMO

[72] ibid.

issues faced complex tax, accounting and regulatory obstacles. Much of those legal issues were resolved with the passing of the *Tax Reform Act of 1986,* which included the Real Estate Mortgage Investment Conduit (REMIC) tax vehicle. After 1986 the issuance of CMOs grew enormously. The new tax law also allowed for the creation of other mortgage instruments such as STRIPs, floaters and inverse floaters[73].

Structured Finance, Collateralized Debt Obligations (CDO's), which took securitization to the next level, were first created in 1987, they were brought to the residential mortgage market in 1995[74]. There are three motivations for creating CDO's[75]:

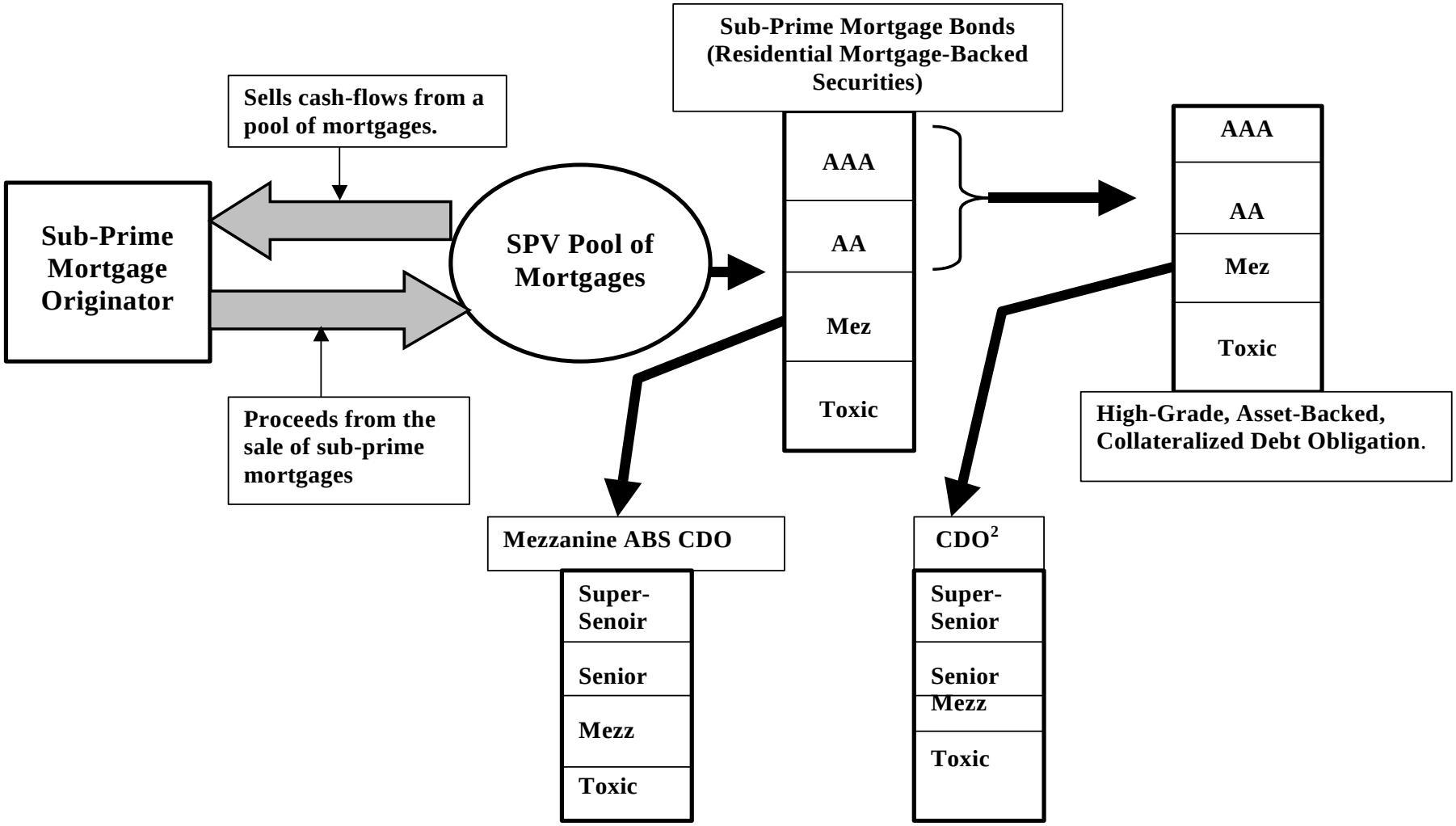
- Balance Sheet Purposes in order to
  - Shrink the balance sheet
  - Reduce required regulatory capital
  - Achieve cheaper
- Arbitrage
  - An asset manager can gain assets under management to increase fees
  - Asset-management services can be provided to investors through management of CDO's
- Origination
  - Banks and insurance companies that wish to increase their equity capital

Residential Mortgage-Backed Securities are securities backed by a pool (collection) of mortgages. But, unlike pro rata bonds issued under non-structured securitization, securities issued under an MBS-type CDO are structured. That is, tranches, or pieces, of the pool are structured according to the quality of the securities issued under a given tranche. Thus, senior, of the AAA-rated tranche has the lowest risk, and lowest return. Subordinated tranches include the middle or mezzanine risk-adjusted securities, with the highest-yielding bottom tranche, usually, the equity tranche, known as "toxic waste", bears the most risk[76]. The CDO-creation process is illustrated in Figure 1.

[73] Kolev, Ivo, PRIMER: MORTGAGE-BACKED SECURITIES (July 29, 2004) FINANCIAL POLICY FORUM, Derivatives Study Center: Washington
[74] Lucas, Douglas, Laurie S. Goodman, and Frank J. Fabozzio, COLLAREALIZEED DEBT OBLIGATIONS, 2nd Edition (2006) John Wiley & Sons: New York, p. 5
[75] ibid, p. 9
[76] ibid, p. 103

FIGURE 1: Creation of Sub-Prime Based CDO's

[Based on Gordon (2009), pp. 21 and 98]



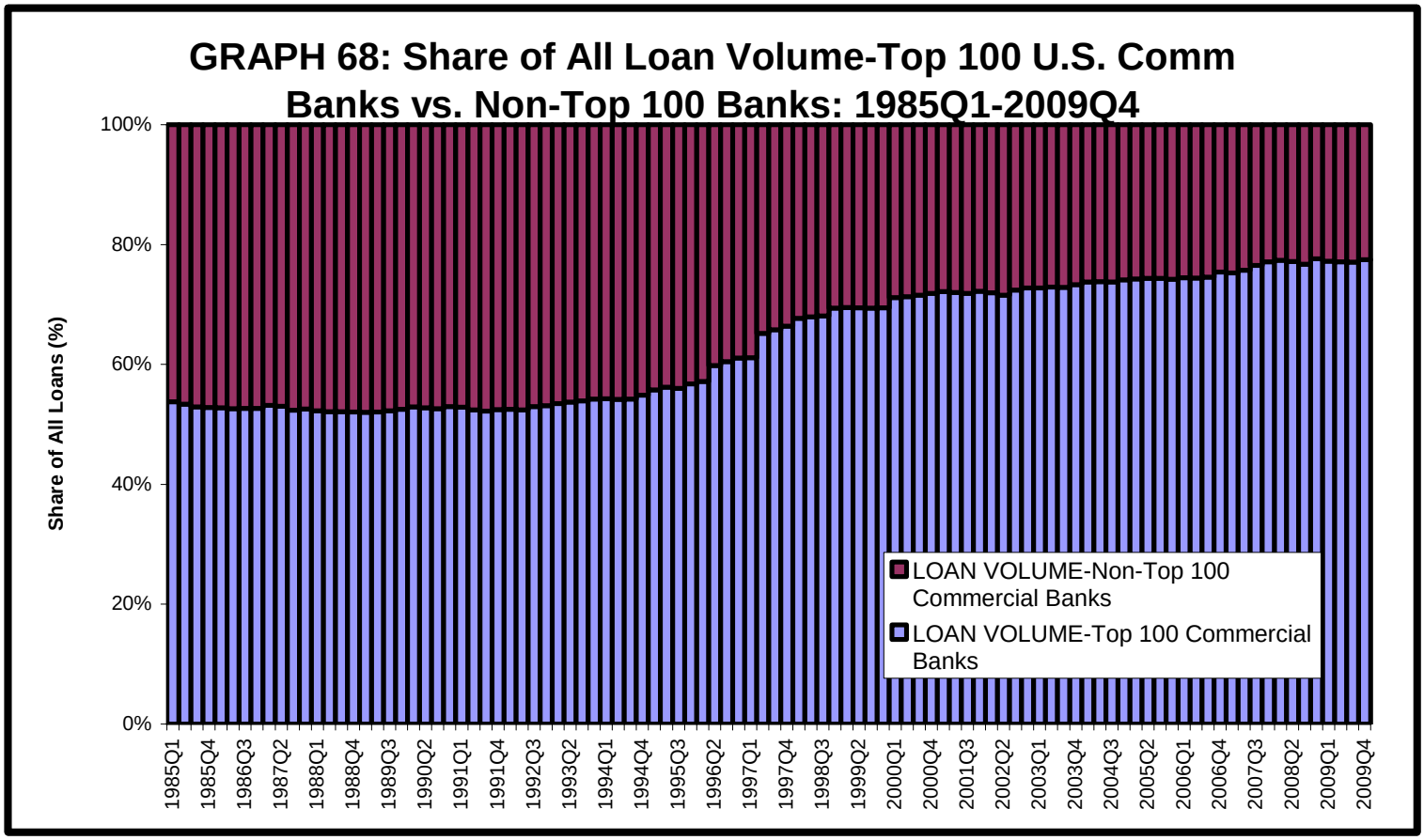
C. FINANCIAL REGULATION FOR THE 21st CENTURY

Between the 1930's and 2007, there were no systemic banking crises in the U.S. There were failures of some sizable banks, such as Penn Square and Franklin National in the 1970's, and some regional problems. In the 1980's and early 1990's there was the looting and collapse of the savings and loans, which did strain the financial system. But, this resulted in the insolvency of a major sector of the financial system, but not the insolvency of the entire financial system. The Panic of 2007-08 was the first time in the U.S., since the 1930's, that the entire financial system was perceived as insolvent. With the collapse of credit markets, real economic activity ground to a halt. Credit is the lubricant that greases the wheels of the real economy, when that lubricant dried up with the financial panic in 2007-08, the wheels of the real economy seized up, and economic activity came to a grinding halt.

The way forward may be to look to both Roosevelts for guidance on how to extricate ourselves from this crisis and to try to stave off future financial panics, certainly not forever, but maybe, at least, for another century.

1. Looking to TR: Anti-Trust and "Too Big to Fail"

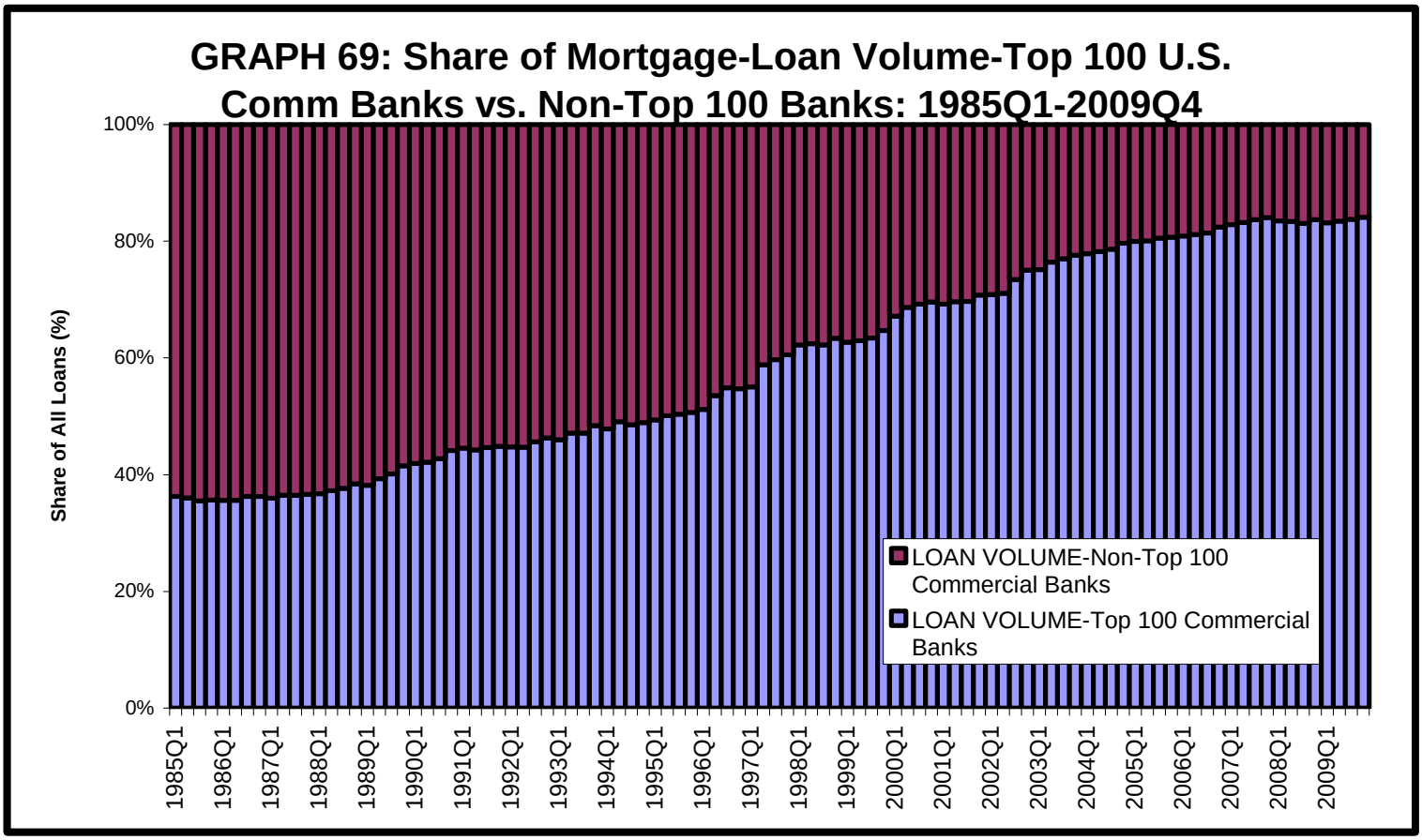
Teddy Roosevelt, the "Trust Buster", is certainly relevant for guidance on how to remedy the market distortions that brought us to the brink of Great Depression II. Over the last three decades, de-regulation of markets, including financial markets, has been the reigning philosophy, and it has been translated into policy. In line with this paradigm has been the lack of concern about the growing divergence between private and social costs as a result of various forms of market failure. One form of market failure, in particular, that has been ignored is that of market power. The results of the neglect of the effects of market concentration can be seen in Graph 68.



SOURCE: Federal Reserve Board.

Graph 68 tracks the share of All Loan Volume originated by the top 100 commercial banks, and the remainder of U.S. commercial banks over the span of the Federal Reserve Board's data: 1985Q1 to 2009Q4[77]. As of August 5, 2010, there were 7,813 FDIC-insured banks in the U.S.[78] that would imply 7,713 non-top 100 banks. In 1985Q1, the top 100 U.S. banks had 54% of all loan volume. By 2009Q4, the share of the top 100 had risen to 77%. That implies that the remaining 7,713 banks had 23% of all loan volume by U.S. banks. That represents a 24 percentage-point gain by the top 100 banks in the market-share of all loan volume over the 24-year period—a percentage-point gain per year. The growth in the share of residential mortgage-loan volume is even more striking.

[77] The Federal Reserve Board has released data for 2010Q1, though it has not been included in Graph 68.
[78] Federal Deposit Insurance Corporation < http://www2.fdic.gov/idasp/index.asp> Accessed August 10, 2010.



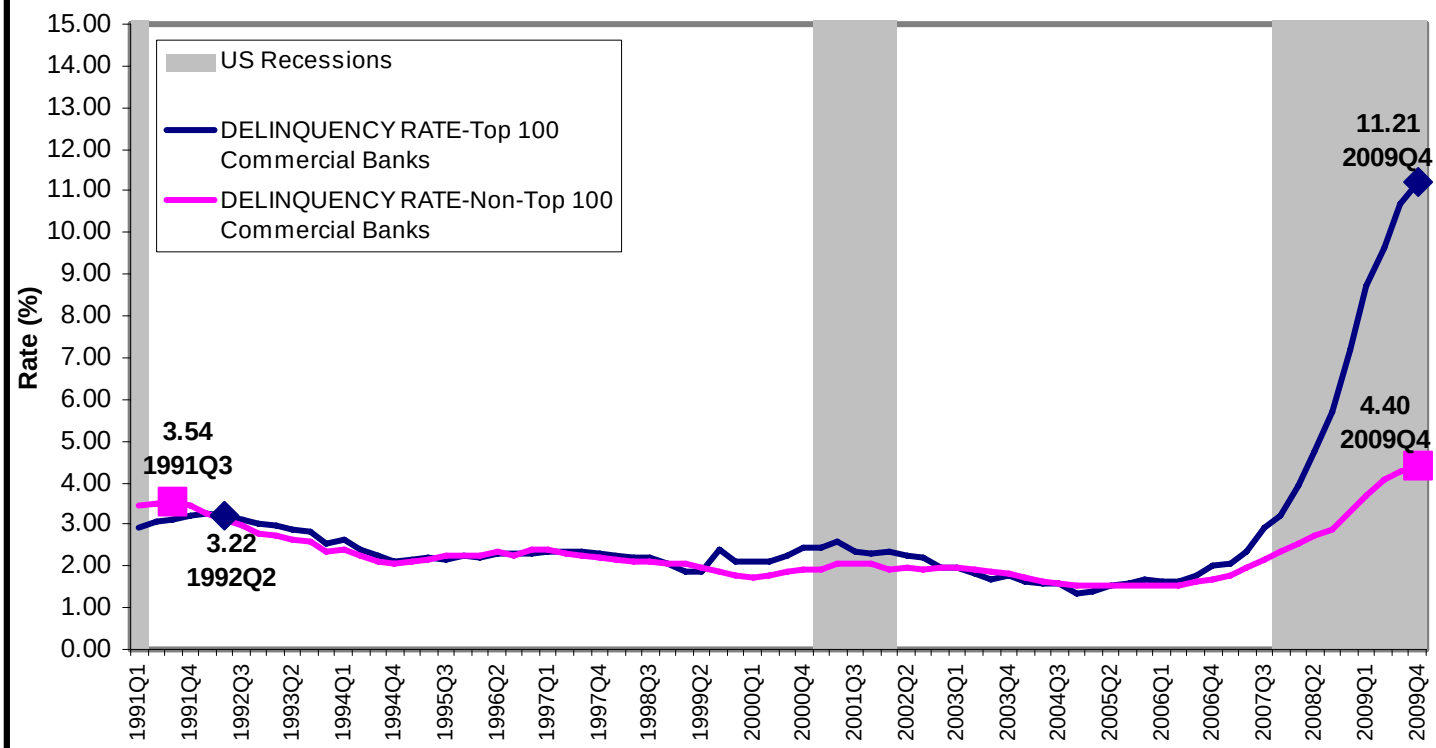
SOURCE: Federal Reserve Board.

Graph 69 tracks the share of mortgage-loan volume of the top 100 U.S. banks over the same span of data as Graph 68. In 1985Q1, the top 100 U.S. banks had 36% of mortgage-loan volume, but by 2009Q4, the top 100 U.S. banks had an 84%-share of mortgage-loan volume. That represents a 48 percentage-point increase in market share over the 24-year period. Further, it is the top 100 banks that have the most trouble with non-performing loans, and particularly in the area of residential mortgages. It is the top 100 banks that became the most vulnerable to the sub-prime mortgage crisis.

Graph 70 presents the delinquency rate on residential mortgages for the top 100, and non-top 100 U.S. commercial banks from 1991Q1 to 2009Q4. Until the meltdown in the sub-prime mortgage market, the delinquency rates on residential mortgages for the top 100 banks versus the remainder of U.S. banks was fairly close. In fact, after the 1990-91 Recession, the delinquency rate on residential mortgages for the non-top 100 banks was

slightly higher delinquency rate for the top 100 banks. However, things changed with the advent of the housing bust in 2006.

GRAPH 70: Delinquency Rate on Res Mortgages: Top 100 Comm Banks and Non Top-100: 1991Q1-2009Q4

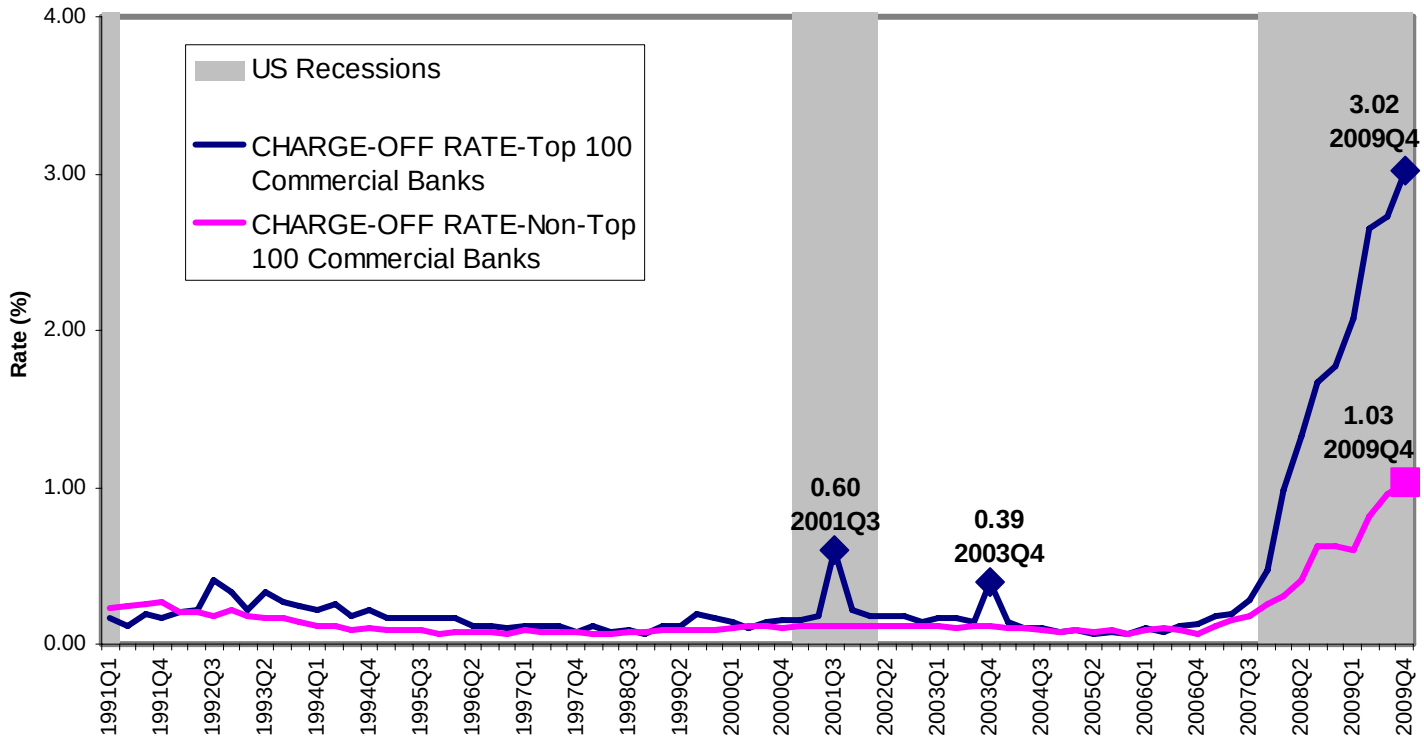


SOURCE: Federal Reserve Board.

With the end of house-price increases, and then actual price declines, the delinquency and foreclosure rates began to spike. But, as shown in Graph 70, while the delinquency increased from 1.53% in 2006Q2 to 4.40% by 2009Q4 for non-top 100 banks, it spiked from 1.64% for top 100 banks in 2006Q2 to 11.21% in 2009Q4. The delinquency rate on residential mortgages for the top 100 banks was 2 1/2 times the rate for non-top 100 banks. It is the same story with regard to the charge-off rate for residential mortgages, depicted in Graph 71. In 2006Q2, the charge-off rate for the top 100 banks was 0.08%, and that for the non-top 100 was 0.10%. By 2009Q4, it was 1.03% for the non-top 100 banks, but, at 3.02%, the charge-off rate for the top 100 banks was three times that for the non-top 100 banks. Further, while the charge-off rate for non-top 100 banks grew by 10

times between 2006Q2 and 2009Q4, the charge-off rate for the top 100 U.S. banks grew by 38 times over the same period.

GRAPH 71: Charge-Off Rate on Residential Mortgages: Top 100 U.S. Comm Banks vs. Non Top-100 Comm Banks: 1985Q1-2009Q4



SOURCE: Federal Reserve Board.

To the extent that anti-trust policy was even a consideration, the focus seemed to be on *In-Market* concentration, rather than *Market-Extension*[79]. Thus, if a big bank would enter a local market, regulators looked at the increase, if any, of concentration in the local banking market due to the big bank's entry. But, *how many* markets it operated in, or its absolute size with regard to the entire U.S. market were not considered. It is these factors that play an important role in systemic risk.

[79] Pilloff, Steven, *The Banking Industry*, pp. 275-279, in Brock, James, Editor, THE STRUCTURE OF AMERICAN INDUSTRY, 12th Edition (2009) Pearson Education: Upper Saddle River, NJ..

There are actually two issues here, the first: "to big to fail", which, could be addressed by breaking up large institutions, using both criteria, in-market and market-extension concentration measures, to establish threshold ratios that would trigger anti-trust action (i.e., to break up "too-big" institutions). The second: "too interconnected" could be addressed by requiring transparency in Credit Default Swaps, and adequate capital coverage to cover claims on such credit-default insurance. The anti-trust approach to solving the "too-big-to-fail" problem has been advocated by Paul Volcker, former Fed Chairman and a current economic advisor to President Obama[80].

2. Looking to FDR: Addressing the Three Horsemen of Financial Crisis

Many of the advocates for financial de-regulation over the last 30 years have cited advances in technology, such as small and more powerful PC's, networking, the Internet and the introduction of broadband. Advocates further cite financial market "innovations" such as financial derivatives, and, in particular, banks selling their loans to the capital markets, where pools of loans are securitized, and tranched to reduce risk (i.e., the "Great Moderation"). All these developments were pointed to as justifications for breaking down the walls that were erected by the *Glass-Steagall Act* between commercial banking and other financial activities, such as investment banking. Thus, even before repeal of *Glass-Steagall* by the *Gramm-Leach-Bliley Act of 1999*, Citibank and Travelers Insurance were granted a waiver by Greenspan's Fed and other regulators to merge and form a financial "supermarket" where commercial banking, insurance, and investment banking could all be offered under one roof. According to the business model, the newly formed CitiGroup could tap into economies of cross-marketing and cross-selling. Nevertheless, in spite of the "this time is different" arguments, and in spite of the latest technological developments and financial innovations, exactly 100 years after the collapse of a banking system in 1907, the U.S. and World economies were on the brink as a shadow banking system collapsed in 2007. Despite all the technological and financial-product

[80] Vekshin, Alison and Dawn Kopecki , *Dems, Wall Street water down financial reform*, (1/4/2010) BLOOMBURG, BUSINESSWEEK < http://www.msnbc.msn.com/id/34644156/ns/business-businessweekcom/> Accessed on August 11, 2010.

changes that had taken place between 1907 and 2007, human behavior was still the same. Unregulated banking activity in the beginning of both centuries allowed financial markets to run amuck, the consequences of said events threatened to destroy the real economy.

There are three aspects of market failure that seem to be present in financial crises, they are: Conflicts of Interest, Asymmetric/Hidden Information, and Principal-Agent Problems. Each one is briefly discussed below.

CONFLICTS OF INTEREST--Credit-rating agencies such as Standard and Poor's (S&P), Moody's and Fitch have incentive to bias their ratings upward to retain and attract more business from issuers of securities, as those issuers pay the agencies for ratings of their securities. Further, prior to the current crisis, in some cases, directors of the rating agencies sat on the boards of some of the issuers of Collateralized Debt Obligations (CDO's) and other structured-finance products that were to be rated.

ASYMMETRIC INFORMATION--A landmark article by Nobel Prize-winning economist George Akerlof related the problem of lemons in the used-car market to buyers and sellers' information about the true value of the car and how that related to the ability of the market to function[81]. This was reflected in the current crisis when the Asset-Backed Commercial Paper Market (ABCP) collapsed in August 2007, and when credit in all financial markets dried up in September 2008 after the failure of Lehman Brothers and the nationalization of AIG. Since the value of the Collateralized Debt Obligation (CDO's) used as collateral in the ABCP market were model-based, and those models had mis-priced the assets used as collateral, investors were not willing to buy commercial paper because they had no information on prices. As Ackerlof predicted, the market collapsed. Similarly, in September 2008, when the assets of Lehman Brothers could not be valued because the derivatives it held could not be priced, there was no information on

[81] Akerlof, George, *The Market for 'Lemons': Quality Uncertainty and the Market Mechanism*, QUARTERLY JOURNAL OF ECONOMICS (1970) 84: 488–500.

whether or not they were solvent. Thus, investors perceived a state-change in the market. That is, they perceived it as going from one of *risk*, to one of *uncertainty*[82].

PRINCIPAL-AGENT PROBLEMS--If one does not have any stake in the use of money they have borrowed through a debt contract[83] then there is no incentive not to behave recklessly with the borrowed money by taking irresponsible risks. One solution is for the lender to require that the borrower put up collateral, in the cases of households and businesses, and in addition, for businesses, some minimum amount of net worth. When borrowers must put up collateral for a loan then they have a lot to lose if they cannot repay the loan, because the borrower can sell off their collateral to re-coup the loan[84]. This is particularly relevant to the current crisis as many hedge funds, as well as, banks' off-balance sheet entities have been operating by being leveraged many times over. Not only did this encourage reckless behavior but, while the payoff was large if the investment (i.e., read "bet") paid off, the losses were catastrophic if they bet wrong. Consequently, overleveraging has played a crucial role in the current crisis, as it did in the run-up to the Great Depression.

The financial regulation put into place in the 1930's was designed to mitigate the dangers posed by the "three horsemen". Two major pieces of legislation that addressed the excesses of the 1920's financial markets were passed by Congress and President Franklin Roosevelt signed into law the *Securities Act* and the *Glass-Steagall Act* in 1933. In 1934, Roosevelt signed into law the *Securities Exchange Act of 1934.* The *Securities Act* regulated the issuing and trading of securities and the *Glass-Steagall Act*, among other things, created the Federal Deposit Insurance Corporation (FDIC) and erected the wall between commercial banking and other financial activities such as investment banking. The 1934 *Securities Exchange Act* created the Securities and Exchange Commission (SEC) to regulate the stock markets.

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[82] Within Knight's framework, a situation characterized by *risk* is to face an unknown outcome from a known distribution; a situation characterized by uncertainty is one in which a participant faces an unknown outcome from an *unknown* distribution. (See Knight, Frank,

[83] The problem also exists with regard to equity contracts (see Mishkin, Frederic S and Stanley G. Eakins, FINANCIAL MARKETS AND INSTITUTIONS, 6th Edition (2009) Prentice-Hall, pp. 376-379.

[84] See Mishkin and Eakins (2009), p. 380.

By the 1960's the banking lobby began chipping away at *Glass-Steagall*, and by 1980, deregulation (begun in the 1970's with the trucking and airline industries), had moved to the financial markets with the passage of *The Depository Institutions Deregulation and Monetary Control Act (DIDMCA) of 1980*[85] **,** which brought further assaults on Glass-Steagall. Finally, in 1999, the remainder of *Glass-Stegall* was repealed by the *Gramm-Leach-Bliley Act*[86].

3. Financial Reform in the 21st Century

The financial reforms that were put in place after the onset of the Great Depression were, in large part, due to the work of the Pecora Commission. The *Pecora Investigation* was an inquiry begun on March 4, 1932 by the U. S. Senate Committee on Banking and Currency to investigate the causes of the Wall Street Crash of 1929. The name refers to the fourth and final chief counsel for the investigation, Ferdinand Pecora[87]. Democrats originally viewed the commission as window dressing by the Republicans to placate public anger over Wall Street's misconduct, and its role in brining about the Depression. With Roosevelt's and the Democrats' victory in the 1932 elections, Pecora, a New York City Assistant District Attorney, became the fourth and final chief council for the investigative committee. With Pecora as Chief Council, it was anything but window dressing. He sought to uncover the causes of the financial collapse, and he personally examined many high-profile witnesses, who included some of the nation's most influential bankers and stockbrokers. Out of Pecora's investigations came the New Deal legislation that brought about 50 years of U.S. financial stability (see discussion above).

[85] Kennedy, Daniel W., Volume I: U.S. Economy, CURRENT CONDITIONS AND OUTLOOK FOR THE U.S. AND CONNECTICUT ECONOMIES: 2008-2010 (June 2009) Office of Research, Connecticut Department of Labor: Wethersfield, CT., Section III.
[86] Frontline, *The Long Demise of Glass-Steagall*, (2005) PUBLIC BROADCASTING SYSTEM http://www.pbs.org/wgbh/pages/frontline/shows/wallstreet/weill/demise.html , Accessed on August 10, 2010.
[87] PECORA COMMISSION, Wikipedia

In May 2009, the bipartisan, Financial Crisis Inquiry Commission was instituted to investigate the circumstances surrounding the recent financial crisis. But, is this the 21st Century's Pecora Commission? On its website, the Commission states:

> In the wake of the most significant financial crisis since the Great Depression, the President signed into law on May 20, 2009, the Fraud Enforcement and Recovery Act of 2009, creating the Financial Crisis Inquiry Commission. The Commission was established to "examine the causes, domestic and global, of the current financial and economic crisis in the United States."[88]

Further, it sates that:

> A report of the Commission's findings is due to the Congress, President and, most importantly, the American people on December 15, 2010.[89]

However, President Obama signed into law the *Wall Street Reform and Consumer Protection Act* on July 21, 2010[90]. So, how does the Financial Crisis Inquiry Commission make recommendations to the President on financial reform in December when the financial reform bill has already been signed into law in July? One explanation could be that subsequent financial reform measures will be coming forth sometime in 2011, based on the recommendations of the commission in December. After all, New Deal financial regulation was the result of several pieces of legislation that passed between 1933 and 1935. On the other hand, it could be because the commission is window dressing.

Nevertheless, by signing this bill, President Obama implements the most sweeping reform of financial regulation since the New Deal. It includes the following[91]:

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[88] About, FINANCIAL CRISIS INQUIRY COMMISSION Website < http://fcic.gov/about/> Accessed on August 10, 2010.
[89] ibid
[90] Jackson, Jill, *Financial Reform Law Highlights*, (July 21, 2010) CBSNEWS.COM http://www.cbsnews.com/8301-503544_162-20011200-503544.html Accessed on August 11, 2010.
[91] Dennis, Brady, *Obama signs financial overhaul into law* (July 22, 2010) WASHINGTONPOST.COM < http://www.washingtonpost.com/wp-dyn/content/article/2010/07/21/AR2010072100512.html> Accessed on August 10, 2010

- Establishes an independent consumer bureau within the Federal Reserve to protect borrowers against abuses in mortgage, credit card and some other types of lending[92].

- It grants the government new authority to seize and wind down large, troubled financial firms, and sets up a council of Federal regulators to monitor threats to the financial system.

- It mandates oversight of the vast market for derivatives, and gives shareholders more say on how corporate executives are paid.

However, save a few exceptions, the legislation does not attempt to alter the fundamental shape of Wall Street. And, it stops short of breaking up the nation's megabanks, it leaves out a ban on trading certain derivatives, and it doesn't set firm limits on executive pay. Finally, it does not significantly streamline the financial regulatory framework[93]. As Gorton (2009) [94] points out, what should be regulated is banking activity, regardless of who does it. Further, there should be a valuable charter that limits entry so that "banks", defined by what they do, will have an incentive to defend their valuable charter. One way to do that is to limit entry into banking. This should be the basis of bank regulation. A critical factor that contributes instability to the financial system is excessive competition by banks, which fosters risky behavior in the search for profits[95].

But, this still leaves the problem of "zombie banks" and the toxic assets that still lurk in the shadows of their balance sheets. As Gorton (2009) notes, the problem of identifying which assets are toxic would require tracing back the lineage of each Collateralized Debt Obligation called a "look-through", which is nearly an impossible task[96]. He likens the problem of tracing the assets' lineage back to the individual mortgages that went into their construction to an E-Coli outbreak. But, at least with E-Coli the contaminated ground beef can be traced back by its lot number, which allows identification of the

[92] Although, originally the consumer bureau was to be a stand-alone agency not housed within the Fed.
[93] See Brafy (July 22, 2010)
[94] Gorton, Gary B., SLAPPED BY THE INVISABLE HAND (2009) Oxford University Press, USA: New York, pp. 160-161.
[95] ibid, pp. 156-157.
[96] ibid, pp 111-113.

contaminated carcasses that were used create the tainted beef. As noted above, no such thing can be done with the potentially toxic assets. So what can prevent a series of nasty surprises from sending us right back into financial panic again? In lieu of policymakers' reluctance at outright nationalization, a better route than the stress tests may have been another Resolution Trust Corporation (RTC), or better yet, another Reconstruction Finance Corporation (RFC).

President George H.W. Bush announced his plan for what would become the *Financial Institutions Reform, Recovery, and Enforcement Act* (FIRREA) on February 9, 1989. FIRREA was the most important legislation affecting the Savings & Loan (S&L) industry since the Great Depression[97]. Further, it was FIRREA that created the Resolution Trust Corporation (RTC). Between 1989 and mid-1995, the Resolution Trust Corporation closed or otherwise resolved 747 thrifts with total assets of $394 billion[98]. Although the RTC did have its problems, and reorganized twice, it eventually did resolve the S&L mess. The taxpayers still lost $125 billion on the whole episode, but, that may have had more to do with free-market hawks pressuring the RTC to sell acquired assets back to the private sector before the taxpayers could get their money back.

A still better model might have been the Reconstruction Finance Corporation (RFC). The RFC, like the RTC, was an independent agency of the U. S. government. It was chartered under Herbert Hoover in 1932. It was continued by the New Deal and played a major role in handling the Great Depression in the United States. Starting in 1933, Franklin Roosevelt kept the agency and revitalized it after it languished under Hoover. Roosevelt increased the funding, streamlined the bureaucracy, and used it to help restore business prosperity, especially in banking and railroads. He appointed Texas banker Jesse Jones as head, and Jones turned the RFC into an empire with loans made in every state[99].

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[97] Davison, Lee, *Politics and Policy: The Creation of the Resolution Trust Corporation* (2005) FDIC BANKING REVIEW, Vol. 17: No. 2, p. 17.
[98] Federal Deposit Insurance Corporation, <http://www.fdic.gov/ bank/ analytical/ banking/ 2000dec/ brv13n2_2.pdf >
[99] Reconstruction Finance Corporation, WKIPEDIA

Finally, the Swedish model may have provided a useful template for restoring the U.S. financial system to health. Though there should certainly be caution in attempting to directly export Sweden's model to solving the U.S. financial crisis, as Jonung (February 2009), author of a European Commission study states:

> The exportability of the Swedish model of the 1990s to countries suffering from financial turmoil today requires a detailed knowledge of the institutions, legislation and political conditions in the country involved. The application of these lessons outside Sweden is not a simple task, given the major differences between the initial conditions of the Swedish crisis of the early 1990s and the present global financial crisis. Nevertheless, the Swedish experience of bank resolution does provide important lessons for today[100].

Swedish approach for resolving the banking crisis of 1991-93 can be summarized into seven policy lessons. They are as follows[101]:

1. ***Political unity***- A central feature of the Swedish model was the political unity underlying the bank resolution policy from the very start.

2. ***Blanket guarantee of bank deposits and liabilities***-The Swedish government, in cooperation with the opposition, announced that depositors and other counterparties of Swedish commercial banks and Swedish financial institutions in which the State was involved were to be fully.

3. ***Swift policy action***- Once it was fully understood that a serious financial crisis was in the making, the government, the parliament and the Riksbank responded by taking decisive steps to support the financial system and, in particular, banks in distress.

4. ***An adequate legal and institutional framework based on open-ended funding***- On December 1992, the Swedish Parliament, the Riksdag, passed legislation by and overwhelming majority and with no political infighting to establish a Bank Support Authority, the Bankstödsnämnd. The parliament decided that the Bankstödsnämnd was to be given open-ended funding, not a fixed predetermined budget. This was a deliberate choice in order to avoid the risk that the

[100] Jonung, Lars, *The Swedish Model of Resolving the Banking Crisis of 1991093. Seven Reasons Why it Was Successful,* EUROPEAN ECONOMY: Economic Papers 360 (February 2009) European Commission: Brussels, p. 1.
[101] ibid, pp. 7-14.

Bankstödsnämnd would be forced to go back to the Riksdag to ask for additional funding.

5. ***Full information disclosure***- From the very start, the Bankstödsnämnd sought to obtain a clear picture of the financial problems facing the financial institutions through due diligence. Banks that turned to the Bankstödsnämnd with requests for support were obliged to give full disclosure of all their financial positions, opening their books completely to scrutiny. This requirement facilitated the resolution policy, as well as making it acceptable in the eyes of the public.
6. ***Differentiated resolution policy to maintain the banking system and prevent moral hazard***- Banks that turned to the Bankstödsnämnd were dealt with in a way that minimised the moral hazard problem. In short, the aim was to save the banks – not the owners of the banks. By forcing owners of banks to absorb losses, public acceptance of the bank resolution was fostered. In this way, taxpayers were likely to feel that the policy was fair and just.

7. ***The role of macroeconomic policies to end the crisis***- The bank resolution policy in Sweden was much facilitated by the design of monetary and fiscal policies to counteract the crisis once it peaked in the autumn of 1992. These measures allowed the Swedish economy, and hence the financial system, to recover fairly rapidly

4. Why a Government Response?

The question many have had is: Why a government response? To answer that question, it is first helpful to look at the dynamics that generate financial crises. One model that offers some insights into the dynamics that produce financial crisis is that proposed by Brunnermeier (2009). He summarizes the economic mechanisms through which these negative synergies interacted with each other to produce the recent credit bubble and its subsequent popping. He notes four economic mechanisms[102]:

1. Borrowers' *Balance-Sheet Effects* cause two *liquidity spirals*
   - When asset prices drop, financial institutions' capital erodes, and
   - At the same time, lending standards and margins tighten.

2. The *lending channel* can dry up when banks become concerned about their future access to capital markets and start hoarding funds (even if the creditworthiness of the borrowers dose not change)

[102] Brunnermeier, Markus K., *Deciphering the Liquidity and Credit Crunch 2007-2008* J. OF ECONOMIC PERSPECTIVES (Winter 2009) (23): 1 77-100, p. 78.

3. Runs on *financial institutions*, like those that occurred at Bear Stearns, Lehman Brothers, and Washington Mutual, can cause a sudden erosion of bank capital.

4. *Network effects* can arise when financial institutions are borrowers *and* lenders at the same time. In particular, a gridlock can occur in which multiple trading parties fail to cancel out offsetting positions because of concerns about counterparty risk. To protect themselves against the risks that are not netted out, each party has to hold additional funds.

Krishnamurthy (2010)[103] offers a similar dynamic that leads to financial crisis:

1. When the feedback starts from falling asset values resulting in a decrease in risk-capital, which increases risk-aversion.

2. This causes a further fall in asset prices.

3. Falling liquidity raises haircuts reducing repo activity and trading, further reducing liquidity.

4. The above three feedbacks are indicative of EXTERNALITIES.

5. Further, the financial sector is systemically important because it supplies the credit the lubricates the wheels of the real economy

Given the above models of the dynamic of financial crisis, three major advantages justify a government response to financial crisis. Following Krishnamurthy (2010)[104]:

1. The government can internalize the negative externalities (noted in Point 4, above) by injecting risk capital into the financial sector.

2. Further, its comparative advantage over the private sector is that it has little, or no demand for liquidity. It can issue T-Bills.

3. Thus, the government can offer lower haircuts (see Box 1, above), and longer-maturity repo loans since it DOES NOT face liquidity considerations.

[103] Krishnamurthy, Arvind., *How Debt Markets have Malfunctioned in the Cris*is, J. OF ECONOMIC PERSPECTIVES (Winter 2010): Vol. 24 No. 1:, p. 26.
[104] ibid, pp. 26-27.

D. THE SOVERIEGN DEBT CRISIS

The Greek debt crisis was touched off by the credit-rating agencies' downgrade of Greece's bonds based on their belief that Greece's national debt was at unsustainable levels[105]. Was the timing of the credit agencies' downgrade of Greece motivated by their being caught off guard by Dubai's postponing repayment of their bonds[106]? Regardless of the timing, one thing is clear, the drop in tourism and shipping, the mainstays of the Greek economy, due to the recent World financial and economic crisis, precipitated the current fiscal crisis in Greece. But, in addition to structural problems in Greece itself, there are also contradictions in the structure of the European Union (EU), or Eurozone, which also must be resolved. Though the EU countries under the Euro have a single monetary policy through the European Central Bank (ECB), each country carries out its own fiscal policy. The only attempt at any sort of EU-wide fiscal coordination is the Maastricht Treaty's requirement that member countries' deficits not exceed 3% of their GDP[107]. One currency and multiple fiscal policies contributes to the current-account distortions within the Eurozone, where some EU countries are running persistent surpluses, while others are running persistent deficits. Ultimately, the problem of one EU-wide monetary policy and multiple fiscal policies must be resolved. Of course, the big stumbling block for solving the single-versus-multiple fiscal-policies problem is the sovereignty issue[108]. But, another factor playing a major role in this crisis is the recent financial crisis. As governments took on private debt as a result of bailing out the banks to keep them from going under, the private debt accumulated over the boom period was transferred to governments during the bust[109]. When George Papandreou became Prime Minister in October 2009, he found that the previous government had hidden the extent of Greece's debt[110]. Further, it has now come to light that the American investment bank Goldman-Sachs may have helped Greece hide its

[105] De Grauwe, Paul, *Greece: The start of a systemic crisis of the Eurozone?* (11 May 2010) VOXEU.COM <
[106] De Grauwe, *Paul Europe Has no Future without A Political Union* BLOOMBURG.COM (13 May 2010).< http://www.bloomberg.com/news/2010-05-13/euro-has-no-future-without-a-political-union-commentary-by-paul-de-grauwe.html >
[107] Flowers, Andrew, *Demystifying Sovereign Debt in Greece: Why It Matters to Us*, EconSouth (2010Q2) Federal Reserve Bank of Atlanta: Atlanta, pp. 7-12.
[108] ibid, p. 12.
[109] De Grauwe (13 May 2010).
[110] Flowers (2010Q2), p. 8.

debt by manipulating the currency-exchange rate, just before Greece entered the EU, through the use of Credit Default Swaps[111]. Other EU countries are now possible candidates for the spread if the sovereign-debt crisis, particularly Portugal, Spain, Ireland, Italy, and the UK may also be facing severe fiscal stress. An important player in how all this will turn out is the EU's largest economy: Germany[112]. Both Germany and France have to be on board for any bailout to be effective and to be considered legitimate. Finally, there is the issue of International Monetary Fund (IMF) involvement and whether or not the EU can overcome issues of independence with regard to the IMF's involvement.

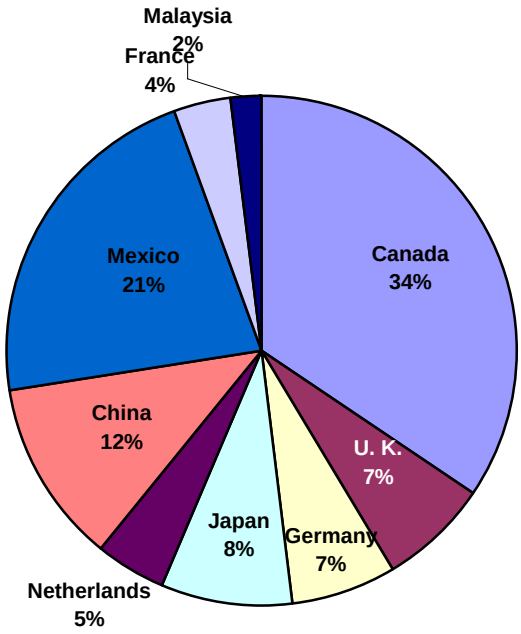
The subsequent impact of the Greek debt crisis has been felt around the World over the first half of 2010. Not only is fear of contagion spreading throughout Europe, as discussed above, but that it could spread far beyond Europe. Other countries' banking systems are large holders of Greek sovereign debt and are vulnerable to credit crises, such a crisis could be participated by Greece restructuring its payments on its bonds leading to a partial default. If this were to result in the failure of a large European financial institution, it could precipitate a liquidity crisis, or even a solvency crisis, resulting in a European version of the Lehman Brothers collapsed in the United States, and like that event, could send shockwaves throughout the World's financial system. Outside of Greece and the European Central Bank (ECB), French and German banks are the largest holders of Greek debt[113].

