Current Conditions and Outlook for the U.S. and Connecticut Economies: 2013-2015

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Economic Analysis and Forecasting Group
Office of Research, CT. Department of Labor

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Thank You to the Second Expanded 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 economists 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. Last year, our panel was expanded by adding additional economists to our panel and extending invitations to a broader group of observers, including to representatives from Congress, the Legislature, and the media. And, this year we were joined by staff from the offices of U.S. Representatives John Larson and Joe Courtney, and Robert T. Ross, Executive Director, Connecticut Office of Military Affairs. 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.

Putting the Economists' Panel Together

Office of Research staff were critical in putting together the Panel, they are Debbie Barr, Administrative Assistant, Andy Condon, Ph.D, Director, Office of Research, Patrick Flaherty, Economist, Jonathan Hand, Systems Developer, and economists Matt Krzyzek and Sarah Pilipaitis

Economists' Panel (April 2014 Participants)

The table on the following page lists the members of the 2014 Economists' Panel and their affiliations.

CTDOL ECONOMISTS' PANEL FOR 2014: Members and Affiliations

PANELIST	AFFILIATION
Susan Coleman, Ph.D.	Professor of Finance, University of Hartford, former member Governor's Economic Council
Andy Condon, Ph.D.	Director, Office of Research, Connecticut Department of Labor (CTDOL)
Ed Deak, Ph.D.	Professor and former Economics Department Chair, Fairfield University, CT Forecast Model Mgr. New England Economic Partnership, and former member of the Governor's Economic Council.
Alissa DeJonge	Director of Research, Connecticut Economic Resource Center (CERC)
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Patrick Flaherty	Economist, Office of Research, CTDOL
Peter Gioia	Chief Economist, CBIA.
Don Klepper-Smith	Chief Economist, DataCore Partners, and Economic Advisor to Farmington Bank, former Chair of the Governor's Economic Council.
Matt Krzyzek	Economist, Office of Research, CTDOL
Lisa Perrone	Office of U.S. Representative John Larson
Sarah Pilipaitis	Co-Editor, *Connecticut Economic Digest* and Economist, CTDOL-Research
Nandika Prakash, Ph.D.	Senior Economist, Connecticut Department of Economic and Community Development (DECD)
Robert T. Ross	Executive Director, Connecticut Office of Military Affairs
Orlando Rodriguez, M.A.	Latino & Puerto Rican Affairs Commission , formally Senior Policy Fellow, Connecticut Voices for Children
Manisha Srivastava	Budget Analyst, Office of Policy and Management
Dene Tewksburg	Office of U.S. Representative Joe Courtney

FOREWORD

What follows is the outlook for the U.S. and Connecticut economies for 2014 and 2015, 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-July 2014, it has been five years since National Bureau of Economic Research (NBER)-designated the official end of the 2007-09 Recession in June 2009. This recovery has followed the first U.S. systemic banking panic since the 1930's, the first collapse of a shadow banking system since The Panic of 1907, and the first succession of collapses in asset bubbles in housing and the stock market, in conjunction with unsustainable levels of household debt since the 1920's. This resulted in what has been called a *Balance Sheet Recession* The Great Depression was a balance-sheet recession, as was the recession that followed the collapse of Japan's real estate bubble in 1989. The aftermath of the recent Balance Sheet Recession produced residual effects that have acted as a drag on the economy, over the current recovery, from the bursting of the housing bubble. This residual drag is the result of two effects: (1.) Negative Wealth Effects from the asset-side of households' balance sheets from the bursting of the housing bubble, and (2.) the Default and Deleveraging Process from the liabilities side of households' balance sheets from the accumulation of unsustainable debt-levels.

But, it is important to note that housing has always played a critical role in the business cycle; it is just that housing's role has become glaringly apparent over the current cycle. And, due to the bursting of the housing bubble, that driver has been absent over this recovery, with a vengeance. At the time of writing, the housing market appears to be at a critical juncture. After apparently turning around in 2012, and into 2013, several important housing indicators began to decelerate, or actually decline, beginning in the

summer of 2013, long before the on-set of the harsh winter. Given this, the harsh-winter explanation of the decline in housing activity fails to account for the pre-winter slowdown in housing activity. One explanation that does account for the slowdown before the harsh winter has to do with investors. Until the rise in interest rates, investors purchased houses at rock-bottom prices and rented them out. They then pulled out of the market, with rising interest rates, in the summer of 2013. The question for the housing market is: can "regular" homebuyers (i.e., those who buy a home as a primary residence and not as income-generating asset) re-charge previous activity-levels in 2014, with the retreat of investors? Finally, there is also a lack of inventory, driven by the persistently high levels of negative equity, especially in the lower-tier (lower third), of home values.

Therefore, critical to this outlook, or any contemporary forecast, is where the stalled housing recovery is going. If housing gets its "second wind", then that should support stronger growth over the 2014-15 period. But, if housing does not get its second wind, following a second-quarter bounce-back from the weather-induced, depressed economic activity in the first quarter, then growth could very well slow going into the third and fourth quarters of 2014, and into 2015.

And, what would a contemporary, economic outlook be if it did not factor in another potential, manufactured crisis inflicted on the economy.

With regard to Connecticut's outlook, housing too is playing a critical role. 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 Miami, Phoenix and Las Vegas, as well as some neighboring states such as Massachusetts and Rhode Island, Connecticut was still affected, and in particular, certain regions of the state, with regard to sub-prime mortgages. However, Massachusetts and Rhode Island are recovering more quickly. Though the percent of homes selling at a loss has been falling since the peak, by March 2014, 31% of Connecticut's homes still sold for a loss, making the state the sixth highest of the 36 states and the District of Columbia that Zillow had data on. This put Connecticut ahead of Massachusetts and Rhode Island, and far above New York, in the

percent of homes sold at a loss. Further, in a study recently released by the HAAS Institute at the University of California, of the cities, with metro areas with a population of one million, ore more, Connecticut had two cities that ranked in the top ten cities with the highest percent of homeowners, with a mortgage, underwater: Hartford, number one; and Bridgeport, tenth. So even though the housing bubble was less severe in Connecticut, it seems to be taking longer to recover from it.

At the beginning of the current recovery, Connecticut's job-growth was relatively stronger than that for the U.S. when the job-market began recovering in 2010, but, going into the second half of 2010, and into 2011, the U.S. and Connecticut traded places and Connecticut's job-growth rate fell below that of the nation. After adding 17,100 jobs, on an annual basis, in 2011, Connecticut's job-growth slowed to 15,300, in 2012, and 14,300, in 2013. Meanwhile, the U.S. Economy added 1.6 million jobs in 2011, which then ramped up to 2.3 million jobs in 2012, and held at another 2.3 million in 2013 (although that represented a slowing rate, it was still twice Connecticut's rate).

The outlook over the forecast horizon, 2013-2015, expects that given the pick-up in U.S. job-growth in April, the U.S. Economy may very well, bounce back, in the second quarter, from the harsh winter, but, the Connecticut Short-Term Employment Forecast assumes that growth will return to a slower pace going into the third and fourth quarters, tempering growth for 2014. Further, the forecast assumes that the slowdown in housing, which began in the summer of 2013, will continue, given rising interest rates, no active fiscal policy on the horizon, especially given that 2014 is an election year, In addition, another manufactured crisis looms on the horizon, with the need for Congress to act on extending the *Moving Ahead for Progress in the 21st Century Act* (MAP-21), which expires on September 30th. If it is not extended, then authorization for Federal spending on highway and public transportation programs, as well as surface transportation safety and research and some rail programs, will expire. And, it is expected that 2015 will continue the current political environment of divided government.

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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Current Conditions and Outlook for the U.S. and Connecticut Economies: 2013-2015

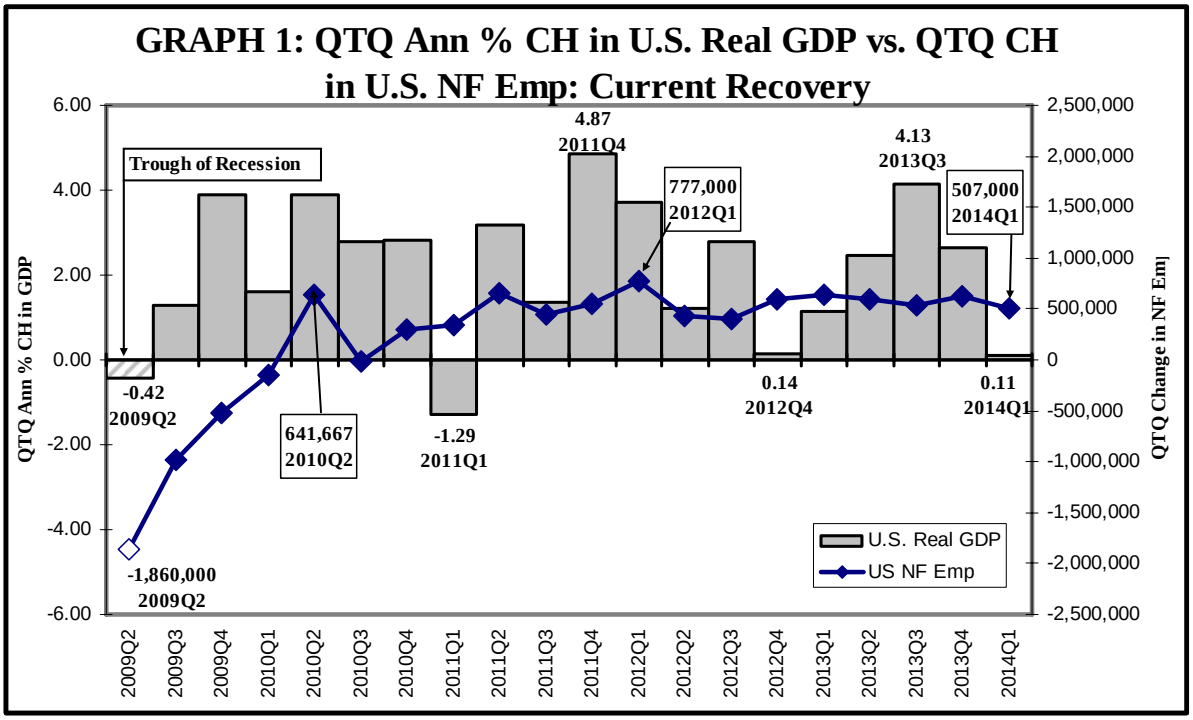
June 2014

INTRODUCTION- Is It Just the Weather?

The *U.S. Employment Situation* for April 2014 showed that jobs grew by 288,000 and that the Unemployment Rate (UR) fell by 0.4 percentage-points, its lowest level in five years. The jobs report was certainly stronger than most had expected, and the numbers for February and March were revised upward. However, after increasing in March, 806,000 left the Labor Force in April, making a shrinking labor force the principal reason for the declining UR[1]. From the less volatile, quarterly frequency, as depicted in Graph 1 (line and right vertical scale), U.S. Non-Farm job-growth peaked, over the recovery, at 777,000 in 2012Q1. Then, job-growth decelerated until it peaked again at 641,000 in 2013Q1. And, once again, job-growth decelerated until it bumped-up again to 624,333 in 2013Q4. Then, U.S. job-growth, once again, decelerated to 507,000, in the first quarter of 2014.

And, as reflected in the first estimate of U.S. GDP for 2014Q1[2], (see Graph 1, bars and left vertical scale) U.S. economic growth rapidly decelerated in the first three months of 2014. Part of what dragged down GDP growth was a deceleration in consumer spending, particularly spending on Goods. Many have pointed to weather as the principal culprit, and expect economic growth to follow the same pattern as that in job-growth and re-accelerate with the end of a record harsh, and long, winter. Though weather certainly played a role, it is not the whole story as to why the economy has recently slowed and cannot seem to attain "escape velocity" and go into a sustained expansion, as opposed to the "fits-and-starts" recovery pattern that has persisted since the official end of the last recession.

[1] U.S. BLS, THE EMPLOYMENT SITUATION —APRIL 2014 (May 2, 2014) U.S. Department of Labor: Washington
[2] U.S. BEA, GROSS DOMESTIC PRODUCT: FIRST QUARTER 2014 (ADVANCE ESTIMATE) (April 30, 2014) U.S. Department of Commerce: Washington



SOURCE: U.S. BLS and Author's calculations

As noted in previous outlooks, this long and weak recovery is the consequence of the first Post World War II recession that followed a Worldwide, systemic financial panic, and a nationwide collapse of an asset bubble in housing, the primary (or only) asset on the balance sheets of most middle and working class households, and therefore producing a much wider impact on the economy than the collapse of the Tech Bubble in 2000, or the 1987 Stock Market Crash. Further, since 2010, active fiscal policy has been off the table in the U.S., as well as Europe, and manufactured crises such as the clown show over the debt ceiling in 2011, and consequent Sequestration, the "Fiscal Cliff", and the government shutdown in October 2013, have certainly not helped matters any. In addition, the failure to extend UI Benefits, has neutralized an important automatic stabilizer by reducing income to households with large spending multipliers This has left only the Federal Reserve's Quantitative Easing policy to try to stimulate the economy, or at least, to hold deflation at bay.

To assess the outlook for the U.S. and Connecticut economies, over the 2013-15 Forecast Horizon PART I: explores the critical factors that appear to be driving the current

business cycle. PART II: then turns to identifying the current stage of the business cycle as we close out the first half of 2014. PART III: focuses on the U.S. Labor Market as it enters its fifth year of recovery. PART IV: turns to the Connecticut Economy and assesses its current state, with an emphasis on the State's labor-market conditions, as of the first half of 2014. Finally, PART V concludes the outlook with the forecast for Connecticut's job-growth, over the 2013-15, Forecast Period.

PART 1: CRITICAL FACTORS DRIVING THE CURRENT BUSINESS CYCLE

I. WHY THE WEAK RECOVERY? How We Got Here

The persistent drag on the economy throughout this recovery is the consequence of the bursting of the housing bubble that produced two significant effects: (1.) ***Negative Wealth Effects*** from the asset-side of households' balance sheets from the bursting of the housing bubble, and (2.) the ***Default and Deleveraging Process*** from the liabilities side of households' balance sheets from the accumulation of unsustainable debt-levels[3]. But, it is not just over this cycle that housing has played a critical role; housing has always been an important driver of the business cycle[4]. And, due to the bursting of the housing bubble, that driver has been absent, with a vengeance over this recovery.

The bursting of the housing bubble, in conjunction with high levels of household debt resulted in the collapse of Net Worth for a significant portion of U.S. households as the bubble popped after 2005, producing what has been called a "Balance Sheet Recession". And, it is this that makes the recent recession, along with the worldwide financial panic in September 2008, and current, weaker recovery different from all the previous Post World War II business cycles. A *"Normal" Recession* is brought about by a slowdown in economic activity, which results in declining output growth and rising unemployment brought about by either the Fed raising interest rates, an inventory Buildup, or other factors that depress economic activity An alternative scenario is that of an exogenous shock to the economy, such as the oil embargos of the 1970's, which acted to slam the breaks on economic activity as prices rose and real income and output fell. These factors that put the brakes on the economy all arise from a FLOW Perspective, which is reflected on the Income-Expenditures Statement. But, a *Balance-Sheet Recession*: is the result of major sectors of the economy becoming insolvent. That is, the abrupt collapse in aggregate spending as households pay down debt to rebuild their Net Worth. This

[3] Boshara, Ray and William Emmons, *AFTER THE FALL: Rebuilding Family Balance Sheets; Rebuilding the Economy* (May 2013), 1. INTRODUCTION, Center for Household Financial Stability: Federal Reserve Bank of St. Louis < http://www.stlouisfed.org/publications/ar/2012/pages/ar12_2a.cfm > Accessed on April 1, 2014

[4] Leamer, Edward E., *Housing and the Business Cycle* (August 3, 2007) SYMPOSIUM-FRBKC: Jackson Hole, WY.

contraction in economic activity is driven by the STOCK Perspective, which is reflected on the Balance Sheet, which records Assets, Liabilities, and Net Worth. That is:

$$\text{ASSETS} - \text{LIABILITIES} = \text{NET WORTH} \qquad (1.)$$

The collapse in housing prices, along with high debt-loads would be reflected in terms of Equation (1.) as:

$$\text{ASSETS} \Downarrow (\text{Housing}) - \text{LIABILITIES} \Uparrow (\text{Debt}) = \text{NET WORTH} < 0 \qquad (2.)$$

The following discussion briefly presents the mechanisms by which negative wealth effects and defaults and deleveraging have been transmitted through the economy as separate channels from that of the immediate financial crisis, and acted as major contributing factors to the collapse in aggregate spending over the Great Recession, and whose residual effects are acting as continuing drags on the recovery.

A. WEALTH EFFECTS: Asset-Side of HH Balance Sheets.

As noted above, the Wealth Effects of the housing bust are reflected on the Assets-side of households' balance sheets. To explore the effects on the macroeconomy, it will be helpful to look at a standard macroeconomics textbook presentation of the aggregate consumption function for the economy. In this consumption function, the standard determinants of consumption are wealth and income, specifically Disposable Personal Income (Y_D). That is: Consumption (C) = f[Wealth (W), Income (Y_D)]. To shed light on the current discussion, the Wealth argument is broken out into two parts: Housing Wealth (HW) and Non-Housing Wealth (NW). This allows for the expression of three different Marginal Propensities to Consume (MPC)[5]: the MPC out of NW (α), the MPC out of HW (β), and the MPC out of Y_D (δ). Following the expression of this more detailed

[5] The *Marginal Propensity to Consume* (MPC) is defined as the fraction spent out of an extra dollar of income, or, conversely, the fraction of reduced spending from a one-dollar reduction in income.

breakdown of the wealth argument the consumption function, based on the expression as presented by Iacoviello (2011)[6] reads as follows

$$C = \alpha NW + \beta HW + \delta Y_D \qquad (3.)$$

The interpretation of the coefficient β in Equation (3) is as the MPC out of Housing Wealth (HW). That is, for every one-dollar change in HW (Housing Wealth), Consumption (C) should change by β, some fraction of that dollar less than 1.

There have been a significant number of studies to try to identify what the value of β is. In a recent study, Mian and Sufi (2013) found that the MPC out of housing wealth, or β in Equation (3), is 5-7 cents[7]. However, they found substantial heterogeneity across ZIP codes. Specifically, they found that ZIP codes, with poorer and more levered households have a significantly higher MPC out of housing wealth. Further, they found that in line with their MPC result, ZIP codes experiencing larger wealth losses, particularly those with poorer and more levered households, experienced a larger reduction in credit limits, refinancing likelihood, and credit scores. Their findings highlight the role of debt and the geographic distribution of wealth shocks in explaining the large and unequal decline in consumption from 2006 to 2009[8].

Further, it appears that since the crisis, one factor, among several, that may be playing a role in the subsequent, weak recovery, is the MPC, or β, out of housing wealth, which has declined from around 5 cents (as cited above) to 3 cents[9], and maybe even as low as one cent[10]. This implies that even if housing were to get a second wind after the decline in housing activity in the summer of 2013, followed by the harsh winter, as we enter the last

[6] Iacoviello, Matteo, *Housing Wealth and Consumption* (August 2011), International Finance Discussion Papers-No. 1027, Board of Governors of the Federal Reserve System: Washington, p.3.
[7] Mian, Atif and Amir Sufi, *Household Balance Sheets, Consumption, and the Economic Slump* (October 2013) The Quarterly Journal of Economics (2013) 128 (4): 1687-1726.
[8] Mian and Sufi (2013), Abstract
[9] Mo, Henry, *Honey, I shrunk the Wealth Effect* (February 13, 2013) U.S. ECONONICS DIGEST: Credit Suisse
[10] Sufi, Amir, *Will Housing Save the U.S. Economy?* (April 2013) Booth School of Business: University of Chicago

half of 2014, gains in housing wealth will not be the boost to consumer spending that it was before the popping of the bubble.

In research done by Case, Quigley, and Shiller (2013), they found that Housing-Wealth effects are stronger than Financial-Wealth effects. That is, in terms of Equation (3.), β is larger than α (i.e., $\beta > \alpha$). They updated their previous research on the links between changes in housing wealth, financial wealth, and consumer spending. They extended a panel of U.S. states observed quarterly during the seventeen-year period, 1982 through 1999, to the thirty-seven year period, 1975 through 2012Q2. They found that an increase in Real Housing Wealth (e.g., the rise between 2001 and 2005) would, over the four years push up Household Spending by about 4.3%. Conversely, a decrease in Real Housing Wealth (e.g., comparable to the crash between 2005 and 2009) would lead to a drop of about 3.5%[11].

In more recent research by Mian and Sufi (2014), they found that, as noted in the INTRODUCTION to this outlook above, though the total housing market decline of 2007 to 2009 was similar in magnitude to the crash in equity values in 2001, the macroeconomic effects of the housing bust were very different. Their results offer a simple explanation: most of stock market wealth is held by the top-end of the wealth distribution with a very low MPC out of wealth. This reinforces the findings of Case, Quigley, and Shiller (2013), cited above. Similarly, the house-price recovery from 2011 onwards did not contribute as much to economic activity as the 2002 to 2006 housing gains. Their results suggest that this might be because the borrowing channel was effectively shut down for those most responsive to house price gains[12].

[11] Case, Karl E , John M. Quigley, and Robert J. Shiller, *Wealth Effects Revisited: 1975-2012* (January 2013) National Bureau of Economic Research: Cambridge, MA., Abstract.
[12] Mian, Atif and Amir Sufi, *House Price Gains and U.S. Household Spending from 2002 to 2006* (May 16, 2014) National Bureau of Economic Research: Cambridge, p. 4.

B. DEFAULTS AND DELEVERAGING: Liabilities-Side of HH Balance Sheets. While the Asset-side of Households' balance sheets is reflected in the NW and HW arguments in Equation (3.), the effects of the Liabilities-side are expressed through the Disposable Personal Income (Y_D) argument. Y_D is defined as:

$$Y_D = \text{Income (Y)} + \text{Transfer Payments (Tr)} - \text{Taxes (T)}$$

Once Y_D is derived, there are two possible ways to dispose of income: it can either be Saved (S) or spent on Consumption (C). Thus, $Y_D = C + S$. In the above discussion on Equation (3.), δ was defined as the Marginal Propensity to Consume (MPC) out of Y_D. If we then define μ as the Marginal Propensity to Save (MPS) out of Y_D then since $Y_D = C + S$, it would follow that MPC + MPS = 1, or $\delta + \mu = 1$. This relationship can be re-arranged to MPC = 1 − MPS. Thus, if the MPS increases, then the MPC must go down, conversely, if the MPS declines, then the MPC must increase. This is, in fact, how *Deleveraging* is transmitted through the δY_D argument in Equation (3.), and therefore to Consumption (C), or aggregate spending in the economy. When households began to deleverage in the face of accumulated, unsustainable levels of debt, on the Liabilities side of their Balance Sheets, after the housing-bust induced loss of wealth on the Assets-side, to rebuild their Net Worth, and since paying down debt is considered to be Saving, this process resulted in an increase in the MPS for a significant portion of U.S. Households after 2006. And, since the MPC = 1 – MPS, the deleveraging-induced increase in the MPS necessarily resulted in a decline in the MPC and aggregate demand in the U.S. Economy.

In a report released by the newly instituted Center for Household Financial Stability, at the Federal Reserve Bank of St. Louis, in May 2013, they identified two distinct but

related ways in which the Liability side of households' balance sheets may have harmed the economy in recent years: (1.) Defaults and (2.) Deleveraging[13].
Defaults that discharge debt in excess of acquired collateral value result in a loss to the lenders; it is the concentration of losses at highly leveraged financial institutions that appears to give loan defaults their macroeconomic significance[14].

Household "Deleveraging" is the process by which households pay down their debts and rebuild their Net Worth/Savings[15]

An early, and remarkably accurate, analysis of likely *Mortgage Defaults* and their effects on financial institutions, mortgage lending and the economy as a whole by Jan Hatzius, Chief Economist at Goldman-Sachs, predicted a huge reduction of 2.6 percentage points in real GDP growth in both 2008 and 2009 from a baseline of about 2.5 percent annual growth. Thus, Hatzius predicted roughly zero growth for the two years. As it turned out, real GDP fell 0.3 and 3.1 percent in those years, somewhat worse than he predicted.

There is a substantial amount of empirical evidence documenting the contours and extent of *Household "Deleveraging*" The International Monetary Fund (IMF) combined an examination of current levels of household debt in 36 countries with an analysis of previous episodes of excessive household debt. The IMF confirmed that household debt can become so large and burdensome that it hampers economic growth; the organization also concluded that policy responses that involve debt restructuring can alleviate some of the burdens on the economy. In earlier work, economists at the McKinsey management consulting firm stressed the need for countries to avoid the buildup of excessive household debt in the first place.

Mian and Sufi, in their just-released book, *House of Debt*, say that it wasn't household debt that caused the Great Recession[16] In their book, they expand on their research cited

[13] Boshara, Ray and William Emmons, *After the Fall: Rebuilding Family Balance Sheets; Rebuilding the Economy* (May 2013) Center for Household Financial Stability: Federal Reserve Bank of St. Louis, Chapter 6.
[14] ibid
[15] ibid

above in the discussion on wealth effects. They argue that the Great Recession was the result of a sharp fall-off in consumption due to the *unevenly* accumulated household debt in the first six years of the 21st century. In that period, mortgage-credit grew more than twice as fast in neighborhoods with low credit scores than in neighborhoods with high credit scores, a marked departure from the experience of previous decades. When the housing bubble popped, the economic consequences were sharply magnified by the way debt was distributed across households and communities[17].

C. OTHER FACTORS CONTRIBUTING TO THE WEAK RECOVERY

In addition to the factors discussed above, and as summarized by the Saint Louis Fed: "And the research suggests that both the Asset-Side Wealth Effect and the Liability-Side Deleveraging Effect appear to be important contributors to the overall Household Balance-Sheet Effects on spending and the economy"[18]. There are a number of other factors that have acted as a drag on the U.S. Economy, and have therefore also contributed to the slow recovery. A critical, recurring hit to the economy, over this recovery, has been the self-inflicted wounds of MANUFACTURED CRISES. The first of these spectacles was the Debt Ceiling Sideshow in the summer of 2011. This resulted in *The Budget Control Act of 2011*, which brought us Sequester. Then, there was the "Fiscal Cliff" at the end of 2012, and, of course, who could forget the Government Shutdown in October 2013. All of these unnecessary antics inflicted hits on the economy.

Another, and significant, contributing factor to the slow recovery has been the persistent *Output Gap*, which has resulted in unemployed human and physical resources throughout the current recovery. And, according to Okun's Law, the output foregone, due to the Output Gap, is lost forever, we never recover it. At first, the U.S. and European governments did, in fact, implement active fiscal policy to close the Output Gap. But, in 2010, both the U.S. and EU (European Union) turned to what has been billed as "EXPANSONARY AUSTERITY"—Especially Europe. The obsession with the debt and

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[16] Boushey, Heather, It Wasn't Household Debt That Caused the Great Recession (May 21, 2014) ATLANTIC < http://finance.yahoo.com/news/wasnt-household-debt-caused-great-182512510.html > Accessed on May 22, 2014
[17] ibid
[18] Federal Reserve Bank of St. Louis (2013), p. 13]

deficit, on both sides of the Atlantic, instead of on growth, has doomed millions, unnecessarily, to unemployment.

II. CURRENT STATE OF HOUSEHOLDS' BALANCE SHEETS

As discussed in Section I, the long, slow, weak recovery that the U.S. Economy is currently experiencing is due to several factors, but primarily it is being driven by depressed consumer spending. In turn, depressed consumer spending is being driven largely by the collapse in U.S. Households' Net Worth, from the popping of the housing bubble (the hit to the Assets side of the Balance Sheet), and unsustainable levels of debt (the hit to the Liabilities side of the Balance Sheet). This has resulted in the recent recession being dubbed a "Balance Sheet Recession"[19]

A. ASSET-SIDE OF HOUSEHOLDS' BALANCE SHEETS

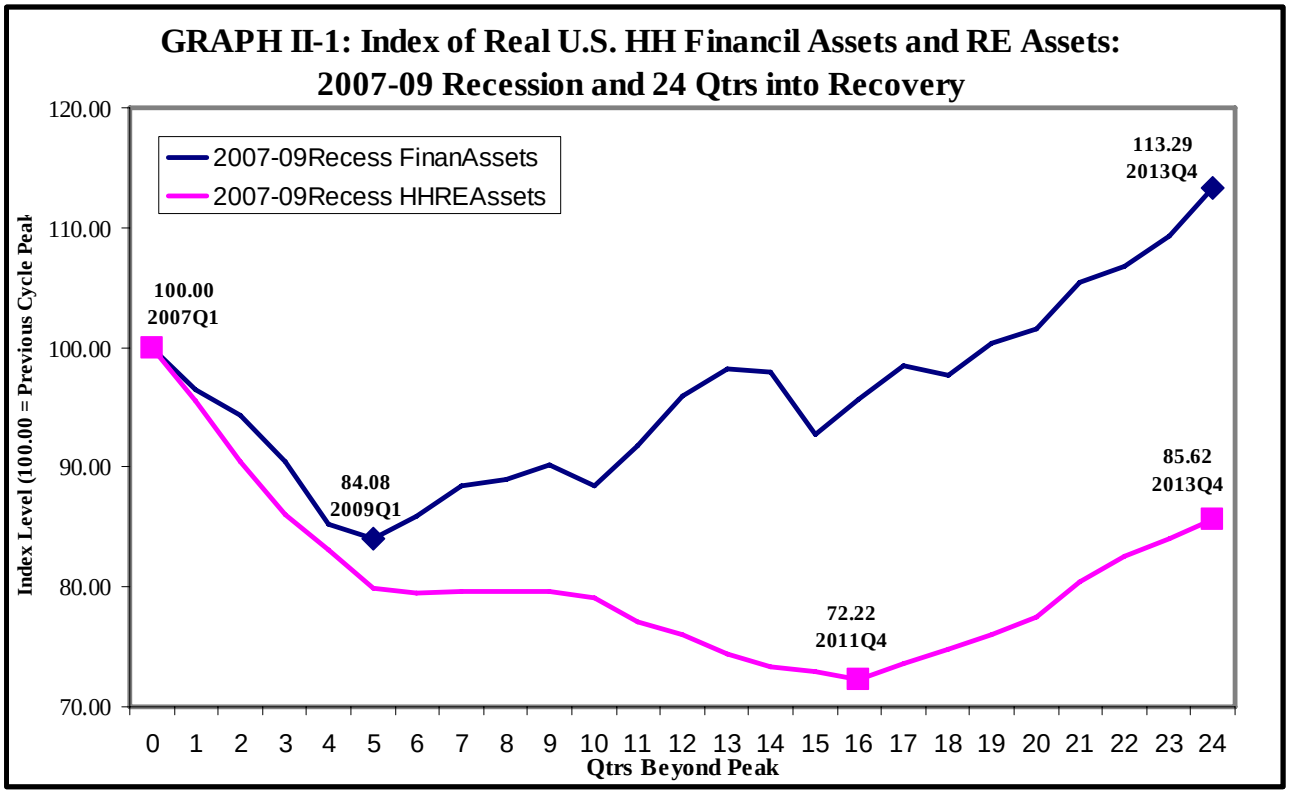
As noted in the INTRODUCTION above, and detailed in Section II, this long and weak recovery is the consequence of the first Post World War II recession that followed a Worldwide, systemic financial panic, and a nationwide collapse of an asset bubble in housing, the primary (or only) asset on the balance sheets of most middle and working class households, and therefore producing a much wider impact on the economy than the collapse of the Tech Bubble in 2000, or the 1987 Stock Market Crash. This point is brought home in a June 2012 article in the *Federal Reserve Bulletin*, which reported the results of the Survey of Consumer Finances: 2007-2010. In their reporting on the survey results Bricker, et al, note that:

> The decreases in family income over the 2007−10 period were substantially smaller than the declines in both median and mean net worth…[20]

[19] Koo, Richard, *The World in Balance Sheet Recession: Causes, Cure, and Politics* (2011) REAL-WORLD ECONOMICS REVIEW (58)
[20] Bricker, Jesse, Arthur B. Kennickell, Kevin B.Moore, and John Sabelhaus, *Changes in U.S. Family Finances from 2007 to 2010: Evidence from the Survey of Consumer Finances* (June 2012) FEDERAL RESERVE BULLITEN (98): 2, p. 1.

> In addition, the role of housing as the major, or only, source of wealth on the Asset-side of a household's balance sheet was critical in determining the steepness in the decline in a family's Net Worth The decline in median net worth was especially large for families in groups where housing was a larger share of assets, such as families headed by someone 35 to 44 years old (median net worth fell 54.4 percent) and families in the West region (median net worth fell 55.3 percent)[21].

The different behavior of U.S. Households' Financial versus Real Estate Assets is striking as illustrated in Graph II-1.



SOURCE: FRBG-Flow-of-Funds, Table B100 and Author's calculations.

Graph II-1 plots two indices, one for Households' (HH) Real Financial Assets and one for HH's Real, Real Estate Assets. Each value is a ratio of that period's real or constant-dollar value (deflated by the price index for Personal Consumption Expenditures), with the Base Period, the peak of the previous cycle, which is equal to 100.00 [= (Base

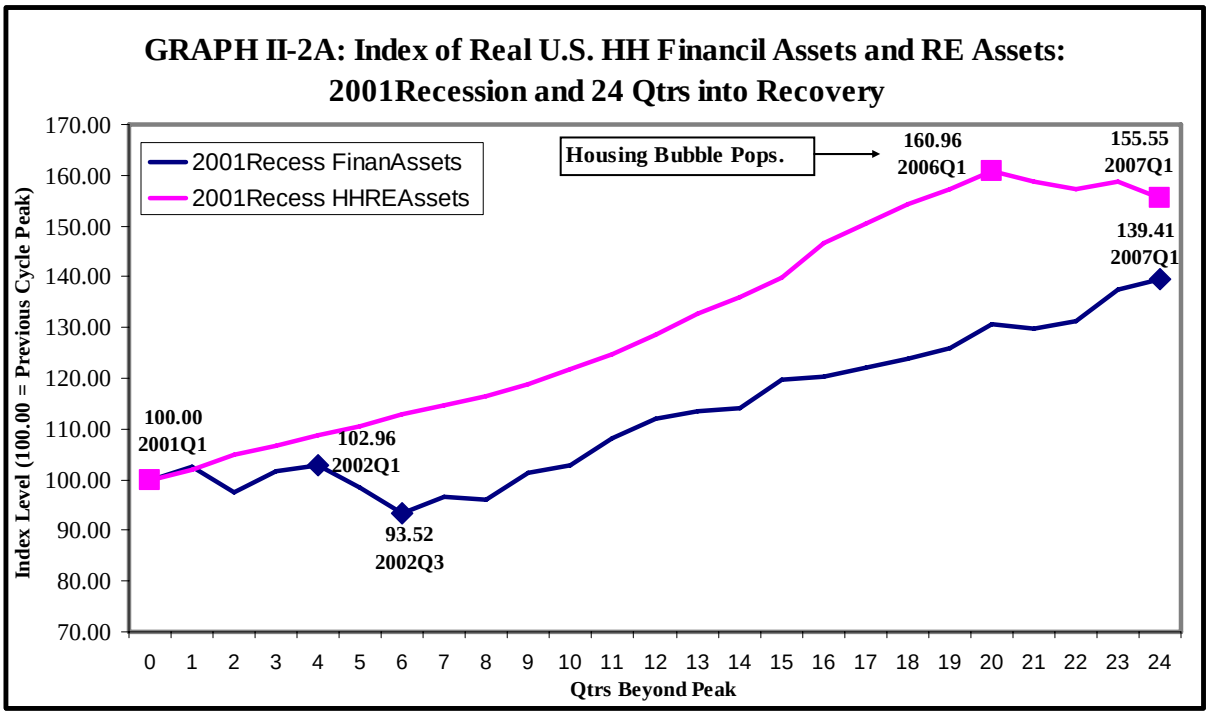
[21] ibid, p. 2.

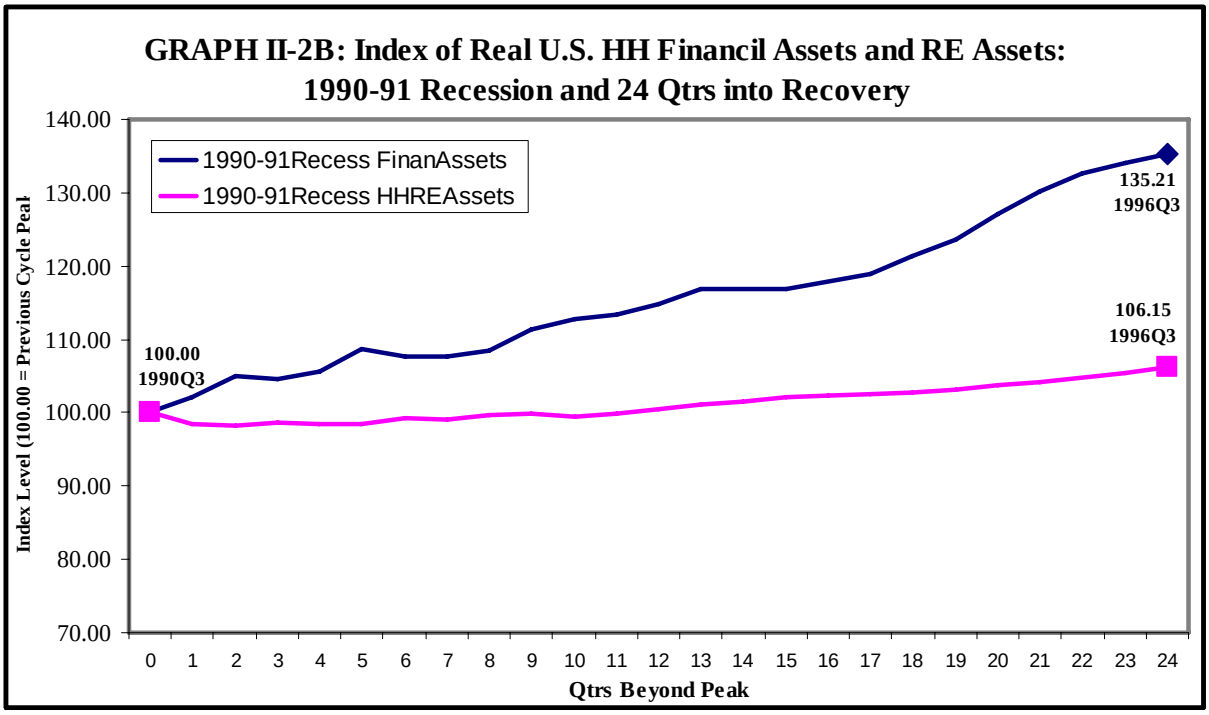
Period/Base Period) X 100]. Each series is tracked from the peak of the previous recovery/expansion to 24 Quarters from the previous peak.

With the on-set of recession, as officially declared by the National Bureau of Economic Research (NBER) in December 2007 (2007Q4), Financial Assets began to fall in value as markets responded to the slowing economy, and the financial panic in September 2008 (as well as the collapse of the Asset-Backed Commercial Paper market in August 2007), and the popping of the housing bubble, which began the deflation of HH Real, Real Estate values. After five quarters of recession, the stock market turned around in March 2009 (2009Q1), after HH's Real Financial Assets had declined in value by just under 16%. Save a couple set-backs, especially after the sideshow over the debt ceiling in the late summer of 2011, Financial Assets continued to gain in value and by 24 quarters after the previous peak, and 18 quarters after the NBER-declared Trough of the 2007-09 Recession, HH's Financial Assets had gained 34.74% in value, and stood at 113.29% of their 2007Q4 value, in real terms.

The story has been much different for HH's Real, Real Estate (RE) Asset-values over the last recession and current recovery. As is apparent on Graph II-1, the initial decline in HH's RE Assets, which bottomed at the same time as that of Financial Assets in 2009Q1, measured from 2007Q4 (the peak of the previous expansion), was 20.17%, which much steeper than that for Financial Assets (see above). After reaching a plateau, by 10 quarters from the previous peak (2010Q2), HH's RE Assets began to decline again. They reached a global bottom in 2011Q4, after declining by 27.78% from their cycle-peak value in 2007Q4. Though, between 2011Q4 and 2013Q4 HH's RE Assets recovered in value by 18.55% that still put the value of HH's RE at 85.62% of its 2007Q7 value, and still down by 14.38%. This behavior of HH's RE Assets of the current cycle is dramatically different than that of any other Post World War II business cycle. To see this, Graph II-2A and II-2B tracks these same two major asset classes over the two previous Post Cold War cycles, from the peak of the previous expansion to 24 quarters beyond the peak. During and after the 2001 Recession, HH's Real RE Assets actually increased in value over both, the recession and recovery phases of the cycle. Given the link between housing

wealth and consumption, as discussed in Section I, above, it is not surprising that over the 2001 Recession, Real Personal Consumption Expenditures (PCE) actually grew by 2.09% over the three quarters of recession, which translates into an annualized rate of 2.80%.



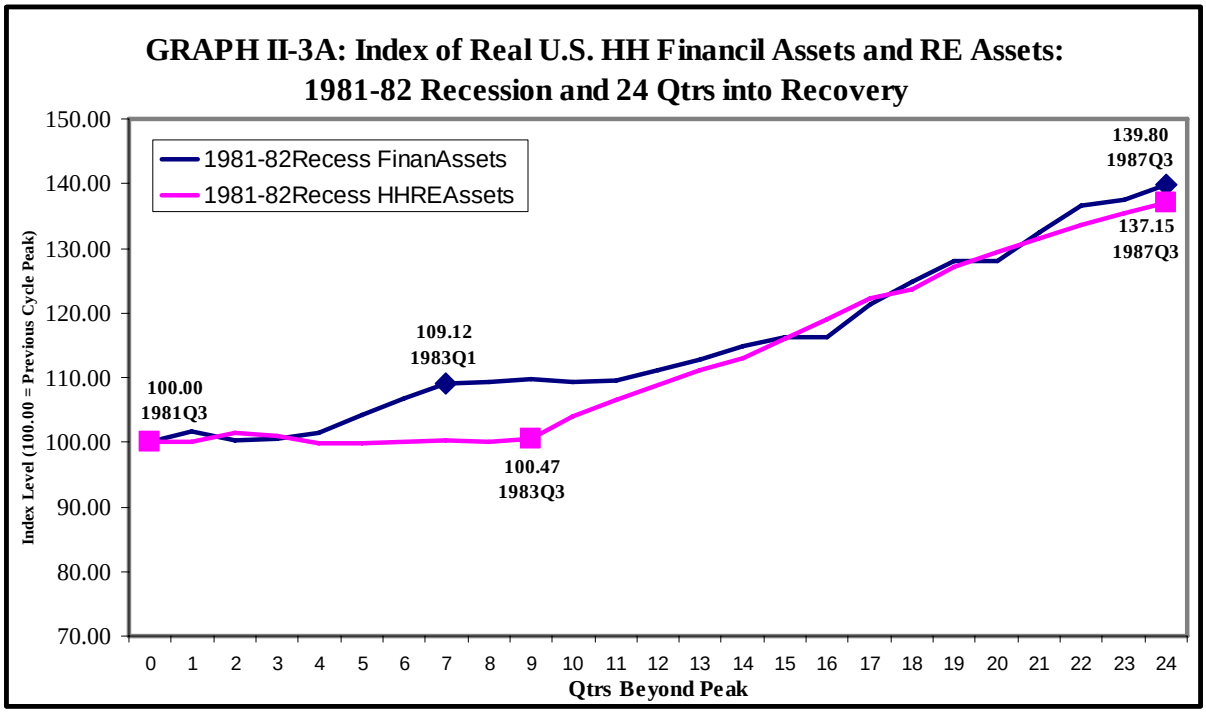


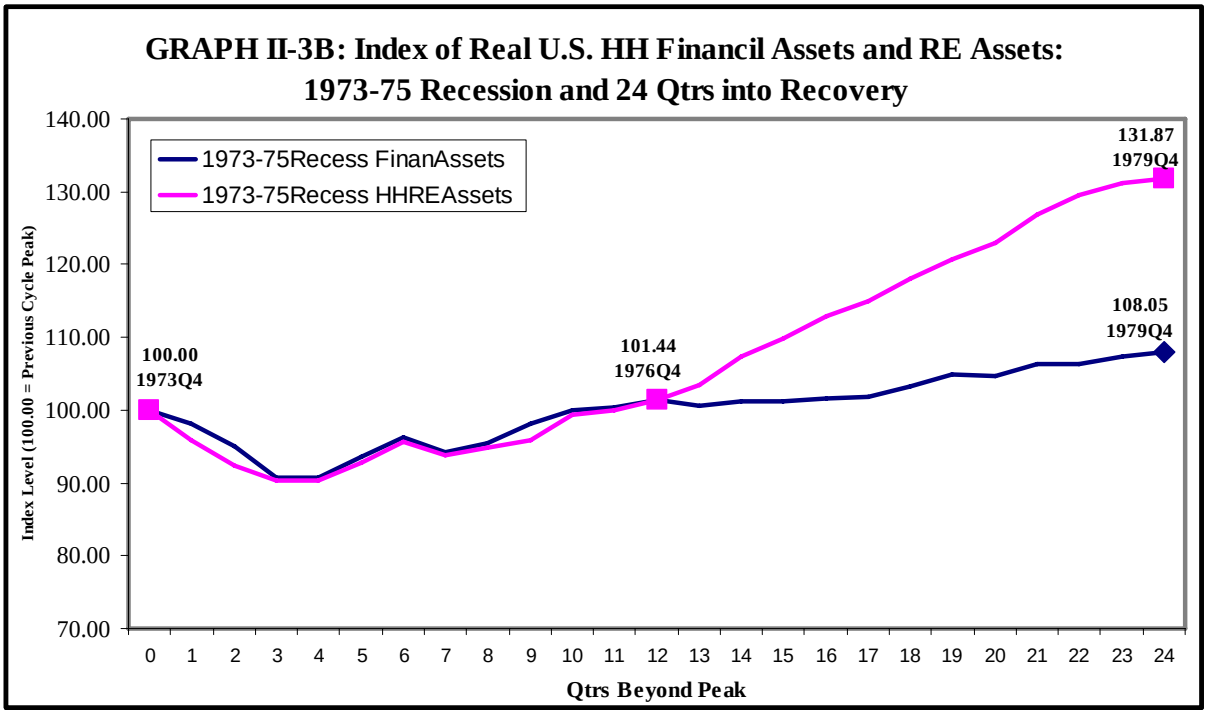
SOURCE: FRBG- Flow-of-Funds, Table B100 and Author's calculations.

Conversely, over the six quarters, of the 2007-09 Recession, Real PCE declined by 2.71%, or at an annualized, compounded rate of 1.81%.

The growth in Real PCE, even as the Tech Bubble popped and Real Financial Assets lost in value, and even after recovering, did not return to the late-90's pace of growth (See Graph II-2A), was clearly driven by the beginnings of the Housing Bubble. And, as noted in Graph II-2A, as the Housing Bubble popped, HH's Real Financial Assets peaked in 2006Q1, and began declining after that. From Graph II-2B, it is clear that HH's Real RE Asset-values remained flat from the peak of the previous expansion to 24 quarters from the peak. There had been regional real estate bubbles in New England, California, and some other regions, but there was no nationwide bubble. In addition, with the looting of the savings & loans in the 1980's following their wholesale deregulation, there was a sectoral financial panic, brought on by the collapse of the savings & loans sector, but not a systemic crisis, as other sectors of the financial system were not seriously damaged. Consequently, nationally, HH's Real RE values remained flat throughout the first half of the 90's expansion, but they did not decline. By 1996Q1, 24 quarters beyond the peak of the 1980's Expansion in 1990Q3, HH's Real Financial Assets had increased in value by 35.21%, but HH's Real RE Assets had only increased in value by 6.15%.

Graph II-3A and II-3B track the behavior of HH's Real Financial and RE Assets over recession and recovery phases of the cycles with the two other steep recessions occurring after World War II. Graph II-3A tracks the two assets' behavior over the 1981-82 Recession and recovery phase. Note that both Real Financial and RE Assets both grew together, especially after 1984Q3, 11 quarters from the previous peak. It was the 1980's recovery/expansion in which the savings & loans were deregulated, and that saw the development of regional real estate bubbles, as noted above. Graph II-3B illustrates how inflation affects different asset-classes differently. From the peak of the previous expansion, 1973Q4, to 24 quarters out from the peak (1979Q4), the value of HH's Real Financial Assets increased by 8.05%, while HH's Real RE Assets increased by 31.87%. During periods of high inflation, financial assets are hurt more than real assets. Since upper-income HH's are likely to own financial assets, they were affected the most.



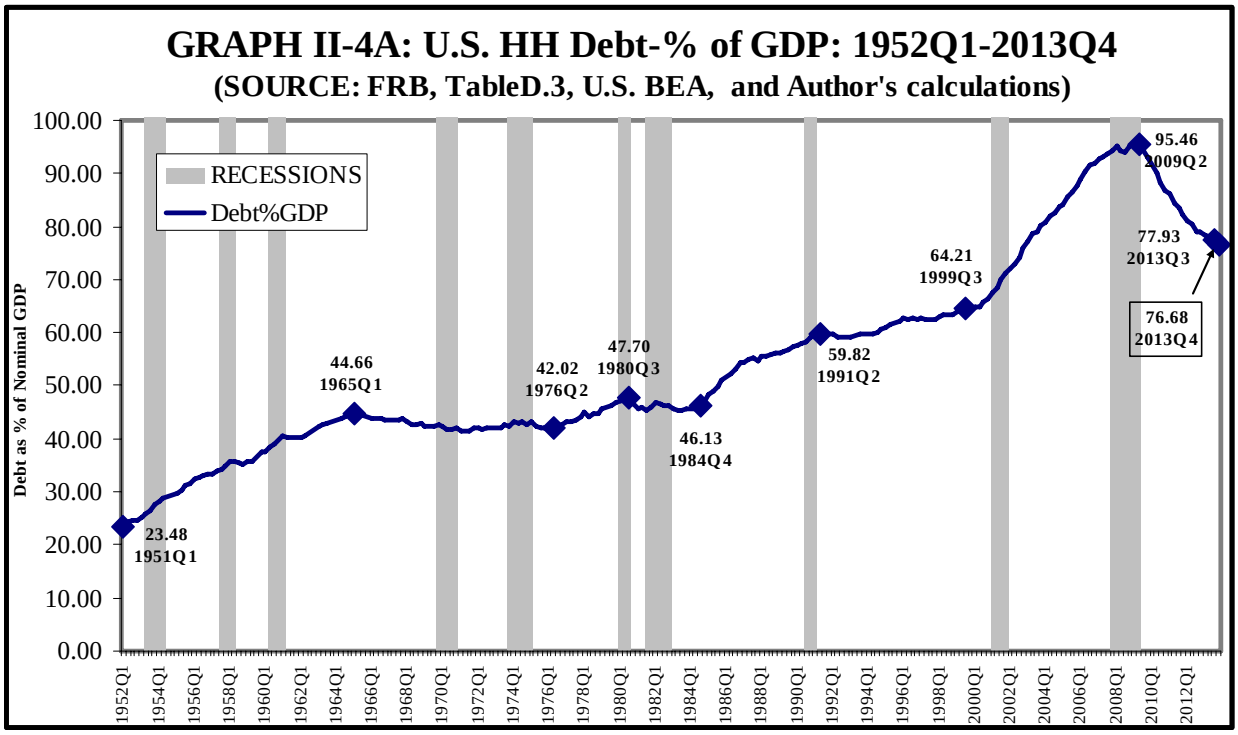


SOURCE: FRBG-Flow-of-Funs, Table B100 and Author's calculations.

B. LIABILITIES-SIDE OF HOUSEHOLDS' BALANCE SHEETS

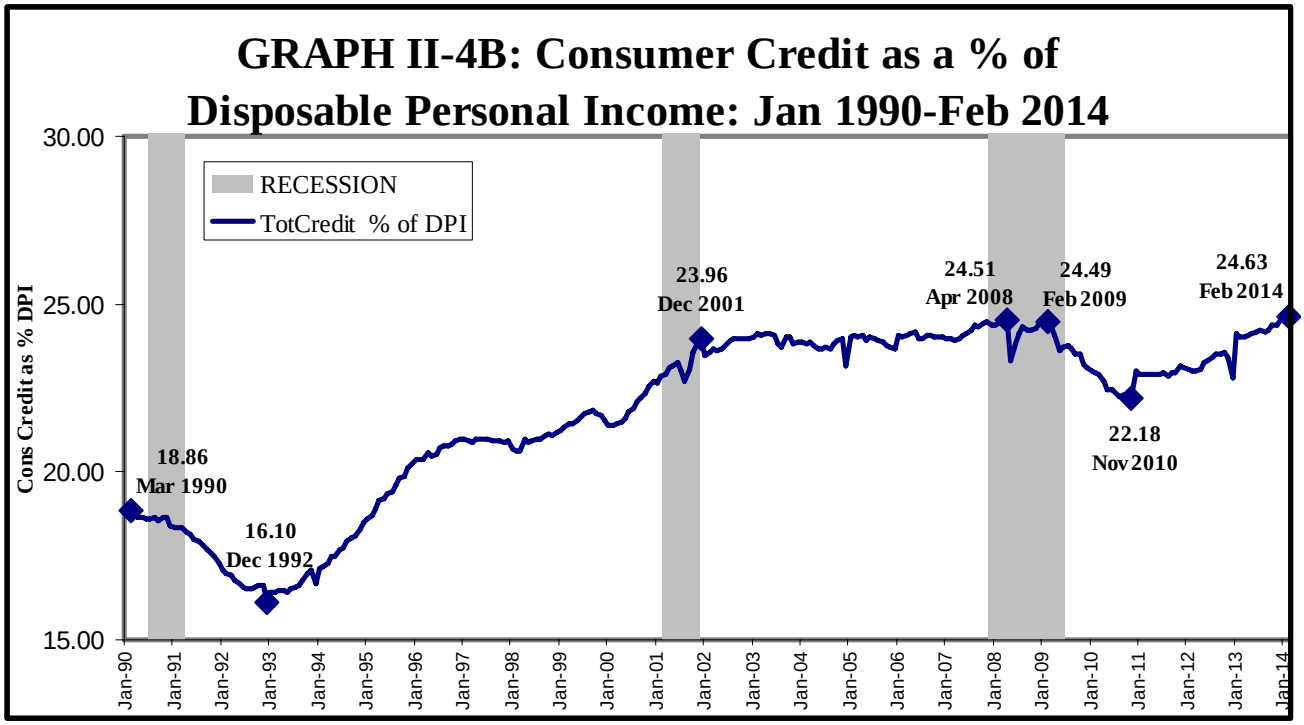
Turning to the Liabilities side of U.S. Households' (HH's) Balance Sheets, the effect on HH's Net Worth is not only due to the *Wealth Effect*, which is driven by what happens to the value of assets on HH's Balances Sheets, and discussed above, but also by what levels of debt are being carried on the Liabilities-side of the Balance Sheet, which drives the *Deleveraging Process*.