In addition to another possible financial crisis spreading across the Globe, but with Europe as the epicenter, as opposed to the U.S. in 2007 and 2008, the fallout from the Greek debt crisis may also have other repercussions for the U.S. Graph 72-A shows the major destinations for U.S. Exports over the first half of 2010. The two largest U.S. export destinations are its two

[111] See BUSINESSWEEK and Phillips, Mark, *U.S. Banks Helped Fuel Greek Debt Crisis* (February 10, 2010) CBS.COM < http://www.cbsnews.com/stories/2010/02/28/eveningnews/main6253608.shtml > Accessed on August 12, 2010.
[112] See Hamilton, Scott and Tom Keene, *Germany Should Aid Greece With 'Win-Win' Wage Boost, Posen Says*,(March 25, 2010) BUSINESSWEEK,COM < http://www.businessweek.com/news/2010-03-25/germany-should-aid-greece-with-win-win-wage-boost-posen-says.html> and Czuczka, Tony and Brian Parkin, *Merkel Makes Public Case for Germany to Aid Greece (Update2)* (May 03, 2010) BUSINESSWEEK,COM < http://www.businessweek.com/news/2010-05-03/merkel-makes-public-case-for-germany-to-aid-greece-update2-.html>
[113] Flowers (2010Q2), pp. 9-10.

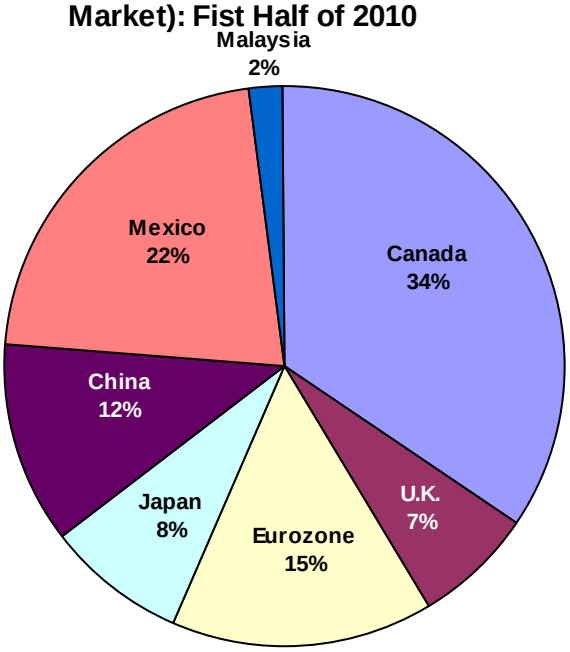
NAFTA partners Canada, which accounted for 34% of exports, and Mexico (21%). China was third at 12%, followed by Japan, which received 8% of our exports. Rounding out the top export-destinations was the U.K. and Germany, each receiving 7% of our exports, followed by France, the Netherlands, and Malaysia. However, when the EU-member countries are considered as one market (which is the whole point of the Eurozone), a different picture emerges. This picture is presented in Graph 72-B.

GRAPH 72-A: Major U.S. Export Destinations: Fist Half of 2010



SOURCE: Federal Reserve Bank of Boston, New England Economic Indicators

GRAPH 72-B: Major U.S. Export Destinations (Eurozone as One Market): Fist Half of 2010



After Canada and Mexico, the Eurozone market is the third largest destination for U.S. Exports, accounting for 15% of exports in the first half of 2010. Another hit to the European economy from another financial crisis would have a significant negative impact on U.S. Exports. Such a result would present two problems for the U.S. Economy's ability to recover from the recent crisis: directly, it would reduce GDP growth, but, also it would further prevent the rebalancing of the U.S. current-account distortions, which is one of the underlying, longer-run causes, of the recent crisis. If the U.S. is to redress its trade imbalances, it must import less and export more. Of course, this adjustment cannot take place in a vacuum, other countries, such as Germany, China, and Japan must reduce their reliance on export growth and increase the importance of domestic consumption to address their persistent trade surpluses[114].

[114] In particular, Germany's persistent trade surplus, especially with regard to its other Eurozone trading partners, has significant implications for macroeconomic stability within the European Union.

V. HAWKS, DOVES, AND CHICKENS: The U.S. Deficit and Debt

As in the 1930's, the current financial and economic crisis has resulted in significant spending by governments as a result of the banking crisis, the need to stimulate the economy in the wake of near financial collapse, and the triggering of the automatic stabilizers as output and employment declined. A study of financial crises over an 800 year span by Rogoff and Rhienhart (2009) found an average increase of 86% in national debt within three years of the onset of a banking crisis.[115] With growing public deficits, also like the 1930's, and again in the 1980's and the 2000's, the debate over deficits has heated up again. The deficit hawks tell us that balancing the Federal budget is the most prudent course for restoring growth and vitality to the economy. They compare the Federal budget to that of the family, who must tighten their belts in a time of austerity. The deficit doves argue that comparing the Federal budget to that of an individual family is committing the Fallacy of Composition[116]. They further argue that running Federal deficits while significant excess capacity exists in the economy is not a vice but rather a virtue. As the spender of last resort, they view such government action as the only way to break contracting of employment, income and output. Further, the lost output to the economy due to an *Output Gap*[117] is lost forever and never recovered. The Chicken Littles tell us that the growing national debt is a sign that "the sky is falling" and that the debt will precipitate a Greek-style sovereign-debt crisis, and be a burden on our children. Who is right? What are the implications of Federal deficits and the debt?

According to the Congressional Budget Office (CBO), there are three factors that have contributed to the recent growth in the U.S. national debt[118]:

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[115] Rogoff, Kenneth and Carmen M. Rhienhart, THIS TIME IS DIFFERENT (2009) Princeton University Press: Princeton, NJ.

[116] The *Fallacy of Composition* is the fallacy of inferring from the fact that if every part of a whole has a given property that the whole also has that property. See LOGICAL FALLACIES < http://www.logicalfallacies.info/relevance/composition/> Accessed on August 16, 2010.

[117] The concept of the *Output Gap*, introduced by Author Okun (see Footnote 144, below), is the difference between the economy's potential output and the actual output. Thus, the Output Gap = Full-Employment GDP – Actual GDP.

[118] Huntley, Jonathan, *Federal Debt and the Risk of a Fiscal Crisis*, ECONOMIC AND BUDGET ISSUES BRIEF (July 27, 2010) Congressional Budget Office: Washington, p. 1.

1. An imbalance between federal revenues and spending that predates the recent recession, and the exacerbation of that imbalance due to the financial crisis.

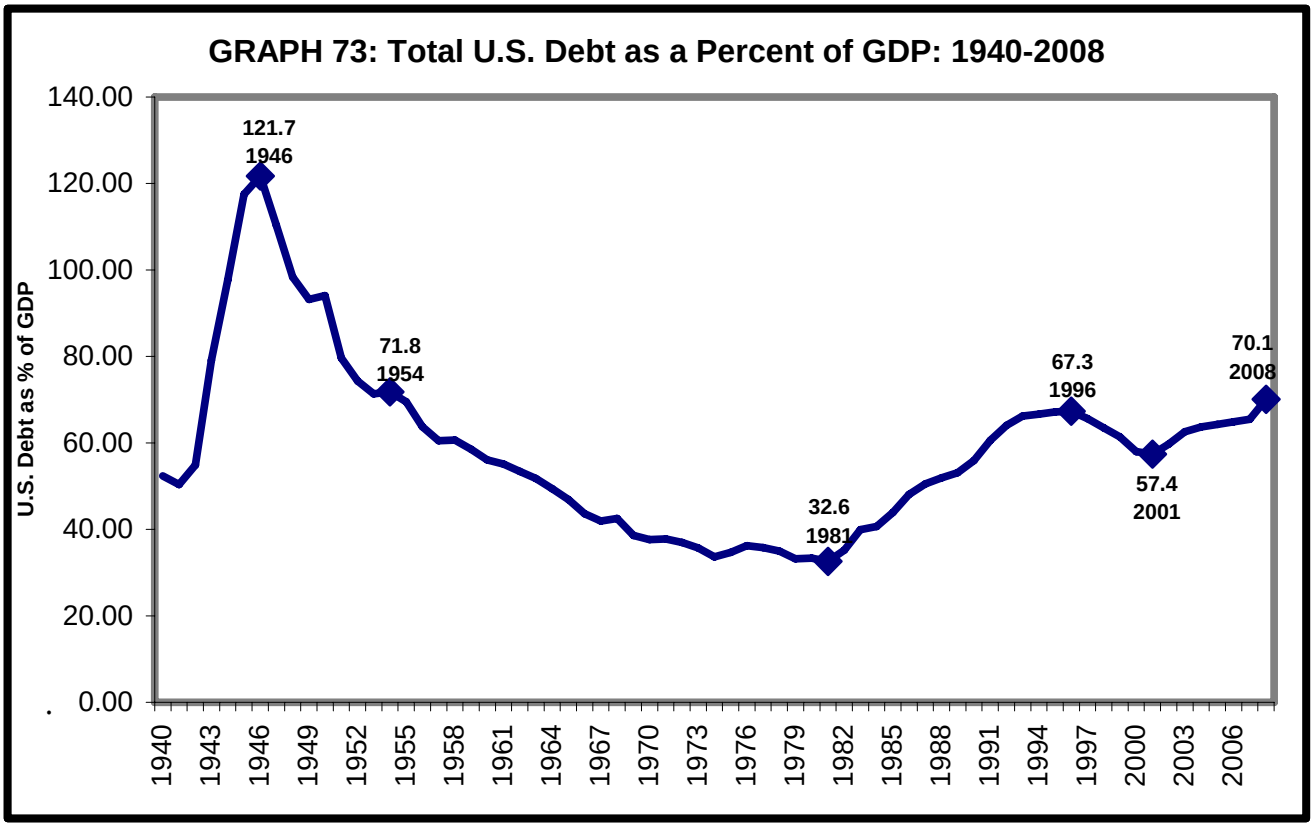
2. The sharply lower revenues and elevated spending that derive directly from the recession and panic.

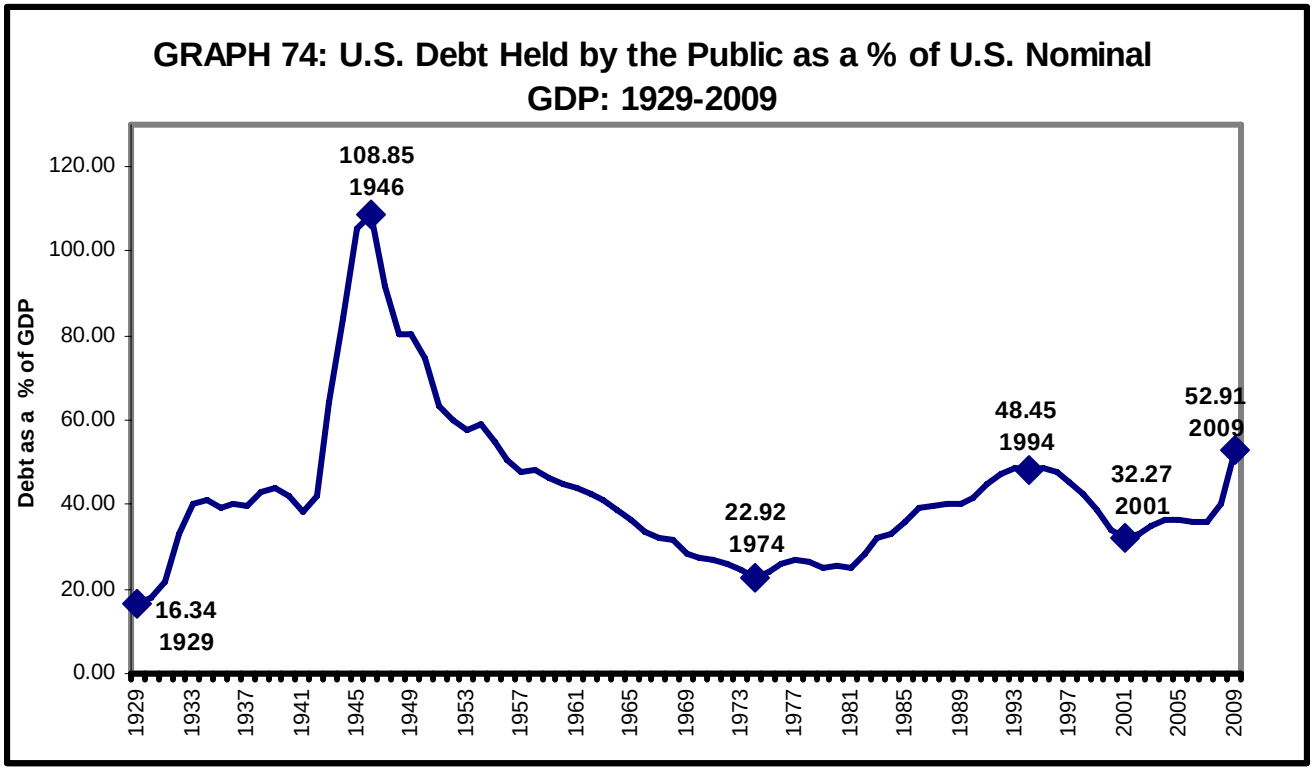
3. The costs of various federal policies implemented in response to the recession and panic.

In 2008, the year of the financial crisis and the initial spending authorized under TARP to ward off financial collapse, Gross, or Total U.S. Debt[119] was $9.986 trillion, and debt held by the public was $5.803 trillion[120]. This represented an 11.6% increase in the Gross, or total, debt from 2007, and a 15.3% increase of the debt held by the public from 2007. As noted above, based on Rogoff and Rhienhart's findings that the national debt of countries experiencing a banking crisis increased, on average, by 86% within three years of the onset of the crisis. Given the above numbers for the U.S. Debt in 2008, that would translate into a U.S. Gross, or total debt of $18.574 trillion in 2011, with $10.794 trillion in U.S. Debt held by the public in 2011. And, that is just the average cost of a banking crisis. So how does the U.S. debt compare historically?

Graph 73 tracks Gross U.S. Debt as a percent of GDP from 1940 to 2008, and Graph 74 tracks U.S. Debt, held by the public, from 1929 to 2009. The need for immediate and massive spending to mobilize for World War II drove the Gross, or total debt to 121% of GDP, and the debt held by the public to 109% of GDP by 1946. Gross U.S Debt reached its lowest post-war percent of GDP in 1981 at 32.6%, while debt held by the public reached its lowest percent of GDP in 1974 at 22.9%. With the growth of the "Twin Deficits" in the 1980's and early 1990's, Gross U.S. Debt grew to 67.3% of GDP by 1996, and debt held by the public grew to 48.7% of GDP in 1993

[119] "Gross Debt" includes debt held by the public, and intra-governmental obligations (e. g., debt owed to the Social Security Trust Fund).
[120] CBO (August 2010) Table 1, p. XI.



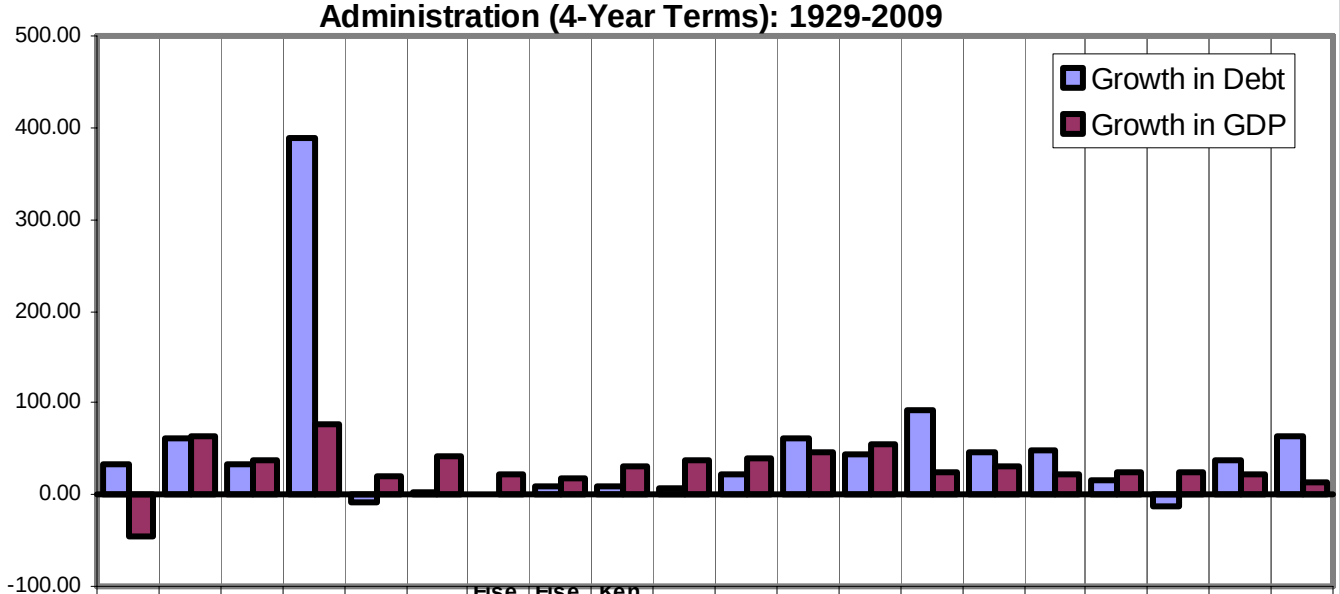


SOURCE: U.S. Bureau of Public Debt < http://www.treasurydirect.gov/govt/reports/pd/histdebt/histdebt.htm>

After bottoming in 2001 at 57.4% for total debt, and 32.3% debt held by the public, both after growing again in the 2000's, spiked with the onset of crisis in 2007.

Graph 75 shows the growth-rate of U.S. Debt, held by the public, and GDP, by four-year presidential administrations from 1929 to 2009. Presidents serving two terms are shown separately for each four-year term. Again, World War II drove the strongest growth in the U.S. Debt, and nominal GDP. Between 1941 and 1945, as Roosevelt mobilized the country for war, the U.S. Debt grew by 387.7%, and GDP by 76.01%. Over the next four years, FDR until his death, and then Truman, the debt actually declined by 8.9%. The next biggest four-year growth-rate in the U.S. Debt was under Reagan's first term, 1981 to 1985, when the debt grew by 90.9%. The largest decline was during Clinton's second term, when the U.S. Debt declined by 12% between 1997 and 2001. Under George W. Bush's second term, 2005 to 2009, the U.S. Debt grew by 64.3%, the second highest growth-rate of a presidential four-year term in the Post Word War II Era.

GRAPH 75: Growth-Rate of U.S. Debt Held by the Public and GDP by Administration (4-Year Terms): 1929-2009



	Hoover	FDR1	FDR2	FDR3	FDR4/Truman	Truman	Eisenhower 1	Eisenhower 2	Kennedy/LBJ	Johnson	Nixon	Nixon/Ford	Carter	Reagan1	Reagan2	Bush I	Clinton1	Clinton2	Bush II_1	Bush II_2
Growth in Debt	33.12	61.61	32.39	387.7	-8.87	1.89	0.43	8.68	9.41	6.65	22.58	61.07	43.76	90.94	45.34	48.28	16.13	-12.0	38.34	64.28
Growth in GDP	-45.5	62.94	37.87	76.01	19.82	41.95	21.57	18.15	31.99	36.89	40.42	46.86	54.02	23.74	29.98	21.62	24.97	23.45	22.87	12.82

SOURCE: U.S. Bureau of Public Debt, U.S. BEA, and calculations by CTDOL-Research.

Interestingly, after World War II, debt did not grow faster than GDP over a presidential four-year term until Nixon's second term, which was completed by Ford. Under Carter, debt grew more slowly than GDP, then, under both Regan terms, and that of George H.W. Bush, debt, held by the public, once again grew faster than GDP, until both Clinton terms. In fact in Clinton's second term debt declined. Debt then resumed growing faster than GDP under George W. Bush.

When Barack Obama took office in January 2009, the U.S. Debt, held by the public, for all of 2009, was 53.4% of GDP (see Graph 74), approximately where it stood in 1955. According to the Congressional Budget Office (CBO), by 2020, based on the current trajectory, U.S. Debt. Held by the public, should reach 69% of GDP[121]. This would be a level comparable to somewhere between 1950, when it was 74.6% and 1951, when it was 63.2%.

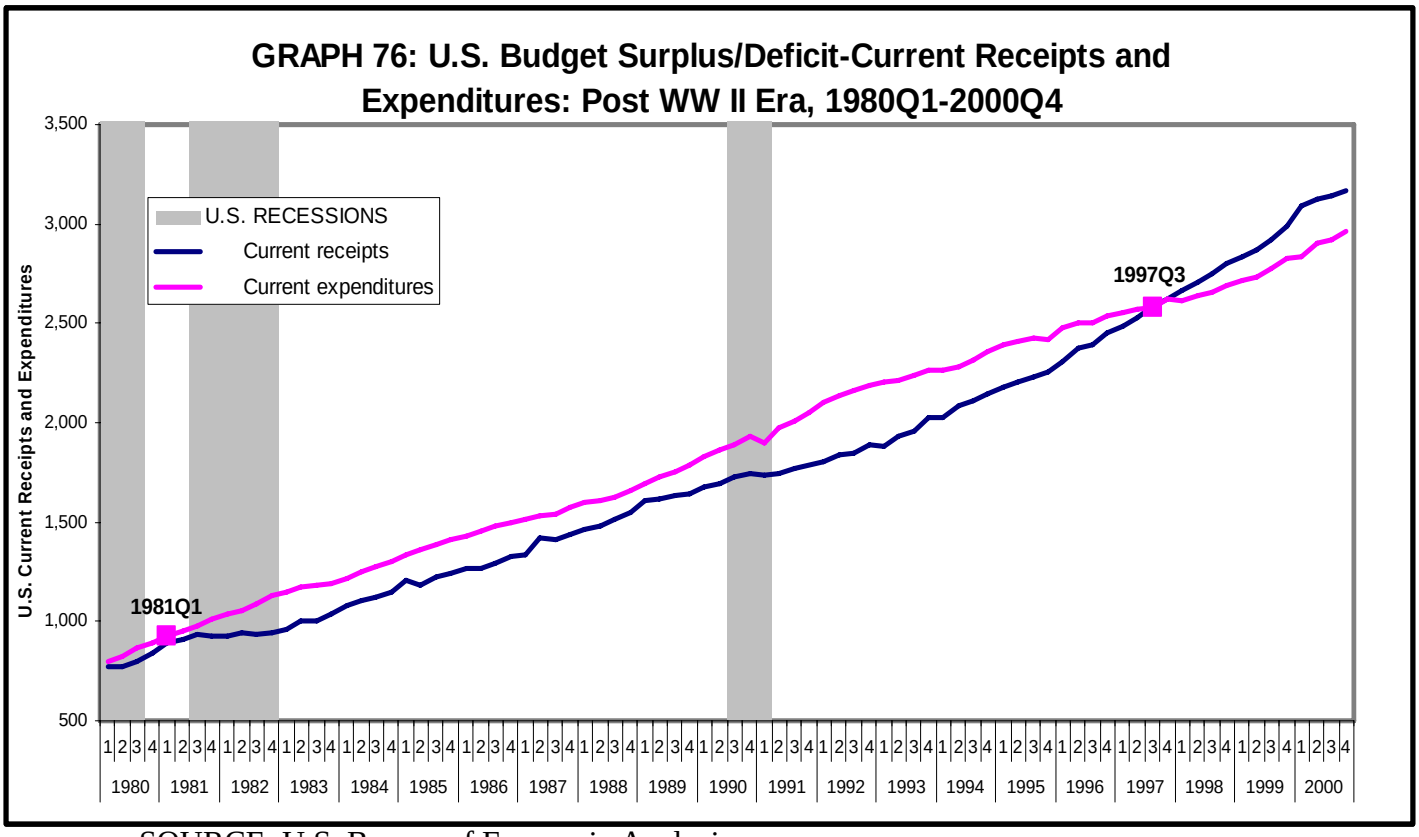
Keynesian economics prescribes operating budget deficits during a recession to stimulate the economy and bring it back to full employment. However, Keynes never suggested to run operating budget deficits at full employment, in fact Keynesians talk about the "full-employment, Balanced-budget" Further, the government should not run an operating surplus at full employment, as this would cause spending to leak out of the economy dragging down income, output, and employment. This is called " fiscal drag". Thus, there is a difference between cyclical deficits and structural deficits (running a deficit even after the economy has returned to full employment). However, economists more oriented toward the Classical School would argue against government budget deficits, even during a recession. Modern incarnations of the Classical School called the "New Classicists" include the Real Business Cycles and Rational Expectations schools. They argue that anticipated policies to stimulate the economy have no effect. Ricardian Equivalence holds that deficit financing is the equivalent of raising taxes now to finance spending. This is because consumers will reduce their spending in the current period, in lieu of future taxes

[121]Congressional Budget Office, *The Budget and Economic Outlook: An Update* (August 2010) U.S. Congress: Washington, p. IX.

to pay off the issued bonds[122]. The upshot of these New Classical theories is that fiscal policy will have no effect on mitigating the business cycle.

FEDERAL RECEIPTS AND EXPENDITURES—Based on data from the U.S. Bureau of Economic Analysis (BEA), between 1947 and 1970, save during recessions, Federal Current Receipts exceeded Current Expenditures. After the 1970 Recession, there was a greater, two-year lag, beyond the end of the recession, before receipts and expenditures came back in line. After the 1970 Recession, there was a two-year lag before receipts and expenditures came back in line. However, it was in the 1973-75 Recession that receipts fell below expenditures for an extended period of time. It was not until the second quarter of 1978 (1978Q2), nearly three years after the end of recession that they converged toward balance. This, of course, was on the heels of the collapse of Bretton Woods and the Oil Embargo. With the onset of the 1980 Recession, once again, receipts fell below expenditures, as would be expected during recession. It was after the 1981-82 Recession that two protracted periods of persistent, secular Federal-Budget, operating deficits continued over the business cycle, whether in recession, recovery, or expansion.
The first lasted from 1981Q1 to 1997Q3. It is associated with the Reagan tax cuts, accompanied by a simultaneous massive defense build-up, which resulted in the "Twin Deficits". This is depicted in Graph 76, which tracks current receipts and expenditures from 1980 to 2000.

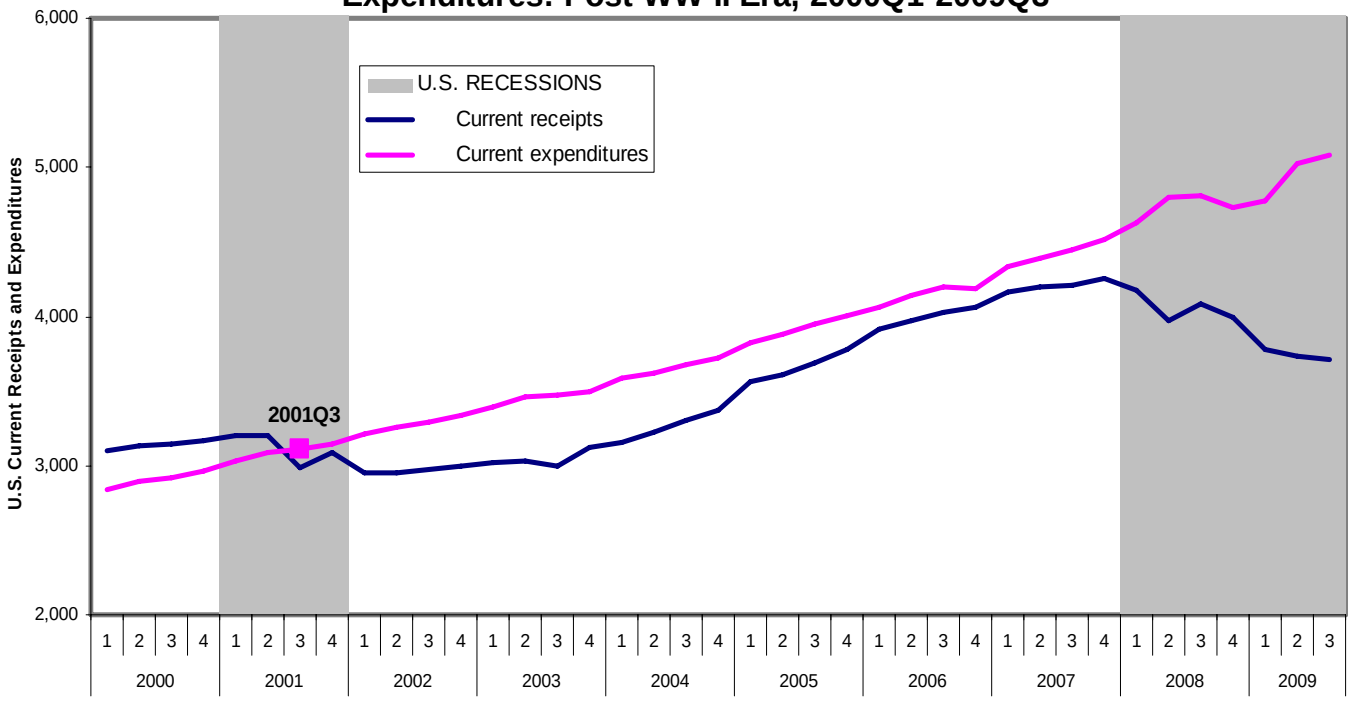
[122] Ironically, Ricardo himself was skeptical of the idea of "Ricardian Equivalence".



SOURCE: U.S. Bureau of Economic Analysis

Beginning in 1981Q1, on the heels of President Reagan's implementation of policies prescribed by the Supply-Side Economics School, current expenditures remained above current receipts. This happened regardless of business cycle, be it recession, recovery or expansion and lasted until the third quarter of 1997. Under President George H.W. Bush and President Clinton's first term, a number of policy-steps were taken to address the problem of U.S. structural deficits. Whether due to these remedial steps, for other unrelated reasons, or both, current receipts passed above current expenditures in President Clinton's second term. This continued until 2001Q3, when budget surpluses came to an end. Graph 77 tracks current receipts and expenditures from 2000 to 2009.

GRAPH 77: U.S. Budget Surplus/Deficit-Current Receipts and Expenditures: Post WW II Era, 2000Q1-2009Q3



SOURCE: U.S. BEA

Structural deficits continued throughout the first decade of the 21st Century. A multitude of factors contributed to this, including the Tech Bubble collapse and the ensuing recession, the September 11th Attacks, the 2001 and 2003 Bush tax cuts and also the Iraq and Afghan wars. The gap between current receipts and current expenditures began to close by 2006Q4, nevertheless, the gap (i.e., a deficit) still remained on the eve of the 2007-08 Financial Crisis. Then, with the economy slowing and then going into recession, followed by the 2008 financial crisis, the deficit, once again, widened. As shown on Graph 77, the trajectory of current receipts soon fell rapidly as the 2007-09 Panic and contraction unfolded.

FEDERAL BUDGET FORECAST— The Congressional Budget Office (CBO) projects that over the 2011–2020 period, U.S. Federal deficits would total $9.8 trillion, or 5.2% of GDP during that period In 2011, CBO estimates, the deficit under the President Obama's budget would decline to 8.9% of GDP and would total $1.3 trillion—$346 billion more

than the deficit that CBO projects in its March baseline (which is based on the assumption that current laws and policies remain in place)[123]. That is, the baseline assumes that the 2001 and 2003 Bush Tax Cuts will expire at the end of 2010. President Obama has indicated that he will continue the tax cuts for families making less than $250,000 and individuals less than $200,000, but the reversion to Clinton-Era tax-rates for the richest Americans[124]. Congress's Joint Committee on Taxation (JCT) found that extending the Bush tax cuts would add $36 billion to the deficit next year[125]

In its August 2010 update of the budget outlook, the CBO projected a recovery in total revenues, growing from 14.6% of GDP in 2010 to 17.5% in 2011 and 18.7%in 2012. However, these increases are predicated, in part, on the scheduled expiration of the 2001 and 2003 Bush tax cuts at the end of 2010, which includes temporary relief from the AMT that expired at the end of December 2009, and in part to the anticipated economic recovery. The CBO also expects revenues will be boosted by provisions of the recently enacted health care legislation, the *Patient Protection and Affordable Care Act*, as amended by the *Health Care and Education Reconciliation Act of 2010*. Together, they are estimated to increase receipts by growing amounts over the next few years, reaching 0.6% of GDP by 2020. In addition, the structure of the individual income tax will gradually raise receipts over time. Together, all of these factors are expected in the CBO baseline scenario to push Federal revenues to 21.0% of GDP by 2020, compared with an average level of about 18% of GDP over the past 40 years[126].

THE 2001 AND 2003 BUSH TAX CUTS AND THE DEFICIT— Budget trajectories that differ from CBO estimates result from deviations of expected federal policy. Examples of this include extending the Bush tax cuts and different-than-expected troop

[123] Congressional Budget Office, *An Analysis of the President's Budgetary Proposals for Fiscal Year 2011* (March 2011) U.S. Congress: Washington, p. 1.
[124] Montgomery, Lori, *GOP plan to extend tax cuts for rich adds $36 billion to deficit, panel finds* (August 12, 2010) WASHINGTONPOST.COM < http://www.washingtonpost.com/wp-dyn/content/article/2010/08/11/AR2010081105864.html> Accessed on August 19, 2010
[125] ibid
[126] Congressional Budget Office, *The Budget and Economic Outlook: An Update* (August 2010) U.S. Congress: Washington, p. X.

levels in Iraq and Afghanistan. The baseline scenario can change further by various scenarios of discretionary spending growth. Focusing on the currently, politically-charged issue over whether or not to let all, or part of, the Bush tax cuts expire on December 31, 2010, the CBO projects that if the all of the Bush tax cuts are permanently extended, the Federal Deficit (excluding debt service) will cumulatively increase by $1.123 trillion between 2011 and 2015, and by $2.652 trillion between 2011 and 2020[127]. If all of the Bush tax cuts are permanently extended, and if the Alternative Minimum Tax (AMT) is indexed for inflation, the CBO projects that the cumulative deficit between 2011 and 2015 will increase by $1.583 trillion, and increase by $3.893 trillion between 2011 and 2020[128].

DOES THE U.S. RISK A SOVEREIGN-DEBT CRISIS?— With growing Federal deficits, driven by recession and financial crisis, as well as coming off decade-long fiscal imbalances, as noted above, the debate over deficits has heated up once again. The question is: does the current and projected trajectory of the U.S. fiscal path put us on the road to a sovereign debt crisis, a sudden stop, or both? A sovereign debt crisis is usually considered to occur when a country fails to make interest and principal payments on its external debt. Thus, sovereign internal default has been almost completely neglected.[129] As discussed above, the current sovereign debt crisis in the Eurozone, centered around Greece is now threatening to spread throughout the Eurozone and maybe the World. Could the U.S. be on the same track as Greece? Or, could the U.S. face a sudden stop such as the one that touched off the Asian Crisis in 1997? A *Sudden Stop* in capital flows is defined as a sudden slowdown in private capital inflows into a country (usually an emerging-market country), and a corresponding sharp reversal in the current account Sudden stops are usually followed by a sharp decrease in output, private spending, and credit to the private sector, rising unemployment, a collapse in the exchange rate, and

[127] ibid, Table 1-7, p. 24.
[128] ibid
[129] Rogoff, Kenneth and Carmen M. Rhienhart (2009), Ch. 8, pp. 120-127.

inflation[130]. Though sudden stops are more connected to the trade deficit than sovereign debt, the two are tightly connected for the U.S. Excess dollars accumulated by nations such as China and Japan, who are running trade surpluses with the U.S., are using their accumulated dollars to purchase U.S. Treasuries. Thus, the U.S. current-account deficit and significant foreign ownership of the U.S. Government's debt held by the public are connected. Given these facts, could any of these scenarios be in the cards for the U.S.?

An important consideration for being the destination in any flight to safety, during a financial or economic crisis, or both, is political stability. Thus, the flight to U.S. Treasuries occurred even as the U.S. Financial system faced insolvency in September 2008. Though investors showed a collapse of confidence in the U.S. and World financial systems, they, at the same time, showed complete confidence in the U.S. political system[131]. This is not to succumb to hubris on this point, as many in the economics profession had done with regard to the possibility of financial crisis, before the onset of the Panic of 2007-08. It is rather to consider the important factors that dictate whether or not investors will purchase debt (especially long term debt) of a given country. These include political stability, an economy's debt-level carrying capacity and its history of making principal and interest payments on schedule. An interesting feature of Greece's debt crisis is that it has been a perennial defaulter since it re-gained its independence from the Ottoman Empire in the early 1800's[132]. On the other hand, right from the beginning of the Republic, the young United States decided to honor its debts. In that respect, the U.S., from its beginnings, became a member of a small club of nations that has never defaulted on its sovereign debt[133].

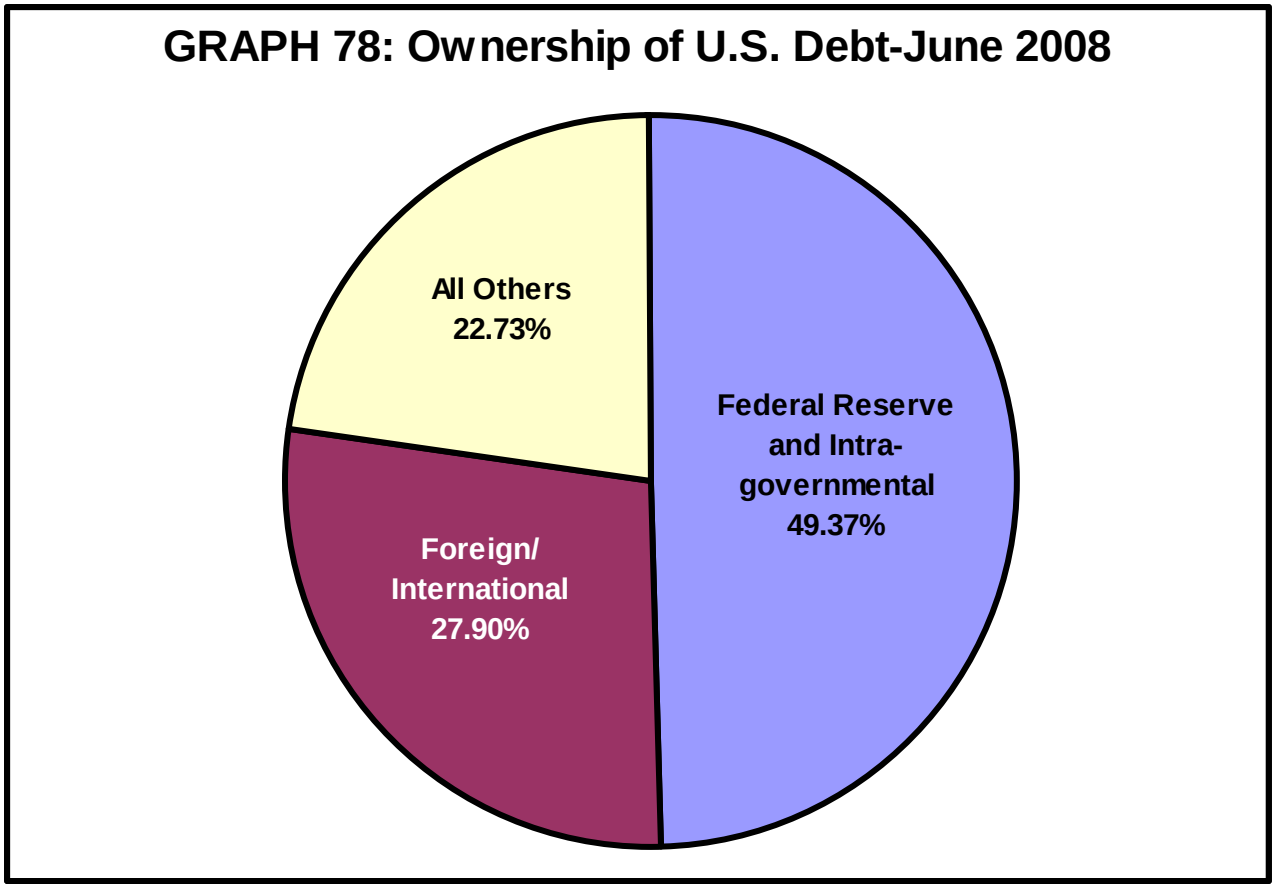
[130] See Calvo, Guillermo A., *Capital-Flows and Capital-Market Crises: The Simple Economics of Sudden Stops* (November 1998) J. OF APPLIED ECONOMICS, Vol. 1: No. 1, pp. 35-54 for a simple model of sudden stops.
[131] In fact, when adjusted for deflation in 2008Q4, the real return on short-term U.S. Treasuries was actually negative. It is as if investors were saying to the U.S. Government, "Take our money. Please!" (with apologies to Henny Youngman).
[132] Rogoff, Kenneth and Carmen M. Rhienhart (2009), pp. 12-13, and 92..
[133] ibid, p 44.

Another import impediment to solving the Greek debt crisis is that it is part of the Eurozone, and therefore under the Euro common currency. That is, it has no national currency that could depreciate, and through such adjustment, make its exports more competitive, imports more expensive, and boosting economic growth. Of course, that would also open it up to the possibility of a sudden stop. But, as discussed above, there is another problem with the Eurozone. While the Eurozone has one currency and central bank, and therefore one, unified, monetary policy, each member country conducts its own, independent, fiscal policy. In many ways, the current sovereign debt crisis reflects the need to resolve this contradiction[134].

The U.S., of course, has its own currency, and, so far, it is still serving, to some extent, as the World's key currency, although some countries are now pegging their currencies to a basket of currencies that includes the dollar, the euro, and the yen. And, some countries, like Brazil, have denominated some of their external debt in euros, by going to the European bond market. Clearly an episode or episodes, of political deadlock resulting in technical default by the U.S. Government on its debt, such as the Government shutdown in 1995, would spook investors' confidence in the U.S. political system, especially given the current shakiness of the U.S. and World financial markets. That could make investors in U.S. debt nervous. Certainly the amount of U.S. debt that is foreign-owned presents more of a problem than the debt we owe ourselves (the internally owned part). When U.S. Debt, held by the public, reached 109% of GDP during, and just after, World War II, we owed most of that debt to ourselves. In that case, it was not a matter of reducing our standard of living in the future to pay back foreigners, but a problem of internal redistribution of future income to the bondholders. But, as depicted in Graph 78, in June 2008, 28% of U.S. Government Debt held by the public, was owned by foreign investors. This would be critical if one, or all, of the rating agencies decided to downgrade the U.S. credit rating as they did for Greece at the end of 2009. This would cause the interest rate on U.S. Debt to go up. This, in turn, would considerably raise the interest payments that the U.S. would have to make on servicing its debt. Total debt service on any given level

[134] Flowers, Andrew, *Demystifying Sovereign Debt in Greece: Why It Matters to Us* (2010Q2) ECONSOUTH:Federal Reserve Bank of Atlanta: Atlanta, p. 12.

of debt would increase considerably. But, the question is: Is that likely? On the other hand, investors spontaneously dumping U.S. Debt would cause a drop in U.S. Treasury prices, which would also spike interest rates on U.S. Debt. In the final analysis, the critical factor is whether or not, in the long run, the U.S. Economy experiences weak or strong growth. Putting the economy on a sustained path of growth in Real, per capita GDP would reduce the Federal debt, held by the public, as a percent of GDP. Key to that is whether or not policies are implemented to bring idle resources into production and thereby putting the economy back on track to producing at its full potential. Further, if the opportunity posed by idle resources is used for public-sector investment in infrastructure, the economy's capacity for growth could be enhanced.



SOURCE: U.S. Bureau of the Public Debt and Wikipedia.

THE MACROECONOMICS OF THE FEDERAL DEFICIT AND DEBT— The macroeconomic effects of Federal deficit spending, and sovereign debt, is subject to widely different opinions among economists, depending on their school of thought. As

introduced above, Keynesians and the New Classical economists (Real Business Cycles and Rational Expectations) have diametrically opposed views on the effects of government deficit spending on economic performance.

In a report released from the Heritage Foundation, Brian M. Riedl argues that Federal stimulation of the economy has been a failure. He points out that Bush and Obama's stimulus bills implemented to resuscitate the economy have failed to do so. He also points to The Great Depression as a case of stimulative failure, as the Unemployment Rate (UR) was back up to 20% on the eve of World War II. He also points to Japan's lost decade where fiscal stimulus did nothing to rekindle growth[135]. His argument's underlying structure draws on Say's Law. He argues that it does not matter whether or not consumers spend or save because savings do not drop out of the economy. Nearly all people put their savings in: (1) banks, which quickly lend the money to others to spend; (2) investments in stocks and bonds; or (3) personal debt reduction. In each of these situations, the financial system transfers one person's savings to someone else who can spend it. So all money is quickly spent regardless of whether it was initially consumed or saved.[136] : And, although Government spending has a multiplier effect that allows the money to re-circulate trough the Economy multiple times, it is irrelevant to the question of stimulus. Yes, $100 in unemployment benefits can be spent at a grocery store, which, in turn, can use that $100 to pay salaries and support other jobs. The total amount of additional economic activity will be well above $100; but because government borrows the $100, that same money is now unavailable to the private sector--which would have spent the same $100 with the same multiplier effect.

Alan Blinder, of Princeton University and Mark Zandi, of Moody's Economy.Com, released the report on July 27, 2010, of a study they did on the effectiveness of the U.S. Government's response to the 2007-08 financial panic. They divided the government's response into two components: (1.) One attributable to the fiscal stimulus, the *American*

[135] Riedl, Brian w., *Why Government Spending Does Not Stimulate Economic Growth: Answering the Critics* (January 8, 2010) WALL STREET JOURNAL.
[136] ibid.

Recovery and Reinvestment Act of 2009 (ARRA) and (2.) the effects attributable to financial-market policies such as the Troubled Asset Relief Program (TARP), the bank stress tests, and the Fed's quantitative easing. Blinder and Zandi conclude that:

> Nonetheless, the effects of the fiscal stimulus alone appear very substantial, raising 2010 real GDP by about 3.4%, holding the unemployment rate about 1½ percentage points lower, and adding almost 2.7 million jobs to U.S. payrolls. These estimates of the fiscal impact are broadly consistent with those made by the CBO and the Obama Administration. To our knowledge, however, our comprehensive estimates of the effects of the financial-market policies are the first of their kind. We welcome other efforts to estimate these effects[137]

Further, Blinder and Zandi report that, based on Moody's Analytics model, without the government's response, GDP in 2010 would be about 11.5% lower, payroll employment would be less by some 8½ million jobs, and the nation would now be experiencing deflation[138].

These are two dramatically different stories about the effectiveness of government spending in stimulating the economy after it has slipped into recession, and in this case, financial crisis as well. It certainly lends credence to the saying that "if you put two economists in the same room, you'll get three different opinions".

So, which one are we to believe? It seems that if Reidl's point that "In each of these situations, the financial system transfers one person's savings to someone else who can spend it. So all money is quickly spent regardless of whether it was initially consumed or saved." flies in the face of what happened during the Panic of 2007-08. In that instance credit markets froze up. As a consequence, savings were not lent out, by banks, or by other lending institutions, because they could no longer value the assets on their balance sheets (see Section IV, above). This was the result of information asymmetry. Not only could they not determine whether or not they were solvent, they had no information about the solvency of their counterparties. Fearing insolvency (all the way around), they did not

[137] Blinder, Alan S. and Mark Zandi, *How the Great Recession Was Brought to an End*, (July 27, 2010), p. 1.
[138] ibid, p. 1.

lend to each other, businesses, or consumers. Instead, they, either held funds in reserves to shore up their balance sheets, used them to purchase U.S. Treasures (i.e., the flight to safety), or sold off assets to shrink their balance sheets. This gets to the crux of the focus of modern Classical Macroeconomics based on Say's-Law and economic models that are extensions of it. First, there is no market failure, such as in this case due to asymmetric and hidden information (again, see Section IV, above)**.** Second, money is considered to be a vei1 over the real economy**,** so it is admitted to the analysis as a means of exchange, but not as a store of value or unit of account. Further, this precludes an analysis of the interaction between the real economy and financial sector, and thus the consequences of the feedback dynamic between the two. Third: Say's-Law type New Classical models of the economy focus on flows to the complete exclusion of stocks, and thus they ignore the interaction between stocks and flows, and the implications for the economy, like the need for banks to shore up balance sheets in the face of declining, or unknown, asset values, and the consequences for the flow of credit. Further, households' accumulation of unsustainable levels of debt, in conjunction with the collapse in housing values devastated their net worth, which led to a retrenchment in spending, as changes in stocks affected flows (i.e., balance-sheets effects triggered a collapse in credit and spending).

The interaction between the real economy and the financial sector, and the consequences for the macro-economy were thrown into stark relief in 2007 and 2008, as the near collapse of the financial system nearly sent the World's economy into a second Great Depression. The inability of banks to value assets on their balance sheets, because of asymmetric, or hidden information, about the toxic assets carried on them caused a flight to liquidity to shore up their capital, which shut off the flow of credit. This was basically the 21st Century's version of a "good old fashioned" banking panic. As a result, the flow of short-term credit to businesses (especially small businesses) for financing their operating cycles was shut off. This resulted in curtailed operations and business shutdowns, which, in turn, caused rising unemployment as well as falling output and income—the multiplier working in reverse.

Reidl argues that a dollar borrowed by the government and spent is a dollar not spent by private individuals; it is therefore nothing but a redistribution. But, that is assuming that the total amount of money in the economy is fixed[139]. As Minsky (1975)[140] and others point out, the issue revolves around Inside Money, created by the banking system and endogenous, Outside Money, created through the government's power of seignorage, and exogenous. Inside Money accounts for most of the basic money supply. When banks make loans, Inside Money increases (and dollar-for-dollar, so does debt), when loans are paid back, or written off, Inside Money is destroyed. This creation and destruction of money is a continuous process, with net, credit-creation the result of the interaction of these two dynamics. And, as depicted on Graph 8, in Section I, above, as the monetary base has been expanding, with the Fed's injection of liquidity into the banking system, at the same time, M1, the basic money supply, has been contracting. The result: the Money Multiplier fell below 1.0 throughout 2009 and 2010, in fact it is below 0.9. So, money is *not* circulating, it is contracting. More money is being destroyed than is being created, the net result, as noted above M1 is contracting—money is *not* fixed.

As mentioned above, this behavior by the financial system was motivated by the rapid deterioration in financial institutions' balance sheets—a *stock concept.* Since Say's-Law based theories of the macro-economy ignore stocks, and focus, for the most part, on flows, this whole process would be off the radar screen. Further, this is what is known as a *Balance Sheet Recession*[141]. It comes on the heels of the collapse of an asset bubble in which households accumulated excessive levels of debt. As Fisher (1933)[142] pointed out, with falling asset values and unsustainable levels of debt, especially if these two factors are accompanied by price deflation, the result is a depression, not a recession. Again, these issues focus on asset markets and balance sheets, stock concepts, which are beyond

[139] Although the ultimate amount of credit that can be created in the economy is limited by the Required Reserve Ratio [(RRR), (i.e., the Money Multiplier = 1/RRR)], this ratio is set by the Fed, and can therefore be increased., or decreased as one of the Fed's Quantitative Policy Tools.
[140] Minsky, Hyman, JOHN MAYNARD KEYNES (1975)
[141] Koo, Richard, *U.S. Economy in Balance Sheet Recession: What the U.S. Can Learn from Japan's Experience in 1990–2005* (February 10, 2010) Nomura Research Institute
[142] Fisher, Irving, *Debt-Deflation Theory of Depression* (1933) ECONOMETRICA Vol. 1, No. 4 (Oct., 1933), pp. 337-357

the purview of models that exclusively focus on flows, and only on the real economy. Further, since New Classical models dispose of financial instability by assuming frictionless credit markets, impediments to credit and the consequences to the real economy are not considered. Further, since the potential problems introduced into an economy where significant amounts of production and consumption are financed by debt, which must be serviced over multiple periods, are assumed away, and thus the effects of deteriorating balance sheets on current-period behavior of consumers and businesses, as well as financial institutions, brought about by declining asset values, in conjunction with unsustainable levels of debt accumulated over past time periods, is not considered[143].

So what should the effects of the U.S. Federal debt be on economic growth? The idea that there is a zero-sum game with regard to Federal borrowing and spending is only appropriate at full employment. Riedl's describing government's deficit spending as crowding out private spending in an expanded sense (i.e., beyond debt markets), is implicitly assuming full employment of the economy's resources. But, when the U.S. Economy's manufacturing sector was operating at 66.91% capacity utilization in January 2009, the lowest in the Post World War II Era, (see Graph 30, Section I), which implies that 33.81% of plant and equipment in the manufacturing sector was idle, and when the official unemployment numbers count 8.5 million workers as having lost their jobs, there is no zero-sum game between government spending, or government induced spending, and private spending—especially when there is little, or no private spending. There is no zero-sum game until the economy is operating at full-employment. That is, when it is operating at a point out on the Production-Possibilities frontier (P-PF). In fact, according to Okun's Law, the lost output from economic activity below the full-employment potential is lost forever[144] (i.e., "use it, or lose it"). When the economy is operating at a point inside the P-PF, which necessarily implies that there are idle resources in the economy, there is no zero-sum game—using resources to produce more of one good or service, does not imply an equal reduction in resources away from the production of

[143] See Krishnamurthy, Arvind, *Amplification Mechanisms in Liquidity Crises*, AMERICAN ECONOMIC JOURNAL: Macroeconomics. (Jul 2010), Vol. 2, No. 3: Pages 1-30
[144] Okun, Athur, *POTENTIAL GNP: Its Measurement and Significance* (1962) Cowles Foundation: Yale University

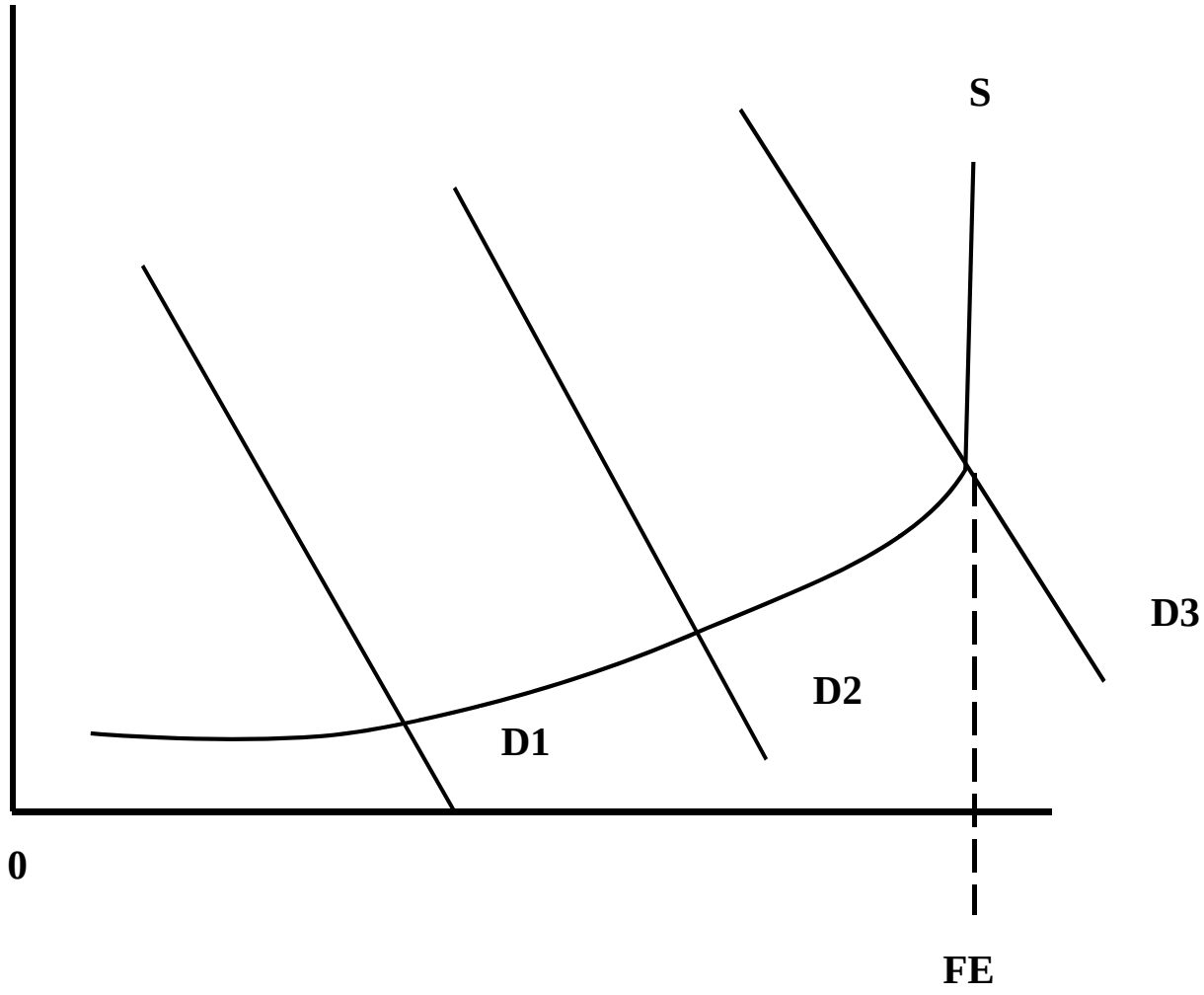
another good or service. This situation is depicted in the generic Graph 79, which can be used to show crowding out in the debt market, or "crowding out" in terms of the real economy. The supply curve in Graph 79 starts out perfectly elastic (i.e., horizontal) to the left near the vertical axis. As it moves out along the horizontal axis it becomes more and more inelastic until it turns perfectly vertical (i.e., inelastic) at the Full-Employment (FE) line. Demand Curve D1 represents demand when there is significant slack in either the debt market, or the economy as a whole. At Demand Curve D2, significant amounts of resources have been brought into play, but some are still idle. At Demand Curve D3, all resources are fully utilized.

If the U.S. Government goes into the debt market at Demand Curve D1 in Graph 79, there is little, or no, pressure on interest rates, as private investment-demand is low, and thus, there is little or no competition for loanable-funds. If D1 and S represent the Aggregate Demand (AD) and Aggregate Supply (AS) curves for the U.S. economy, then government demand, or government-stimulated demand, does not displace private demand because significant amounts of the economy's resources are idle (i.e., the economy is operating at a point inside the P-PF). As stated by Okun's Law, the lost output from not employing these idle resources is lost forever—again, "use it, or lose it".

Only at D3 in Graph 79, when the economy is operating at a point out on the P-PF does the zero-sum game pertain. This is similar to the situation during the Vietnam War when the Federal Government made demands on the economy's resources to fight the war just as the economy was reaching full employment. This resulted in classical Demand-Pull inflation. In this case, reallocating resources to the war effort necessarily was at the expense of the production of goods and services for the civilian economy.

From the debt market standpoint, if the Federal Government went into the debt market where the supply curve in Graph 79 is at S = FE, then the government would be sopping up all of the available, loanable-funds and completely crowding out private investment. In the intermediate case, represented by Demand Curve D2, there is some, but not complete, crowding out of private investment. And, even that assumes that there is no

GRAPH 79: Crowding Out



monetizing all, or part, of the U.S. Debt by the Federal Reserve, which would mitigate all, or some, of the crowding out. And, of course, a strongly growing economy would reduce the size of the debt relative to GDP (shifting the S-Curve out).

In a 1996 article, William Vickery[145] addressed fifteen fallacies that are committed by those advancing fiscal fundamentalism[146]. They are, perhaps, even more relevant today than when he addressed them 14 years ago. Specifically, in addressing Fallacy 3: *Government borrowing is supposed to "crowd out" private investment*, Vickery states:

> The current reality is that on the contrary, the expenditure of the borrowed funds (unlike the expenditure of tax revenues) will generate added disposable income, enhance the demand for the products of private industry, and make private investment more profitable. As long as there are plenty of idle resources lying around, and monetary authorities behave sensibly[147]

Again, as illustrated above, in the discussion of Graph 79, with considerable excess capacity and the unemployment rate between 9% and 10% (not counting the underemployed, and those working part-time for economic reasons), there are plenty of idle resources, and thus, no crowding out.

Fallacy 1: *Deficits are considered to represent sinful profligate spending at the expense of future generations who will be left with a smaller endowment of invested capital* is also relevant here. As Vickery noted, this fallacy seems to stem from a false analogy to borrowing by individuals. His answer to Fallacy 1 is:

> Current reality is almost the exact opposite. Deficits add to the net disposable income of individuals, to the extent that government disbursements that constitute income to recipients exceed that abstracted from disposable income in taxes, fees, and other charges. This added purchasing power, when spent, provides markets for private production, inducing producers to invest in additional plant capacity, which will form part of the real heritage left to the future. This is in addition to whatever public investment takes place in infrastructure, education, research, and the like. Larger deficits, sufficient to recycle savings out of a growing gross domestic product (GDP) in excess of what can be recycled by profit-seeking private investment, are not an economic sin but an economic necessity[148].

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[145] Within three weeks of writing this article, Vickery won the Nobel Prize in Economics, and then died before he could accept it. It was posthumously accepted for him.

[146] Vickery, William, *Fifteen Fatal Fallacies of Financial Fundamentalism A Disquisition on Demand Side Economics* (1996) COLUMBIA UNIVERSITY WORKING PAPERS SERVER http://www.columbia.edu/dlc/wp/econ/vickrey.html Accessed on August 15, 2010.

[147] iIbid.

[148] ibid.

Again, as discussed above, lost output is lost forever. Putting idle resources to work will increase, not decrease current and future income. And, since the economy is currently operating more closely on the horizontal portion of the S-Curve (i.e., close to Keynes's Liquidity Trap[149]) in Graph 79, there is the potential to squander a significant amount of economic growth by not employing currently idle capacity. But, this requires fiscal stimulation of the economy on a scale big enough to spark self-sustaining growth. And, up to this point, that has not yet been done. As Blinder and Zandi point out, the ARRA and TARP have certainly kept us out of depression, and kept the worst-case scenario from playing itself out, but jump-starting growth would require a bigger stimulus. Since the first stimulus package, at $787 billion, was much less than the $1.2 trillion first proposed by Christina Romer, a second stimulus would be required to put the economy back on a path to sustained growth. Unfortunately given the current political realities, that is not likely.

Another important point is that the originally proposed stimulus package, and, in fact the House Bill, which was closer to, but still short of, what Romer had originally suggested, contained provisions for more stimulation of the economy by direct Federal spending. However, the final bill that President Obama signed into law as the ARRA, was not only significantly smaller, but was much more heavily skewed toward tax cuts as opposed to direct stimulation. Why should that matter?

Riedl devotes a lot of his debunking of fiscal stimulus on tax cuts, and, of course, he also goes after the effectiveness of direct fiscal stimulus, as discussed above. And, as noted above, the final stimulus bill was much heavier on tax cuts, and lighter on direct fiscal stimulation. Does it matter which one is the dominant fiscal policy tool employed? What is notable about the massive spending to mobilize for World War II is not just the scale, but that it was direct spending. The government has a Marginal Propensity to Consume (MPC) of 1. That is, in the first round of spending, the entire dollar is spent. Then, in subsequent rounds, the multiplier effect would be determined by the MPC of the income

[149] When the economy is in a Liquidity Trap, interest rates are so low that conventional monetary policy is no longer effective in stimulating aggregate demand.

groups most targeted by the spending. The higher the income of the group, or groups, most impacted by a given fiscal stimulus, the lower the MPC, and therefore, the lower the associated multiplier, and the shorter the half-life of the initial injection into the economy. Conversely, the MPC and multiplier will be higher, and the half-life of the initial injection will be longer, if the targeted income group, or groups, is lower because they will spend more of a new dollar of income that they receive. Furthermore, direct fiscal stimulation of the economy is an active policy tool; the money is spent. On the other hand, if the fiscal tool employed is a tax cut, then, since the MPC of households is less than 1, all of the initial injection into the economy will not be spent. So, the impact of the first round for a tax cut will be less than that for direct government spending. Thus, to get a given increase in employment, income, and output, a tax cut must be larger than an initial fiscal injection. In addition, a tax cut is passive, that is, the tax cut is implemented, and it is then hoped that the money is spent. So, while direct fiscal stimulation is active, a tax cut is passive policy. Thus, spending on World War II was on a massive scale, and it was active fiscal policy (i.e., the Government spent the money directly), as a consequence, mobilizing for the War ended the Depression.

A final point concerns the argument made by Reidl and others, including Niell Ferguson in a *Financial Times* editorial that the evidence shows that deficits do not stimulate demand[150]. But, the debt as a percent of GDP is a ratio, and the value of the ratio is affected by its two components: the *numerator* and the *denominator*. That is the debt as a percent of GDP is equal to[151]:

$$\left(\frac{Debt}{GDP}\right)\times 100 \qquad (2.)$$

[150] To follow the debate between Niell Ferguson and Brad DeLong and Paul Krugmen, see http://delong.typepad.com/sdj/2010/07/cant-anybody-here-play-this-game-fiscal-policy-edition.html (July 19, 2010)
[151] Dornbusch, Rudiger, Stanley Fischer, and Richard Startz, MACROECONOMICS, 10th Ed. (2007), McGraw-Hill/Irwin;: New York, Ch.

The value of a given ratio of debt-to-GDP, at a point in time, depends on which component plays the dominant role in changing the value of the ratio from one period to the next. This can be seen in Graph 75 (above), which presents the growth-rate of both the numerator (U.S. Debt, held by the public) and the denominator (U.S. Nominal GDP) over each four-year presidential administration. It is the behavior of these two components together that produces the results depicted in Graph 74 (above) U.S. Debt, held by the public, as a percent of GDP. Looking at the resultant ratio, without investigating the behavior of the component numerator and denominator can convey a misleading impression. This is clear when looking at Herbert Hoover's policies with the onset of the Great Depression. In the face of a $2.0 billion decline in revenues for the 1932 Fiscal Year, he raised taxes and cut spending[152]. Thus, though the U.S. Debt, as a percent of GDP, actually rose under Hoover, it was *not* due to stimulative fiscal policy, it was due to rapidly falling revenues (see Graph 75), due to rapidly declining GDP [the denominator in Equation (2.)], even though Hoover's fiscal policy was contractionary, because of his attempt to balance the Federal Budget in the face of a rapidly contracting economy[153]. He was pulling spending out of the economy, just as aggregate spending was rapidly falling. But, as revenue continued to fall faster than the cuts in spending, deficits, and the debt, actually increased.

VI. WHERE DO WE GO FROM HERE? The Outlook for 2009-2011 and Beyond

The momentum from the last half of 2009 and into the first half of 2010 seems to be dissipating going into the last half of 2010. Several factors seem to be asserting themselves and dragging the economy, if not down into a double-dip recession, at least into a significant slowing in the pace of recovery. The first, and most obvious is the loss of steam in the housing market. With expiration of the first-time homebuyers' tax credit, the housing market has not held up on its own. Although the Treasury and FANNIE

[152] De Long, J. Bradford, *Fiscal Policy in the Shadow of the Great Depression* (January 1996) National Bureau of Economic Research: Cambridge, MA.
[153] Again echoing the current-day deficit hawks, Hoover wanted to balance the Federal Budget to send a message to the markets.

MAE and FREDDIE MAC have vowed to pick up the slack after the Fed ended its program of buying Residential Mortgage-Backed Securities (RMBS's) in March, so far, it hasn't made much of a difference. This is reflected in the numbers. In its report on new home sales, the U.S. Census Bureau announced that sales dropped by 12.4% in July 2010, compared to June. Further, new home sales were down by 32.4% from July 2009. In July there were 9.1 months of supply of new homes on the market[154]. Further, according the National Association of Realtors (NAR) sales of existing houses plunged by a record 27% in July[155]. The number of previously owned homes on the market rose 2.5% to 3.98 million. At the current sales pace, it would take 12.5 months to sell those houses, the highest since at least 1999 and, up from 8.9 months in June. The months' supply of single-family homes at 11.9 months was the highest since 1983[156].

In addition to the relapse in the housing market, the *American Reinvestment and Recovery Act* (ARRA), known as "the stimulus" is set to wind down going into the last half of 2010 and into 2011. According to the Congressional Budget Office (CBO), the ARRA[157] has accomplished the following in the second quarter of 2010:

- Raised Real GDP by 1.7%-4.5%.
- Lowered the UR by 0.7-1.8 percentage points.
- Increased the number of people employed by 1.1 million-3.3 million.
- Increased the number of FTE's by 2.0 million-4.8 million.

[154] U.S. Bureau of the Census, NEW RESIDENTIAL SALES IN JULY 2010 (August 25, 2010) U.S. Department of Commerce: Wasington.
[155] Schlisserman, Courtney, *U.S. Economy: Home Sales Plunge as Tax Credit Wanes* (August 24, 2010) BUSINESSWEEK.COM < http://www.businessweek.com/news/2010-08-24/u-s-economy-home-sales-plunge-as-tax-credit-wanes.html> Accessed on August 24, 2010.
[156] ibid.
[157] Congressional Budget Office, *Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output From April 2010 Through June 2010* (August 2010) U.S. CONGRESS: Washington, p. 2.

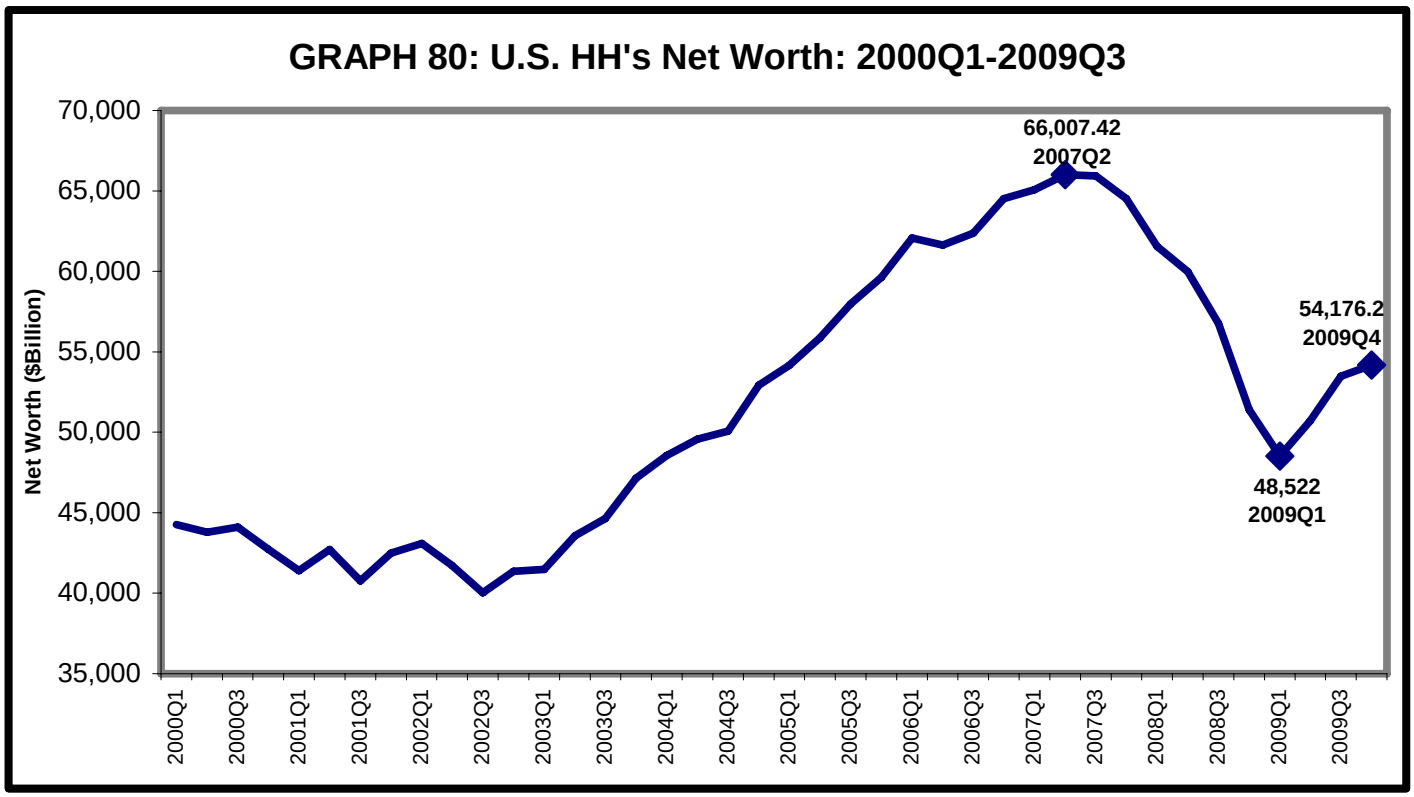
However, the CBO also notes that the effects of ARRA on output are expected to gradually diminish during the second half of 2010 and beyond. The effects of ARRA on employment and unemployment are expected to lag slightly behind the effects on output; they are expected to wane gradually in 2011 and beyond.

As Blinder and Zandi (2010) found in their study of the effects of the ARRA and the TARP, these programs certainly prevented the U.S. Economy from going into a second Great Depression, and also provided some initial boost to the economy (see Section V, above, this outlook) But, without a second stimulus, because of the scaling back of the House version of the bill, the ARRA is probably not big enough to carry the economy through from recovery to expansion and self-sustaining growth. This is due to the nature of the recent recession and crisis, and their on-going aftermath.

A BALANCE-SHEET RECESSION—What sets the recent crisis off from past Post-World War II, U.S. recessions is that this was not a "normal" downturn in the business cycle. It was even different than the severe 1973-75 and 1981-82 recessions. The recent recession and panic came on the heels of the collapse of a credit-fueled asset bubble, and the simultaneous accumulation of unsustainable levels of household debt. In this regard, it has much in common with the initial severe economic contraction that ushered in the Great Depression between 1929 and 1933, and the collapse of the asset bubble in Japan in 1989. It is what Richard Koo (2010)[158] has called a *Balance Sheet Recession.* Balance sheet recessions, as noted above, follow on the heels of the popping of a credit-fueled asset bubble, in conjunction with the excessive accumulation of debt. The collapse of asset values, in conjunction with high levels of debt, inflicts severe damage on the net worth of businesses, households, and the financial sector. There has been two times in the last 100 years when U.S. household debt exceeded 100% of GDP: 1929 and 2006[159]. Graph 80 shows the abrupt and significant drop in U.S. households' Net Worth between 2007Q2 and 2009Q1.

[158] Koo, Richard, *U.S. Economy in Balance Sheet Recession:What the U.S. Can Learn from Japan's Experience in 1990–2005* (February 10, 2010) Nomura Research Institute, p. 2.
[159] Atif Mian Amir Sufi, *Household debt and macroeconomic fluctuations* (29 April 2010) < http://www.voxeu.org/index.php?q=node/4954> Accessed on August 15, 2010.

In 2009Q1, household Net Worth was 74% of what it was in 2007Q2. That is a 26% decline in less than two years. By 2009Q4, U.S. households had recovered 11.7% of the Net Worth they had lost. However, that still left Net Worth at 82% of its 2007Q2 level. But, the greater drag on the economy is the debt overhang.



SOURCE: Board of Governors of the Federal Reserve.

The key to the length and severity of the process of households' rebuilding their balance sheets is how long it takes to bring debt down to acceptable, and sustainable, levels. Until that point is reached, this process will act as a tremendous drag on the economy. Mishkin (1978) was the first to highlight this process as a significant factor in the contraction, and the prolonging of, the Great Depression. He pointed out that, as households sought liquidity to pay down their debt, and repair their net worth on their balance sheets, their preference shifted away from the demand for less liquid assets (e.g., durable goods)

toward more liquid assets[160]. And, as noted above, Fisher (1933) pointed out that when the economy is faced with declining asset values, and high levels of debt, the proverbial straw that can put the economy into depression is deflation[161] Even without sustained deflation, and therefore, an outright depression, as Mishkin[162] and Koo[163] point out, the economy may, at the very least, still be in for an extended period (a decade, or more) of secular stagnation. Krishnamurthy (2010) proposes two detailed transmission mechanisms, which involves asset prices and balance sheets, and Knightian Uncertainty. Krishnamurthy describes two amplification mechanisms that operate during crises[164]:

1. First mechanism involves asset prices and balance sheets. A negative shock to agents' balance sheets causes them to liquidate assets, lowering prices, further deteriorating balance sheets and amplifying the shock.

2. The second mechanism involves investors' Knightian uncertainty. Unusual shocks to untested financial innovations increase agents' uncertainty about their investments, causing them to disengage from markets and amplifying the crisis.

With regard to Krishnamurthy's first mechanism, negative shocks impacted households' balance sheets after home prices fell, and their housing became worth less than their mortgage. This, in conjunction with any other accumulated debt destroyed net worth. Banks and other financial institutions, carrying financial derivatives created from pooled sub-prime mortgages found they could no longer value such assets on their balance sheets. This result was the direct consequence of the rise in delinquencies and charge-offs due to rising foreclosures. Further, this process collapsed the inverted pyramids of successive generations of financial derivatives created from structured securitization of pools of sub-prime mortgages.

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[160] Mishkin, Fredrick S., *The Household Balance Sheet and the Great Depression*, THE JOURNAL OF ECONOMIC HISTORY, Vol. 38, No. 4 (Dec., 1978), pp. 918-937, p. 925
[161] See Fisher (1933), pp. 341-345.
[162] Mishkin (1978)
[163] Koo (February 2010)
[164] Krishnamurthy, Arvind, *Amplification Mechanisms in Liquidity Crises* (July 2010) MACROECONOMICS 2, pp. 1–30

The second mechanism came into play, as financial institutions could no longer value derivative assets created from sub-prime mortgage pools resulting in asymmetric and hidden information about the value of collateral used in the commercial paper and other short-term credit markets. This resulted in the collapse of the Asset-Backed Commercial Paper market in August 2007, as investors found themselves in a state of Knightian Uncertainty. Similar mechanisms were operating in the insolvency crisis after the collapse of Lehman Brothers, and subsequent nationalization of AIG in September 2008.

THE SPENDER OF LAST RESORT—The above cited research on the nature of balance-sheet recessions, as compared to "normal" recessions[165] has some significant implications for the outlook for 2010 and 2011. With the need for households to repair their balance sheets and re-build net worth (particularly with regard to bringing down unsustainably high levels of debt), and for financial institutions to shore up their capital and reserves, because toxic assets of uncertain value still remains on their books, aggregate demand is weak. In fact, it appears that credit markets are still down due to both a lack of demand, and the unavailability of supply[166]. Further, the Money Multiplier, as noted above, has been below 1.0 throughout 2009 and 2010[167] That is, as the Monetary Base is rapidly increasing, M1, the basic money supply is shrinking![168] This is the reverse of the money-multiplier process introduced in Principals of Economics textbooks. Thus, with depressed household demand, in conjunction with restricted access to credit for, especially small, businesses, that leaves just one component of aggregate demand left to drive spending in the economy: the government—the spender of last resort. However, with a second stimulus politically unlikely, and the inadequate size of the ARRA to propel the economy into self-sustaining recovery (although it did apparently prevent the worst-scenario outcome), and with policy toward the financial sector, particularly with

[165] "Normal", meaning a recession that is not the result of the collapse of a credit-driven, asset bubble, which leaves a large debt-overhang in its wake. A "Normal" recession would be a downturn in economic activity that, even if it does involve the financial sector too, there is no danger of systemic crisis, or collapse of the entire financial system.
[166] Bianco, Timothy and Filippo Occhino, *Bank Loans: Still Contracting* ECOMIMC TRENDS (August 10, 2010) Federal Reserve Bank of Cleveland: Cleveland. http://www.clevelandfed.org/research/trends/2010/0810/01gropro.cfm Accessed on August 27, 2010.
[167] Federal Reserve Bank of St. Louis.< http://research.stlouisfed.org/fred2/series/MULT>
[168] ibid

regard to the Public-Private Partnership Program (P-PIP), tantamount to forbearance, the U.S. could be in for a Japan-style lost decade, if not a back-to-back, or double-dip recessions.

THE OUTLOOK FOR THE U.S. ECONOMY: 2010 AND 2011— The Congressional Budget Office's (CBO) forecast narrative from their August 2010 update of the budget and economic outlook includes discussion of some of the factors highlighted above, and their implications for U.S. economic growth coming out of the recent recession and panic:

> The pace of growth is likely to remain slow while the economy recovers from the effects of the financial crisis and as the support to economic activity provided by fiscal policy diminishes. In the past, recoveries from deep recessions have tended to be quite robust. After deferring purchases during a slump, especially for expensive goods like homes, autos, and capital equipment, households and businesses typically boost spending quickly as economic prospects improve. However, international experience suggests that recoveries from recessions spurred by financial crises tend to be slower than average, perhaps because the losses in wealth and the damage to the financial system that occur during such crises weigh on spending for a number of years. In the aftermath of a crisis, it takes time for consumers to rebuild their wealth, for financial institutions to restore their capital bases, and for nonfinancial firms to regain the confidence required to invest in new plant and equipment[169]

Thus, the continual undercurrent of damaged balance sheets in both, the household and financial sectors, will exert a drag on any momentum the economy would have had coming out of the recent, steep recession, unlike the strong recoveries that followed the 1973-75 and 1981-82 recessions, as neither one of those recessions came on the heels of the collapse of an asset bubble (particularly, a housing bubble), in conjunction with systemic financial crisis. Consequently, in the recoveries following those recessions, pent up demand for durable goods, and rebounds in the housing market helped drive

[169] Congressional Budget Office, *The Budget and Economic Outlook: An Update* (August 2010) U.S. Congress: Washington, pp. 31-32.

recovery[170]. As noted above, as Mishkin pointed out, when recovering from a balance-sheet recession, consumers' preferences change from less liquid to more liquid assets, which depresses the demand for less liquid assets such as durable goods. In addition, previous Post-World War II recoveries were also supported by resurgence in housing demand and its associated multipliers. As Leamer (2007) points out, residential investment is a significant contributor to recessions, which given the current, continuing housing crisis is probably obvious to most in 2010, but, it has also been a significant contributor to recoveries from recessions too[171]. Thus, in addition to the drag on economic growth from battered balance sheets, housing, and its associated multiplier effects, a major driver of economic growth, coming out of a recession, is not available to power the economy out of the current crisis. With balance sheets in tatters, housing market activity slowing again, due to the expiration of the $8,000 first-time homebuyers' tax credit, and the Fed's exiting the RMBS market, and with the winding down of the stimulative effects of the ARRA, it is expected that the U.S. Economy will lose momentum in the last half of 2010, and into 2011. In fact, of the five U.S. Macroeconomic forecasts presented in Table 3, four are expecting a deceleration in the growth-rate of Real GDP in 2011, compared to 2010. Only Ray C. Fair's forecast expects the Real GDP to grow faster in 2011 than in 2010. Table 2 presents the forecasters and their identifier as it appears in Table 3.

TABLE 2: Forecasters and Their Identifiers

IDENTIFIER	FORECASTER
CBO	Congressional Budget Office
IMF	International Monetary Fund
UMich	University of Michigan
Fair	Ray C. Fair
BCEI	Blue Chip Economic Indicators

[170] This, in turn, was driven by the Reagan defense build-up, which was the largest peace-time increase in defense spending in U.S. history.
[171] Leamer, Edward, E., HOUSING IS THE BUSINESS CYCLE (September 2007) National Bureau of Economic Research: Cambridge, MA., pp. 10-13.

Table 3 shows each individual forecast for each of the five forecasters. The most frequently forecasted indicator, at the national and international, level is GDP. As a consequence, there are updated forecasts for all five forecasters for Real GDP over the

TABLE 3: Updated U.S. Macro Forecasts for 2010 and 2011

	% CHANGE			Pct-Pt Diff	Pct-Pt Diff
Real GDP	**2009**	**2010**	**2011**	**2009-10**	**2010-11**
CBO[1]	-2.40	3.00	2.10	5.40	-0.90
IMF[2]	-2.40	3.30	2.90	5.70	-0.40
UMich[3]	-2.40	3.20	2.90	5.60	-0.30
Fair[4]	-2.40	2.97	3.30	5.37	0.34
BCEI[5]	-2.40	2.90	2.80	5.30	-0.10
AVERAGE	-2.40	3.07	2.80	5.47	-0.27
	% CHANGE (CPI-U)			**Pct-Pt Diff**	**Pct-Pt Diff**
General Price Level	**2009**	**2010**	**2011**	**2009-10**	**2010-11**
CBO	-0.40	1.60	1.00	2.00	-0.60
IMF	-0.40	*	*	*	*
UMich	-0.40	1.50	1.40	1.90	-0.10
Fair	-0.40	*	*	*	*
BCEI	-0.40	1.60	1.50	2.00	-0.10
AVERAGE	-0.40	1.57	1.30	1.97	-0.27
	MILLIONS			**Difference**	
Employment	**2009**	**2010**	**2011**	**2009-10**	**2010-11**
CBO	130.9	*	*	*	*
IMF	130.9	*	*	*	*
UMich	130.9	130.4	132.5	-0.5	2.1
Fair	130.9	132.5	135.4	1.6	2.9
BCEI	130.9	*	*	*	*
AVERAGE	130.9	131.4	133.9	0.5	2.5
	% LEVEL			**Pct-Pt Diff**	**Pct-Pt Diff**
Unemployment Rate	**2009**	**2010**	**2011**	**2009-10**	**2010-11**
CBO	9.30	9.50	9.00	0.20	-0.50
IMF	9.30	*	*	*	*
UMich	9.30	9.70	9.20	0.40	-0.50
Fair	9.30	9.58	8.63	0.27	-0.95
BCEI	9.30	9.60	9.10	0.30	-0.50
AVERAGE	9.30	9.59	8.98	0.29	-0.61

CBO[1]	August 2010 Updated Forecast
IMF[2]	July 2010 Updated Forecast
UMich[3]	JuN 2010 Updated Forecast
Fair[4]	July 2010 Updated Forecast
BCEI[5]	August 10, 2010 Forecast
*	No update available.

TABLE 4: GDP-Descriprive Statistics		
	2010	2011
Mean Forecast	3.07	2.80
Standard Error	0.08	0.20
Median	3.00	2.90
Standard Deviation	0.17	0.44
Sample Variance	0.03	0.19
Coefficient of Variation	5.50	15.60
Range	0.40	1.20
Minimum	2.90	2.10
Maximum	3.30	3.30
Confidence Level(95.0%)	0.21	0.54

2010-11 Forecast Horizon. The next most widely available forecast is that for the Unemployment Rate (UR). Forecasts for the General Price Level and Non-Farm Employment are either not as frequently included in the forecasts, or are not updated as frequently. Table 4 presents the summary, descriptive statistics for the five forecasts for 2010 and 2011. Since all five forecasters provided updated forecasts for Real GDP, the summary statistics in Table 4 are confined to the descriptive statistics for the growth-rates of Real GDP for 2010 and 2011.

As mentioned above, save Fair, the forecasts call for a deceleration in Real GDP growth between 2010 and 2011. The last two columns on the right in Table 3 show the percentage-point change in the growth-rate of Real GDP over 2009-10 and 2010-11. The IMF forecast expects the largest acceleration in the growth-rate of Real GDP from 2009 to 2010. The IMF projects that Real GDP will go from a 2.40% contraction in 2009 to a growth-rate of 3.30% in 2011, a difference in growth-rates of 5.70 percentage points, or 570 basis points (100 basis points = 1 percentage point). The lowest percentage-point difference in growth-rates between 2009 and 2010 is that BCEI, consensus forecast, which expects Real GDP to grow by 2.80% in 2010, a 530 basis-point difference from the 2.40% contraction in 2009. The average forecast for 2010 is for Real GDP to grow by 3.07%, which is 547 basis points higher than the 2.40% decline in Real GDP in 2009.

Four of the five forecasts show a deceleration in Real GDP growth for 2011. Ray C. Fair is the only forecast to show an acceleration in Real GDP-growth from 2010 to 2011. Fair

expects Real GDP to grow by 3.30% in 2011, a 34 basis-point acceleration in growth over that of 2010. The CBO expects the biggest slowdown in Real GDP-growth in 2011, compared to 2010. The CBO projects that Real GDP will grow by 2.10% in 2011. That is 90 basis points lower than its forecast for Real GDP growth in 2010.

From Table 4, as would be expected, the variability in the forecasts increases as the forecast period gets further from the historical data. The Standard Error of the Forecast increases from 0.08 in 2010 to 0.20 in 2011. Further, the Coefficient of Variation (the ratio of the Standard Deviation-to-The Mean X 100) increases from 5.50 in 2010 to 16.50 in 2011. Given the 95% Confidence level of 0.21 for 2010 and 0.54 for 2011, the forecast ranges for 2010 and 2011 are:

2010 GDP Forecast Range: P(2.86 <= GDP2010 <= 3.28) = 0.95
2011 GDP Forecast Range: P(2.26 <= GDP2011 <= 3.34) = 0.95

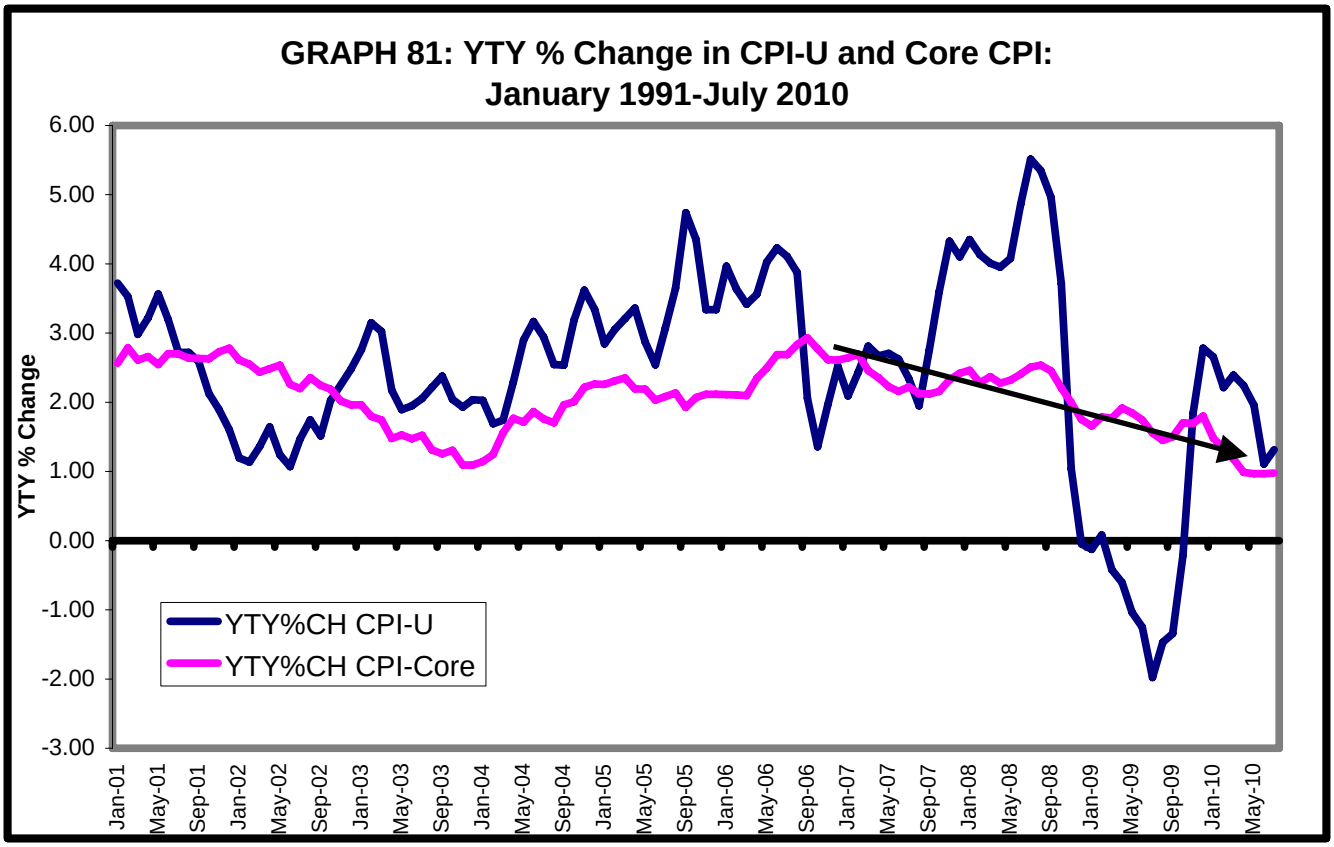
Returning to Table 3, four out of five forecasters had updated their forecasts for the U.S. Unemployment Rate (UR) for 2010 and 2011. On average, the four forecasters updating their forecasts for the UR expect it to average 29 basis points higher in 2010, compared to 2009. The average forecast expects the UR to increase from 9.30%, in 2009 to 9.59% in 2010. The average forecast projects that the average UR for 2011 will be 8.98%, a 61 basis-point decline from 2010. The most pessimistic forecast for the UR in 2010 is that of the University of Michigan. UMich expects the UR to rise from 9.30% in 2009 to 9.70% in 2010—a 70 basis-point rise in the UR. The most optimistic outlook for the UR is that of the CBO. The CBO expects that the UR will average 9.50% for 2010, which is a 20 basis point increase over the 2009 UR. Ray C. Fair is the most optimistic about the UR in 2011. The Fair forecast projects a 95 basis-point decline in the UR in 2011, compared to 2010, averaging 8.63%. The remaining three forecasters all expect a 50 basis point decline in the UR in 2011, compared to 2010. The CBO expects the lowest UR in 2011 of the remaining three forecasters. The CBO expects that the U.S. UR will average 9.00% in 2011.

The average forecast for the price level by the three who had recent updated forecasts, was for the deflation in 2009 to turn to very low inflation in 2010 (a 1.57% increase in the CPI-U in 2010, compared to –0.40% in 2009). The average forecast expects a deceleration in the growth-rate of the CPI-U to 1.30% in 2011. Only the University of Michigan and Ray C. Fair had updated forecasts for jobs in 2010 and 2011. And, they had very divergent forecasts of the expected jobs outlook. UMich expects that, on an annual average basis, the U.S. Economy will be down 500,000 in 2010, and then add 2.1 million jobs in 2011, for a net, cumulative increase of 1.6 million jobs over the 2010-11 forecast horizon. On the other hand, Ray C. Fair expects the U.S. Economy to add 1.6 million new jobs in 2010, and 2.9 million new jobs in 2011, for a cumulative total of 4.5 million new jobs over the 2010-11 forecast horizon. Interestingly, both expect a pick-up in net jobs creation in 2011, but UMich expects GDP-growth to decelerate, while Fair expects GDP-growth to accelerate. The implication is that Michigan expects a slowdown in productivity growth in 2011, compared to 2010, while Fair expects productivity growth to accelerate in both, 2010 and 2011.