Because of the inflated value of housing during the housing bubble, households believed they could carry higher levels of debt than was revealed after housing values began to fall. With the popping of the bubble, leverage ratios suddenly became untenable. This unsustainable debt burden is more easily seen if instead of comparing debt to the asset-side of the balance sheet (the *stock* perspective), it is compared to indicators from the income/output, or *flow* perspective. Graph II-4A tracks U.S. Household debt as a percent of U.S. GDP over the Post World War II Era, 1952Q1 to 2013Q4.



What is striking in Graph II-4A is the dramatic acceleration in the accumulation of U.S. HH Debt, as a percent of GDP, after 1999Q3. It was already by then a record 64.21% of GDP, but by 2009Q2, it reached 95.46% of GDP. Though it had fallen to 76.68% of GDP by 2013Q4, this was still at a historically high level.

Graph II-4B tracks, specifically, Consumer Credit as a percent of another flow concept Disposable Personal Income (DPI). Graph II-4B tracks Consumer Credit, as a percent of DPI, from January 1990 to February 2014.

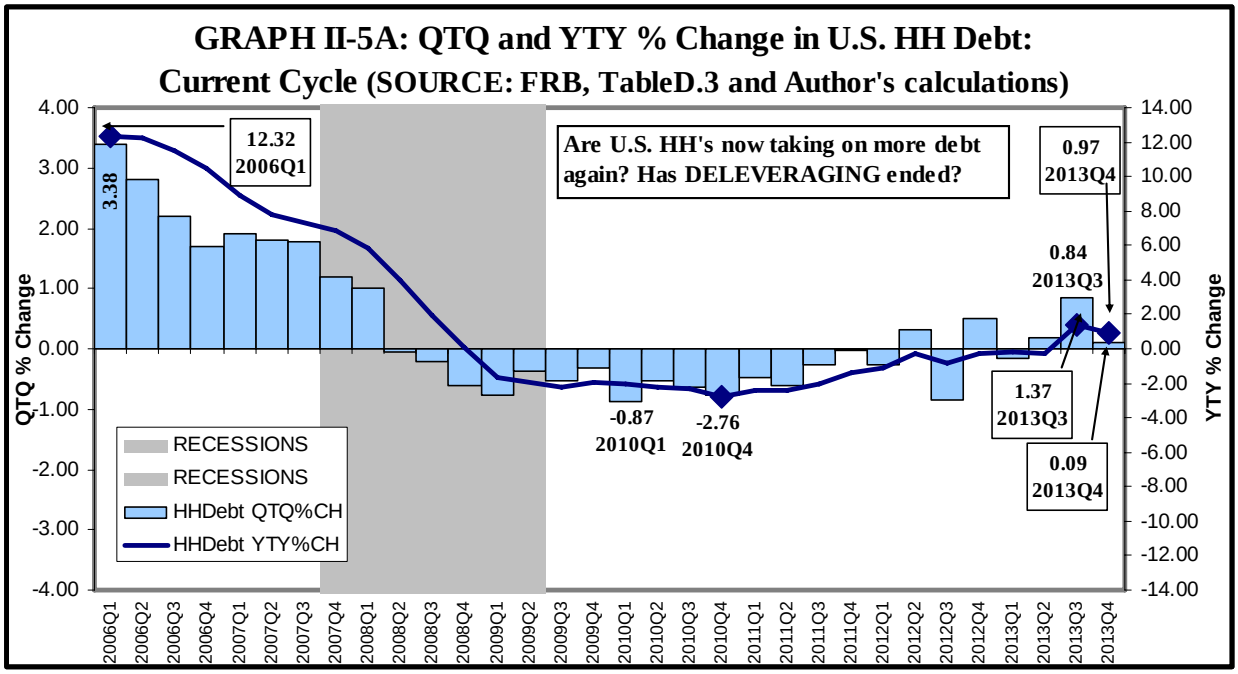


SOURCE: FRB-Consumer Credit, Series G.19 and Author's calculations.

As can be observed in Graph II-4B, after the 1990-91 Recession, Consumer Credit, as a percent of DPI, declined, but began increasing again after December 1992. It approached 23% by the end of the 2001 Recession in December 2001. It actually grew slowly after that until April 2008, five months before the financial panic, when it surpassed 24%. It began to fall after February 2009, until November 2010 when it bottomed-out at just over 22%. Since then, it has been increasing again, and by February 2014, Consumer Credit was again over 24% of DPI.

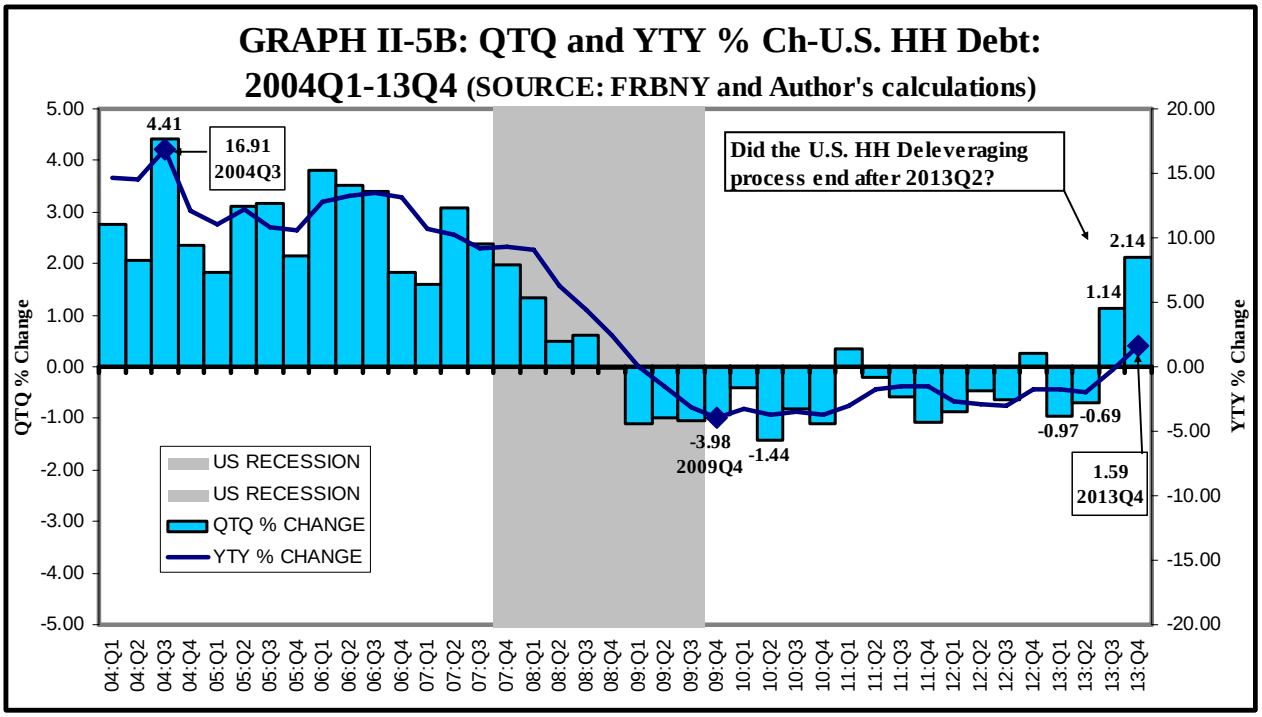
C. DID DELEVERAGING END IN 2013?

The patterns observed in Graph II-4A and II-4B raises the question: Did HH's deleveraging end in the middle of 2013? Are U.S. HH's now *re-leveraging*? Graph II-4A shows a steady decline in total U.S. HH Debt, as a percent of GDP, from 2009Q2 to 2014Q4. However, Graph II-4B shows a steady increase in Consumer Credit, as a percent of DPI, from November 2010 through February 2014. In order to get a clearer picture of the trends in U.S. HH Debt and Credit, Graph II-5A looks at the Quarter-to-Quarter (QTQ) and Year-to-Year (YTY) percent-change in U.S. HH Debt from 2006Q1, the peak of the housing bubble, to 2013Q4, based on data from the Federal Reserve Board (Table D.3). Graph II-5B tracks the QTQ and YTY percent-change in total U.S. HH Debt from 2004Q1 to 2013Q4, based on data from the Federal Reserve Bank of New York's Quarterly Report on Household Debt and Credit.

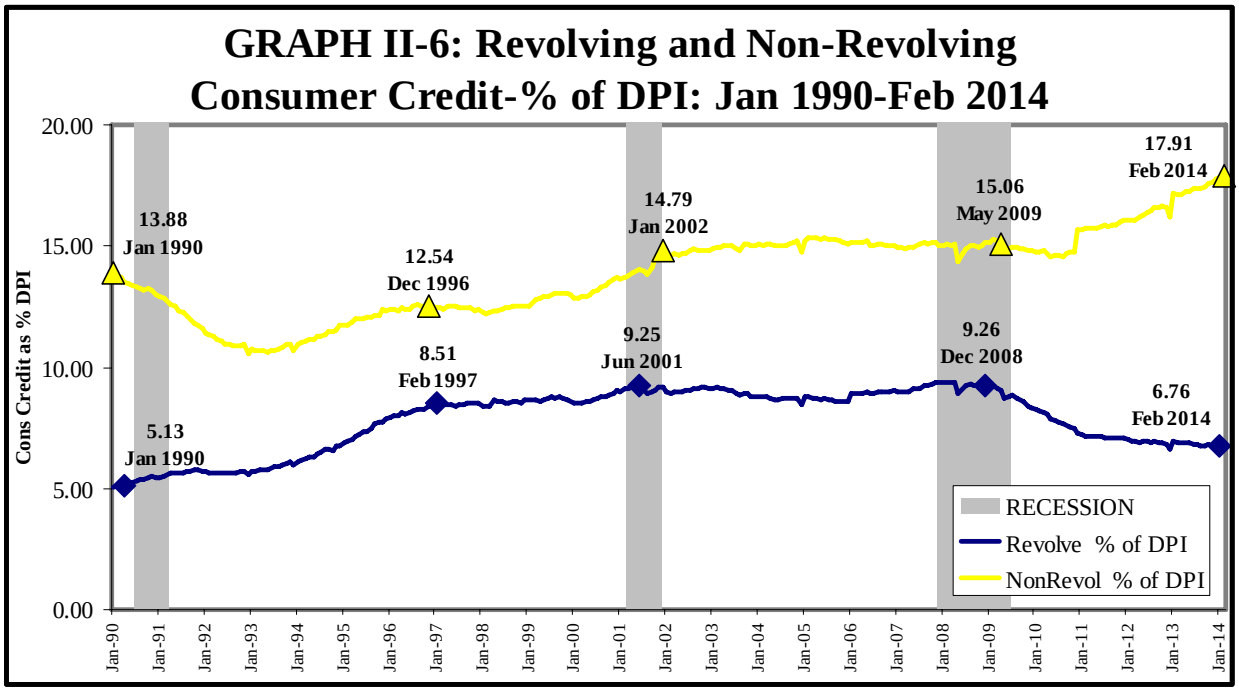


From Graph II-5A, the QTQ percent change in U.S. HH Debt was consistently negative from 2008Q2 until 2012Q1. The QTQ percent-change then followed an up-and-down pattern until the second quarter of 2013. For the first time since the crisis/recession, U.S. HH Debt grew for three consecutive quarters from the second to fourth quarters of 2013. After a jump of +0.84%, on a QTQ basis (3.40% on an annualized basis), in 2013Q3, the

2013Q4 growth-rate was positive, but flat, with an anemic increase of 0.09% (0.36% on an annualized basis). Nevertheless, U.S. HH's seemed to re-leverage over the last three quarters of 2013. Another perspective on deleveraging (or, re-leveraging), is presented in Graph II-5B.



From Graph II-5B, the New York Fed's Quarterly Report on Consumer Debt and Credit data follows a similar pattern to the data from the Federal Reserve Board's U.S. HH Debt from Table D.3. There are however, a couple of differences. In the New York Fed's data, HH's do not stop accumulating debt until 2008Q4, three quarters after the end of leveraging in the Graph II-5A data. Also, there were two positive-growth quarters (on a QTQ basis), based on the New York Fed data: 2011Q1 and 2012Q4. And, the New York Fed data in Graph II-5B shows relatively steep QTQ declines in U.S. HH Debt over the first half of 2013: -0.97% (-3.82% on an annualized basis) in 2013Q1, and -0.69% (-2.73% on an annualized basis) in 2013Q2. Then, re-leveraging begins with a vengeance over the last half of 2013, with strong QTQ growth-rates in U.S. HH Debt: +1.14, which translates into a +4.64% annualized rate, in 2013Q3, and +2.14%, or an +8.84% growth-rate on an annualized basis, in 2013Q4. What seems to be driving this re-leveraging?

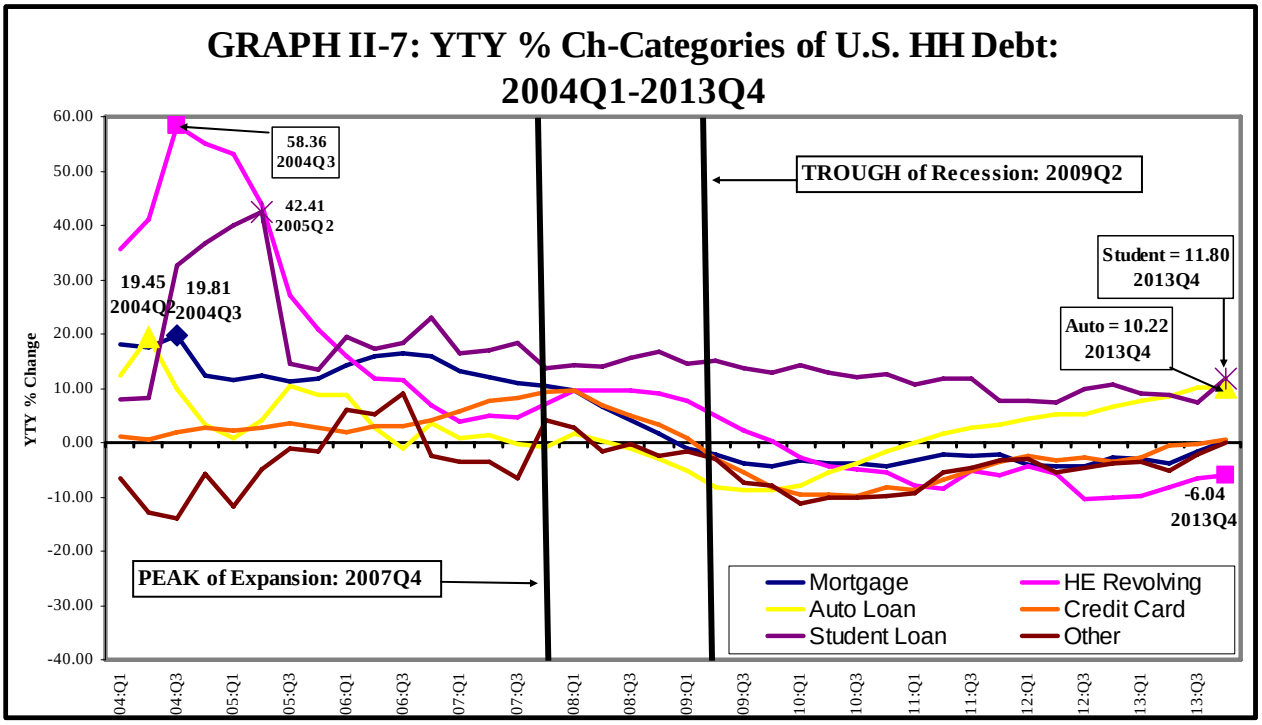


SOURCE: FRB-Consumer Credit, Series G.19 and Author's calculations

Graph II-6 tracks Revolving and Non-Revolving Consumer Credit as a percent of DPI from January 1990 to February 2014. *Revolving Consumer Credit* is a line of available credit that is usually designed to be used repeatedly, with a preapproved credit limit. Common types of revolving credit include credit cards and home-equity lines of credit[22]. *Non-Revolving Consumer Credit* is a type of an installment loan, which is given in a lump sum for a specific purchase or investment. The loan is paid back with regularly scheduled payments. Non-Revolving credit includes home loans, car loans, student loans, and business loans[23].

What is of note in Graph II-6 is that since the recession, Non-Revolving Credit has grown from 15.06% of DPI in May 2009 to 17.91% by February 2014. Over the same period, Revolving Credit has fallen from 9.26% of DPI in December 2008 to 6.76% by February 2014. What is driving the increase in Non-Revolving Credit?

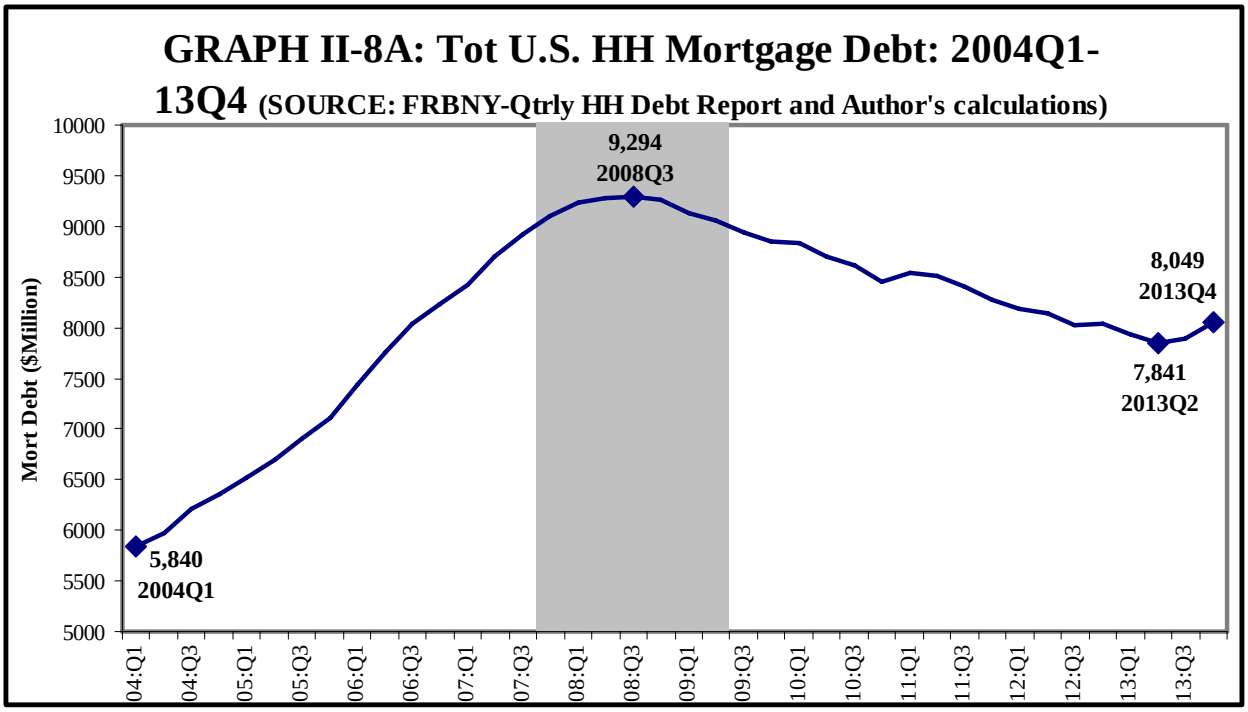
[22] Economic Snapshot, *Consumer Credit*, econlowdown,: Federal Reserve Bank of St. Louis < http://www.stlouisfed.org/publications/itv/articles/?id=2030 > Accessed on June 5, 2014.
[23] ibid.

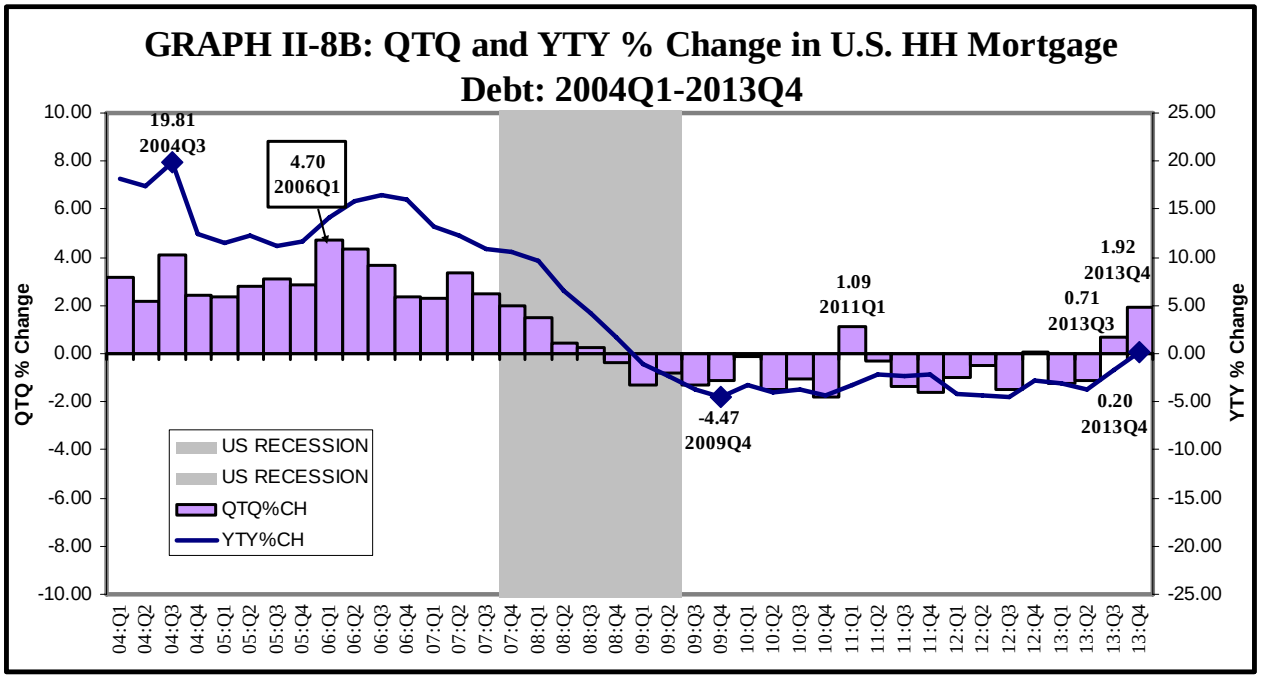


SOURCE: FRBNY-Report on Household Credit and Debt and Author's calculations.

To see what is driving the increase in consumer debt, as a percent of DPI, Graph II-7 looks at the YTY Percent-change in the major categories of consumer credit from 2003Q1 to 2013Q4. The major categories of Non-Revolving Credit are Mortgages, Auto Loans, and Student Loans. The major categories of Revolving Credit are Home Equity (HE) Revolving Credit, Credit Cards, and Other. A line at, or below the horizontal axis indicates flat growth, or a decline, in the YTY growth-rate of the given consumer-credit category. When the line is above the horizontal axis, it represents a YTY percent-increase in the given category of consumer credit. Two categories with positive YTY growth are Student Loans and Auto Loans. Student Loans have had positive YTY growth in t every quarter from 2003Q1 to 2013Q4. The YTY, quarterly growth-rate in Auto Loans turned positive after 2011Q1. And, in 2014Q1, the average auto-loan term was 66 months, the highest level since Experian started tracking it in 2006. Further, 25% of all first-quarter new-vehicle loans were extended out to 73-84 months, a 27.6% YTY growth-rate[24].

[24] McWhinnie, Eric, *Are Americans filling up on too much debt?*(June 8, 2014) USA TODAY < http://www.usatoday.com/story/money/personalfinance/2014/06/08/wscs-are-americans-filling-up-on-too-much-debt/10166869/ > Accessed on June 9,2014.





SOURCE: FRBNY-Report on Household Credit and Debt and Author's calculation

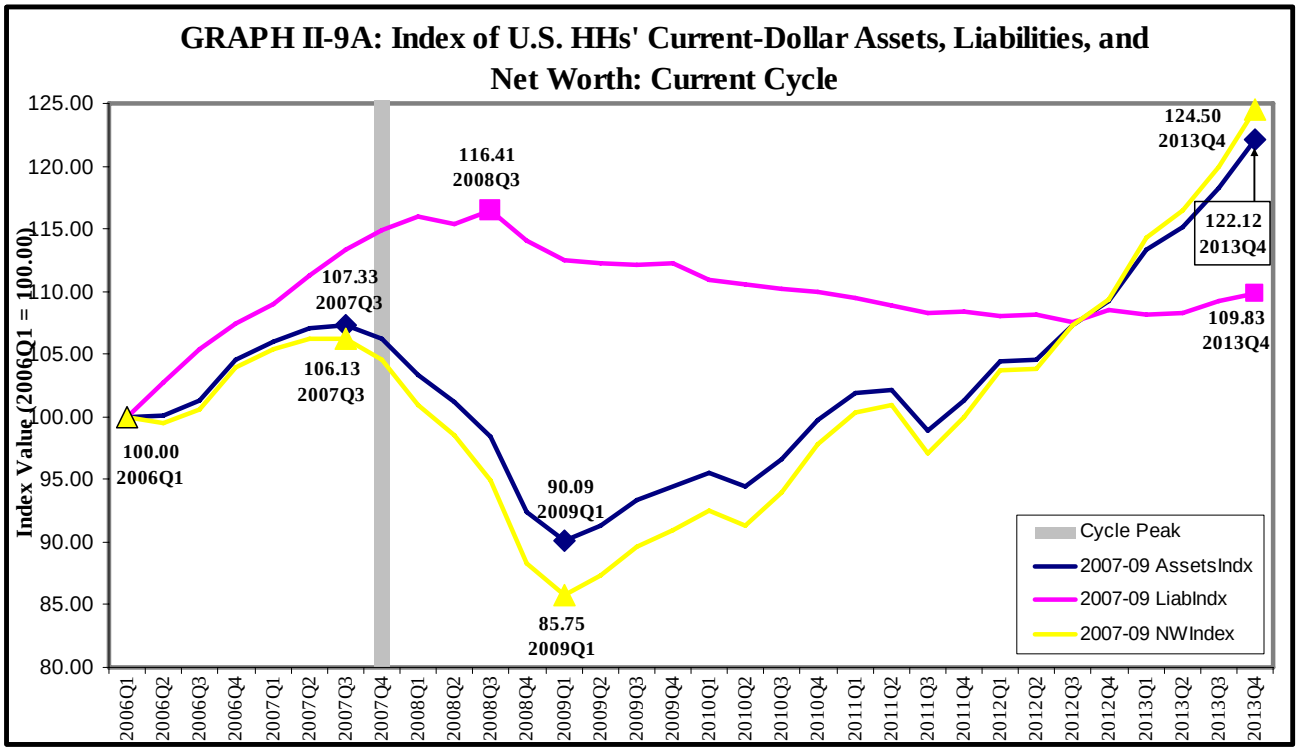
Though the YTY growth-rate in Mortgages was flat in 2013Q4, growing by 0.20%, after YTY declines in the first three quarters, the QTQ growth-rate was positive, and accelerating over the last two quarters of 2013. This can be clearly observed in Graph II-8A and II-8B.

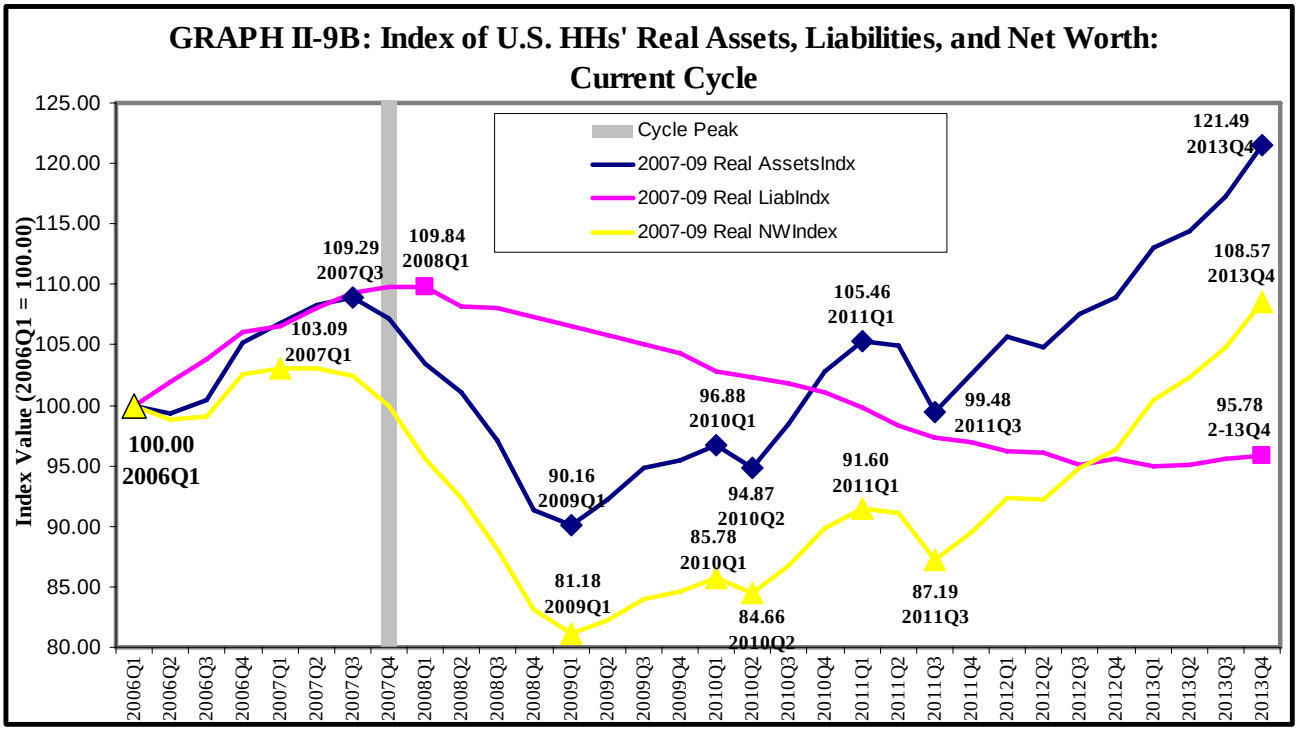
In spite of many housing indicators decelerating, or even declining after mid-2013 (see Section III below), households' reducing their Mortgage Debt seemed to reverse, and even accelerate in growth after 2013Q2. From Graph II-8A, after peaking at $9.3 trillion in 2008Q3, U.S. HH's Mortgage Debt declined to $7.8 trillion by 2013Q2. But, by 2013Q4, Mortgage Debt had reversed its five-year decline and increased to $8.1 trillion, a 2.65% increase, which annualized, is a 5.38% growth-rate. Looking at the QTQ growth-rate in Graph II-8B, after declining by 1.15% in 2013Q2, Mortgage Debt then grew by 0.71% in 2013Q3, and then accelerated to 1.92% (an annualized rate of 7.90%), in 2013Q4.

D. CURRENT STATE OF U.S. HOUSEHOLDS' NET WORTH

Graph II-9A and II-9B look at the "bottom-line" consequences of the state of U.S. Households' Asset-side of their balance sheets, and the Liabilities side, both discussed above. Graph II-9A tracks the index of the level of the current-dollar value of Assets, Liabilities, and Net Worth of the aggregate U.S. Household Sector from 2006Q1 (the Base Period when the index value = 100.00) and 2013Q4. Note how the index for Assets closely tracks the index for Net Worth over the range of data. Current-Dollar or Nominal Asset values fell by 16.06% between 2007Q3 and 2009Q1, and then recovered by 35.55% by 2013Q4. Liabilities fell by 6.98% between 2008Q3 and 2013Q2. Then, as noted in the discussion on deleveraging above, Liabilities began to increase over the last half of 2013, and by 2013Q4, they were up by 1.43%.

As noted above, Net Worth closely tracks the path of Assets, and like Assets, Net Worth peaked in 2008Q3, and then declined by 19.20% by 2009Q1, as did Assets. By 2013Q4, Net Worth had recovered by 45.19%. But, things do look a little different when the components of the balance sheet are adjusted for inflation.





SOURCE: FRB-Flow-of-Funds, Table B100 and Author's calculations.

When deflating the balance-sheet components by the Price Index for Personal Consumption Expenditures (PCE), the ups-and-downs in the recovery of Asset values and Net Worth become more pronounced. HH's Real Assets declined by 17.50% between 2007Q3 and 2009Q1. However, between 2009 and 2011, the recovery in Real Assets' value was a bumpy ride. After a peak and decline over the first half of 2010, Real Assets values then resumed their increase until 2011Q1. With the beginning of divided government and the clown-show over the debt ceiling, after increasing by almost 17% between 2009Q1 and 2011Q1, Real HH's Assets value then fell 5.67% by the third quarter of 2011. After recovering, Real Asset values have steadily increased growing by 22.13% between 2011Q3 and 2013Q4. Since the global bottom in 2009Q1, Real Assets have recovered by 34.75%, as of 2013Q4.

The value of U.S. HH's Real Liabilities peaked in 2008Q1, and by 2013Q4, Real Liabilities had declined, albeit slowly, by 12.80%. Just as for Nominal Assets and Net Worth, the value of Real Assets and Net Worth also closely track each other. U.S. HH's Real Net Worth peaked in 2007Q1, and then, like Nominal Net Worth, took the largest plunge in value in the Post World War II Era, falling by 21.25% by 2009Q1. And, like for Real Assets, Real Net Worth's recovery has been a bumpy ride. Real Net Worth recovered by, just under, 13% between 2009Q1 and 2011Q1. But, again like for Real Assets, Real Net Worth took a hit with the arrival of divided government and the sideshow over the debt ceiling. Real Net Worth fell 4.81% over the first three quarters of 2011. In similar fashion to Real Assets, after recovering, Real Net Worth has steadily increased growing by 24.52% between 2011Q3 and 2013Q4. Since the global bottom in 2009Q1, Real Assets have recovered by 33.74%, as of 2013Q4.

Of course, as pointed out in the discussion above, the distribution, and type of assets on HH's balance sheets matters in how this crisis has impacted their financial position. As noted in Graph II-1, above, while the real value of U.S. HH's Financial Assets were 13.29% higher in 2013Q4 than they were in 2007Q1, over that same period, the real value of U.S. HH's Real Estate Assets were still 14.38% below their 2007Q1 value. This is critical for understanding the severity of the recent recession and the weakness of the

current recovery. As cited above from Bricker, et al, in the Fed's Survey of Consumer Finances, "The decline in median net worth was especially large for families in groups where housing was a larger share of assets…". This link among housing, wealth, and the weak recovery is also emphasized in The Century Foundation's study on wealth and inequality in 2013:

> Not all households experienced this loss equally, however. While housing made up two-thirds of all middle class wealth in the mid-2000s, the wealthiest one percent had about 90 percent of their gross assets in stocks, securities, and other forms of business equity. Middle class families were therefore seven times as exposed to the housing bubble and collapse, while wealthier families were comparatively insulated[25].

While the Principal Residence accounted for two-thirds of the wealth of the middle three income quintiles in 2010, it accounted for only 9% of the wealth of the Top 1%[26]. Thus, there has been a large disparity in the collapse in Net Worth from the housing bust, with upper-tier households, whose wealth is mostly held in the form of Financial Assets, have done very well over this recovery as the market came roaring back in March 2009. And, according to a Pew Research Center study, every dollar and more of aggregate gains in household wealth between 2009 and 2011 went to the richest 7% of US. HH's .Aggregate Net Worth among this top group rose 28% during the first two years of the recovery, from $19.8 trillion to $25.4 trillion. The bottom 93%, meanwhile, saw their aggregate Net Worth fall 4% from $15.4 trillion to $14.8 trillion. As a result, wealth inequality increased substantially over the 2009–2011 period, with the wealthiest 7% of U.S. HH's increasing their aggregate share of the nation's overall wealth from 56% to 63%[27] And, as reported in the December 9, 2013 issue of *FANNIE MAE HOUSING INSIGHTS*, The very low share of below-median Net Worth HH's directly holding stocks or pooled investment funds suggests that the majority of HH's have not participated in the stock

[25] Landy, Benjamin, *A Tale of Two Recoveries: Wealth Inequality After the Great Recession* (August 28, 2013) THE CENTURY FOUNDATION, p.2.
[26] ibid, Figure 2, p. 2.
[27] The Pew Charitable Trusts, *Pursuing the American Dream: Economic Mobility Across Generations* (July 2012)

bull market that began in 2009 to the same degree as higher wealth HH's[28]. And, they further noted:

> While financial wealth, which has recovered relatively rapidly during the current cycle, is highly concentrated among wealthy households, housing wealth, which has lagged significantly in the current recovery, is much more broadly held among less wealthy households. Less than 3 percent of the lowest 25th percentile in net worth directly held stocks, but more than 20 percent of them owned a home. This suggests that less wealthy households, who have received little benefit from the rising stock market, have been disproportionately harmed by the sharp and prolonged downturn in the housing market and subsequent modest recovery[29].

Distribution of Debt Burden and Consumer Spending

It is not just the distribution of housing wealth that resulted in the impact of the collapse in housing values hitting the middle- and lower-income HH's, but also the distribution of the impacts of the accumulated debt burdens. As cited above, as the FANNIE MAE article pointed out, less than 3% of the lowest 25th percentile in Net Worth directly held stocks, but more than 20% of them owned a home. But, not only does this suggests that less wealthy HH's, who have received little benefit from the rising stock market, have been disproportionately harmed by the sharp and prolonged downturn in the housing market and subsequent weak recovery, but they were also the most impacted by the resultant debt hangover. Mian and Sufi, in their newly released book, *HOUSE OF DEBT* state that, with regard to debt, the rich were different in two important ways:

(1.) The richest 20% of homeowners had a Leverage Ratio (LR) of only 7%, compared to a LR of 80% for the poorest homeowners

(2.) And, as noted above, the Net Worth of the richest homeowners is overwhelmingly concentrated in non-housing assets. Conversely, poor households had $4 of equity for every $1 of other assets, while for the richest homeowners, it was exactly the opposite, for every $1 in home equity, they had $4 of other assets, particularly, Financial Assets (e.g., money-market funds, stocks, bonds, etc.)[30].

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[28] FANNIE MAE, *FANNIE MAE Housing Insights* (December 9, 2013) (3): 11, p.4.
[29] ibid, p.4.
[30] Mian, Atif and Amir Sufi, *HOUSE OF DEBT* (2014) University of Chicago Press: Chicago, Chapter 2, p. 20.

From the balance-sheet standpoint, the creditor's asset, the loan, is the borrower's liability, the debt. Therefore, it is going to be the upper-tier income persons (say the top 5%), who have a lower Marginal Propensity to Consume (MPC), and, therefore, a higher Marginal Propensity to Save (MPS), that loan their excess funds (i.e., their savings), to the remaining (say bottom 95%), who have a higher MPC and lower MPS. As a consequence, there is a link between debt and wealth inequality. And, as Mian and Sufi show graphically, the lowest quintile of Net Worth, of homeowners, have the highest LR, which progressively falls when moving from the poorest to the richest 20%[31]. Thus, middle-, but especially, lower-income and poor homeowners who were highly leveraged, and had little, or no, financial wealth were the most vulnerable to the collapse of housing values, which resulted in hits to both sides of their balance sheets, wiping out their Net Worth.

III. U.S. HOUSING MARKET: Is It the Weather?

The epicenter of the discussion in Section II, above, on the current state of U.S. Households' balance sheets is, of course, housing. Further, the direction that the current recovery takes, as we enter the second half 2014, is tied to where the housing market is going. Did it really turn around at the end of 2012, beginning of 2013, or was that a false start? Was the harsh 2013-14 Winter the principal, or only, reason the "housing recovery" paused, or is there more to it than just the weather?

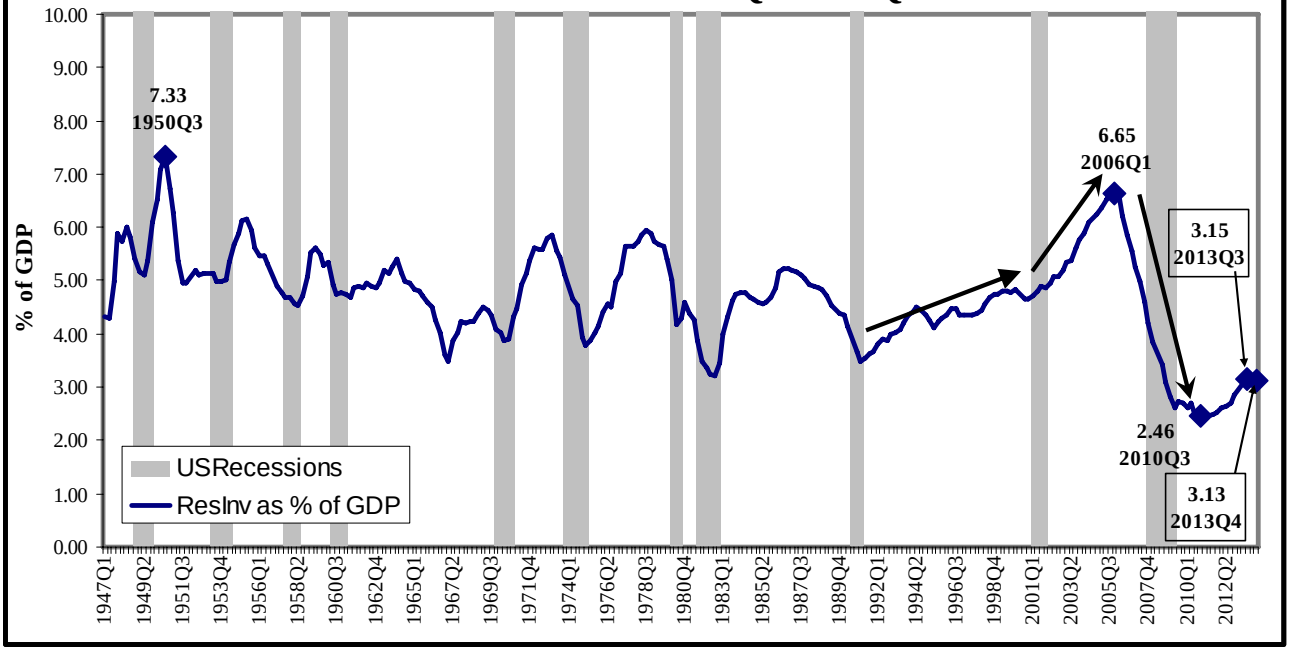
In particular, as discussed in Section I-INTRODUCTION, the persistent drag on the economy from the bursting of the housing bubble is the result of two effects: (1.) Negative Wealth Effects from the asset-side of households' balance sheets from the bursting of the housing bubble, and (2.) the Default and Deleveraging Process from the liabilities side of households' balance sheets from the accumulation of unsustainable debt-levels[32]. But, it is not just over this cycle that housing has played a critical role;

[31] ibid Figure 2.1, and p.21.
[32] Boshara, Ray and William Emmons, *AFTER THE FALL: Rebuilding Family Balance Sheets; Rebuilding the Economy* (May 2013), 1. INTRODUCTION, Center for Household Financial Stability: Federal Reserve

housing has always been an important driver of the business cycle. This was pointed out by Leamer in presenting his paper *Housing and the Business Cycle* at the Kansas City Fed's Jackson Hole Conference in 2007[33]. And, due to the bursting of the housing bubble, that driver has been absent, with a vengeance over this recovery. This is starkly illustrated in Graph III-1.

Graph III-1 tracks Residential Investment, as a percent of GDP, over the business cycle throughout the Post World War II Era. It reached its peak in 1950Q3, when it was 7.33% of GDP. But, this is also when there was a surge in household (HH) formation after World War II, and after the de-mobilization-driven 1948 Recession. It was also the year that the Korean War began. But, it was the beginning of a pattern in which housing activity would peak before going into recession, and then accelerate coming out.

GRAPH III-1: U.S. Residential Investment Spending as a Percent of GDP: 1947Q1-2014Q1



SOURCE: U.S. BEA and Author's calculations.

Bank of St. Louis < http://www.stlouisfed.org/publications/ar/2012/pages/ar12_2a.cfm > Accessed on April 1, 2014

[33] Leamer, Edward E., *Housing and the Business Cycle* (August 3, 2007) SYMPOSIUM-FRBKC: Jackson Hole, WY.

In fact, Shiller (2014) has identified Residential Investment as a leading indicator of recessions[34]. This pattern seemed to change somewhat coming out of the 1990-91 Recession. In addition to the end of the Cold War, which resulted in massive downsizing in defense-related industries, there had also been significant regional real estate bubbles that popped, along with the collapse of the Savings & Loans, and this had a depressing effect on real estate coming out of the 1990-91 Recession. Though the pervious pattern of the declines in Residential Investment, going into a recession, and accelerated growth coming out of a recession did, in fact, play out, it was a much more muted version of it. However, unlike other recoveries, the 90's Recovery had a slight, but consistently, upward trend in Residential Investment, as a percent of GDP. Then, coming out of the 2001 Recession, U.S. Residential Investment, between 2001Q1 and 2006Q1, took off for the longest and second steepest assent in the Post World War II Era. Except, unlike the peak in 1950Q3, the second-highest peak in 2006Q1, was not accompanied by strong growth in U.S. Household formation. In the two years when Residential Investment rose from its previous peak of 6.01% of GDP in 1948Q2, to its Post WW II peak of 7.33% in 1950Q3, the U.S. Headship-Rate grew at a compounded, annualized rate of 3.66% between 1948 and 1950[35]. Conversely, as Residential Investment, as a percent of GDP, rose from its pre-recession peak of 4.73% in 2000Q2 to 6.65%, in 2006Q1, U.S. Household formation over the 2001-06, five-year period, only grew at a 1.12% annualized rate[36]. A simple application of the *Rule of 72* puts the two growth-rates of U.S. HH's into perspective[37]. At the 1948-50 U.S. HH growth-rate of 3.66%, it would take 19.66 years for the number of U.S. HH's to double, at the 2001-06 1.12% annualized rate, it would take 64.47 years for the number of U.S. HH's to double. Yet, Residential Investment, as a percent of GDP, grew to its second-highest level in the Post World War II Era.

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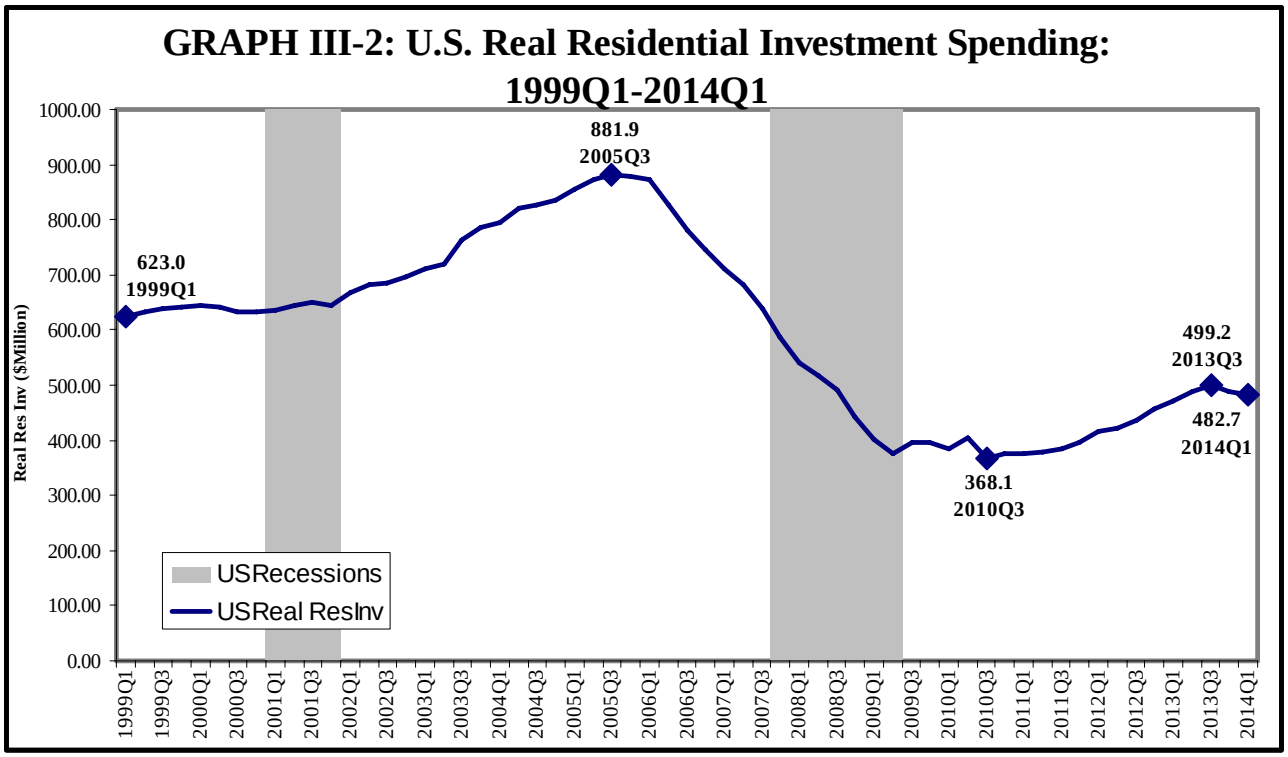
[34] Shiller, Robert, *Speculative Asset Pricing Stocks and Real Estate* (June 5, 2014) Presentation at the Connecticut Academy of Science and Engineering's 39th Awards Dinner, Crowne Plaza Hotel: Cromwell, CT., Slide 13- *U.S. Residential Investment 1948-I-2007-IV as Leading Indicator of Recessions.*
[35] Table HH-1. Households, by Type: 1940 to Present, U.S. Census and Author's calculations.
[36] ibid.
[37] The *Rule of 72* states that $1 invested at 10% would take 7.2 years ((72/10) = 7.2) to turn into $2. That is, it would take 7.2 years to double in value. (see *What is the 'Rule of 72'?* INVESTOPEDIA < http://www.investopedia.com/ask/answers/04/040104.asp > Accessed on June 12, 2014)

As a final note on Graph III-1, after bottoming out at 2.46% of GDP, in 2010Q3, its lowest level in the Post World War II Era, Residential Investment, as a percent of GDP, recovered modestly to 3.15% of GDP by 2013Q3. However, it appeared to level off in 2013Q4 (see Graph III-1). And, even this modest recovery still puts U.S. Residential Investment, as a percent of GDP, at some of its lowest levels of the entire Post World War II Era.

Graph III-2 focuses on the behavior of Real (constant-dollar) level of U.S. Residential Investment from 1999Q1 to 2014Q1. In 2005Q3, Real U.S. Residential Investment peaked at $881.9 billion before the popping of the housing bubble; it then fell to a low of $368.1 billion in 2010Q3, or 41.74% of its peak value in 2005Q3. Then, a modest, but upward, recovery trend began until Real Residential Investment recovered to $499.2 billion, or 56.61% of its 2005Q3 level, in 2013Q3. But, then it flattened, and even began to fall again over the next two quarters of available data, and by 2014Q1 it was at



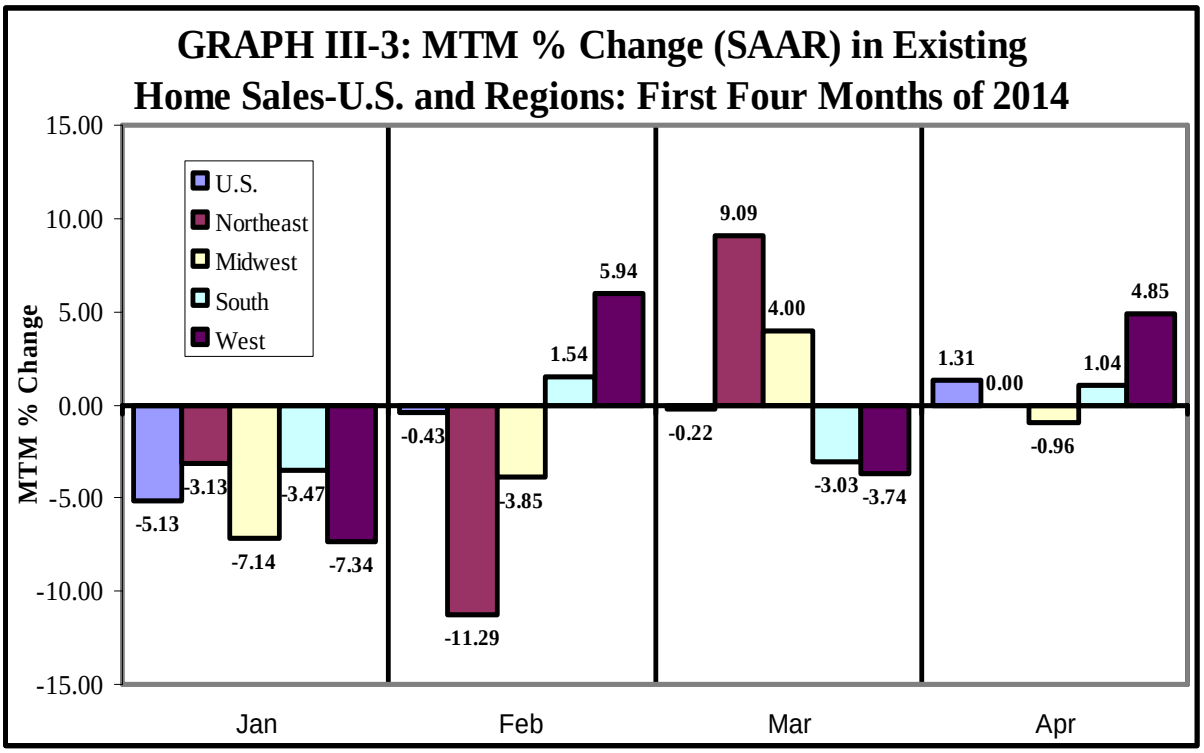
SOURCE: U.S. BEA and Author's calculations.