Four of the five macro-forecasts expect a slowdown going into 2011. This seems like the most likely scenario as a slowdown may have already begun going into the last half of 2010. In addition to the drag-forces on the economy discussed above (the need for households and the financial sector to repair their balance sheets, the continued weakness in, and the withdrawal of support of, the housing market, and the winding down of the economic stimulus from the ARRA), three other factors may not only slow the momentum of recovery but, cut it short. Commercial Real Estate, particularly with regard to Commercial Mortgages-Backed Securities (CRMS), for the same reasons that drove the meltdown in Residential Mortgage-Backed Securities (RMBS) are expected to exacerbate the commercial real estate crisis going into 2011. In addition, there could be a crisis looming with regard to private-equity debt in 2011 and 2012. And, though the aid to the states from the bill signed by President Obama in July, 2010 will go a long way to alleviate the fiscal stresses into the last half of 2010 and into the beginning of 2011, it still leaves the states with a $140 billion gap to close in 2011. Thus, the requirement for most states to balance their budgets will still put a significant drag on the economy. The

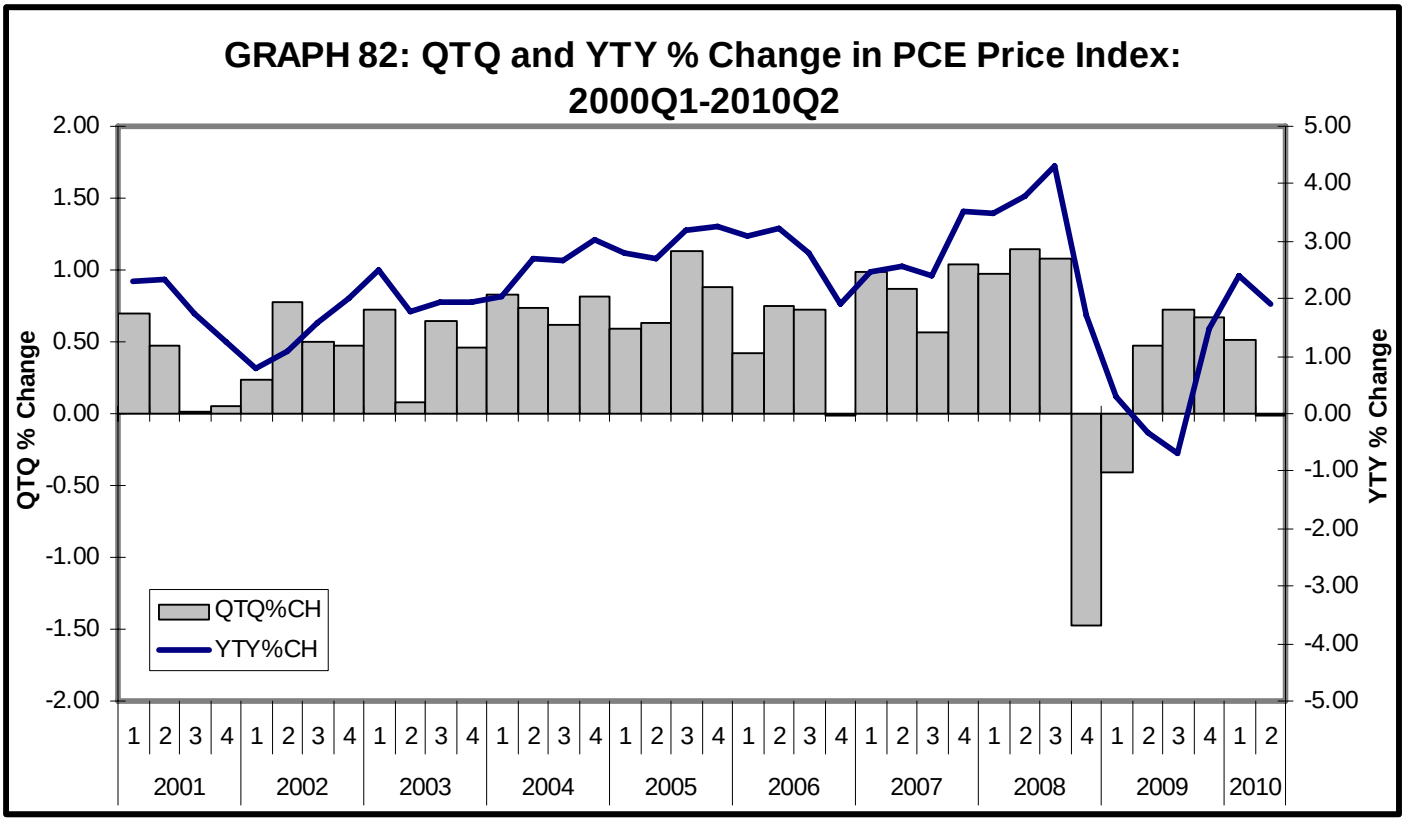
sovereign debt crisis, centered around Greece, in the Eurozone, still poses risks to the World Economy.

Finally, the specter of deflation is of particular concern over the forecast period. After removing the volatile components of the monthly Consumer Price Index (CPI) to obtain the Core CPI, particularly for the CPI for all Urban Consumers, or Core CPI-U, inflation/deflation trends can then be assessed with a less noisy series. Based on the Month-to-Month (MTM) change in the CPI-U, the U.S. Economy experienced steep deflation over the Panic Period over the end of 2008, beginning of 2009, while, on a MTM basis, the Core CPI-U did not show deflation until January 2010. When looking at the less volatile Core CPI-U on a Year-to-Year basis, as shown in Graph 81, there is a slow, but persistent, secular decline in the YTY growth-rate of the Core CPI-U from September 2006 through June 2010. Although, the July release did show that the decline had leveled off after May, a return to deceleration would be cause for worry.



SOURCE: U.S. BLS and CTDOL-Research calculations.

Turning to Graph 82, while the Price Consumption Expenditures (PCE) Price Index, a quarterly series, showed steep Quarter-to-Quarter (QTQ) declines in 2008Q4 and 2009Q1, there was a strong recovery in prices through 2009Q3, but then the QTQ growth-rate decelerated, turning negative in 2010Q2. On a YTY basis, the PCE Price Index rapidly decelerated throughout the last half of 2008, and turned negative throughout 2009. Prices recovered strongly in 2010Q1, but then began decelerating again, on a YTY basis, in 2010Q2.

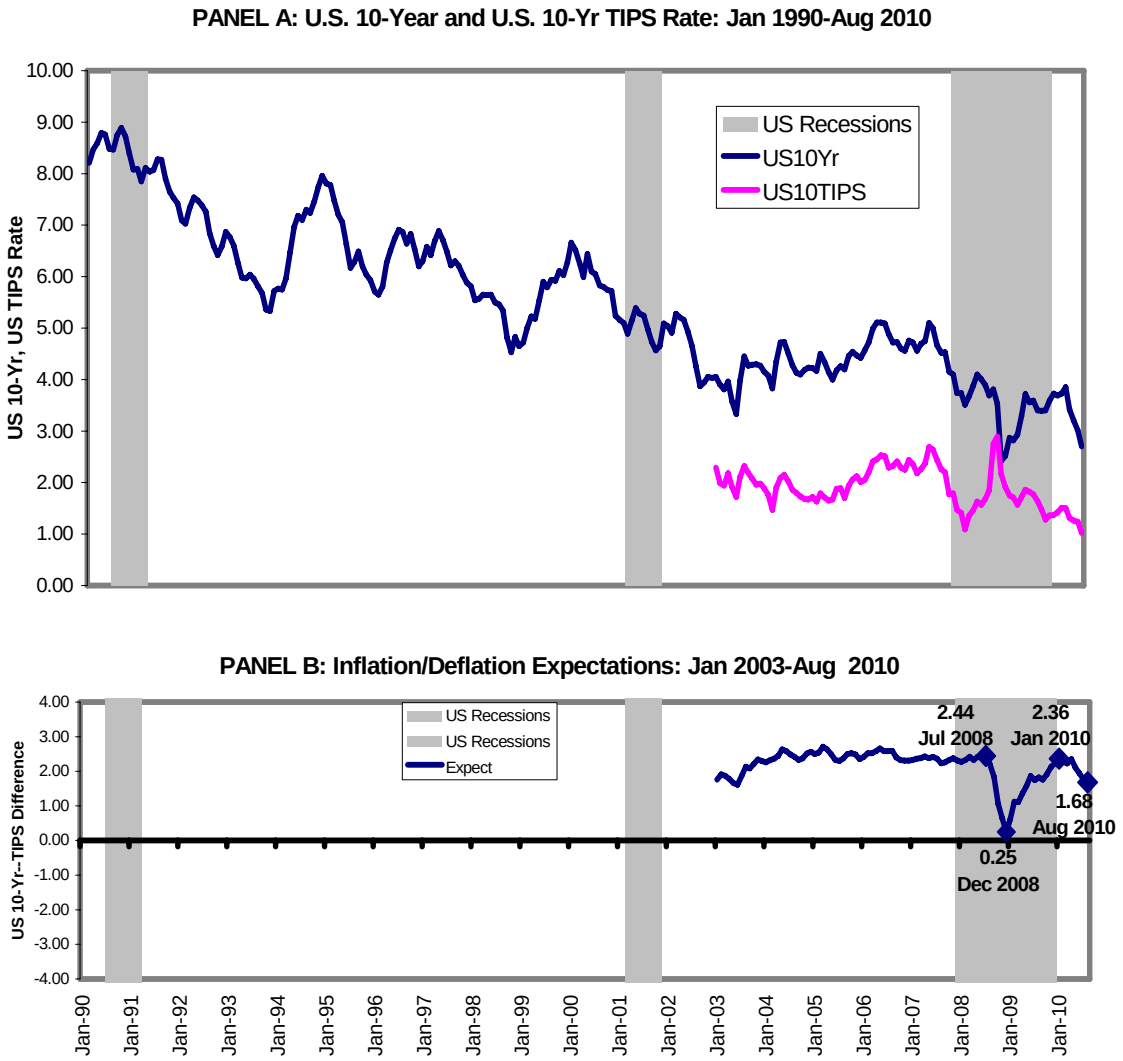


SOURCE: U.S. BEA and CTDOL-Research calculations.

A final signal on possible deflation comes from the difference between the interest rate on the U.S. Ten-Year Treasury Bill and the Treasury, Inflation-Protected Security (TIPS). A positive difference between the U.S. 10-Year and the TIPS would indicate inflationary expectations; a negative value would imply deflationary expectations. Between July and December 2008, that difference dropped from 2.44 percentage points to 0.25 percentage points (or 244 to 25 basis points). By January 2010, the difference had recovered to 236

basis points, however, by August that had dropped to 168 basis points. Expectations seem to be at least toward decelerating inflation, given that inflation is currently very low. This is illustrated in Graph 83.

GRAPH 83: U.S. 10-Year, U.S. 10-Yr TIPS, and Inflation/Deflation Expectations



SOURCE: Federal Reserve Board and CTDOL-Research calculations.

Why the concern about deflation? As Fisher pointed out in his 1933 article in *Econometrica*[172], if the economy is facing declining asset values, in conjunction with high, unsustainable, levels of debt (both present in the 2010 U.S. Economy), then deflation pushes the economy into depression. This is because, with the general price level falling, the real debt burden increases, as borrowers must repay their debt with dollars worth more than the dollars they borrowed. Further, as the price level is falling, all other things constant, the real interest rate is increasing. In other words, deflation is the proverbial straw. Or, to put it another way, deflation is what can push the economy over the edge from recession to depression.

172 Irving Fisher, "The Debt-Deflation Theory of Great Depressions,", *Econometrica* (1933), p. 925.

VOLUME 2

Current Conditions and Outlook for the Connecticut Economy: 2009-2011

August 2010

EXECUTIVE SUMMARY

CURRENT CONNECTICUT ECONOMIC CONDITIONS: Spring 2010- -
Connecticut seems to have done something over this cycle that it has not done before in the Post Cold War Era. Non-Farm Employment turned down going into the last recession after that of the U.S. The U.S. officially went into recession in December 2007, and employment turned down that same month. Yet Connecticut's Non-Farm Employment did not turn down until March 2008. Further, it appears that the U.S. and Connecticut employment cycles both bottomed in December 2009. If these turning points hold up in next year's benchmark, it would mean that Connecticut's recovery coincided with the U.S—again, a first in the Post Cold War Era. On the other hand, while the U.S. had job declines of 3.0% per year on an annualized basis, over 24 months, Connecticut's employment contracted at a 3.5% per year annualized basis, over 21 months.

A STRONG COMEBACK?— Connecticut's job-growth has been stronger than U.S. job-growth from December 2009 through May 2010. Connecticut's Non-Farm Employment grew by 0.91%, while that for the U.S. grew by 0.76%. For both the U.S. and Connecticut economies, the jobs numbers have been boosted by the 2010 Census.

WHERE IS THE JOB-GROWTH COMING FROM?—Reflecting the hiring of temporary Census workers, U.S. Federal employment grew by 571,000, or 20.2%, and Connecticut's Federal employment grew by 6,200, or 33.3%. Census workers have accounted for a significant number of the jobs created both the U.S. and Connecticut since the recovery. Between December 2009 and May 2010, the hiring of temporary workers for the Census accounted for 50% of net, new U.S. job-growth and for 40% of Connecticut job-growth. So where is private-sector job-growth, and where is it coming from? The second largest contributor to job-growth, and largest private sector NAICS sector, is Accommodation and Food Services, which accounted for 36.1%, or 5,200 net, new jobs. However, preliminary Unemployment Insurance (UI) tax data indicate that though there has certainly been robust job-growth in Accommodation and Food Services, it might not be quite as strong once the 2011 Benchmarking process has been completed.

It appears that the Food Services Industry accounted for much of the growth in the Accommodation and Food Services NAICS sector. Drilling down further, the growth in Foods Services jobs was nearly evenly split between Full-Service and Limited-Services restraints (and, it is this industry that may be particularly affected by next year's benchmarking, as discussed above). The next biggest contributor to job-growth was Retail, which accounted for 29%, or 4,100 net, new jobs between December 2009 and May 2010. The growth in Retail jobs seems to be broad-based, with particularly strong boosts in Building Materials and Motor Vehicles. Close behind Retail is Administration Support and Waste Management (hereafter Admin-Support), which contributed 4,000 net, new jobs, or 28% of the jobs added to Connecticut's Economy between December 2009 and May 2010. As for the U.S. Economy, a large driver of the job-growth and declines over the business cycle is Employment Services, particularly Temporary Help.

TEMPORARY HELP AND THE BUSINESS CYCLE— Unfortunately, Connecticut's Employment Services is not broken down by industries in the Establishment Survey, so Temporary Help cannot be isolated as it could for the discussion of the U.S. jobs market. Temporary Help accounted for about three-quarters of all U.S. Employment Services jobs. Assuming Connecticut's Employment Services Industry is similarly distributed, and that it follows the national pattern of more extensive use of temporary and contingent workers, reflected by the increasingly larger swings in the Year-to-Year (YTY) percent-change in employment in the Employment Services Industry over successive cycles since 1990. Over the recent crisis/panic, the 32.69% decline in Connecticut's Employment Services jobs in March 2009 (topping the 21% declines in the two previous Post Cold War recessions), on a YTY basis, is the largest over the range of available data. From that point on, the YTY growth-rate accelerated in an almost vertical climb, and in May 2010, the YTY growth-rate in Connecticut's Employment Services jobs was 14.62%. It is this behavior of temporary help employment over the business cycle that has been the principal driver of the Admin-Support Sector.

TREND-DRIVEN SECTORS— Health Care and Social Assistance (HCSA) accounted for 23% of Connecticut's job-creation between December 2009 and May 2010. However,

HCSA and Education were the only two NAICS sectors adding jobs to Connecticut's Economy over the recession and panic. Both HCSA, and Education (which accounted for 6.3% of the jobs added during the current recovery), are both driven by trend-dominated factors.

Manufacturing is being driven by both trend and cyclical forces. And, so far, Manufacturing jobs have actually increased over the current recovery, contributing a modest 200 jobs. The Professional, Technical, and Scientific Sector (hereafter Prof-Tech) accounted for 21%, or 3,000 jobs, created over the current recovery. Like Admin-Support, this too is a sector in which strong cyclically, dominated industries play a major role in driving its behavior over the cycle.

HOWEVER, Sectors Are Still Losing Jobs—Eight of Connecticut's NAICS sectors continued to shed jobs over the current, apparent recovery. Three of those sectors accounted for one-third of the net job-losses between December 2009 and May 2010, and are directly connected to the epicenter of the recent housing bubble, recession, and financial panic. Finance and Insurance accounted for 17.4%, or 2,500, jobs lost, Construction had a net loss of 2,000 jobs, and accounted for 14% of jobs lost, and Real Estate had a net decline of 200 jobs, accounting for 1.39% of jobs lost. Three NAICS sectors contributed just under 14% to just over 15% to job-losses, and combined accounted for nearly 44% of net, job-losses. Transportation and Warehousing had a net loss of 2,200 jobs, Other Services shed 2,100 jobs, and Wholesale Trade had a net decline of 2,000. Information had a net-loss of 600 jobs, and Management of Companies and Enterprises

WHAT IS THE SIGNAL FROM WEEKLY UI CLAIMS?—Since Initial Claims for Unemployment Insurance (UI) are reported on a weekly basis they are the most, timely indicator of labor-market conditions. The most common way to assess and present UI Claims data is to use a Four-Week Moving Average (4-WMA).

The January 2010, the 4-WMA of Initial Clams was still above 10,000, which is still at recessionary levels. And, after Week-to-Week (WTW) declines in Initial Claims continued through February and March, they reversed direction in April, and the WTW change jumped as high as 10%, the week of April 24th, but continued to decline in May, for four consecutive weeks. In addition, the YTY percent-change in the 4-WMA of Connecticut's Initial Claims have experienced the largest declines since December 1993. Thus, the signals from the Initial Claims data are that a recovery is probably underway, and the jobs data discussed above, reinforces this reading on the current state of the Connecticut Economy. Of course, the sustainability of the current, apparent recovery, both at the national and state levels, is in question.

BUBBLE, RECESSION, AND PANIC: Assessing the Hit to the State's Economy

There has not been a U.S. recession accompanied by a financial panic since The Great Depression. Consequently, looking to the historical record of the post-war recoveries will not be as informative as it was for understanding the dynamics of previous post-war recoveries. And, in fact, the historical reference, in many respects, must reach much further back in time to previous episodes of banking panics in the first third of the 20th Century, and even the last half of the 19th Century, as well as from cross-country studies.

The principal concern over what appears to be a recovery underway is: Can the economy sustain a recovery and propel itself on to the expansion phase once government supports are phased out? Recessions accompanied by financial panics are usually followed by weaker recoveries, especially on the heels of a popping asset bubble, due to the damage done to the economy's balance sheets, in conjunction with the disruption in the flow of credit. This section re-traces how the recession and panic impacted the major sectors of Connecticut's Economy and what it implies for a sustainable recovery.

CONNECTICUT'S LABOR MARKETS-- Nearly 20% (20,400 jobs) of all the jobs lost in Connecticut's Economy between March 2008 and December 2009 were in Manufacturing. The next biggest hit was Construction, which shed 15,400 jobs and accounted for 15% of jobs lost. Retail accounted for another nearly 15% of job-losses.

Admin-Support and Professional-Technical each accounted for more than 10% of jobs lost, and Finance and Insurance, Government, and Wholesale Trade each contributed more than 5% of the jobs lost during the recession/panic.

The pattern of Connecticut's job-losses seems to be pretty close to that of the U.S. For both Connecticut and the U.S., Manufacturing accounted for the most jobs lost this was followed by Construction and Retail. Construction, of course, was directly impacted by the bursting of the housing bubble, and retail indirectly, as consumers funded their spending, at unsustainable levels, by using their homes as ATM's. As discussed above, Admin-Support is driven by the behavior of the Temporary Help Industry over the business cycle. But, Professional-Technical is also driven by a couple of cyclically sensitive industries, particularly, Engineering and Architectural, which is tied to the Construction Sector, and Computer Systems and Design, which is tied to the Financial Sector, particularly the Insurance Industry.

When ranking Connecticut's NAICS sectors by the steepness of their job contractions over the recent recession/panic, not surprisingly, Construction, is the most negatively impacted sector, it contracted by 23% between March 2008 and December 2009. This was followed by Admin-Support, again, driven by Temporary Help employment-losses, and Professional and Technical, also driven by cyclically sensitive industries, particularly, Engineering and Architectural, which is tied to the Construction Sector and Computer Systems and Design whose services are heavily targeted toward the financial sector. Manufacturing contracted by 10.83% and Information and Real Estate each contracted by between 9% and 10%. Retail and Wholesale Trade each contracted by between 8% and 9%.

IT IS AN ILL WIND THAT BLOWS NO GOOD—Even in the midst of the worst recession since the 1930's, there were sectors still adding jobs. Most net, new jobs, both nationally and in the State's Economy, were created in the Health Care and Social Assistance (HCSA) Sector. HCSA added 7,400 jobs to Connecticut's Economy between March 2008 and December 2009. That represents a 3.11% increase in the HCSA job-

base. The other sector to add jobs over the recent recession/panic period was Education, which expanded by 2.63% that translates into an addition of 1,500 jobs over the 21-month recession period. Growth in HCSA and Education were driven by longer-term, demographic factors that muted any cyclical forces. However, HCSA job-growth in Connecticut may be muted by the losses in the Hospital Industry that began toward the end of 2008, and Education may be severely impacted by budget cuts due to the reduction in State aid to cities and towns resulting from the State's budget deficit.

INCOME AND SPENDING-- The level of consumer spending in the economy is based, not on total income, but on *disposable* income. That is, what consumers have to spend after their income is adjusted for any transfer payments received and any taxes taken out. Between 2008Q4 and 2009Q1 the decline in Personal Income (Net Transfers) was the largest, and only negative, component contributing to the QTQ change in Nominal DPI. Current Personal Transfer Payments made the largest positive contribution, with the reduction in Tax Payments the next largest contribution to CT. DPI growth. With the smaller decline over the 2009Q2-Q3 Period, again, PI (Net Transfers) was the biggest subtraction from Nominal DPI. However, over the current cycle, it appears that Connecticut Real DPI did not decline as steeply as Real QPI, Real CT DPI declined by 2.13% in 2009Q1, but Real QPI declined by 3.82%, CT Real DPI growth was barely positive again at 0.14% in 2009Q4.

NON-FARM EARNINGS AND EMPLOYMENT OVER THE RECESSION/PANIC-- Over the recent recession/panic (2008Q1 to 2009Q4), quarterly, Non-Farm Employment declined by 5.74%, while Real, Non-Farm Earnings declined by 4.64%. Looking at the response of Connecticut employment to a one-percent change in Connecticut, Real Non-Farm Earnings, over the recent recession, for every one-percent decline in Real Earnings, Connecticut's employment contracted by 1.24%. Thus, there was a greater than proportional decline in jobs from a one-percent decline in real earnings. Connecticut's earnings declined more steeply than U.S. earnings. U.S. Real, Non-Farm Earnings declined by 3.77% over eight quarters (2007Q4 to 2009Q4), while Connecticut's Real Non-Farm Earnings declined by 4.64% over seven quarters (2008Q1 to 2009Q4). The

difference appears to be in private versus public-sector earnings. U.S. Private Real, Non-Farm Earnings actually declined more steeply than Connecticut's Private, Real Non-Farm Earnings. However, U.S. real, public-sector earnings grew by 7.73% between 2007Q4 and 2009Q4, but, between 2008Q1 and 2009Q4, Connecticut's Real Earnings in the Government Sector grew by less than 1%.

THE STATE'S HOUSING MARKETS—One of the first signs of the impending bursting of the housing bubble was the abrupt decline in existing home sales after reaching unprecedented heights. This was true at both the national and the state level. In 2005Q1, Connecticut Existing Homes Sales turned down, one quarter before the downturn in national sales. By 2009Q1, Existing Home Sales had fallen by 53% from their peak. By the fourth quarter of 2009, the quarter of a possible turnaround in the State and National economies, Existing Home Sales recovered to 58,000, a 45% rebound. Though data for the second quarter of 2010 are not yet available at the time of writing, 2010Q1 Existing Home Sales numbers sent an ominous signal about the State's housing market. Existing Home Sales fell from a level of 58,000 in 2009Q4 to 49,600 in 2010Q1, a decline of 8,400, or 14.5%.

We Won't Get Fooled Again?--Housing permits did not begin their precipitous drop until after March 2006. And, it is housing permits that caused many economists, policymakers, commentators, and others to reject the idea that there was a housing bubble, especially in Connecticut. Many had argued that new household formation driven by demographics and immigration justified rising home values. But pressure on the demand for residential living space should have driven up the price of residential space, regardless of tenure (i.e., owner-occupied or rental). That is housing prices and rents should have been rising in tandem (see Volume 1: *U.S. Outlook*). But, that is not what was happening. The following discussion explains why the disconnect between house prices and rents should have been a red flag. .

Over the recent bubble, the monthly level of Housing Permits in Connecticut never approached the levels of the early 1970's and the 1980's real estate bubble. It was Mark

Twain who said that history doesn't repeat itself, but it rhymes. Each asset bubble throughout history seems to have a different twist lulling each new generation of participants into believing that "this time is different" [to use Rogot and Rienhart's (2009) expression, and title of their book] Thus. Many discounted any imbalances in the housing market by pointing to the low level of permits, and tight land-use regulation restricting the supply of housing, which agued against any possible oversupply of housing. However, oversupply, per se, was not at the heart of the recent housing bubble. The heart of the 2000's housing bubble was in a credit bubble fueled by the Federal Reserve and the trade deficit, the financing of home buying, a bubble psychology, and new "innovations" in the securitization of pools of mortgages, which resulted in riskier borrowers being given mortgages that were to re-set at higher, unsustainable payment-levels. Thus, this was a housing-finance crisis, and therefore, the indicators of impending trouble were not in housing permits, but in other indicators that were not widely considered. One of those indicators, the ratio of the Median House Price-to-the Median Rent was reaching very high levels by historical standards, and another, the ratio of the Median House Price-to-Median Household Income was also reaching very high levels, especially in Connecticut.

Current State of Connecticut's Housing Markets—As discussed above, Connecticut's Existing Home Sales declined by 8,400, or 14.48% between 2009Q1 and 2010Q1, the latest available data. After bouncing back from their low of 128 in January 2009, Total Housing Permits peaked at 294 in July 2009. From then on, they once again declined to a low of 207 in January 2010—a 47.46% decline. So far, since January, permits have increased every month of data in 2010 (February to April, and reached a level of 331, up 124 (+60%) from the January low. However, it should be noted that the last month of available data is also the last month of the $8,000 First-Time Homebuyer's Tax Credit program. Though homebuyers have until June 30th to close, the question remains as to whether or not the housing market will continue to recover after this program expires.

The last three quarters of available data from the Federal Housing Finance Agency (FHFA) show three consecutive quarters of QTQ declines in Connecticut house prices,

but at a decelerating rate, and only a relatively small decline in 2010Q1 (-0.28%). On a YTY basis, the FHFA House Price Index (HPI) for Connecticut has been declining just under 5% per quarter since 2008Q4. YTY, it seems that there is a steady erosion of house values that is neither, accelerating or abating. Foreclosure data for 2010 seem to be sending mixed signals about the current state of Connecticut's housing markets. The April foreclosure numbers from The Warren Group showed that Connecticut had 451 foreclosures, down from 648 in March. That is a MTM decline of 30.4%. However, over the first one-third of 2010, there have been 2,620 foreclosures, compared to 1,839 for the first one-third of 2009, that represents a YTY, same-period increase of 42.5%. The numbers from RealityTrac show that foreclosure filings fell from 2,915 in April to 2,088 in May. That represents a 30% MTM decline, but up 90% on a YTY basis—again, the data paint a mixed picture.

CONNECTICUT'S FINANCIAL SECTOR-- The Rise of Connecticut's Financial Sector over the last two decades has resulted in its increased importance to the State's Economy. While Finance and Insurance Earnings have increased their share of Total Non-Farm Earnings, Manufacturing's Earnings have declined. And, in 2001Q1, the share of Finance and Insurance pasted above that for Manufacturing. Even with the dip in Finance and Insurance Earnings share in 2009Q1, it still remained above Manufacturing, and has since, recovered much of its share. Further, while Connecticut's Manufacturing Sector employment has declined significantly since 1990Q1, employment in the Finance and Insurance Sector has pretty much maintained its share of Non-Farm Employment. As a consequence, manufacturing has been losing its stature in Connecticut, both in terms of earnings and jobs. At the same time, Finance and Insurance has gained in share of earnings and pretty much maintained its share of employment.

Connecticut's Financial Sector: Recession and Panic---By December 2007, the initial events signaling the impending financial crisis, including the collapse of the Asset-Backed Commercial Paper market (ABCP) in August had already unfolded. And, the National Bureau of Economic Research (NBER) had since declared December 2007 as the turning point ending the previous recovery/expansion. And, although Connecticut's

Economy would not turn down until three months later in March 2008, this, nevertheless, seems to be the most appropriate point in which to take a snapshot of the distribution of employment in the U.S. and Connecticut Finance and Insurance sectors. There were significant differences in the distribution of jobs with the U.S. and Connecticut Finance and Insurance sectors. Connecticut's Finance and Insurance jobs were concentrated in the Insurance Industry, while the U.S. sector's jobs were concentrated in Credit Intermediation (and Monetary Authority), and Connecticut also had more employment concentrated in the Securities, Commodities, and Brokers Industry, as well as the smaller Funds and Trusts Industry. Given that the largest concentration of U.S. Finance and Insurance jobs was in Credit Intermediation in December 2007, it is no surprise that it also contributed the largest share of job-losses to the sector between December 2007 and December 2009. Nearly 59% of U.S. Finance and Insurance jobs lost were in Credit Intermediation, but 46.3% of jobs were in that industry. Thus, Credit Intermediation, job-losses were heavily concentrated, based on the December 2007 share. Nevertheless, the relative hit to Connecticut's Credit Intermediation Industry was much greater. Though this industry employed, just under, 25% of Connecticut's Finance and Insurance workers, its relative contribution to job-losses over the recent recession/panic was double (nearly 48%) that of its share of Connecticut's Finance and Insurance employment in December 2007. Both, Securities, Commodities, and Brokers and Insurance were under-represented in their contribution to job-losses, based on their shares of Finance and Insurance employment in December 2007. In fact, the Insurance Industry's relative contribution to employment losses was just over half its share of employment in December 2007. The only other over-represented industry, in terms of job-losses, was the smaller, Funds and Trusts Industry, which contributed twice as many jobs to losses as its share of employment in December 2007 (3.9% versus 8.5%).

The two steepest declines in employment for Connecticut's Finance and Insurance Sector were the 9.21% in Credit Intermediation, which was steeper than its U.S. counterpart, and the 10.42% contraction in Funds and Trusts, which was double the decline in the U.S. Funds and Trusts Industry. The U.S. employment declines in Securities, Commodities, and Brokers and Insurance were both steeper than their Connecticut counterparts.

Connecticut's steepest declines were in those industries that had smaller shares of employment in December 2007 than their U.S. counterparts. The net result was that Connecticut's Finance and Insurance Sector lost 4.79% of its jobs between December 2007 and December 2009, while the U.S. Finance and Insurance Sector lost 6.16%.

Connecticut's Financial Sector In the Aftermath of Recession and Panic---After what appears to be a turnaround in jobs in December 2009, though Connecticut's Non-Farm Employment grew faster than the U.S. between December 2009 and May 2010, job-losses in the State's Finance and Insurance Sector actually began accelerating and were steeper than the job losses in the U.S. Finance and Insurance Sector, especially in Credit Intermediation.

THE ECONOMIC CRISIS AND THE STATE BUDGET

On July 1, 2010, Connecticut Comptroller, Nancy Wyman, in her statement to the Governor on Connecticut's fiscal condition, stated that The General Fund budget for FY2010 has been balanced through the use of:

- $1.278 billion in budget reserve funds,
- Over $800 million in federal stimulus dollars, and
- Payment deferrals and one-time transfers.

Further, in the absence of these non-recurring revenues and expenditure reductions, the Fiscal Year (FY) 2010 General Fund operating budget deficit would exceed $2.0 billion dollars. In FY 2009, the state issued $947.6 million in Economic Recovery Notes to close that year's operating deficit. And, though the steep declines in General Fund tax revenues, observed in the first half of this FY, have abated, and in light of significant increases in income tax and corporation tax rates, General Fund net tax revenues are still expected to be relatively flat as compared to last FY, and are expected to be $1.8 billion below their FY 2008 level.

IMPACT OF ECONOMIC CRISIS ON STATE REVENUES--Though the length of decline in Connecticut's General Revenues and the Personal Income Tax were three and

six months shorter over the recent recession/panic than they were during the 2001 Recession, they were steeper over the recent crisis. Further, the decline in Sales Tax Revenues was both longer, and steeper, over the recent recession/panic. The decline in revenues from the Corporate Income Tax was eight months longer over the recent recession/crisis, compared to the 2001, though not as steep. On a compounded, annualized basis, Connecticut General Revenues, Personal Income Tax, and Sales and Use Tax all had much steeper rates of decline over the recent recession/panic, compared to the 2001 Recession. Although, over the 2001 Recession, the Corporate Income Tax declined at a rate more than double that of the recent crisis, its decline lasted eight months longer over the recent crisis.

STATES GET A TEMPORARY REPRIEVE--A temporary reprieve was granted to the states when President Obama signed into law the *Education, Jobs, and Medicaid Assistance Act* on August 10, 2010. Connecticut is slated to get an estimated $309 million to help stave off teacher lays offs and cuts to Medicaid, which translates into $110 million for local schools and $199 million for Medicaid.

HOWEVER, STATES STILL FACE BUDGET STRESS--Though the bill President Obama signed into law in August, will certainly go a long way toward cushioning states' budget shortfalls, the states will still face significant fiscal stress in FY2011, and beyond. Nationally, state and local employment accounted for 15.1% of U.S. Non-Farm Employment. According to Mark Zandi of MoodysEconomy.Com, in his testimony before Congress, if states get no more fiscal relief, they will have to take steps to eliminate deficits for state FY2011. He estimates that those steps could shave nearly a full percentage point off of GDP. That, in turn, could cost the economy 900,000 jobs. Historically, the State and Local Sector has accounted for about 12% of GDP and have added about ¼ of a percentage point to annual GDP on an ongoing basis. If the State and Local Government Sector slips back into negative territory, it could contribute to a reversal of this still-fragile recovery.

WHERE DOES THE STATE'S ECONOMY GO FROM HERE? The Outlook for 2009-2011 and Beyond

THE CONNECTICUT ECONOMY: Outlook for 2009-2011---As noted in the introduction, Connecticut seems to have done something over this cycle that it has not done before in the Post Cold War Era. Non-Farm Employment turned down going into the last recession after that of the U.S. and the State's recovery in jobs coincided with that of the U.S. jobs recovery rather than lagging it. Further, Connecticut's job-growth since the December 2009 recovery has been stronger than that for the U.S. And, until May, so was Private-Sector job-growth. But, Connecticut's Private-Sector job-growth trajectory flattened out in May, indicating a possible slowing in private-sector job growth. The June numbers showed a significant deceleration in private job-growth for the U.S. Government job growth had been stronger for the U.S. than for Connecticut until May when both U.S. and Connecticut Government job-growth spiked due to the hiring of Census workers. Based on the U.S. drop in June, the State's Government jobs may drop in June as well. The question is: Will the current recovery continue? Will the recovery slow to a crawl turning into a Japan-style lost decade, or will there be a repeat of the 1980 and 1981-82 double-dip recessions? The possibility that it could accelerate seems unlikely at this point.

Forecast for Annual Job Growth: 2009-2011-- On an annual basis, it is expected that Connecticut's economy will recover from the steep losses of 2009, but still register a decline of 5,000 jobs in 2010 as a result of the current recovery's slowing momentum going into the second half of the year. Assuming that, even if the recovery slows over the last one-half of 2010, it will nevertheless, continue, annual job-growth will turn positive again in 2011, for the first time since 2008, and that Connecticut will recover 15,730 jobs.

Forecast for 4th Qtr-to-4th Qtr Job Growth: 2009-2011-- Turning to the fourth-quarter-to-fourth quarter forecast for Connecticut employment, The Goods-Producing sector is expected to continue losing jobs over the forecast period, on a fourth-quarter-to-fourth quarter basis. However, losses will decelerate from 40,831 between 2007Q4 and 2009Q4,

to 4,467 jobs over the 2009Q4-2011Q4 Forecast Period. Though losses are expected to subside in the Construction Sector, due to the continued drag of housing on the economy, not much growth is expected. Manufacturing, after hemorrhaging 24,000 jobs between 2007Q4 and 2009Q4, is expected to return to trend-losses, with about 3,000 more lost jobs over the 2009Q4-2011Q4 Forecast Period, due to continued re-structuring, including downsizing and outsourcing. As a result, on a 4th Quarter-to-4th Quarter basis, it is expected that, after shedding 66,025 total Non-Farm jobs between 2009Q4 and 2009Q4, Connecticut's Economy will recover 20,150 Non-Farm jobs between 2009Q4 and 2011Q4.

Sectoral Detail--After losing 25,194 jobs over the 2007Q4-2009Q4 Period, the Services-Providing Sector is expected to return to job-growth over the forecast period, adding 24,617 jobs, modest growth compared to the 51,077 jobs created over the 2005Q4-2007Q4 Period, as the last expansion was coming to a close. Once again, Health Care and Social Assistance (HCSA) is projected to account for a significant portion of net-job gains over the forecast horizon. HCSA is expected to add 7,700 jobs between 2009Q4 and 2011Q4, and account for 39% of all the net job-gains in the Services-Providing Sector. However, the growth-rate is expected to slow from the 5.5% pace between 2007Q4 and 2009Q4, to 3.0% over the 2009Q4-2011Q4 Forecast Period. Another previously strong-growing sector, Education, may also be facing some severe headwinds going into the forecast period. Its pace has already slowed from a 7.7% rate (+12,700) between 2005-07, fourth-quarter-to-fourth-quarter, to 2.1% (+3,700) over 2007Q4-2009Q4. The growth-rate is expected to slip to 1.9% (+3,500) over the 2009Q4-2011Q4 Forecast Period. In fact, even the modest forecast for job-growth in the Education Sector may be overly optimistic.

After losing 13,700 over the 2007Q4-09Q4 Period, Admin and Support is expected to recover 5,000 jobs over the forecast period. It is expected that employers will rely very heavily on temporary and contingent workers over the coming recovery and beyond. Another sector with a large amplitude over the business cycle is Professional, Technical, and Scientific. This sector too is driven by a few industries that dominate the cyclical

behavior of the sector. Particularly, Computer Systems and Design, which accounted for three-quarters of the sector's job-growth between 2005Q4 and 2007Q4, and for one-quarter of the sector's losses over 2007Q4-2009Q4. Also contributing 1,000 jobs each to the 7,700 jobs lost in Professional, Technical, and Scientific were Architectural and Engineering, which accounted for 26% of the job-losses, Advertising, which accounted for 16% of the losses, and Legal, which contributed 14% of the sector's job-losses. A good portion of the 2,900 projected job-gains for the Professional, Technical, and Scientific Sector between 2009Q4 and 2011Q4 will be in Computer Systems and Design. Last, but certainly not least, especially concerning Connecticut's Economy is the forecast for Finance and Insurance Sector. Though it accounted for 42% of Finance and Insurance jobs in 2007Q4, the Finance sub-sector contributed 55% to the job-losses in this sector between 2007Q4 and 2009Q4. The principal activity under this heading is Credit Intermediation. And, though it accounted for only 26% of jobs in this sector in 2007Q4, Non-Depository Institutions accounted for two-thirds of all job-losses between 2007Q4 and 2009Q4, in which employment was concentrated in Real Estate Credit and Sales Financing. Job-losses in Depository Institutions, Commercial Banks and Savings Institutions, began to accelerate in 2009. It is expected that losses in Depository Institutions, Real Estate Credit, and Sales Financing will continue, though the pace will slow from a7% decline between 2007Q4 and 2009Q4, to a 2% decline over the forecast period. Insurance, though recovering from the 2,700-job decline between 2007Q4 and 2009Q4, is still expected to shed another 800 jobs over the forecast period.

RISKS TO THE FORECAST: Very High—The risks to the forecast are quite high, and tilt toward the negative side. Some major risks include:

- The European debt crisis is a potential threat to Connecticut's Economy, as the Eurozone has two of Connecticut's three largest export destinations, France and Germany.

- The $8,000 first-time homebuyers' credit ended on April 30, 2010 and much of the Federal fiscal stimulus package (ARRA) spending ends in 2011. In addition, the Fed began withdrawing from its program of buying up Residential Mortgage-Backed Securities (RMBS).

- An ensuing fiscal crisis for most states that must balance their operating budgets by law could cut the tentative recovery short Although, a temporary reprieve was granted to the states when President Obama signed into law the *Education, Jobs, and Medical Assistance Act* on August 10, 2010.

- The housing sector, with its consequent multiplier effects, will continue to act as a drag on the economy. In addition, Connecticut can expect another generation of ARMs to re-set in 2010 and 2011, which could bring about a new wave of foreclosures.

In the final analysis, the need for households to continue the long process of repairing their balance sheets, by working off excessive debt-loads, in the face of continued weak housing prices, will act as a significant drag, on both, the State and National economies over the entirety of the forecast horizon.

THE CONNECTICUT ECONOMY: Beyond 2011---With the end of the Cold War and the downsizing of the defense industry, in conjunction with the restructuring of the insurance industry, the Connecticut Economy's ability to create jobs has been severely effected. In the 1990's, Connecticut's job-creation rate fell to an anemic 0.5% per year. And, the first eight years of this century have seen a collapse in the job-creation ability of both the U.S. and the Connecticut economies. The U.S. added jobs at weak 0.6% per year rate between 2000 and 2008, and Connecticut for all practical purposes had no job growth, adding jobs at a rate of only 0.05% per year. Further, since the end of the Cold War, defense cutbacks, and the restructuring of the insurance industry, Connecticut has become more strongly tied to the fortunes of the U.S. Economy.

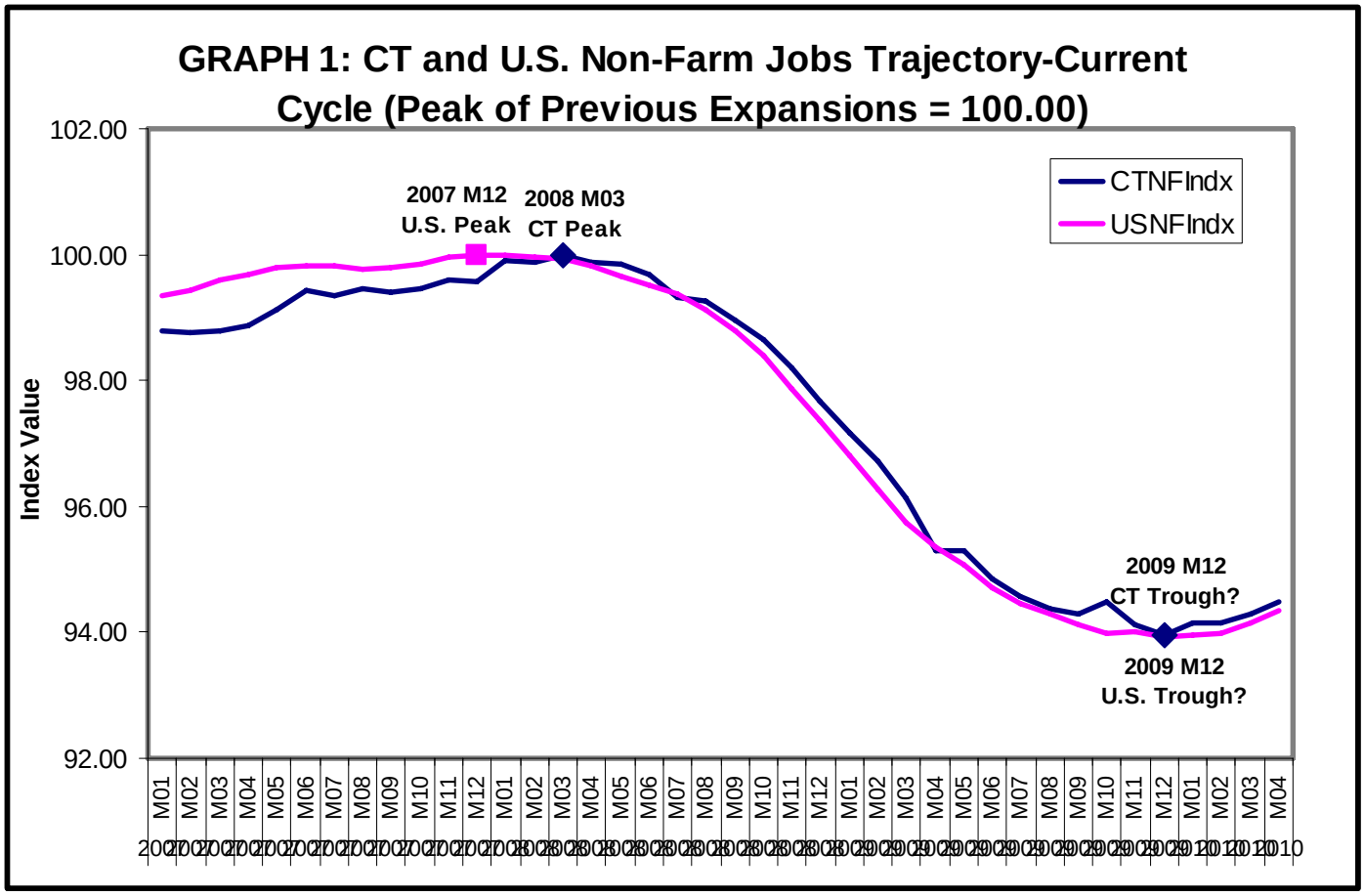
The changing fortunes of regional economies, driven by changes in competitive advantage, has resulted in a trend of firms' reconfiguring themselves through what is termed "outsourcing", or what economists call Vertical Disintegration, or Production Fragmentation. *Vertical Disintegration*, or outsourcing occurs when a firm contracts out to an external supplier to provide a function previously performed internally, within the firm, or spins off a division, at an earlier stage of its production process, to form a new firm. Whether or not the U.S. is a net beneficiary of offshore outsourcing, and how much is of the on-shore type is not critical for the affects it would have on Connecticut's

economy. Critical to Connecticut's labor market, is whether or not outsourcing is out-of-state, regardless of whether or not it is onshore, or offshore with regard to the national economy.

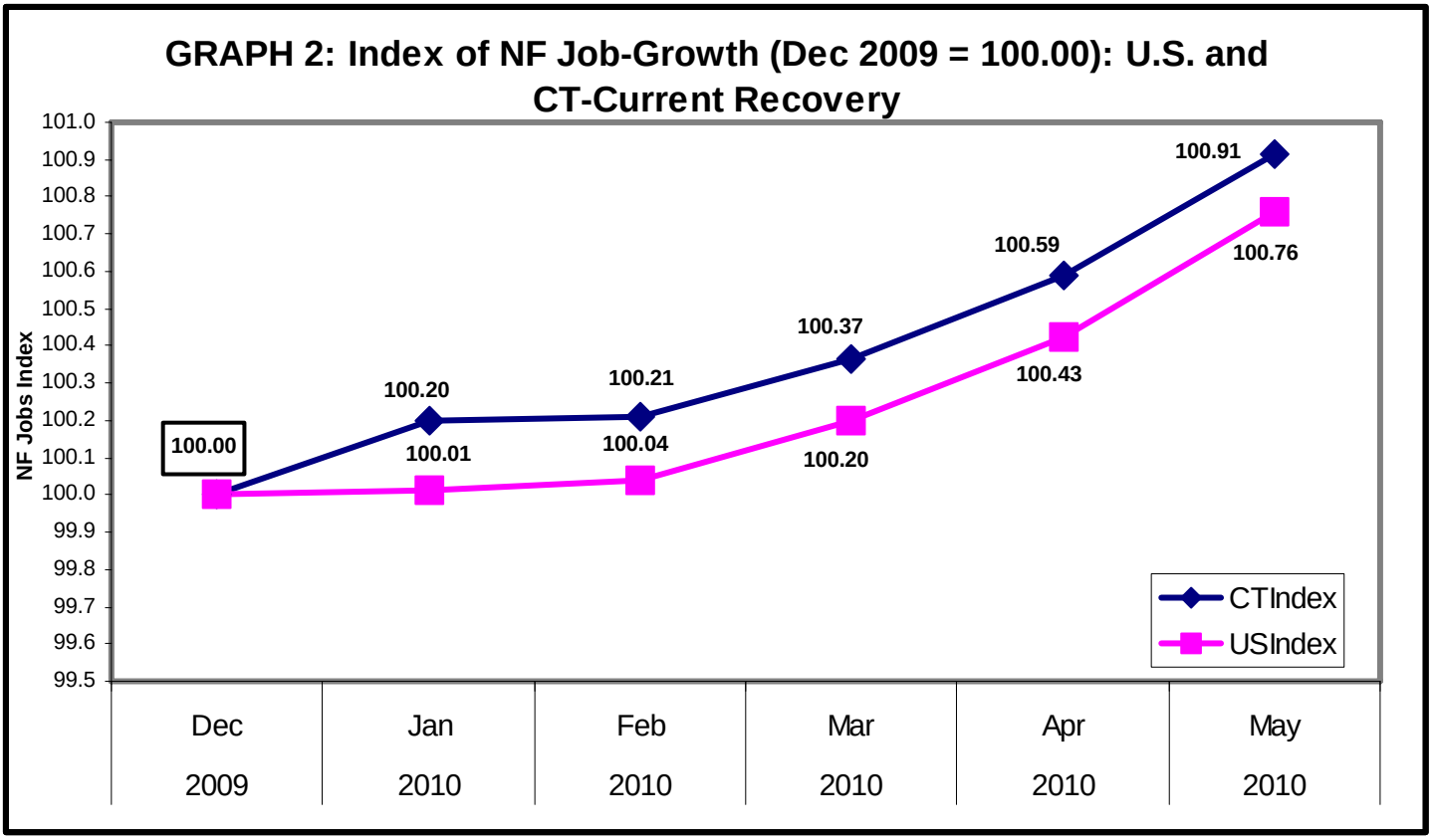
In light of this trend, it appears that Connecticut's muted GDP-growth and declining labor-market dynamics since 1997, may have not only been driven by higher productivity, compared to the U.S., but also by a faster than national pace, in the vertical disintegration of its industry structure resulting in GDP declining as a share of Gross Output (GO), in conjunction with growth in the importation of Intermediate Inputs from out of state. If these trends continue, then the long-term outlook appears to be one in which the State's firms continue the process of vertical disintegration at a faster pace than the U.S., which, in turn, if most outsourcing is out-of-state, translates into slower growth in GDP (= Value Added), firm formation, and job creation.

I. CURRENT CONNECTICUT ECONOMIC CONDITIONS: Spring 2010

Connecticut seems to have done something over this cycle that it has not previously done in the Post Cold War Era. Non-Farm Employment turned down in Connecticut going into the last recession after the U.S. Graph 1 presents an index of U.S. and Connecticut employment, with both index values equal to 100.00 at their respective peaks (indicated on Graph 1) in the last recovery/expansion. The U.S. officially went into recession in December 2007, and employment turned down that same month. Yet Connecticut's Non-Farm Employment did not turn down until March 2008. Further, it appears that the U.S. and Connecticut employment cycles both bottomed in December 2009. If these turning points hold up in next year's benchmark, it would mean that Connecticut's recovery coincided with the U.S—again, a first in the Post Cold War Era. On the other hand, while the U.S. had job declines of 3.0% per year on an annualized basis, over 24 months, Connecticut's employment contracted at a 3.5% per year annualized basis, over 21 months.



A Stronger Comeback?—Graph 2 tracks the U.S. and Connecticut apparent recoveries beginning in December 2009 to May 2010, the last period of available Non-Farm Employment data. An index identical to the one constructed for Graph 1 traces the month-to-month growth in U.S. and Connecticut jobs, with December 2009 equal to 100.00.



SOURCE: U.S. BLS, CTDOL-Research and calculations by CTDOL-Research.

Where is the Job-Growth Coming From?—As noted above in the discussion on Graph 1, this is the first Post Cold War recession in which the U.S. went into recession before Connecticut, and in which Connecticut and U.S. jobs-growth turned up simultaneously, instead of Connecticut's turnaround in jobs lagging behind that of the U.S. But, in addition, Connecticut's job-growth has been stronger than U.S. job-growth from December 2009 through May 2010. Connecticut's index value is above that for the U.S. over the entire period tracked in Graph 2. From December to May Connecticut's Non-Farm Employment grew by 0.91%, while that for the U.S. grew by 0.76%. For both the U.S. and Connecticut economies, the jobs numbers have been boosted by the 2010 Census. The hiring of temporary workers for the Census is summarized in Table 1.

TABLE 1: U.S. and CT. Government Job Growth

PANEL A: U.S. Government Employment*

GovLevel	Dec-09	May-10	CHANGE	%CHANGE
FEDERAL	2,824	3,395	571	20.22
STATE	5,178	5,157	-21	-0.41
LOCAL	14,479	14,416	-63	-0.44
TotGov	22,481	22,968	487	2.17

PANEL B: CT. Government Employment*

GovLevel	Dec-09	May-10	CHANGE	%CHANGE
FEDERAL	18.6	24.8	6.2	33.33
STATE	67.6	66.7	-0.9	-1.33
LOCAL	160.0	160.4	0.4	0.25
TotGov	246.2	251.9	5.7	2.32

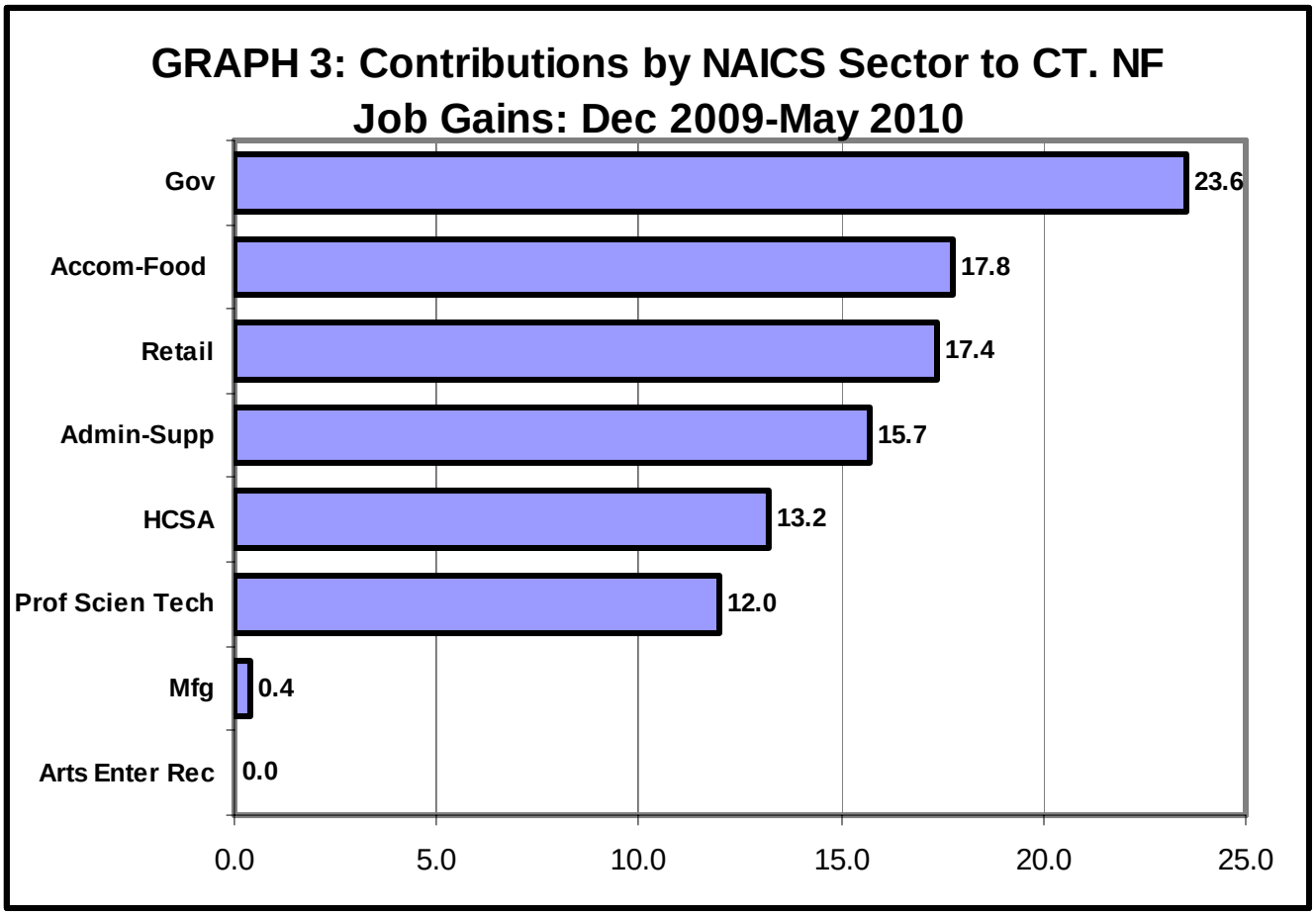
SOURCE: U.S. BLS

*X 1000

Panel A presents the level of U.S. Federal, state, local, and total Government employment in December 2009, the month U.S. and Connecticut Non-Farm Employment declines ended, and May 2010, the last month of available data. The last two columns (left-to-right) present the change and the percent-change from December to May. Panel B depicts the same information for Connecticut. Reflecting the hiring of temporary Census workers, U.S. Federal employment grew by 571,000, or 20.2%, and Connecticut's Federal employment grew by 6,200, or 33.3%. Census workers have accounted for a significant number of the jobs created both the U.S. and Connecticut since the recovery, especially for the month of May. Between December 2009 and May 2010, the hiring of temporary workers for the Census accounted for 50% of net, new U.S. job-growth and for 40% of Connecticut job-growth.

So where is the private-sector job-growth coming from? Graph 3 presents the eight NAICS sectors that have added jobs between December 2009 and May 2010. The Public Sector accounted for 5,700 net, new jobs added to Connecticut's economy, which represents 40% of total net new jobs, and 24% of the jobs added by the eight NAICS sectors with job-growth. And, as discussed above, much of the hiring in the Public Sector

was for the 2010 Census at the Federal level. But, where are the private jobs being created? As indicated on Graph 3, the second largest contributor to job-growth, and largest private sector NAICS sector, is Accommodation and Food Services, which accounted for 17.8%, or 4,300 net, new jobs generated by sectors with job growth.



SOURCE: U.S. BLS and calculations by CTDOL-Research.

Digging down below the sectoral level must be viewed with caution, as data are not available on a seasonally adjusted basis below the sectoral level of detail. Comparing the December 2009-May 2010 Period to that of December 2007-May 2008, on the eve of the recent recession, might offer some insights into the source of sectoral job growth. Based on this comparison, it appears that the Food Services Industry accounted for much of the growth in the Accommodation and Food Services NAICS sector. Drilling down further, the growth in Foods Services jobs was nearly evenly split between Full-Service and

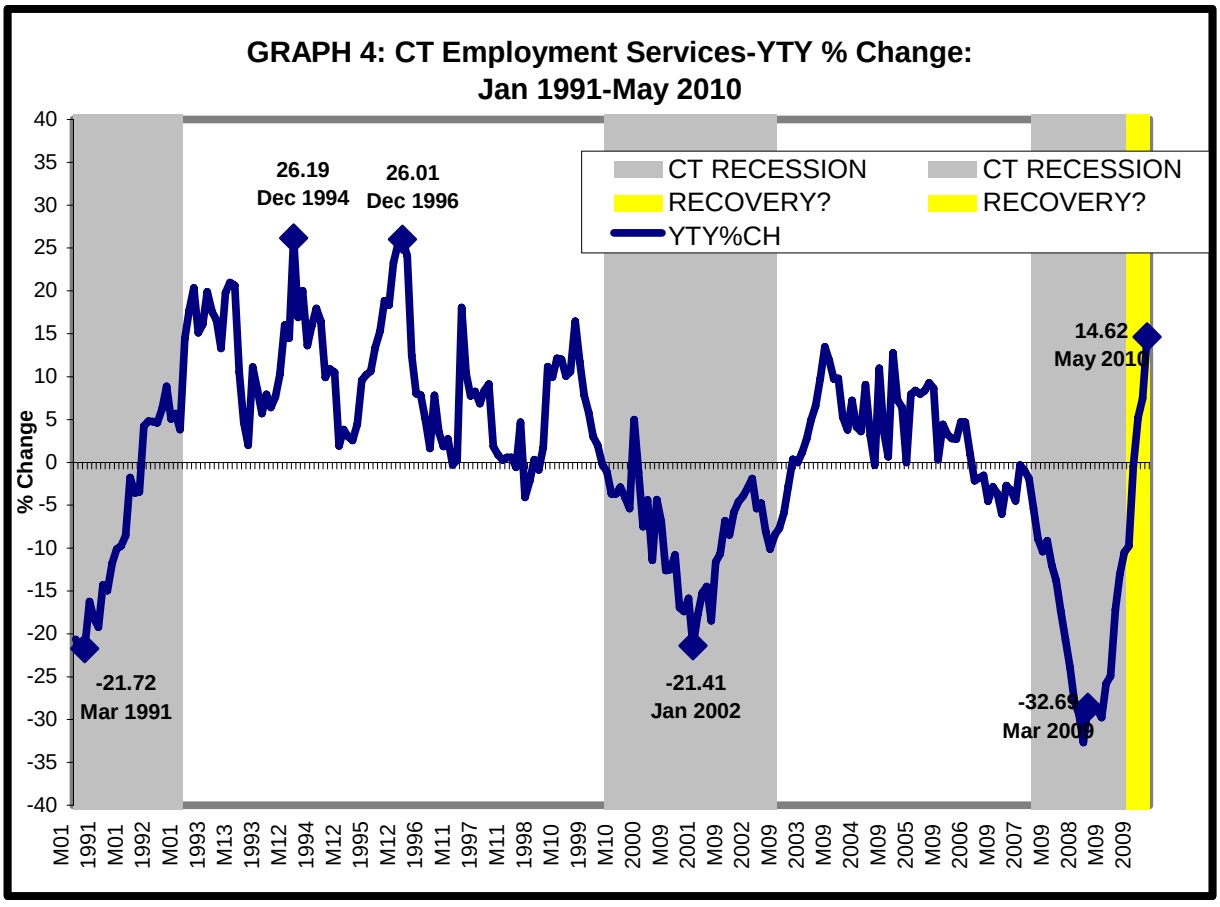
Limited-Services restraints. The next biggest contributor to job-growth was Retail, which accounted for 17.4%, or 4,200 net, new jobs between December 2009 and May 2010. Again, looking at the seasonally unadjusted data for Retail industries below the sectoral level, it shows that the six Retail industries that provide detail from the Establishment Survey indicate that, even though all declined between December and May, due to seasonal factors, the declines over the December2009-May 2010 Period were smaller for four of the six industries, and were positive for Motor Vehicles and Parts (which was negative over the December 2007-May 2008 Period), and for Building Materials and Supplies, which was positive, and stronger than the growth over the December 2007-May 2008 Period. Thus, the growth in Retail jobs seems to be broad-based, with particularly strong boosts in Building Materials and Motor Vehicles.

Close behind Retail is Administration Support and Waste Management (hereafter Admin-Support), which contributed 3,800 net, new jobs, or 15.7% of the jobs added to Connecticut's Economy between December 2009 and May 2010 (see Graph 3). As for the U.S. Economy, a large driver of the job-growth and declines over the business cycle id Employment Services, particularly Temporary Help. As discussed in *Volume 1: The U.S. Economy*[173], temporary help has become a much more significant factor in the U.S. Labor Market, and this is also true of the Connecticut Labor Market.

Graph 4 tracks the YTY percent-change in Connecticut Employment Services jobs from 1990 to 2010. Unfortunately, Connecticut's Employment Services is not broken down by industries so Temporary Help cannot be isolated as it could for the discussion of the U.S. jobs market. However, at the U.S. level, Temporary Help accounted for about three-quarters of all Employment Services jobs. Assuming Connecticut's Employment Services Industry is similarly distributed, Graph 4 shows that, like the U.S., the amplitude of the YTY percent-change in jobs over the business cycle is much greater than that for Total Non-Farm Employment. And, over the last expansion, also like the U.S., the share of Employment Services, of Total Non-Farm Employment increased, but then fell as Connecticut entered recession and then panic. With recovery in jobs, the YTY change

[173] See U.S. Outlook.

increased rapidly and dramatically. Again, this follows the national pattern. Outsourcing and the more extensive use of temporary and contingent workers is reflected by the increasingly larger swings in the YTY percent-change in employment in the Employment Services Industry over successive cycles since 1990. Again, this pattern is also observed in the U.S. data. Over the recent crisis/panic, the 32.69% decline in March 2009 (topping the 21% declines in the two previous Post Cold War recessions), on a YTY basis, is the largest over the range of available data. From that point on, the YTY growth-rate accelerated in an almost vertical climb, and in May 2010, the YTY growth-rate in Connecticut's Employment Services jobs was 14.62%. It is this behavior of temporary help employment over the business cycle that has been the principal driver of the Admin-Support Sector.



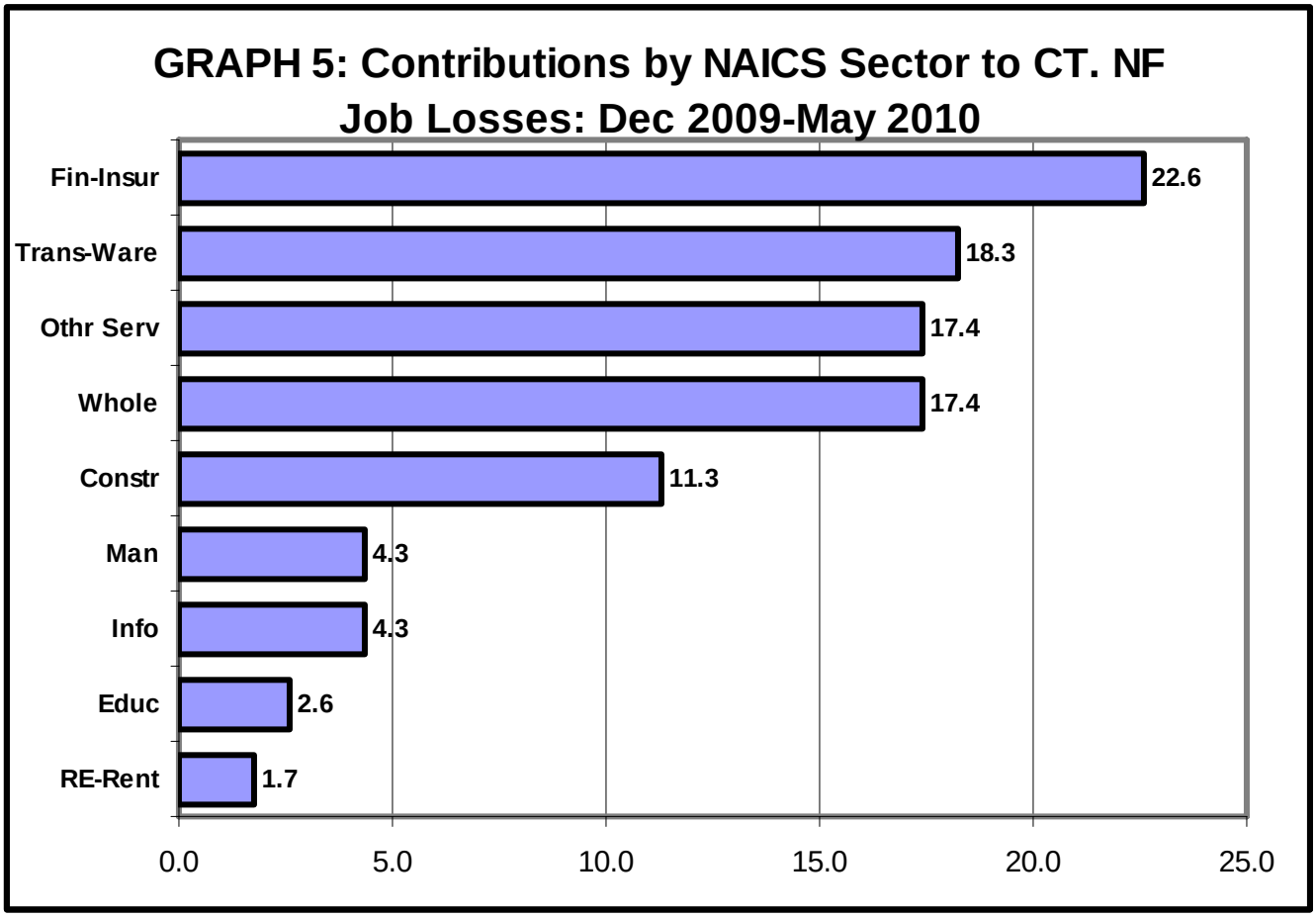
Trend-Driven Sectors-- Health Care and Social Assistance (HCSA) accounted for 13.2% of Connecticut's job-creation between December 2009 and May 2010. However, HCSA and Education were the only two NAICS sectors adding jobs to Connecticut's Economy

over the recession and panic. Both HCSA, and Education (which accounted for 6.3% of the jobs added during the current recovery), are both driven by trend-dominated factors. However, Education is also subject to the fiscal health of especially local governments, and that is tied to the business cycle. Once the recent extension of Federal aid to the states winds down in 2011 the growth in Education employment will end. In fact, as shown in Graph 5, below, the revised jobs data shows that the State's Education Sector has actually lost 300 jobs. Thus, the demographic trends in education are being overwhelmed by the current economic crisis.

There are some sectors that are predominately, or completely, by cyclical factors and therefore experience large swings of growth and decline over the business cycle. Manufacturing, on the other hand, has been pulled by both, trend and cyclical, forces. And, so far, Manufacturing jobs have actually increased over the current recovery, contributing a modest 100 jobs, which accounts for 0.4% of net, new jobs between December and May. The Professional, Technical, and Scientific Sector (hereafter Prof-Tech) accounted for 12%, or 2,900 of the jobs, added by growth sectors over the current recovery. Like Admin-Support, this too is a sector in which strong cyclically, dominated industries play a major role in driving its behavior over the cycle. In addition, some important trend factors also drive this sector, particularly the trend toward firms, particularly in the Financial Services Sector, outsourcing intermediate inputs, such as purchased services (i.e., temporary help and contingent workers).

HOWEVER, Sectors Are Still Losing Jobs—As depicted in Graph 5, nine of Connecticut's NAICS sectors continued to shed jobs over the current, apparent recovery. Three of those sectors accounted for one-third of the net job-losses between December 2009 and May 2010, and are directly connected to the epicenter of the recent housing bubble, recession, and financial panic. Finance and Insurance accounted for 22.6%, or 2,600, jobs lost, Construction had a net loss of 1,300 jobs, and accounted for 11.3% of jobs lost, and Real Estate had a net decline of 200 jobs, accounting for 1.70% of jobs lost. Three NAICS sectors each contributed 17% to 18% to job-losses, and combined accounted for nearly 54% of net, job-losses. Transportation and Warehousing had a net

loss of 2,100 jobs, Other Services shed 2,000 jobs, and Wholesale Trade had a net decline of 2,000. Information had a net-loss of 500 jobs, Management of Companies and Enterprises declined by 500, and Education was down by 300 jobs.



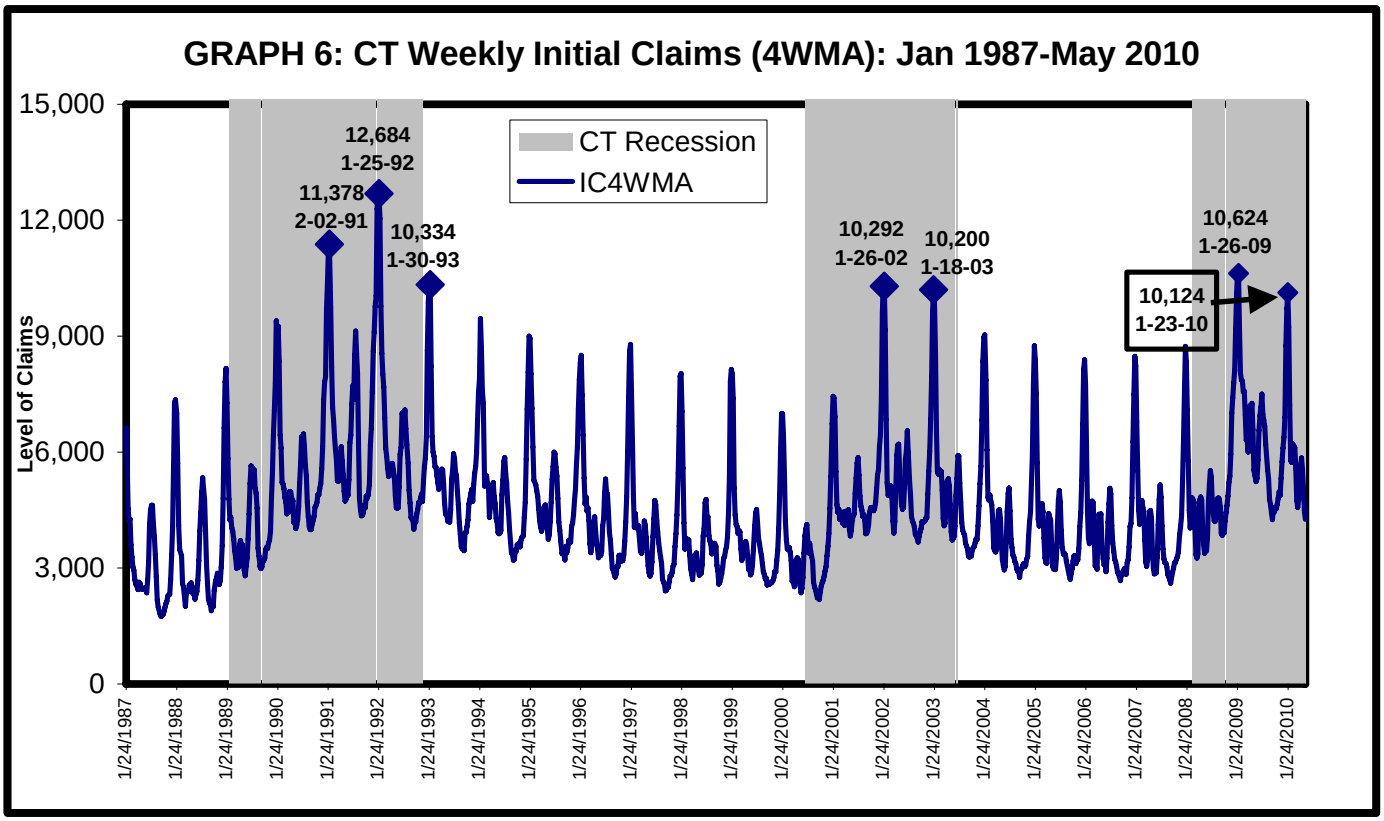
SOURCE: U.S. BLS and calculations by CTDOL-Research.

Connecticut seems to have made a strong showing, compared to the U.S., over what appears to be a recovery that began in December 2009. And, while both Connecticut and U.S. job-growth was boosted by the hiring of temporary Census workers by the Federal Government, it seems that that boost has had a larger affect on the U.S. numbers than on the Connecticut numbers. Connecticut seems to have created more private-sector jobs over the December 2009-May 2010 Period. But, is this job-creation, and economic recovery in general, sustainable? To further explore where we might be going over the 2009-2011 outlook horizon, the next section recaps where we have been, and, in

particular, how the State's Economy was impacted by the recent recession and panic, and what that implies for the near future economic prospects.

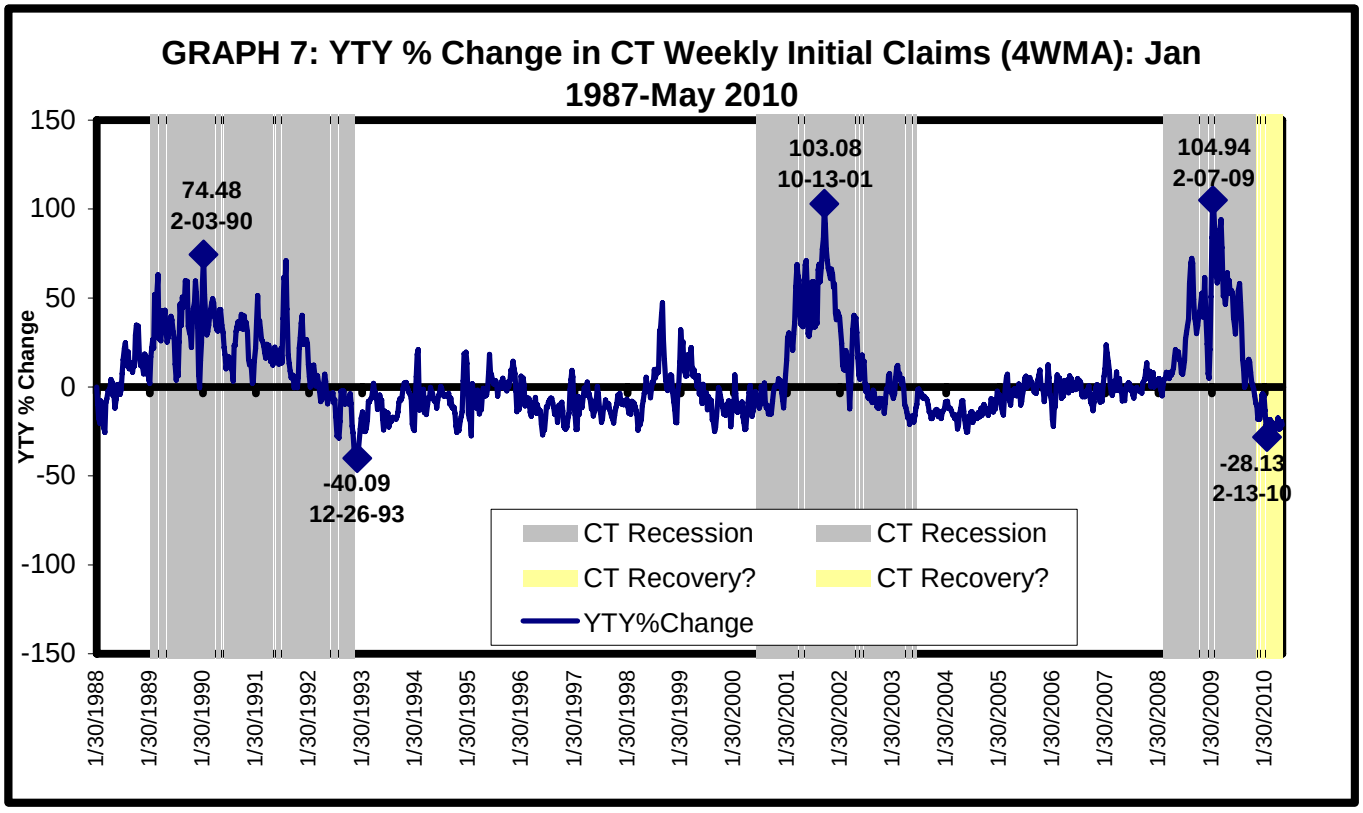
What is the Signal from Weekly UI Claims?—Initial Claims are an important indicator of the level of job-losses, at least by those eligible for Unemployment Insurance (UI). UI Claims are reported on a weekly basis making them the highest-frequency indicator of labor-market activity. Further, since they are reported on a weekly basis, they are the most, timely indicator of labor-market conditions. If Initial Claims are declining over an extended period, then that may indicate that conditions in the labor market are improving.

Graph 6 presents the Four-Week Moving Average (4-WMA) of Connecticut Initial Claims. As is apparent, even after applying the moving-average filter, there is still a lot of noise in the data, nevertheless, a clear-enough signal still comes through.



SOURCE: U.S. ETA and calculations by CTDOL-Research.

The January 2010 levels of Initial Clams were still above 10,000, which are still at recessionary levels, as made apparent by Graph 6. And, after Week-to-Week (WTW) declines in Initial Claims continued through February and March, they reversed direction in April, and the WTW change jumped as high as 10%, the week of April 24th. However, in the Month of May, Initial Claims, once again, declined for four consecutive weeks.



SOURCE: U.S. ETA and calculations by CTDOL-Research.

In addition, Graph 7 indicates the YTY percent-change in Connecticut's Initial Claims has experienced the largest drop since the December 1993 YTY decline in Initial Claims coming out of the 1989-92 Recession. Connecticut's Initial Claims dropped by 28.13% on a YTY basis during the week of February 13, 201. This is the largest decline since the 40.09% YTY decline of the week of December 26, 1993. The weeks of February 20th and April 3rd each exceeded 27%, YTY. Thus, the signals from the Initial Claims data are that a recovery is probably underway, and the jobs data discussed above, reinforces this reading on the current state of the Connecticut Economy.

Of course, the sustainability of the current, apparent recovery, both at the national and state levels, is another question, which will be taken up below in the discussion of the outlook for Connecticut to 2011.

II. BUBBLE, RECESSION, AND PANIC: Assessing the Hit to the State's Economy

The recent recession has been like no other in the Post World War II Era. There has not been a recession accompanied by a financial panic since The Great Depression. Consequently, looking to the historical record of the post-war recoveries will not be as informative as it was for understanding the dynamics of previous post-war recoveries. In many respects the historical reference must reach further back in time to previous episodes of banking panics that occurred during the first third of the 20th Century, and even the last half of the 19th Century for episodes of the sudden loss of confidence in the banking system. Examination of cross-country experience within the last 30 years offers further insights into the current economic environment/climate.

The principal concern over what appears to be an underway recovery is: Can the economy sustain a recovery and propel itself on to the expansion phase once government supports are phased out, or will the national and state economies sink into a double-dip like that of 1980 and 1981-82 back-to-back recessions, or worse? Recessions accompanied by financial panics are usually followed by weaker recoveries, especially on the heels of a popping asset bubble, due to the damage done to the economy's balance sheets, in conjunction with the disruption in the flow of credit. These factors may be playing a significant role in the economy's slowing activity as the $8,000 first-time, homebuyers tax-credit has expired in conjunction with the Fed's withdrawing from the mortgage market.

To find out where the economy is going, it is first critical to find out where it has been, and therefore, in the process, discover how we got to where we are. This section re-traces how the recession and panic impacted the major sectors of Connecticut's Economy and what it implies for a sustainable recovery. The major sectors and markets of the economy

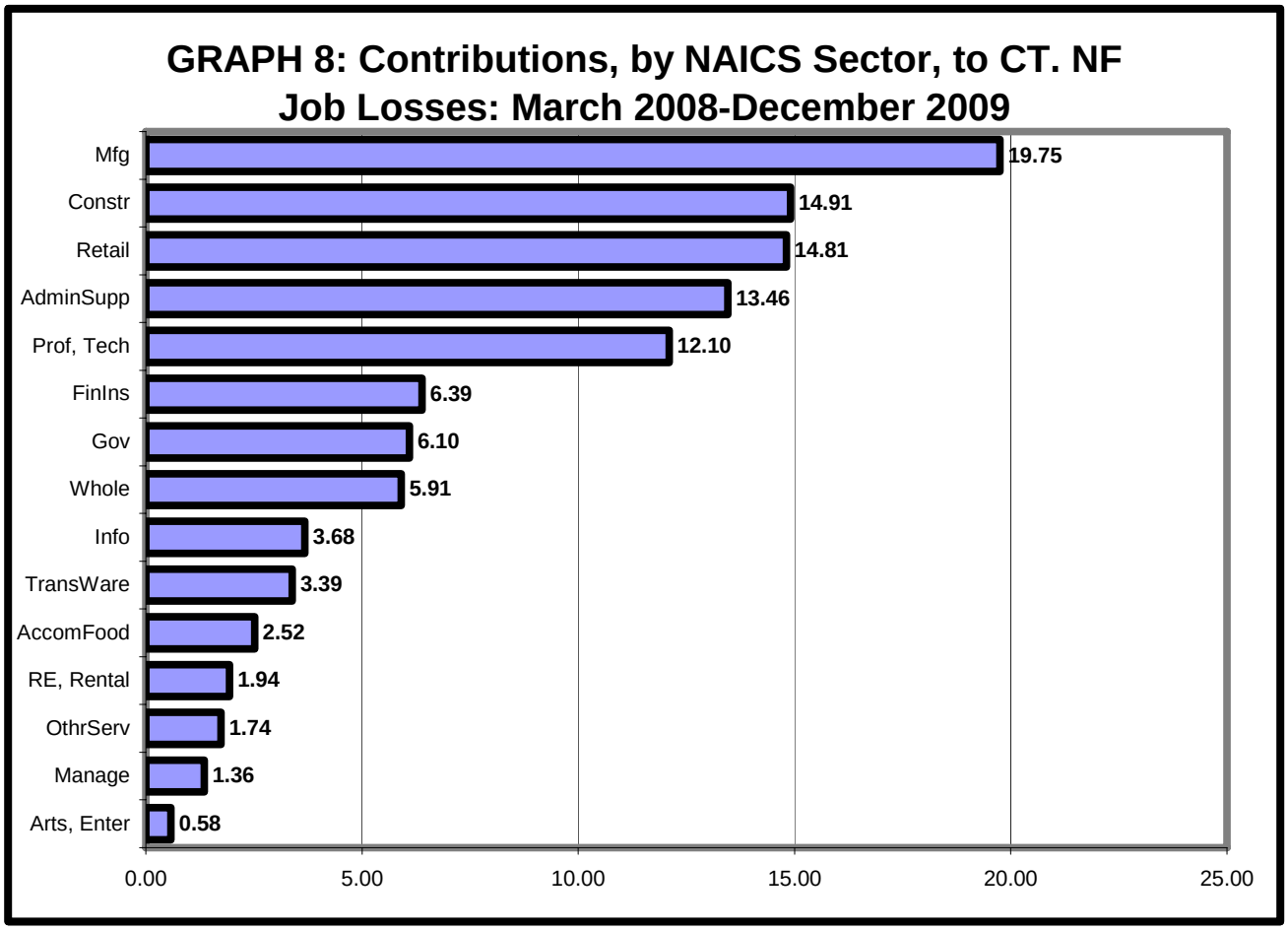
are each assessed beginning with Connecticut's Labor Market, then Income and Spending are looked at, followed by an assessment of the State's housing market after the housing bubble and sub-prime mess. Finally, Connecticut's Financial Sector, not just an important sector of the State's Economy, but one whose importance is also increasing, especially in terms of the State Economy's income and output.

A. CONNECTICUT'S LABOR MARKETS

As pointed out in Section I, above, Connecticut went into recession after the U.S. in March 2008. Since both the U.S. and Connecticut turned around, in terms of job-growth, in December 2009, Connecticut's recession, based on Non-Farm Employment, lasted 21 months, compared to the U.S. with a length of 24 months (U.S. Non-Farm jobs turned down in December 2007, and then resumed growth after December 2009). Thus, at least, the jobs-recession was three months shorter in Connecticut, compared to that for the U.S. For the U.S., jobs declined by 8.4 million, or 6.06% over a 24-month period. For Connecticut, jobs declined by 103,400, or 6.04%, over a 21-month period. At first, it looks like the intensity was the same for both Connecticut and the U.S., but, since Connecticut's jobs-recession was shorter, when put on an annualized basis, it turns out that Connecticut's decline was steeper then that for the U.S. Connecticut lost jobs at a rate of 3.50% per year over 21 months, while the U.S. lost jobs at a rate of 3.08% per year over a 24-month period.

Graph 8 presents the contributions to the State Economy's job-losses by NAICS sector over the recession/panic, ranked in the order of their contribution. Nearly 20% (20,400 jobs) of all the jobs lost in Connecticut's Economy between March 2008 and December 2009 were in Manufacturing. The next biggest hit was Construction, which shed 15,400 jobs and accounted for 15% of jobs lost. Retail accounted for another nearly 15% of job-losses. Admin-Support and Professional-Technical each accounted for more than 10% of jobs lost, and Finance and Insurance, Government, and Wholesale Trade each contributed more than 5% of the jobs lost during the recession/panic.

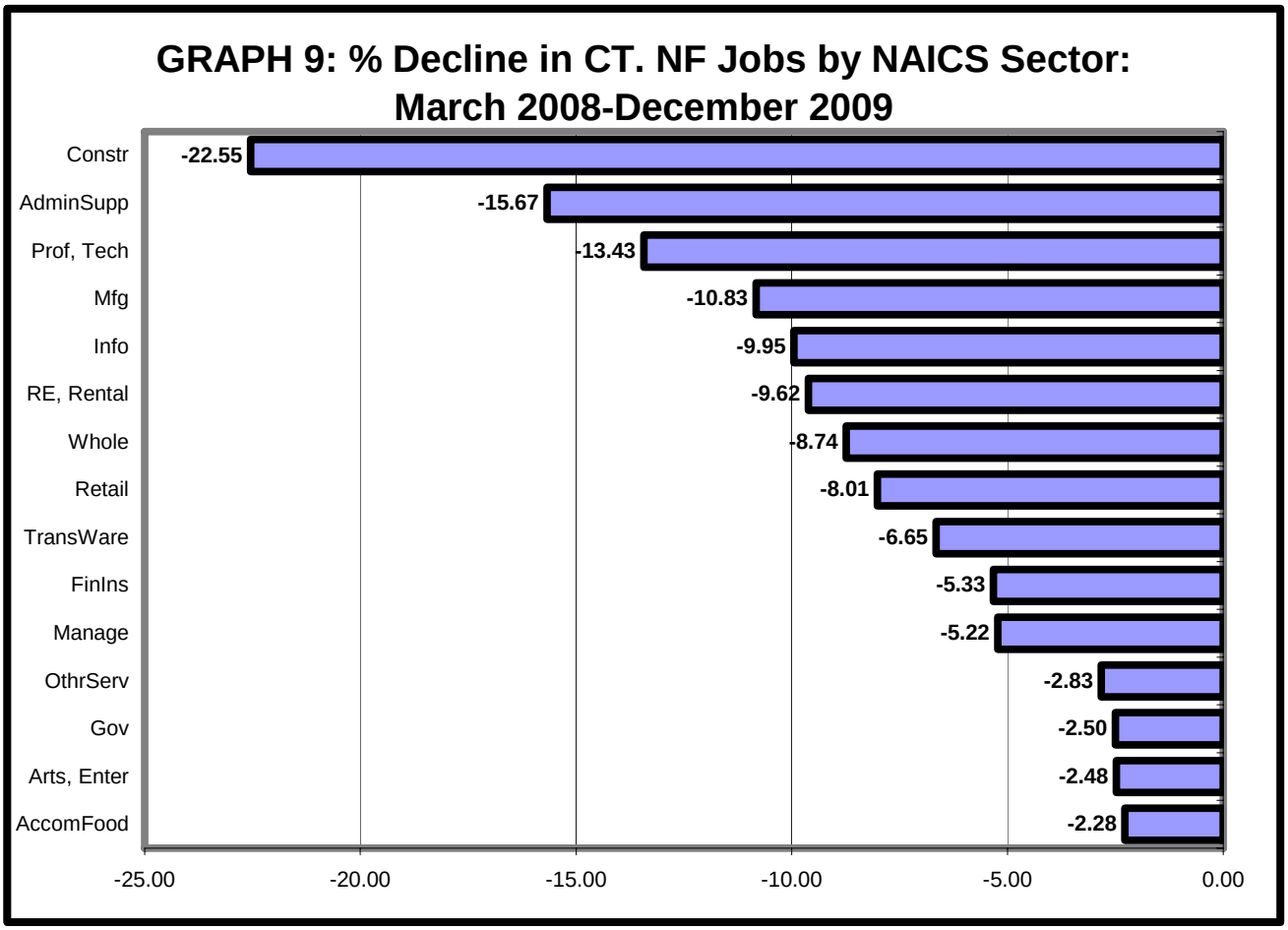
How does this compare to the contributions to U.S. job-losses? Based on the ranking of NAICS-sector contributions to U.S. job-losses in Graph 57 (see Part 1, *U.S. Outlook*), the pattern of Connecticut's job-losses seems to be pretty close to that of the U.S. For both Connecticut and the U.S., Manufacturing accounted for the most jobs lost, this was followed by Construction and Retail. Construction, of course, was directly impacted by the bursting of the housing bubble, and retail indirectly, as consumers funded their



SOURCE: U.S. BLS and calculations by CTDOL-Research.

spending, at unsustainable levels, by tapping into house-price appreciation through Mortgage Equity Withdrawals (MEW). As discussed in Section I, above, Admin-Support is driven by the behavior of the Temporary Help Industry over the business cycle, both at the state and national levels. The hiring of temps increases rapidly as the economy comes

out of recession, but contracts rapidly as the economy slows. In addition, temporary and contingent workers have become larger shares of the workforce over the last three decades[174]. Professional-Technical is also driven by a couple of cyclically sensitive industries, particularly, Engineering and Architectural, which is tied to the Construction Sector, and Computer Systems and Design, which is tied to the Financial Sector, particularly the Insurance Industry.



SOURCE: U.S. BLS and calculations by CTDOL-Research.

Graph 9 ranks Connecticut's NAICS sectors by the steepness of their job contractions over the recent recession/panic. Not surprisingly, Construction, the most negatively

[174] For instance, see Bureau of Labor Statistics, CONTINGENT AND ALTERNATIVE EMPLOYMENT ARRANGEMENTS (February 2005) U.S. Department of Labor: Washington and Dey, Mathew, Susan Houseman, and Anne Polivka, *What Do We Know about Contracting Out in the United States? Evidence from Household and Establishment Surveys* (September 2009) Upjohn Institute Staff Working Paper No. 09-157, Upjohn Institute: Kalamazoo, MI.

impacted sector, contracted by 23% between March 2008 and December 2009. This was followed by Admin-Support, again, driven by Temporary Help employment-losses, and Professional and Technical. This is another major sector driven by cyclically sensitive industries, particularly, Engineering and Architectural, which is tied to the Construction Sector and Computer Systems and Design whose services are heavily targeted toward the financial sector. Manufacturing contracted by 10.83% and Information and Real Estate each contracted by between 9% and 10%. Retail and Wholesale Trade each contracted by between 8% and 9%. It is, of course, no coincidence that the sectors with the steepest declines in employment also made the largest contributions to job losses.

It is an Ill Wind That Blows No Good—Even in the midst of the worst recession since the 1930's, there were sectors that were still adding jobs through the whole crisis. Most net, new jobs, both nationally and in the State's Economy, were created in the Health Care and Social Assistance (HCSA) Sector. HCSA added 7,400 jobs to Connecticut's Economy between March 2008 and December 2009. That represents a 3.11% increase in the HCSA job-base. The other sector to add jobs over the recent recession/panic period was Education. Jobs in the Educational Services Sector expanded by 2.63%, which translates into an addition of 1,500 jobs over the 21-month recession period. The job-growth in both HCSA and Education was driven by longer-term, demographic factors that muted any cyclical forces operating to produce job-losses in other sectors. Although, HCSA job-growth in Connecticut may be muted by the losses in the Hospital Industry that began toward the end of 2008, and Education may be severely impacted by budget cuts due to the reduction in State aid to cities and towns from the State's budget deficit.

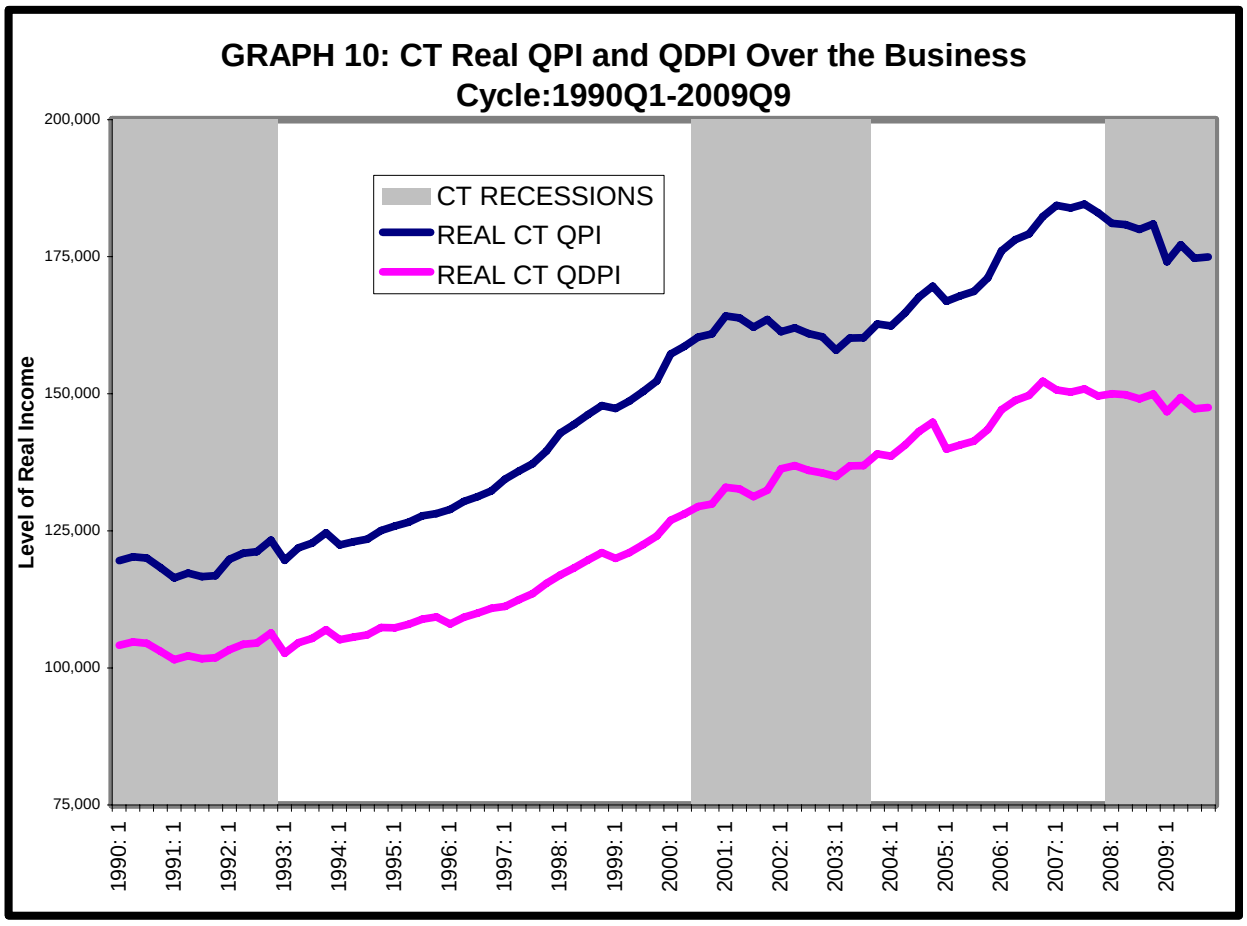
B. INCOME AND SPENDING

GRAPH 10 tracks Connecticut Real Quarterly Personal Income (QPI) and Real Disposable Personal Income (DPI) over the Business Cycle: from 1990Q1 to 2009Q4[175].