$482.7 billion, or 54.63%, of its 2005Q3 level by 2014Q1. Though many have contended that the weather is the sole culprit for the decline in housing activity, the data suggest a different story. The decline in Residential Investment coincided with the deceleration, or even outright decline, in other housing indicators as well. This deceleration, or decline, in housing data began in the summer of 2013, long before the on-set of the long, harsh winter of 2013-14.

The growth in New Home Sales began decelerating after 2013Q2[38] and the growth in Existing Home Sales decelerated after 2013Q3[39]. And, the Pending Home Sales Index (PHSI) began to outright decline after June 2013, although in March 2014, it increased by 3.73% for the first time in eight months, it was still down by 7.85%, from March 2013[40]. It is clear that the deceleration in growth of these critical housing indicators, and for some, even outright decline, all began before the on-set of the harsh winter. So, just what is going on in the housing sector? Is the "recovery" over, or was it an illusion to begin with?

To explore the answer to this question, Graph III-3 presents the Month-to-Month (MTM) percent-change in Existing Home Sales for the U.S. and regions over the first four months of 2014. In January 2014, Existing Home Sales, in the U.S. and the four regions were all down compared to December 2013, on a MTM basis. However, the decline in the Northeast Region (-3.13%) was not as steep as it was nationally (-5.13%). The steepest declines were in the Midwest (-7.14%) and the West (-7.34%).

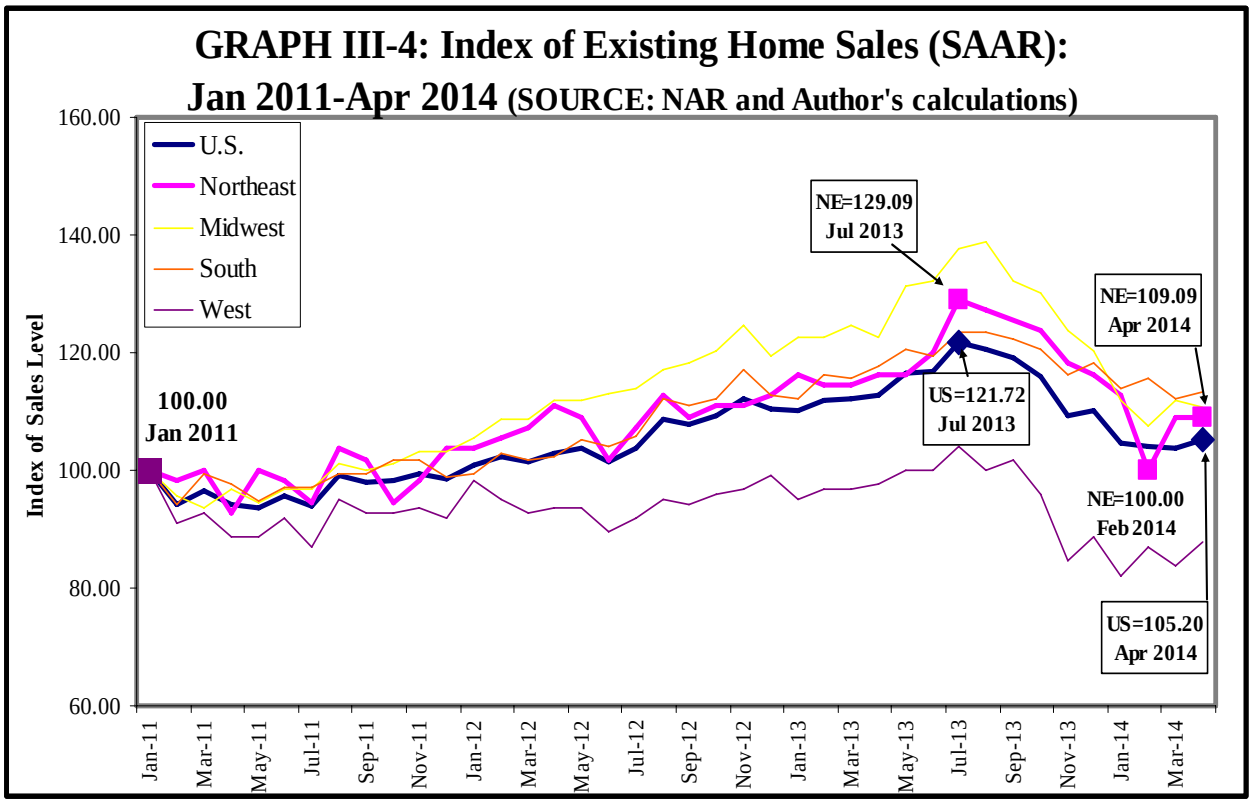
[38] Table Q1. New Houses Sold by Sales Price: United States, U.S. Census < http://www.census.gov/construction/nrs/ > Accessed on May 8, 2014.
[39] Existing Home Sales by Region , National Association of Realtors (April 22, 2014) < http://www.realtor.org/topics/existing-home-sales/data > Accessed on May 8, 2014.
[40] U.S. Pending Home Sales Index Up in March (April 28, 2014) National Association of Realtors < http://www.realtor.org/topics/pending-home-sales/data > Accessed on May 8,2014.



SOURCE: NAR and Author's calculations.

In February, the MTM percent-change in U.S. Existing Home Sales was essentially flat (-0.43%), but Existing Home Sales declined steeply in the Northeast (-11.29%). However, while U.S. Existing Home Sales had another slight decline in March sales in the Northeast surged by 9.09%. For the first time in 2014, U.S. Existing Home Sales grew by 1.31% in April, while after strong growth, in March, sales in the Northeast had no growth in April. Meanwhile, the other regions have had up-and-down growth in sales from February through April. So, is it just the weather? Did Existing Homes Sales suffer a temporary set-back due to the long and harsh Winter of 2013-14?

To explore the answer to that question, Graph III-4 tracks an index of Existing Home Sales, for the U.S. and regions, from January 2011 to April 2014 (the most recent period of data at the time of writing). Each index value is the ratio of Existing Sales in the given period to the base period, which is January 2011 (where the index = 100.00). The track of the U.S. and Northeast indices is highlighted by thicker lines in Graph III-4.



Note the peak of the index-value for the U.S. and the Northeast (as well as for the other regions). The U.S. Index value peaked at 121.72 in July 2013. From then on, the index-value for the U.S. began to decline, implying decelerating growth in Existing Home Sales. The same pattern holds for the Northeast Region, after peaking at 129.89 in July 2013, the Existing Home-Sales Index then began to decline, again indicating decelerating growth in Existing Home Sales. There is, in fact, a steep dip in the Northeast in February, no doubt, weather induced, but that is within the context of an overall deceleration since the Summer of 2013. The other regions follow a similar pattern. As is apparent from Graph III-4, the decelerating growth in sales began long before the harsh winter set in. There were no snow storms in July.

Another perspective on where the housing market might be going is presented in Graph III-5A and III-5B. Graph III-5A shows the Pending Home-Sales Index (PHSI) level (line, and right-hand vertical scale), and the Month-to-Month (MTM) percent-change in the PHSI (bars, left-hand vertical scale), from January 2011 to April 2014 (the latest

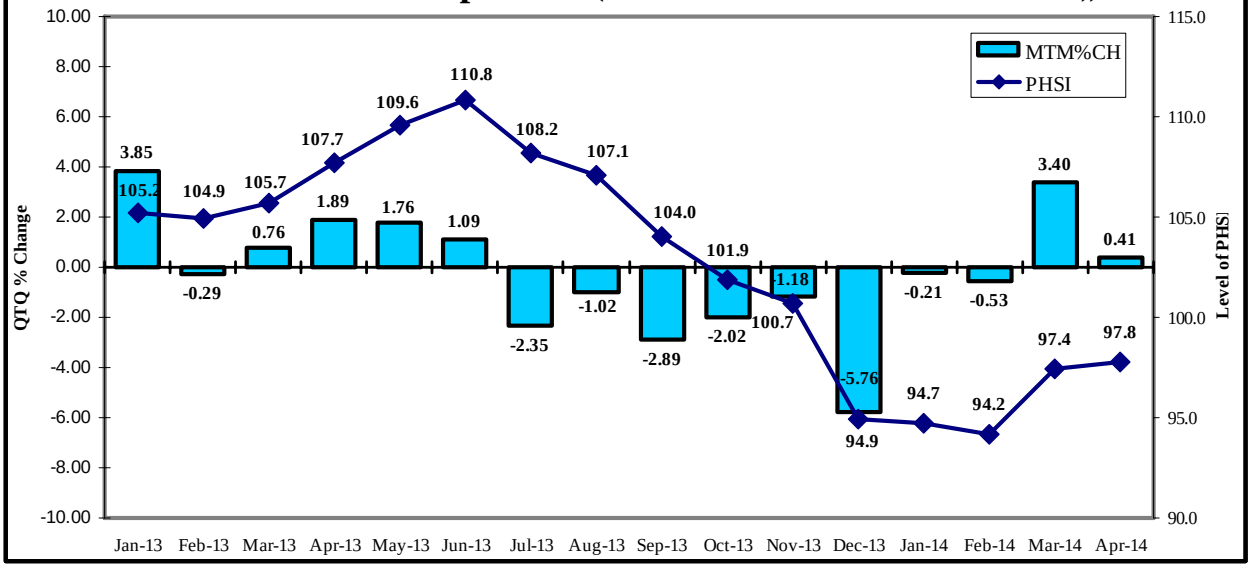
available data at the time of writing). The PHSI is a leading indicator of future existing home sales as it typically takes four to six weeks to close a sale after a contract has been signed[41].

As can be seen on Graph III-5A, the PSHI began declining after June 2013, long before the snow started flying in December. And though pending home sales came roaring back in March 2014, with a MTM growth-rate of 3.40%, April's growth-rate was an anemic 0.41%. Graph II-5B tracks the MTM percent-change (bars, left vertical scale) and the YTY percent-change (line, right vertical scale), over the first four months of 2014. After MTM declines in January and February, as noted above, after strong MTM growth in March, the MTM growth-rate was anemic in April. And, on a YTY basis, pending homes sales declined over the first four months of 2014.

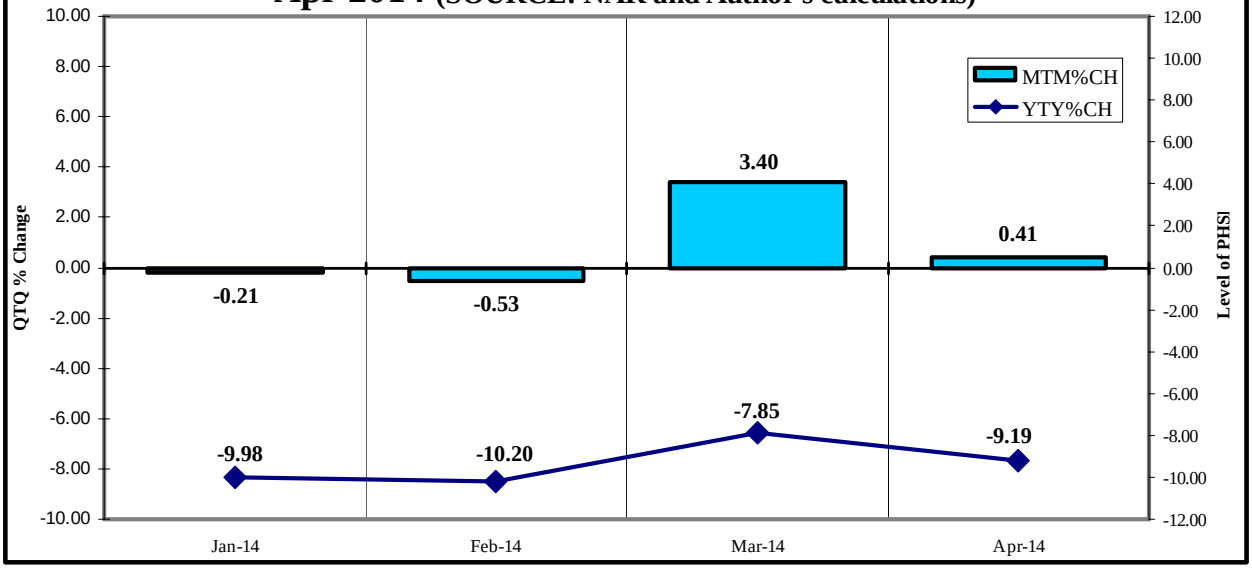
To get another perspective on where the housing market might be going, Graph III-6 compares an index of New Home Sales to that of Existing Home Sales, where each index is equal to 100.00 at the January 2011 observation. As He's (2003) research showed, the New Housing and Existing Housing markets are basically two different markets[42].

[41] Pending Home Sales Index – PHSI, INVESTOPEDIA < http://www.investopedia.com/terms/p/pending-home-sales-index.asp > Accessed on June 16, 2014.
[42] He (2003)

GRAPH III-5A: U.S. Pending Home-Sales Index and MTM % Ch: Jan 2013-Apr 2014 (SOURCE: NAR and Author's calculations))



GRAPH III-5B: U.S. PHSI-YTY and MTM % Change: Jan-Apr 2014 (SOURCE: NAR and Author's calculations)



The factors driving the demand for housing in each sub-market are different. Table III-1 presents the factors that He found critical to the demand for housing in each sub-market. New Home Sales tend to be concentrated in the upper end of the market, and that is reflected in the factors effecting demand for new housing, particularly Real Stock Returns, which play a major role (see left-hand column of Table III-1). On the other hand, Stock Prices only play an indirect role in the demand for existing homes as this market is dominated by middle- and lower-income homebuyers. Unemployment and Home Sale Prices play a much more dominant role in the demand for Existing Home Sales (right-hand column, Table III-1). .

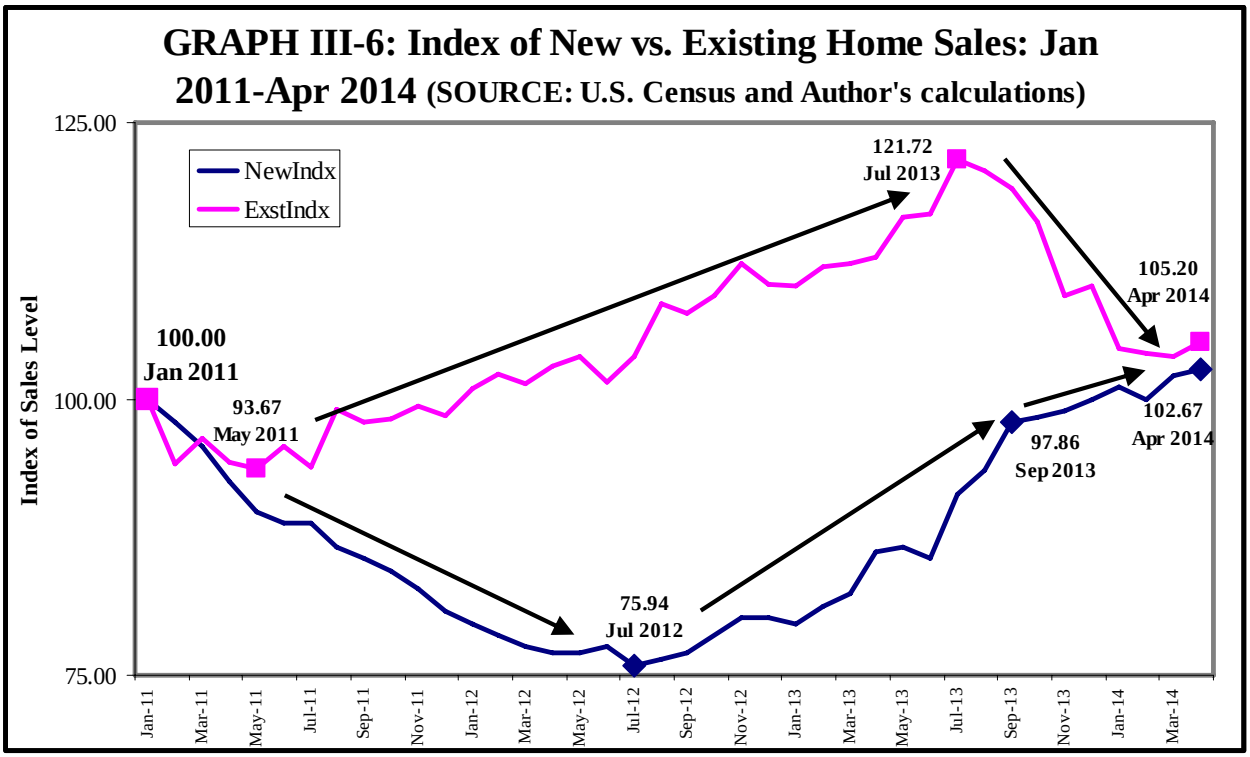
TABLE III-1: A Tale of Two Housing Markets

Factors Effecting New Home Sales	Factors Effecting Existing Home Sales
Real Stock Returns	Mortgage Rates
Mortgage Rates	DPI
Disposable Personal Income (DPI)	Home Sales Prices
	Unemployment
	Stock Prices Indirectly Through Affecting Confidence

SOURCE: He (2003)

Given the factors depicted in Table III-1, we should expect to observe different behaviors in the New Home Sales Market versus that in the Existing Home Sales Market. And this seems to be the case over the current recovery.

The behavior of the Existing and New Home Sales markets, as depicted in Graph III-6, demonstrates how these are two different housing markets. And, as expected, the two markets have followed two different trajectories since January 2011. However, while New Home Sales continued to slide until July 2012, Existing Home Sales recovered after May 2011, and grew steadily until July 2013. Given the Bull Market after the turnaround in March 2009, it seems the upper end should have been the growing sub-market.



So, what drove the increase in Existing Home Sales? Or, as it has been characterized: "The Housing Recovery". Further, the question is not only, what drove the rising Existing Home Sales numbers, but what played the principal role in the reversal of Existing Home Sales after July 2013 (as depicted in Graph III-6)?

As Fed Chair Janet Yellen said in her May Congressional testimony, "The recent flattening out in housing activity could prove more protracted than currently expected, rather than resuming its earlier pace of recovery."[43] There are several reasons why it may be more protracted than expected. First, without the exotic mortgages of the bubble era, homes are not as affordable as they appear, and mortgages rates have been going up since the Fed began its tapering program. Also, the student-loan debt burden is keeping a lot of would-be homebuyers off the market[44]. Further, there are still a number of homeowners that have negative equity, or near negative equity, despite the decline in those who are

[43] Newman, Rick, *Why the housing market is suddenly struggling* (May 8,2014) THE DAILY TICKER < http://finance.yahoo.com/blogs/daily-ticker/why-the-housing-market-is-suddenly-struggling-201005280.html > Accessed on May 8, 2014.
[44] ibid

under water—and, there has been significant improvement[45]. But, given these, and other factors, what drove the "recovery" in the first place? The answer seems to be: investors, and not typical homebuyers. When home values bottomed out and started to rise in 2013, as sales picked up, much of it was driven by investors buying homes at fire-sale prices to hold onto and rent out, profiting from the rental income. This would explain the counterintuitive behavior of Existing Home Sales, visa vie New Home Sales. Further, rising interest rates made such investments less profitable[46]. By the summer of 2013, investors began retreating, and that coincides with the deceleration in growth and outright decline in the housing indicators discussed above. By 2014Q1, mortgage lenders originated just $235 billion in mortgages, the weakest production quarter in 14 years[47]. As a consequence, there may not be enough demand from ordinary buyers to support price gains throughout 2014.

ADDITIONAL FACTORS EFFECTING HOME SALES

Some additional factors that play a critical role in the demand for housing include Household Formation (or, Headship Rates), Prices (see Table III-1), Mortgage Rates, and, in the aftermath of the housing bust: the number of homeowners, with a mortgage, Underwater, or Upside-Down (i.e., their mortgage is more than their house).

[45] Staff, *9.1 Million U.S. Residential Properties Seriously Underwater in First Quarter, Lowest Level in Two Years* (April 15, 2014) RealtyTrac < http://www.realtytrac.com/content/foreclosure-market-report/q1-2014-home-equity-and-underwater-report-8037 > Accessed on June 18, 2014.

[46] ibid and Lyster, Lauren, *'I was right, the housing recovery was a sham': The Guardian's Heidi Moore* (April 28, 2014) THE DAILY TICKER < http://finance.yahoo.com/blogs/daily-ticker/i-was-right--the-housing-recovery-was-a-sham--guardian-s-heidi-moore-191918931.html > Accessed on April 28, 2014; Napach, Bernice, *This Housing Recovery Is Different: Investors Are Now Big Buyers*(March 25, 2014) THE DAILY TICKER < http://finance.yahoo.com/blogs/daily-ticker/housing-recovery-different-investors-now-big-buyers-145259693.html > Accessed on April 15, 2014; and Olick, Diana, *Something is out of whack for housing (and it's not all this snow)* (March 3, 2014) CNBC < http://www.cnbc.com/id/101460942?__source=yahoo|finance|headline|headline|story&par=yahoo&doc=101460942|What%20is%20out%20of%20whack%20with > Accessed on March 3, 2014.

[47] l Muolo, Pau, Mortgage *Bankers Continue to Shed Jobs, Industry Lost 4,500 Positions in March* (April 2014) IMF http://www.insidemortgagefinance.com/imfnews/1_344/daily/mortgage-lenders-shed-more-workers-in-march-1000027129-1.html > Accessed on May 9, 2014.

Household Formation and the Housing Inventory

Of course, as Alfred Marshall pointed out, markets have two sides, supply AND demand[48]. The net number of housing units either constructed, rehabbed, converted, or put up for sale, minus those abandoned, converted to non-residential use, razed, or withheld from the market, represents the net-change in the supply-side of the housing market. Ultimately, it is net household formation (the number of new households minus the number of dissolved households), or the headship-rate, that determines the demand for housing units to live in.

Graph III-7 plots the index for total number of housing units from the U.S. Census Housing Survey, and an index of the total number of households from the Current Population Survey in Panel A. The base period is 2006Q1 (when housing prices began to decline nationally), and both indices are equal to 100.00 at that period. Panel B tracks the index of the number of year-round vacant units over the same period tracked in Panel A, and the base period is also 2006Q1.

Clearly, as the housing bust unfolded, the Number-of-Households Index declines, and then begins to grow slowly coming out of the recession (see Table III-7, Panel A). However, the Number-of-Housing-Units Index continued climbing until 2008Q4, the period of the collapse of Lehman Brothers and AIG. Then, after declining, in 2010Q3, the Housing-Units Index began increasing again albeit, at a much slower rate. As the recovery unfolded, the growth in the number of households accelerated 2011Q1 and 2012Q4. And, this pattern where household formation declines as the economy goes into recession, and then increases again as the economy recovers is typical behavior over the business cycle[49] However, the decline in household formation over the current cycle was steeper, and the recovery in household formation has been weaker than that observed over other Post World War II cycles. And, between 2012Q4 and 2013Q1, U.S. Household formation declined again, as illustrated in Panel A, Graph III-7.

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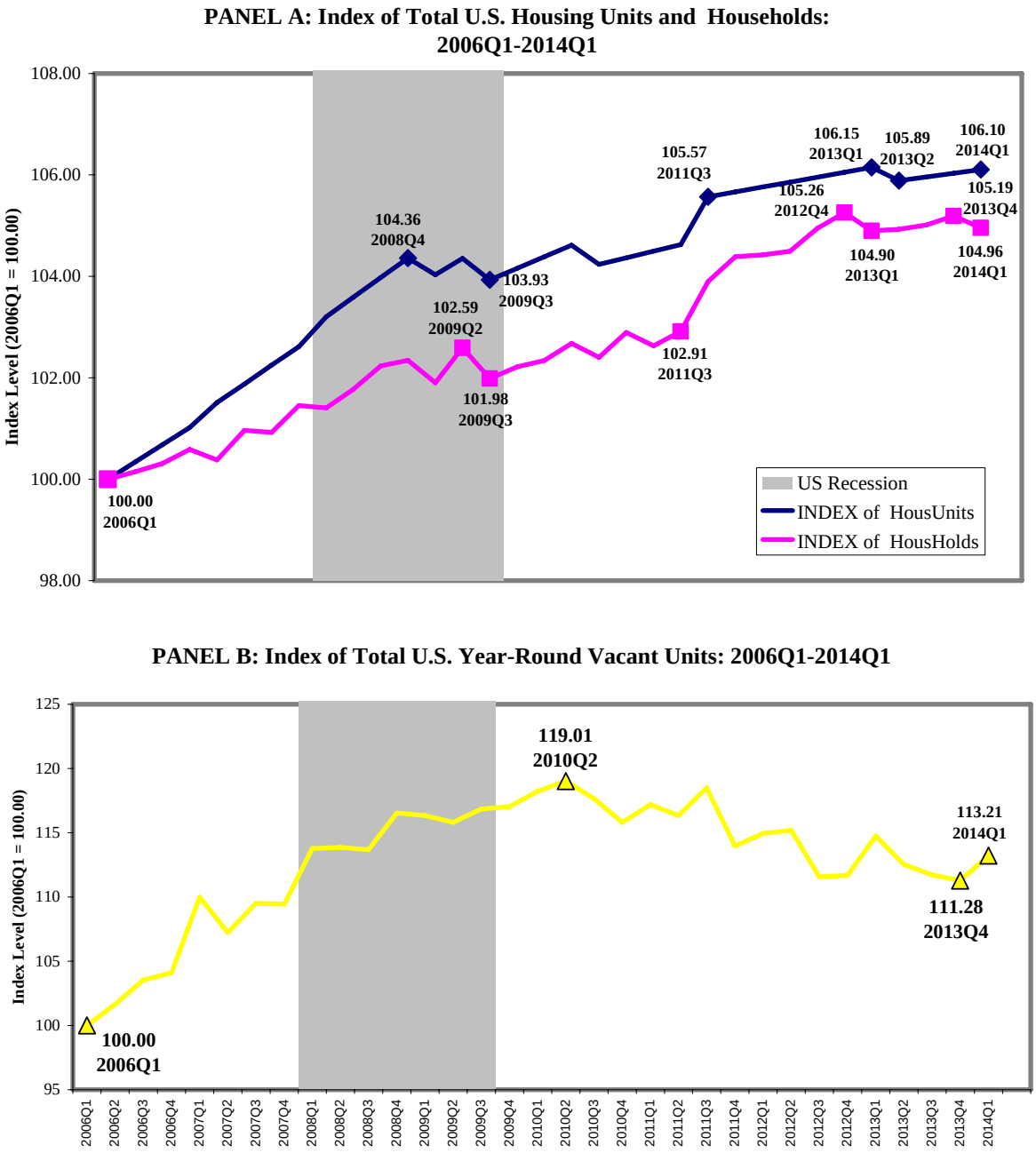
[48] Marshall, Alfred, PRINCIPAL OF ECONOMICS (1890) MacMillan and Co.: London and New York, Book V, Chapter 3- *Equilibrium of Normal Demand and Supply*, p. 348.
[48] ibid and Olick, Diana, (March 3, 2014)
[49] See Painter, Gary, *What Happens to Household Formation in a Recession?* (April 2010) MORTGAGE BANKERS ASSOCIATION

GRAPH III-7: Supply, Demand, and Inventory-U.S. Housing Units: 2006Q1-14Q1



SOURCE: U.S. Census-Tables 8 and 13, and Author's calculations.

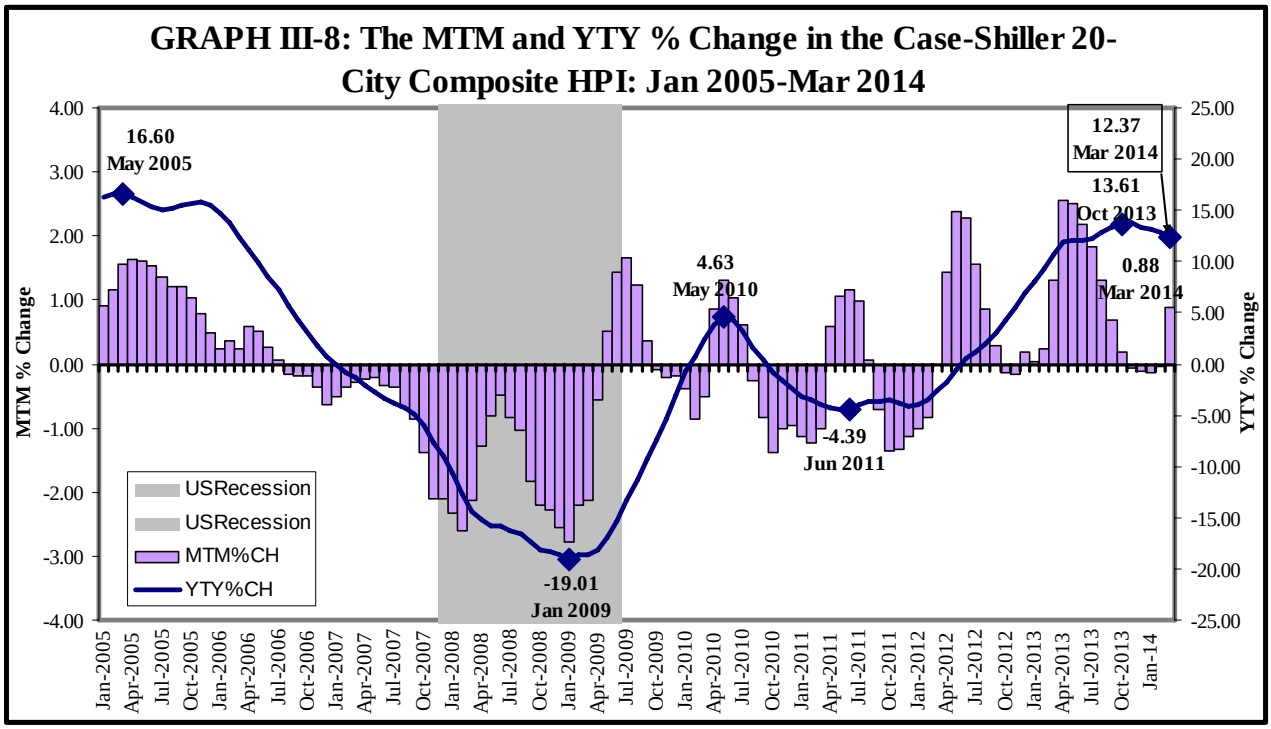
After increasing again over the next three quarters of 2013, the headship rate again declined between 2013Q4 and 2014Q1.

The net result of the behavior of the demand for housing units (Household-Formation Index in Panel A, Graph II-7), and the supply of housing units (Number-of-Housing-Units Index in Panel A, Graph III-7), is presented in Panel B of Graph III-7 as the number of Year-Round Vacant Units, or excess supply of housing units. After the housing bust in 2006Q1 (Panel B, Graph III-7), the Vacant-Units Index climbs steeply until it peaks in 2010Q2. As the gap between the demand for housing units (household formation) and the supply of housing units (number of housing units) began to close (Panel A), the index for Vacant Units (Panel B) began falling from 2010Q2 to 2013Q4. Then, with the decline in household formation in 2014Q4, and continued growth in housing units, the number of Vacant Units jumped in 2014Q1.

Home Sales Prices

Graph III-8 presents the Case-Shiller 20-City Composite House-Price Index (HPI), which is based on the price of a standardized house. The bars represent the Month-to-Month (MTM) percent-change in the 20-City Composite HPI (left vertical scale), and the line represents the Year-to-Year (YTY) percent-change in the 20-City HPI (right vertical scale).

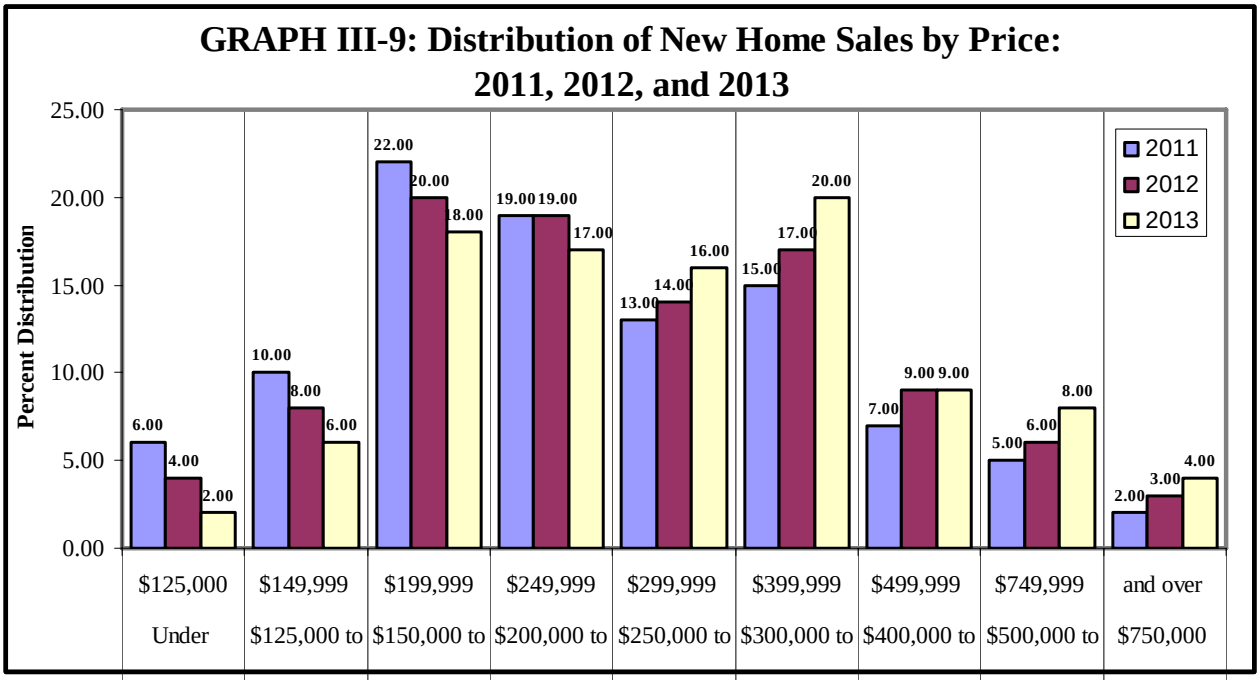
From Graph III-8, after accelerating from June 2011 to October 2013, the YTY growth-rate in the 20-City Composite HPI began to decelerate, and before the long, harsh winter set in. After a YTY growth-rate of 13.61% in October 2013, the YTY growth-rate in March 2014 was 12.37%, a slight, but nevertheless, steady decline in the growth-rate. The MTM growth-rate in the 20-City Composite HPI has been following a fits-and-starts pattern since the beginning of the recovery over the last half of 2009. After decelerating rapidly after April 2013, the MTM Growth-rate turned negative after October 2013. After four straight months of MTM declines, the 20-City Composite HPI grew by 0.88% in March 2014. The question is: Does this portent a bounce-back in the growth in the price of a standardized house?



SOURCE: S&P Dow-Jones Indices and Author's calculations.

Another interesting perspective on the behavior of home prices that may offer some insights is the distribution of the number of home sales by price category. This is presented in Graph III-9. In 2012, New Home Sales increased by 20.26%, then in 2013, the growth-rate decelerated somewhat to 16.58%. But, as depicted in Graph III-9, there was something else going on besides the deceleration in YTY sales of New Homes.

From 2011, to 2012, to 2013, the share of new home sales in the home-price categories, below $250,000, declined over the three years of sales data, and increased in the categories of home sales prices above $250,000. This highlights the housing market's activity being increasingly tilted toward the high-end of the market over this recovery.



SOURCE: U.S. Census-Table Q1 and Author's calculations.

Has this shift, as illustrated in Graph III-9, squeezed first-time homebuyers out of the market? First timers accounted for 26% of purchases in January 2014, down from 30% a year earlier, according to the National Association of Realtors (NAR)[50] In fact, January was the lowest market share for First-Timers NAR has recorded since it began monthly measurements in October 2008[51]

Mortgage Rates

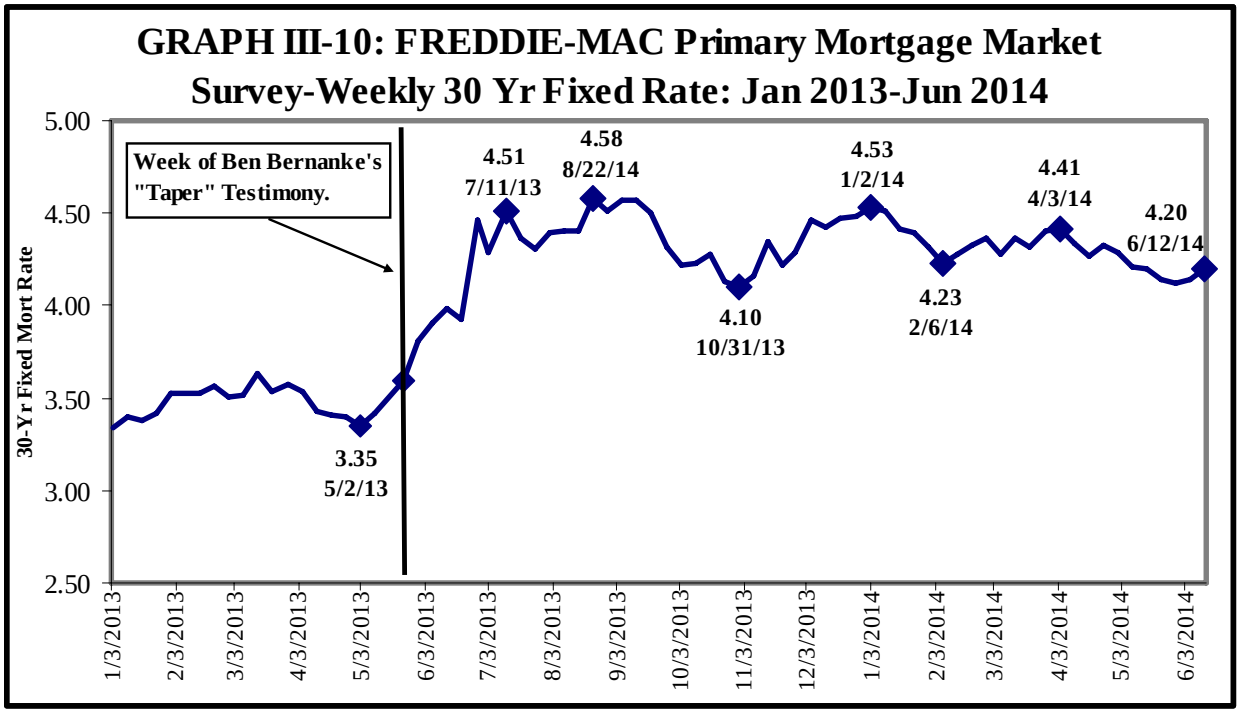
Another factor affecting the housing market is mortgage rates. Graph III-10 presents FREDDIE MAC's weekly Primary Mortgage Market Survey (PMMS) from January 3, 2013 to June 12, 2014. After peaking at 3.63% in Mid-March 2013, the 30-Year Fixed Mortgage Rate then declined to 3.35%, and began rising after the week of May 2, 2013, two weeks before Fed Chairman Bernanke announced the Fed's intension to ending its Quantitative Easing (QE) program, dubbed "tapering". The 30-Year (Yr), Fixed-Rate continued to rise to 4.51% the week of July 11, 2013, then fell, and peaked again at

[50] Gopal, Prashant and John Gittelsohn, *Americans Shut Out of Home Market Threaten Recovery*: Mortgages BLOOMBERG (March 5, 2014)
[51] ibid.

4.58% the week of August 22, 2013. This remains its highest level over the range of data presented in Graph III-10.

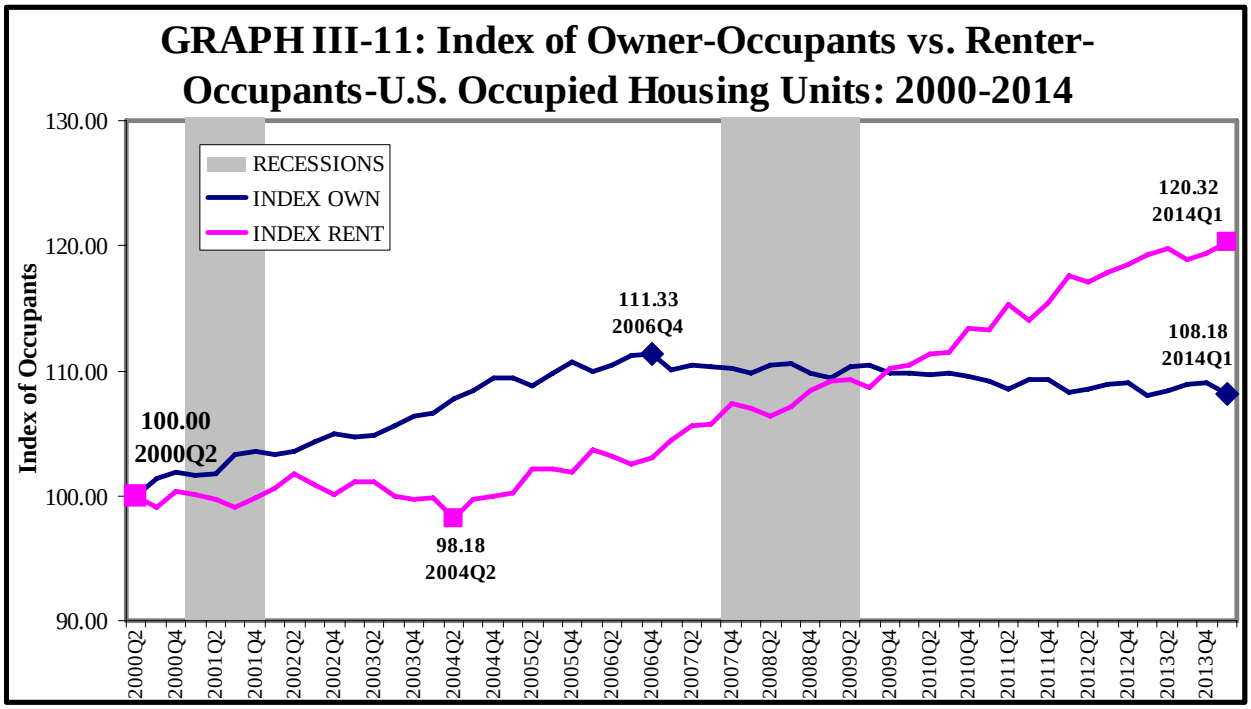
Since August 2013, the 30-Yr Fixed-Rate has bounced up-and-down within the low-to-mid 4% range. As of mid-June 2014, the rate was at 4.20%, down from 4.41% in the beginning of April, but a slight increase from the end of May.

The behavior of the 30-Yr Fixed-Rate in Graph III-10 is critical for explaining the deceleration, and declines, in the housing indicators, discussed above, with regard to graphs III-4, III-5A and 5B, and III-6. The housing indicators tracked in these graphs, and discussed above were clearly driven by the more than 100 basis-point (one percentage-point) jump in the 30-Yr Fixed-Rate from May to July 2013. As noted in the discussion above, what drove the "housing recovery" in the first place seems to be: investors, and not typical homebuyers. When home values bottomed out and started to rise in 2013, as sales picked up, much of it was driven by investors buying homes at fire-sale prices to hold onto and rent out, profiting from the rental income.



SOURCE: FREDDIE MAC

The dramatic growth in the renters' markets can be seen in Graph III-11. The base period for both the Renters' and Owners' Index is 2000Q2, where each index equals 100.00, and represents the total number of U.S. housing units occupied by each in the period. As the housing bubble inflated, the Owners' Index rose until it peaked at 111.33 in 2006Q4, representing an 11.33% increase in owner-occupied housing units from 2000Q2. Meanwhile, renter-occupied housing units were declining. The Renters' Index bottomed at 98.18 in 2004Q2, representing a 1.82% decline in the number of U.S. renter-occupied units.



SOURCE: U.S. Census-Table 8A and Author's calculations.

But, as house prices became too expensive for some, and as others began losing their homes, the number of renter-occupied units began a steady, decade-long climb, and by 2014Q1, the Renters' Index was 120.32, representing a 22.55% increase in the number of renter-occupied units between 2004Q2 and 2014Q1. Meanwhile, between 2006Q4 and 2014Q1, the number of owner-occupied units began a more-than seven-year decline, as the housing bubble popped and financial panic and recession set in. From a value of 111.33 in 2006Q4, the Owners' Index fell to 108.18 by 2014Q4, which represents a

2.83% fall in the number of owner-occupied units. Put another way, the number of renter-occupied units increased by 7.4 million over the 39 quarters between 2004Q2 and 2014Q1. That is an annualized rate of 761.000 renter-occupied units added per year. Over the 29 quarters between 2006Q4 and 2014Q1, the number of owner-occupied units declined by 2.2 million, which translates into an annualized decline of 300,000 units per year.

Even though the demand for rental units remains strong, with the more than 100 basis-point jump in the 30-Yr Fixed-Rate in home mortgages, between May and July 2013 (see Graph III-10), such investments became less profitable. The result: by the summer of 2013, investors began retreating. And, this period coincides with the deceleration in Existing Home Sales, and the decline in Pending Home Sales, depicted in graphs III-4 and III-5A, above.

Negative Equity

As noted in Section II, particularly in the discussion of Graphs II-8A and II-8B, it appeared that U.S. Households may have begun to increase their mortgage debt over the last half of 2013, after several years of deleveraging. In spite of the apparent re-leveraging, according to the 2014Q1, Zillow *Negative Equity Report*, the national negative equity rate continued to decline. By the first quarter of 2014, it was 18.8%, down 12.6 percentage-points from its 31.4% peak in 2012Q1. Negative equity has fallen for eight consecutive quarters as home values have risen. The national negative equity rate fell from 25.4% in 2013Q4 and 19.4% by 2014Q4, while the pace of annual home value growth slowed to 5.7% in 2014Q1, from 6.6% in 2013Q4. Nevertheless, more than 9.7 million homeowners, with a mortgage still remain underwater[52].

In April, RealtyTrac released its report on U.S. Residential properties underwater (i.e., Negative Equity). The said that 17% of U.S. Properties are seriously Underwater, that is, their mortgage was, at least, 25% higher than the estimated market value of their property. Nevertheless, this is down from 26% from the previous year. In addition, in

[52] Zillow, *Negative Equity Report* (March 2014)

2014Q1, 9.9 Million Properties, with a mortgage, had 50% Equity or More. This was up from 9.1 Million in 2013Q1 Also, in 2014Q1, 35% of Residential Properties in were in the foreclosure Process[53].

Though the problem of underwater homeowners has certainly been improving, especially over the last year, it is still a serious drag on the market, particularly when distributional factors are taken into account. Among all homeowners with a mortgage nationwide, roughly 1 in 3 (30.2%) who owned homes within the bottom third of home values were underwater in 2014Q1[54] That's almost three times as many as in the top third of homes (10.7%). Among the middle tier, 18.1% of homeowners with a mortgage were underwater in the first quarter. The affordable homes most likely to be sought after by first-time home buyers, those in the bottom tier, are also those most likely to be kept off the market because their current owners are in negative equity, or underwater. Those underwater have a very difficult time listing and selling their homes, even if they want to, without engaging in a short sale or dipping into their savings[55].

And, the problem of negative equity at the lower tier of the housing market is not likely to go away soon. "The unfortunate reality is that housing markets look to be swimming with underwater borrowers for years to come," said Zillow Chief Economist Dr. Stan Humphries. "It's hard to overstate just how much of a drag on the housing market negative equity really is, especially at the lower end of the market, which represents those homes typically most affordable for first-time buyers. Negative equity constrains inventory, which helps drive home values higher, which in turn makes those homes that are available that much less affordable."[56]

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[53] RealtyTrac, *9.1 Million U.S. Residential Properties Seriously Underwater in First Quarter, Lowest Level in Two Years* (April 15, 2014) < http://www.realtytrac.com/content/foreclosure-market-report/q1-2014-home-equity-and-underwater-report-8037 > Accessed on June 18, 2014.
[54] Zillow (April 15, 2014) and Hopkins, Cory, *The Nation's Most Affordable Homes Also the Most Likely to Be Underwater* (May 19, 2014) MARKET TRENDS < http://www.zillow.com/blog/q1-2014-negative-equity-report-152403/ > Accessed on June 18, 2014.
[55] ibid.
[56] ibid.

The U.S. Housing Market in Mid-2014

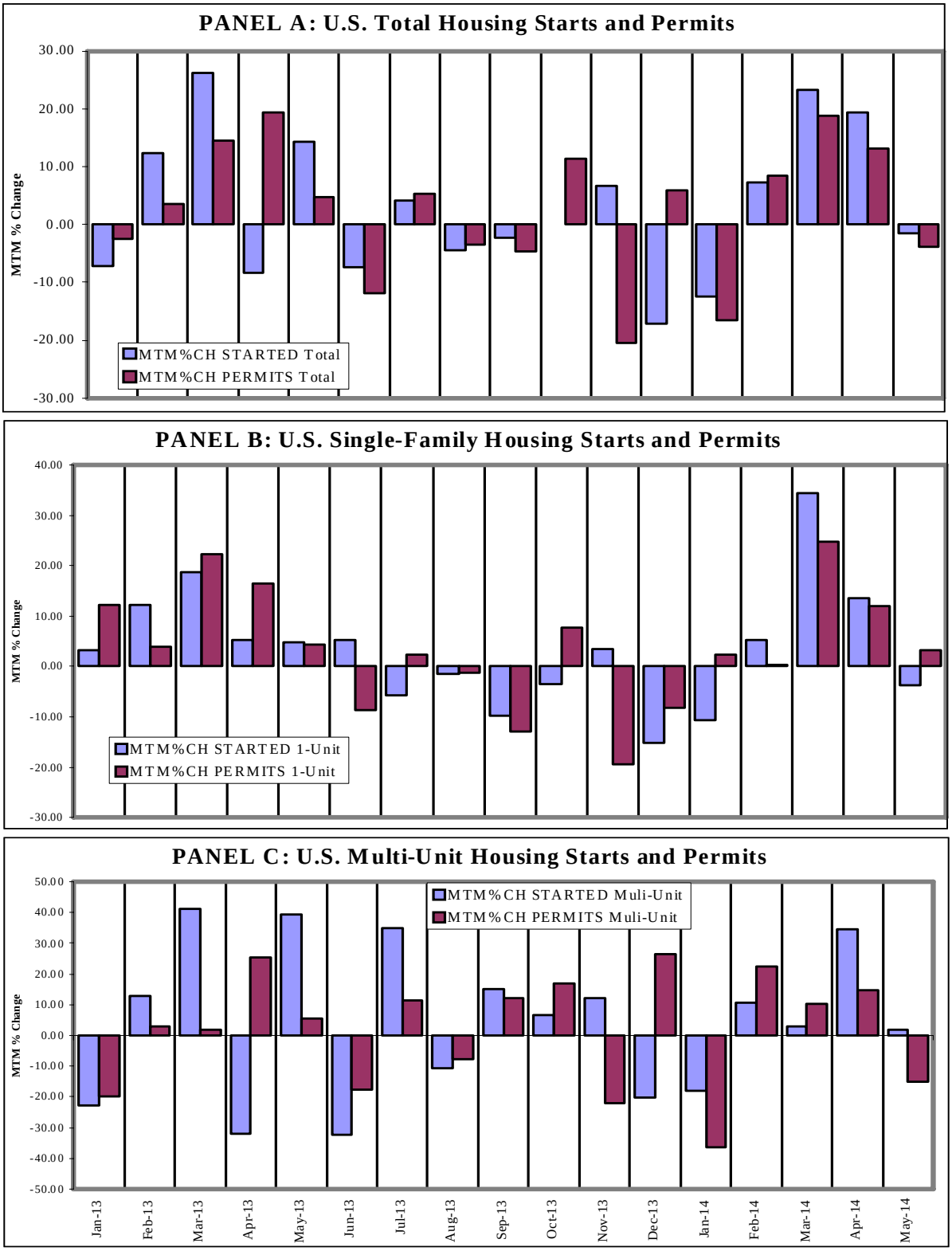
So, what does it all mean as we enter the second half of 2014? In May, housing starts declined for both single-family homes and the more volatile multi-unit segment. New single-family construction dropped 5.9% to a 625,000 annual rate. Work on multi-unit housing fell 7.6% to a 376,000 pace. In addition, permits for new construction fell by 6.4% in May to a 991,000 annual pace, the slowest in fourth months. Permits are a sign of future intentions and reveal whether builders are optimistic[57].

Graph III-12 shows the Month-to-Month (MTM) growth-rate in both U.S. Housing Permits, and Housing Starts, from January 2013 to May 2014. It was the end of 2012 when the housing market supposedly turned around. So, the range of data in Graph III-12 should capture most of the recent housing recovery. Panel A shows the MTM percent change of total U.S. Starts and Permits, Panel B shows the MTM growth-rate of starts and permits for Single-Unit housing, and Panel C shows the MTM percent-change in Multi-Unit starts and permits.

The first thing to note in Graph III-12 is that the only three straight months of growth, in both starts and permits, over the entire 16-month period depicted is February, March, and April 2014. Total Starts were down in December and January, and they were both very stormy months in the harsh Winter of 2013-14. But, so was February and March was also cold and snowy. But, yet, in February both Total Permits (+8.46%) and Starts (+7.25%) increased. Then, the MTM growth-rate in both accelerated in March. Permits grew by 18.72%, and Starts surged by 23.20%. The growth-rate of both then decelerated somewhat in March, but then, as noted above, both declined in April. The pattern played out in Graph III-12, Panel A does not appear to be driven mostly by the weather. Granted, the winter certainly had more to do with the behavior of, especially, starts, in the Northeast and Midwest, but there were no snow storms over the June-to-July 2013 period when, save July, both starts and permits were down each month on a MTM basis.