[175] As this was going to press, the U.S. BEA released 2010Q1 State Personal Income. The first-quarter estimate for Connecticut will be discussed below in Section VI *Where Does the State's Economy Go From Here?*

Both nominal QPI and DPI were deflated by the Price Consumption Expenditures (PCE) Index to obtain Real QPI and Real DPI.

In observing the longer-term trend, it appears that the growth in Connecticut Real DPI has flattened somewhat compared to the longer-term trend in Real QPI. However, over the current cycle, it appears that Connecticut Real DPI did not decline as steeply as Real QPI, especially upon entering the recession in the beginning of 2008. This will be more closely examined below.

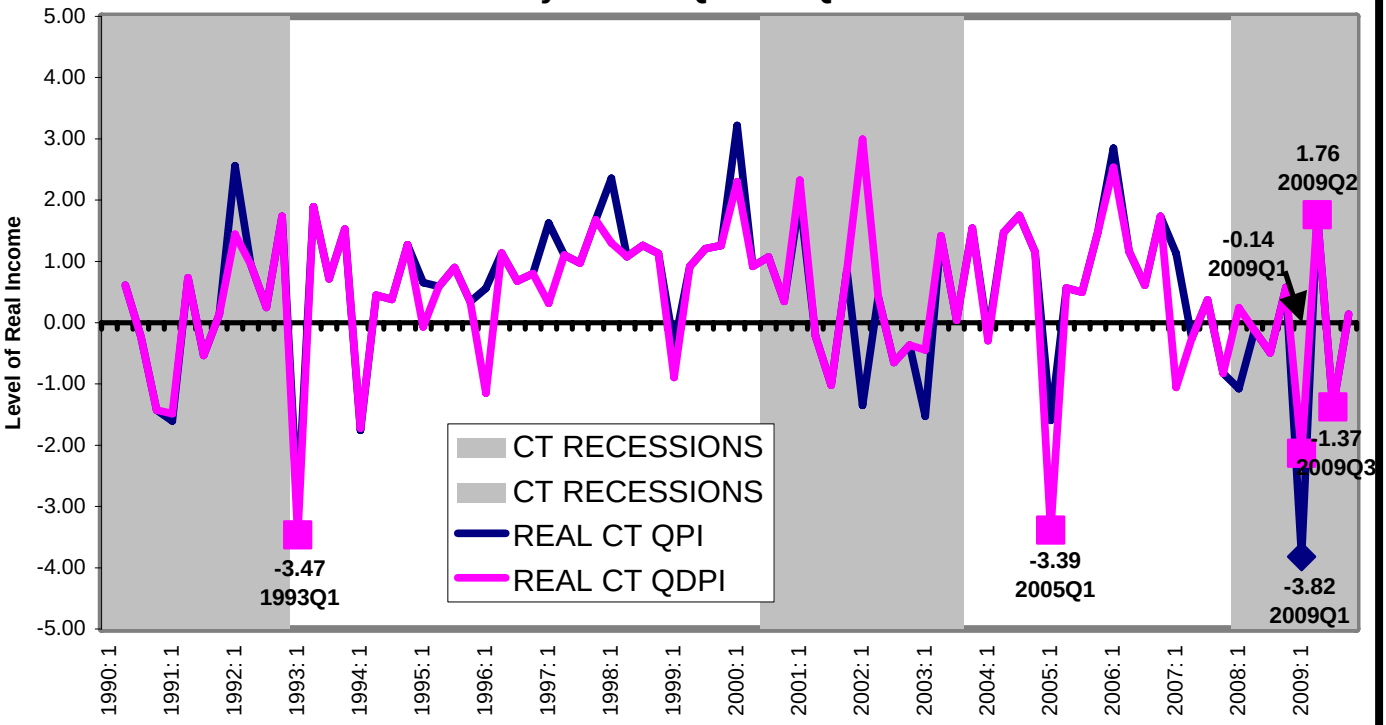


SOURCE: U.S. BEA and calculations by CTDOL-Research.

To look more closely at the behavior of Connecticut Real QPI and Real DPI over the business cycle, GRAPH 11: tracks the QTQ Percent Change from 1990Q1 to 2009Q4. As noted on Graph 11, Real CT DPI declined by 2.13% in 2009Q1, but Real QPI declined by 3.82%, which represented the steepest decline over the 1990Q1-2009Q4 Period.

Thus, Real DPI did not decline as steeply, relative to Real QPI, as it did in 2005Q1 (-3.39%) and 1993Q1 (-3.47%, see Graph 11) when Real DPI declined more steeply than Real QPI. By 2009Q4, after bouncing back to a 1.76% QTQ growth-rate in 2009Q2, then declining again by 1.37% in 2009Q3, CT Real DPI growth was barely positive again at 0.14% in 2009Q4. Over the last thee quarters of 2009, the QTQ growth-rate of Real CT QPI has pretty much tracked the growth-rate of CT Real DPI.

GRAPH 11: QTQ % Change in CT Real QPI and QDPI Over the Business Cycle:1990Q1-2009Q9



SOURCE: U.S. BEA and calculations by CTDOL-Research.

Why the focus on DPI? Because, the level of consumer spending, in the economy is based, not on total income, but on *disposable* income. That is, what consumers have to spend after their income is adjusted for any transfer payments received and any taxes taken out. That is, Disposable Personal Income is equal to income plus transfers minus taxes. This relationship is expressed as:

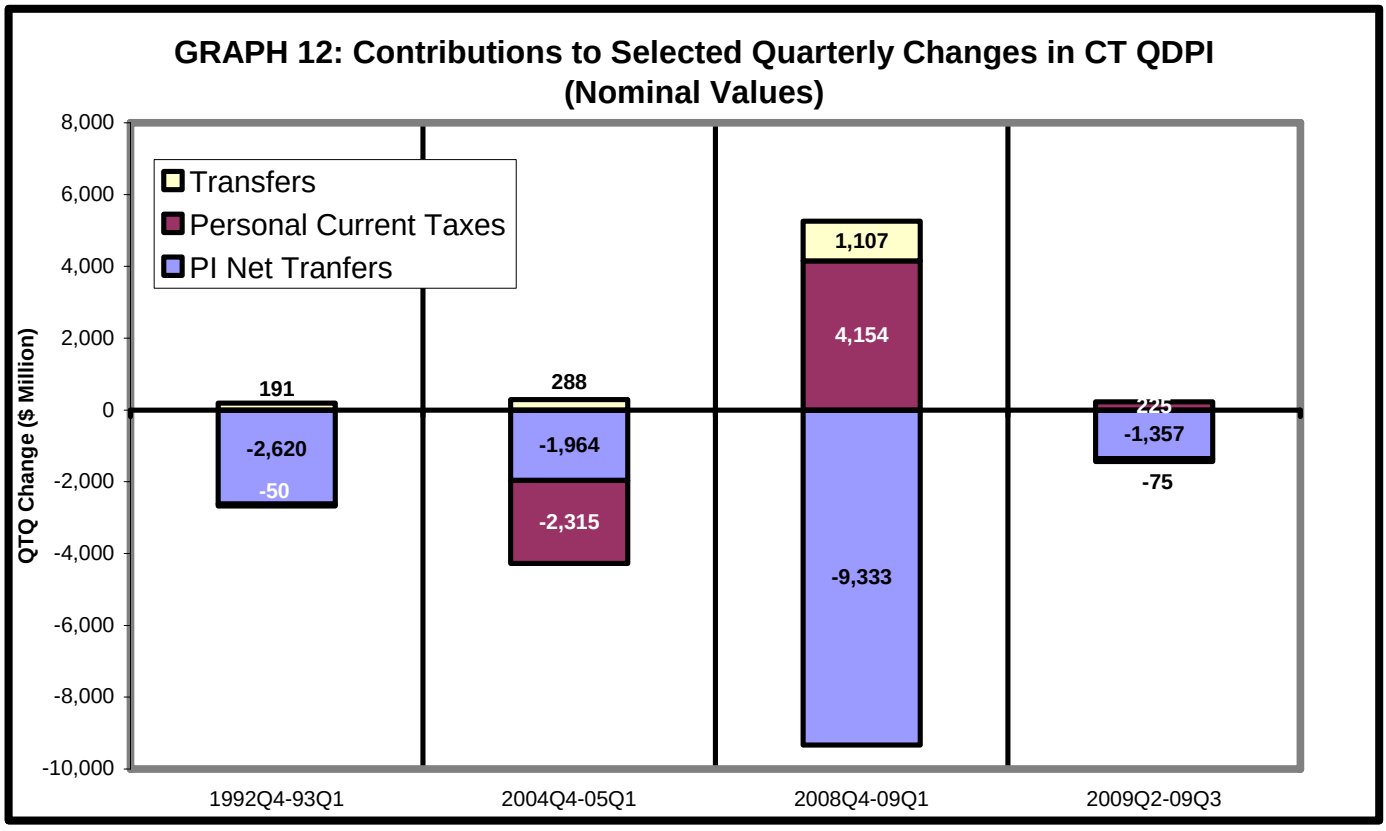
DPI = PI + TRNS -- TX (1.)

Where: DPI = Disposable Personal Income

TRNS = Transfer Payments

TX = Taxes

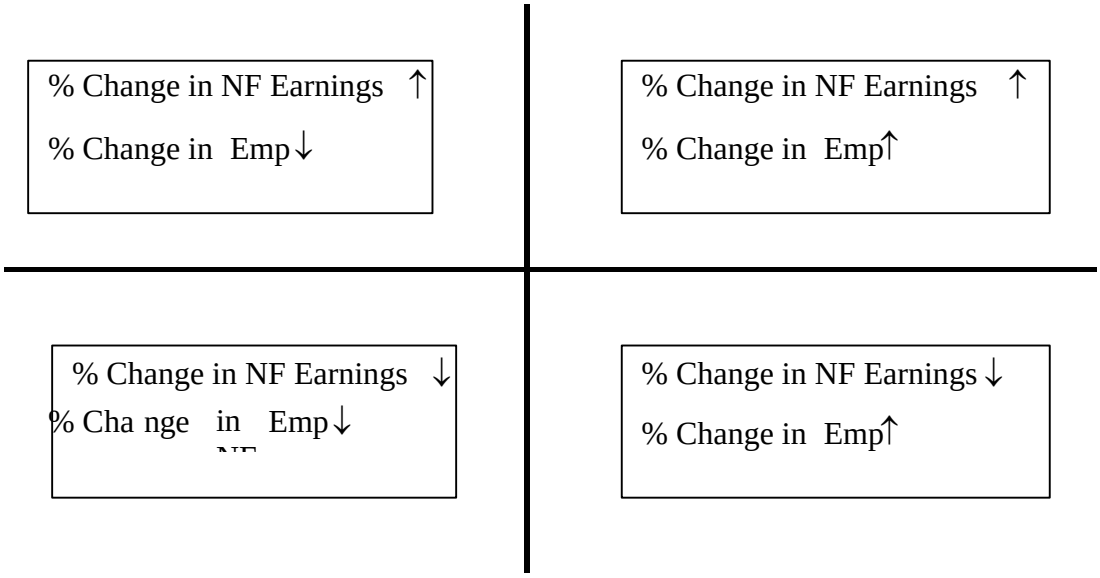
To further understand the behavior of Connecticut DPI over the business cycle, and how it is affecting consumer spending, it will be helpful to investigate the behavior of the components of DPI. Graph 12 breaks out the contributions of each one of the three components of DPI to the Three Declines in Nominal Connecticut DPI Between 1990Q1-2009Q4. Nominal, rather than Real DPI is used for the analysis in Graph 12 because of the adding-up problem when using chained-dollar, or real values of GDP and Personal Income.



SOURCE: U.S. BEA and calculations by CTDOL-Research.

From Graph 12, between 2008Q4 and 2009Q1 the decline in Personal Income (Net Transfers) was the largest, and only negative, component contributing to the QTQ change

TEMPLATE 1: Template for Percent Change in Earnings vs. Employment

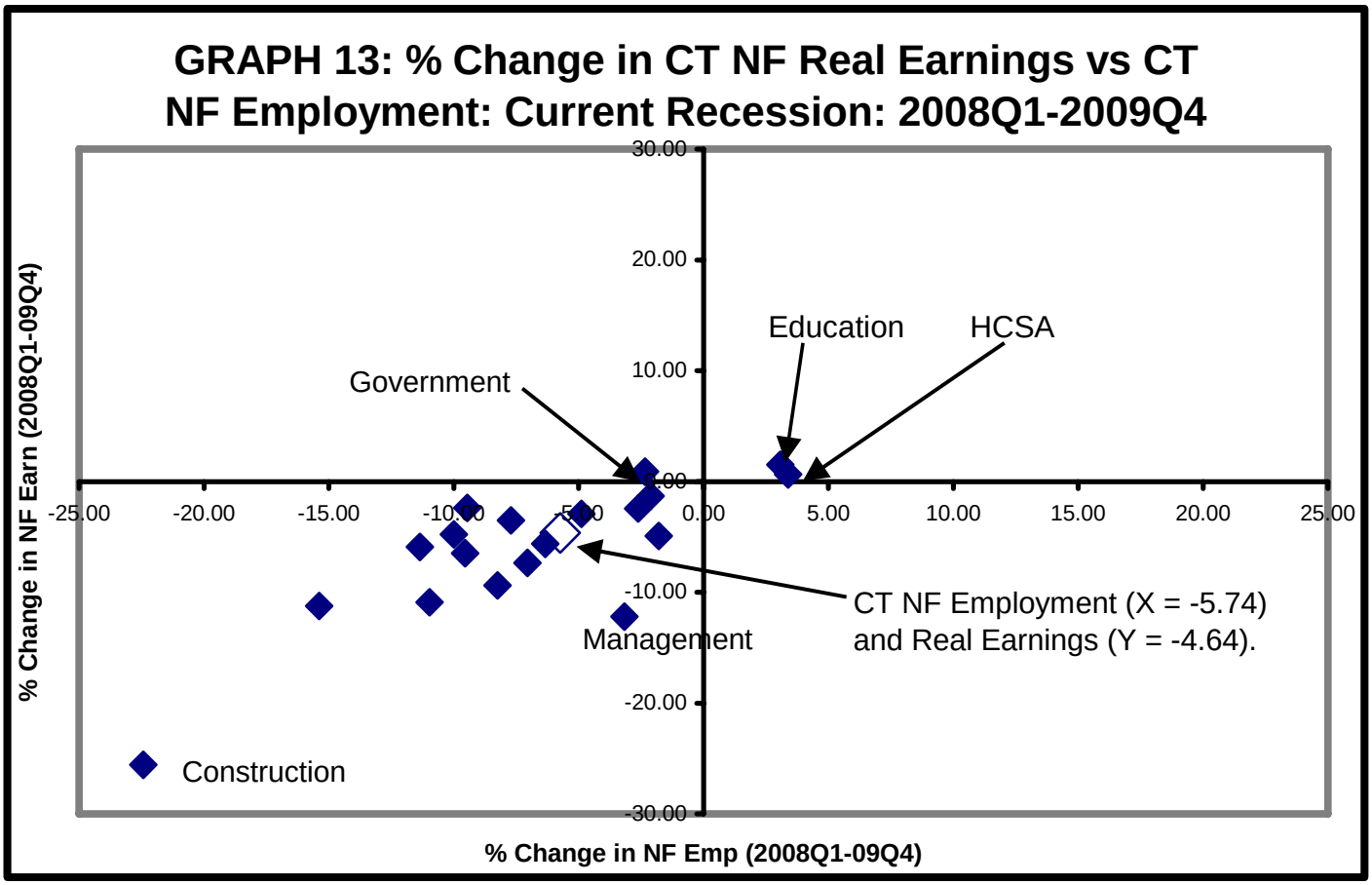


in Nominal DPI. Current Personal Transfer Payments made the largest positive contribution, with the reduction in Tax Payments the next largest contribution to CT. DPI growth. With the smaller decline over the 2009Q2-Q3 Period, again, PI (Net Transfers) was the biggest subtraction from Nominal DPI.

Template 1 serves as an aid to reading the comparisons presented in Graph 13. Graph 13 presents the percent Change in CT Real Earnings, by NAICS Sector, vs. Corresponding NAICS Sector's Percent-Change in NF Employment: Current Recession. Since income generated by output produced represents the income side of the GDP identity, Real Non-Farm Earnings can be used as a proxy for the State's Real Non-Farm output (i.e., Non-Farm State GDP). This, in turn, allows a comparison to be made between changes in Connecticut's output over the recession and changes in employment over the recession.

As would be expected over a recessionary period, most of the NAICS sectors fall in the southwest quadrant of the graph. The larger diamond with no fill represents the decline in Connecticut average quarterly Non-Farm Employment, and Connecticut quarterly, Real Non-Farm Earnings by Industry over the recent recession/panic (2008Q1 to 2009Q4). It

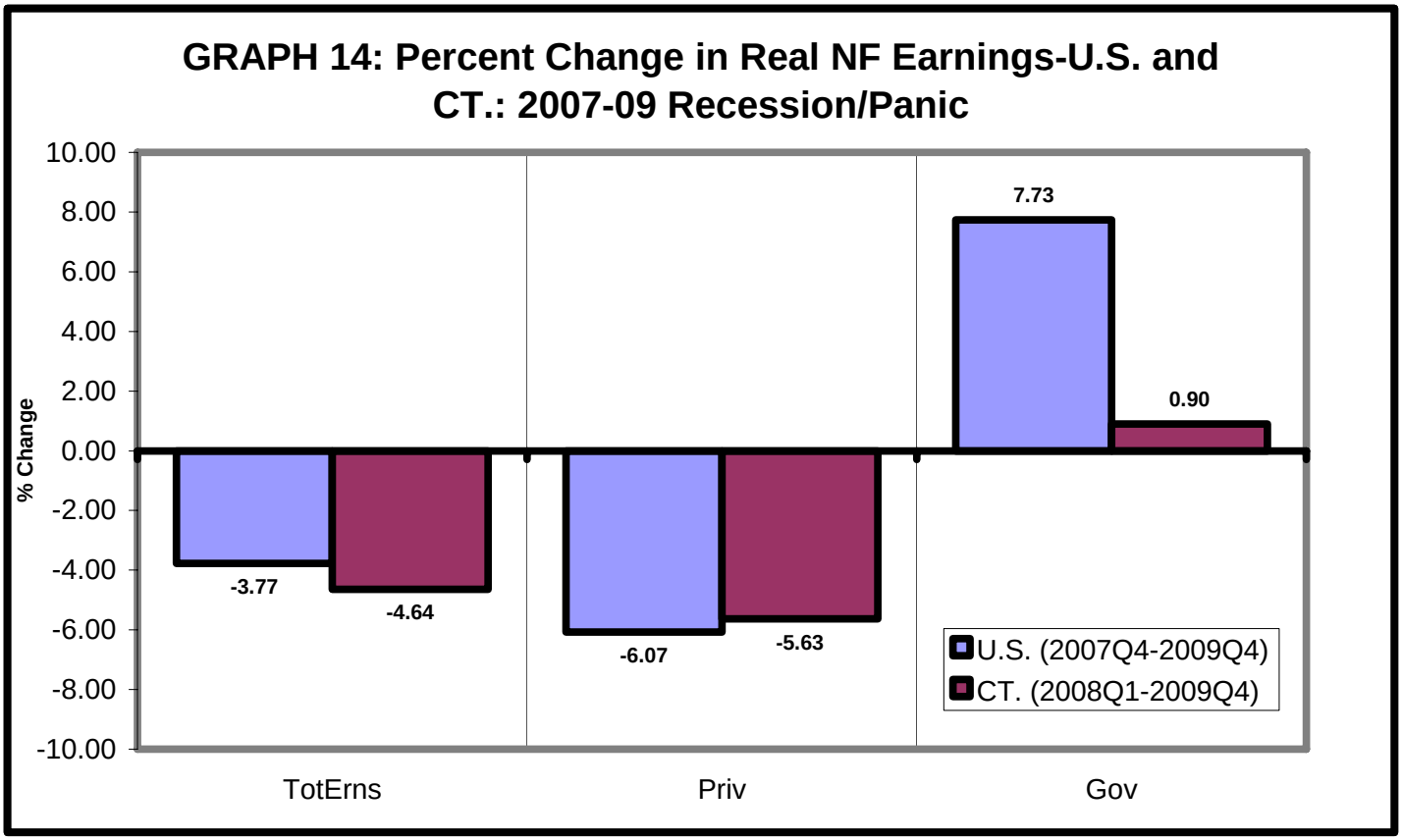
shows that quarterly, Non-Farm Employment declined by 5.74% over the recent recession, while Real, Non-Farm Earnings declined by 4.64%.



SOURCE: U.S. BEA and U.S. BLS and calculations by CTDOL-Research.

Looking at the response of Connecticut employment to a one-percent change in Connecticut, Real Non-Farm Earnings, over the recent recession, for every one-percent decline in Real Earnings, Connecticut's employment contracted by 1.24%. Thus, there was a greater than proportional decline in jobs from a one-percent decline in real earnings. Connecticut's earnings declined more steeply than U.S. earnings. U.S. Real, Non-Farm Earnings declined by 3.77% over eight quarters (2007Q4 to 2009Q4), while Connecticut's Real Non-Farm Earnings declined by 4.64% over seven quarters (2008Q1 to 2009Q4). The difference appears to be in private versus public-sector earnings. Graph 14 breaks out the percent-change in Real Non-Farm Earnings over the recession/panic

period by private versus public-sector earnings for the U.S. and Connecticut. U.S. Private Real, Non-Farm Earnings actually declined more steeply than Connecticut's Private, Real



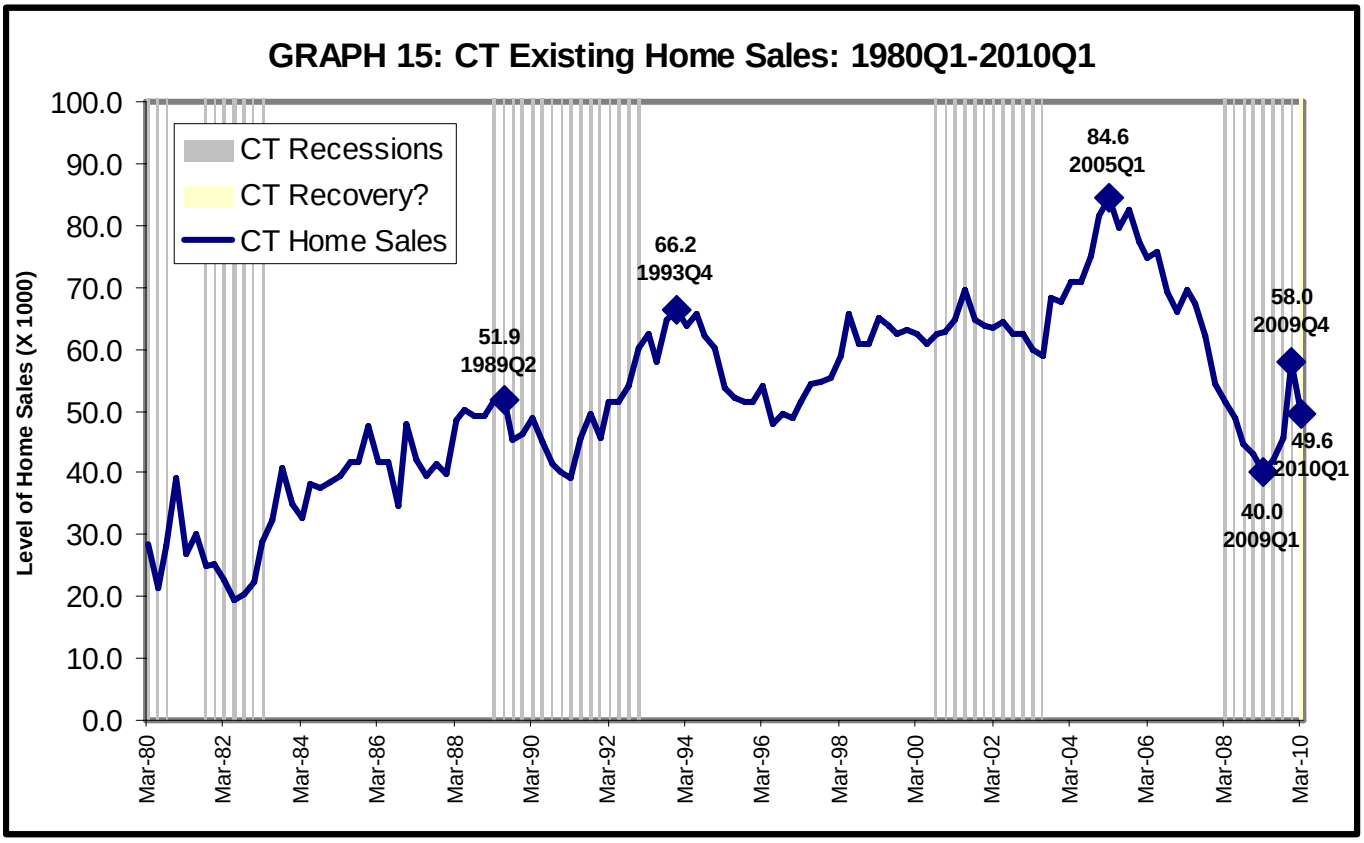
SOURCE: U.S. BEA and calculations by CTDOL-Research.

Non-Farm Earnings. However, the critical difference is in the growth of Government Real, Non-Farm Earnings. U.S. real, public-sector earnings grew by 7.73% between 2007Q4 and 2009Q4, but, between 2008Q1 and 2009Q4, Connecticut's Real Earnings in the Government Sector grew by less than 1%. The net result is that Connecticut's Real, Non-Farm Earnings declined more steeply than U.S. earnings over the recent recession/panic.

C. THE STATE'S HOUSING MARKETS

At the same time that housing permits declined, and before the decline in house prices, or residential construction contract awards, one of the first signs of the impending bursting

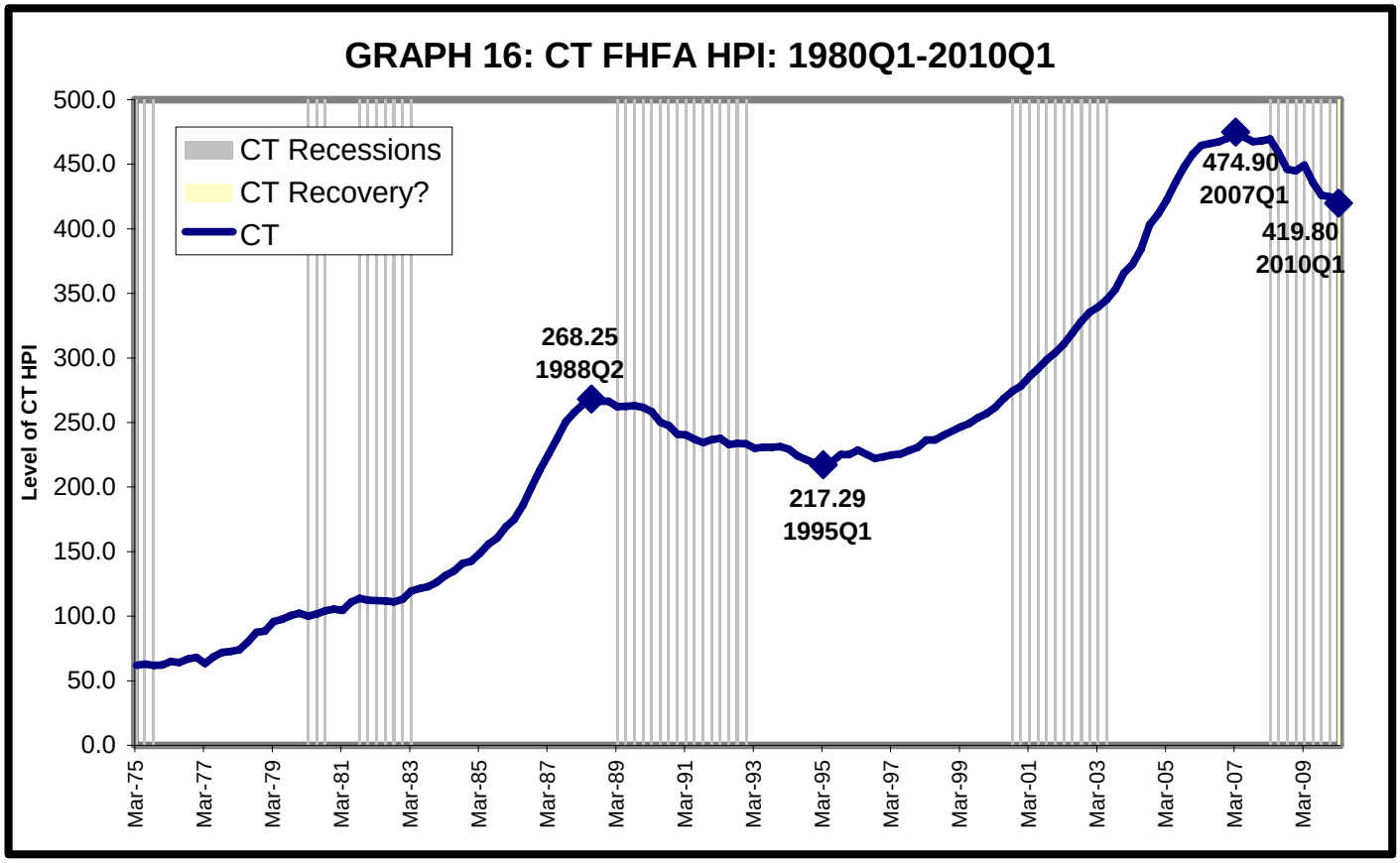
of the housing bubble was the abrupt decline in existing home sales after reaching unprecedented heights. This was true at both the national and the state level. As it turned out, it was home sales that were a leading indicator of the impending bursting of the housing bubble. Graph 15 tracks Existing Home Sales activity in Connecticut from 1980Q1 to 2010Q1.



SOURCE: Boston Federal Reserve Bank, New England Economic Indicators.

In 2005Q1, Connecticut Existing Homes Sales turned down, one quarter before the turndown in national sales. The level of sales at 84,600 far surpassed the 51,900 reached at the peak of the 1980's real estate bubble, or the 1993Q4-peak of 66,200. By 2009Q1, Existing Home Sales had fallen to 40,000, a 53% drop in the turnover of existing homes over four years of virtual continuous decline. This is double the rate of the 24.3% decline in existing home sales between 1989Q2 and 1991Q1, during Connecticut's Real Estate Bust of the late 1980's. By the fourth quarter of 2009, the quarter of a possible turnaround in the State and National economies, Existing Home Sales recovered to

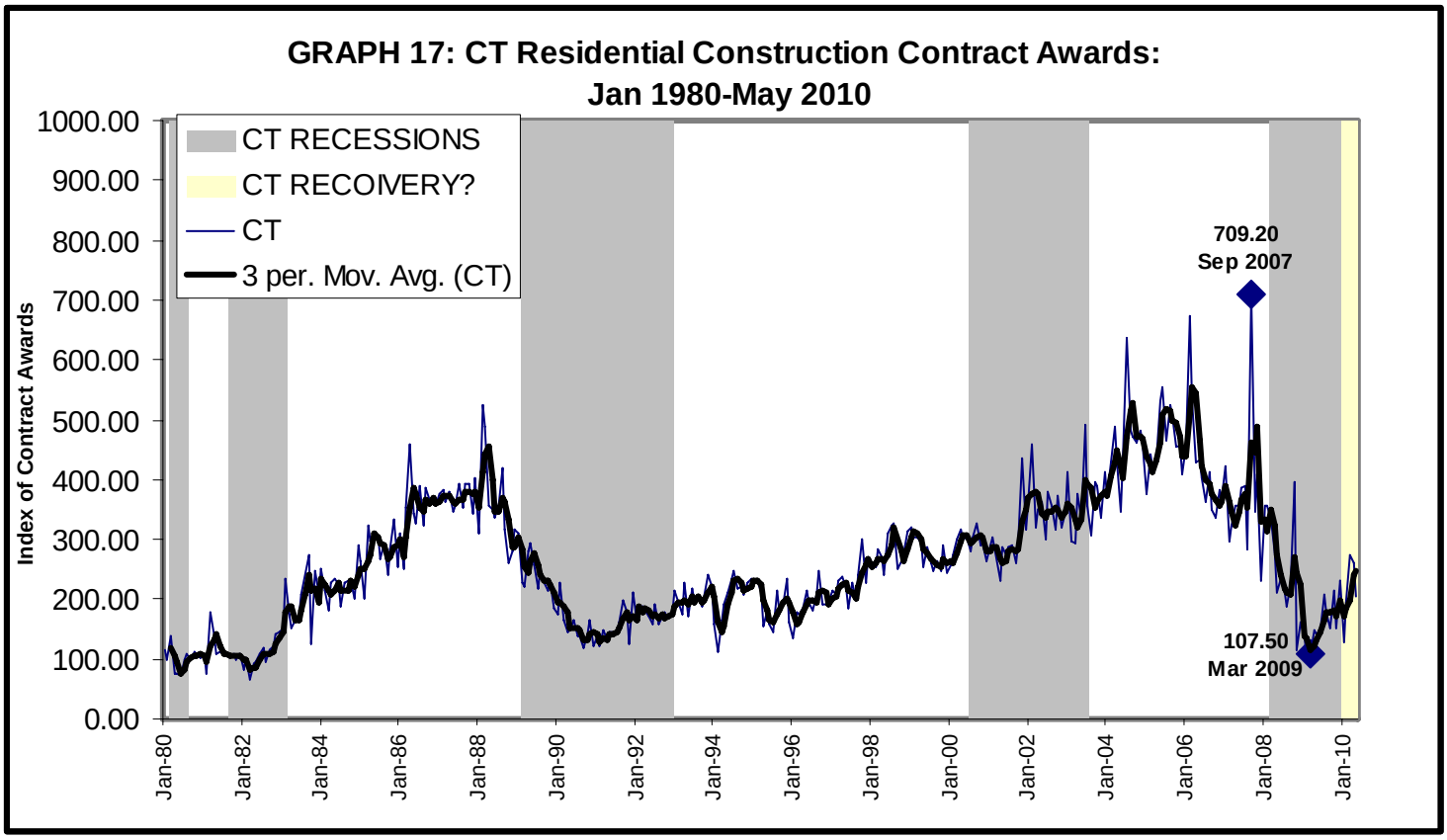
58,000, a 45% rebound. Though data for the second quarter of 2010 are not yet available at the time of writing, 2010Q1 Existing Home Sales numbers sent an ominous signal about the State's housing market. Existing Home Sales declined by 8,400, or 14.5%, falling from a level of 58,000 in 2009Q4 to 49,600 in 2010Q1. Over the same period one year earlier, 2008Q4-2009Q1, which coincided with the financial panic, Existing Home Sales fell by 3,700, or 4.2%. This was only one-third the decline of 2009Q4-10Q1. Other housing activity indicators did not start showing signs of deterioration until the end of 2006, and into 2007. As shown on Graph 16, housing prices in Connecticut, as measured by the Federal Housing Finance Agency's Housing Price Index (HPI) did not decline until 2007Q1.



SOURCE: Boston Federal Reserve Bank, New England Economic Indicators.

Likewise, as shown in Graph 17, Residential Construction Contract Awards also peaked in 2007. In September, the index value reached a data-range high of 709.20. By the low

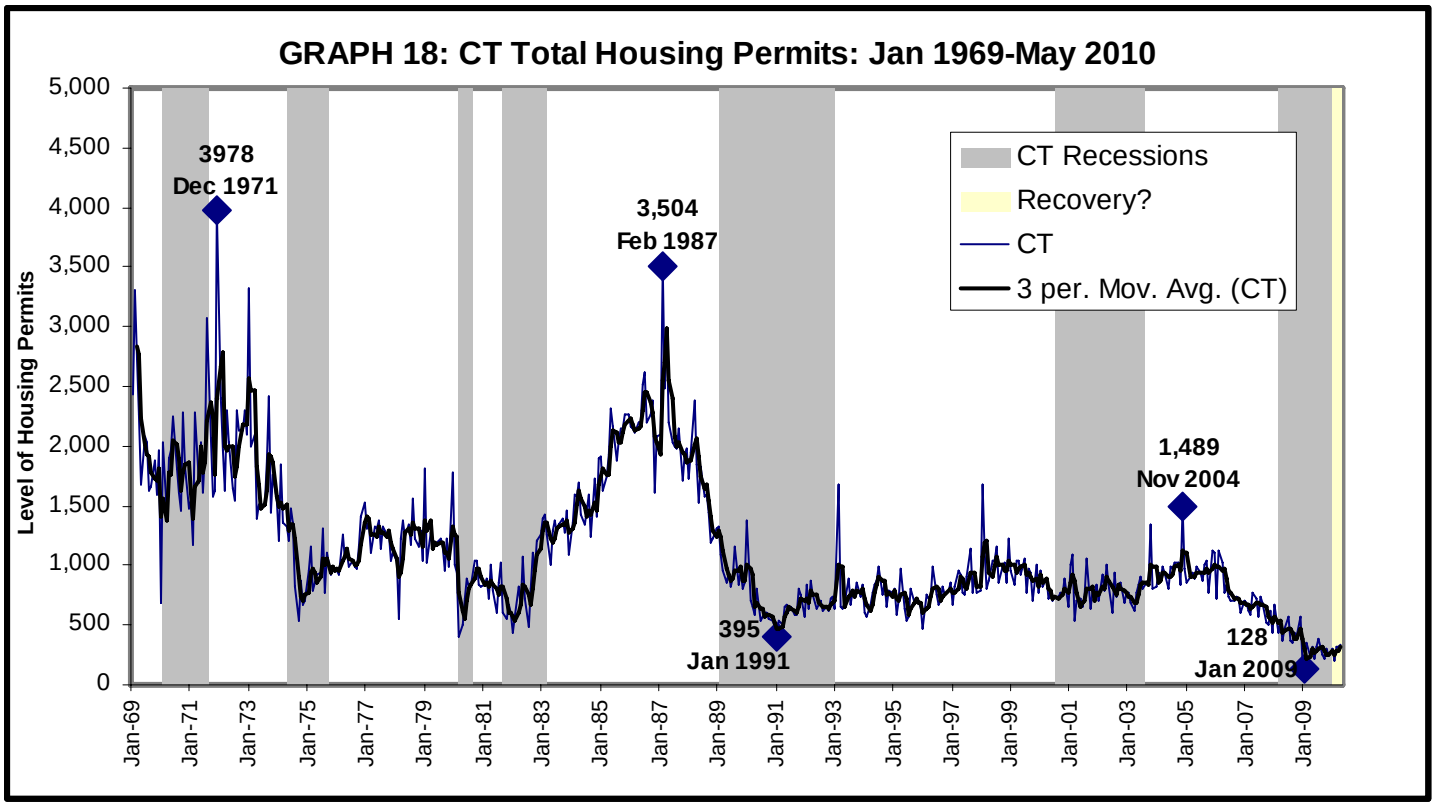
point of March 2009, residential contract awards had declined by 84.84% from their peak.



SOURCE: Boston Federal Reserve Bank, New England Economic Indicators.

Housing permits did not begin their precipitous drop until after March 2006. And, it is housing permits that caused many economists, policymakers, commentators, and others to reject the idea that there was a housing bubble, especially in Connecticut.

Many had argued that new household formation driven by demographics and immigration justified rising home values. But pressure on the demand for residential living space should have driven up the price of residential space, regardless of tenure (i.e., owner-occupied or rental). That is housing prices and rents should have been rising in tandem (see Volume 1: U.S. Outlook, above). But, that is not what was happening. The following discussion explains why this disconnect between house prices and rents should have been a red flag. .



SOURCE: Boston Federal Reserve Bank of Boston-New England Economic Indicators.

We Won't Get Fooled Again?--From Graph 18 it can be seen that the monthly level of Housing Permits in Connecticut never approached the levels of the early 1970's and the 1980's real estate bubble. It was Mark Twain who said that history doesn't repeat itself, but it rhymes. Each asset bubble throughout history seems to have a different twist lulling each new generation [176]of participants into believing that "this time is different."[177] Thus, many discounted any imbalances in the housing market by pointing to the low level of permits, and tight land-use regulation restricting the supply of housing, which agued against any possible oversupply of housing. However, oversupply, per se, was not at the heart of the recent housing bubble. The heart of the 2000's housing bubble was in the financing of home buying, a bubble psychology, and new "innovations" in the securitization of mortgage-pools, which resulted in riskier borrowers being given

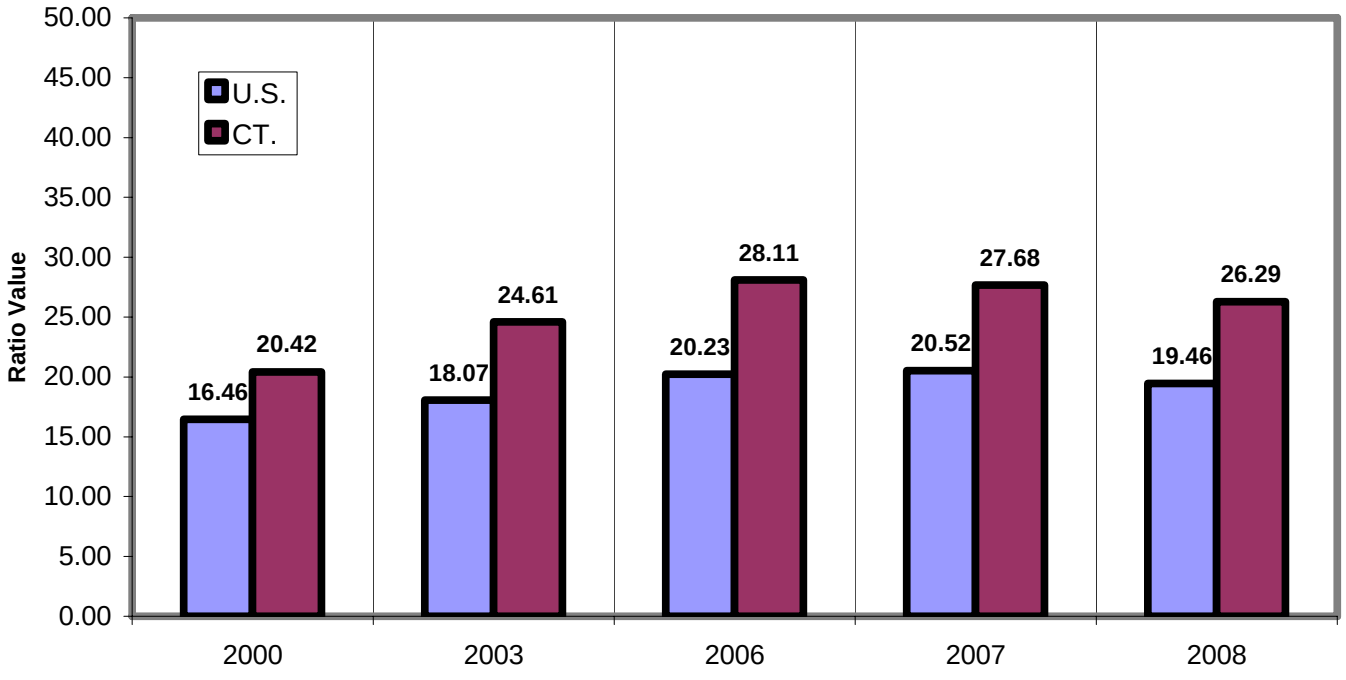
[176] Although, over the last two decades the same generation has lived through two back-to-back asset bubbles.
[177] Which, aptly enough, is the title of a recent book by Rhienhart and Rogot (2009) on the history of financial crises.

mortgages that were to re-set at higher, unsustainable payment-levels. Thus, this was a housing-finance crisis, and therefore, the indicators of impending trouble were not in housing permits, but in other indicators that were not widely considered. One of those indicators, the ratio of the Median House Price-to-the Median Rent was reaching very high levels by historical standards, and another, the ratio of the Median House Price-to-Median Household Income was also reaching very high levels, especially in Connecticut.

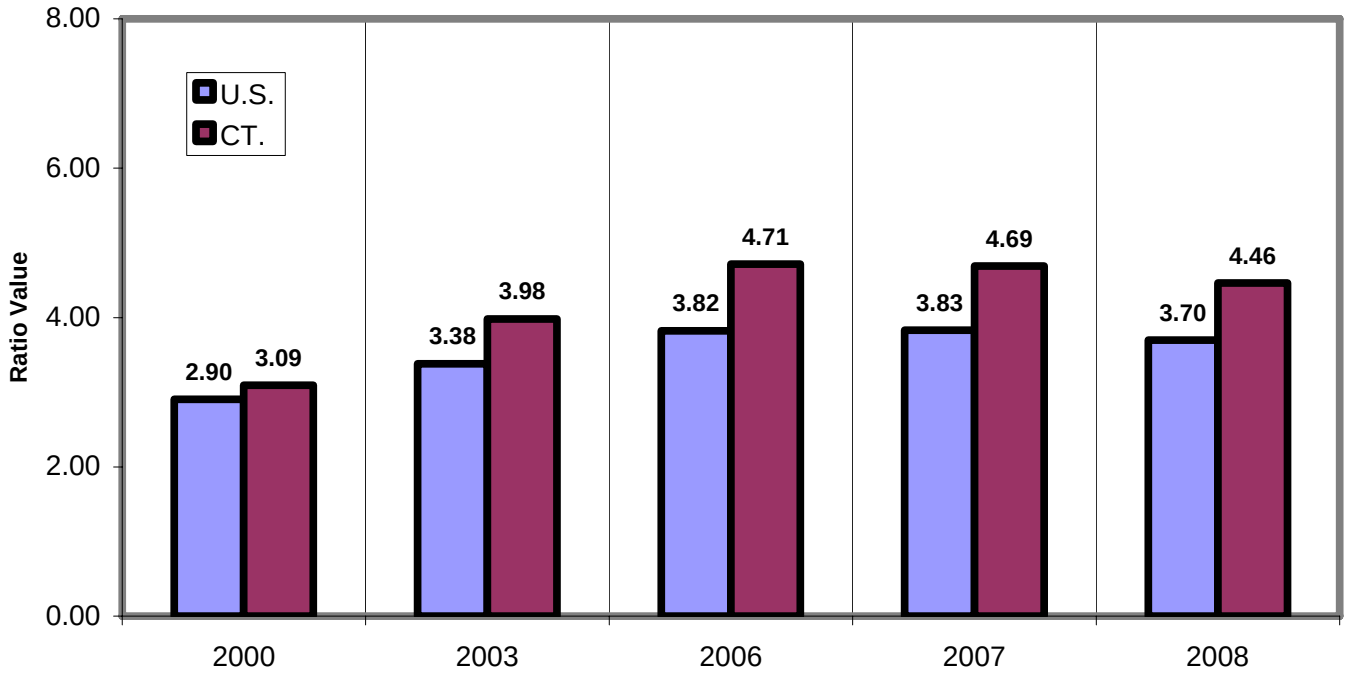
Graph 19 shows the growth in the Median House Price-to-Median Monthly Rent (annualized) for selected periods between 2000 and 2008 (the last year of available data from the American Community Survey). From 2000 to 2007, the U.S. house price-to-rent ratio increased by 4.06 percentage points leaving it 1.25 times higher than its 2000 value. From 2007 to 2008 it declined somewhat to 19.46. The rise in this ratio, and therefore the rise in this disconnect between rents and house prices for Connecticut was even greater, and Connecticut's ratio peaked sooner. Between 2000 and 2006, the house price-to-rent ratio increased by 7.26 percentage points, resulting in its value being 1.38 times its 2000 level. By 2008 the ratio was at 26.29, down 1.82 percentage points from its 2006 peak of 28.11, but still 5.87 percentage points above its 2000 level of 20.42.

The same trends are apparent in Graph 20, which presents the ratio of the Median House Price-to-Median Household Income for Connecticut and the U.S. over the same selected periods as presented in Graph 19. And, the story is basically the same. Between 2000 and 2007, the U.S. Median House Price-to-Household Median Income ratio increased from 2.90 to 3.83, an increase of 0.93 percentage points. Connecticut's ratio peaked in 2006, increasing from 3.09 in 2000 to 4.71 in 2006, an increase of 1.62 percentage points. The U.S. ratio declined to 3.70 by 2008, while Connecticut's ratio declined to 4.46. Nevertheless, Connecticut's ratio was 1.21 times higher than that for the U.S. in 2008, compared to 1.07 times higher in 2000. The same relationship holds for the Median House Price-to-Median Rent ratio discussed above. Connecticut's ratio was 1.24 times that of the U.S. in 2000, but by 2008, it was 1.35 times higher than that for the U.S.

GRAPH 19: Ratio of Median House Price-to-Annualized Median Rent-CT and the U.S.: Selected Periods 2000-2008



GRAPH 20: Ratio of Median House Price-to-Median HH Income-CT and the U.S.: Selected Periods 2000-2008

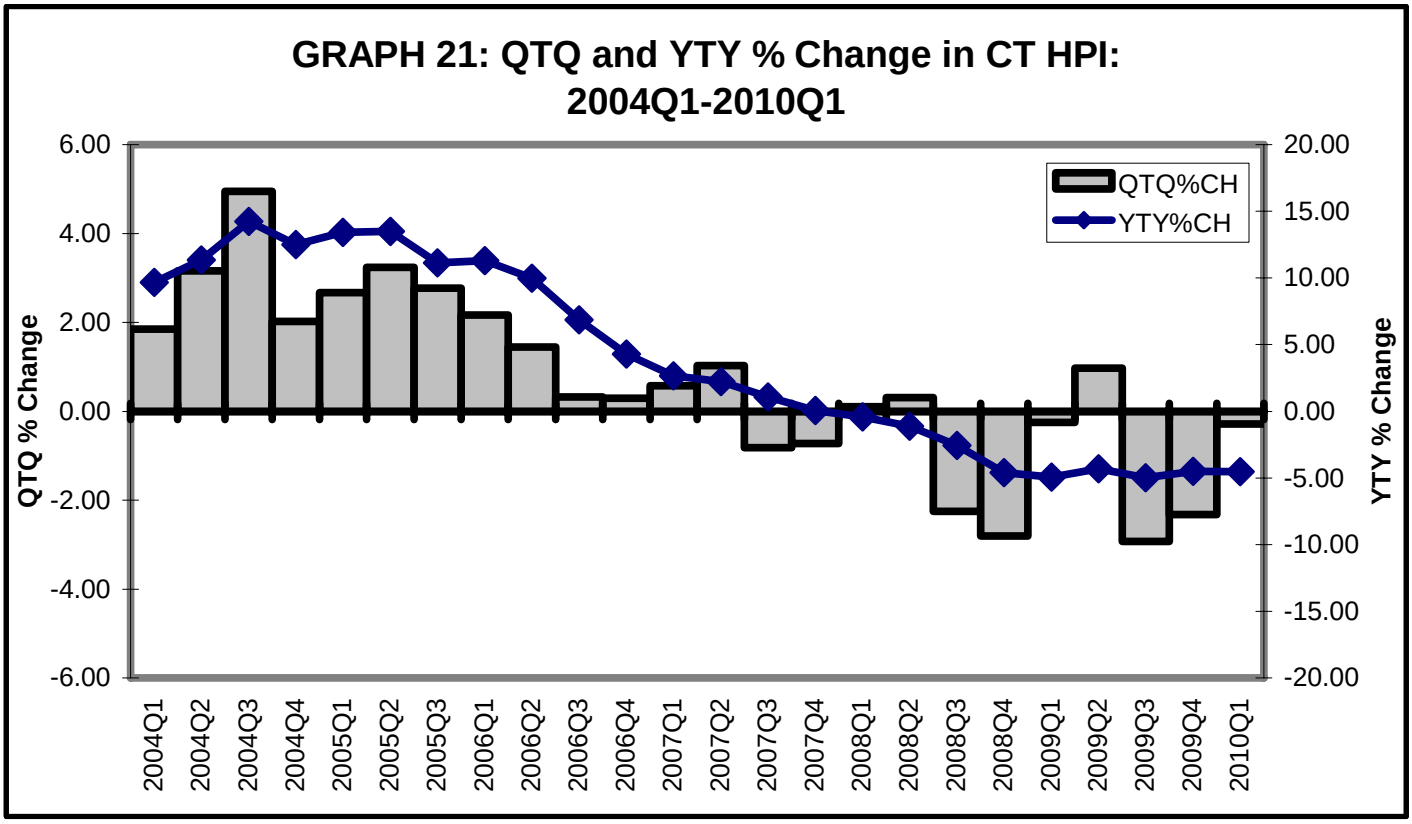


SOURCE: U.S. Census Bureau and calculations by CTDOL-Research.

Of course, the aggregate U.S. values mask the fact that those ratios were much higher for areas at the epicenter of the housing bubble such as parts of California, Nevada, Arizona, and South Florida. Nevertheless, these numbers reveal Connecticut's vulnerability to the housing bubble/bust, and to the missed signs that Connecticut would not be left unscathed from the 21 Century's first asset bubble.

Current State of Connecticut's Housing Markets—As discussed above, Connecticut's Existing Home Sales declined by 8,400, or 14.48% between 2009Q1 and 2010Q1, the latest available data. After bouncing back from their low of 128 in January 2009, Total Housing Permits peaked at 294 in July 2009, an increase of 207.81%. From then on, they once again declined to a low of 207 in January 2010—a 47.46% decline. So far, since January, permits have increased every month of data in 2010(February to April, and reached a level of 331, up 124 (+60%) from the January low. However, it should be noted that the last month of available data is also the last month of the $8,000 First-Time Homebuyer's Tax Credit program. Though homebuyers have until June 30th to close, the questions remains as to whether or not the housing market will continue to recover after this program expires. Thus, permit-gains in the first four months of 2010 could be reversed over the remainder of the year. Ultimately, the key to the turnaround in the housing market is the end of asset-deflation. And, that will end when house-prices begin to increase again.

Graph 21 focuses on the period covering 2004Q1 and 2010Q1. The QTQ percent change in the Federal Housing Finance Agency's House Price Index (HPI) for Connecticut is measured on the left-hand vertical axis, and the YTY percent change is measured on the right-hand vertical axis. As is apparent, the last three quarters of available data show three consecutive quarters of QTQ declines in Connecticut house prices, but at a decelerating rate, and only a relatively small decline in 2010Q1 (-0.28%). On a YTY basis, the HPI for Connecticut has been declining just under 5% per quarter since 2008Q4. YTY, it seems that there is a steady erosion of house values that is neither, accelerating or abating.



SOURCE: Boston Federal Reserve Bank-New England Economic Indicators.

Foreclosure data for 2010 seem to be sending mixed signals about the current state of Connecticut's housing markets. The April foreclosure numbers from The Warren Group showed that the level of Connecticut's foreclosures was 451, down from 648 in March. That is a MTM decline of 30.4%. However, over the first one-third of 2010, there have been 2,620 foreclosures, compared to 1,839 for the first one-third of 2009, that represents a YTY, same-period increase of 42.5%[178].

The numbers from RealityTrac show that foreclosure filings fell from 2,915 in April to 2,088 in May. That represents a 30% decline from April, but foreclosure filings are up 90% from May 2009[179]—again, the data paint a mixed picture.

[178] Howard, Lee, *Foreclosures up in Connecticut*, THE DAY (May 29, 2010) < http://www.theday.com/article/20100529/BIZ04/305299927/1044> Accessed on June 14, 2010.
[179] Gosselin, Kenneth R., *Connecticut Foreclosure Filings Decline In May*, HARTFORD COURANT (June 10, 2010) < www.courant.com/business/hc-foreclosures-connecticut-may-0611-20100610,0,3612412.story> Accessed on June 30, 2010)

Critical to the recovery in the State's housing market, as well as the national housing market, is reversing price declines. This is predicated on a couple of factors including where the State's job-market goes in the second half of 2010, in terms of job-growth and bringing down the unemployment rate, and how Connecticut is affected by the expected re-sets of Adjustable-Rate Mortgages (ARM) and Option-ARM's, originated in 2005 and 2006, and scheduled to re-set in 2010 and 2011. Nationally, $1 trillion in ARM's and Option-ARM's are expected to re-set over the 2010-11 Period. Apart from the possibility of a significant slowing of economic recovery, or even a double-dip recession, this factor alone could bring about a new wave of foreclosures.

The State does have some programs to ameliorate the foreclosure problem, such as the Mandatory Mediation Program administered by the Judicial Branch. From the program's beginning in 2008 to April 30, 2010, 60% of the 6,413 cases have resulted in the homeowner staying in their home, with 44% resulting in loan modification.[180] The Connecticut Fair Housing Center, a non-profit, operates a program in which they argue clients' cases with banks and lenders. In March 2010, the Obama Administration announced a new anti-foreclosure effort aimed at helping homeowners who are unemployed or whose homes are underwater. Lenders are required to lower monthly payments for a minimum of three months for homeowners who are receiving unemployment benefits, and are asked to "consider" reducing the principal of loans for those behind on their payments. However, banks and other lenders are not required to participate in the Federal program, and banks and lenders may choose to foreclose anyway[181].

The most ominous sign from the State's housing markets is the significant decline in existing home sales in 2010Q1 (see Graph 15, above). Recall from the above discussion that it was the abrupt drop in existing home sales, in 2005 that was one of the first signals of the popping the housing bubble.

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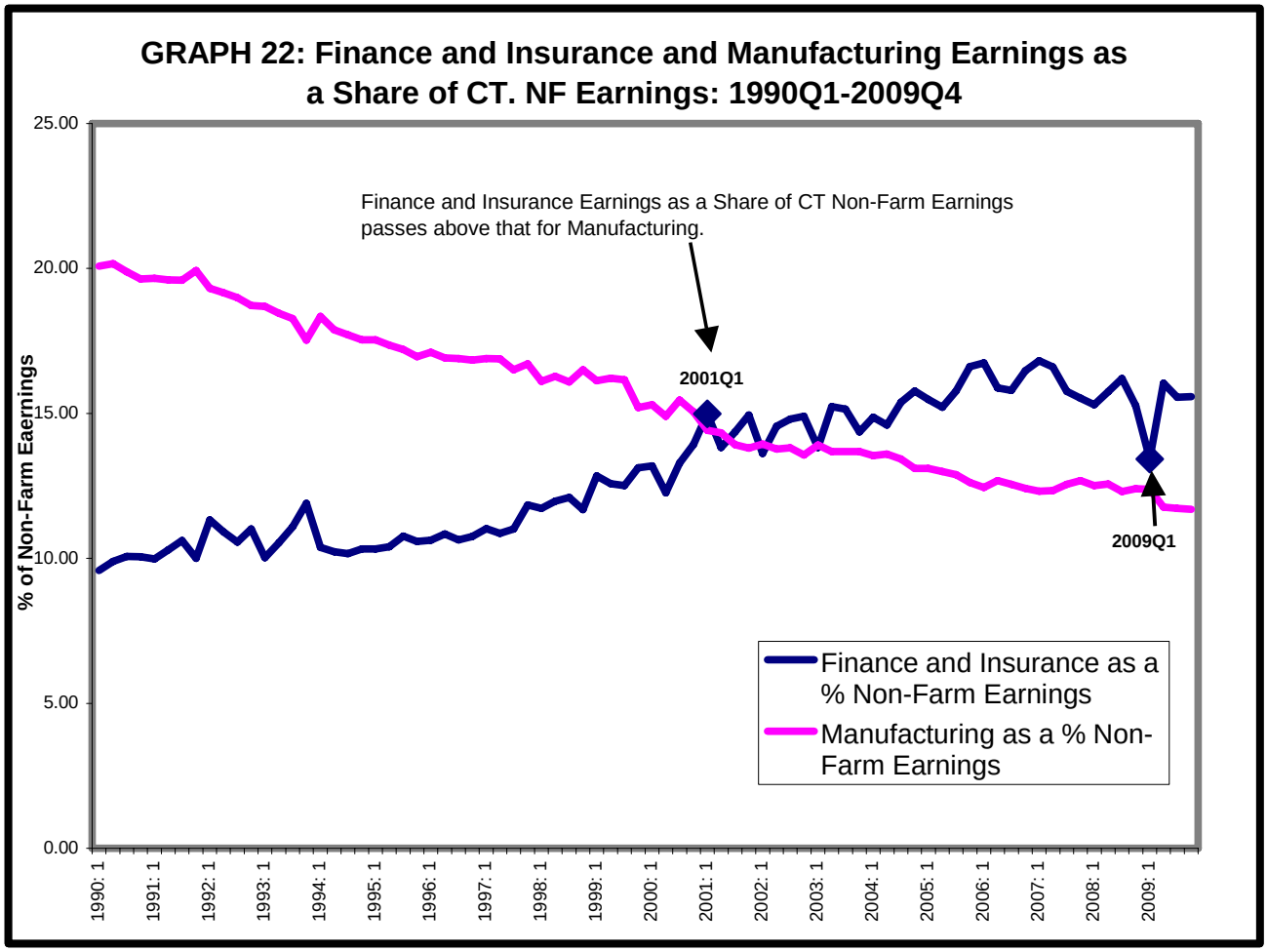
[180] State of Connecticut, Judicial Branch, *Foreclosure Mediation Program (FMP) Results As of April 30, 2010* (April 30,2010).
[181] Connor, Tom, *The Next Wave*, CONNECTICUT MAGAZINE (June 2010) < http://www.connecticutmag.com/Connecticut-Magazine/June-2010/The-Next-Wave/> Accessed on June 29, 2010.

D. CONNECTICUT'S FINANCIAL SECTOR

The Rise of Connecticut's Financial Sector---Over the last two decades the financial sector has increased in its importance to the Connecticut Economy. Graph 22 tracks the changes in the earnings in the State's Finance and Insurance and Manufacturing sectors as a share of Total Non-Farm Earnings from 1990Q1 to 2009Q4.

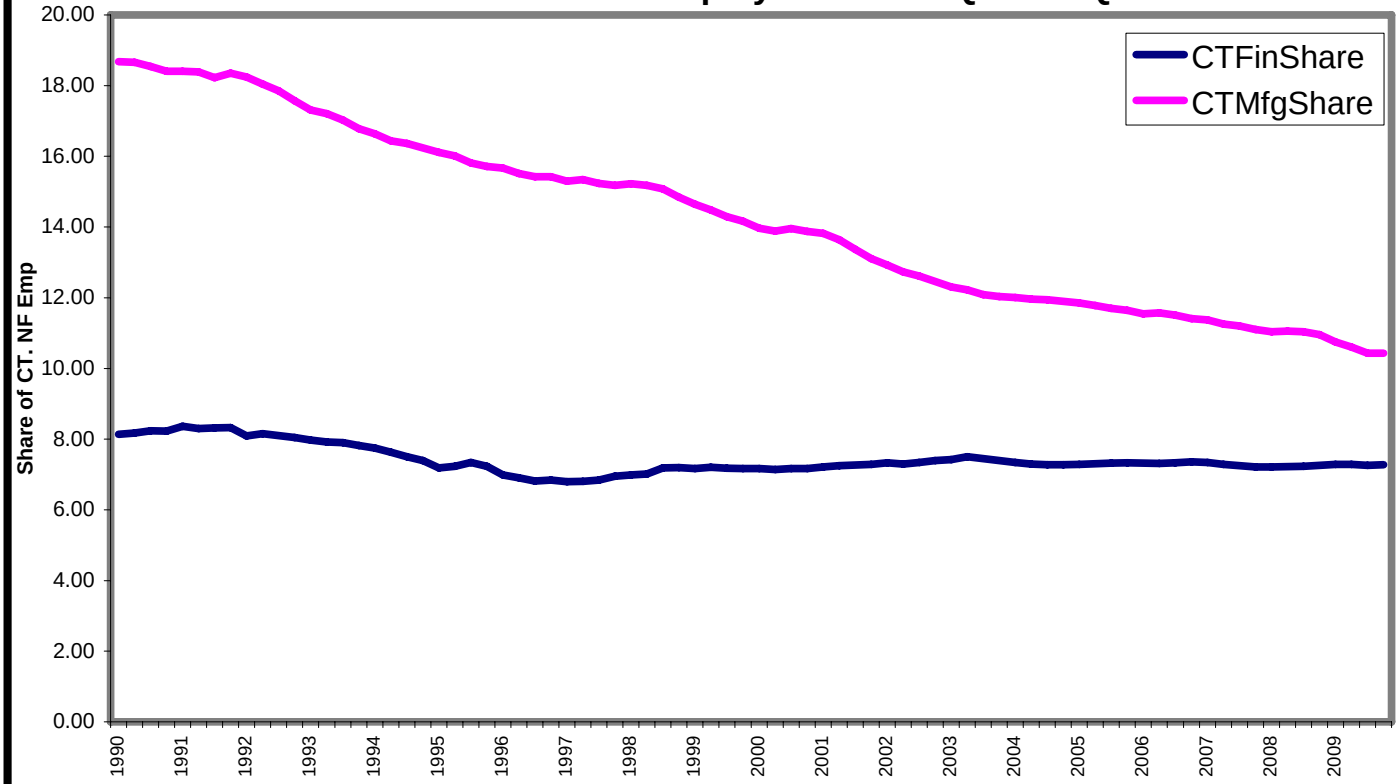


SOURCE: U.S. BEA and calculations by CTDOL-Research.

As depicted in Graph 22, while Finance and Insurance Earnings have increased their share of Total Non-Farm Earnings, Manufacturing's Earnings have declined. And, in 2001Q1, the share of Finance and Insurance pasted above that for Manufacturing. Even with the dip in Finance and Insurance Earnings share in 2009Q1, it still remained above Manufacturing, and has since, recovered much of its share. Further, as depicted in Graph 23, while Connecticut's Manufacturing Sector employment has declined significantly

since 1990Q1, employment in the Finance and Insurance Sector has pretty much maintained its share of Non-Farm Employment. As a consequence, manufacturing has been losing its stature in Connecticut, both in terms of earnings and jobs. At the same time, Finance and Insurance has gained in share of earnings and pretty much maintained its share of employment.

GRAPH 23: Finance and Insurance and Manufacturing Employment as a Share of CT. NF Employment: 1990Q1-2009Q4



SOURCE: U.S. BEA and calculations by CTDOL-Research.

Connecticut's Financial Sector: Recession and Panic---By December 2007, the initial events signaling the impending financial crisis, including the collapse of the Asset-Backed Commercial Paper market (ABCP) in August had already unfolded. And, the National Bureau of Economic Research (NBER) had since declared December 2007 as the turning point ending the previous recovery/expansion. And, although Connecticut's Economy would not turn down until three months later in March 2008, this, nevertheless, seems to be the most appropriate point in which to take a snapshot of the distribution of

employment in the U.S. and Connecticut Finance and Insurance sectors. There were significant differences in the distribution of jobs with the U.S. and Connecticut Finance and Insurance sectors. Connecticut's Finance and Insurance jobs were concentrated in the Insurance Industry, while the U.S. sector's jobs were concentrated in Credit Intermediation (and Monetary Authority). Connecticut also had more employment concentrated in the Securities, Commodities, and Brokers Industry, as well as the smaller Funds and Trusts Industry. Given that the largest concentration of U.S. Finance and Insurance jobs was in Credit Intermediation in December 2007, it is no surprise that it also contributed the largest share of job-losses to the sector between December 2007 and December 2009[182]. Nearly 59% of U.S. Finance and Insurance jobs lost were in Credit Intermediation, but 46.3% of jobs were in that industry. Losses are over-represented, based on the December 2007 share. Nevertheless, the relative hit to Connecticut's Credit Intermediation Industry was much greater. Though this industry employed, just under, 25% of Connecticut's Finance and Insurance workers, its relative contribution to job-losses over the recent recession/panic was double (nearly 48%) that of its share of Connecticut's Finance and Insurance employment in December 2007. Both, Securities, Commodities, and Brokers and Insurance were under-represented in their contribution to job-losses, based on their shares of Finance and Insurance employment in December 2007. In fact, the Insurance Industry's relative contribution to employment losses was just over half its share of employment in December 2007. The only other over-represented industry, in terms of job-losses, was the smaller, Funds and Trusts Industry, which contributed twice as many jobs to losses as its share of employment in December 2007 (3.9% versus 8.5%).

In addition to the relative contribution to job-losses, the steepness of the employment decline is another critical perspective on the State's hit from the recent crisis on its Finance and Insurance Sector. It will also shed some light on why some sub-sectors were

[182]To get the needed detail, especially at the state level, unseasonalized, Current Employment Statistics (CES) data are tracked for both the U.S. and Connecticut from December 2007 to December 2009. Analyzing the data from December-to-December should mitigate any seasonality problems, and, in addition, it pretty much tracks the recent recession and panic (assuming both Connecticut and the U.S. turned the corner in December 2009), although Connecticut did not actually go into recession until March 2008 (based on the Non-Farm Employment series)

over-represented in their contributions to job-losses, and why some were under-represented.

The two steepest declines in employment for Connecticut's Finance and Insurance Sector were the 9.21% in Credit Intermediation, which was steeper than its U.S. counterpart, and the 10.42% contraction in Funds and Trusts, which was double the decline in the U.S. Funds and Trusts Industry. The U.S. employment declines in Securities, Commodities, and Brokers (-6.73%) and Insurance (-4.05%) were both steeper than their Connecticut counterparts. Connecticut's steepest declines were in those industries that had smaller shares of employment in December 2007 than their U.S. counterparts. The net result was that Connecticut's Finance and Insurance Sector lost 4.79% of its jobs between December 2007 and December 2009, while the U.S. Finance and Insurance Sector lost 6.16%.

Connecticut's Financial Sector In the Aftermath of Recession and Panic---After what appears to be a turnaround in jobs in December 2009, though Connecticut's Non-Farm Employment grew faster than the U.S. between December 2009 and May 2010, job-losses in the State's Finance and Insurance Sector actually began accelerating and were steeper than the job losses in the U.S. Finance and Insurance Sector, especially in Credit Intermediation.

At the time of writing, Wall Street is apparently beginning to re-hire workers, even as Main Street still languishes in recession. Employment in the Securities Industry in New York was at 160,400 in May, up from the trough of 158,500 in February, but still well below its peak of 188,900 in January 2008[183]. This trend could particularly have positive spillover effects for Fairfield County, especially Greenwich and Stamford, due to its concentration of Securities, Commodities, and Brokers jobs, as well as its proximity to New York City.

[183]. Scharwtz, Nelson D., *Wall St. Hiring in Anticipation of an Economic Recovery* (July 10, 2010) NEW YORK TIMES < http://www.nytimes.com/2010/07/11/business/11rebound.html?_r=1&th&emc=th > Accessed on July 12, 2010.

III. THE ECONOMIC CRISIS AND THE STATE BUDGET

On July 1, 2010, Connecticut Comptroller, Nancy Wyman, in her statement to the Governor on Connecticut's fiscal condition stated that:

> The Office of Policy and Management has projected a Fiscal Year 2010 General Fund budget surplus of $242.9 million. The Transportation Fund is estimated to end Fiscal Year 2010 with a fund balance of $98.5 million. I am in general agreement with the trends that OPM has identified[184].

The reasons for the budget surplus were stated to be the following:

> The largest single change from last month is a $30 million increase in anticipated sales tax receipts. After months of decline, in March 2010 receipts from the sales tax showed modest gains. Even with the recent improvement in receipts, the sales tax is estimated to generate 5.5 percent less revenue than last fiscal year and is $446.2 million below its Fiscal Year 2008 level. [185].

The General Fund budget for Fiscal Year (FY) 2010 has been balanced through the use of:

- $1.278 billion in budget reserve funds,
- Over $800 million in federal stimulus dollars, and
- Payment deferrals and one-time transfers.

Further, in the absence of these non-recurring revenues and expenditure reductions, the FY 2010 General Fund operating budget deficit would exceed $2.0 billion dollars. In FY 2009, the state issued $947.6 million in Economic Recovery Notes to close that year's operating deficit[186].

However, this good news was tempered with the warning that even though the steep declines in General Fund tax revenues, observed in the first half of this FY, have abated, and in light of significant increases in income tax and corporation tax rates, General Fund

[184] Wyman, Nancy, Letter to Governor Rell on General and Transportation Fund Statements for FY2010, July 1, 2010.
[185] ibid.
[186] ibid

net tax revenues are still expected to be relatively flat as compared to last FY, and are expected to be $1.8 billion below their FY 2008 level.

Table 2 compares the declines in Connecticut's General Revenues, and three major tax sources: the Personal Income Tax, the Sales and Use Tax, and the Corporate Income Tax. From left-to-right, the "%Decline" column shows the percent decline in a given revenue source, the "No of Mo" column presents the number of consecutive months that State Revenues from this source declined, and the third column, "AnnDecline" gives the compounded, annualized percent decline in the given revenue source. This is to put declines of different lengths on the same footing to make meaningful comparisons.

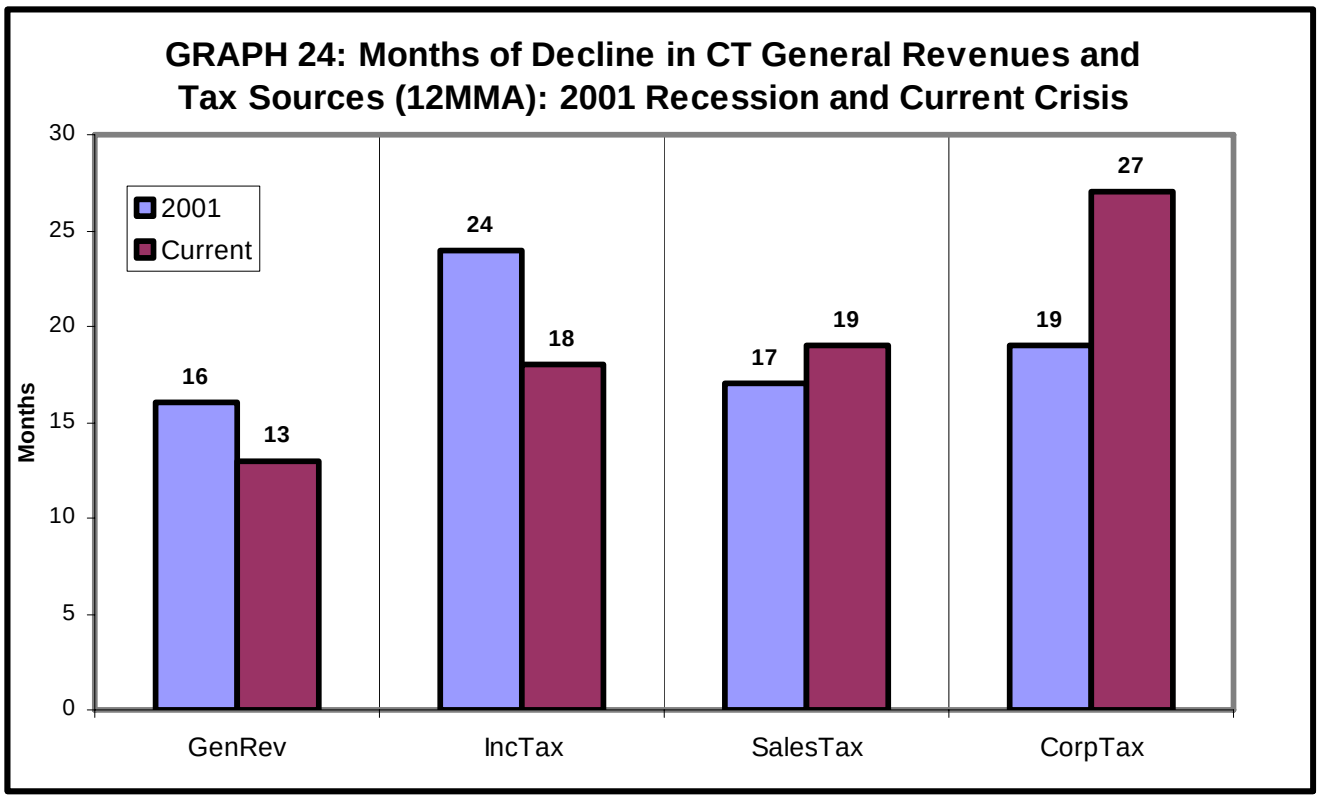
TABLE 2: Declines in CT General Revenue and Taxes: 2001 Recession and Current Crisis

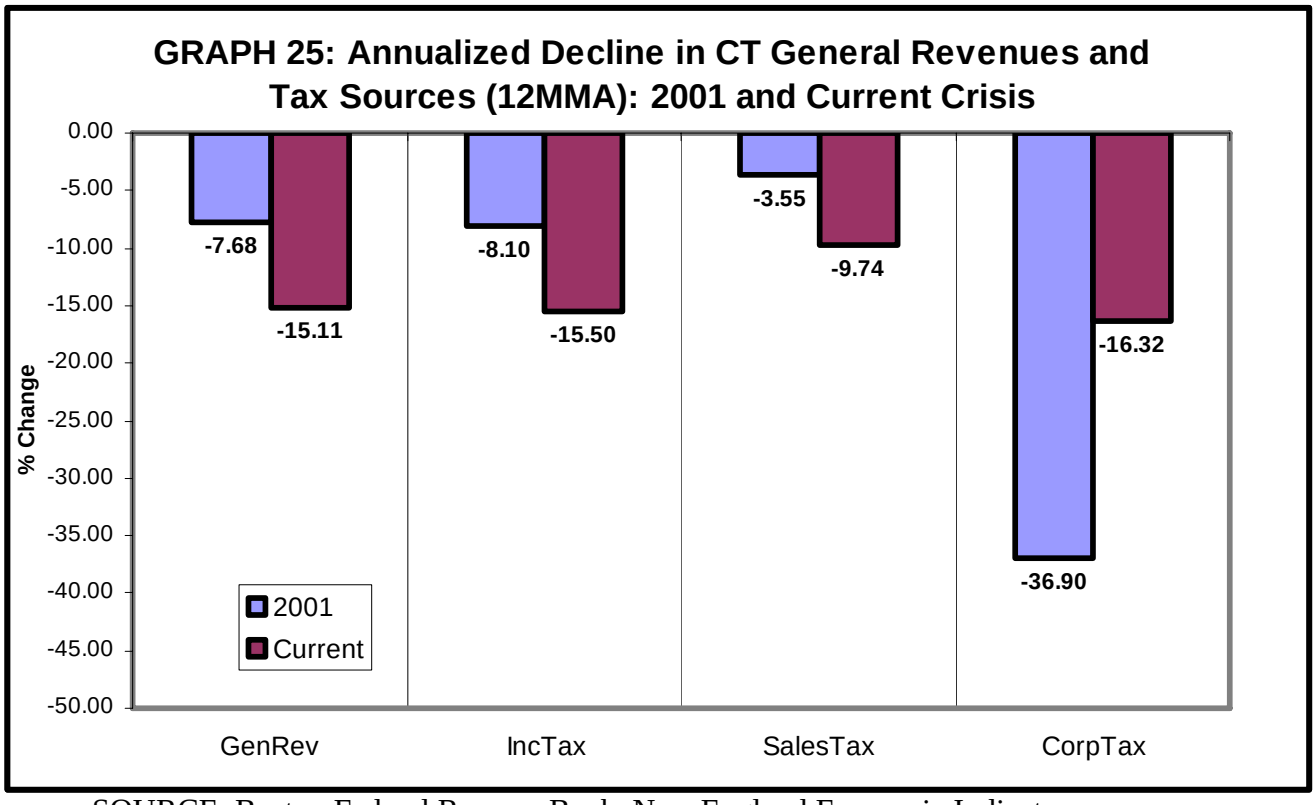
	2001 Recession Decline			Current Recess/Panic Decline		
TaxRev	%Decline	No of Mo	AnnDecline	%Decline	No of Mo	AnnDecline
GenRev	10.11%	16	-7.68	16.26%	13	-15.11
IncTax	15.55%	24	-8.10	22.32%	18	-15.50
SalesTax	4.99%	17	-3.55	14.98%	19	-9.74
CorpTax	51.77%	19	-36.90	33.03%	27	-16.32

SOURCE: Boston Federal Reserve Bank: New England Economic Indicators.

Though the length of decline in General Revenues and the Personal Income Tax were three and six months shorter over the recent recession/panic than they were during the 2001 Recession, they were steeper over the recent crisis. The decline in Sales Tax Revenues was both longer, and steeper, over the recent recession/panic. The decline in revenues from the Corporate Income Tax was eight months longer over the recent recession/crisis, compared to the 2001 Recession, but it was not as steep.

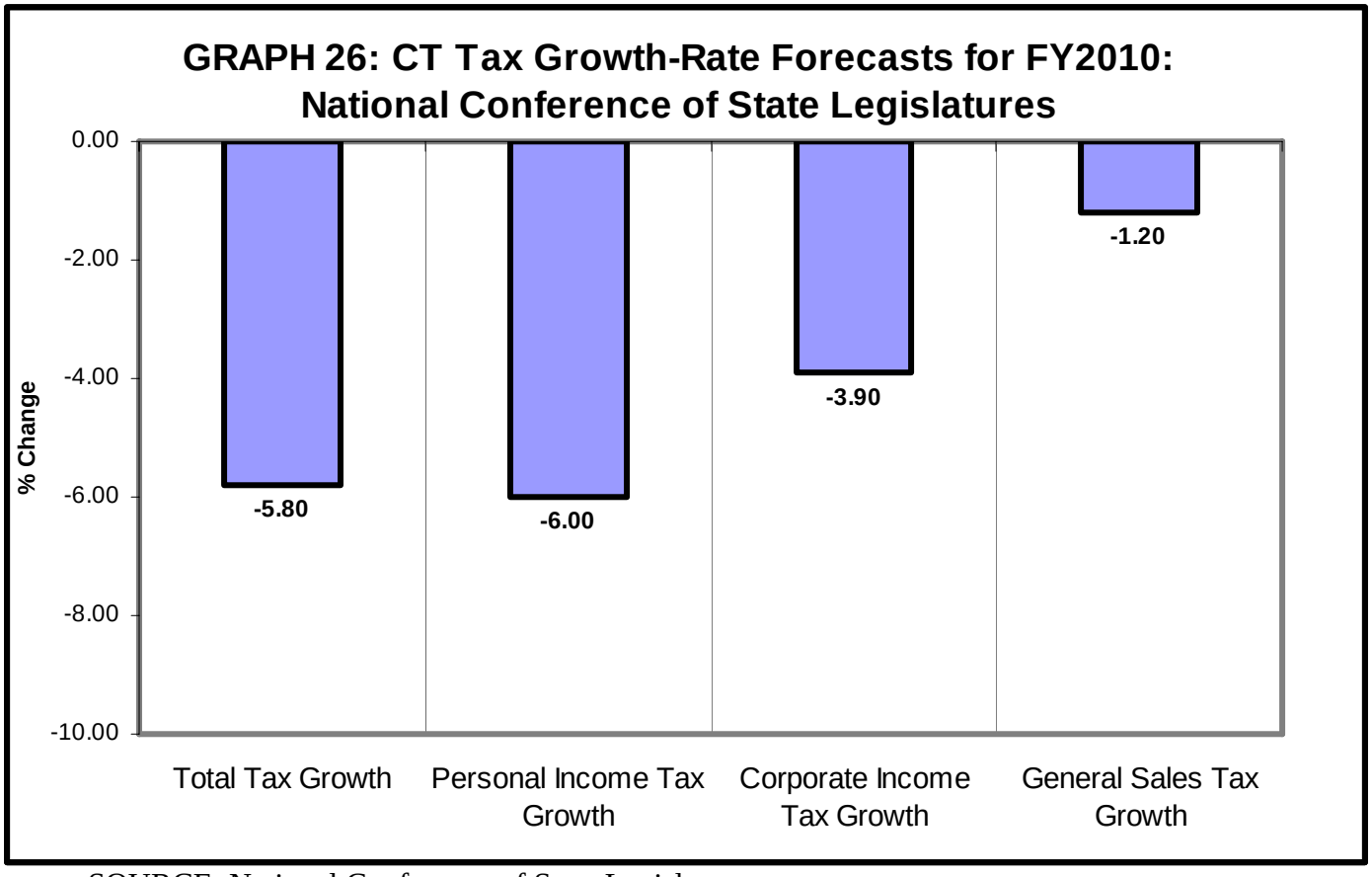
Graph 24 visually summarizes the number of months that State-Government Revenues declined, by major source over the 2001 Recession and the recent recession/panic. Since, as depicted in Graph 24, different revenue sources declined for different lengths of time, not only across the two recessions, but, even over the same recession, employment declines were converted to compounded, annualized rates of decline to put all comparisons on the same footing.





SOURCE: Boston Federal Reserve Bank, New England Economic Indicators.

From Graph 25, on a compounded, annualized basis, Connecticut General Revenues, Personal Income Tax, and Sales and Use Tax all had a much steeper rate of decline over the recent recession/panic, compared to the 2001 Recession. However, over the 2001 Recession, the Corporate Income Tax declined a rate more than double the rate of decline during the recent crisis. However, the length of the decline in Corporate Income Tax Revenue was eight months longer over the recent crisis, compared to the 2001 Recession (see Graph 24). FY2010 is projected to be another period of declining tax revenues. Graph 26 presents the forecasts by the National Conference of State Legislatures for the growth in the major sources of tax revenues for Connecticut in FY2010. Total tax revenues, including all major sources, are expected to decline in FY2010 for Connecticut.



SOURCE: National Conference of State Legislatures.

Save the Corporate Income Tax, the rate of decline in Connecticut's tax revenues has been much steeper over the recent crisis, as compared to the 2001 Recession. Especially the income and sales taxes have declined at much steeper rates over the recent crisis compared to the 2001 Recession. This reflects the much higher unemployment rate during the current period, resulting in the decline in income-tax revenues, and the unsustainable levels of consumer spending, which was driven by a credit bubble, which, when it popped, resulted in steep declines in sales-tax revenues.

Further, Connecticut, along with other states, could face intensifying fiscal stress going into 2011. Counting both initial and mid-year shortfalls, 48 states have addressed or still face budget shortfalls for FY 2010, totaling $200 billion or 30% of state budgets. These are the largest gaps on record[187]. States' fiscal problems are expected to continue into the next fiscal year, and, in fact, beyond FY2011. Including both budget gaps addressed, and those still open, total $112 billion or 17% of budgets in 46 states[188]. This total is likely to grow as revenues continue to deteriorate, and may well exceed $180 billion, and states will also face large gaps that could total $120 billion in FY2012. These numbers suggest that states will face total budget shortfalls of some $260 billion for FY's 2011 and 2012[189].

American Recovery and Reinvestment Act has provided some support to the states mitigating cuts in services and minimizing tax increases. But the aid is now winding down and only about $40 billion remains to help with 2011 fiscal problems. The Federal Government could avert deep additional budget cuts that would further harm the economy by extending assistance over the period during which state fiscal distress is expected to continue rather than allowing the aid to phase out before the states have recovered their fiscal footing[190].

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[187] McNichol, Elizabeth and Nicholas Johnson, *Recession Continues to Batter State Budgets; State Responses Could Slow Recovery* (Updated May 27, 2010) Center on Budget and Policy Priorities: Washington, p. 1.
[188] ibid, p. 1.
[189] ibid, p. 1.
[190] ibid, p. 1.

And, the ARRA has played a significant role in Connecticut's rosier budget outlook for FY2010, compared to the original forecasts. State Comptroller, Nancy Wyman, cautioned that a $500 million deficit that was projected for most of the current fiscal year was mainly eliminated not by revenue gains, but by deficit-mitigation measures that included Federal stimulus dollars, deferral of payments to the state pension fund and one-time transfers of money from accounts including the Rainy Day Fund[191]. Most of this money is in the form of increased Medicaid funding and a "State Fiscal Stabilization Fund." But it now appears likely the federal assistance will end before state budget gaps have abated. The Medicaid funds are scheduled to expire in December 2010, which is just halfway through the 2011 fiscal year in most states[192]. Another critical part of ARRA support to states is the education grants provided to prevent large cuts in teaching staff, and to even add more teachers where necessary. According to the Connecticut Department of Education, as of December 31, 2009, the ARRA created or retained 5,388 jobs in the State[193].

Nationally, state and local employment accounted for 15.1% of U.S. Non-Farm Employment[194]. A sizable reduction with its multiplier effects could inflict a significant hit on the economy, even possibly causing a double-dip recession. From a macroeconomic perspective, almost all state and local governments are required to adopt balanced budgets. Tax revenues, which are generated by economic activity, tend to move pro-cyclically; as a result, budget balancing by state and local governments tends to amplify national business cycle swings[195]. According to Mark Zandi of MoodysEconomy.Com, in his testimony before Congress, if states get no more fiscal relief, they will have to take steps to eliminate deficits for state FY2011. He estimates that those steps could shave nearly a full percentage point off of GDP. That, in turn,

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[191] Wyman, Nancy, WYMAN SAYS SURPLUS RISES TO $166.9 MILLION BASED ON MODEST UPSWING IN JOBS, INCOME TAX COLLECTION (June 1, 2010) State of Connecticut, Office of the Comptroller.
[192] McNichol and Johnson (May 27, 2010), p. 7.
[193] *The American Recovery and Reinvestment Act of 2009 (ARRA) Federal Quarterly Report Summary Period Ending December 31, 2009*, Connecticut Department of Education.
[194] Carroll, Daniel, *Recession Shrinks State and Local Governments* (July 7, 2010) ECONOMIC TRENDS, Federal Reserve Bank of Cleveland.
[195] Bradbury, Katharine, *State Government Budgets and the Recovery Act* (February 17, 2010) PUBLIC POLICY BRIEFS, Federal Reserve Bank of Boston, p. 3..

could cost the economy 900,000 jobs. Historically, the State and Local Sector has accounted for about 12% of GDP and have added about ¼ of a percentage point to annual GDP on an ongoing basis. If the State and Local Government Sector slips back into negative territory, especially if it begins to take hold this summer, it could contribute to a reversal of this still-fragile recovery (i.e., a possible double-dip recession)[196].

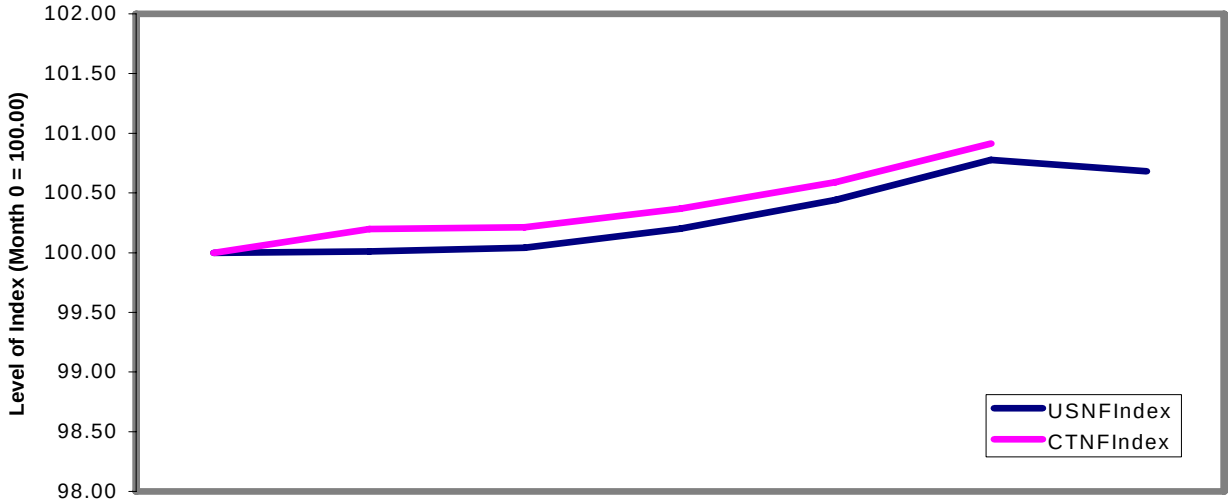
IV. WHERE DOES THE STATE'S ECONOMY GO FROM HERE? The Outlook for 2009-2011 and Beyond

THE CONNECTICUT ECONOMY: Outlook for 2009-2011---As noted in the introduction to the Connecticut Outlook (see page 1 above), Connecticut seems to have done something over this cycle that it has not done before in the Post Cold War Era. Non-Farm Employment turned down going into the last recession after that of the U.S. and the State's recovery in jobs coincided with that of the U.S. jobs recovery rather than lagging behind it. Graph 27 expands on Graph 2, which tracked the U.S. and Connecticut apparent recoveries beginning in December 2009 to May 2010, the last period of available Non-Farm Employment data. An index identical to the one constructed for Graph 1 traces the month-to-month growth in U.S. and Connecticut jobs, with December 2009 equal to 100.00. But, Graph 27 takes Graph 2 a couple of steps further by not only tracking Non-Farm Employment (Panel A), but also by two major sub-categories: Private Employment (Panel B) and Government Employment (Panel C). From Panel A (and Graph 2), Connecticut's job-growth since the December 2009 recovery has been stronger than that for the U.S. And, until May, so was Private-Sector job-growth. But, as depicted in Panel B, Connecticut's Private-Sector job-growth trajectory flattened out in May, indicating a possible slowing in private job growth. The June numbers showed a significant deceleration in private job-growth for the U.S. From Panel C, Government job growth had been stronger for the U.S. than for Connecticut until May when both U.S. and Connecticut Government job-growth spiked due to the hiring of Census workers. Based on the U.S. drop in June, the State's Government jobs may drop in June as well.

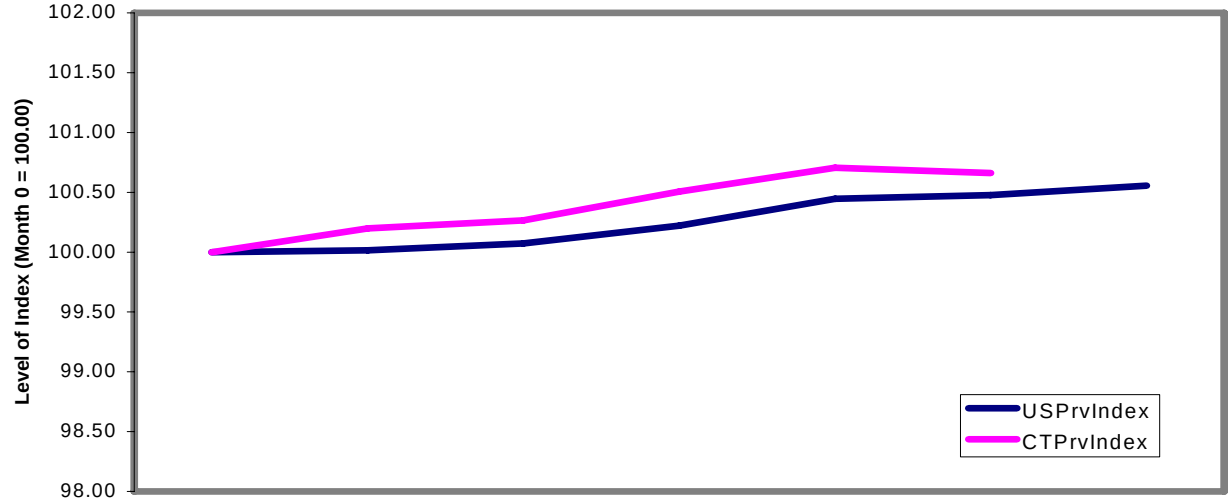
[196] See ibid, p. 10.