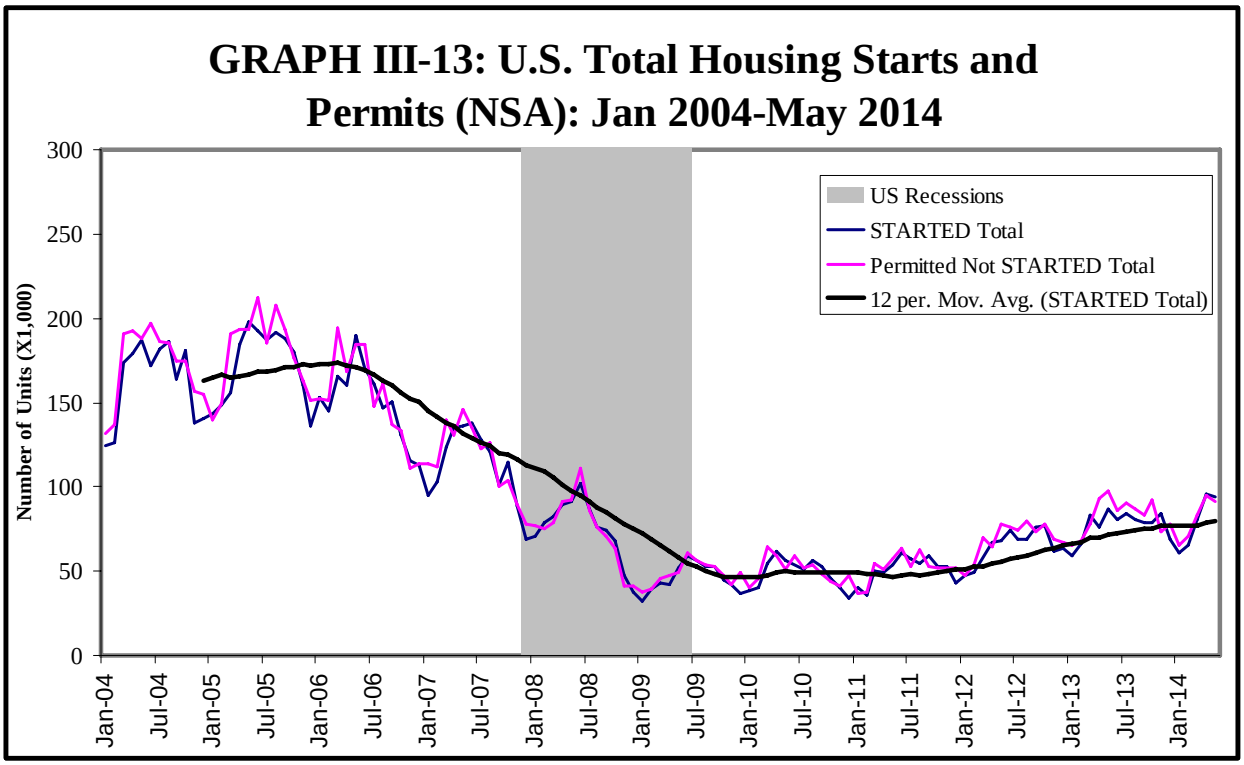
[57] Bartash, Jeffry, *May brings no sign of spring housing revival* (June 17, 2014) MARKETWATCH < http://www.marketwatch.com/story/may-brings-no-sign-of-spring-housing-revival-2014-06-17 >. Accessed on June 17, 2014.

GRAPH III-12: MTM Percent Change in U.S. Housing Starts and Permits: Jan 2013May 2014



SOURCE: U.S. Census and Author's calculations

From Panel B and C, it is apparent that the MTM growth-rate in starts and permits in February was driven by increases in Multi-Unit starts and permits. But, the strong growth in March and April was clearly driven by Single-Unit starts and permits. In fact, March had the strongest growth in Single-Unit Starts (+34.48%) and Permits (+24.76%) over the entire 16-month period depicted in Graph III-12. But, it was also Single-Unit activity that drove the decline in housing starts in May. Single-Unit Starts contracted by 3.71%, while Multi-Units starts were up by 1.82%. The decline in permits was driven by Multi-Unit, which was down by 15.09%, while Single-Unit permits were up by 3.30%.



SOURCE: U.S. Census and Author's calculations.

Graph III-13 offers a wider perspective on the trends in housing starts and permits. Both, Total U.S. Housing Starts, Permits, and a 12-Month Moving Average (MMA) are tracked from January 2004 to May 2014. Both starts and permits track each other fairly closely over the 10-year period. As would be expected, after the housing bust, both series and the 12-MMA declined. They remained flat until the last half of 2012, and then began to turn

up slightly. Note that both series declined after October 2013, bounced back after January 2014, and then, as noted above, declined in May 2014.

As noted above, after home values bottomed out and started to rise in 2013, as sales picked up, much of it was driven by investors buying homes at fire-sale prices to hold onto and rent out, profiting from the rental income. However, rising interest rates made such investments less profitable .By the summer of 2013, investors began retreating, and that coincides with the deceleration in the growth of, and even actual, outright, decline in the housing indicators discussed in this section. The decline of starts and permits in April may be signaling that now that investors have retreated, there are not enough buyers to support the market.

IV. TO TAPER OR NOT TO TAPER: Winding Down QE3

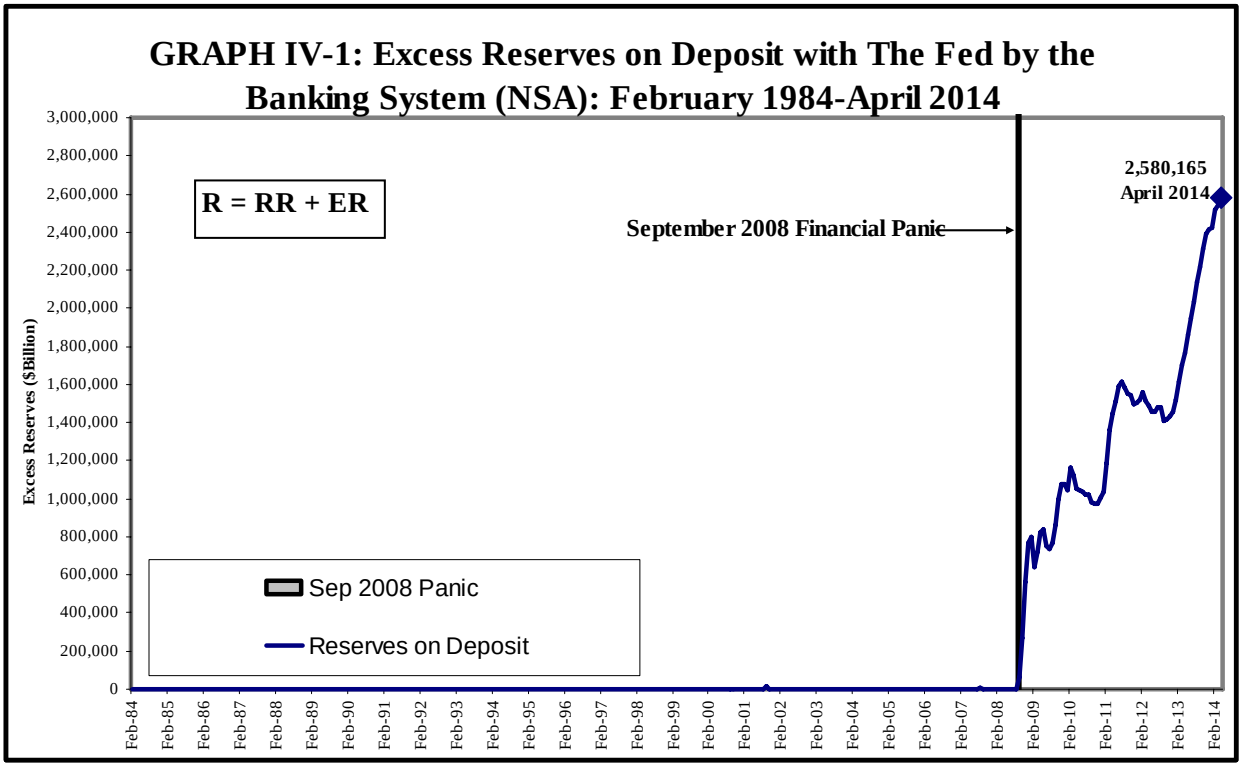
On May 22, 2013, Fed Chairman Ben Bernanke raised the possibility of Tapering in his testimony to the Congress[58] He announced that the Fed may begin to step down its $85 Billion/month purchase of Mortgage-Backed Securities (MBS) and other long-term assets known as QE3. This process of the Fed's winding down its purchases of long-term assets has been called "TAPERING". Conventional Policy reached its limits when short-term rates approached zero with the onset of financial panic, the effective Federal Funds Rate was 0.07% in July 2011, and has not been above 1% since October 2008, one month after the collapse of Lehman Brothers. At first, The Fed responded by buying massive amounts of short-term private debt, specifically, Commercial Paper (the short-term debt of corporations). In addition, the Fed also bought other securities issued by the Private Sector. This purchasing of private debt, as well as the Fed's purchasing of U.S. long-term debt, has been called ***Quantitative Easing*** (QE). This has exploded the size of the Fed's Balance Sheet. Between January 2008, eight months before the financial panic, and August 2010, nearly two years after the onset of the panics and crisis, the Fed's Balance

[58] Bernanke's Statement Before Congress-FRB, May 22, 2013

Sheet increased in size by 2 ½ times. However, the U.S. Banking System has sterilized much of the Fed's increase in the Monetary Base (MB) by holding $2.5 trillion in Excess Reserves (ER). The growth in ER's is clearly illustrated in Graph IV-1.

A. WHAT IS THE PURPOSE OF QUANTITATIVE EASING?

Until the 2008 crisis, the Fed's main monetary-policy instrument was *Federal Open Market Committee* (FOMC) Operations where it controlled the Federal Funds Rate by buying and selling short-term Government securities. Another tool *The Discount Window*, where The Fed directly loaned to banks, but, until the recent crisis, it was seldom used. But, faced with the crisis in September 2008, with the collapse of Lehman Brothers and AIG, as noted above, the Fed then began to aggressively pursue unconventional policy known as *Quantitative Easing* (QE).



SOURCE: FRBStL-FRED

The purpose of QE is to:

(1.) Stabilize the Financial System, and

(2.) Stimulate demand in interest-rate sensitive sectors.

Initially, the first round of QE (QE1) was implemented by the Fed, at the end of 2008, and into 2009, to prevent further collapses in asset-values around the drying up of the Mortgage Backed Securities (MBS) market by supporting the demand for these securities as private investors retreated from the market. There are two previous instances when the U.S. used Quantitative Easing: The 1930's and, The 1960's, when it was known as *Operation Twist*. Japan also used it in 2001.

BOX IV-1: QUANTITATIVE EASING-We've Been Here Before

The First U.S. QE: The 1930's[59]

During 1932, with Congressional support, the Fed purchased approximately $1 Billion in Treasury securities Half, however, was offset by a decrease in Treasury bills discounted at the Reserve Banks.

At the end of 1932, short-term market rates hovered at 50 basis points or less. QE continued during 1933-36. In early April 1933, Congress sought to prod the Fed into further action by passing legislation that:

(i) Permitted the Fed to purchase up to $3 billion in securities directly from the Treasury (direct purchases were not typically permitted) and, if the Fed did not,

(ii) It also authorized President Roosevelt to issue up to $3 billion in currency.

The Fed halted purchases in November 1933. However, QE did not end there. Instead, it shifted to the Treasury and the White House through gold purchases.

Operation Twist: The 1960's

The second appearance of QE was in the 1960's in which in was known as *Operation Twist.*

During the Kennedy Administration, the Fed attempted to flatten out the Yield Curve by selling short-term securities (raising short-term rates) and buying long-term securities (lowering long-term rates). It was widely believed that the policy did not work because it only changed the composition of the Fed's balance sheet, and not its size.

[59] Anderson, R.G., *The First U.S. Quantitative Easing: The 1930s*, ECONOMIC SYNOPSES (2010) FRBStL

However, a variation of Operation Twist was implemented by the Fed, in March 2009, where it sought to bring down long-rates, while keeping short-term rates low, to increase the demand for mortgage lending. It changed the composition of its Balance Sheet AND increased its size.

B. WHAT DID "OPERATION TWIST 2.0" SEEK TO ACOMPLISH?

There are two reasons why, even when the Fed lowers short-term rates, households and businesses face higher rates[60]:

(1.) The Term Premium and,

(2.) The Risk Premium.

The ***Term Premium*** is the average difference between the interest rate on long-term bonds and the interest rate on short-term bonds According to Liquidity-Preference Theory, the longer the period an investor is willing to forego perfect liquidity (i.e., holding cash, or near-cash assets), the higher the reward (i.e., the return, or interest rate).The ***Risk Premium*** is the difference between corporate bond rates, and the risk-free rates of U.S. Treasury bonds with the same maturity date[61].

Most of the interest rates faced by households and businesses are not based on the short-term rate affected by the Fed's conventional policy tools. For instance, conventional mortgage-rates (i.e., 30-year, fixed) are tied to the U.S. 10-Year Treasury, not the short-term T-Bill, or Federal Funds rate[62]. As noted by the Congressional Research Service (CRS) in their February 2013 study:

> The Fed has stressed that large-scale asset purchases ("quantitative easing") stimulate the economy by reducing long-term interest rates Spending by households and businesses is influenced by the rates available to them, such as mortgage rates for households buying homes or corporate bond rates for larger corporations that are financing physical investment projects through bond issuance. Under QE, the Fed attempts to lower long-term Treasury and MBS

[60] Gordon, Robert, MACROECONOMICS (2012), Pearson Addison Wesley: Boston Ch. 4, Section 4-5.
[61] ibid.
[62] However, the resets under the Option ARM's and other sub-prime mortgages, in many cases, were based on the short-term London Interbank Offering Rate (LIBOR) during the Housing Bubble.

yields directly through purchases that drive down their yields, in the hope that lower Treasury and MBS yields will indirectly filter through to reductions in other private long-term yields[63].

C. STAVING OFF DEFLATION?

Another objective, especially in flooding the banking system with reserves was to stave off deflation. The Fed, of course, has been criticized, especially by Monetarists, for not loosening monetary policy as the U.S. went into depression in the 1930's. The criticism was especially strident from Milton Friedman and Anna Swartz[64] And Ben Bernanke made it a point to apologize to Milton Friedman on the occasion of his 90th birthday[65]. Whether or not, in fact, The Great Depression was caused by the Fed following a tight monetary policy is debated by many economists and economic historians, and many do not agree with that explanation[66] Nevertheless, the Fed took aggressive and unconventional steps to prevent the U.S. Economy from falling into deflation, especially after the collapse of Lehman Brothers and AIG in September 2008. Ben Bernanke was not about to see the Fed blamed again. And, this became especially critical after the 2010 Mid-Term elections in which it was clear that there would be no active fiscal policy after the expiration of the stimulus programs under the *American Recovery and Reinvestment Act* of 2009 (ARRA). Bernanke himself chided Congress for not doing its part to stimulate economic growth, including in his last testimony before that body[67]

Graph IV-2 tracks the Year-to-Year (YTY) percent-change in the Adjusted Monetary Base and the U.S. All-Urban Core Consumer Price Index (CPI), which excludes the more volatile components of Energy and Food.

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[63] Labonte, Marc, *Federal Reserve: Unconventional Monetary Policy Options* (February 19, 2013) Congressional Research Service: Washington, p. 10

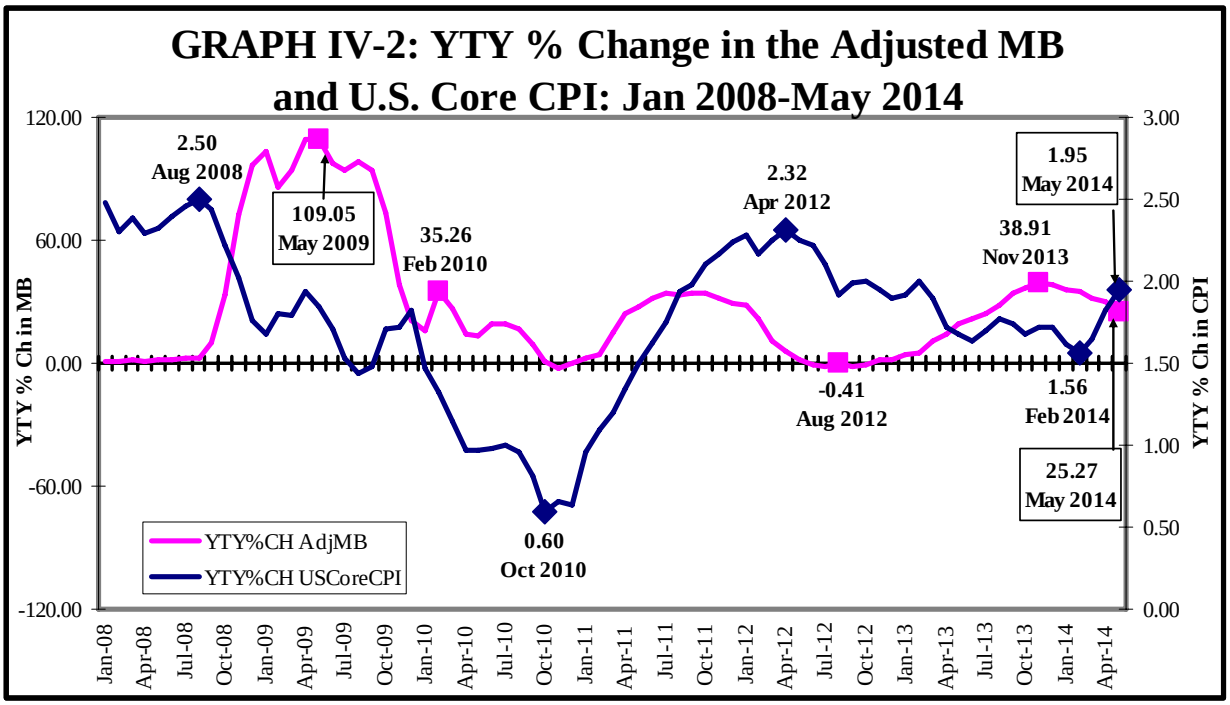
[64] Friedman, Milton and Anna Swartz, *A Monetary History of the United States* (1971 Paperback Edition) Princeton University Press: Princeton, NJ

[65] Remarks by Governor Ben S. Bernanke, *On Milton Friedman's Ninetieth Birthday* (November 8, 2002), at the University of Chicago, FEDERAL RESERVE BOARD: Washington < http://www.federalreserve.gov/BOARDDOCS/SPEECHES/2002/20021108/ > Accessed on July 22, 2014.

[66] For example, see Timin, Peter, *Did Monetary Forces Cause the Great Depression?*, Koo, Richard, *The Holy Grail of Macroeconomics* (2009), and Wicker, Elmus, *The Banking Crises of the 1930's*.

[67] White, Martha, C., *Bernanke to Congress: It's your turn to act* (June 7, 2012) NBC News < http://economywatch.nbcnews.com/_news/2012/06/07/12107344-bernanke-to-congress-its-your-turn-to-act?lite > Accessed on July 22, 2014.

The ***Adjusted Monetary Base*** (MB) is the sum of currency (including coin) in circulation outside Federal Reserve Banks and the U.S. Treasury, plus deposits held by depository institutions at Federal Reserve Banks. These data are adjusted for the effects of changes in statutory reserve requirements on the quantity of base money held by depositories[68]. .

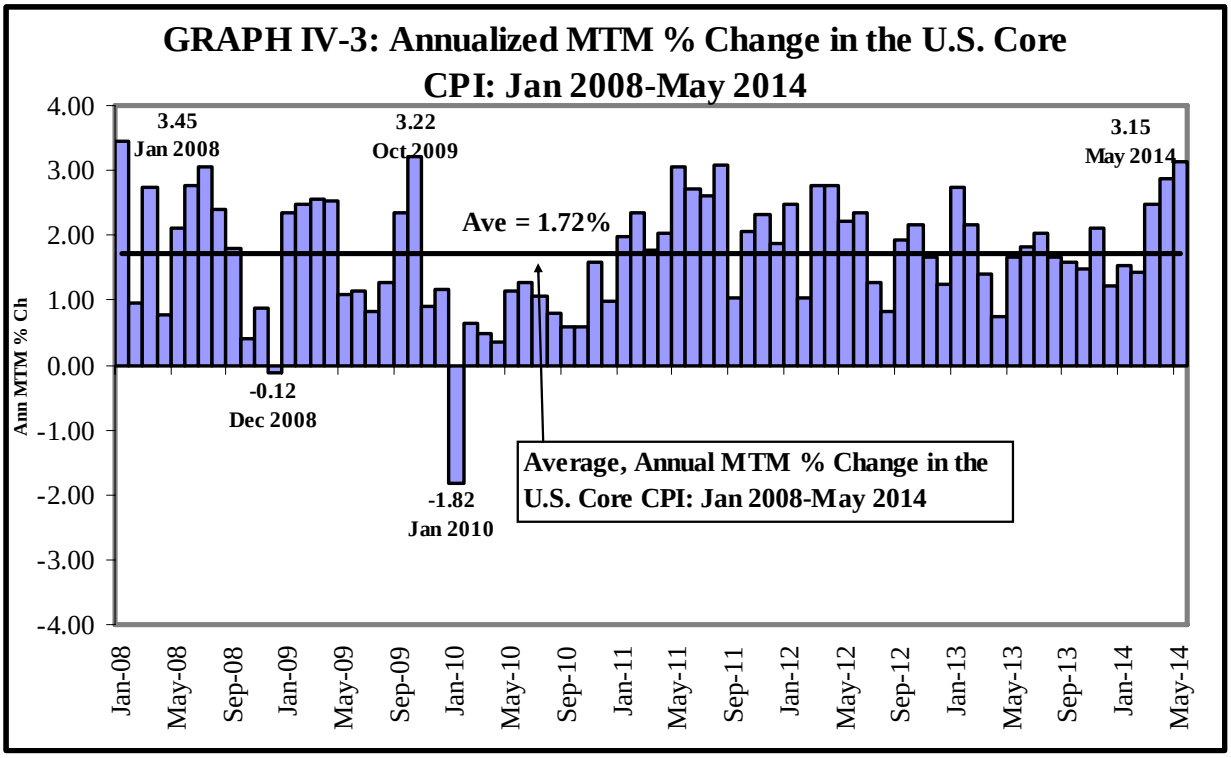


SOURCE: FRBStL-FRED, U.S. BLS, and Author's calculations.

After the September 2008 Crisis, the Adjusted MB shot up by 109.05%, on a YTY basis in May 2009. This was as there was a rapid deceleration in the monthly, YTY growth-rate in the Core CPI, a month before the crisis, in August 2008, and October 2010. Then, YTY growth-rate, in the Core CPI, accelerated again until August 2012, when it, again, decelerated. That same month, on a YTY basis, the Adjusted MB declined by 0.41%, the only YTY monthly decline over the entire 77-month period depicted in Graph IV-2. One month later, in September 2012, Bernanke announced QE3. Nevertheless, the YTY growth-rate in the Core CPI continued to decelerate until February 2014. It then accelerated, on a YTY basis from 1.56% in February to 1.95% by May.

[68] Federal Reserve Economic Database (FRED), Federal Reserve Bank of Saint Louis < http://research.stlouisfed.org/fred2/series/BASE > Accessed on June 18, 2014.

Graph IV-3 presents a more detailed look at the behavior of the Core CPI by tracking the annualized, Month-to-Month (MTM) percent-change over the 77-month period depicted in Graph IV-2.



SOURCE: U.S. BLS and Author's calculations.

Graph IV-3 tracks the annualized, MTM percent-change in the Core CPI (bars), and the average annualized, MTM percent-change over the entire 77-month period covering January 2008 to May 2014. As is apparent, the MYM, annualized change in the Core CPI has proceeded in fits-and-starts over the entire period. Reaching its three highest levels in January 2008 (+3.45%), October 2009 (+3.22%), and May 2014 (+3.15%), the latest period of data at the time of writing. The annualized, MTM percent-change also exceeded 3% twice in 2011. There were two periods of deflation: December 2008 (-0.12%) and January 2010 (-1.82%). But, over the entire period, despite the massive injection of reserves into the banking system by the Fed, the average annualized, MTM inflation-rate (based on the Core CPI) has been 1,72% (see Graph IV-3). So far, the inflation hawks have been wrong, and if the Fed had not pumped reserves into the banking system, we

could very well have gone into a catastrophic deflationary spiral. Even now, many are pointing to the accelerating Core CPI rate since March as a sign that the economy is approaching full employment. Yet, we had five straight months of accelerating growth in the Core CPI between December 2010 and May 2011. No one would argue that we were on the verge of full employment in 2011, even before the debt-ceiling clown-show.

So, what has QE actually accomplished? Many critics have contended that the Fed is just printing money and that more "money printing" will trigger hyper-inflation and a collapse of the dollar. And, since Quantitative Easing (QE) probably played a significant roll in the Bull Market since March 2009 (with a couple of pauses), and, it has certainly helped households whose assets are primarily financial (i.e., upper-income households, which stimulates spending out of Non-Housing Wealth), but it has not done much to stimulate the broader economy (and without being complemented by active fiscal policy, there is not a whole lot more it can do).

But, given the Fed's massive increase of the Monetary Base MB, which has resulted in the explosion in growth of reserves in the banking system, the inflation hawks have been wrong, and, so far, their fears have been misplaced. Since the Fed is purchasing long-term U.S. Treasuries from the secondary market, rather than buying up an initial issue, it is not "monetizing the debt", at least not directly[69]. So, the inflation-hawks misgivings are misplaced because "money printing" is a false premise. During the Fed's aggressive easing of monetary policy during the financial crisis and during QE1 and QE2, the Fed added about $2 trillion of assets to its balance sheet and an equal amount to its liabilities (see discussion above), mainly by increasing the reserve deposits of banks, increasing the Monetary Base (MB = Currency + Reserves) Normally, such an expansion of bank reserves would trigger additional bank lending and investing until bank deposits—the largest share of M1, the basic money supply — grows by a multiple of the increase in reserves. That is, M1 is a multiple of MB, which, in large part is made up of Bank Reserves. However, given the stresses on banks during and after the financial crisis, and the decline in credit-demand due to households' deleveraging, banks have held onto most

[69] ibid, p. 16

of those new reserves as ER (Excess Reserves) (see Graph IV-1, above), thus truncating the money-creation process. In fact, the Money Multiplier (MM) has been below 1.00 since 2008. For the past two years, the M2 measure of the money supply has grown only around 6-7% annually. Thus, instead of creating lots of money as most critics assume, the Fed paid for its asset purchases by creating bank reserves, which the banks effectively "sterilized" by holding onto them. Thus, as Robert McTeer notes, "The bad news is that this sterilization meant that the stimulus to the economy was much less than intended. The good news is that money not created—usually called "printed" for effect — is not spent, and money not spent cannot cause inflation and a weakening of the dollar."[70]

Then the question becomes: If it is not having its intended effect of stimulating the economy, then, why do it? Why pump more reserves into the banking system if the banks hoard them as excess reserves? McTeer goes on to answer that question:

> The answer to that is if the banks are under such duress that they want to hold extra liquidity and capital for precautionary purposes, then, if the Fed weren't providing it, they would try to generate it themselves through shrinking of other assets, that is, reducing lending and investing. The Fed may not be generating much expansion, but it is preventing contraction[71]

In other words, as stated at the outset of this sub-section, the successive QE policies of the Fed probably prevented the economy from going into sustained deflation as it did in the Great Depression. And, as Fisher (1933) pointed out in his *Debt-Deflation Theory of Depression*[72], in an economy with significant debt-loads, in conjunction with the bursting of an asset bubble, if the economy goes into deflation, then the real burden of debt increases. The subsequent deleveraging by households can then send the economy into a depression, rather than a recession. Between the TARP and the ARRA, which addressed the immediate emergency, and QE, which addressed the weakness in the economy following the crisis, and therefore preventing deflation, the U.S. Economy avoided depression. Though, as Bernanke pointed out in his testimony in February 2013 (as

[70] McTeer, Robert, *The Federal Reserve's Third Quantitative Easing: QE3 Sets Sail* (November 1, 2012) NATIONAL CENTER FOR POLICY ANALYSIS, p. 2
[71] ibid, p. 2
[72] Fisher, Irving, *The Debt-Deflation Theory of Great Depressions* ECONOMETRICA (1933) pp. 337-357

recounted above), there is only so much the Fed can do, then Congress needs to step in and pass some legislation authorizing active fiscal stimulus to the economy. As just noted, QE probably prevented the U.S. Economy from going into deflation, and thereby preventing the economy from sinking into a 1930's-like Great Depression.

D. QE3, TAPERING, AND FED POLICY IN 2014

On September 13, 2012, the Fed announced that it would make large scale asset purchases of $40 billion of Agency MBS per month from financial institutions for unspecified duration. Further, the Fed said that it will keep interest rates at zero percent until at least 2015, and that it will make additional purchases if the employment picture doesn't improve, and in general will maintain a stimulative policy for a "considerable time."[73]. This is what has been called "QE3"[74]. Then, in his testimony before Congress on May 22, 2013, Bernanke announced that The Fed "In the next few meetings, we could take a step down in our pace of purchase". This winding down of QE3 has been called "Tapering". After backing off somewhat from his initial announcement, due to the initial reaction (e.g., the "Taper Tantrum" in the markets), Bernanke then announced in December 2013 that, in fact, the Fed had begun trimming its $85 billion monthly purchases of MBS, by $10 billion, to $75 billion per month[75].

January 2014: enter Janet Yellen, the new and first woman, Fed Chair. Her first testimony was in the midst of the harsh 2013-14 Winter. And, there were some signs of continued problems in the labor market that preceded the winter. There was an unexpected rise in the number of Americans filing for first-time benefits, while the January jobs picture was similarly disappointing, with job-gains of only 113,000, far below what economists had forecast. Yellen said that the officially published

[73] *What is QE3: Quantitative Easing Explained in Simple Terms* (September 12, 2012) Policy.Mic < http://mic.com/articles/14687/what-is-qe3-quantitative-easing-explained-in-simple-terms > Accessed on June 17, 2014, and Plumer, Brad, *QE3: What is quantitative easing? And will it help the economy?*. (September 13, 2012) WASHINGTON POST: Wonkblog < http://www.washingtonpost.com/blogs/wonkblog/wp/2012/09/13/qe3-what-is-quantitative-easing-and-will-it-help-the-economy/ > Accessed on Jane 18, 2014.
[74] Labonte (2013), p.2
[75] Zumbrun, Joshua, *Fed Trims QE Pace to $75 Billion on Labor Market Outlook* (December 18, 2013) BLOOMBERG < http://www.bloomberg.com/news/2013-12-18/fed-cuts-qe-pace-to-75-billion-on-improved-job-market-outlook.html > Accessed on June 20, 2014.

Unemployment Rate (UR), U-3, which is the basis for the Fed's 6.5% rate target, doesn't represent the so-called "full employment" rate and that The Fed will likely begin boosting its benchmark interest rate well *after* that level is reached. She noted that an additional 5%, an unusually high fraction of our labor force, is working part time for economic reasons, and that there is an unusually high fraction of Americans who are unemployed for a substantial amount of time. She emphasized that the paring down of asset purchases is not on a preset course, and that the persistent drags on the economy: squabbling over fiscal policy over the last two years and a quite tight fiscal policy have imposed a substantial drag on spending in the U.S. economy over the last several years[76],

At the time of writing, Janet Yellen explained the results of the Federal Open Market Committee (FOMC) of June 18, 2014. The FOMC continued to taper its asset-purchase program (QE3) by $10 billion to a pace of $35 billion a month. She also explained that though economic activity is rebounding in the current quarter and will continue to expand at a modest pace afterward, unemployment remains elevated and underutilization in the labor market remains significant[77], which reiterates her February testimony.

E. FED LOWERS ECONOMIC FORECAST AS IT CONTINUES TAPERING

Despite the Fed's continued tapering, it downgraded its outlook for the U.S. Economy. It lowered its forecast for growth this year to 2.1% to 2.3%, down from its previous prediction of nearly 3%. The mediocre expansion is primarily the result of a disastrous winter in which the economy actually shrank by 2%. The Fed said that though the recovery has picked up speed since the first quarter, it is unlikely to make up all its lost ground. The Fed kept its estimate of next year's growth-rate unchanged at 3.0%-3.2%[78].

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[76] Craig, Victoria, *Janet Yellen Talks Disappointing Data, Weather on Capitol Hill* (February 27, 2014) FOXBusiness < http://www.foxbusiness.com/economy-policy/2014/02/27/janet-yellen-talks-dissapointing-data-weather-on-captiol-hill/ > Accessed on June 20, 2014.

[77] Radkar, Mamta, *Janet Yellen Explains The Fed Decision* (June 18, 2014) BUSINESS INSIDER < http://www.businessinsider.com/janet-yellen-june-fomc-press-conference-2014-6 > Accessed on June 23, 2014) and Board of Governors of the Federal Reserve, *Transcript of Chair Yellen's Press Conference* (June 18, 2014).

[78] Mui, Ylan, *Federal Reserve lowers economic forecast but continues to cut bond purchases* (June 18, 2014) WASHINGTON POST-Wonkblog < http://www.washingtonpost.com/blogs/wonkblog/wp/2014/06/18/federal-reserve-lowers-economic-forecast-but-continues-stimulus-phaseout/ > Accessed on June 23, 2014.

PART 2: IDENTIFYING THE CURRENT STAGE OF THE BUSINESS CYCLE: Mid-2014

V. SO JUST WHERE ARE WE? Current Stage of the Cycle in Mid-2014

So, just where are we as we approach the mid-point of 2014? What stage of the Business Cycle is the economy operating at as we enter the second half of the year? Is the economy at a Turning Point, an Inflection Point, or is it More-of-the-Same?

If the U.S. Economy is at a TURNING POINT, then it would be heading into recession. If the U.S. Economy has been temporarily set back by the harsh 2013-14 Winter, and, is now set to resume the strengthening recovery underway before the winter's on-set, then it is at an INFLECTION POINT. Or, have the recent ups-and-downs just reflected MORE OF THE SAME. That is, the economy is continuing on its recurring pattern over this weak recovery: episodes of strong growth, that then fizzles out, which, in turn, is followed by another round of strong growth.

A. MODIFIED SHISKIN RULES FOR SPOTTING A RECESSION

Julius Shiskin, an economic statistician, at the U.S. Commerce and Labor departments, from the 1930's to the 1970's, and who developed numerous innovations in economic statistics (including the X-11 seasonal adjustment procedure), suggested several rules-of-thumb to identify recession in a New York Times article published in 1975. In time, the other rules of thumb were forgotten and recession became popularly defined as two consecutive quarters of a decline in Real GDP, which is a fallacy. In the U.S. the Business Cycle Dating Committee of the National Bureau of Economic Research (NBER) is the authority for dating US recessions. They defined the 2001 Recession as beginning in 2001Q1, and as ending in 2001Q4[79]. Within that interval, there were no two consecutive quarters of declining Real GDP. In fact, the NBER studies and analyzes a number of series before it declares the beginning, or the end, of a recession.

Niemira and Klein (1994) modified Shishkin's rules for spotting a recession. There are four rules for spotting a recession under the modified approach:

[79] See U.S. BEA < http://bea.gov/faq/index.cfm?faq_id=485 > and NBER –Recession Dating Procedure < http://www.nber.org/cycles/jan08bcdc_memo.html > Accessed on July 31, 2014.

1. Real GDP must decline for, at least, one quarter

2. Industrial Production must contract for, at least, 4-6 months.

3. And, there should be a contraction for, at least, 4-6 months. In one of the following series:.
    a. Real Per Capita Disposable Personal Income (DPI)
    b. U.S. Non-Farm Employment
    c. Aggregate Hours Worked

4. The Employment Diffusion Index should decline below 40% of all series expanding their workforce, on a one month change basis, and remain below that point for, at least, 4-6 months.

Table V-1 presents the indicators listed above (fist column, from the left), their performance over the preceding 12 months, for monthly series, and over the preceding four quarters for quarterly series (middle-column graph), and a comment on their meeting the criteria for a recession (last column on the right).

(1.) Real GDP must decline for, at least, one quarter.

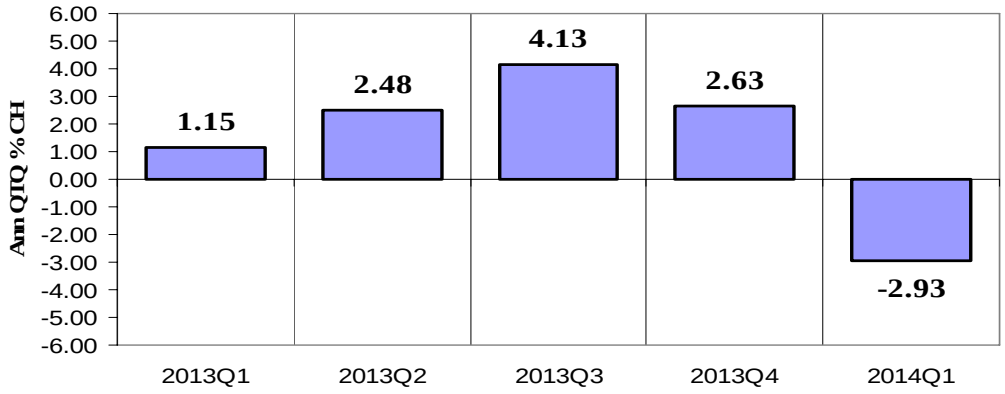
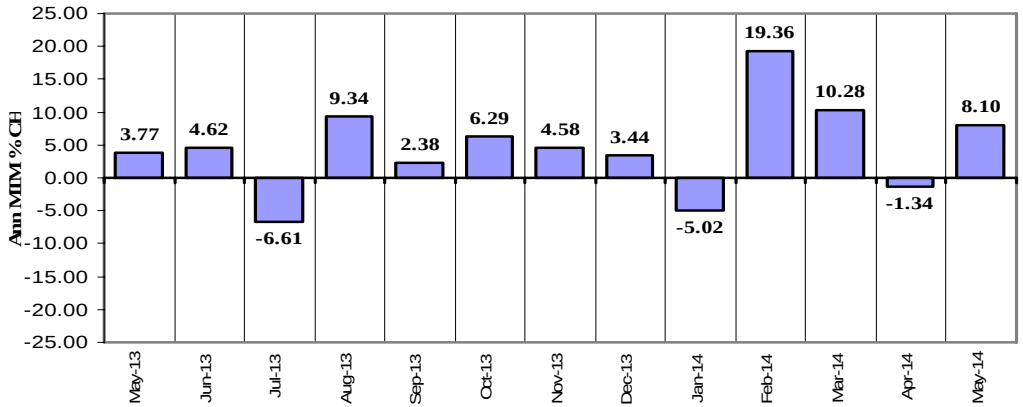
The first rule, presented in Table V-1, is that Real GDP must decline for, at least, one quarter. Growth in U.S. RGDP accelerated from its flat growth in 2012Q4 (+0.14%) (not shown in Table V-1), over the first three quarters of 2013, but then the growth-rate in Real GDP accelerated in 2013Q4, and actually contracted in 2014Q1, which means that the behavior of Real GDP is sending a signal of possible recession. Though the growth in Real GDP has been decelerating since 2013Q3, the contraction, and especially its size, probably had more to do with the harsh 2013-14 Winter. So, this apparent signal of possible recession should be viewed within the context of the weather-induced slowdown in economic activity in the first quarter of 2013. Nevertheless, RGDP-growth is slowing.

(2.) Industrial Production must contract for, at least, 4-6 months. .

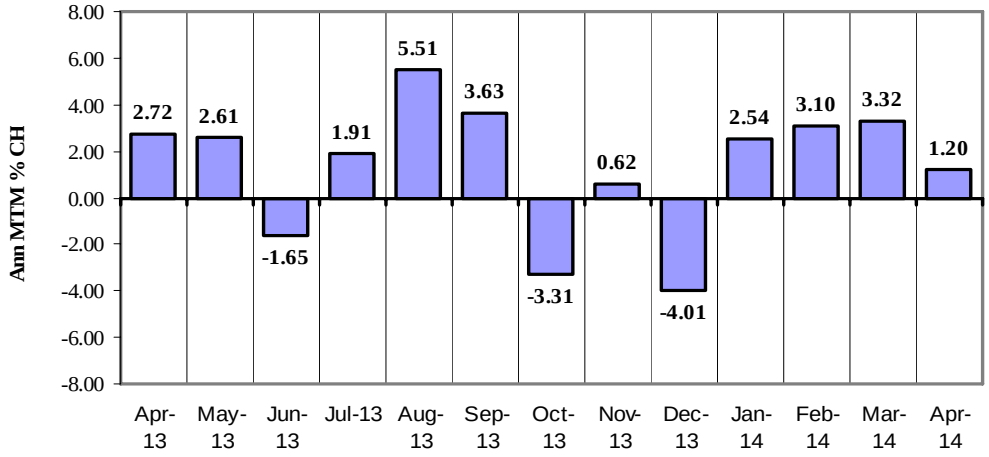
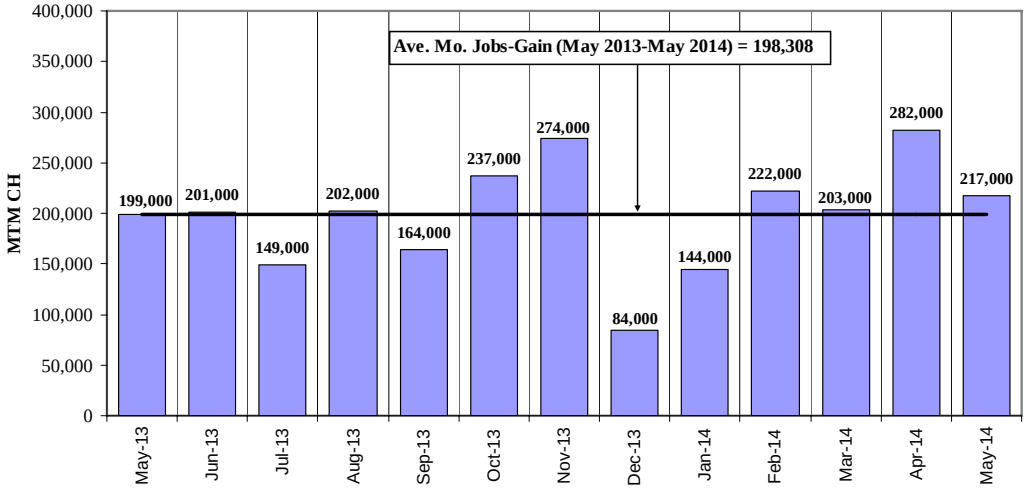
The next of Shishkin's rules, or criteria, for spotting a recession presented in Table V-1 is Industrial Production (IPI) must contract for, at least, 4-6 months. In Table V-1, it is the Manufacturing IPI that is tracked over the preceding 12 months, as of the time of writing. Manufacturing is tracked because it is less likely than the Total IPI to be effected by the weather, because the Total IPI includes the output of weather-sensitive utilities.

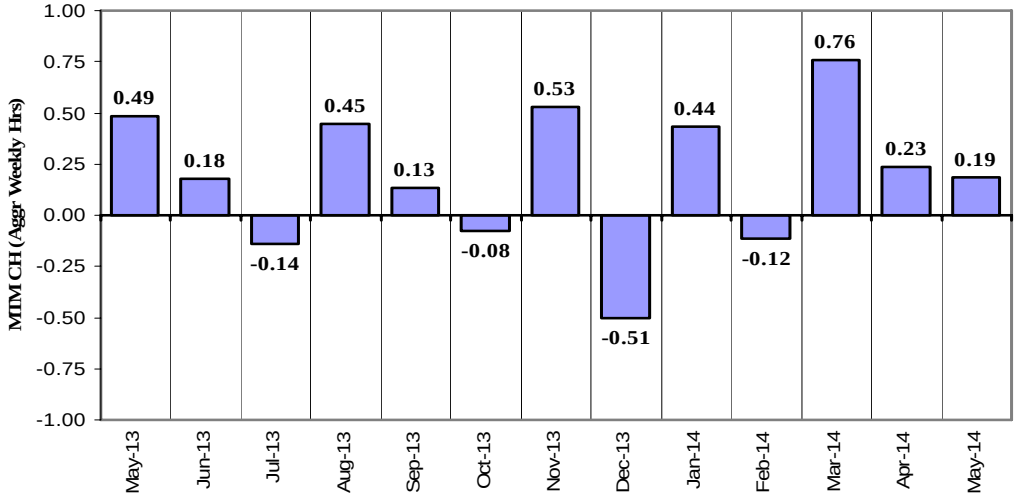
TABLE V-1: Niemira and Klein's Modified Shiskin Rules for Spotting a Recession

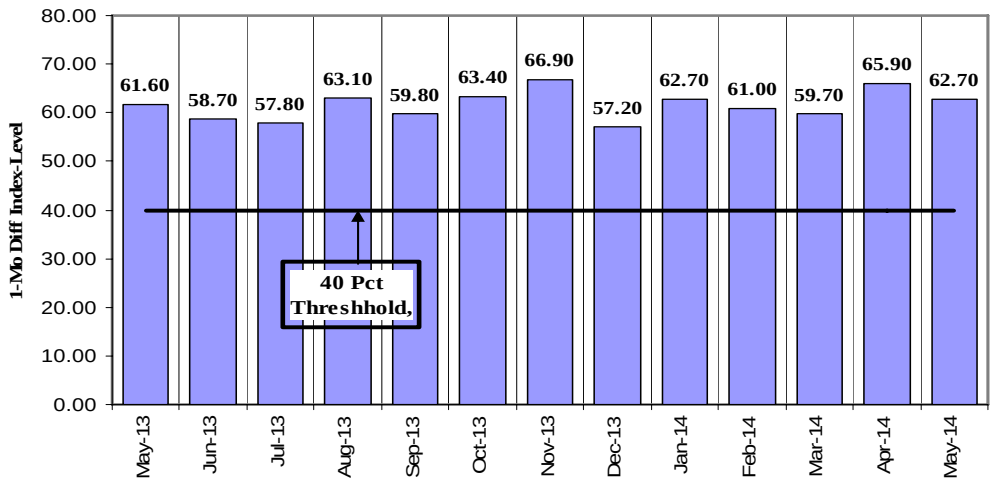
I. CRITICAL INDICATORS FOR SPOTTING A RECESSION

INDICATOR GROUP	COMPOUNDED, ANNUALIZED %CHANGE: (QTQ/MTM)	CRITERION FULFILLED?
(1.) Real GDP must decline for, at least, one quarter.		
Real GDP (Q-U.S. BEA)		**YES** **(Growth in U.S. RGDP accelerated for the first three quarters of 2013, it then decelerated in 2013Q4, and STEEPLY contracted in 2014Q1)**
(2.) Industrial Production must contract for, at least, 4-6 months. .		
Mfg. Output (M-FRB)		**NO** **(But Mfg Output has been up-and-down, and has contracted three times within the last 12 months. Growth shot up over 19%, annualized, in February, 10% in March, 8% in May)**

(3.) And, there should be a contraction for, at least, 4-6 months. In one of the following series:.

INDICATOR GROUP	ANNUALIZED %CH/JOBS CHANGE/PCT-PT CH (QTQ/MTM)	CRITERION FULFILLED?
Real Per Capita DPI (M-U.S. BEA)		**NO** **[But, it has declined three times over the last 12 months. Growth actually accelerated over the winter (Dec-Feb) due to the ACA, but then decelerated in April.]**
U.S. NF Emp (M-U.S. BLS)		**NO** **(The pattern has been accelerating monthly growth, followed by a deceleration in. Growth. Growth accelerated from December to February, cooled March, surged in**

		April, then slowing in May.)
Aggregate Hrs Worked (M-U.S. BLS)		**YES** **(It's been an up-and-down pattern, and includes 4 months of declines. After an up-and-down pattern in Jan-Feb, hours surged by +0.76% in March, but growth has decelerated in April and May).**
(4.) The Employment Diffusion Index should decline below 40% of all series expanding their workforce, on a one month change basis, and remain below that point for, at least, 4-6 months.		
INDICATOR GROUP	**MONTHLY LEVEL OF 1-MO DIFFUSION INDEX**	**CRITERION FULFILLED?**

Emp Diffusion Index (M-U.S. BLS)		**NO** **(After decelerating from January to March, the 1-Month Diffusion Index increased to 65.90 in April, and then fell slightly to 62.70 in May).**

[SOURCE: Niemira and Klein (1994), p. 138 and Author's calculations]

***(2.) Industrial Production* (Continued).**

The Manufacturing IPI falls one month short of fulfilling the criterion for signaling a recession. Manufacturing Output has been up-and-down, and has contracted three times within the last 12 months, including two fairly steep declines: -6.61%, on an annualized basis, in July 2013, and -5.02%, in January 2014. But, then the growth in Manufacturing Output shot up over 19%, on an annualized basis, in February, but then decelerated, though still strong, to 10.28% in March, and then contracted by -1.34% in April. Manufacturing Output recovered in May, increasing by just over 8%.

(3.) And, there should be a contraction for, at least, 4-6 months. In one of the following series: Real Per Capita DPI, U.S. Non-Farm Employment, and Aggregate Hours Worked.

At the time of writing, two of the four series, presented in Table V-1, like the Manufacturing IPI, discussed above, were one decline short of fulfilling the recession-rule. Real Per Capita Disposable Personal Income (DPI) and Aggregate Hours Worked both had three declines within the preceding 12 months. These two series will be discussed first.

Real Per Capita Disposable Personal Income (DPI)

As noted above, Real Per Capita DPI has declined three times over the last 12 months. Real Per Capita DPI declined by 1.65%, on an annualized basis, in June 2013, and then had two more steep declines: -3.31% in October (the month of the Government shutdown), and -4.01% in December, the first month of the harsh 2013-14 Winter. But then growth turned positive in January (+2.54%), and then the growth in Real Per Capita DPI, further accelerated in February and March, when the annualized, monthly growth-rate exceeded 3% in each month. This was driven largely by the expansion of Medicaid under the *Affordable Care Act* (ACA), which shows up as an increase in Transfer Payments (since DPI = Income + Transfer Payments – Taxes). In April, the growth in Real Per Capita DPI decelerated to 1.20%, less than one-half of its January and February growth-rates.

Aggregate Hours Worked

Aggregate Hours Worked is the second series, in addition to Real GDP, to meet the requirement for signaling a recession. Overall, the pattern over the previous 12 months has been up-and-down, but includes four months of declines. The steepest decline was the -0.51% in December 2013. But there were also three other declines in Aggregate Hours Worked: July (-0.14%) and October (-0.08%) 2013, and February 2014 (-0.12%). After an up-and-down pattern in January and February to start 2014, the growth in Aggregate Hours Worked, surged by +0.76% in March, but the growth-rate in hours-worked has decelerated into April (+0.23%) and May (+0.19%).

U.S. Non-Farm Employment

At the time of writing, there have been no declines in job-growth over the previous 12 months of data. Therefore, the Non-Farm Employment series suggests no recession. As illustrated in Table V-1, the average Month-to-Month (MTM) growth-rate in U.S. Non-Farm Employment, between May 2013 and May 2014, is 198,308 jobs per month. There have been five months in which jobs grew faster than the average, four months at, or near, the average, and four months below the average. Similar to the growth-rate in Real GDP, there seems to be an up-and-down pattern to the MTM growth-rate. That is, there is a pattern of accelerating monthly growth, which, is then followed by one, or more, moths of a deceleration in growth. Job-growth actually accelerated from the flat growth in December (+84,000) to +222,000 in February. Job-growth cooled off somewhat in March (+203,000), but then re-accelerated again in March (+282,000), again, following the fits-and-starts pattern. May, once again, had a deceleration in job-growth (+217,000), but, job-growth did not drop below 200,000, a level that has been maintained since February.

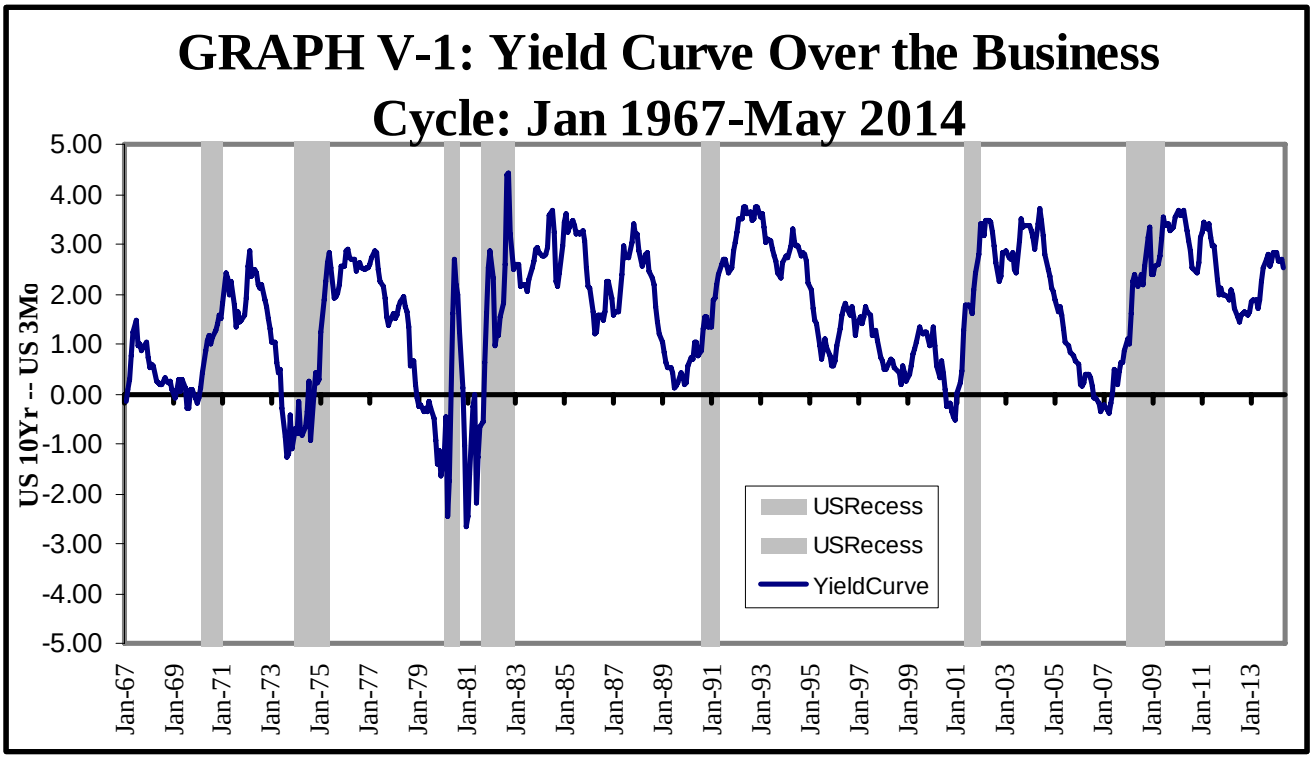
(4.) The Employment Diffusion Index should decline below 40% of all series expanding their workforce, on a one month change basis, and remain below that point for, at least, 4-6 months.