GRAPH 27: CT vs. U.S. Jobs Recovery-Current Tentative Recovery

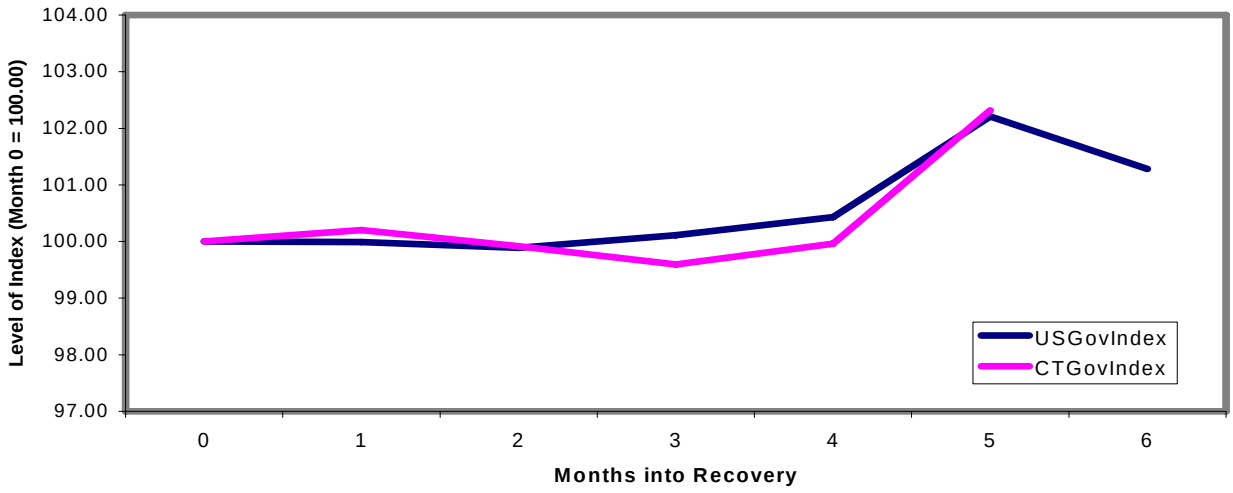
PANEL A: CT vs. U.S. NF Emp: Current Recovery



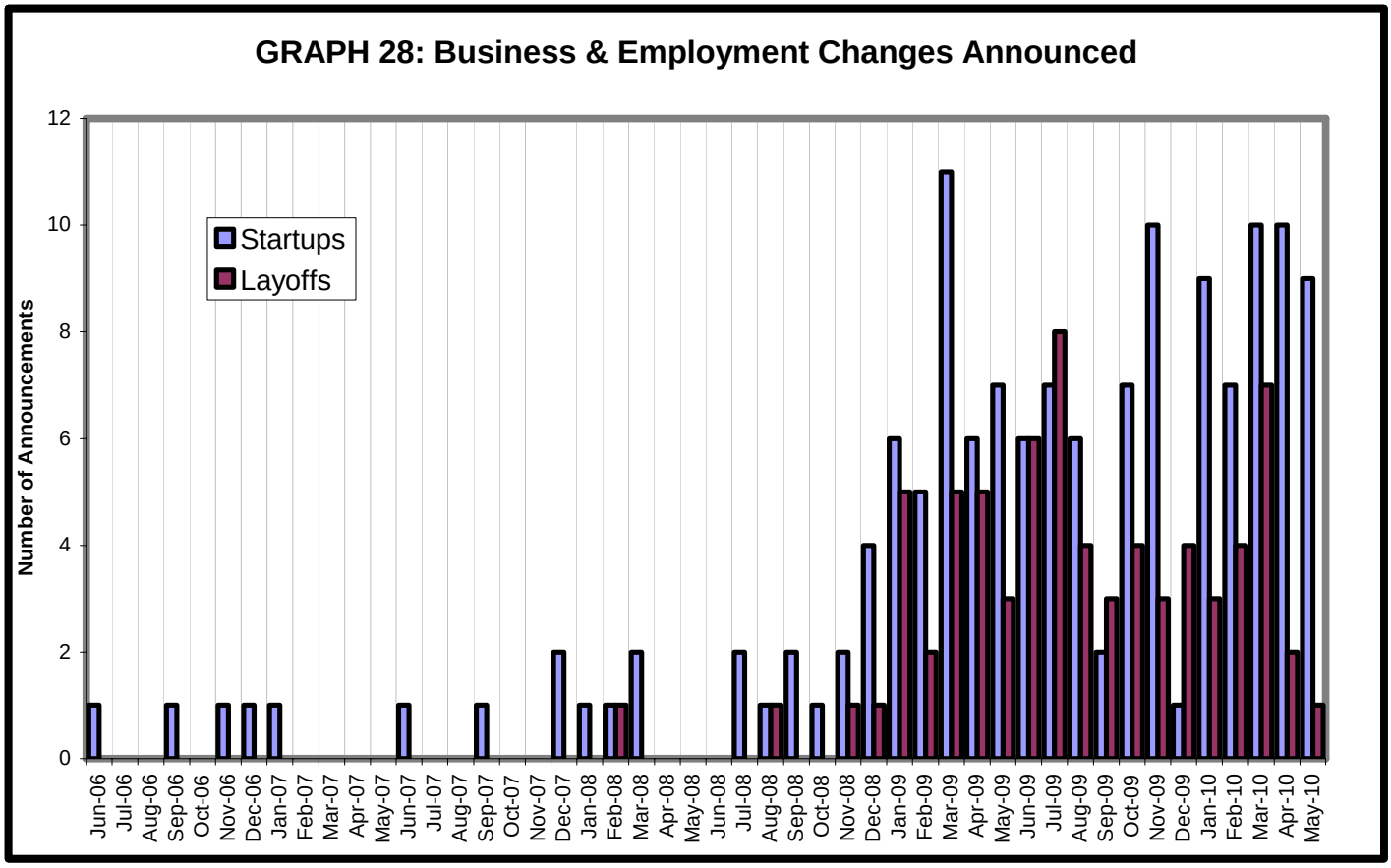
PANEL B: CT vs. U.S. Priv Emp: Current Recovery



PANEL B: CT vs. U.S. Gov Emp: Current Recovery



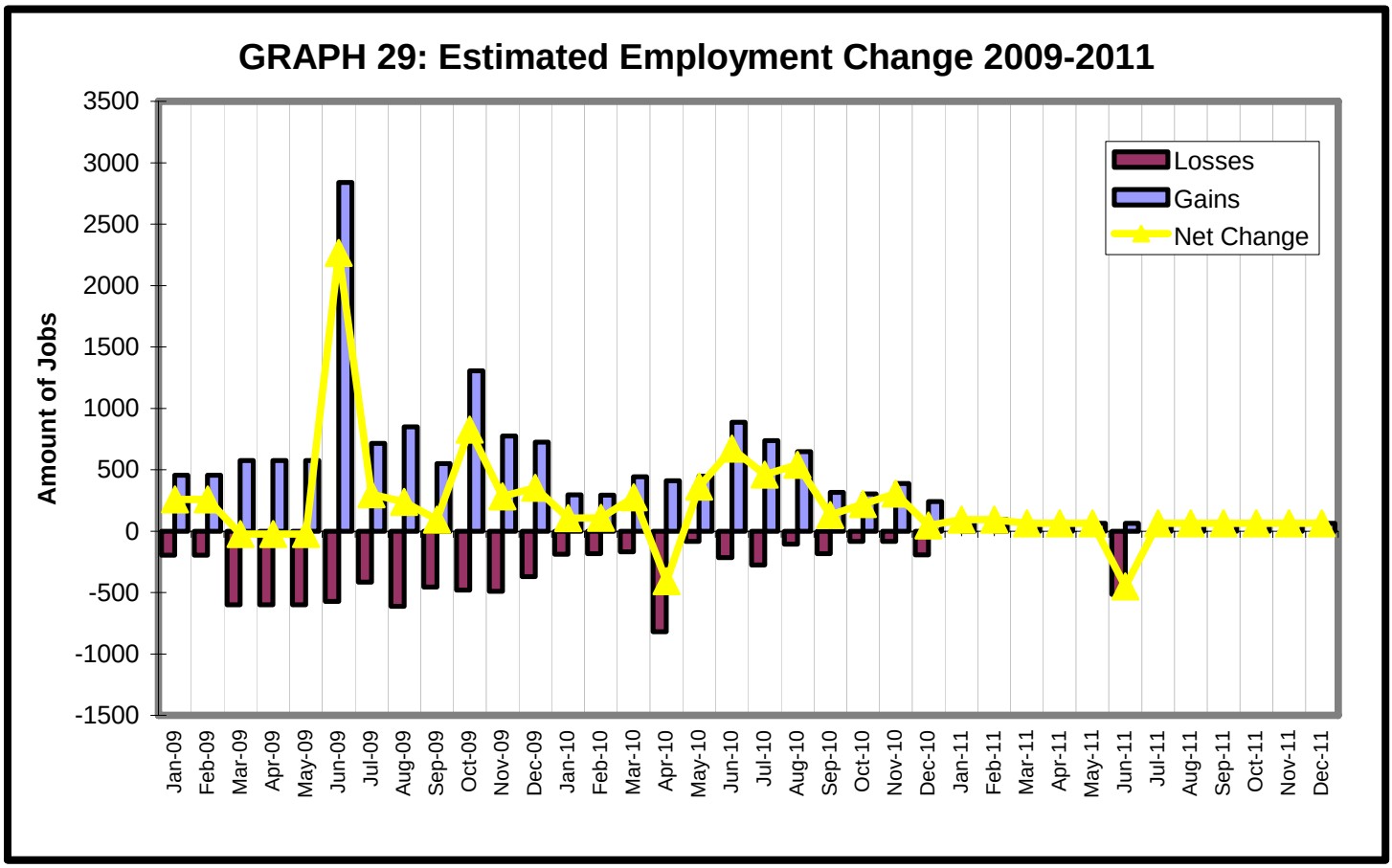
The question is: Will the current recovery continue? Will the recovery slow to a crawl turning into a Japan-style lost decade, or will there be a repeat of the 1980 and 1981-82 double-dip recessions? The possibility that it could accelerate seems unlikely at this point. Graph 28 tracks the jobs announcements for Connecticut from various media announcements. It follows the number of job-expansion announcements and the number of job-reduction announcement from June 2006 to May 2010.



DATA SOURCE: Slepski, Joseph, Business and Employment Changes Announced in the News Media (April 2010) CTDOL-Research
GRAPH DRAWN BY: Sarah York and Matt Krzyzek, Economists, CTDOL-Research

Job announcement activity actually picked up the last quarter of 2008 as the U.S. and World economies were going into financial crisis. Further, the number of announcements of job additions exceeded that of job eliminations. However, when tracking the actual number of job additions and subtractions in each announcement, Graph 29 shows that from January 2009 through December 2011, a period that coincides with the forecast

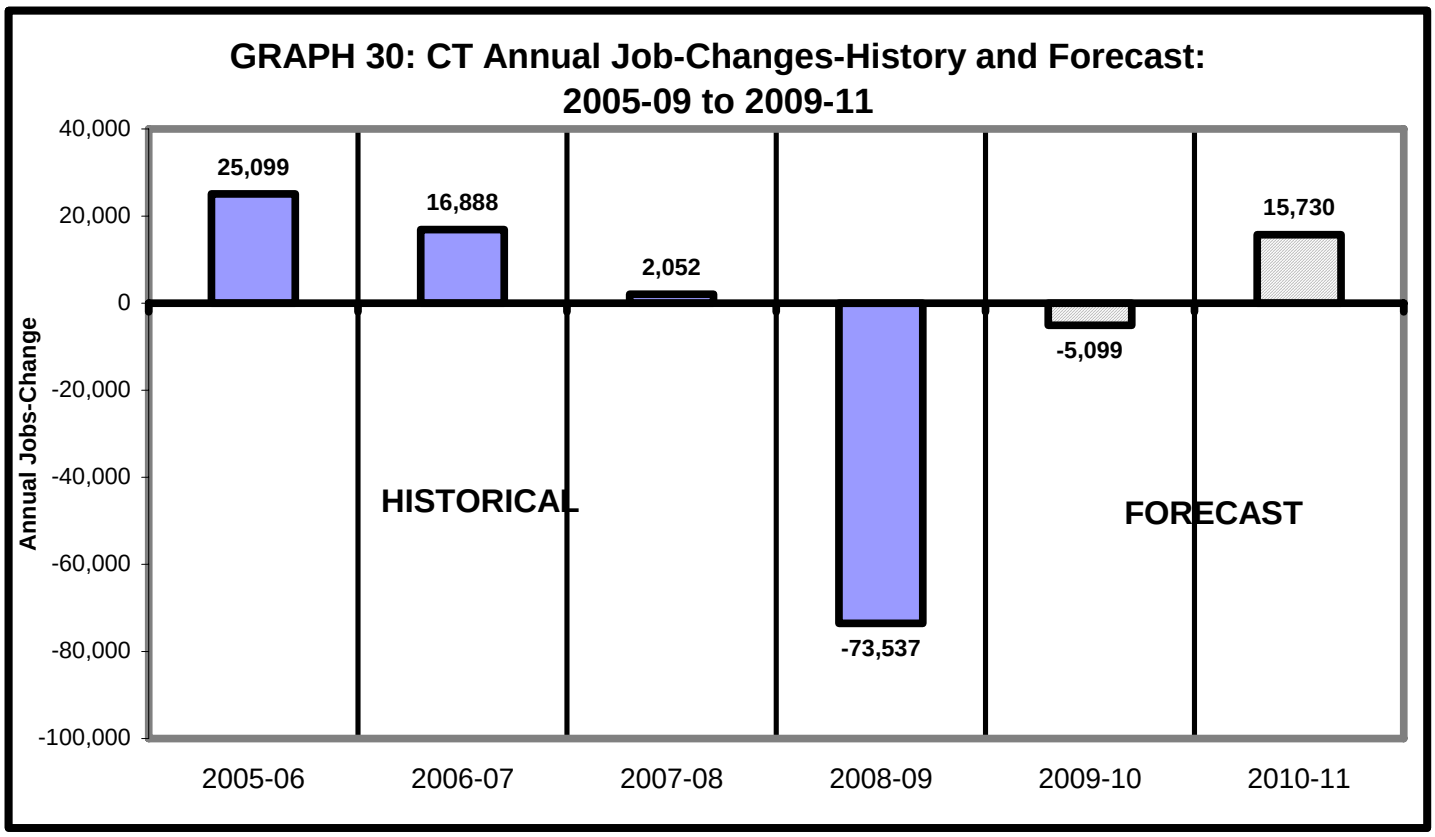
horizon (see below), After a spike in June 2009, the number of jobs announced (blue bars) has trailed off to flat. And, though the number of announced jobs eliminated has appeared to be smaller than the number job expansions (red bars), save a projected spike in jobs eliminated in June 2011, they too flatten out going into 2011. The net number of jobs announced (the yellow line) essentially flatlines after January 2011 (again, except for June).



DATA SOURCE: Slepski, Joseph, *Business and Employment Changes Announced in the News Media (*April 2010) CTDOL-Research
GRAPH DRAWN BY: Matt Krzyzek and Sarah York, Economists, CTDOL-Research

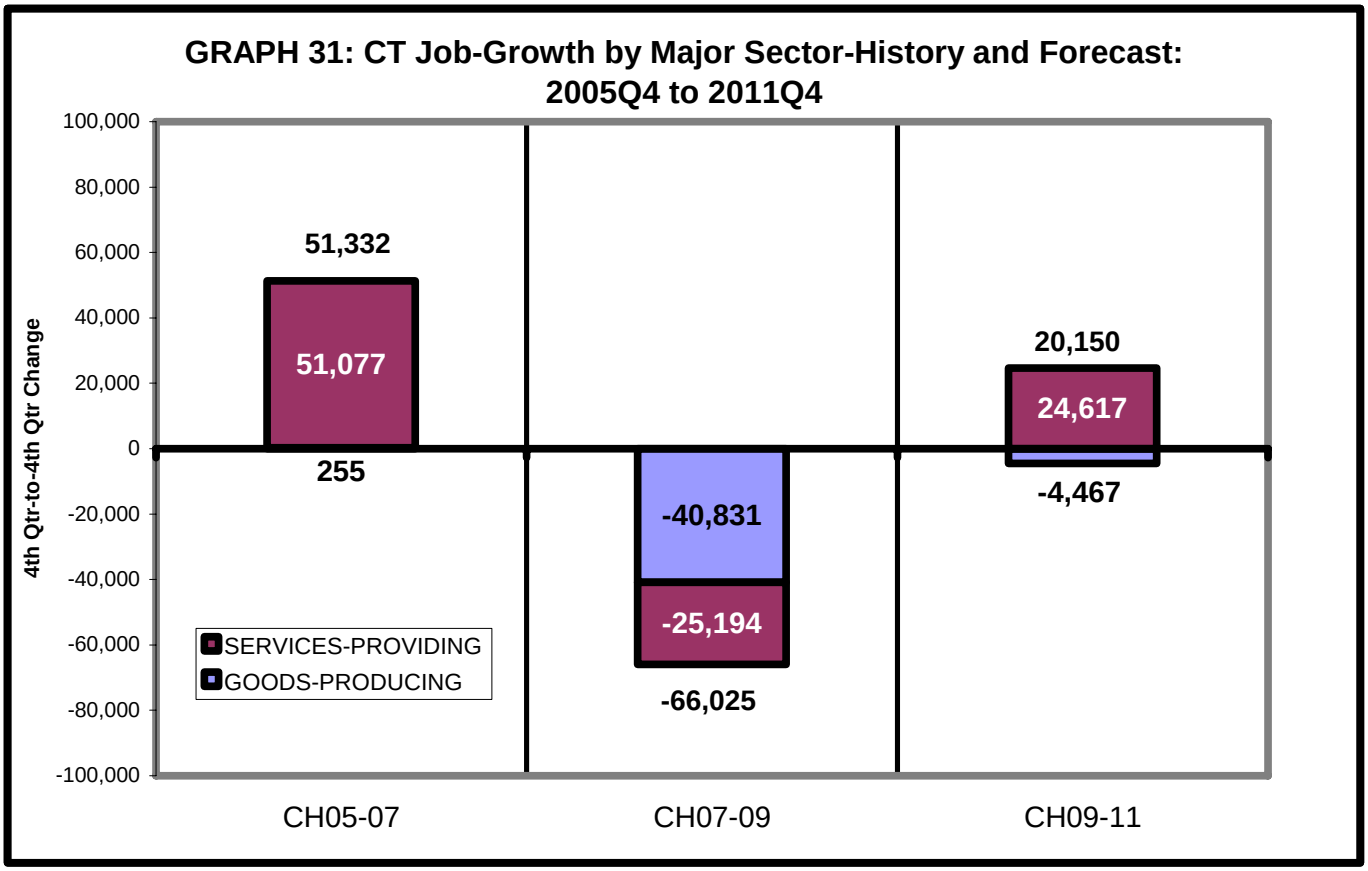
Graph 30 summarizes the annualized job-changes over the 2005 to 2009 historical years and the expected annual job-changes over the two forecast years: 2010 and 2011. On an annual basis, it is expected that Connecticut's economy will recover from the steep losses of 2009, but still register a decline of 5,000 jobs in 2010 as a result of the current recovery's slowing momentum going into the second half of the year. Assuming that,

even if the recovery slows over the last one-half of 2010, it will nevertheless, continue, annual job-growth will turn positive again in 2011, for the first time since 2008, and that the State's economy will recover 15,730 jobs. This would represent a net-gain of 11,800 jobs over the two-year forecast period, on an annual basis.



Turning to the fourth-quarter-to-fourth quarter changes in jobs for Connecticut employment, the following section highlights the 2005Q4-07Q4 and 2007Q4-09Q4 historical periods and the 2009Q4-2011Q4 Forecast Period. The Goods-Producing sector is expected to continue losing jobs over the forecast period, on a fourth-quarter-to-fourth quarter basis. However, from Graph 31, losses will decelerate from 40,831 between 2007Q4 and 2009Q4, to 4.467 jobs over the 2009Q4-2011Q4 Forecast Period. Though losses are expected to subside in the Construction Sector (see Table 3), due to the continued drag of housing on the economy, not much growth is expected. Manufacturing, after hemorrhaging 24,000 jobs between 2007Q4 and 2009Q4, is expected to return to trend-losses. About 3,000 more job-losses are expected over the 2009Q4-2011Q4

Forecast Period, as the manufacturing sector continues to re-structure, including downsizing and outsourcing.



SOURCE: U.S. BLS, CT DOL-Research, and Research calculations

After losing 25,194 jobs over the 2007Q4-2009Q4 Period, the Services-Providing Sector is expected to return to job-growth over the forecast period, adding 24,617 jobs. Though a turn-around from the recession period, the projected job growth in services is quite modest compared to the 51,077 jobs created over the 2005Q4-2007Q4 Period, as the last expansion was coming to a close. Once again, Health Care and Social Assistance (HCSA) is projected to account for a significant portion of net-job gains over the forecast horizon as it has over the historical periods depicted in Table 3. HCSA is expected to add 7,700 jobs between 2009Q4 and 2011Q4, and account for 39% of all the net job-gains in the Services-Providing Sector. However, the growth-rate is expected to slow from the 5.5% pace between 2007Q4 and 2009Q4, to 3.0% over the 2009Q4-2011Q4 Forecast

Period. The chief culprit affecting the slowdown in growth is the Hospital sub-sector. Year-to-Year (YTY), job-growth at Connecticut's hospitals began slowing after the middle of 2008, and by the end of 2009, it was actually negative. It is expected that this drag on HCSA job-growth will persist over the forecast horizon.

Another previously strong-growing sector, Education, may also be facing some severe headwinds going into the forecast period. Its pace has already slowed from a 7.7% rate (+12,700) between 2005-07, fourth-quarter-to-fourth-quarter, to 2.1% (+3,700) over 2007Q4-2009Q4. The growth-rate is expected to slip to 1.9% (+3,500) over the 2009Q4-2011Q4 Forecast Period. Though the student demand, especially at the community colleges is high, as many take advantage of the downturn to change careers, or improve their skills, budget cuts at the State level are restraining the response to the increase in demand. Further, given the State's budget deficit, and consequent cuts to local government aid, education budgets are being slashed, and some are being cut deeply. Thus, even the modest forecast for job-growth in the Education Sector may be overly optimistic.

After losing 13,700 over the 2007Q4-09Q4 Period, Admin and Support is expected to add nearly 5,000 jobs over the forecast period. Driving the ups and downs in this sector is, as previously mentioned, is Employment Services. It is expected that employers will rely very heavily on temporary and contingent workers over the coming recovery and beyond. That is, this represents an on-going and permanent structural change, not just in manufacturing, but in the services sector as well. It is becoming an important indicator of changes in the direction of the business cycle. Another sector with a large amplitude over the business cycle is Professional, Technical, and Scientific. This sector too is driven by a few industries that dominate the cyclical behavior of the sector.

PUBLICATION TABLE AS OF MAY 5, 2010

TABLE 3: Connecticut Non-Agricultural Employment: History and Forecast

INDUSTRY	HISTORICAL			FORECAST	NUMERICAL CHANGES			PERCENT CHANGES		
	2005:Q4	2007:Q4	2009:Q4	2011:Q4	CH05-07	CH07-07	CH09-11	%CH05-07	%CH07-09	%CH09-11
TOTAL	**1,649,936**	**1,692,218**	**1,624,730**	**1,646,119**	**42,283**	**-67,489**	**21,390**	**2.56**	**-3.99**	**1.32**
GOODS PRODUCING……	**261,598**	**261,853**	**221,022**	**216,554**	**255**	**-40,831**	**-4,467**	**0.10**	**-15.59**	**-2.02**
Mining……	749	749	609	685	0	-139	75	-0.04	-18.61	12.38
Construction……	66,446	70,464	53,854	53,553	4,018	-16,609	-302	6.05	-23.57	-0.56
Manufacturing……	194,403	190,641	166,558	162,317	-3,763	-24,083	-4,241	-1.94	-12.63	-2.55
SERVICE PROVIDING…….	**1,363,869**	**1,414,946**	**1,389,752**	**1,414,369**	**51,077**	**-25,194**	**24,617**	**3.74**	**-1.78**	**1.77**
Wholesale Trade……..	66,951	68,279	63,853	65,087	1,328	-4,425	1,234	1.98	-6.48	1.93
Retail Trade……	197,475	197,521	183,095	183,041	46	-14,426	-54	0.02	-7.30	-0.03
Transportation and Warehousing……	53,347	53,951	49,464	51,500	604	-4,487	2,036	1.13	-8.32	4.12
Utilities……	8,478	6,685	6,590	6,697	-1,793	-95	107	-21.15	-1.42	1.63
Information……	37,629	38,153	34,009	33,158	524	-4,144	-851	1.39	-10.86	-2.50
Finance and Insurance……	118,479	123,339	116,694	114,933	4,860	-6,645	-1,761	4.10	-5.39	-1.51
Real Estate and Rental and Leasing……	20,946	20,937	18,977	18,498	-9	-1,960	-479	-0.04	-9.36	-2.52
Professional, Scientific, and Technical Services….	89,442	93,827	85,392	88,961	4,385	-8,435	3,570	4.90	-8.99	4.18
Management of Companies and Enterprises…….	24,923	27,076	27,160	27,838	2,153	84	678	8.64	0.31	2.50
Admin and Support/Waste Manage/Remediation..	89,456	91,785	76,656	80,716	2,330	-15,129	4,060	2.60	-16.48	5.30
Educational Services……..	164,730	177,404	177,556	184,632	12,675	151	7,076	7.69	0.09	3.99
Health Care and Social Assistance……	229,756	241,328	251,895	261,282	11,572	10,567	9,387	5.04	4.38	3.73
Arts, Entertainment, and Recreation……..	43,437	42,540	40,638	41,637	-896	-1,902	999	-2.06	-4.47	2.46
Accommodation and Food Services……..	105,336	113,137	110,158	111,366	7,801	-2,979	1,208	7.41	-2.63	1.10
Other Services……	56,494	58,747	56,523	58,284	2,254	-2,225	1,762	3.99	-3.79	3.12
Government**……	56,991	60,235	91,093	86,738	3,244	30,858	-4,355	5.69	51.23	-4.78

SOURCE: Connecticut Department of Labor, Office of Research NOTE: Data not seasonally adjusted

****State and local-government employment did not actually increase by 29,769 between 2007Q4 and 2009Q4. Reporting requirements changed, which caused a jump in jobs reported by the State and local governments.**

Particularly, Computer Systems and Design, which accounted for three-quarters of the sector's job-growth between 2005Q4 and 2007Q4, and for one-quarter of the sectoral losses over 2007Q4-2009Q4. Also contributing 1,000 jobs each to the 7,700 jobs lost in Professional, Technical, and Scientific were Architectural and Engineering, which accounted for 26% of the job-losses, Advertising, which accounted for 16% of the losses, and Legal, which contributed to 14% of the sector's job-losses. A good portion of the 2,900 jobs expected to be added to the Professional, Technical, and Scientific Sector between 2009Q4 and 2011Q4 will be in Computer Systems and Design. Jobs in this industry are tied to other sectors, including the Financial Services Sector, which we not turn to.

Last, but certainly not least, especially concerning Connecticut's Economy, is the forecast for Finance and Insurance Sector employment. Though this sector's share of the State's employment, at first declined, and then recovered, its share of output and earnings have steadily grown over the last two decades, and by 2009, in spite of the financial crisis, Finance and Insure now accounts for a larger share of Connecticut's economy than Manufacturing, which has been steadily declining as a share of the State's Economy.

Though it accounted for 42% of Finance and Insurance jobs in 2007Q4, the Finance sub-sector contributed 55% to the job-losses in this sector between 2007Q4 and 2009Q4. The principal activity under this heading is Credit Intermediation. And, though it accounted for only 26% of jobs in this sector in 2007Q4, Non-Depository Institutions accounted for two-thirds of all job-losses between 2007Q4 and 2009Q4. In turn, employment was concentrated in Real Estate Credit and Sales Financing. Losses in Depository Institutions, Commercial Banks and Savings Institutions, began to accelerate in 2009. Again, driven by the continued weakness in the housing market, and the persistence of foreclosures, it is expected that losses in Depository Institutions, Real Estate Credit, and Sales Financing will continue, though the pace will slow from a7% decline between 2007Q4 and 2009Q4, to a 2% decline over the forecast period. Insurance, though recovering from the 2,700-job decline between 2007Q4 and 2009Q4, it is still expected that another 800 jobs will be shed over the forecast period.

RISKS TO THE FORECAST: Very High---A major risk on the downside is posed by the current soveriegn debt crisis unfolding in Europe, centered around Greece, but also Portugal and Spain, and possibly others. After the U.S.'s two NAFTA partners,Canada and Mexico, Europe is the most important U.S. export market. And, U.S. exports are hurt by the sliding Euro and simultaneous appreciating dollar. This is particularly relevant to Connecticut, as two of the State's three largest export destinations, France and Germany, are members of the Eurozone. Two other financial shoes that could drop are centered on the toxic assets in the commercial real estate market, which imploded in 2007, and some have warned of an impending privtate-equity debt crisis in 2011 and 2012. Last, the Fed and other central banks must walk a tightrope in their efforts to withdraw liquidity from the World's economies. The $8,000 first-time homebuyers' credit ended on April 30, 2010[197] and much of the fiscal stimulus package spending ends in 2011. In particular, Federal aid under the ARRA, to the states will wind down halfway through FY2011. An ensuing fiscal crisis for most states that must balance their operating budgets by law could cut the tentative recovery short. In addition, the Fed began withdrawing from its program of buying up Residential Mortgage-Backed Securities (RMBS). The Treasury has said that it will step in to continue to support low mortgage rates.

From the real side of the economy the housing sector, with its consequent multiplier effects, will continue to act as a drag on the economy. In addition, Connecticut can expect another generation of ARMs to re-set in 2010 and into 2011, which could result in a new wave of foreclosures. Further, the impacts of the withdrawal of the government's stimulus to the economy will depend on whether or not the economy can achieve self-sustaining growth if life supports are removed. Further, discussions about cutting spending to address the Federal deficit resulting in spending-reductions that are too soon and too aggressive could, in the words of Paul Krugman, be reminiscent of 1937, when FDR suddenly got the "old fashioned religion", because it appeared that the economy had recovered from the Depression, and decided to balance the Federal Budget, which, in conjunction with some other factors, sent the U.S. Economy back into the Great Depression.

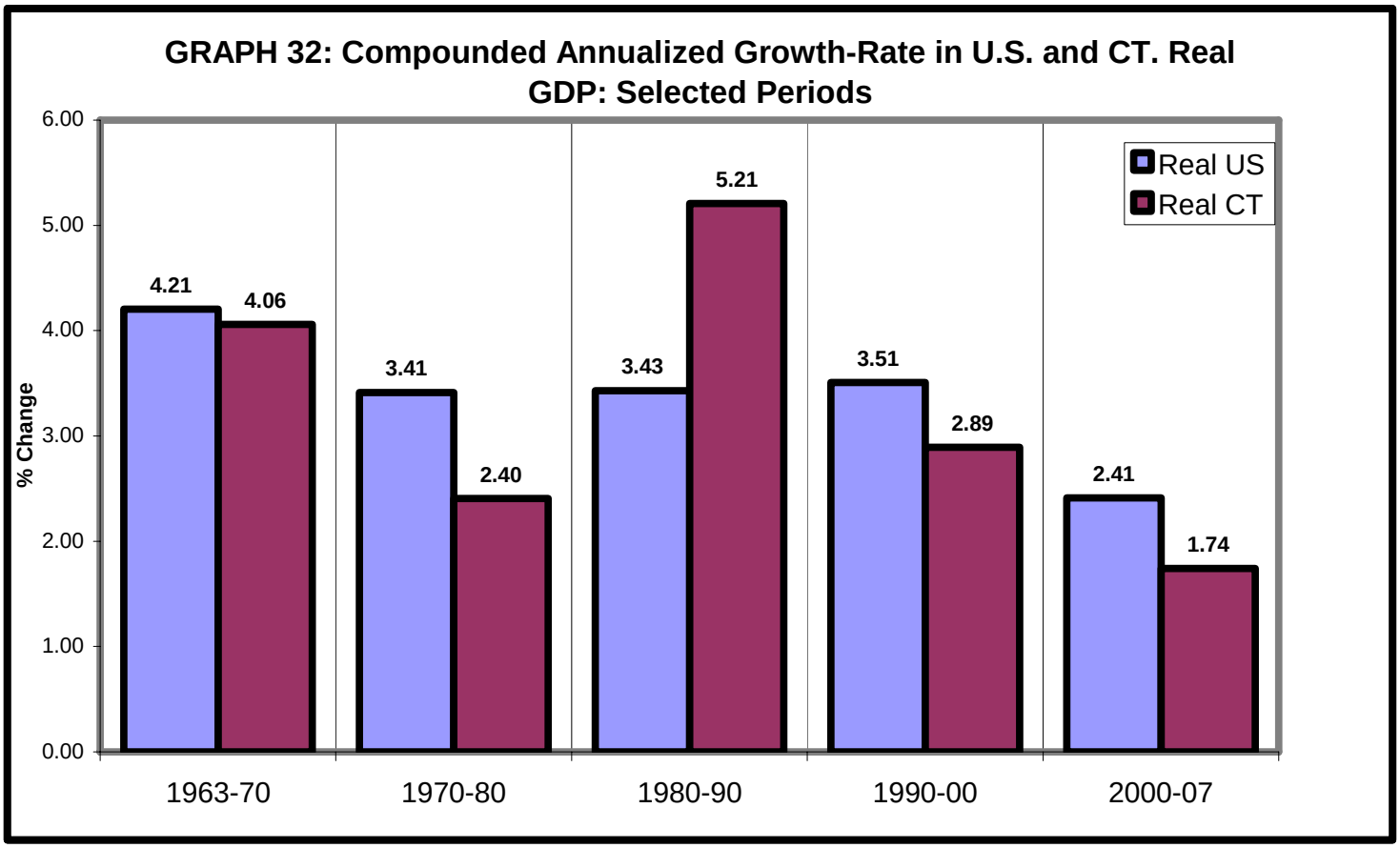
[197] Though first-time homebuyers had until June 30th to close.

In the final analysis, the need for households to continue the long process of repairing their balance sheets, by working off the accumulation of excessive debt-loads, in the face of the popping of an asset bubble, the continued weakness in housing (including further price declines), and the consequent, persistently high unemployment, will act as significant drags, on both, the State and national economies over the entirety of the forecast horizon.

THE CONNECTICUT ECONOMY: Beyond 2011---What can be expected for the State's Economy beyond 2011? To get a sense of the longer-term forces acting on the State's Economy, the following discussion focuses on some trends in the national and Connecticut economies that have been unfolding over the Post World War II Era.

Graph 32 looks at the growth-rates of U.S. and Connecticut GDP over the last four decades of the 20th Century and the first decade of this century. Since the two end periods analyzed in Graph 30 are seven years, where the middle three periods are each full decades, the compounded, annualized growth-rate is presented to put all five periods on the same basis. The first observation about Graph 30 is that the growth-rate in Real U.S. GDP has not matched its performance in the 1960's. After growing at a compounded 4.2% annualized growth-rate, the U.S. Economy has never duplicated that in subsequent decades. After hitting a growth-plateau of between 3.4-3.5% per-year growth over the last three decades of the 20th Century, the growth-rate in Real U.S. GDP has slowed to a 2.4% annualized growth-rate over the fist seven years of the 21st Century, on the eve of the recent crisis. Connecticut's performance came close to matching U.S. Real GDP growth in the 1960's. However, Connecticut's Economy grew at a full percentage-point lower than that for the U.S. in the 1970's (at 2.4% per year). With the Reagan defense buildup, and with Connecticut strategically positioned with a strong defense-industry oriented economic base, the State's Economy boomed as the defense budget grew. While the national economy grew at 3.4% per year, Connecticut's growth surged to 5.2% per year. The State's Economy has never matched that performance since. While the growth in the U.S. Economy had a slight up-tick to 3.5% per year in the 1990's, Connecticut's growth-rate fell to under 3%. Though the growth-rate fell for both the U.S. and

Connecticut economies between 2000 and 2007, while the U.S. growth-rate dropped a percentage point to 2.4% per year, Connecticut's growth-rate came to a virtual standstill at 1.7% per year[198].



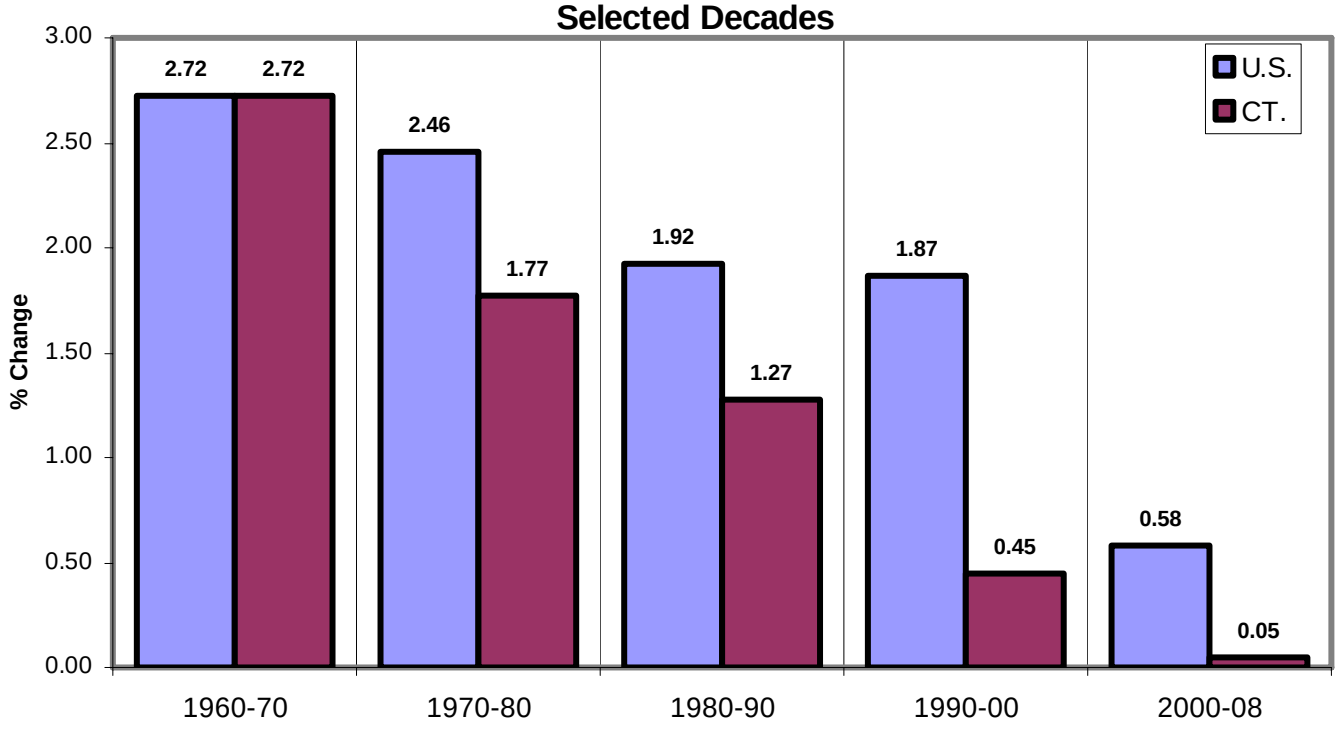
SOURCE: U.S. BEA and calculations by CTDOL-Research.

Turning to Graph 33, employment-growth in the U.S. and Connecticut is tracked for the last four decades of the 20th Century, and the first eight years of the 21st. Since the last period of analysis is eight years, not a full decade, as in Graph 30, Graph 31 presents the compounded, annualized growth-rates for each period. For both the U.S. and Connecticut, the growth-rate in employment has never matched the performance of the 1960's in subsequent decades. In the 1960's, both the U.S. and Connecticut, were adding jobs at a rate of 2.7% per year. As U.S. job-growth performance slipped in each

[198] See Kennedy, Daniel W., *Structural Change in the U.S. and Connecticut Economies* (2008) Office of Research, Connecticut Department of Labor: Wethersfield, CT.

subsequent decade, Connecticut's performance slipped by even more. While the U.S. added jobs at a rate of 2.5% per year in the 1970's, the Connecticut rate fall to 1.8%. Even in the 1980's, when Connecticut's GDP-growth far outpaced that of the U.S., the State's Economy added jobs at a rate of 1.3% per year, compared to 1.9% for the U.S.

GRAPH 33: U.S. and CT. Compounded, Annualized Job-Growth: Selected Decades



SOURCE: U.S. BLS and calculations by CTDOL-Research.

With the end of the Cold War and the downsizing of the defense industry, in conjunction with the restructuring of the insurance industry, the Connecticut Economy's ability to create jobs has been severely effected. While the U.S. Economy reproduced the, less than stellar, 1.9% per-year job creation rate of the 1980's again in the 1990's, Connecticut's job-creation rate fell to an anemic 0.5% per year. The first eight years of this century have seen a collapse in the job-creation ability of both the U.S. and the Connecticut economies. Both put in the most dismal performances of the Post-1960 Era. The U.S. added jobs at weak 0.6% per year rate between 2000 and 2008, and Connecticut for all

practical purposes had no job growth. Over the 2000-2008 Period, the State's Economy added jobs at a rate of only 0.05% per year.

Though the last year of the current period certainly includes the recent financial and economic crisis, the worst since the Great Depression, the 1970's, 1980's, and the 1990's have all had their turbulence, which effected economic growth in each of the decades. Even the 1960's started and ended with a recession, punctuated by a financial crisis in 1966. Thus, the decade-by-decade comparisons seem to be a valid exercise. Given that, it appears to be clear that both the U.S. and Connecticut economies are in the midst of a long-term decline in the ability to generate job-growth. And, since the end of the Cold War, defense cutbacks, and the restructuring of the insurance industry, Connecticut has become more strongly tied to the fortunes of the U.S. Economy. Among other factors, Rogoff and Rhienhart (2010)[199] found that output began to decline in those countries that were in a run-up to a financial crisis. Finance has played an ever-larger role in the U.S. Economy since the advent of financial deregulation beginning with the *Monetary Decontrol Act of 1980.* As discussed above (see Graph 22), finance has become an increasing share of Connecticut's Economy over the last two decades. These factors may have played a role in the decline of output and job growth, particularly in Connecticut. But, changing areas of competitive advantage, particularly in terms of geography, may have also played a role in declines in output and job growth, but also in the role of the rise of finance. This may be particularly true for Connecticut.

The changing fortunes of regional economies, driven by changes in competitive advantage, has focused attention on the trend of firms' reconfiguring themselves through what is termed "outsourcing". Over the last two decades there has been a debate over the effects of outsourcing, particularly, offshore outsourcing[200]. The phenomenon of

[199] Rogoff and Rhienhart, THIS TIME IS DIFFERENT (2009)
[200] For instance, see Bhagwati, Jagdish, Arvind Panagariya, and T.N. Srinivasan, *The Muddles over Outsourcing*, JOURNAL OF ECONOMIC PERSPECTIVES (Forthcoming), Houseman., Susan N, *Outsourcing and Offshoring: Problems for Price and Productivity Measurement* (June 2008) UPJOHN INSTITUTE: Kalamazoo, Greene, William, *Growth in Services Outsourcing to India: Propellant or Drain on the U.S. Economy?* (January 2006) OFFICE OF ECONOMICS WORKING PAPER, U.S. International Trade Commission: Washington, and Amiti, Mary and Shang-Jin Wei *Fear of Service*

"outsourcing" is what economists call *Vertical Disintegration*, or *Production Fragmentation*. Vertical Disintegration, or outsourcing occurs when a firm contracts out to an external supplier to provide a function previously performed internally, within the firm, or spins off a division, at an earlier stage of its production process, to form a new firm. This converts a vertically integrated process into a *supply chain*. Whether or not the U.S. is a net beneficiary of offshore outsourcing, or how much outsourcing is of the on-shore type is not critical for the affects it would have on Connecticut's economy—particularly, its labor market. Critical to Connecticut's labor market, is whether or not outsourcing is out-of-state, regardless of whether or not it is onshore, or offshore with regard to the national economy.

But, to explore the effects of outsourcing on the State's Economy, restricting the discussion to GDP, or Final Demand, is not seeing the whole picture, especially as it affects the demand for labor and the implications for labor-market dynamics, especially with regard to vertical disintegration. Labor is required, not just to produce goods and services to meet final demand, but also to produce goods and services to meet intermediate demand by the processing sectors. That is: *Gross Output* (GO), which includes Final Demand (= GDP) plus intermediate-inputs demand, is the critical measure of output. Further, the affects of "outsourcing" or vertical disintegration, can only be assessed by including, not just GDP, but also Intermediate Inputs and the changing shares of each as a component of GO.

Data on *Gross Output* (GO), the expanded concept of economic output may be found in the KLEMS data first released by the U.S. Bureau of Economic Analysis in 2005. The KLEMS data aggregates the detail underlying the industry estimates of *Intermediate Inputs* into three cost categories—Energy, Materials, and Purchased Services[201]. These estimates are prepared by applying a KLEMS (K-Capital, L-Labor, E-Energy, M-Materials, and S-Purchased Services) production framework to BEA's estimates of

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Outsourcing: Is It Justified? (October 2004) IMF WORKING PAPER, International Monetary Fund: Washington.

[201] Strassner, Erich H, Gabriel W. Medeiros, and George M. Smith, Annual Industry Accounts: Introducing KLEMS Input Estimates for 1997–2003 (September 2005) SURVEY OF CURRENT BUSINESS, U.S. Bureau of Economic Analysis: Washington, p. 31

industry production based on the North American Industry Classification System. Unfortunately, KLEMS data are not produced at the state level. Thus, some of the methodology used by BEA in producing state GDP estimates was used to estimate state-level Gross Output and its components for Connecticut. Specifically, a share-allocation procedure was used to allocate the national share to the state's industry for each of the KLEMS components to obtain total Intermediate Inputs.

The first clue to the trends observed in Connecticut's Economy is the growth-rate of Gross Output (GO) and its two major components, VA (= GDP) and Intermediate Puts over the 1997-2007 Period. Intermediate Inputs, as a share of U.S. GO, increased from 45.15% to 46.50%, or by 1.35 percentage-points (not shown), between 1997 and 2007. In 1997, Intermediate Inputs represented 43.02% of Connecticut's Total GO, but by 2007 Connecticut's Intermediate-Inputs share had grown to 46.03% of Total GO, which represented a 2.66 percentage-point increase. This rapid growth in Connecticut's share of Intermediate Inputs over the 1997-2007 Period represents a significant shift in the State's industrial structure, and it could go a long way toward explaining the decline in the State's labor-market dynamics.

The top five contributors to Connecticut's growth in Intermediate Inputs are close to the top five contributors to the growth in Value Added (= GDP)—save one exception, Health Care (a top-five contributor to GDP growth) is replaced by Information. Connecticut's Finance and Insurance Sector tops the list, contributing nearly 29% of the growth in Intermediate-Input demand between 1997 and 2007. Manufacturing contributed another 15% to the growth in Connecticut Intermediate Inputs. Within Connecticut's Finance and Insurance Sector, the Securities, Commodities, and Brokers and Insurance industries, were the largest contributors to growth. Focusing on Securities, Commodities, and Brokers, what is striking is the dramatic growth in Intermediate Inputs, especially between 2002 and 2007, roughly, the last expansion. Intermediate Inputs grew by 111%--double the rate of VA (or GDP). The result: Intermediate Inputs increased as a share of GO by 7.58 percentage points, which was necessarily at the expense of VA.

Critical for job-creation in a state, regional, or local economy is the *Regional Purchase Coefficient* (RPC), the share of Intermediate Inputs actually purchased in the local economy. It follows that one minus the RPC represents the share of commodity inputs purchased outside the local economy (i.e., imports). According to analysis using IMPLAN, the RPC for Connecticut's Securities, Commodities, and Brokers Industry has remained stable at 0.4527 between 2002 and 2007. Thus, 45.27% of this industry's commodity purchases are in Connecticut, however, it also implies that 54.73% of Intermediate Inputs are imported from out-of-state (i.e., the portion that "leaks" out of the state). Given the growth in the share of Intermediate Inputs, given the RPC, imports for this industry increased by 101%. Even though the second biggest contributor to Connecticut's growth in Finance and Insurance output, Insurance Carriers, has an RPC of 0.6688, (i.e., one-third of its Intermediate Inputs are imported), imports increased by 60% between 2002 and 2007, driven by the increased share of Intermediate Inputs.

To summarize, it appears that Connecticut's muted GDP-growth and declining labor-market dynamics since 1997, may have not only been driven by higher productivity, compared to the U.S., but also by a faster than national pace, in the vertical disintegration of its industry structure resulting in GDP declining as a share of GO, in conjunction with the growth in the importation of Intermediate Inputs from out of state. If these trends continue, then the long-term outlook appears to be one in which the State's firms continue the process of vertical disintegration faster than that in the U.S., which, in turn, if most of the outsourcing is out-of-state outsourcing, translates into slower growth in GDP (= Value Added), firm formation, and job creation[202].

[202] For the longer study on this issue, see Kennedy, Daniel W., *OUTSOURCING AND THE DECLINE IN CONNECTICUT'S LABOR-MARKET DYNAMICS: Is There a Connection? Some Clues from KLEMS* (November 2009) OCCASSIONAL PAPER: Connecticut Department of Labor: Wethersfield, CT., for a condensed version, see Kennedy, Daniel W, *CONNECTICUT'S LABOR-MARKET DYNAMICS: Clues from KLEMS?* (November 2009) CONNECTICUT ECONOMIC DIGEST: Connecticut Department of Labor and Connecticut Department of Economic and Community Development: Wethersfield and Hartford, CT.