The One-Month Employment Diffusion Index indicates no recession. The last time the Diffusion Index was below the critical value of 40.00 was December 2009, when it was 38.60. Over the 12-month period depicted in Table V-1, the Diffusion Index hit its high of 66.90 in November 2013, then it dropped to its lowest level (over the 12-month reference time-frame), of 57.20, one

month later in December. It then recovered to 62.70 in January. After decelerating from January to March, the 1-Month Diffusion Index increased to 65.90 in April, and then fell slightly to 62.70 in May.

B. TWO OTHER INDICATORS THAT HAVE SIGNALED POSSIBLE RECESSIONS

Two other indicators that have also signaled possible recessions are *The Yield Curve* and *Oil Prices.* The ***Yield Curve***, in many instances, flattens, and then inverts, just before the economy goes into recession. This effects the Net Interest Margin (NIM)[80] of banks, although that relationship has weakened somewhat[81] Graph V-1 presents the Yield Curve (defined as the spread between the U.S. 10-Year Treasury and the U.S. 3-Month Treasury, both constant maturities). Graph V-1 tracks the average monthly Yield Curve over the period January 1967 to May 2014 (latest period of available data).



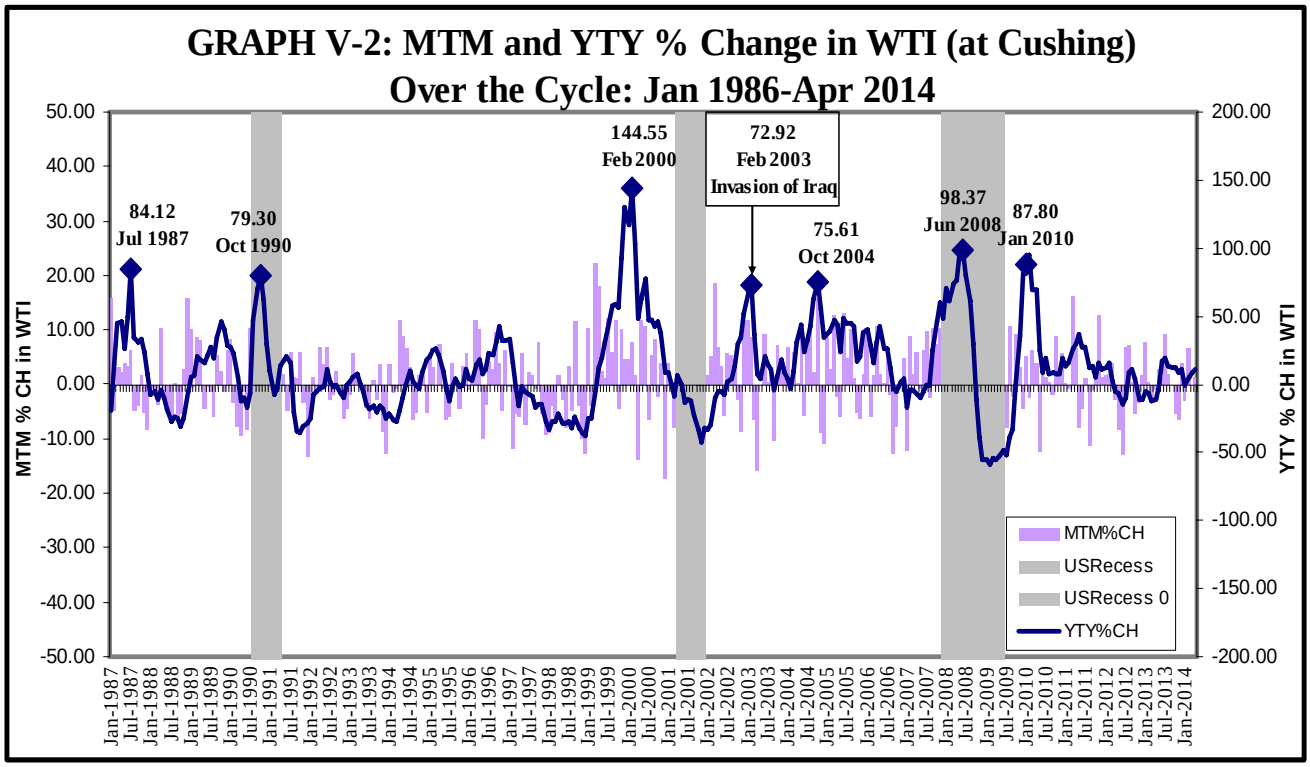
SOURCE: FRBStL-FRED.

[80] $\frac{\text{Interest returns} - \text{Interest expense}}{\text{Average earning assets}} = \text{Net interest margin}$

[81] Terris, Harry, *Higher Rates Not Always a Help to Net Interest Margins* (June 25, 2013) AMERICAN BANKER < http://www.americanbanker.com/magazine/123_7/higher-rates-not-always-a-help-to-net-interest-margins-1059903-1.html > Accessed on January 31, 2014.

Note that before each recession (shaded region), over the 1967-2014 time-frame, the Yield Curve (= US 10-Yr Treasury – U.S. 3-Mo T-Bill), began to decline, after rising over the previous recovery/expansion. This, in turn, implied that the NIM of banks was closing up as well, shutting off the supply of credit. And, even though, as noted above, the link between the Yield Curve and the NIM has weakened somewhat, it nevertheless, is still there. Preceding every recession [save the 1990-91 Recession when it approached zero (0.14, in July 1989), but didn't actually turn negative], the slope of the Yield Curve went from being positive, to flattening, to then turning negative (i.e., it *inverted*, that is, short-term interest rates were higher than long-term interest rates), including before the 2007-09 Recession when it inverted to -0.38 in March 2007. As in every other recovery, the slope of the Yield Curve turned positive and, steepened reaching a peak of 3.67 in January 2010. It then fell to 1.43 by July 2012. Since then it has steepened again peaking at 2.82 in January 2014. By April, it had declined slightly to 2.68, but far from inverting. And, with the Fed keeping the Federal Funds Rate near zero, it is not likely that the Yield Curve will invert anytime soon. This is especially true given that the Fed is tapering its QE3 Program, which, in turn, is resulting in higher long-term interest rates. It is, therefore, unlikely that the Yield Curve will invert, and signal recession, anytime soon. Further, the steepening Yield Curve should improve the NIM.

The second indicator, beyond Shiskin's Rules, that, in many instances, signaled the on-set of recession is ***Oil Prices***. Save Feb 2010, when the YTY % Change in the spot price for West Texas Intermediate (WTI), passing through Cushing (the major U.S. trading hub, World's largest oil storage facility, and price-settlement point for WTI), exceeded 90%, the U.S. Economy went into recession. When the YTY % change was in the 75%-90% range, sometimes we went into recession; sometimes we didn't (see Graph V-2). In some cases there were extenuating circumstances like in February 2003, just before the U.S. invaded Iraq. In that case, the largest Quarter-to-Quarter (QTQ) boost in U.S. defense spending since the Korean War, in 2003Q1, juiced the economy enough to counteract any recessionary pressures from rising oil prices.



SOURCE: FRBStL-FRED.

A rise in oil prices acts as a regressive tax since there is no close, available, substitute for its high-end distillate, gasoline, which motorists need to commute to work, and for other trips. And, the lower the income, the higher the percentage of that income the price of a gallon gasoline is. Thus, it takes spending out of the pockets of those consumers, with the higher Marginal Propensity to Consume (MPC) for other things, which, in turns, dampens overall Aggregate Spending. Conversely, a fall in gasoline prices would act as a progressive tax cut stimulating consumer spending.

The last time the YTY percent-change in WTI exceeded 90% was in June 2008, six months into the 2007-09 Recession, and three months before the financial panic. The YTY growth-rate in the price of WTI did hit 87.80% two years later in June 2010, but the economy did not go into recession (see Graph V-2). There had been a boost in hiring due to the 2010 Census, and the Stimulus was still in effect at the time. Over the past 12 months of available monthly data, at the time of writing (April 2013-April 2014), there have been seven moths of double-digit YTY percent increases, but none exceeding 20%. So far, it does not appear that monthly Oil Prices, on

a YTY basis, are signaling a recession. However, one question on Oil Prices still remains: How is the possible disintegration of Iraq effecting oil markets?

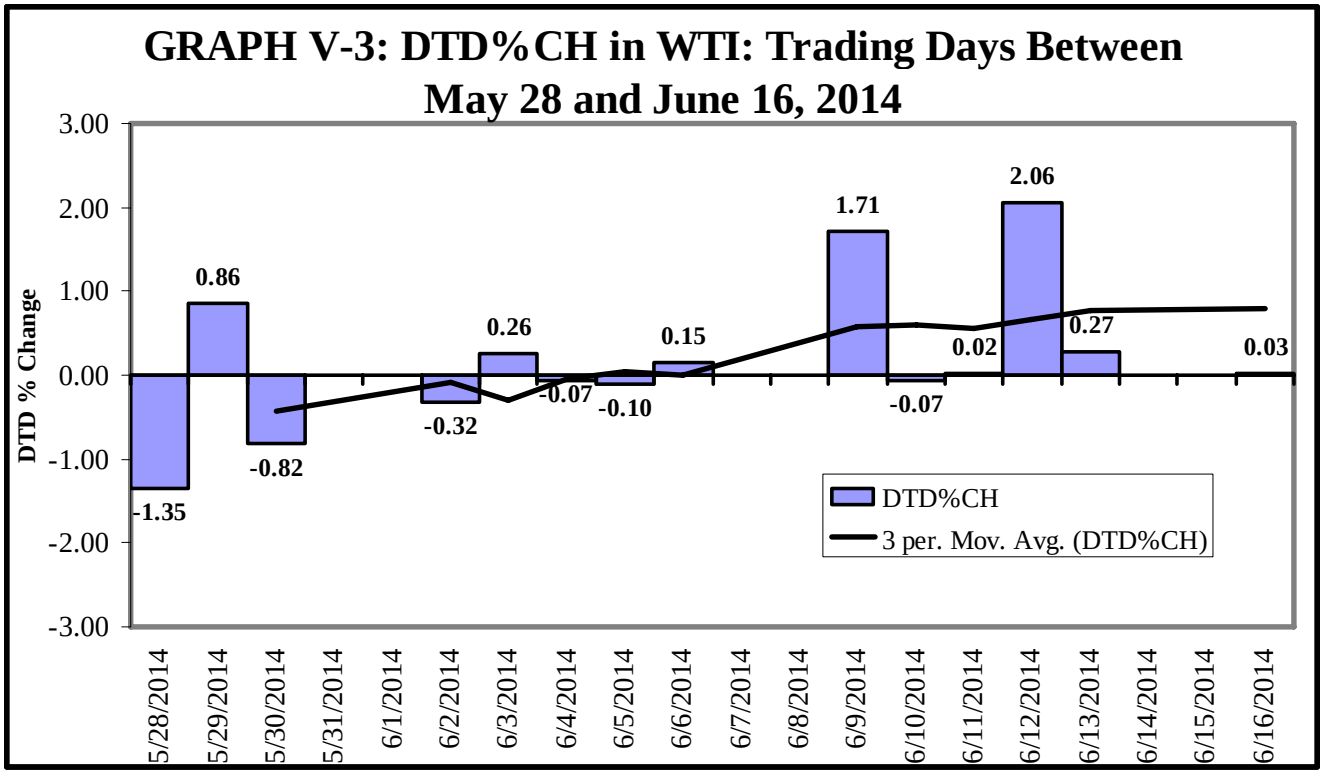
Iraq and Oil Markets

On June 11, 2014, the Iraqi army capitulated to ISIS (Islamic State of Iraq and Syria), the ultra-militant offshoot of Al-Qaida that spilled over from the civil war in Syria to the Iraqi province of Al Unbar and took four cities[82]. Though ISIS has been prevalent in the news of the recent events that could spell the disintegration of the Iraqi nation-state, it is actually the leader of a coalition composed of an eclectic mix of Iraq war holdovers and unaffiliated tribesmen aligned against Prime Minister Nouri al-Maliki's government. These are some of the primary groups said to be aligned with ISIS[83].

The question for the purposes of this section on indicators of recession, and in particular with regard to oil prices is: What has been the effect on oil markets of the crisis in Iraq?

There has clearly been some effect. In their June 16th report on gasoline prices, the AAA said that "After falling for nine straight days, the national average has increased for five consecutive days for a total of about two cents per gallon as violence in Iraq has intensified"[84] And, as illustrated in Graph V-3, which tracks the Day-to-Day (DTD) percent-change in the price of WTI, over the trading days between May 28 and June 16, 2014, after DTD declines in the price of WTI, the 3-Day Moving Average (3-DMA) then turned positive and slightly accelerated in its growth in June, but then seemed to reach a plateau (that is, as of June 16th, the last day of data, at the time of writing). There are two large DTD percent-changes in the price of WTI: June 9th, 1.71%, and 2.06%, on June 12th. The June 9th increase preceded the ISIS advance, and the June 12th increase took place a day after. But, price increases subsided after that (up to June 16th).

[82] Chulov, Martin, Fazel Hawramy, and Spencer Ackerman , *Iraq army capitulates to Isis militants in four cities* (June 11, 2014) THE GUARDIAN < http://www.theguardian.com/world/2014/jun/11/mosul-isis-gunmen-middle-east-states > Accessed on June 23, 2014.
[83] Gibbons-Neff, Thomas, *ISIS: Not alone in their conquest of Iraq* (June 20, 2014) WASHINGTON POST < http://www.washingtonpost.com/news/checkpoint/wp/2014/06/20/isis-not-alone-in-their-conquest-of-iraq/ > Accessed on June 24, 2014.
[84] Daily Fuel Guage Report, *Iraq Violence Sends Gas Prices Slightly Higher* (June 16, 2014) AAA < http://fuelgaugereport.aaa.com/iraq-violence-sends-gas-prices-slightly-higher/ > Accessed on June 25, 2014.



SOURCE: FRBStL-FRED and Author's calculations.

However, to have a significant, and lasting impact on Iraq's oil production, ISIS would have to push more toward the Shiite south, which would be difficult for the Sunni insurgents. Specifically, the Iraqi insurgents would need to shift their focus south of Baghdad in order to have any real impact on oil production or exports. The militants did take control over the Baiji oil refinery north of Baghdad. However, the refinery, which U.S. officials have said was closed weeks ago, processes oil largely for the domestic market[85].

U.S. to Export Crude

In June 2014, the U.S. Commerce Department gave Pioneer Natural Resources Co. and Enterprise Products Partners LP permission to ship a type of ultra-light oil known as condensate to foreign buyers. The buyers could turn the oil into gasoline, jet fuel and diesel. The shipments

[85]. Graeber, Daniel J, *ISIS not impacting Iraqi oil sector much* (June 25, 2014) UPI < http://www.upi.com/Business_News/Energy-Resources/2014/06/25/ISIS-not-impacting-Iraqi-oil-sector-much/7571403703457/ > Accessed on June 25, 2014.

could begin as soon as August and are likely to be small[86]. The rules banning exports of crude oil were imposed after the Arab oil embargo of the 1970s. However, the President has the power to lift the embargo. U.S. companies can export refined fuel such as gasoline and diesel but not oil itself except in limited circumstances that require a special license. The embargo essentially excludes Canada, where U.S. oil can flow with a special permit[87].

The rule-change could be controversial because oil prices are stuck above $100 a barrel amid instability in Iraq, Libya and Ukraine. The benchmark U.S. oil price rose on the news, nearing its high for the year, as traders mulled the possibility of supplies leaving the country[88]. The reaction from refiners has been mixed, Phillips 66, the largest U.S. refiner by market value, has been supportive of lifting the crude export ban, though refiners will probably reap lower profits if they are forced to pay higher prices to compete with international buyers for U.S. crude. On the other hand, Valero (through spokesman Bill Day), doesn't think the current system needs to be changed. Although the U.S. is still importing quite a bit of crude oil to satisfy its demand, net U.S. crude imports were 7.16 million barrels per day as of June 13, down 24% over the last five years, according to data from the U.S. Energy Information Administration (EIA)[89].

C. INFLECTION POINT: Is the Economy Approaching Escape Velocity?

So, to reiterate the common theme of this outlook: Was the contraction in U.S. GDP in 2013Q1 due to the weather, and therefore just a temporary setback, as the U.S. Economy has actually hit an inflection point, and is poised to achieve escape velocity? Save Real GDP and Aggregate Weekly Hours Worked, none of the other indicators that make up Shiskin's rules for spotting a recession satisfied any of the criteria for an economic downturn. So, if there appears to be no recession as we enter the second-half of 2014 that would eliminate the likelihood of the *Turning-Point* scenario. That leaves either the *Inflection-Point* scenario, or the "*More-of-the-Same*" (i.e., "Fits-and-Starts") scenario to consider. To answer this question, the discussion now turns to a

[86] Berthelsen, Christian and Lynn Cook, *U.S. Ruling Loosens Four-Decade Ban On Oil Exports* (June 25, 2014) WALL STREET JOURNAL < http://finance.yahoo.com/news/u-ruling-loosens-four-decade-002800949.html > Accessed on June 25, 2014
[87] ibid.
[88] ibid.
[89] Shauk, Zain, Dan Murtaugh, and Rakteem Katakey *Obama Administration Widens Export Potential for U.S. Oil* (June 25, 2014) BLOOMBERG < http://www.bloomberg.com/news/2014-06-25/obama-administration-widens-export-potential-for-u-s-oil.html?cmpid=yhoo > Assessed on June 25, 2014.

couple of other economic indicators of where the U.S. Economy may be, and may be heading. As discussed, in detail, in Section I, above, and as noted by Mian and Sufi, in their recently released book, *House of Debt*[90] the U.S. Economy had already been heading for a consumption-lead recession before the collapse of Lehman Brothers and AIG in September 2008, ushering in the financial panic. In fact, the National Bureau of Economic Research (NBER) dated the beginning of the recession in December 2007. And, of course, with the collapse in housing prices, nationally, in 2006, the wealth of, especially, middle- and lower-income households was wiped out, as most, or all, of their wealth is tied up in their house. As a consequence, the growth in consumer spending, overall, in this recovery has been tepid, certainly compared to other Post World War II recoveries. Given the role of consumption (or lack thereof) over this recovery, the first indicator to be analyzed in this section will be *Consumption* and its performance over this recovery compared to other, selected recoveries. In addition, other indicators of the strength of economic activity will also be looked at, including *Employment*, the *Velocity of Money*, the *Savings Rate*, *Retail Sales*, and *Orders for Durable Goods*.

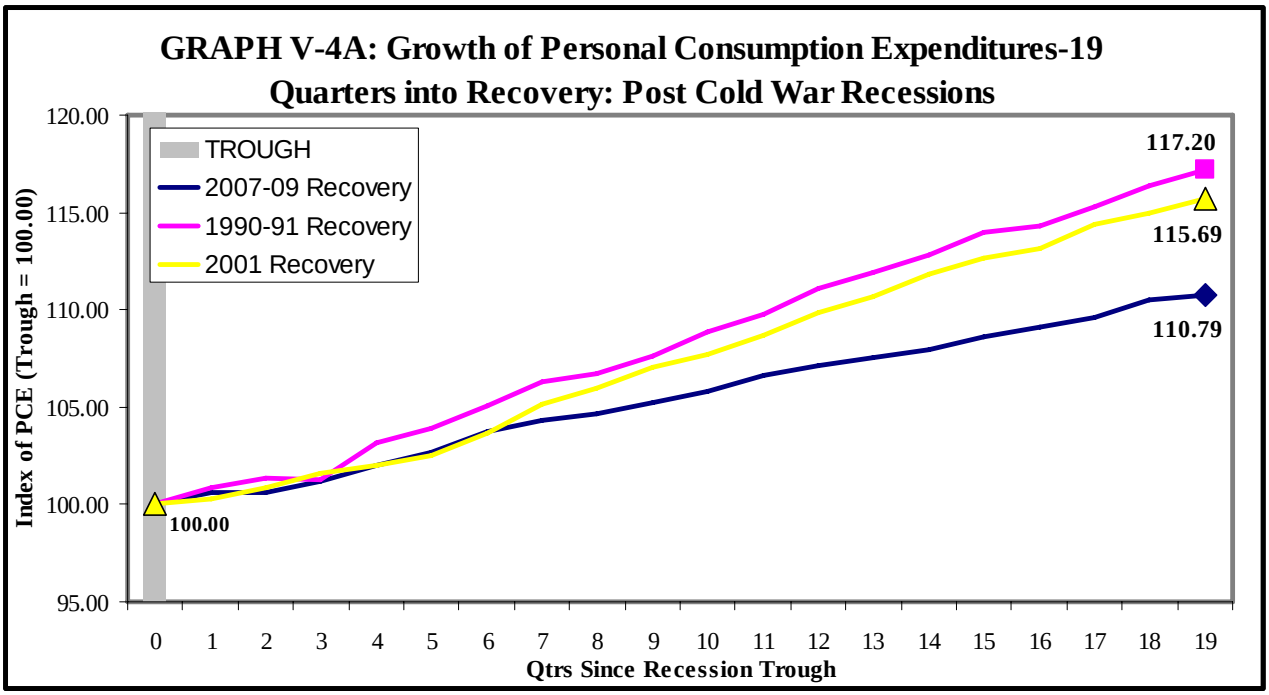
Consumption

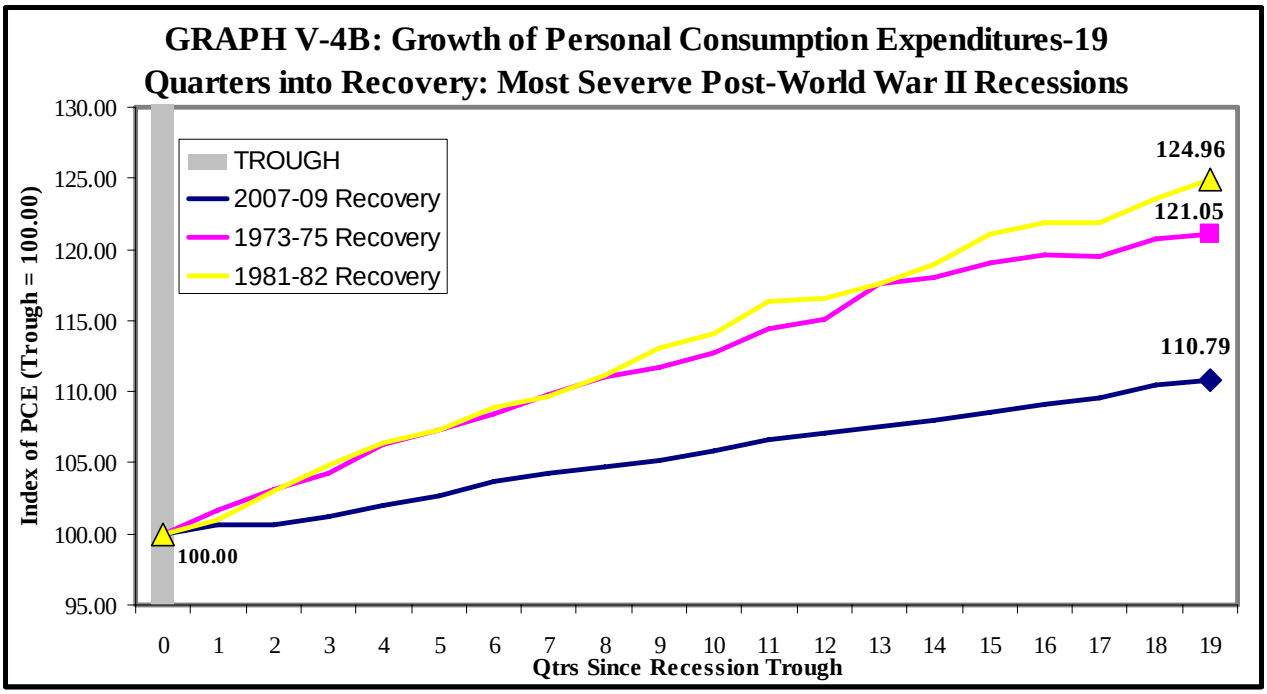
After 19 quarters of Recovery, Consumption is still weak, whether compared to the two previous most severe Post WW II recessions, or the weaker Post Cold War recoveries [save Qtr 19 of the 2001 Recovery (2006Q2)], which was into the popping of the housing bubble.

Graphs V-4A and V-4B construct an index of the level of consumption, with the trough of the previous recession equal to 100.00 (the Base Period). Graph V-4A tracks the current recovery, and the two other Post Cold War recessions over the first 19 quarters of recovery. Graph V-4B tracks the current recovery, and the two other severe Post World War II recessions over the first 19 quarters of recovery.

The growth in Consumption over the current recovery has been weaker than that over the other two Post Cold War recoveries (see Graph V-4A), which, in turn, were weak compared to recoveries during the Cold War Era, including the two steepest: 1973-75 and 1981-82.

[90] Mian, Atif and Amir Sufi, *HOUSE OF DEBT* (2014) University of Chicago Press: Chicago.





SOURCE: U.S. BEA and Author's calculations.

As of 2014Q1, 19 quarters into the current recovery, Consumption had grown by 10.79% since the trough of the recession in 2009Q2. Even the weak recovery after the 2001 Recession performed a little better after 19 quarters of recovery. Consumption after the trough had increased by 15.09% by 2006Q2. Of course, much of the growth in aggregate spending had been financed by consumers using their increasing home values to "cash-out" and use it to finance their spending. And, of course, by 2006Q2, the housing bubble had popped. After the first jobless recovery, the recovery from the 1990-91 Recession began to pick up steam in the second half but, of course, after the Netscape IPO in September 1995, the Tech Boom, which became a bubble by the late 1990's, fueled strong economic growth, and after 19 quarters of recovery, Consumption had grown by 17.20% since the trough in 1991Q1. Nevertheless, this was still not as strong as the growth in Consumption 19 quarters after the trough of Cold War Era recessions. This can be seen in Graph V-4B.

Graph V-4B shows the index of the level of Consumption 19 quarters into the current recovery, and the recoveries from the two other steep recessions in the Post World War II Era. By 19 quarters into the recoveries, the level of Consumption was more than 20% higher than it was at the troughs (21.5% after the 1973-75 Recession, and 24.96% after the 1981-82 Recession), which, in both cases, is much stronger than the performance over any of the Post Cold War recoveries. But, in particular, the current recovery, coming off the first collapse in households' balance sheets, and systemic financial crisis, since the Great Depression, and with no follow-up fiscal stimulus after the end of the ARRA stimulus, has been the weakest of the entire Post World War II Era. It remains to be seen, at the time of writing, whether, or not, second-quarter GDP data will show, not just a bounce-back from the harsh winter, but that the economy has hit an inflection point. That is, will second-quarter data show that the U.S. Economy has finally achieved enough momentum to sustain a stronger recovery?

Further, in addition to the hit to Net Worth from the collapse of the housing bubble, in conjunction with unsustainable levels of debt, the consequent collapse in Aggregate Demand has resulted in another factor contributing to weak Aggregate Spending: JOB LOSS

Job Loss and the Decline in Consumption

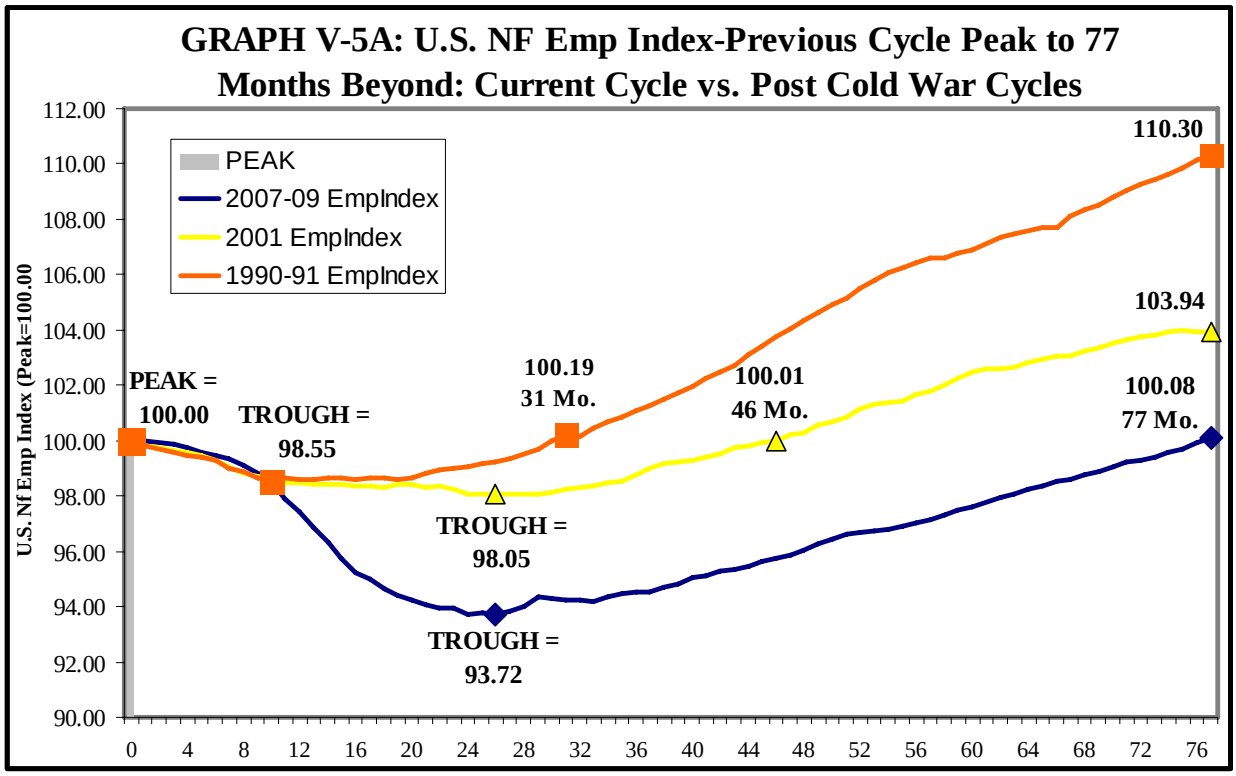
In his research on job-loss and the effects on consumption, Saporta-Eksten (November 2013) found that Consumption theory says that households should be able to smooth transitory income shocks. Unemployment episodes in the US are transitory. Nevertheless, consumption declines substantially upon job loss and remains low for several years afterward. While liquidity constraints, home production, and non-separability are all consistent with consumption decline upon job loss, they cannot explain the persistent weakness in consumption years after re-employment. Eksten shows that these consumption dynamics can be explained by the fact that job loss is associated with both pre- and post-job loss declines in hourly wages and earnings[91]

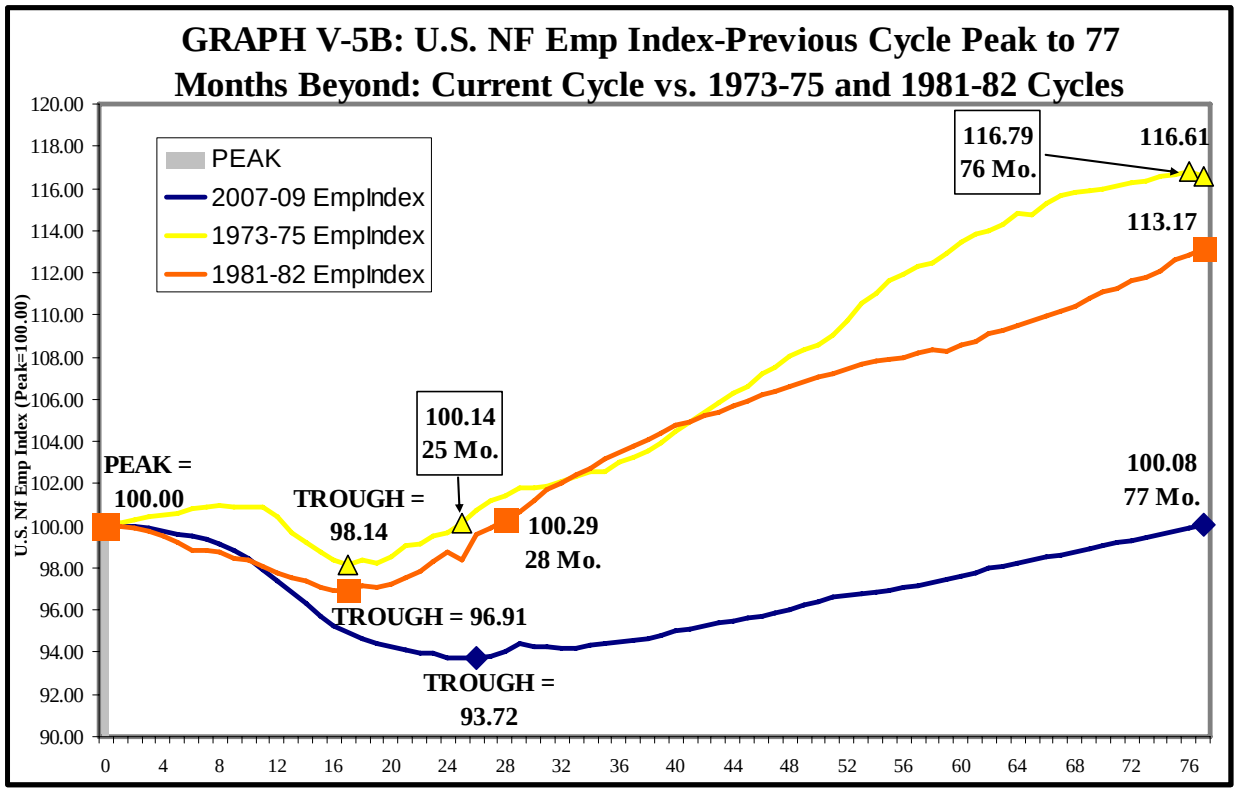
Employment

Seventy-seven months after the peak of the previous expansion (December 2007), and 51 months after turning around (February 2010), following the recent recession, U.S. Non-Farm Employment finally returned to its previous peak level in May 2014. If job-growth continues, then the U.S, jobs market will have progressed from the recovery to the expansion phase of the cycle. This recovery phase has been the longest of the Post World War II Era, including the other two Post Cold War jobless recoveries. Graphs V-5A and V-5B track the indices for the employment-level over the current cycle and the two other Post Cold War recovers (Graph V-5A) and the two other steep Post World War II recessions' recoveries (Graph V-5B).

From Graph V-5A, when compared to the other two Post Cold War cycles, after their respective cycle-peaks, both the recent (2007-09 Recession) and 2001 Recession had job losses for 26 months, compared to the 1990-91 Recession, in which employment contracted for just 10 months. The recent recession had the steepest decline in jobs (-6.28%). The other two Post Cold War recessions had less-severe job losses (-1.95% over the 2001 Recession, and 1.45% over the 1990-91 Recession). Putting the job-losses on an annualized basis shows just how steep the employment-declines were over the 2007-09 Recession. On an annualized basis, the U.S. Economy lost jobs at a 2.95%, compared to a rate of -0.90% over the 2001 Recession, and a -1.75% rate over the 1990-91 Recession.

[91] Saporta-Eksten, tay, *Job Loss, Consumption and Unemployment Insurance* (November 2013) STANFORD UNIVERSITY





SOURCE: U.S. BLS and Author's calculations.

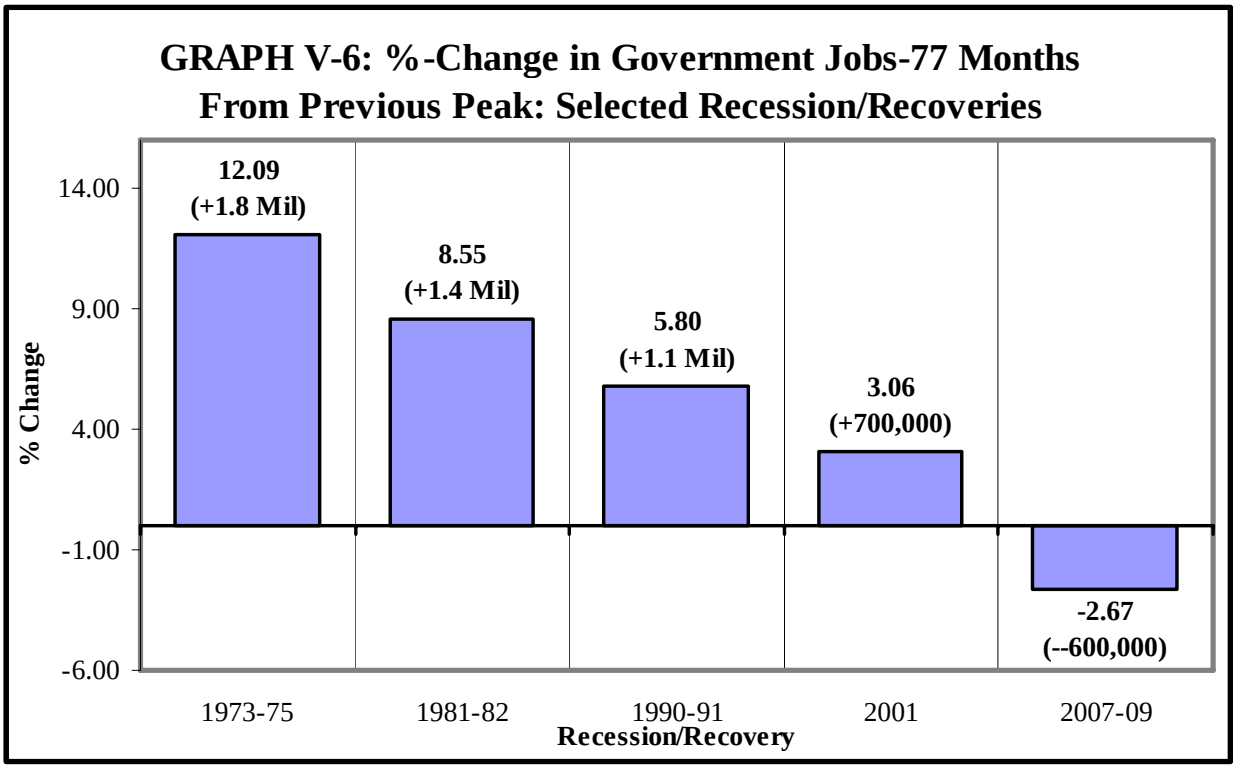
The base period in Graph V-5A is the peak of the previous expansion where the employment-level index is equal to 100.00. Points on the horizontal scale beyond the peak (where number of months beyond the peak = 0), that have an index value of 100.00 represent those points at which the pre-recession level of jobs has been regained. For the recovery after the 2001 Recession, that point is 100.01, 46 months after the previous peak (see Graph V-5A), which makes the point in which the pre-recessions job-level was recovered (i.e., 100% of all the jobs lost in the previous recession were recovered). Following the 1990-91 Recession, it took 31 months to recover the jobs lost (Graph V-5A). Following the recent, 2007-09 Recession, it took until May 2014, or 77 months regain the jobs lost over the recession, the longest jobs-recovery phase in the entire Post World War II Era.

Following the last recession, U.S. job-losses turned around in February 2010. In the 51 months between then and May 2014, U.S. Non-Farm Employment grew by 6.79%, which translates into a 1.56% annualized rate. This was actually stronger than the 1.19%, annualized rate over the 20 months between May 2003 and January 2005, when the job-losses from the 2001 Recession were recovered. And, it was much stronger than the 0.95% annualized rate over the 21 months between May 1991 and February 1993, in which all the jobs lost in the 1990-91 Recession were recovered. If the strength of job-growth, over the current recovery, outpaced the rates over the 2001 and 1990-91 recoveries, then why did it take 77 months to recover the jobs lost in the previous recession (compared to 21 months and 20 months)? The answer is that the job losses in the 2007-09 Recession were much steeper than then those lost in the other two Post Cold War recessions. As noted, in the discussion above, employment contracted by 6.28% over the 2007-09 Recession, compared to 1.95% over the 2001 Recession, and 1.45% over the 1990-91 Recession. Further, due to the collapse of the housing bubble, unsustainable levels of household debt, and a systemic financial panic, this recovery, with no active fiscal policy beyond the short-lived ARRA, the economy has been struggling to recover from the worst economic crisis since the Great Depression.

The steepness of the 2007-09 Recession, and subsequent job-losses is also apparent when comparing the job-recovery performance following the other two steep Post World War II Era contractions, as illustrated in Graph V-5B. Over the 1973-75 Recession, employment contracted

by 1.86%, and even though it contracted by 3.09% over the 1981-82 Recession, that was still only less than half the decline over the 2007-09 Recession. Even the 2.19% annualized rate over the 1981-81 Recession was still less than the 2.95% annualized rate of job-loss over the 2007-09 Recession. In both, the 1973-75 and 1981-82 recessions, employment declined for 17 months, longer than the 1990-91 Recession, but shorter than the period of job-contraction over the 2001 and 2007-09 recessions. The rate of recovery from both recessions was much stronger than that for any of the Post Cold War recessions. It took only eight months to recover the jobs lost in the 1973-75 Recession, and 11 months after the 1981-82 Recession. Further, the annualized rate of job-recovery was 3.07% following the 1973-75 Recession, and 3.82% following the 1981-82 Recession.

In a final note, this is the only Post World War II recovery where the Government Sector has subtracted jobs from the economy. From 77 months beyond the previous peak, the U.S. Economy has shed 600,000 Government jobs, a 2.67% decline (see Graph V-6). Save the 2001 Recovery, every recovery discussed above has added more than one million Government jobs.



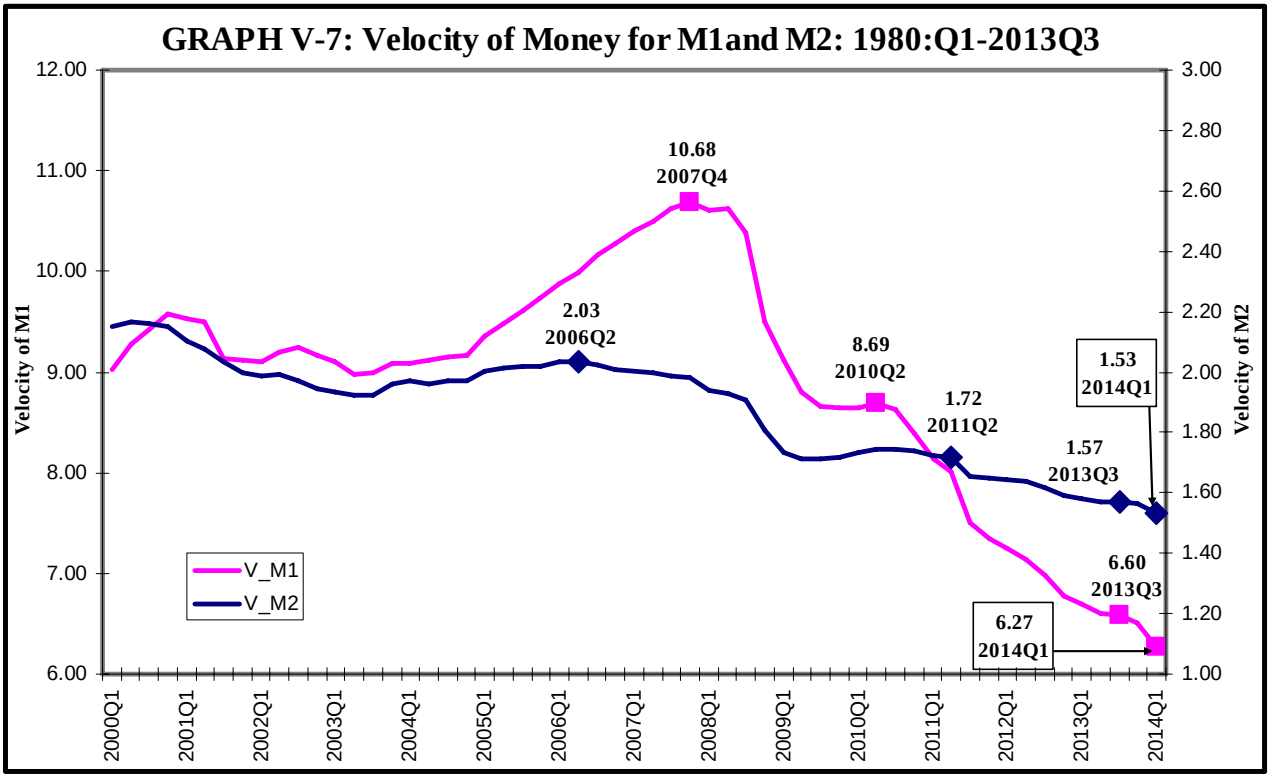
SOURCE: U.S. BLS and Author's calculations.

Velocity of Money[92]

Another indicator of weak spending is the Velocity of Money. There are two velocities that are considered here: the Velocity of M1, and the Velocity of M2. The Velocity of M1 is the frequency at which one unit of currency is used to purchase domestically- produced goods and services within a given time period. M1 is the narrowest component of the Money Supply. It is composed of Currency + Traveler's Checks + Demand Deposits. The Velocity of M1 is calculated as the ratio of quarterly nominal GDP:

> VM1 = GDP / M1 = Number of times M1 is turned over buying goods and services (i.e., Number of Transactions).

A decreasing velocity of M1 might indicate fewer short- term consumption transactions are taking place. Shorter- Term transactions include consumption made on an everyday basis.



SOURCE: FRBStL-FRED.

[92] This section is based on *Velocity of M1 Money Stock* (http://research.stlouisfed.org/fred2/series/M1SL).and *Velocity of M2 Money Stock* (http://research.stlouisfed.org/fred2/series/M2SL)., Federal Reserve Bank of Saint Louis. Accessed on June 25, 2014.

The broader M2 component of the Money Supply includes M1 in addition to Saving Deposits, Certificates of Deposit (less than $100,000), and Money Market Deposits for individuals. Comparing the velocities of M1 and M2 provides some insight into how quickly the economy is spending and how quickly it is saving. Graph V-7 tracks the Velocity of M1 (left vertical scale), and M2 (right vertical scale), from 2000Q1 to 2014Q1 (the latest period of available data at the time of writing).

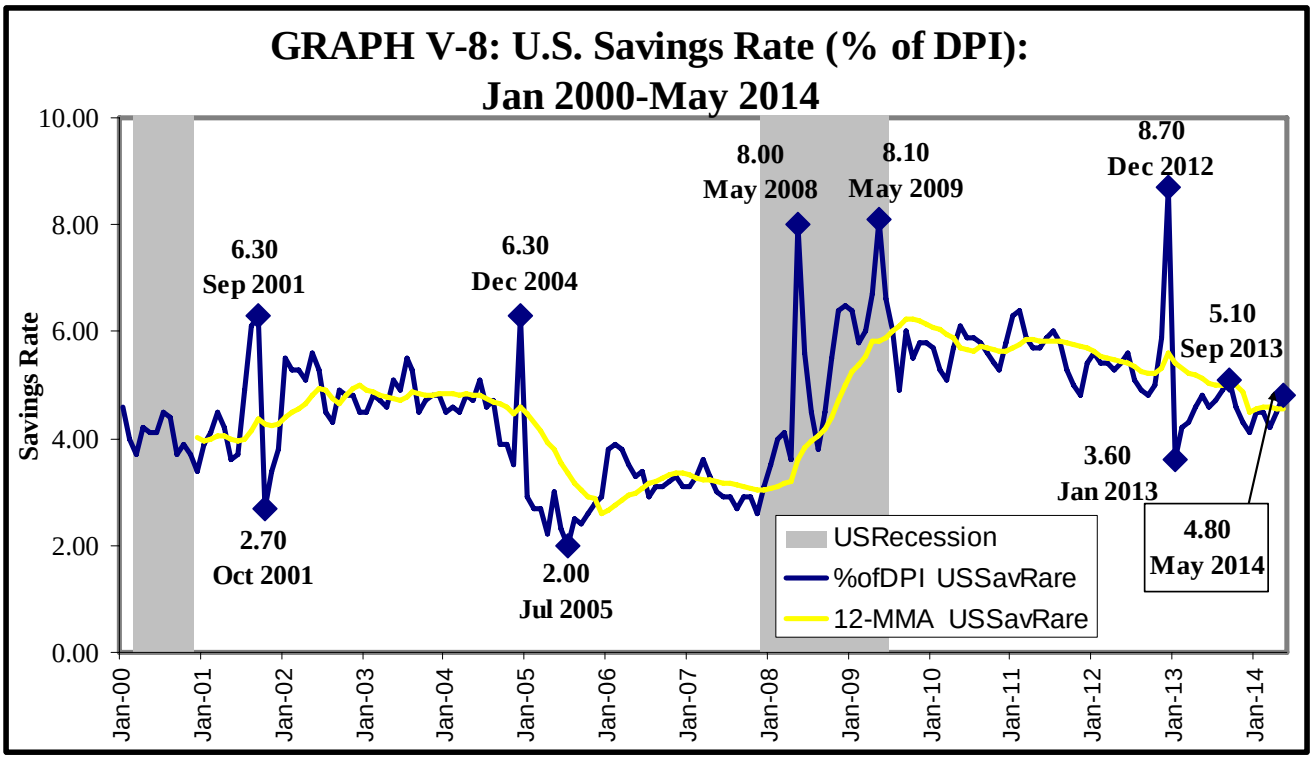
As would be expected, the Velocity of M1 fell from 10.68, in 2007Q4, its highest level over the entire range of data tracked in Graph V-7, the quarter the economy entered recession, and after spending had already begun to fall with the on-set of the housing bust and households carrying unsustainable debt loads. The decline leveled off the last quarter of 2009, but after a level of 8.69 in 2010Q2, the Velocity of M1 began falling again. And, it has continued to fall. In 2014Q1, the Velocity of M1 was at 6.27, the lowest level over the entire time-frame tracked in Graph V-7.

Like the Velocity of M1, the Velocity of M2 has also been falling, although at a shallower pace. By 2006Q2 went back up above 2, the first time since 2001Q4, the trough of the 2001 Recession. It has gradually fallen since then, and in 2014Q4, it was 1.53.

The Savings Rate

And, of course, with the decline in Households' spending, the saving rate would, of course, increase (since: Income = Consumption + Saving).

Although, the U.S. Savings rate certainly declined to unacceptably low levels in the late 90's and early 2000's, but, since the crisis, the increase in savings has been more driven by the need to repair Balance Sheets. And, to the extent that households have been paying down debt, which would be classified as savings, it would not be reflected in the M2-Multiplier data, which includes savings accounts, or time deposits (see discussion above), but does not include paying down debt. So, in addition to the M2-Multiplier, it will also be instructive to look at the savings-rate data, from the Personal Income Series. It should also be noted that, another factor driving the increased savings-rate is that many consumers seem to have become more Risk-Averse.



SOURCE: U.S. BEA and Author's calculations.

From Graph V-8, it can be seen that the U.S. Savings rate shot up to levels not seen in decades as the housing bubble collapsed, and with unsustainable levels of debt, households' balance sheets were decimated. The Savings Rate jumped to 8% in both May 2008 and May 2009. This exceeded, by nearly two percentage points, the jump in the Savings Rate in September 2001, the month of the 911 Attacks, which was equaled again in December 2004. After that the Savings Rate dropped until the on-set of the popping of the housing bubble and the financial panic. The "Fiscal Cliff" affair brought a spike in the Savings Rate in December 2012, when it jumped to 8.70%, then plummeting to 3.60% in January 2013. By September 2013, the U.S. Rate had climbed back to 5.10%, it fell until December, and then climbed back to 4.80% by May 2014.

The 12-Month Moving Average (12-MMA) of the Savings Rate peaked at 6.42% in September and October 2008, its highest level over the time-frame depicted in Graph V-6, and has gradually declined to 4.57% in April and May 2014, which is where it was in 2004 before it began to steeply decline before the recession and panic.

Retail Sales

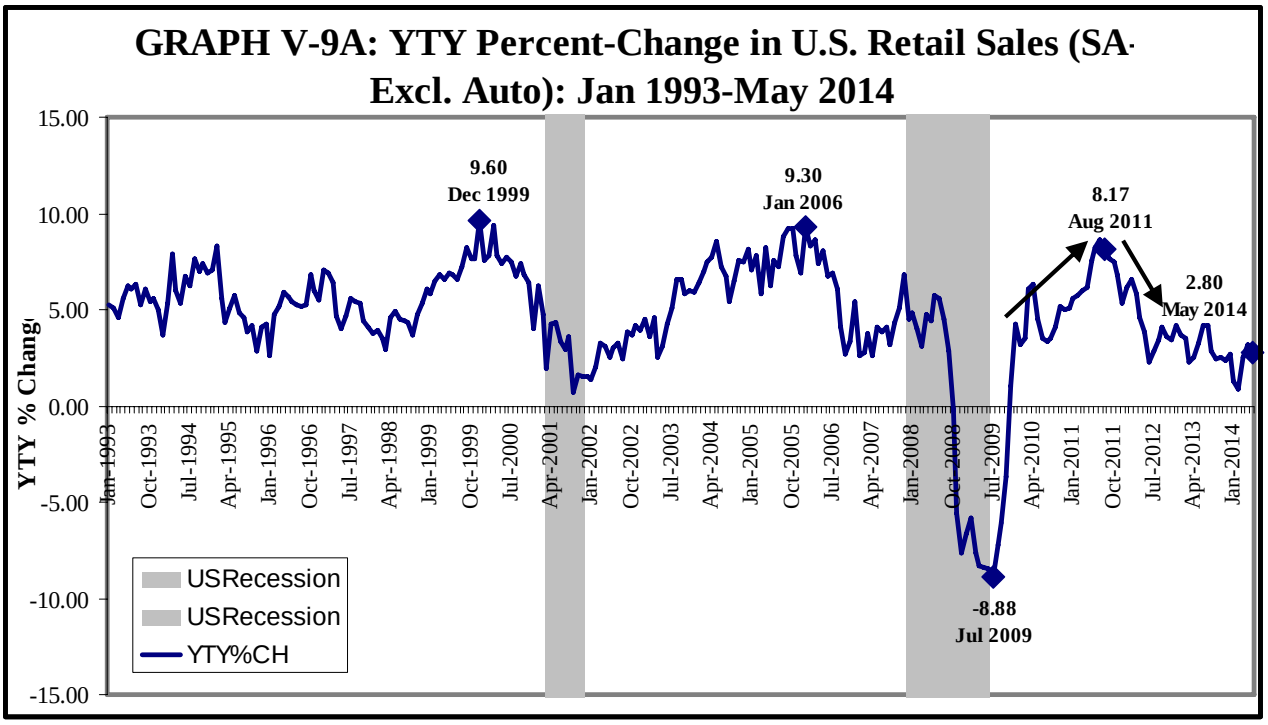
Of course, a very critical indicator of consumers' ability to support spending in the economy is reflected in Retail Sales. Graph V-9A tracks the Year-to-Year (YTY) percent-change in U.S. Retail Sales (seasonally adjusted), excluding Defense and Aircraft (a volatile component), from January 1993 to May 2014, the latest period of available data at the time of writing. .After the steep 8.88%, YTY contraction, in Retail Sales in July 2009, they bounced back sharply by December, and the YTY growth-rate accelerated until August 2011, when Retail Sales grew by 8.17%, the strongest YTY growth-rate since the 9.30% growth in January 2006, as the housing bubble was popping, and the 9.60%, YTY growth, in December 1999, as the Tech Bubble was peaking. Since then, the YTY growth-rate in Retail Sales rapidly decelerated until June 2012, when the YTY growth-rate in Retail Sales still continued to decline, but at a slower pace (see Graph V-9A). In May 2014, the latest period of data at the time of writing, on a YTY basis, Retail Sales grew by 2.80%, up from the 0.85% in February.

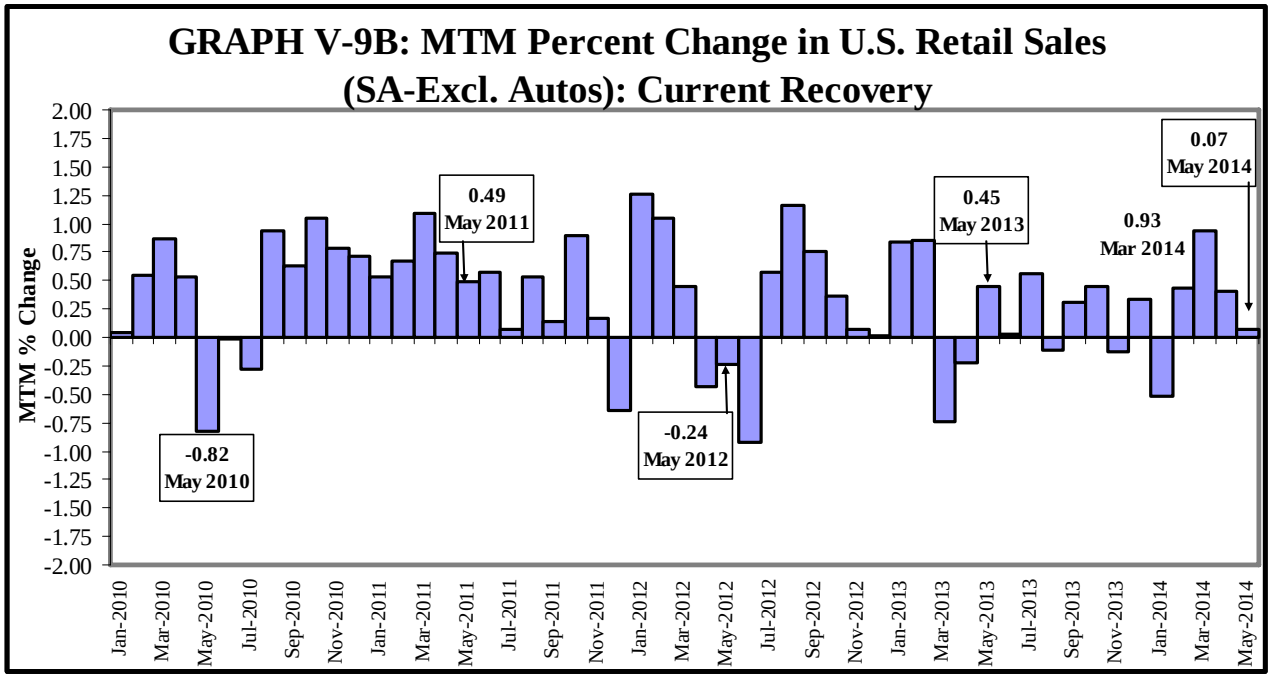
Graph V-9B presents another perspective with the Month-to-Month (MTM) percent-change in Retail Sales (seasonally adjusted) over the current recovery (January 2010 to May 2014). The MTM growth-rate in Retail Sales was flat in May 2014 (+0.07%), and down from March (+0.93%), the strongest month of 2014, so far. Further, Retail Sales in May 2014 were much weaker than either May 2013, or 2011, when the MTM growth-rate exceeded 0.4% in both periods (see Graph V-9B). However, MTM, Retail Sales did not decline as they did in May 2012 (-0.24%) and May 2010 (-0.82%).

One of the seemingly bright spots over the current recovery has been the renaissance of the U.S. Auto Industry after the collapse of General Motors (GM) and Chrysler as the economy went into recession and then panic after September 2008. The U.S. and Canadian governments effectively nationalized GM[93]. The U.S. Government sold the last of its shares in GM in December 2013[94]. Although, at the time of writing, GM is going through a crisis over the defect which claimed, at

[93] Naughton, Keith, *How U.S. Workers Rebuilt an Industry* (December 12, 2013) BLOOMBERG < http://www.bloomberg.com/news/2013-12-12/how-u-s-workers-rebuilt-an-industry.html > Accessed on June 30, 2014.

[94]. Healey, James R, *Government sells last of its GM shares* (December 10, 2013) USA Today < http://www.usatoday.com/story/money/cars/2013/12/09/government-treasury-gm-general-motors-tarp-bailout-exit-sale/3925515/ > Accessed on June 30, 2014.





SOURCE: U.S. Census and Author's calculations.

least 13 lives, and which they tried to cover up, and now there is an announced recall of 7.6 million more cars[95]. Nevertheless, overall, vehicle sales have been fairly strong over this, otherwise, weak recovery. There seems to be three factors playing a role in the strong rebound in vehicle sales:

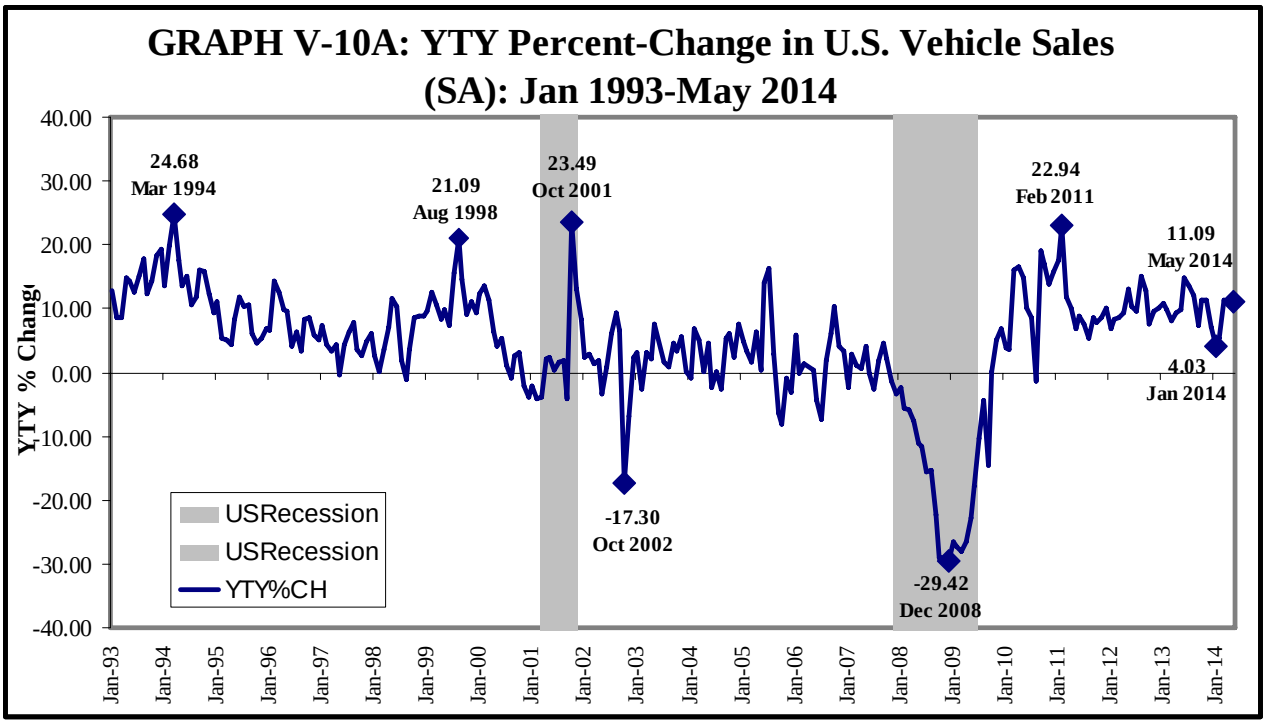
1. Pent-Up Demand
2. Low Interest Rates
3. Available Credit

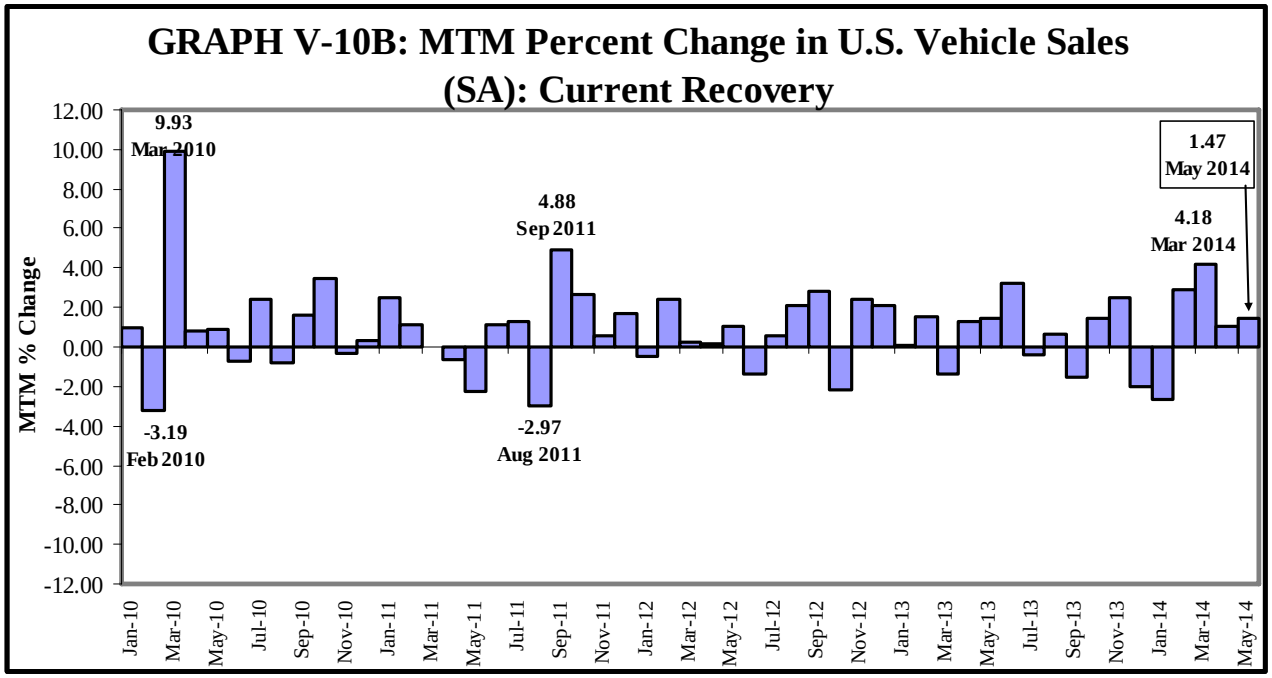
Eventually, pent-up demand will dissipate as consumers who put off buying a new vehicle during the recession have replaced their old vehicles, and long-term interest rates, which effect car-loan rates, have been increasing since the Fed announced it tapering program. And, even if lending standards don't tighten up anytime soon, lenders could be running out of with a higher credit score. So, the strong vehicle sales over this recovery may not continue going forward[96].

Graph V-10A shows the YTY percent-change in Total U.S. Vehicle Sales (seasonally adjusted) from January 1993 to May 2014 (the latest period of available data at the time of writing). After contracting by 29.42% in December 2008, on a YTY basis, U.S. Vehicle Sales came roaring back, and in February 2011, sales grew at a 22.94% YTY rate. There were only three other instances, over the range of data in Graph V-10A, in which the YTY growth-rate in Total U.S. Vehicle Sales exceeded 20%: March 1994 (+24.68%), August 1998 (+21.09%), and October 2001 (+23.49%). However, the YTY growth-rate has decelerated since then. It declined to 4.03% in January 2014, but then rebounded to 11.09% in May.

From Graph V-10B, the Month-to-Month (MTM) growth-rate in U.S. Vehicle Sales had its strongest month coming out of the recent recession in May 2010, when sales grew by 9.93%.

[95] Woodyard, Chris and James R. Healey, *GM recalls 7.6M more cars as costs balloon* (June 30, 2014) USA Today < http://www.usatoday.com/story/money/cars/2014/06/30/gm-recall-stock-trading-halted/11785801/ > Accessed on June 30, 2014.
[96] Irwin, Neil, *The auto industry is back to pre-recession levels. But why?* (August 2, 2013) WASHINGTON POST < http://www.washingtonpost.com/blogs/wonkblog/wp/2013/08/02/the-auto-industry-is-back-to-pre-recession-levels-but-why/ > Accessed on June 30, 2014.



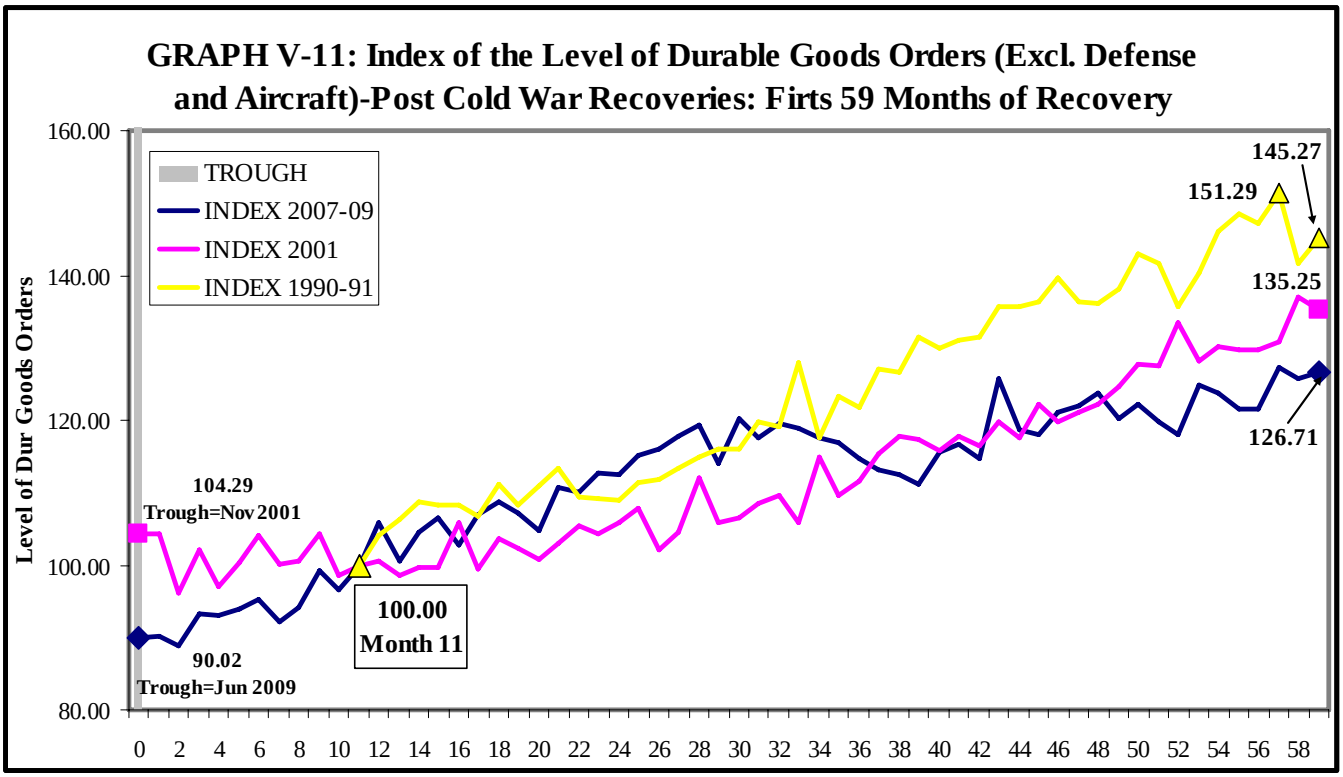


SOURCE: FRBStL-FRED and Author's calculations.

This MTM growth-rate has not been repeated over this recovery, so far. The MTM growth-rate surpassed 4% twice: September 2011 (+4.11%), and recently in March 2014 (+4.18%). The two steepest contractions have been February 2010 (-3.19%), just one month before the March 2010 spike in sales (see above), and August 2011 (-2.97%). Since March, sales have not been as strong, MTM U.S. Vehicle Sales increased by 1.03% in April 2014, and then by 1.47% in May. This closely matched the MTM growth in May 2013 (+1.43%).

Business Investment: Orders for Durable Goods

Orders for Durable Goods fell by 1.0% in May 2014 (at the time of writing), to $238 billion, thanks to a drop in Defense Orders. However, Non-Defense orders rose .6%, driven by orders for new cars and auto parts. The difference is the more volatile Defense and Commercial Aircraft Orders. Graph V-11 focuses on the less volatile Durable Goods Orders, excluding Defense and Aircraft. An index was constructed to track the behavior of Durable Goods Orders, excluding the more volatile Defense and Commercial Aircraft over the first 59 months of the Post Cold War recoveries.



SOURCE: FRBStL-FRED and Author's calculations.

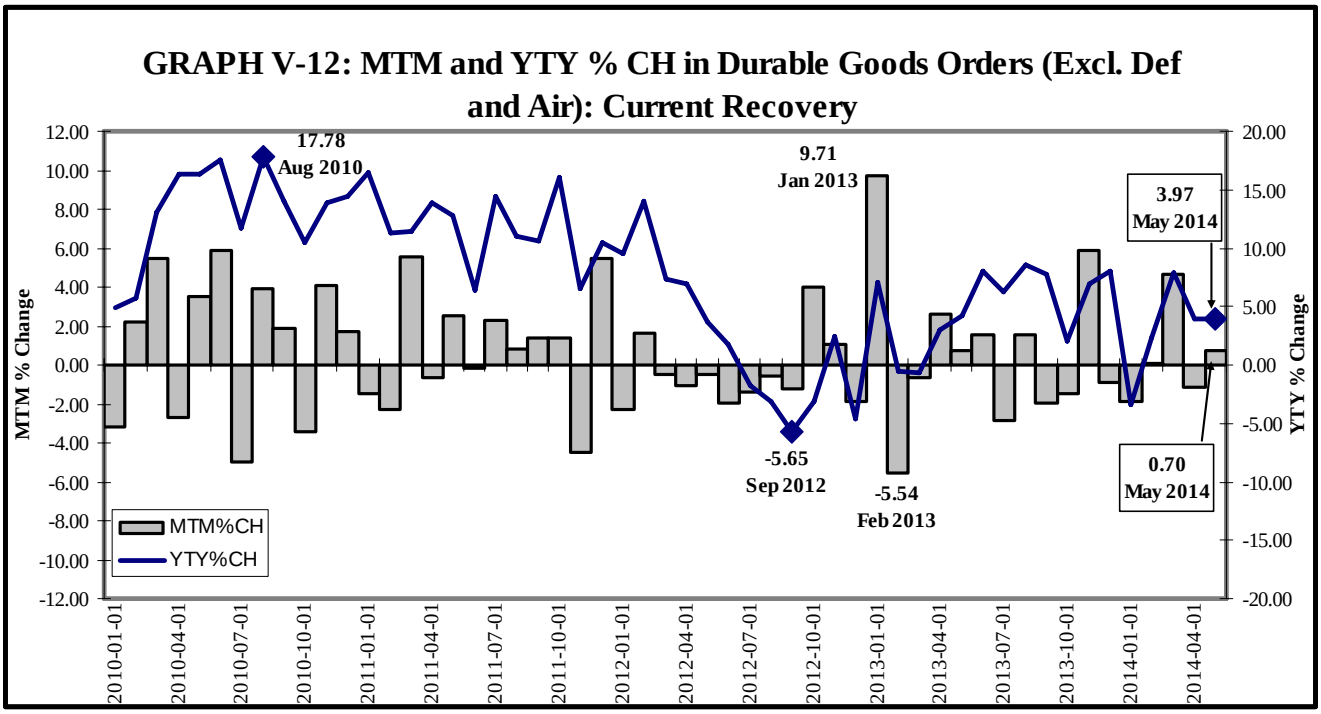
The Index is equal to 100.00, the Base Period, 11 months into recovery. The reason that the base period is not the trough of each recession is because the data series does not begin until February 1992, 11 months into the recovery from the 1990-91 Recession, and the first of the so-called "jobless recoveries" that have characterized the Post Cold War recoveries.

As is quite clear in Graph V-11, the current recovery has seen the weakest growth in Durable Goods Order (excluding Defense and Aircraft) compared to the other two Post Cold War recoveries. From the base period, Month 11, Durable Goods Orders have increased by 26.71%, as of Month 59 of the recovery. After the 2001 Recession, Durable Goods Orders increased by 35.25% over the same length of recovery, and after the 1990-91 Recession, Durable Goods Orders grew by 45.27%, and that was actually down from 51.29% by Month 57 of recovery.

Given the incomplete data, only the current and 2001 recoveries can be compared from their troughs. Over the current recovery, Durable Goods Orders (excluding Defense and Aircraft) have grown by 40.75% (i.e., between June 2009, the trough of the last recession, and May 2014, the latest period of available data, a span of 59 months). This is actually stronger than the growth in Durable Goods Orders over the first 59 months of recovery from the trough of the 2001 Recession. Over the comparable period of recovery, Durable Goods Orders, after the 2001 Recession, grew by a much weaker 29.69%. In fact, over the first 11 months of recovery from the 2001 Recession, Durable Goods Orders actually fell by 4.11%. Durable Goods Orders also fell over the current recovery by 7.62% between months 30 and 39.

Graph V-12 focuses on Durable Goods Orders (excluding Defense and Aircraft) over the current recovery. The left, vertical scale (bars) tracks the Month-to-Month (MTM) growth-rate in Durable Goods Orders from January 2010 to May 2014, and the right, vertical scale (line) tracks the monthly Year-to-Year (YTY) growth-rate.

The first thing to note on Graph V-12 is that after strong growth going into 2010, peaking at 17.78% in August, the YTY growth-rate then begins a two-year deceleration, which turns negative, declining by 5.65% in September 2012. The YTY growth-rate then recovers but backs off again after mid-2013.



SOURCE: FRBStL-FRED and Author's calculations.

YTY, Durable Goods Orders grew by 3.97% in May 2014. Looking at Month-to-Month (MTM) growth, January and February 2013 had the largest swings in MTM growth over the entire recovery, so far. Orders surged by 9.71% in January, on a MTM basis, and then contracted by 5.54% in February. This period followed the "Fiscal Cliff" deal, and was likely driven by the uncertainty created by that manufactured crisis. Save the strong 4.68%, MTM growth in March, the first four months of 2014 had three months of either MTM declines or flat growth. The MTM growth in Durable Goods Orders (excluding Defense and Aircraft) in May was 0.70%.

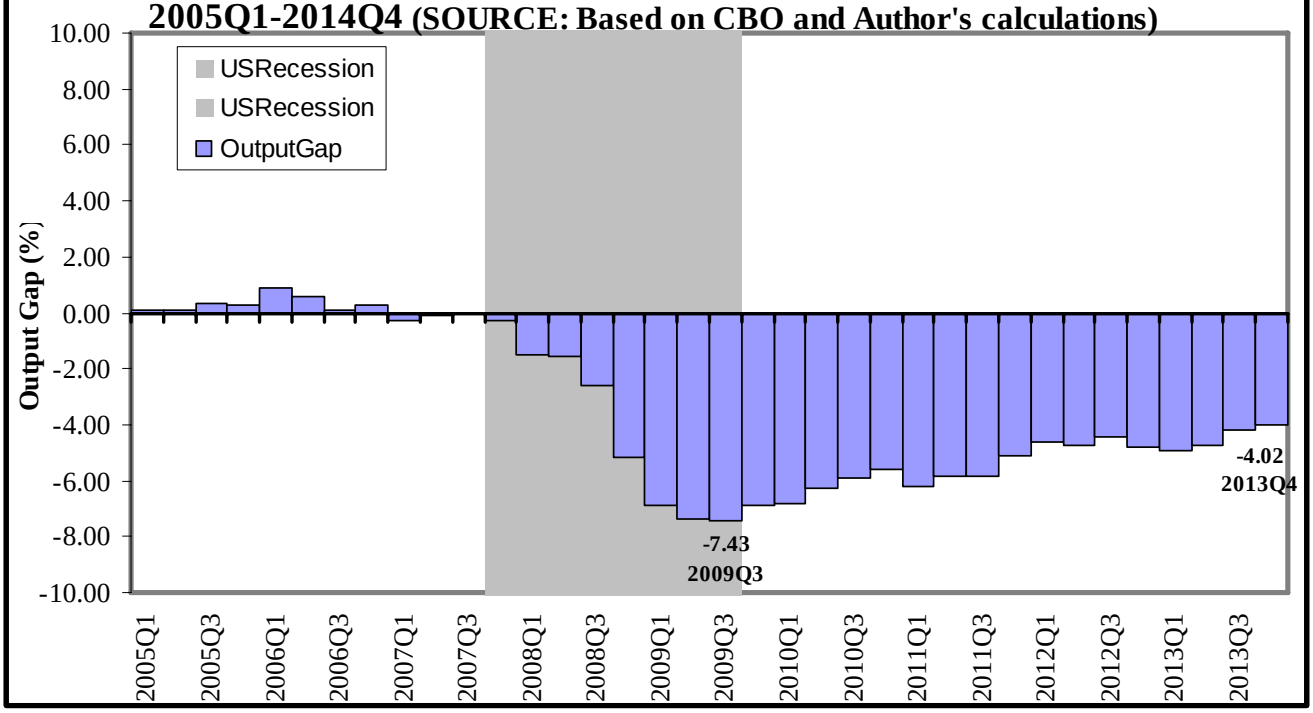
D. TURNING POINT, INFLECTION POINT, OR, IS IT MORE OF THE SAME? A Continuation of the Fits-and-Starts Pattern

Since the U.S. Jobs Market began to recover in February 2010, job-growth has proceeded in Fits-and-Starts. This pattern has continued into 2014, after the U.S. Economy added 200,000 + jobs for two straight months (October and November, 2013), December's job-gains fell to 84,000. U.S. job-growth then rebounded slightly to 144,000 in January 2014. Job-growth then accelerated to 222,000 in February, but then backed off slightly to 203,000 in March. This was then followed by another acceleration in job-growth. Non-Farm Employment growth accelerated

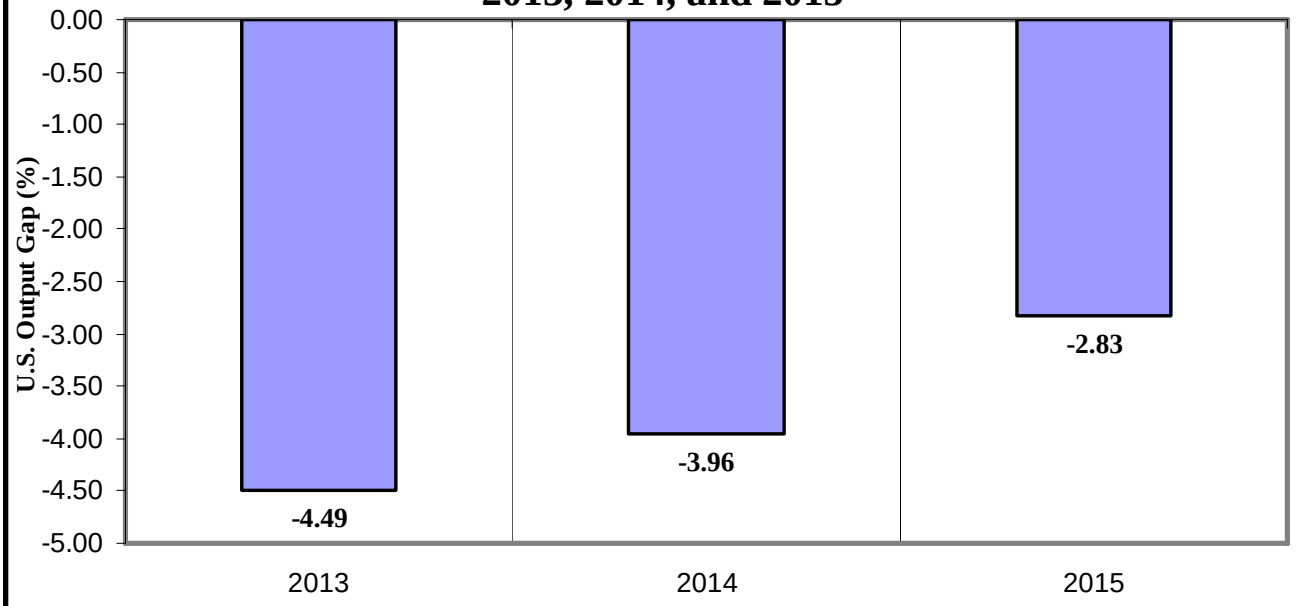
to 282,000 in April, and then slowed again to 217,000 in May. U.S. Real GDP growth has followed a similar pattern since the beginning of the recovery. After declining by 0.42% in 2009Q2, the quarter of the trough of the last recession, the annualized, Quarter-to-Quarter (QTQ) growth-rate in Real U.S. GDP accelerated until 2009Q4, when Real GDP grew by 3.88%. Then growth backed off, and U.S. Real GDP contracted by -1.29% in 2011Q1. The fits-and-starts pattern then resumed again, with the growth in Real GDP achieving its strongest performance over the current recovery in 20011Q4 (+4.87%). Again, the annualized, QTQ growth-rate began decelerating, with growth going flat in 2012Q4 (+0.14%). Then, once again, the growth-rate in Real GDP began accelerating. The QTQ, annualized growth-rate in Real GDP peaked at 4.13% in 2013Q3. Real GDP growth then decelerated in 2013Q4, followed by the steepest contraction in Real GDP growth in 2014Q1 (-2.93%) since the 5.44% contraction in Real GDP in 2009Q1 during the recent recession. Finally, despite the Fiscal Cliff distortions (Dec 2012-Jan 2013), the up-and-down pattern in the MTM % Change in U.S. Real Per Capita DPI comes through, whether when observing the pattern of change in the original series, over the current recovery, or the 3-Month Moving Average (3-MMA). And, in fact, the change in Per Capita Real DPI may offer a clue into the behavior of other indicators, since what consumers can spend is constrained by their level of DPI.

Of course, with fiscal policy off the table, given that a stimulus bill would not make it through the Congress, and the Fed is limited in what it can do (and, it has clearly pushed that to its limits), and, as noted above, the housing market is not likely to strengthen beyond its temporary spurt in 2013, the prospects for this recovery gathering momentum and turning into a full-blown expansion seem pretty dim. Given the factors noted above, and that there is the possibility of more manufactured crises, such as the debt-ceiling clown-show in Mid-2011 and, Government shutdown in October 2013, it is likely that the current recovery will continue on its existing path: accelerating growth, followed by a slowing , or even contraction, in economic activity, followed by another round of growth. In sum, it appears that the fits-and-starts pattern alluded to above will continue. In fact, as illustrated in Graph V-13A, based on the Congressional Budget Office's calculations, and Graph V-13B, estimates by the International Monetary Fund, the U.S. Economy's Output Gap is not expected to close until 2017.

GRAPH V-13A: U.S. Output Gap (Actual GDP -- Potential GDP): 2005Q1-2014Q4 (SOURCE: Based on CBO and Author's calculations)



GRAPH V-13B: IMF Estimate of U.S. Output Gap: 2013, 2014, and 2015



PART 3: FOCUS ON THE U.S. LABOR MARKET: Fifth Year of Recovery

VI. IS THE U.S. LABOR MARKET TIGHT?

Before proceeding to the discussion on the current state of the U.S. Labor Market, it is important to bring attention to a possible decline in the integrity of the data used as the basis for the critical, and closely watched monthly, Non-Farm Employment Series, which is the product of the survey of U.S. business establishments. This survey, in turn, is taken from the Unemployment Insurance Tax database, which is now facing dangerous budget cuts. For the details on this threat to the program, please see Box VI-1.

BOX VI-1: -ALERT: The Quality of the QCEW Could Be In Trouble

(U.S. BLS: http://www.bls.gov/bls/budget2014_enacted.htm)

❖On Friday, January 17, 2014, President Obama signed into law the ***Consolidated Appropriations Act, 2014***. The Act provides $592.2 million in funding to BLS for FY 2014, which began October 1, 2013.

❖This funding level is $21.6 million below the FY 2014 President's Budget. In order to achieve the necessary savings for this funding level and protect core programs, the BLS is taking the steps listed below:

1.) **Curtail the Quarterly Census of Employment and Wages (QCEW).**
2.) Curtail the International Price Program (IPP)

❖**Curtail the Quarterly Census of Employment and Wages (QCEW).**

✓The BLS will achieve savings largely by ***reducing the scope and frequency of collection*** for select units in the QCEW survey that is used to validate and update the NAICS code of business establishments.

✓ This will result in a ***small degradation in the quality of QCEW data*** and make the ***QCEW slightly less accurate as a Sampling Frame for the ESTABLISHMENT SURVEY (I.E., Non-Farm Employment).***

Turning now to the core topic of this section, there are two assertions about the U.S. Labor Market that have been in vogue (at least before the third estimate of 2014Q1 GDP, at any rate):

1. Recently, **the argument that the Labor Market is tightening** and will soon generate inflationary pressures is gaining some traction, and

2. This recovery's **unemployment problem is mainly STRUCTURAL**. And, that Structural Unemployment is taking two forms:
   i.) Mismatch Unemployment
   ii.) Technological Unemployment

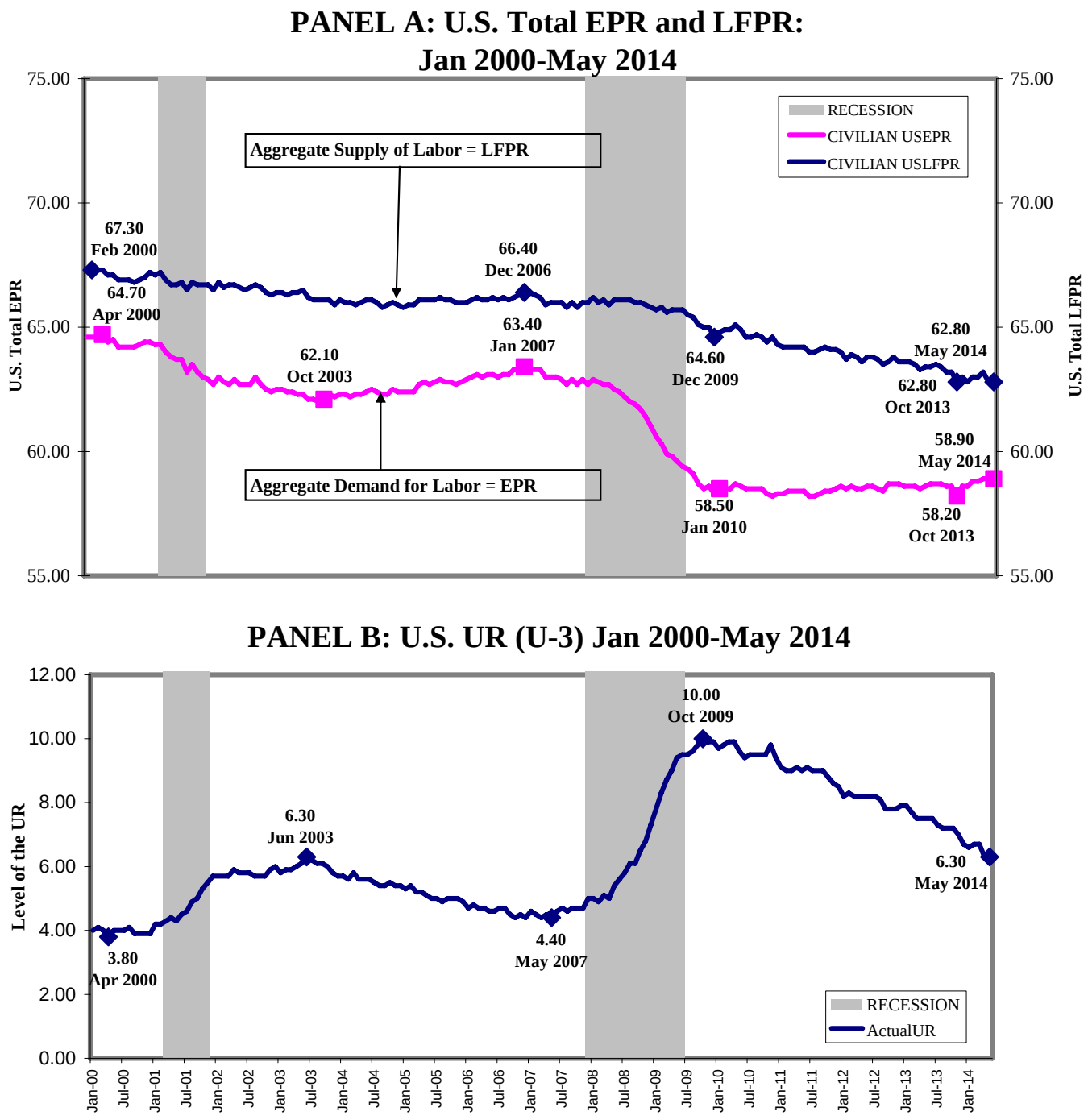
Is the U.S. Labor Market Getting Tight? According to a study by Samuel Kapon and Joseph Tracy (2014)[97] at the New York Fed, the U.S. Labor Market is actually tight. Further, they contended in their Liberty Street Blog post on Feb. 3, 2014 that a widely watched labor-market indicator, the Employment-to-Population Ratio (EPR), is misleading because it does not control for demographics. They argue that once demographics are controlled for, the labor market is actually tightening. Is this so?

To explore this claim, Panel A in Graph VI-1 tracks the Overall, or Total *Labor Force Participation Rate* (LFPR), which represents the Aggregate Supply of Labor to the economy, and the *Employment-to-Population Ratio* (EPR), which represents the Aggregate Demand for Labor in the Economy from January 2000 to May 2014, the latest period of available data at the time of writing. Panel B tracks the Total Unemployment Rate (UR), as measured by U-3[98] An estimate of U-3 can be calculated by taking 1 – (EPR/LFPR). This also expresses the relationship between the EPR, LFPR, and the U-3 measure of unemployment.

Kapon and Tracy argue that the EPR is a misleading indicator because it does not account for demographics. Before exploring this, the discussion will first focus on Graph VI-1 and Total EPR, LFPR, and UR.

[97] Kapon, Samuel and Joseph Tracy, *A Mis-Leading Labor Market Indicator* (February 3, 2014) LIBERTY STREET ECONOMICS-FRBNY < http://libertystreeteconomics.newyorkfed.org/2014/02/a-mis-leading-labor-market-indicator.html#.U7Q-_0CLKPE > Accessed on April 1, 2014.
[98] U-3, total unemployed, as a percent of the civilian labor force (this is the definition used for the official unemployment rate); see the U.S. BLS < http://www.bls.gov/news.release/empsit.t15.htm > Accessed July 1, 2014.

GRAPH VI-1:U.S. Overall EPR, LFPR, and UR: Jan 2000-May 2014



SOURCE: U.S. BLS and Author's calculations.

From Panel A, in Graph VI-1, in May 2014, the LFPR was 62.80. This was down from its 66.40 in December 2006 as the housing bubble was popping and, the economy was poised to go into recession one year later. And, it was 0.9 percentage points (i.e., 90 basis points), below the 67.30, in February 2000, which marked the highest point for the overall U.S. LFPR over the entire range of data. This, of course, was at the end of the Tech Boom. The EPR also reached its highest level during the Tech Boom. In April 2000, the EPR was 64.70, its highest level over the time-frame covered in Graph VI-1. Before entering the 2007-09 Recession, the overall EPR reached a level of 63.40, in January 2007. This was still 1.3 percentage points, or 130 basis points, below its peak in April 2000.

Upon entering the 2007-09 Recession, and then financial panic, after September 2008, the EPR dropped much more steeply than the LFPR. That is, the demand for labor in the economy dropped much more steeply than the supply of labor in the economy did. The result: a sudden and significant excess supply of labor as aggregate demand collapsed. Between December 2006 and December 2009, the LFPR (the aggregate supply of labor), dropped by 1.8 percentage points, or 180 basis points, from 66.40 to 64.60. Over the comparable period, January 2007 to January 2010, the EPR declined by a much steeper 4.9 percentage points, or 490 basis points, from 63.40 to 58.50, reflecting the abrupt collapse in aggregate demand. Since December 2006, the LFPR has steadily and slowly declined to 62.80 by May 2014 (as noted above), which put it 1.8 percentage points, or 180 basis points below its December 2009 level. Meanwhile, the EPR has pretty much remained flat, and by May 2014 it was 58.90, only 0.40 percentage points, or 40 basis points above where it was in January 2010.

The net result of the behavior of the LFPR and EPR over the recent recession/crisis, and current recovery is reflected in Panel B of Graph VI-1. The Unemployment Rate (UR), specifically, the official U-3 measurement rose from 4.40%, in May 2007, to a peak of 10.00% in October 2010, a level not seen since the peak UR of the 1981-82 Recession. And, it was much higher than the peak of 6.30% in June 2003 coming out of the 2001 Recession. Since October 2010, the UR has steadily declined and, by May 2014, it was 6.30%. But, this was still the peak-level of the UR coming out of the 2001 Recession. It is certainly an improvement, and going in the right direction, but is it full employment? Further, to address the criticism of Kapon and Tracy, graphs

VI-A1 to VI-A3 (see Appendix to Section VI), look at how demographics affect the results presented in Graph VI-1. The first graph in the Appendix to Section VI, Graph VI-1A, focuses on the prime demographic group in the labor force: those between the ages of 25 and 54. Graph VI-A2 zeros in on the older demographic, those 55 years old, and older. Finally, Graph VI-A3, looks at the youngest, and least attached to the labor force, cohort, those aged 16 to 24 years old.

From Panel A in Graph VI-1A, it is clear, that like for the total, or overall, Employment-to-Population Ratio (EPR), the demand for labor in the prime-aged 25-54 cohort also collapsed with the on-set of recession and crisis. Between January 2007 and January 2010, the EPR for the 25-54 demographic of the labor force dropped by 5.3 percentage points, or 530 basis points, from 80.10 to a level of 74.80. This was steeper than the 4.9 percentage-point (490 basis points) drop in the overall, or total, EPR. As of May 2014, the EPR for the 25-54 demographic group had recovered to 76.40, a recovery of 1.6 percentage points (160 basis points). Nevertheless, this was still far below the EPR of 80.10 in January 2007. Like the EPR, the Labor Force Participation Rate (LFPR), for the 25-54 year-old demographic group has never recovered to its peak level (over the range of data in Graph VI-1A), of 84.40 in February 2000. After peaking over the last expansion at 83.20, in February 2007 (which was still below its February 2000 peak by 1.2 percentage points), declined to 80.60 by October 2013, and then recovered somewhat to 80.80 by May 2014. But, the LFPR was still 2.4 percentage points (230 basis points) below its previous peak in January 2007. From Panel B, the Unemployment Rate (UR), as measured by U-3, for the 25-54 year-old demographic, after bottoming out at 3.40% in October 2006, peaked at 9.00%, in October 2009, following the recession and panic. This was a full percentage point lower than the peak UR, in the same month, for the overall UR (which peaked at 10%, see Graph VI-1). By May 2014, the UR for the 25-54 year-old demographic had declined to 5.50%. However, this was still 0.3 percentage points higher than the 25-54 year-old group's peak UR of 5.30%, in June 2003, coming out of the 2001 Recession. It does not appear, as of the May 2014 data, that the labor market over the first half of 2014 could be characterized as tight with respect to the prime-aged labor-force demographic when their UR is still higher than it was at its peak level coming out of the 2001 Recession. Further, the LFPR and EPR for the 25-54 year-old demographic group are both still significantly lower than they were over the previous expansion. Finally, it is the 25-54 year old demographic that is more attached to the labor force than those 16-24 years

old, and less likely to retire than the 55 years, and older group. In other words, it is this prime labor-force group that is most strongly attached to the labor force, and it appears that the labor market cannot, at least over the first half of 2014, be considered tight for this group.

Moving to Panel A of Graph VI-A2, and the Over 55 years-old demographic, it is clear that up until the recent recession and crisis, both the Labor Force Participation Rate (LFPR) and Employment-to-Population Ratio (EPR) was steadily and strongly increasing from January 2000. And, in fact, that trend has been going on for, at least, two decades (not shown on graph). From June 2000 to December 2012, the 55-and-over LFPR grew from 32.20 to 40.70, an increase of 8.50 percentage points, or 850 basis points. Between November 2000 and October 2008, this demographic group's EPR grew from 31.40 to 38.10, a growth of 6.7 percentage points, or 670 basis points. While both indicators for the prime-aged labor-force demographic (25-54) have remained flat, or declined slightly over the same period. With the on-set of recession and crisis in 2007 and 2008, the growth in the LFPR, of those 55 years-and-older, began to slow significantly, and even decline slightly between December 2012 and May 2014. But, the 55 years-and-older demographic group is the only group in which their LFPR continued to grow as the economy went into recession and panic. And, even after falling slightly from 40.70 in December 2012 to 40.00 in May 2014, this still puts the LFPR for those 55 and older, at some of the highest levels over the entire range of data in Graph VI-A2, Panel A. The EPR for those 55 years old, and older, declined significantly from 38.10 in October 2008, to 37.00 by December 2009, a drop of 1.1 percentage points, or 110 basis points. However, by August 2013, the 55-and older EPR had recovered to 38.40, which was 30 basis points higher than its previous peak in December 2008. By May 2014, the EPR for the 55-and-older had declined slightly to 38.20. From Panel B, the UR for 55-and-older, peaked over the last recession at 7.40%, in August 2010, nearly two years after the peak in the overall UR, and much lower than the overall 10% peak in October 2009, and even the 9% peak for the prime demographic group, also in October 2009. It then fell to 4.50% by January 2014, and then edged up to 4.60% by May 2014. Again, following the same pattern as that for the overall UR and prime-age labor-force demographic, the 55-and-over UR in May 2014 was still 20 basis points higher than the 4.40% UR at the peak UR level coming out of the 2001 Recession. Though the increase in the LFPR has leveled off since the recent

recession/crisis, it does not appear that a tsunami of retirements is driving the labor-market conditions for those 55 years and older over the first half of 2014.

Graph VI-A3 looks at the last of the demographics breakouts looked at in this section. Turning to Panel A, as for the other two demographics analyzed in this section, the peak Labor Force Participation Rate (LFPR) for the 16-24 year-old demographic was in the early 2000's. Specifically, the peak LFPR for this group was 66.10 in January 2001, two months before the U.S. Economy went into the 2001 Recession. It steadily declined to 59.90 by May 2008, as the economy was going into recession and crisis. Between May 2008 and January 2010, the LFPR for 16-24 year-olds dropped by 5 percentage points, or 500 basis points, to 54.90. By May 2014, the LFPR for 16-24 year-olds was pretty much the same at 55.00. The story is similar for this group's Employment-to-Population Ratio (EPR). Over the time-frame presented in Graph VI-A3, the EPR for 16-24 year-olds peaked at 59.80 in December 2000. It fell to 53.00 by February 2005, but then rebounded slightly to 54.80 in December 2006, as the housing bubble was popping. It is this group, 16-24 year-olds that had the most severe decline in the EPR (i.e., the demand for their labor services), between December 2006, the pre-recession peak, and June 2010, the EPR for those 16 to 24, dropped from 54.80 to 44.50. This was a collapse of 10.3 percentage points, or 1,300 basis points. Since then, the EPR for those 16-to-24 has made, at best, a modest recovery, increasing to 47.70 by May 2014. The results of the declines in the LFPR, and especially the EPR, for those 16-to-24, are reflected in the official Unemployment Rate (UR), U-3, presented in Panel B of Graph VI-A3. With the on-set of recession and crisis, the UR for 16-24 year-olds shot up to 19.50% by April 2010. This was 6.3 percentage points higher than this demographic group's peak UR of 13.20%, in July 2003, coming out of the 2001 Recession. It has fallen since then, dropping below 17% by January 2013, and has further fallen in fits-and-starts since then. After a bump-up to 14.50% in March 2014, it then fell to 13.20% by May, but that still put it at the highest level coming out of the 2001 Recession. Again, it appears that, deficient demand, not demographic factors have accounted for the high unemployment for the 16-24 year-old demographic group.

The Labor Market as of Mid-2014

So, what about Kapon and Tracy's argument that the U.S. Labor Market is actually tight, and that the Employment-to-Population Ratio (EPR) is a misleading indicator? In the discussion above, the labor market was broken out by three major demographic groups: those 16-to-24 years old, and least attached to the labor market, the prime-aged strongest-attached segment of the labor market, those between the ages of 25 and 54, and finally, those 55 years old, and older, that segment of the labor market most likely to include a high percentage of retirees, who will be exiting the labor market permanently.

As of Mid-2014, all three demographic segments of the labor market still had official, U-3 Unemployment Rates (UR) that were higher than at their respective peak UR levels coming out of the 2001 Recession. For the 25-54 and 16-24 year-olds, both, the Labor Force Participation Rate (LFPR) and Employment-to-Population (EPR) have never returned to their pre-2007-09 Recession/Crisis levels. As for the LFPR and EPR of the 55 years-and-older demographic, their LFPR actually grew during the recession and crisis (albeit, at a lower rate), and, of as Mid-2014 was still above its level before the recession/crisis. The EPR for the 55-and-over group is also higher in Mid-2014 than it was at its peak before the recent recession/crisis.

It is the prime demographic group, 25-54 and the younger cohort, 16-24, that has had the decline in the LFPR, and not the 55-and-older group. Further, the EPR, the aggregate demand for labor, is significantly down for both, the 16-24 and prime-aged, 25-54 group, compared to their pre-recession levels. It is only the 55-and-over segment of the labor force for which the EPR is higher than its pre-recession level. Given this, it appears that after breaking the labor force out into three major demographic groups and tracking the behavior of their UR, EPR, and LFPR, that the labor market does not appear to be tight and that there is still a significant amount of demand-deficient unemployment in the U.S. Economy as we approach the mid-point of 2014. With regard to the EPR, it does not appear to be a misleading indicator as asserted by Kapon and Tracy, even when controlling for demographics.

BOX VI-2: -UPDATE: *U.S. Labor Situation for June 2014*

(U.S. BLS http://www.bls.gov/news.release/pdf/empsit.pdf)

As this was "going to press" the *U.S. Labor Situation for June 2014* was released on July 3, 2014. The U.S. Bureau of Labor Statistics (BLS) reported that the U.S. Economy added 288,000 jobs in June. Tables B VI-1, B VI-2, and B VI-3 break out the labor-force indicators, discussed above, in Section VI, by the three major demographic groups that make up the U.S. Labor Force.

TABLE B VI-1: Labor Force Stats by Demographic:

DEMO GROUP	Jun-14 LFPR	Jun-14 EPR	Jun-14 UR (U-3)
Civ Total	62.80	59.00	6.10
16-24	54.70	47.50	13.30
25-54	80.90	76.70	5.10
55 and Over	40.00	38.20	4.40

TABLE B VI-2: MTM Pct-Pt Ch by Demographic:

DEMO GROUP	May-June 2014 LFPR	May-June 2014 EPR	May-June 2014 UR (U-3)
Civ Total	0.00	0.10	-0.20
16-24	-0.30	-0.20	0.10
25-54	0.10	0.30	-0.40
55 and Over	0.00	0.00	-0.20

TABLE B VI-3: YTY Pct-Pt Ch by Demographic:

DEMO GROUP	June 2013-14 LFPR	June 2013-14 EPR	June 2013-14 UR (U-3)
Civ Total	-0.70	0.30	-1.40
16-24	-0.90	0.90	-2.90
25-54	-0.20	0.80	-1.30
55 and Over	-0.40	-0.10	-0.90

SOURCE: U.S. BLS and Author's calculations.

Table B VI-1 presents the Labor Force Participation Rate (LFPR), Employment-to-Population Ratio (EPR), and Unemployment Rate (UR), as measured by U-3, as reported by the U.S. Bureau of Labor Statistics (BLS) in the July 3, 2014 *Labor Situation for June 2014*. Table B VI-2 presents the Month-to-Month (MTM) percentage-point change, by demographic group, of the labor-force

indicators shown in Table B VI-1, and Table B VI-3 presents the Year-to-Year (YTY) percentage-point change.

The Total, or Overall LFPR was 62,80, representing no-change from May, and down 0.70 percentage points from June 2013. This still puts the overall LFPR 3.6 percentage points (360 basis points), below its pre-recession peak of 66.40 in December 2006. The LFPR for 16-24 year-olds was 54.70, down 0.30 percentage points from May, and down 0.90 percentage points from June 2013. Further, this is down 5.2 percentage points (520 basis points) from the May 2008 peak of 59.90. For the prime labor-force group, 25-54 year-olds, the LFPR was 80.90 up by 0.10 percentage points from May, but down 0.20 percentage points from June 2013. Also, it was 2.4 percentage points, or 240 basis points, below its pre-recession level of 83.20 in February 2007. For those 55 and over, the LFPR, at 40.00 was unchanged from May, but down 0.40 percentage points, or 40 basis points, from June 2013.

The Overall EPR was 59.00 in June 2014, up 0.10 percentage points (10 basis points) from May, and up 0.30 percentage points (30 basis points), from June 2013. This was still down 4.4 percentage points, or 440 basis points, from its pre-recession peak of 63.40 in January 2007. But, how does controlling for demographics change the performance of the EPR? Looking first at the prime demographic group, those 25-to-54 years old, the EPR in June 2014 was 76,70, up 0.30 percentage points (30 basis points) from May, and up 0.80 percentage points, or 80 basis points from June 2013. This is certainly going in the right direction, but the June 2014 EPR is still 3.4 percentage points, or 340 basis points below its pre-recession peak of 80.10 in January 2007 for this prime-aged demographic group in the labor force. Turning now to the younger and older cohorts,

The EPR for those 55 years old, and older, was 38.20 in June 2014, and it was unchanged from May. However, it was down 0.10 percentage points, or 10 basis points, from June 2013. With the on-set of recession and crisis, the EPR for those 55 and older dropped 1.1 percentage points (110 basis points), from 38.10 in October 2008 to 37.00 in December 2009. It had recovered to 38.14 by August 2013, and then declined slightly but recovered to 38.20 by May 2014. Until the recent recession/crisis, the EPR, as well as the LFPR, had been steadily increasing over the entire range of data in Graph VI-A2, Panel A (i.e., January 2000 to October 2008. Is the decline in both indicators it due to increased retirements in this age group, or is most of it due to weak labor demand? The next section will address these issues.

For the youngest cohort in the labor force, those between the ages of 16 and 24, the EPR was 47.50 in June 2014. This was 0.20 percentage points (20 basis points), below May, but 0.90 percentage points, or 90 basis points, higher than June 2013. The June 2014 EPR for those 16-24 is still 7.3 percentage points, or 730 basis points below the pre-recession peak of 54.80 in December 2006, though up 3 percentage points (300 basis points), from the 44.50 EPR at the bottom of the cycle for this cohort in December 2010.

Turning to the June 2014 Unemployment Rate (UR), shown in Table B VI-1, the overall UR for June 2014 was 6.10%. This was down 0.20 percentage points (20 basis points), from May, and down 1.4 percentage points, or 140 basis points, from June 2013. And, for the first time over this recovery, the UR is now below the peak-UR, coming out of the 2001 Recession, of 6.30% in June 2003, by 0.20 percentage points, or 20 basis points. But, it is still 1.9 percentage points, or 190 basis points, above the pre-recession low of 4.40% in May 2007. Nevertheless, it is definitely going in the right direction, but far from being able to declare "full employment".

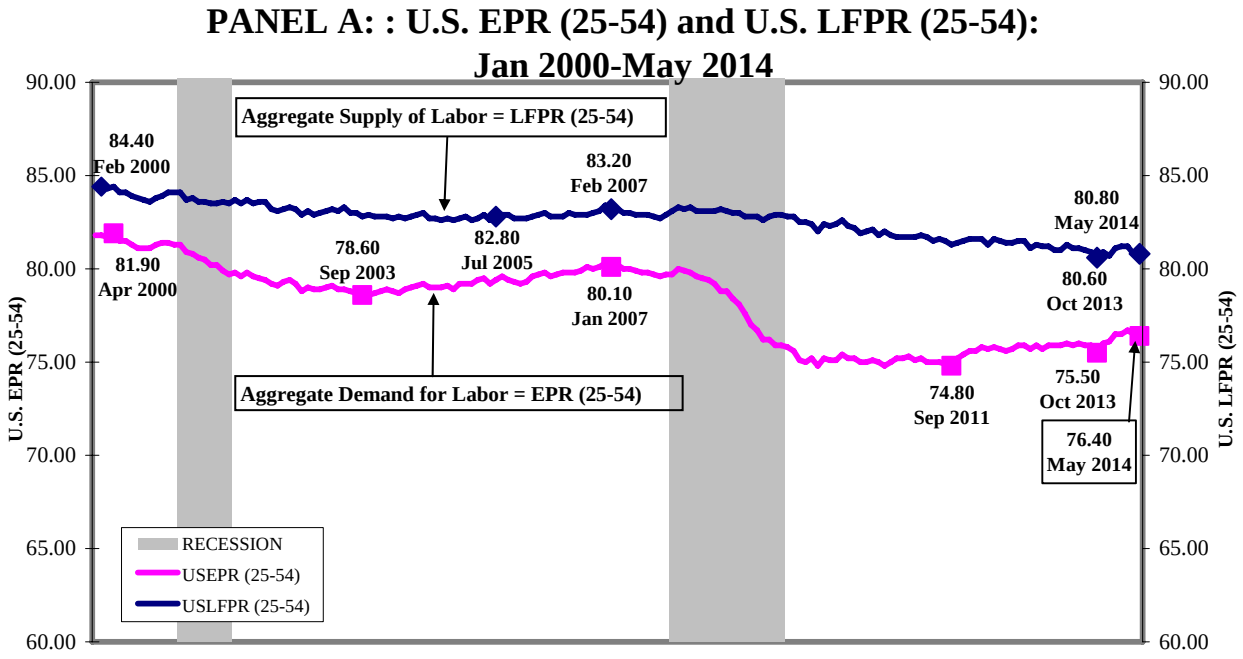
Turning to the prime age group, those 25 to 54, their UR was 5.10% in June 2014. This was down 0.40 percentage points, or 40 basis points, from May, and 1.3 percentage points, or 130 basis points, below the UR for 25-54 year-olds in June 2013. The Month-to-Month (MTM) and Year-to-Year (YTY) declines for this cohort were clearly significant. And, both changes are definitely moving in the right direction. And, the UR for this cohort, like the overall UR, is now down below the peak of 5.20%, in June 2003, coming out of the 2001 Recession, but still 1.7 percentage points, or 170 basis points, above the pre-recession low of 3.40% in October 2006.

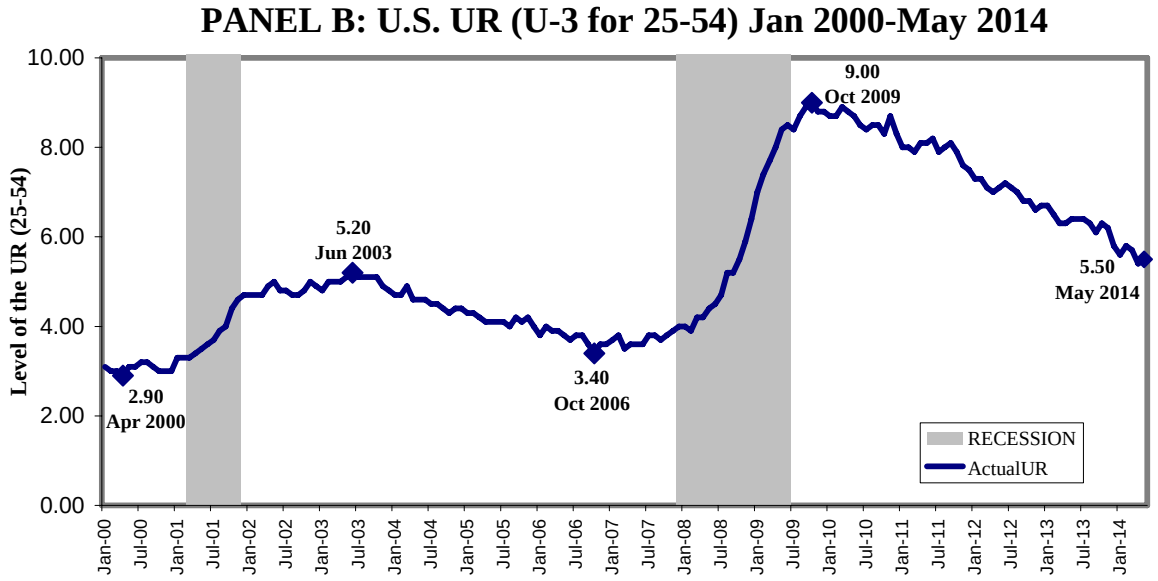
The UR for those 55 years old, and older, in June 2014, was 4.40%. This was down 0.20 percentage points, or 20 basis points, from May, and 0.90 percentage points, or 90 basis points, below the cohorts UR for June 2013. This now puts the UR for those 55 years old, and older, exactly where it was at the peak UR, for this cohort, in June 2003, coming out of the 2001 Recession, and still 1.8 percentage points (180 basis points) above the pre-recession low for this cohort, of 2.60%, in March 2006. For the 16-24 year-old cohort, the UR was 13.30% in June 2014. This was 0.10 percentage points higher than it was in May, but 2.9 percentage points, or 290 basis points, lower than this cohort's June 2013 UR. Though up MTM, the 16-24 year-old segment of the labor force clearly had the most significant YTY decline in their UR, as measured by U-3. And, that is definitely going in the right direction. But, there is still a way to go before the labor market can be declared tight relative to this cohort. As of June 2014, this cohort's UR was still 0.10 percentage points (10 basis

points) higher than its peak-level in July 2003, coming out of the 2001 Recession, and 3.4 percentage points, or 340 basis points, above its pre-recession low of 9.90% in May 2007.

APPENDIX to SECTION VI

GRAPH VI-A1: U.S. EPR, LFPR, and UR for 25-54: Jan 00-May 14

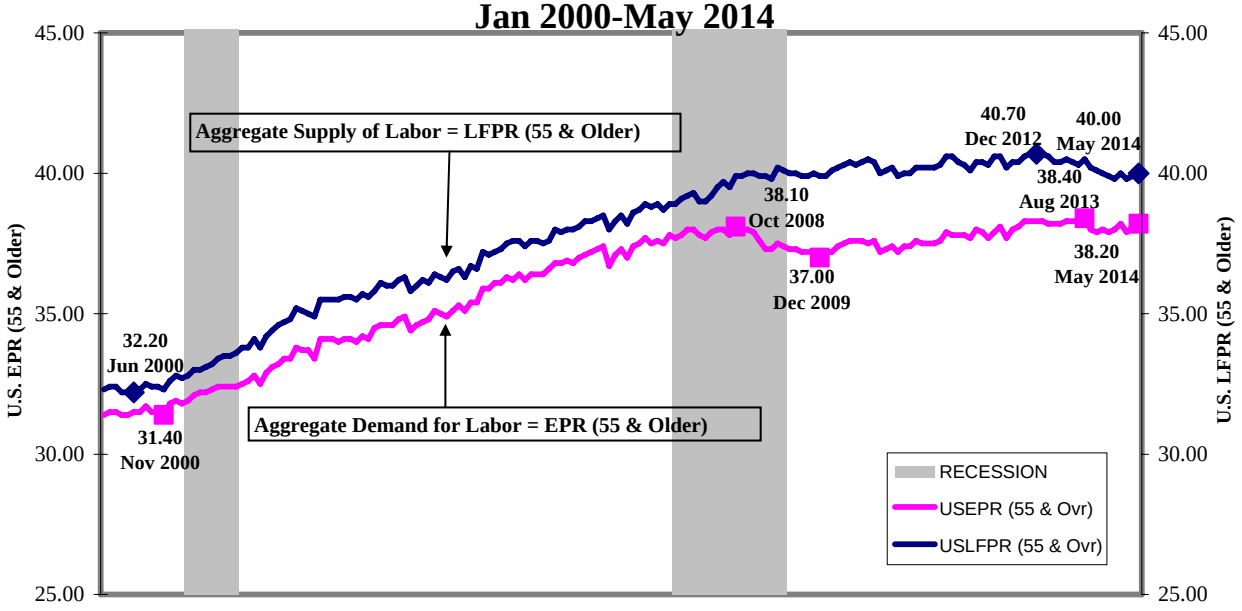




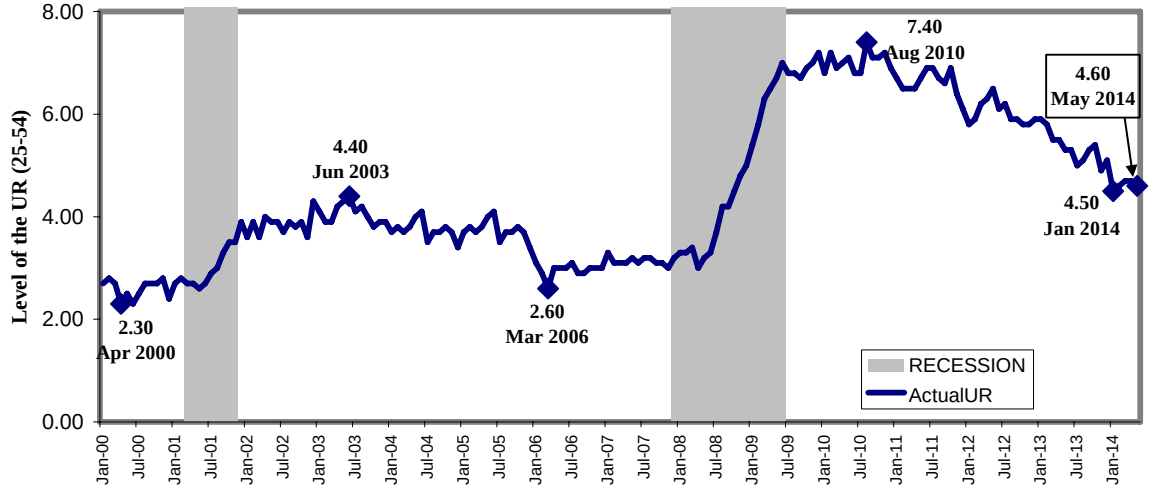
SOURCE: U.S. BLS and Author's calculations.

GRAPH VI-A2: U.S. EPR, LFPR, and UR-55-Older: Jan 00-May 14

PANEL A: : U.S. EPR and U.S. LFPR (55 and Older): Jan 2000-May 2014



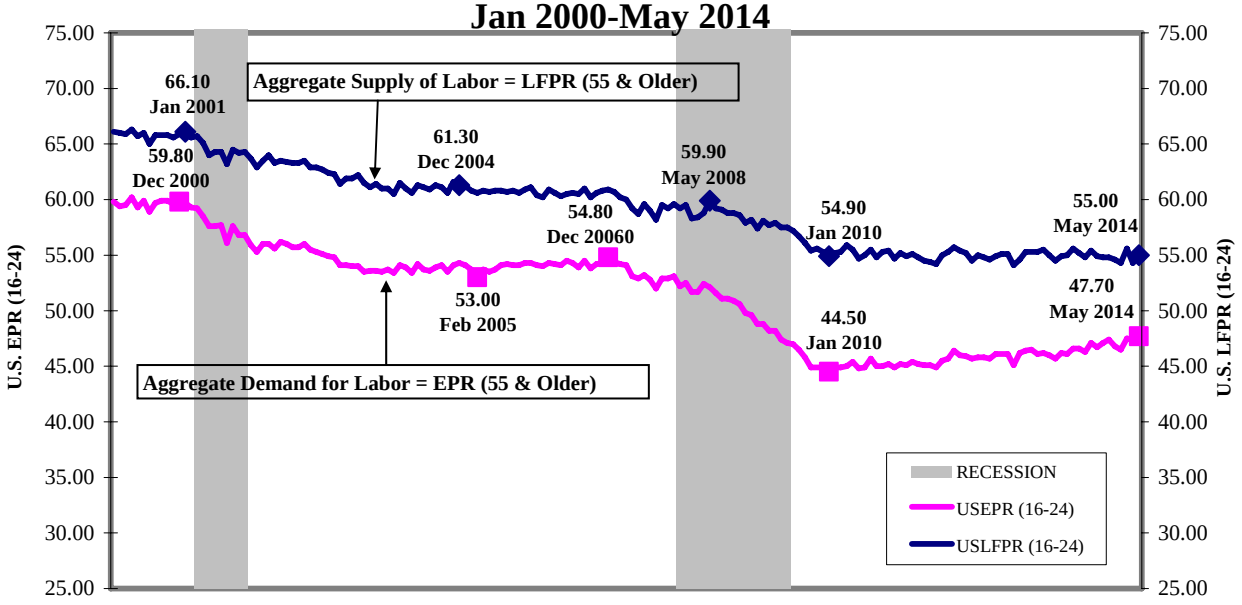
PANEL B: U.S. UR (U-3 for 55 and Older) Jan 2000-May 2014



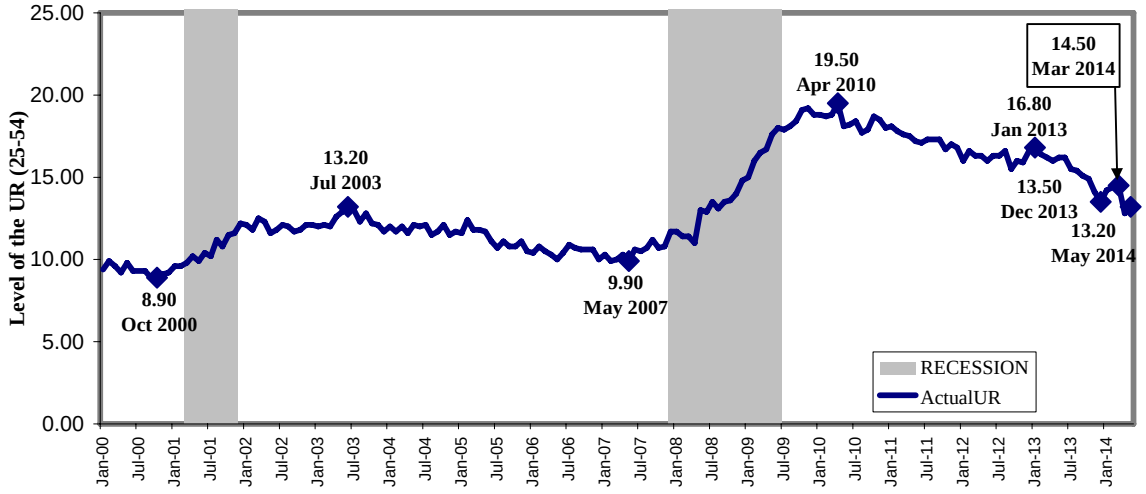
SOURCE: U.S. BLS and Author's calculations.

GRAPH VI-A3: U.S. EPR, LFPR, and UR for 16-24: Jan 00-May 14

PANEL A: : U.S. EPR and U.S. LFPR (16-24): Jan 2000-May 2014



PANEL B: U.S. UR (U-3 for 16-24) Jan 2000-May 2014



SOURCE: U.S. BLS and Author's calculations.

VII. IS UNEMPLOYMENT MOSTLY STRUCTURAL?

A. THE STRUCTURAL UNEMPLOYMENT ARGUMENT

As noted in the introduction to Section VI, above, there have been two arguments about the current state of the U.S. Labor Market that are in vogue. First, that the Labor Market is tightening and will soon generate inflationary pressures is gaining some traction, which was addressed in Section VI, and Second, that this recovery's unemployment problem is mainly structural, as opposed to Cyclical, or Demand-Deficient. And, that Structural Unemployment is taking two forms:

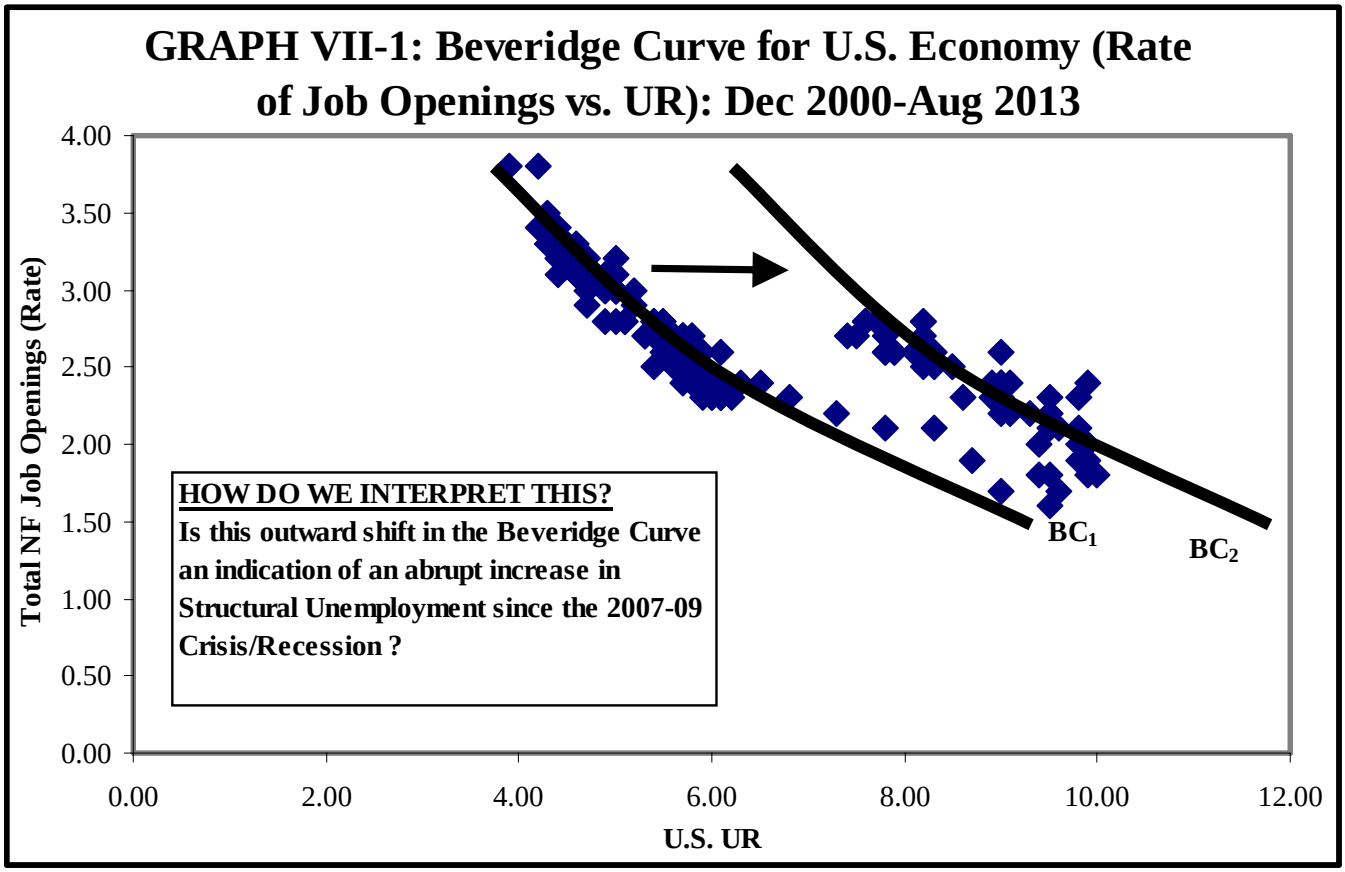
i.) Mismatch Unemployment
ii.) Technological Unemployment

This section turns to addressing the Structural-Unemployment argument.

A widely accepted argument for the persistently high Unemployment Rate (UR) over this recovery is that it is primarily due to *Structural Unemployment*. Those who argue the Structural/Supply-Side Case point to the increased mismatch between the types of labor supplied by workers (or potential workers) and the types of skills demanded by employers. And, in fact, the behavior of the Beveridge Curve[99] has been cited as evidence for the Structural-Unemployment argument. William Beveridge proposed in his report on full employment in 1944 a relationship between Job Openings and Unemployment. Graph VII-1 is the graphical representation of this relationship. The vertical scale is the U.S. Non-Farm Job Openings Rate (JOR), and the horizontal scale is the U.S. Unemployment Rate (UR). The downward-sloping curve in Graph VII-1 represents the relationship between the JOR and the UR. As the JOR increases, the UR declines and vice versa. Stages along the business cycle are represented by sliding up and down the Beveridge Curve: up the curve during expansion, as the UR falls and the JOR increases, and down the curve as the economy goes into recession and the JOR falls, as the UR goes up. Structural Unemployment, such as skills, or geographic mismatch would be

[99] Beveridge, William, *Full employment in a free society* (1944) G. Allen: London

represented by a shift in the curve. But, is the delineation between Cyclical and Structural Unemployment that clearly cut in terms of the Beveridge Curve?



SOURCE: U.S. BLS-JOLTS and Author's calculations.

So, is the shift in the Beveridge Curve a clear-cut sign of Structural Unemployment? In their June 2012 Monthly Labor Review article, Barnichon, Elsby, Hobijn, and Sahin[100] found that according to the Job Openings and Labor Turnover Survey (JOLTS) data, the failure of the Unemployment Rate (UR) to improve much despite growth in the economy is attributable to a shortfall in hires per vacancy in all industries, especially construction. This shortfall is what is causing the current labor market's shift in the Beveridge Curve, which measures the negative relationship between the UR and the JOR. They note that there are four possible reasons for the Shift in the Beveridge Curve[101]:

[100] Barnichon, Elsby, Hobijn, and Sahin, , MONTHLY LABOR REVIEW (June 2012)
[101] ibid

(1) Mismatch between job openings and unemployed workers,

(2) Reduced recruitment effort by employers,

(3) A change in the composition of vacancies and hires, or

(4) Reduced search intensity of unemployed persons

They note that it is difficult to parse from the data currently available in JOLTS as to which reason, or reasons, explains the shift. This point will be picked up on below.

Those that argue that unemployment is structural, point to the behavior of the Beveridge Curve plotted in Graph VII-1 as evidence that the persistently-high unemployment over the current recovery is predominantly Structural, and not Cyclical. And, they would cite Barnichon et al's Reasons (1.), (3.), and (4.) as being the drivers of the shift in the Beveridge Curve observed in Graph VII-1. Graph VII-1 plots the Beveridge Curve from December 2000 to August 2013. And, a clear shift from Beveridge Curve BC_1 to BC_2 can be observed as the UR jumped after the 2007-09 Recession/Crisis. This, the advocates of the Structural Unemployment argument contend, is strong evidence for a Structural Unemployment problem. The three major causes of the Structural Unemployment, or Structural/Supply-Side Case cited above[102]: can be more specifically stated as House Lock (U.S. Census, 2010), Supply/Demand Mismatch (Kocherlakota, 2010), and Incentives Have Become Less Favorable to Employment [Mulligan (2009, 2011)]. Each one is now briefly discussed.

House Lock

This is a geographic-based mismatch due to job-seekers having a tougher time moving to places where jobs are available than they did in the past because the collapse of house prices them unable or unwilling to sell their homes[103].

Supply/Demand Mismatch

The demand for labor may have shifted toward occupations or industries requiring skills that a lot of unemployed people just don't have[104].

[102] Feinman, Joshua N., U.S. LABOR MARKET: *Little Sign of Structural Damage So Far* (November 2012) Deutsche Bank Group)
[103] U.S. Census (2010)

Disincentives to Work

The main culprit often cited here is the extension of UI benefits, but other potential factors include increased food stamps and income supports, including health and mortgage assistance that require low incomes[105].

In summary, the Structural/Supply-Side argument says that much of the rise in unemployment and decline in labor force participation is structural, due to a decline in labor supply (or inappropriate supply for the skills that are in demand in the locations in which they are demanded), and policies that discourage work.

B. DÉJÀ VU ALL OVER AGAIN

But, we have heard such arguments before. As Paul Krugman noted in his September 2010 article in the *New York Times*: "That's right: in the depths of the Great Depression, wise heads proclaimed the problem one of structural unemployment, which obviously could not be cured just by increasing demand". One of those "wise heads" was Ewan Clague who stated in his 1935 article in the *Journal of the American Statistical Association*:

> "My opinion is that the demand, even though active and strong, will be met by supply which will be badly adjusted to fit it. There may very well be a great shortage of labor of certain kinds, with no prospect of any shifting or adapting which will bring about an increased supply. But this will be accompanied by an actual surplus of labor in other occupations. I believe this present labor supply of ours is peculiarly unadaptable and untrained. It cannot respond to the opportunities which industry may offer"[106].

Now, like then, the primary problem is not with Labor Supply, it is with Labor Demand Many contend that increasing incentives for employers to hire more workers, like tax cuts, or credits, will solve the problem are putting the proverbial cart before the horse. Demand for Labor, and other factor-inputs, is what economists call a ***Derived Demand***. That is, they are not demanded directly. Their demand is derived from the demand for the goods and services that they produce

[104] Kocherlakota, Narayana (2010)
[105] Mulligan, Casey (2009, 2011).
[106] Clague, Ewan, *Unemployment and the Changing Structure of Industry* JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION Vol. 30, No. 189, Supplement: Proceedings of the American Statistical Association (March 1935), pp. 209-214

(i.e., ***Direct Demand***). Therefore, if you want to stimulate the Derived Demand for factor-inputs, including labor, then you must first stimulate the Direct Demand for the goods and services they are employed to produce, as Christina Romer put it: "It's aggregate demand stupid!"[107]

Other Problems with the Structural/Supply-Side Case

The collapse was just too abrupt; in less than two years, the UR surged by more than 5 Pct. Pts., and nearly 9 Million Non-Farm Payroll Jobs were lost. Most structural changes (whether in the types and locations of employment opportunities, or matching efficiency, or how people respond to changing work incentives) are the result of an unfolding process that is very unlikely to occur so rapidly. To the extent that Structural/Supply-Side problems do account for some of the stubbornly high UR over this recovery, they are more likely to be the consequence of extended periods of Demand-Deficient Unemployment (i.e., an effect that then became a secondary cause)[108].

Lazear and Spletzer (2012)[109] found that unemployment in cyclically-sensitive industries (e.g., Construction) particularly hit hard in the recent recession displayed the cyclically-based behavior that would be expected (albeit, more exaggerated). At the same time, some industries, like construction, manufacturing, and retailing, experienced disproportionately large increases in unemployment. But the patterns observed on the way up were mirrored on the way down. Those industries that contributed much to the increase in unemployment between 2007 and 2009 were the same that accounted for decreases in unemployment since 2009. The same is true for mismatch, which measures the difference between vacancies and unemployed in an industry, occupation, or location. Industrial mismatch rose substantially during the recent recession, but retreated just as quickly even as unemployment rates have remained high. What happened on the way up happened symmetrically on the way down.

[107] Romer, Christina,
[108] Fujita (Nov. 19, 2013) FRBPh
[109] Lazear, Edward P. and J. Spletzer (September 2012), *The United States Labor Market: Status Quo or a New Normal?* NATIONAL BUREAU OF ECONOMIC RESEARCH: Cambridge

What about House Lock?

While people do appear to be moving less than they used to, this trend predates the Great Recession, and the continued decline in geographic mobility that has occurred in recent years has actually been greater for renters than for home owners—the opposite of what we would expect if the house lock story were correct[110].

What about the Shift in the Beveridge Curve?

As for the apparent shift in the Beveridge curve, this may not necessarily be the telltale sign of structural damage to the labor market and a higher natural rate of unemployment that some contend. Evidence from past business cycles, before the JOLTS program existed, based on the Conference Board's Help Wanted Index, suggests that the recent counter-clockwise shift in the Beveridge curve is not unusual in recessions and early-stage recoveries[111] And, in fact, the Beveridge Curve has begun to return closer and closer to normal[112]. In fact, Narayana Kocherlakota, of the Minneapolis Fed, cited above, and who advocated the Supply/Demand Mismatch Structural argument, has abandoned his argument that a skills mismatch was holding back the recovery in 2012, and has since supported more aggressive action from the Fed[113].

Finally, in recently released research from Kruger, Cramer, and Cho (2014)[114] finds that the decline in job vacancies during the Great Recession set in motion a dynamic that led to unprecedented long-term unemployment and a rise in the unemployment rate. Using parameters of a job matching function that allows for lower match efficiency for the long-term unemployed and that was estimated prior to the recession "we are able to capture most of the shift of the

[110] Feinman (November 2012), p. 5., and Valletta, Robert G., (2013) *House Lock and Structural Unemployment* FRBSF
[111] Daly, Mary C., and B. Hobijn, A. Sahin, R. Valletta (2012). "A Search and Matching Approach to Labor Markets: Is the Natural Rate of Unemployment Rising?" Journal of Economic Perspectives.
[112] Zumbrun, Josh, *Beveridge Curve Starting to Look a Little More Normal* (April 8, 2014) WALL STREET JOURNAL < http://blogs.wsj.com/economics/2014/04/08/beveridge-curve-starting-to-look-a-little-more-normal/ > Accessed on July 3, 2014.
[113] ibid.
[114] Kruger, Cramer, and Cho (March 2014) *Are the Long-Term Unemployed on the Margins of the Labor Market?*,

Beveridge Curve by the path of vacancies"[115]. The Beveridge Curve tends to return to its original position as the share of long-term unemployed falls[116].

C. THE TECHNOLOGICAL UNEMPLOYMENT ARGUMENT

Just as Structural/Mismatch Unemployment was advanced as the reason for the high unemployment over the current cycle and in the 1930's (see discussion above in Part A), so too *Technological Unemployment* been advanced as a significant contributor to the stagnant jobs market. In fact, John Maynard Keynes advanced the idea of Technological Unemployment as the problem in 1930 (six years before he published *The General Theory*) in his *Economic Possibilities for our Grandchildren*[117].

In a recent flurry of articles and videos, the alarm has been sounded over the threat of Technological Unemployment, and they have been given some prominence. In an interview with the *New York Times*, Andrew P. McAfee and Erik Brynjolfsson, of the Massachusetts Institute of Technology (MIT), sounded the alarm on Technological Unemployment, the theme of their new e-book, *Race Against the Machine*, which includes the passage "Many workers, in short, are losing the race against the machine, The tone of alarm in their book is a departure for the pair, whose previous research has focused mainly on the benefits of advancing technology[118] But according to the U.S. BLS's Occupational Employment Survey, there were more bank tellers, more bookkeepers, and more sales clerks in 2009 than there were in 1999—three-quarters of a million more despite the recession[119]. So don't blame technology for persistent unemployment, concludes James Bessen in his September 2013 article in *Slate*. A more likely culprit is the move to austerity in economic policy. The recovery from the Great Recession has been accompanied by government spending cuts and the largest downsizing of government employment in modern history[120]

[115] ibid, p. 53.
[116] ibid.
[117] Keynes, John Maynard, *Economic Possibilities for our Grandchildren* (1930)
[118] Lohr, Steve, *More Jobs Predicted for Machines, Not People* (Oct. 23, 2011) NEW YORK TIMES
[119] Bessen, James, *Don't Blame Technology for Persistent Unemployment* (Sep 30, 2013) SLATE < http://www.slate.com/blogs/future_tense/2013/09/30/technology_isn_t_taking_all_of_our_jobs.html > Accessed on April 1, 2014.
[120] ibid.

Oliver Blanchard, Robert Solow, and B.A. Wilson, in their 1995 paper, *Productivity and Unemployment*[121] sought to address the widespread fear that when unemployment is persistently high it is driven by advances in technology that is making workers redundant. Their paper brought an empirical perspective to the issue. They started by specifying the relationship between employment and productivity. They stated the relationship that Productivity = Output / Employment. It then follows that Employment = Output / Productivity. This relationship holds for a single firm, an industry, or a regional or national economy.

To empirically test the relationship between productivity, (implying advances in technology), and unemployment, Blanchard, Solow, and Wilson implemented a Rank-Order Correlation[122] analysis of Productivity Growth and the Unemployment Rate (UR). In order to eliminate the confounding effects of short-term factors, such as changes in productivity over the phases of the business cycle, they compare the average Productivity and UR over each decade from 1870 to 1990. The result: they obtained a strong negative Rank-Order Correlation of -0.73 between Productivity Growth and the level of the UR, covering the 1870-1990 Period.

Thus, there is, in fact, an *inverse* relationship between Productivity-Growth and the level of the UR. That is, they found that when productivity is growing the fastest, the UR tends to be lower. What does this mean? As they point out in their paper, their results imply that what is critical is that ***when productivity changes, the effect on employment depends on what happens to the level of output***. That is, the change in the demand for labor (as well as any other factor-inputs, but the focus here is on labor), due to a change in the relative price of capital, is the result of two effects: the Substitution Effect, and the Output, or Scale, Effect. Many of the concerns about Technological Unemployment focus exclusively on the Substitution Effect. That is, holding output constant, if the price of capital falls, relative to the price of labor, then capital will be substituted for labor, which is the Technological Unemployment scenario. However, there is also an Output, or Scale Effect. If, holding the capital-to-labor ratio constant, the scale of output increases, then both, more capital *and* labor will be demanded. This is the part of the analysis

[121] Blanchard, O., Solow, R. and B.A. Wilson, *Productivity and Unemployment*.(1995) MIT, Unpublished Manuscript

[122] **Spearman's Rank-Order Correlation Coefficient** is defined as the *Pearson Correlation Coefficient* between ordered, or ranked variables. It indicates how strongly *Monotonic* the function relationship between the rank-ordered variables is.

that usually gets left out of the discussion. And, this is what Blanchard, Solow, and Wilson argue. They conclude that the key to high employment does not lie in the rate of productivity growth, but in a demand for aggregate output that fully uses normal productive capacity.

In order to update the analysis done by Blanchard, Solow, and Wilson, the author of the current outlook used U.S. Bureau of Labor Statistics (BLS) on productivity and the UR and used a Rank-Order Correlation analysis on Average Productivity Growth, and the Average UR, over five-year intervals from 1950-54 to 2005-09, again to control for the confounding effects discussed by Blanchard, Solow, and Wilson, and discussed above. This resulted in 12 observations. The results are presented in Table VII-1 and Graph VII-2.

TABLE VII-1: Correlations Between 5-Yr Ave Productivity Growth and the Level of the UR: 1950-54 to 2005-09

Period	AveProd	AveUR
1950-54	4.05	4.00
1955-59	2.84	5.02
1960-64	3.43	5.72
1965-69	2.82	3.84
1970-74	2.11	5.38
1975-79	1.97	7.04
1980-84	1.57	8.30
1985-89	1.66	6.24
1990-94	1.89	6.58
1995-99	2.40	4.92
2000-04	3.50	5.20
2005-09	1.73	5.88

Spearman's Rank-Order Corr

N = 12	AveProd	AveUR
AveProd	1.0000	
AveUR	**-0.7550**	1.0000

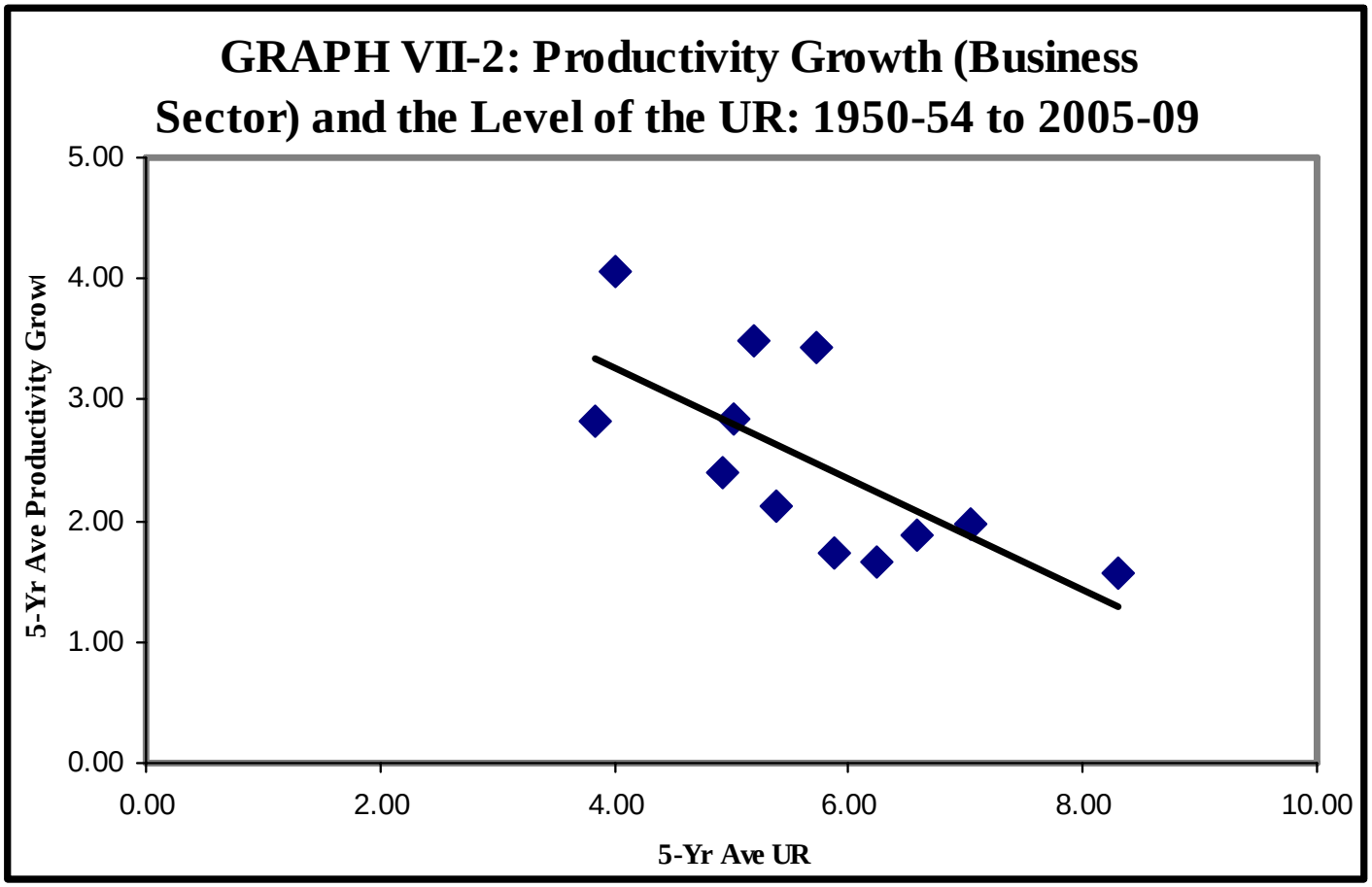
Statistically Significant

Two-Tailed: $\alpha = 0.01$
One-Tailed: $\alpha = 0.01$

SOURCE: U.S. BLS and Author's calculations

As is apparent from Table VII-1, the Blanchard-Solow-Wilson results are validated, and reinforced by extending the analysis to include more recent data. While they obtained a Rank-Order Correlation of -0.73, the updated analysis, using five-year intervals, rather than decade intervals, obtained a Rank-Order Correlation of -0.76. And, even though there are 12 observations, the results are strongly statistically significant at $\alpha = 0.01$ for both, a one-tailed and

two-tailed test. These results are graphically illustrated in Graph VII-2, where strong negative correlation can be clearly observed.



SOURCE: U.S. BLS and Author's calculations.

D. SECULAR STAGNATION?-Where Cyclical Unemployment Morphs into Structural Unemployment

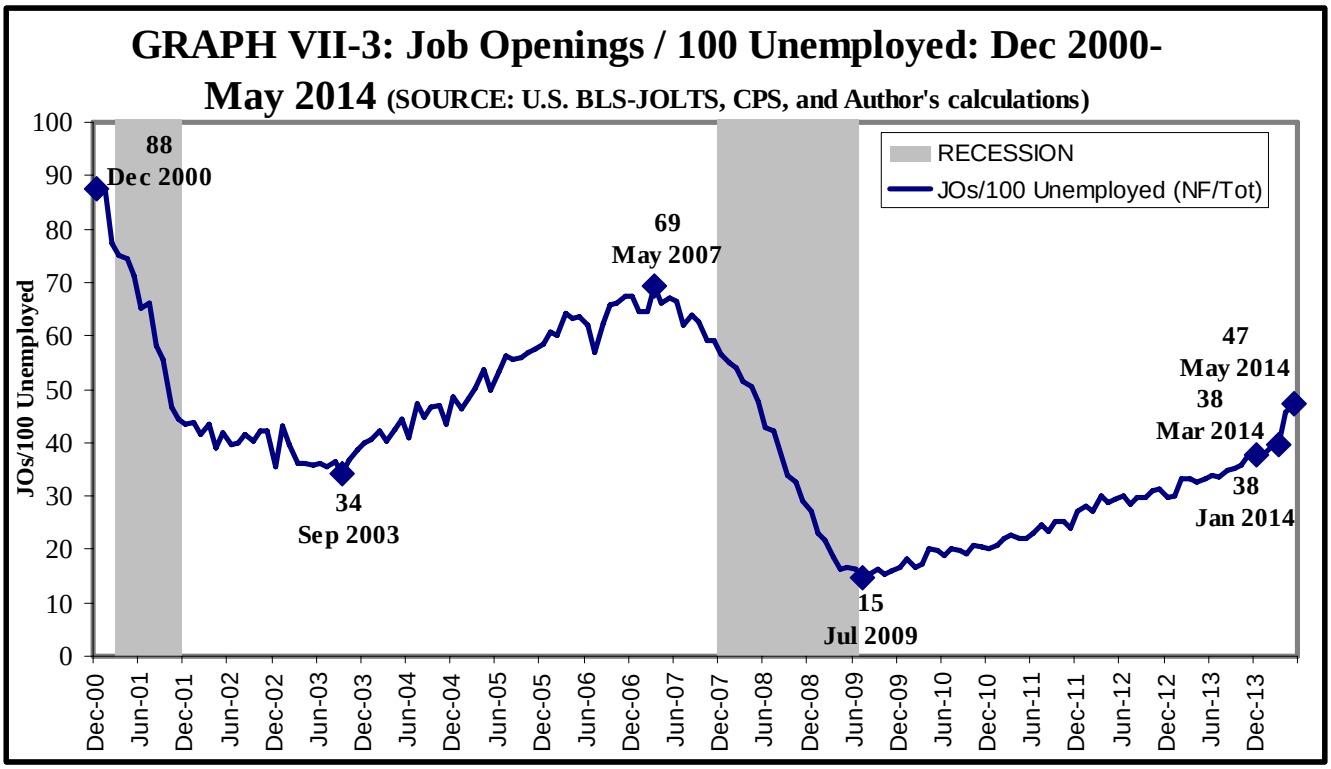
Evidence Suggests That Current Unemployment, whether Cyclical or Structural, is rooted in *Weak Demand.* After the 2007-08 recession/crisis, many economists and commentators wrongly predicted a "V" contraction and recovery pattern, similar to that of the 1981-82 recession and recovery. However, it appears that we have, in fact, experienced the "L" recovery, or at best, an elongated "U" recovery that a small minority of economists and commentators were predicting, given that the recession followed the popping of a housing bubble, accompanied by unsustainable levels of household debt. As illustrated in Graphs V-5A and V-5B, in Section V

above, it has taken the economy 77 months, or 6.4 years, to recovery all the jobs lost over the recent recession. The Congressional Budget Office (CBO) study on the Labor Market's slow recovery[123] concluded that to a large degree, the slow recovery of the labor market reflects the slow growth in the demand for goods and services, and hence GDP. The CBO estimates that GDP was 7½% smaller than potential (maximum sustainable) GDP at the end of the recession; by the end of 2013, less than ½ of that gap had been closed. With output growing so slowly, payrolls have increased slowly as well—and the slack in the labor market that can be seen in the elevated Unemployment Rate (UR) and part of the reduction in the Labor Force Participation Rate (LFPR) mirrors the gap between Actual and Potential GDP. To a smaller degree, the slow recovery of the labor market is the result of structural factors that stem from the recession and the slow recovery of output but that are not directly related to the economy's current cyclical weakness[124].

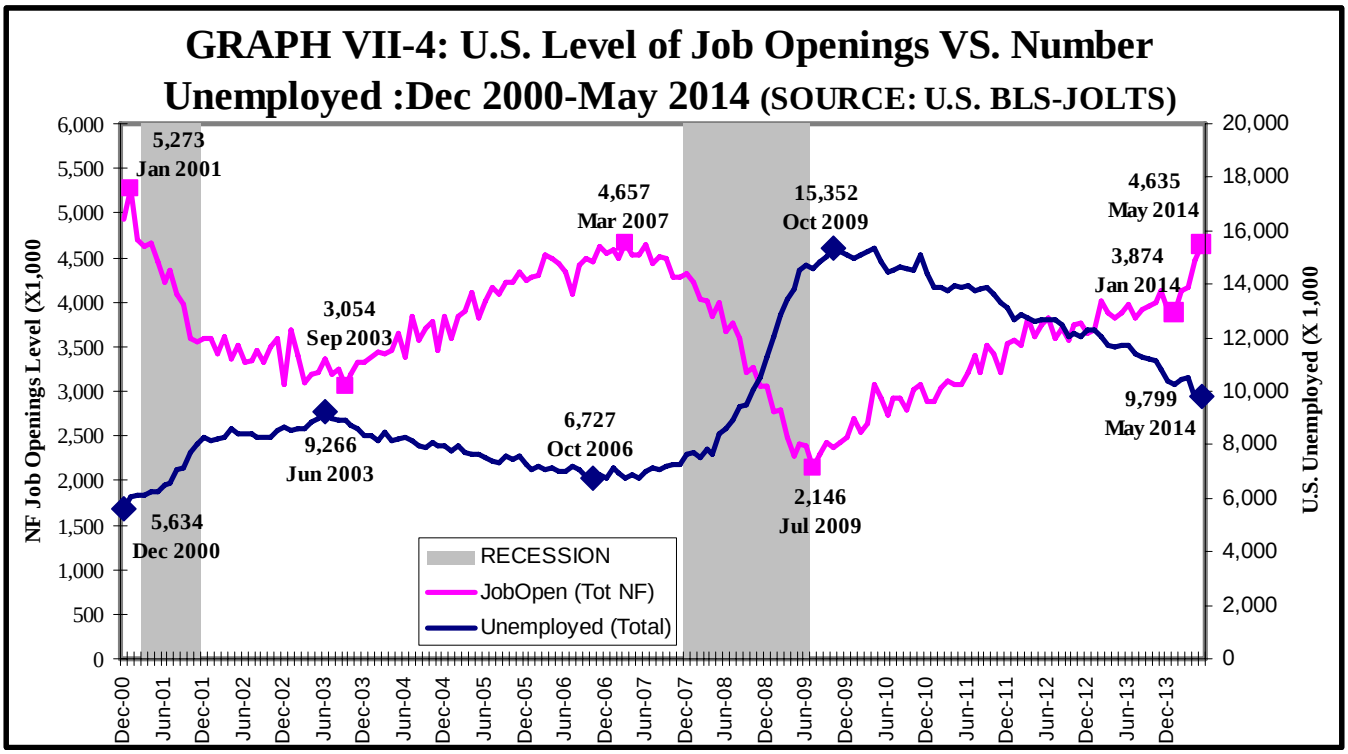
E. HAS THE JOB MARKET TURNED THE CORNER IN 2014?

A real sense of the underlying weakness in demand, and its effects on the demand for labor has been evidenced in the data from the U.S. BLS's Job Openings and Labor Turnover Survey (JOLTS). In Graph VII-3, the total number of Non-Farm Job Openings (JO) are divided by the total number of unemployed (those 16 years old and older) in the Civilian Labor Market, and then multiplied by 100 to produce a series that measures the number of JO's per 100 unemployed. The time-frame in Graph VII-3 is January 2000 to May 2014, the latest available JOLTS data at the time of writing. The highest JO-Rate over the range of data is the 88 JO's/100 Unemployed in December 2000, just before the Tech Bubble popped. The highest it reached in the Early-2000's Expansion was 69 in May 2007, as the economy was on the verge of falling back into recession. It reached its low-point coming out of the 2001 Recession in in September 2003, when it bottomed out at 34. It declined to its lowest point of 15, in July 2009, one month after the trough of the 2007-09 Recession. It then began a very slow recovery, and after more than four years, the JO-Rate finally surpassed the low-point of the 2001 Recession in August 2013, when it was 35, surpassing its September 2003 level. It reached 38 by the end of 2013, where it remained until March 2014. Its growth-rate has accelerated since then.

[123] Congressional Budget Office, *The Slow Recovery of the Labor Market* (February 2014), Summary
[124] ibid.

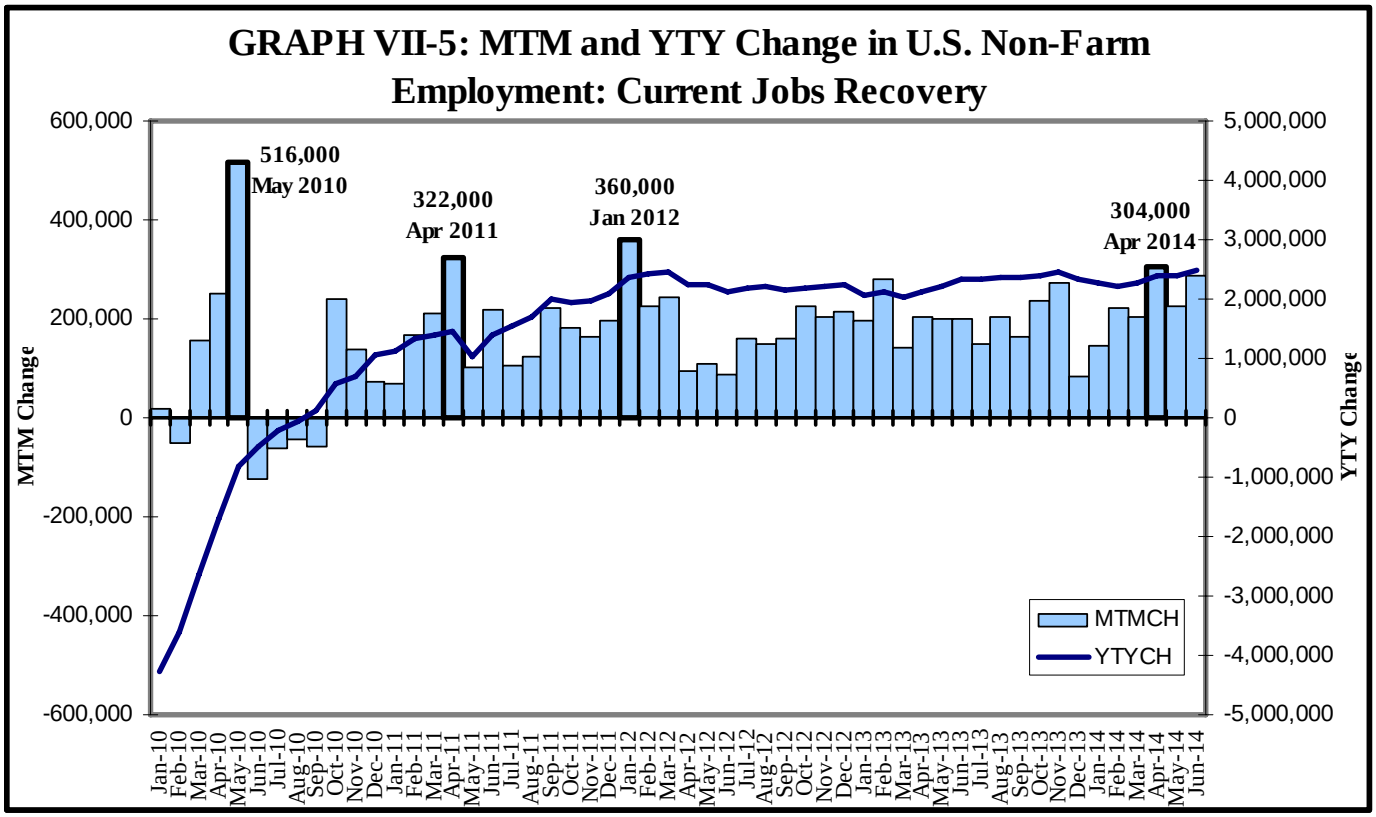


By May 2014, the last period of data, at the time of writing, the JO-Rate had reached 47, meaning that there were 47 JO's for every 100 Unemployed. This is the highest level it has reached over the entire current recovery. In fact, the growth in the JO-Rate between March and May has been the fastest pace over the current recovery. Graph VII-4 looks at what accounts for the pick-up in the pace of the growth in the JO-Rate. The Total Number of Job Openings (JO) and the Total Number of Unemployed, that is, the levels, not the rates, are plotted in Graph VII-4 over the same period tracked in Graph VII-3, above. After peaking at 15.4 million in October 2009, when the UR reached 10%, the number of unemployed has steadily fallen, and was down to 9.8 million by May 2014. The number of JO's has behaved differently. As for the JO-Rate, the Total Number of JO's had their highest peak, over the entire range of data, at the end of the 1990's Expansion, at 5.3 million in January 2001. After peaking again at 4.7 million in March 2007, JO's fell to 2.2 million in July 2009, one month after the trough of the 2007-09 Recession/Crisis, and its lowest point over the entire time-frame graphed in Graph VII-4. This was followed by a slow, but steady, recovery until January 2014 when JO's reach a level of 3.9 million. Then, like the JO-Rate, the growth in JO's accelerated after January.



The number of Non-Farm JO'S increased by 761,000 between January and May 2014. The level of JO's, at 4.6 million, in May, was very close to the level of the previous expansion's peak of 4.7 million in March 2007. The reason for the much lower JO-Rate in May 2014, compared to March 2007 (see Graph VII-3 above), is that the number of unemployed in May 2014, though it had declined significantly, was still 9.8 million, which was 3.1 million, or 45% higher than the 6.7 million unemployed in March 2007. Thus, though the labor market seems to be going in the right direction, based on the behavior of JO's, and though the number of unemployed has come down, it is still quite high by historical standards. And, this is keeping the JO-Rate at a higher level than it might otherwise be, though it is certainly going in the right direction.

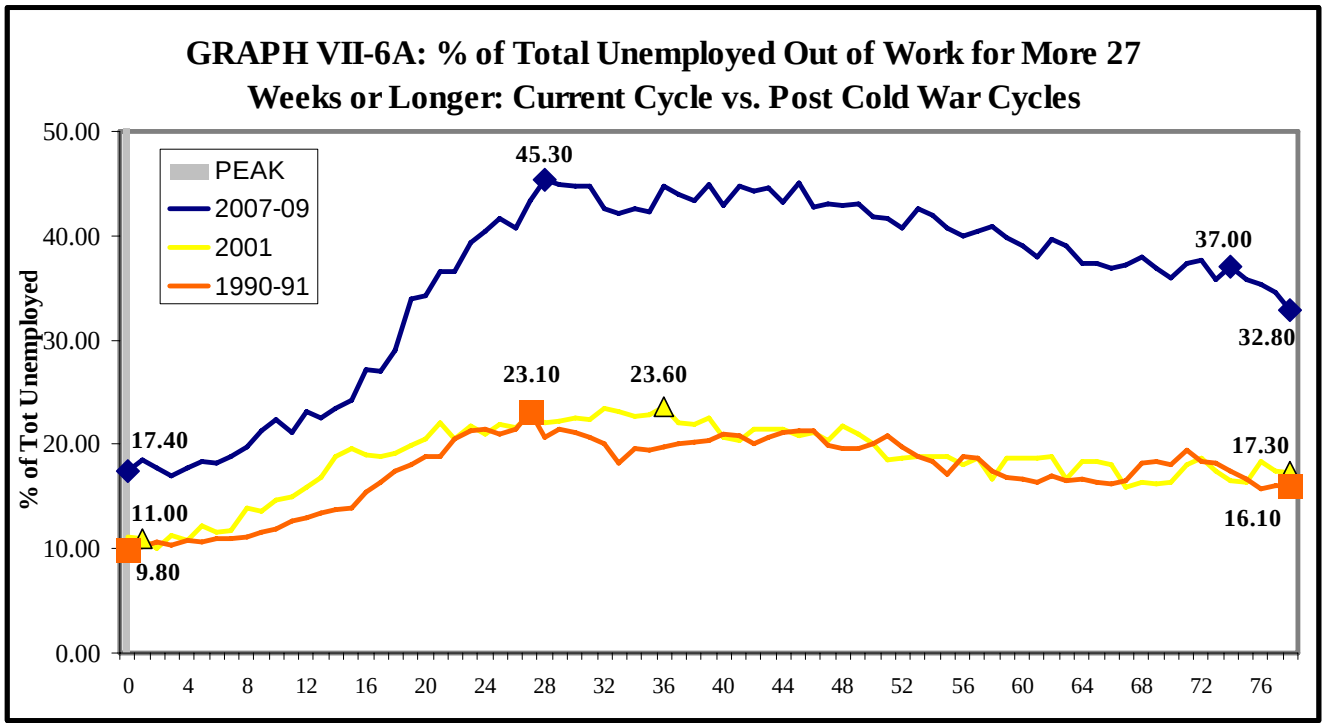
Another indicator of where the labor market may be going as we head into the second half of 2014 is of course, the monthly growth in Non-Farm Employment. Graph VII-5 tracks the Month-to-Month (MTM) growth in U.S. Non-Farm Employment (left vertical scale and bars), and the Year-to-Year (YTY) growth (right vertical scale and line), over the current jobs recovery from January 2010 to June 2014, the latest period of data, at the time of writing.

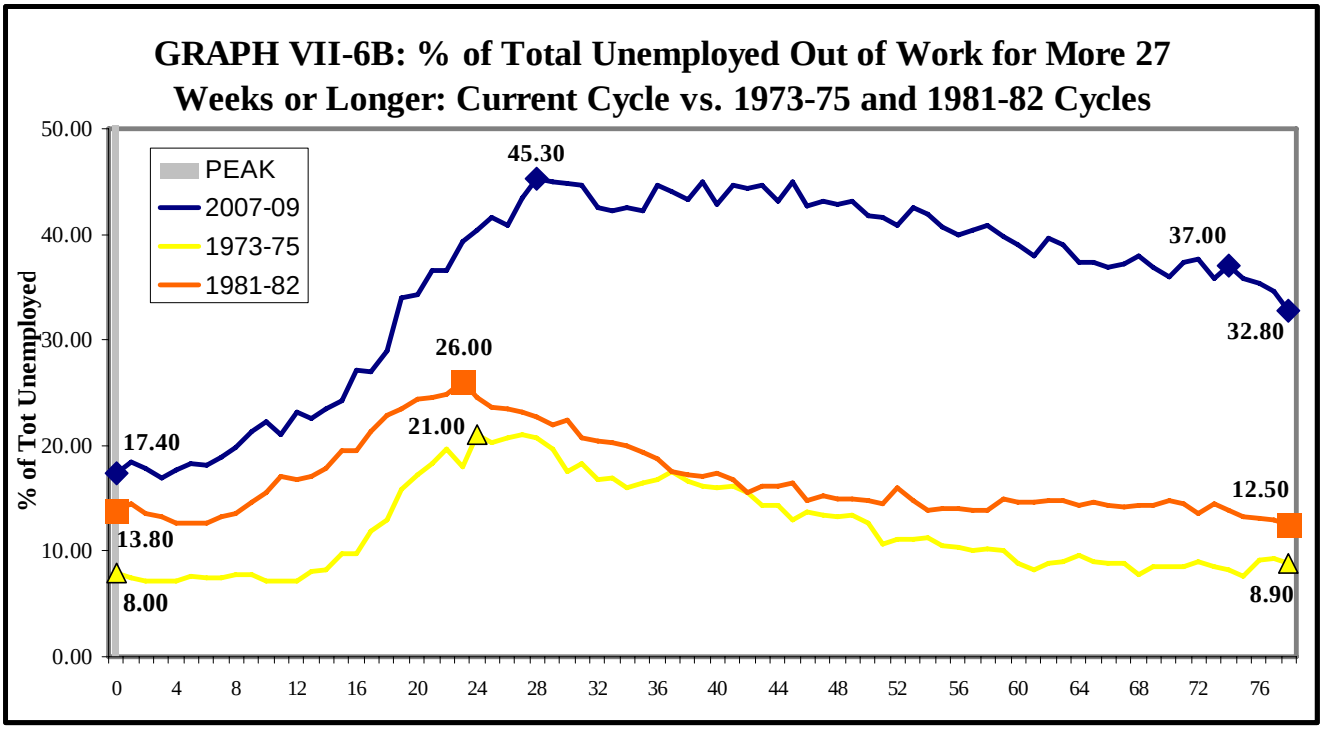


SOURCE: U.S. BLS and Author's calculations.

The four instances, over the current recovery, in which the MTM growth in Non-Farm Employment exceeded 300,000, are highlighted by the heavy boarders around the bars. The largest, the 516,000 increase in May 2010 was driven by the temporary workers hired for the 2010 Decennial Census. Three other months over the 42 months of the jobs recovery that had job-growth exceeding 300,000 were April 2011, January 2012, the last month of 300,000-plus job-growth, April 2014, when Non-Farm Employment grew by 304,000. Then in May, job-growth was not as strong, but then recovered its strength somewhat by accelerating again to 288,000. The question is: has the labor market turned the corner and is now on a trajectory of stronger growth? Possibly, but, as is apparent on Graph VII-5, we have been here before. This jobs-recovery has been characterized by a "fits-and-starts" pattern.

A final note on the state of the current jobs-recovery concerns the underlying weakness still in the labor market, which, if this is, in fact, an inflection point should subside.





SOURCE: U.S. BLS and Author's calculations.

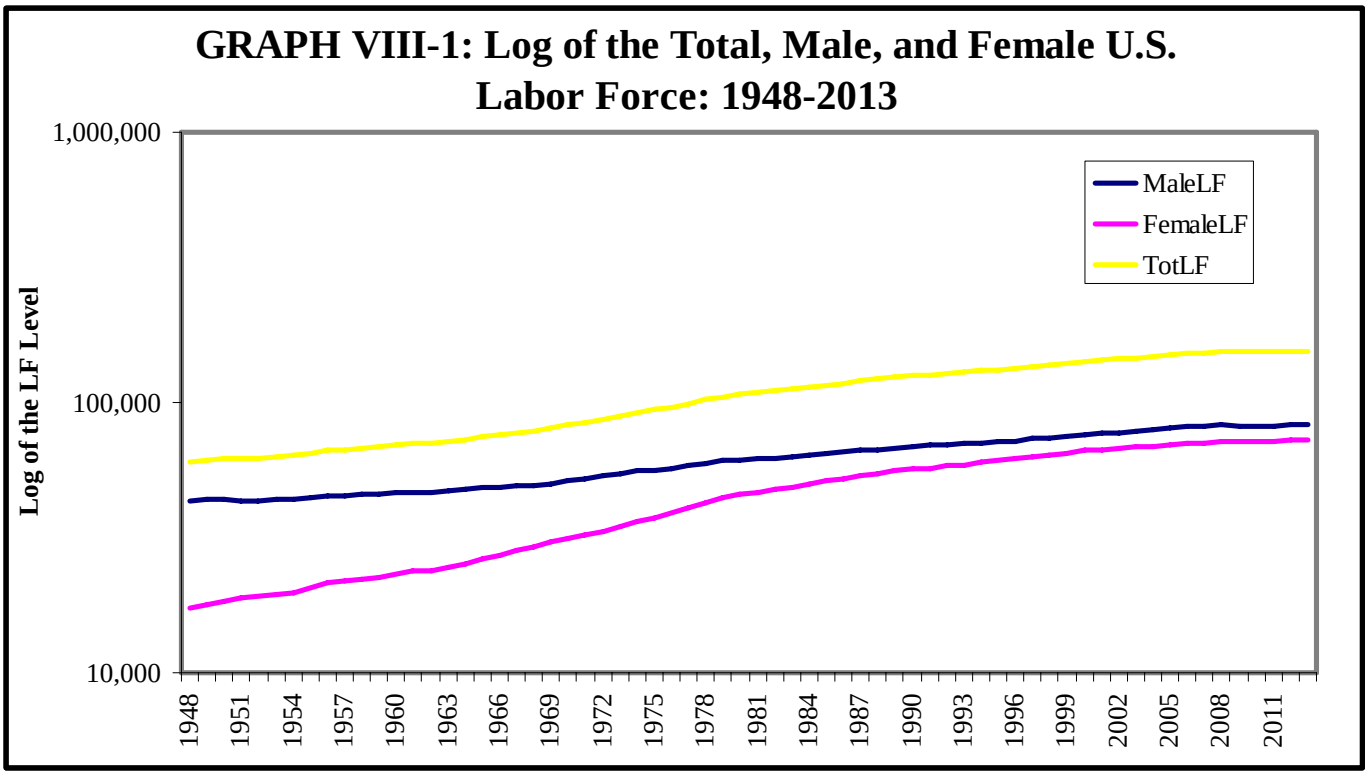
Graphs VII-6A and VII-6B track the Long-Term Unemployed (those unemployed 27 weeks, or longer), as a percent of the total number of unemployed from the peak of the previous expansion, to 76 months beyond that point. Graph VII-6A compares the current cycle to the other two Post

Cold War cycles, and Graph VII-6B compares the current cycle to the other two steep Post World War II cycles, 1973-75 and 1981-82. Clearly, the peak percent of long-term unemployed, 45.38%, over the 2007-09 Recession phase of the current cycle is unprecedented in the Post World War II Era. It was just about double the highest share the long-term unemployed were of total unemployment in both of the other two Post Cold War recessions (see Graph VII-6A). And, from Graph VII-6B, the peak share of long-term unemployed over the recent recession was more than double that of the 1973-75 Recession, and one and three-quarters larger than their peak share over the 1981-82 Recession.

With the release of the June 2014 employment data by U.S. BLS in July, it can be seen (in both Graphs VII-6A and VII-6B), that after 76 months since the previous cycle-peak in December 2007, the long-term unemployed, in June 2014, were 32.80% of the total number of unemployed. In fact, this was a sharp drop from the 37.00% share in February, and far below the peak share of 45.38% in April 2010 (month 28 from the previous peak in Graph VII-6A and VII-6B). Keep in mind however, that this was still double the share of long-term unemployed at comparable stages of the cycle recovering from the previous two Post Cold War cycles. And, the current cycle's long-term unemployed, as a share of the total number of unemployed was three times that at the comparable stage coming out of the 1981-82 Recession, and four times that at the comparable stage coming out of the 1973-75 Recession. So, mid-2014 has certainly seen an accelerated improvement in U.S. Job-Market conditions, but it is important to keep in mind the severity of the recent recession and crisis, and how much weakness still remains. In fact, one of the indicators watched by the Fed is the long-term unemployed. And, as noted above, we could be at a critical inflection point, or it could also be just the continuation of the fits-and-starts pattern observed over this recovery. Nevertheless, the long-term unemployed, as a percent of the total number of unemployed, an indicator of labor-market weakness, has, in fact, been declining since it peaked back in April 2010. And, that decline has accelerated since February. Critical to the inflection-point scenario will be the data for the July-September period. That will determine whether or not the second quarter was a bounce-back from the winter, or turning the corner.

VIII. HOW ARE RETIREMENTS AFFECTING THE LABOR FORCE?

An argument for the decline in Labor Force Participation Rate (LFPR) is that there are structural forces driven by Baby-Boomers retiring and that it has little or nothing to do with cyclical factors. To evaluate this argument, Graph VIII-1 tracks the Log of the Total, Male, and Female U.S. Labor Force (LF) over the Post World War II Era to assess the long-term, trend-characteristics, as opposed to the cyclical characteristics of the LF.

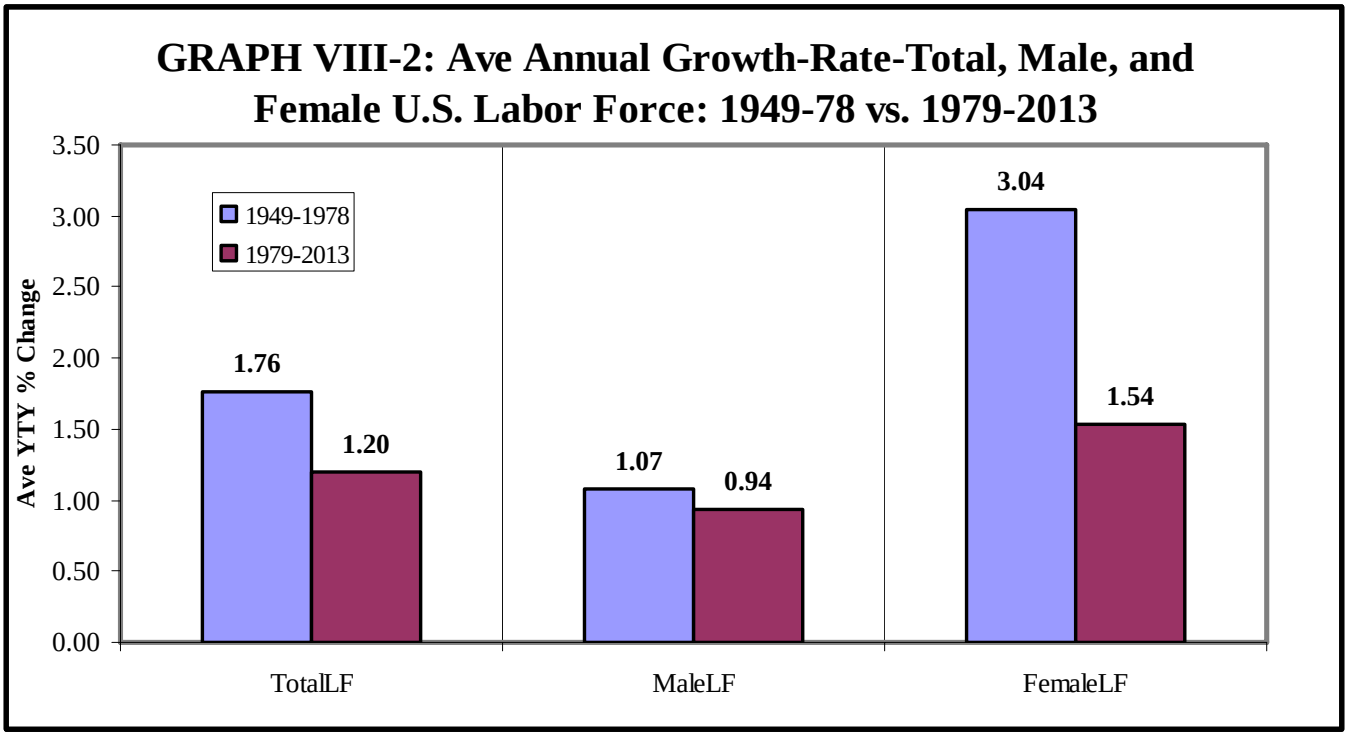


SOURCE: U.S. BLS and Author's calculations.

A. SOME LONG-TERM POST-WORLD WAR II TRENDS

From Graph VIII-1**,** the growth in the U.S. Labor Force (LF) throughout the Post World War II Era can be clearly seen. But, what catches the eye is the rapid growth in the U.S. Female LF, which significantly closes the gap between the Male and Female LF as the Male LF grew at a much slower pace. Further, it appears that the slope of the line representing the Female LF

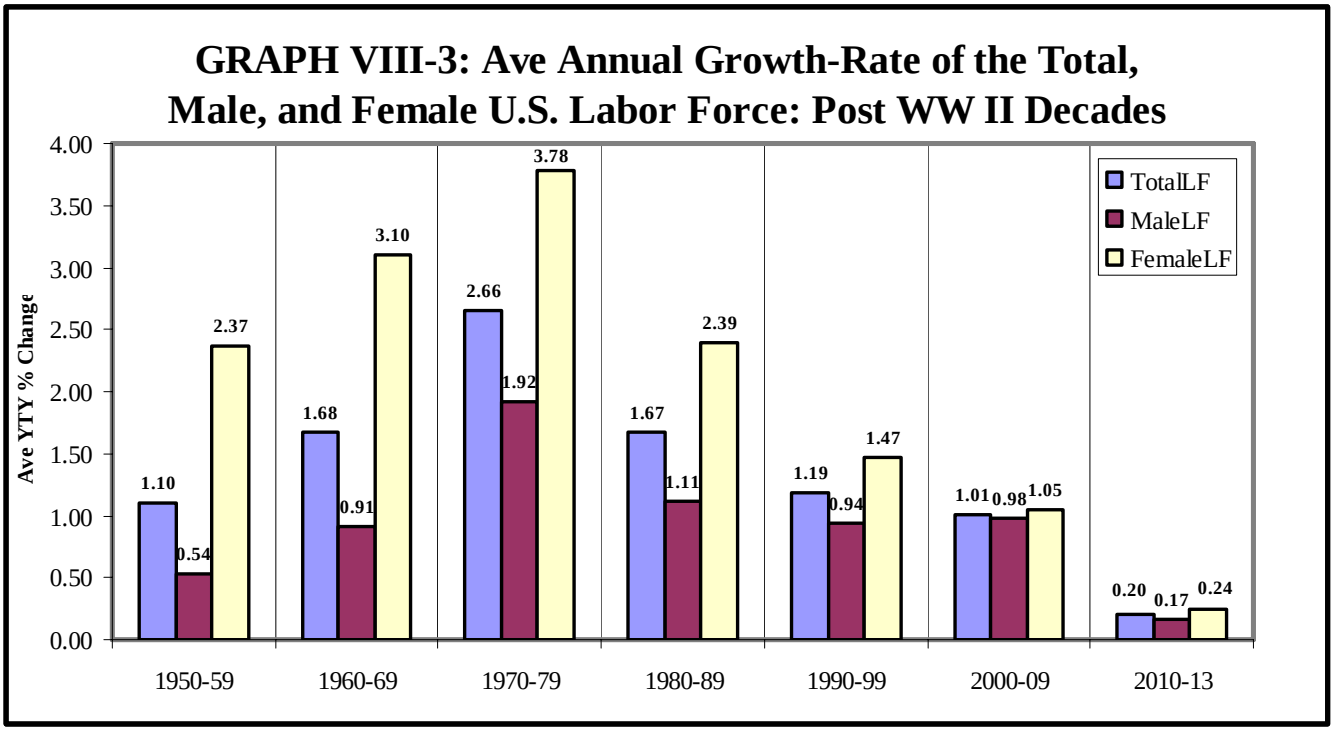
begins to flatten after 1978, implying a slowing in the growth-rate. To explore this, Graph VIII-2 presents the average, annual growth-rate (the geometric mean) for two segments of the Post World War II Era, 1948-1978 and 1979-2013.



SOURCE: U.S. BLS and Author's calculations.

As is clear in Graph VIII-2, there is a definite break, before and after, 1978, in the growth of, not just the Female LF, but the Male, and Total LF as well. From 1949 to 1978, the U.S. LF grew at an annual, average rate (geometric mean), of 1.76%, and after 1978, that rate slowed to 1.20%, including up to 2013. The growth-rate in the Male LF declined slightly from 1.07% over the 1949-1978 segment to 0.94% over the 1979-2013 segment. It is the growth-rate in the Female LF that had the most dramatic break before, and after, 1978. From 1949 to 1978, the Female LF grew at an annual, average rate of 3.04%. Then, after 1978 (i.e., from 1979 to 2013), that rate dropped in half to 1.54%.

Graph VII-3 provides a little more detail by breaking out the growth-rates depicted in Graph VII-2 into the average, annual growth-rate (again, using the geometric mean) for each decade in the Post World War II Era.

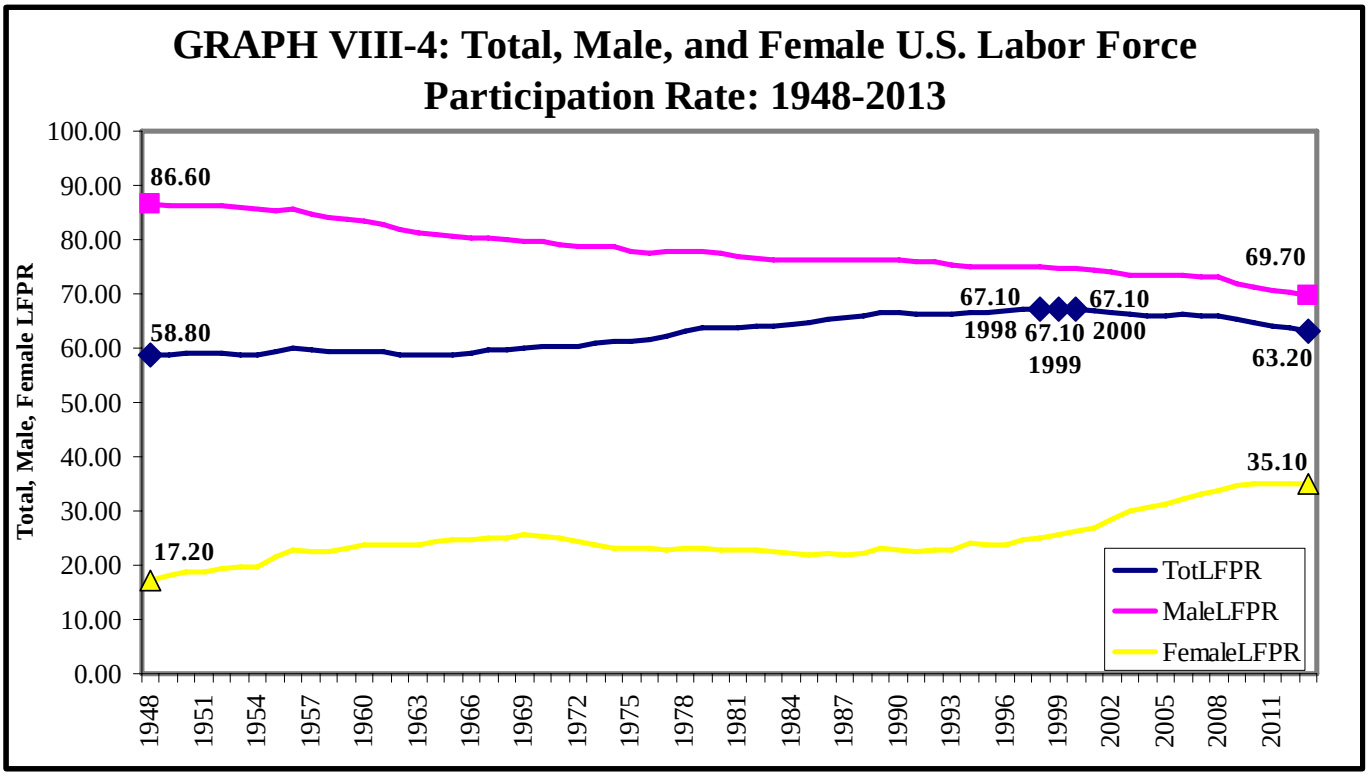


SOURCE: U.S. BLS and Author's calculations.

The accelerating growth-rate for the Total, Male, and Female LF segments from the 1950's to the 1970's comes through strongly in Graph VIII-3. Even before the advent of the Baby Boomers' entering the labor market and driving the average, annual growth-rates to their highest levels in the Post World War II Era. The especially strong growth in the Female LF comes through. The growth-rate of females entering the LF accelerated from an average, annual increase of 2.37% between 1950 and 1959, to 3.10% between 1960 and 1969, a Post World War II peak of 3.78% between 1970 and 1979, when this demographic trend was given a boost by the entry of the Baby Boomers into the U.S. Labor Market. In fact, it was the 1950's, 1960's, and 1970's that had the only years when the annual increase in the Female LF exceeded 4%. The growth-rate in the Male LF also accelerated in these same decades, but at a lower rate. The average, annual growth-rate in the Male LF also peaked in the 1970's, with the entry of the Baby

Boomers, but at one-half the growth-rate of the Female LF (+1.92%). The Total LF grew at an annual, average rate of 2.66%, also the highest in the Post World War II Era.

As noted above, the growth-rate of the Total, Male, and Female LF segments all declined in the decades following the 1970's. And, the first decade of the 21st Century had the lowest average, annual growth-rates in the entire Post World War II Era. The Total, Male, and Female LF segments all grew at annual rates of around 1%, at best, between 2000 and 2009. Between 2010 and 2013, the growth-rates in the Total, Male, and Female LF segments have been close to zero. To conclude the discussion on the longer-term, trend perspective on the labor force, Graph VII-4 tracks the Labor Force Participation Rate (LFPR) for the Total, Male, and Female LF segments from 1948 to 2013.



SOURCE: U.S. BLS and Author's calculations.

In 1948, the U.S. Total LFPR was 58.80%. This gradually increased over the 1950's, 1960's, 1970's, and peaked during the height of the Tech Bubble, at 67.10%, in 1998, 1999, and 2000. It has declined since then, and by 2013, it had declined to 63.20%. The Male and Female LFPR's

have followed opposite trends over the Post World War II Era. The Female LFPR was at its low-point of 17.20% in 1948. By the 1960's the Female LFPR exceeded 20%, and then stayed within the 20-25% range until the late 1990's. At that point, the growth in the Female LFPR, once again, began to accelerate. By 2010, it reached 35.10%, where it has remained through 2013. While the Female LFPR has increased for more than six decades, the Male LFPR has been in secular decline. It was at its Post World War II peak at 86.60% in 1948. Since then, it has continuously declined. By the year of the recent financial crisis, 2008, it was 73.00%. Following the 2007-08 Recession/Crisis, by 2013, the decline in the Male LFPR accelerated, falling by 3.3 percentage points or 330 basis points to 69.70%. The next sub-section turns to a discussion of the cyclical behavior of the Labor Force and the LFPR over the Post World War II business cycles.

B. CYCLICAL BEHAVIOR OF THE LABOR FORCE: Post Bretton Woods Period

There were a total of six complete business cycles, measured from Trough-to-Trough, over the entire Post Bretton Woods Period, starting in November 1970, the trough of the 1969-70 Recession, and ending in June 2009, the trough of the 2007-09 Recession. These are the business cycles as defined by the National Bureau of Economic Research (NBER) in Table VIII-1.

TABLE VIII-1: NBER Designated Business: Cycles: Post Bretton Woods Period

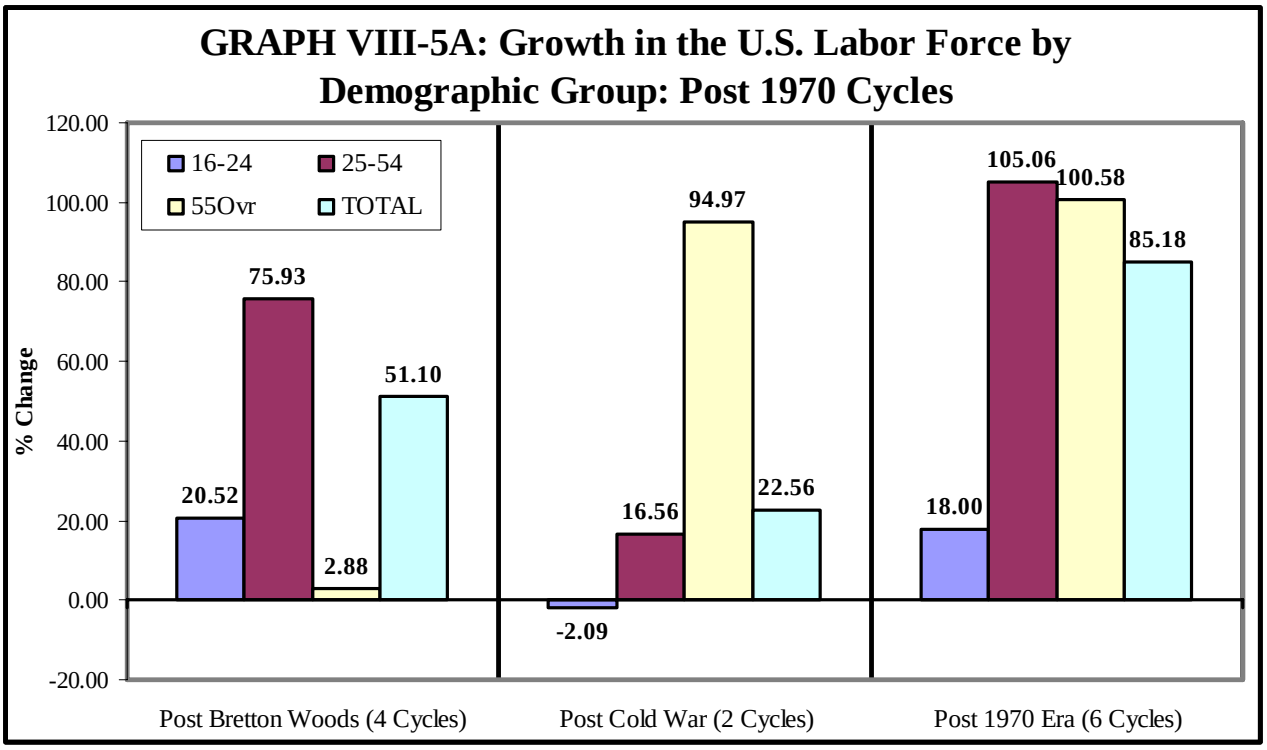
	NBER Dates for Cycle Stages		
No of Mo	**TROUGH**	**PEAK**	**TROUGH**
52	Nov-70	Nov-73	Mar-75
56	Mar-75	Jan-80	Jul-80
28	Jul-80	Jul-81	Nov-82
100	Nov-82	Jul-90	Mar-91
236	**POST BRETTON WOODS**		
128	Mar-91	Mar-01	Nov-01
91	Nov-01	Dec-07	Jun-09
-----	Jun-09	-----	-----
219	**POST COLD WAR CYCLES**		
455	**TOTAL POST-1970 ERA**		

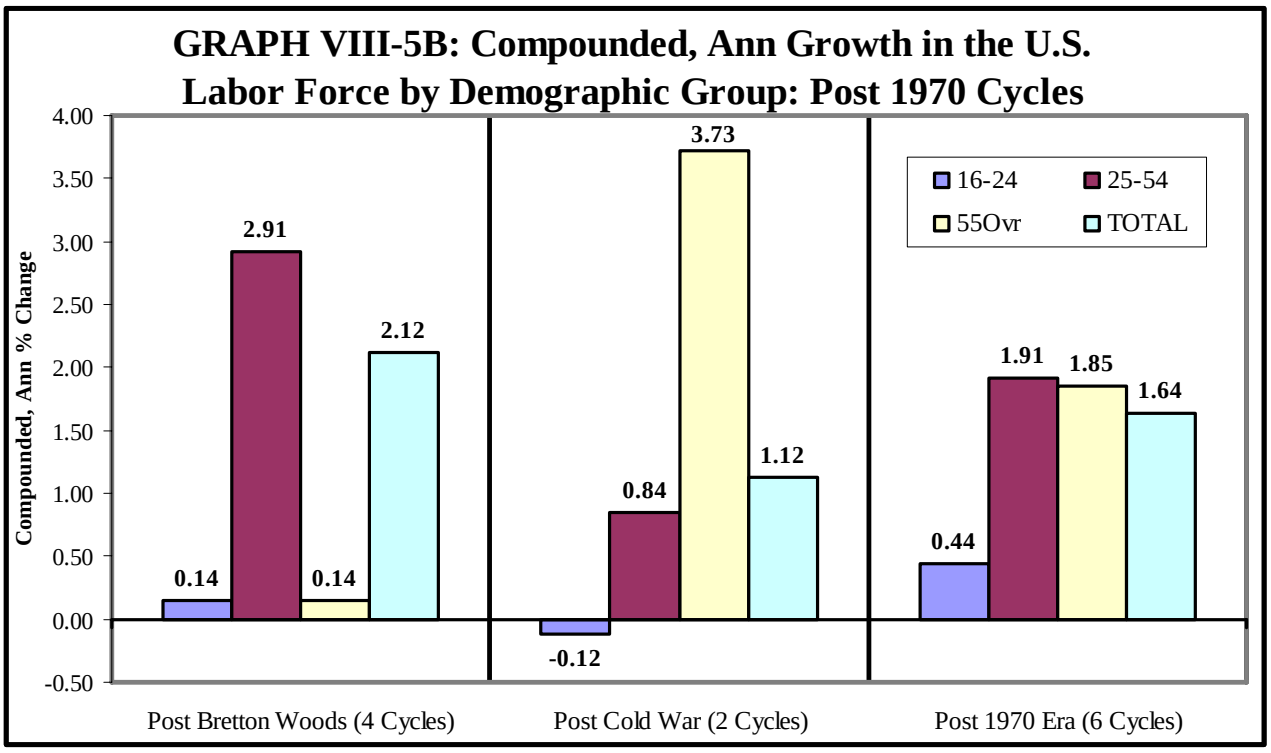
SOURCE: National Bureau of Economic Research

From the cyclical perspective, the focus switches from gender to age to assess the more medium-term cyclical effects on the labor force as opposed to the longer-term trends investigated in Sub-Section A, above. In particular, it is critical to assess the labor-force behavior of the prime demographic, those 25 to 54 years old, as compared to the 16-24 year-old and 55 years-old and older cohorts.

Graphs VII-5A and VII-5B divide the Post Bretton Woods Period into two distinct sub-periods: the Post Bretton Woods/Cold War Period, and the Post Cold War Period. In August 1971, Richard Nixon announced that the U.S. would not longer exchange dollars for gold. This ended the international gold-standard system that had been in place since 1946. From that point, until the End of the Cold War in 1989, is defined as the Post Bretton Woods/Cold War Sub-Period, and from 1989 on is defined as the Post Cold War Sub-Period. There were four complete cycles, measured trough-to-trough, in the Post Bretton Woods/Cold War Sub-Period, from November 1970 to March 1991. The Post Cold War Sub-Period is defined as March 1991, the trough of the 1990-91 Recession to June 2009, the trough of the 2007-09 Recession (see Table VIII-1).

In Graph VIII-5A the total percent-change in the three age-cohorts in the U.S. Labor Force are shown over the four cycles of the Post Bretton Woods/Cold War Sub-Period, the two cycles over the Post Cold War Sub-Period, and for the six cycles over the entire Post Bretton Woods Period. With the Baby Boomers entering the labor force in the 1970's, it is no surprise that the 25-to-54 year-old, age-cohort had the strongest growth over the November 1970-March 1991 (Post Bretton Woods/Cold War) segment, growing by nearly 76%. Next in growth was the 16-to-24 year-old, age-cohort growing nearly 26%. Finally, the slowest growing age group in the labor force, over that segment, was those 55 years old, and older, only increasing by under 3%. The net result: the total U.S. Labor Force grew by 51%. But, as the Baby Boomers got older, the center of gravity shifted, and in the Post Cold War era of cycles, it was the 55 years-old, and older cohort that had the largest growth, increasing by 95% between March 1991 and June 2009. Those 25 to 54 years old grew by just under 17%, and those aged 16-24 years old actually declined by 2%. The net result for the entire Post Bretton Woods Period (November 1970 to June 2009), was that both the 25-54 and 55 years-old, and older cohorts increased by more than 100%, while those 16-to-24 only grew by 18%. The Total U.S. LF grew by 85%.





SOURCE: U.S. BLS and Author's calculations.

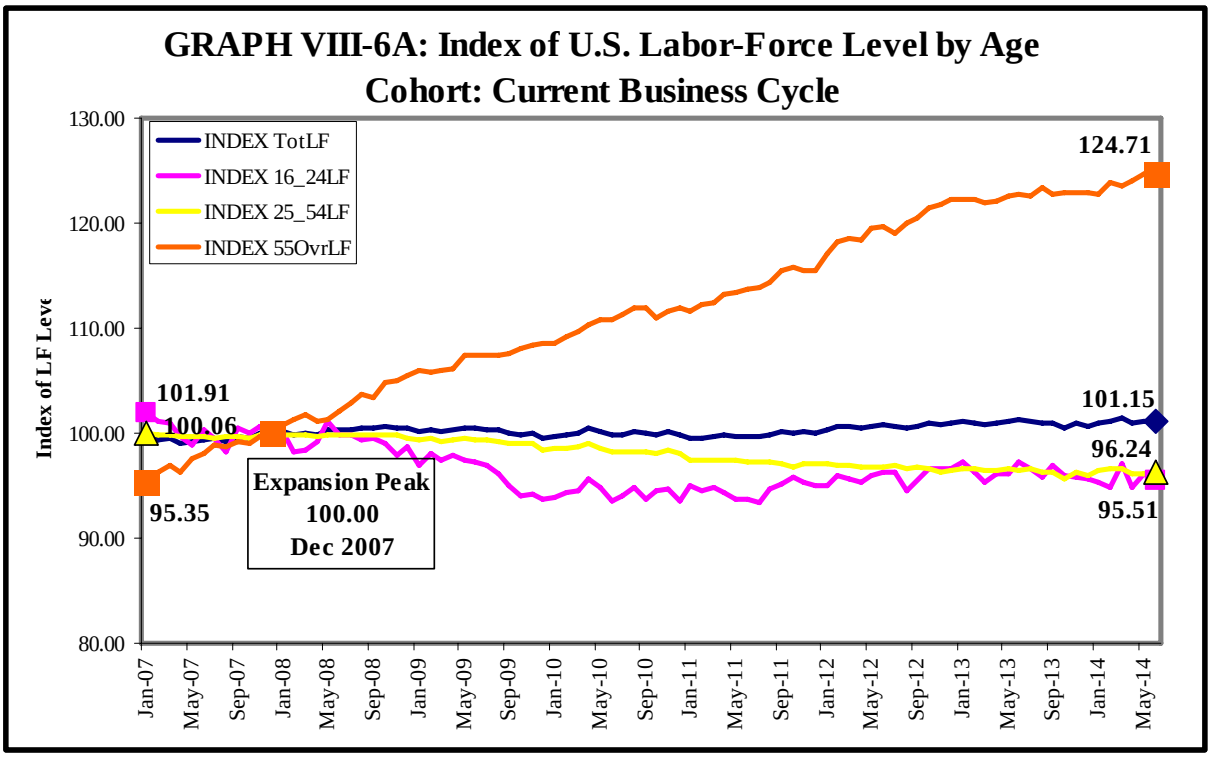
Since the cycles over the segments presented in Graph VII-5A are of different length, Graph VII-5B puts the growth over different-lengthed cycles on the same footing by showing the compounded, annualized growth-rate over the two sub-periods and the entire Post Bretton Woods Period. The growth-rates of the three major age-cohorts, in the labor force, depicted in Graph VIII-5B pretty much line up with the unadjusted growths depicted in Graph VIII-5A. Interestingly, the strongest compounded, annualized growth-rate of any group over the entire Post Bretton Woods Period is that of the 55 years-old, and older cohort that grew at a compounded, annualized rate of 3.73% over the two cycles of the Post Cold War Sub-Period. The second-strongest growth, also the Baby Boomers, was the 2.91% for the 25-54 year-olds over the Post Bretton Woods/Cold War segment. As in Graph VIII-5A, the strongest overall labor-force growth was over the four cycles of the Post Bretton Woods/Cold War segment in which the labor force grew at 2.12% rate. That rate dropped in half to 1.12% over the Post Cold War segment resulting in 1.64% compounded, annualized growth-rate in the Total Labor Force over the six cycles, beginning in November 1970 and ending in June 2009.

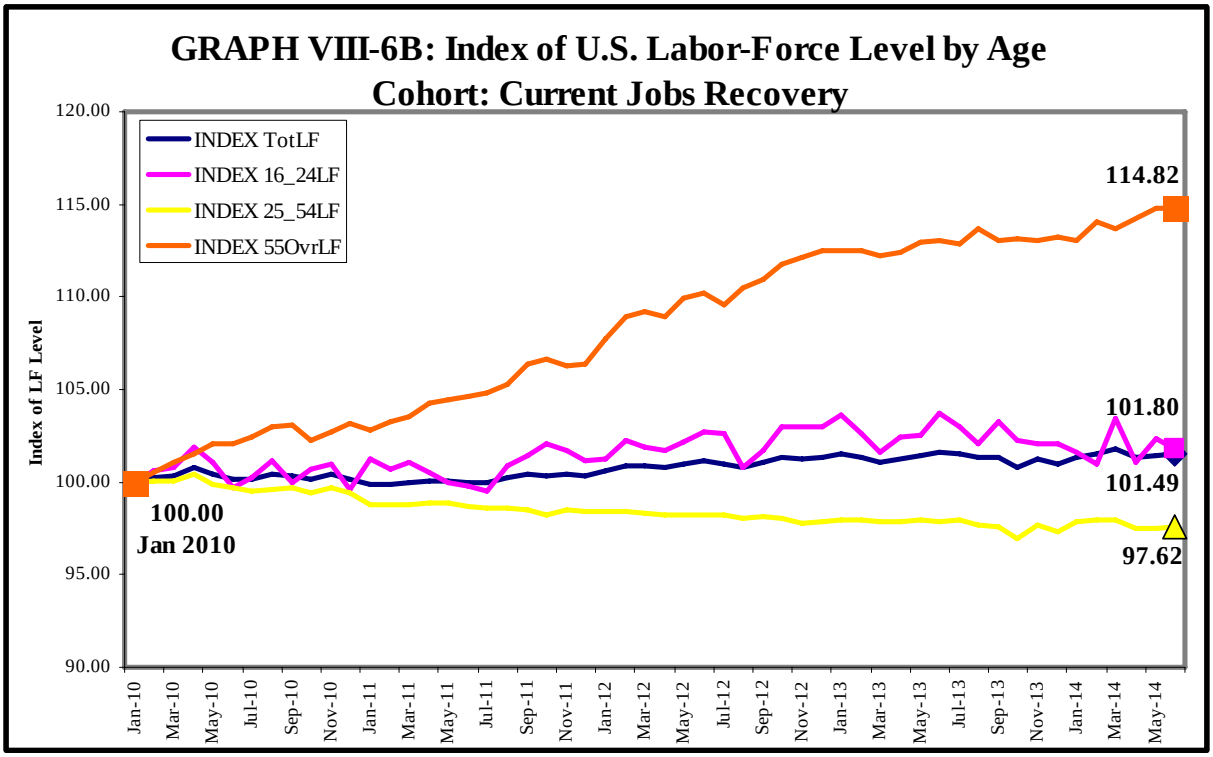
C. THE CURRENT CYCLE: Recession and Recovery

Turning to the current business cycle, including the recession and recovery phases, and focusing on what seems to be driving the behavior of the labor market, especially in terms of why workers seem to have left the labor force, especially since the recovery phase. Graph VIII-6A tracks an index of the level of the Total U.S. Labor Force, and the three major age-cohort breakouts: those 16-to-24 years old, those 25-to-54 years old, and those 55 years old, and older, over the recent recession and current recovery. Graph VIII-6B tracks these same breakdowns of the labor force over the current jobs recovery from January 2010[125] to June 2014, the latest period of available data at the time of writing.

From Graph VIII-6A, it is clear that the 16-to-24 and 25-54 year-old segments of the Labor Force began declining before the peak of the previous expansion in December 2007. The 55-or-older cohort has continued to increase over the entire range of data from January 2007 to June 2014. The high-point for the Total Labor Force was not until March 2014.

[125] The jobs-recovery actually began in February 2010, based on the behavior of Non-Farm Employment from the Establishment Survey. .





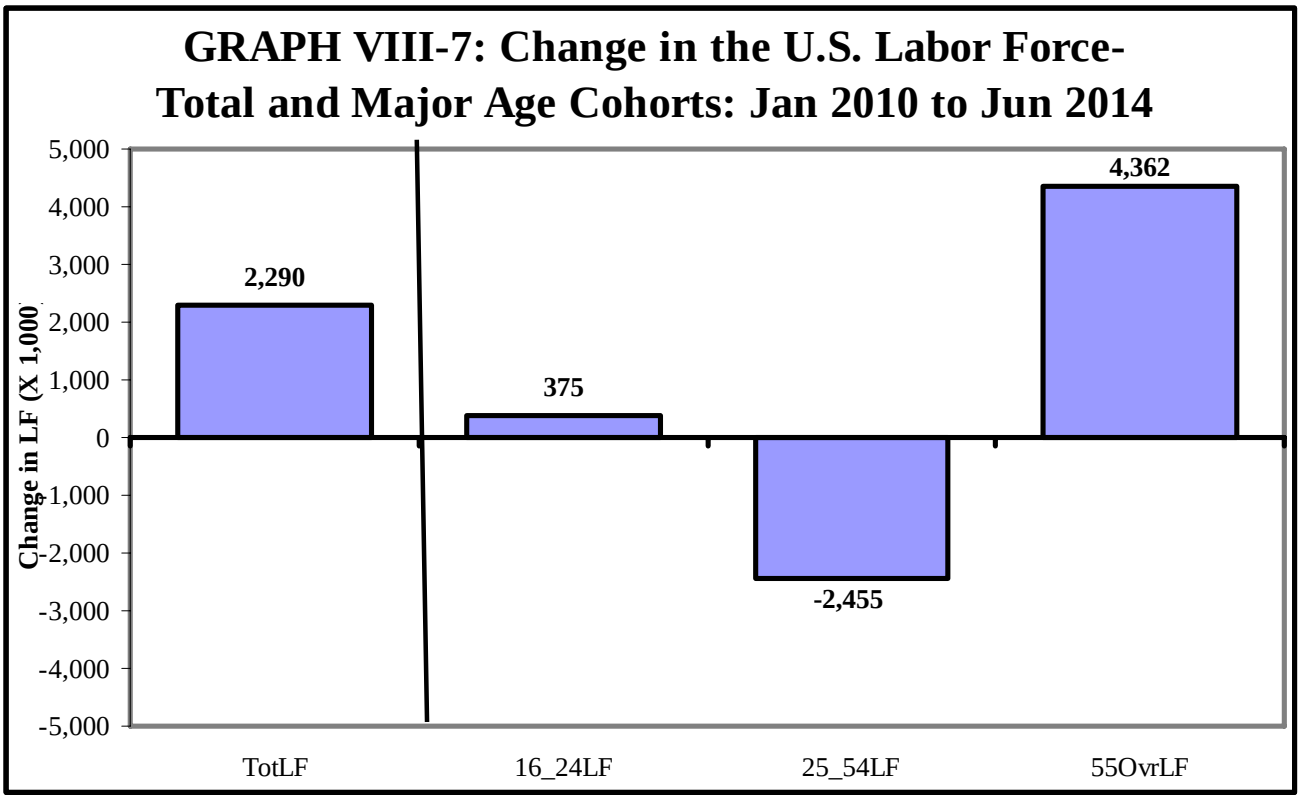
SOURCE: U.S. BLS and Author's calculations.

From Graph VIII-6A, by June 2014, the Total U.S. Labor Force had increased by 1.15% since December 2007, the peak of the last expansion. The conventional wisdom is that the flat-growth

in the Labor Force (LF) is primarily due to retirees and younger workers who are not as strongly attached to the LF as the prime-aged group in the LF, those 25-54 years old. And, in fact, those 16-24 years old, in the LF, have declined by 4.49% since December 2007. But, so have those in the prime-aged cohort. By June 2014, the 25-54 year-old segment of the LF had declined by 3.76% since December 2007. It seems that a prime driver of any support for LF-growth, at least keeping it from contracting, was the "retirees". The 25-54 year-old cohort grew by 24.71% between December 2007 and June 2014. This was, by far, the strongest growth of any of the demographic groups tracked in Graph VIII-6A.

Graph VII-6B focuses on the current recovery phase of the cycle. The jobs-recovery actually began in February 2010, but Graph VII-6B tracks the index for the cohorts tracked in Graph VIII-6A from January 2010 to June 2014, the last period of available data, at the time of writing. Again, the results seem to go against the grain of the conventional wisdom. The prime-aged cohort in the Labor Force (LF) those 25 to 54 years old, have declined over the current recovery. Between January 2010 and June 2014, this group declined by 2.38%. Over the same period, the 55 years, and older, age cohort increased by 14.82%. And, the 16-24 year-old cohort also grew, increasing by 1.80% between January 2010 and June 2014. The net result: the overall U.S. Labor Force grew by 1.49%.

Graph VIII-7 summarizes the changes in the LF over the current recovery. The left-most bar represents the growth in the Total U.S. Labor Force (LF) between January 2010 and June 2014. The U.S. LF has increased by 2.3 million over the current recovery. The three bars to the right represent the contributions to the growth in the U.S. LF over the current jobs-recovery period. Again, contrary to the conventional wisdom, the major contribution to the increase in the U.S. LF, over this recovery, has been the 55-and-over age-cohort their segment of the LF grew by 4.4 million between January 2010 and June 2014. A much smaller contribution to the growth in the U.S. LF was that of the 16-24-old, age-cohort, increasing by 375,000. But, it was the prime-aged group, supposedly, the most strongly attached to the LF that declined by 2.5 million over the current recovery. This seems to be driven by weak demand, not structural factors.



SOURCE: U.S. BLS and Author's calculations.

So far, over the first half of 2014, the demographic patterns illustrated in graphs VIII-6B and VIII-7, over the current recovery, seem to be continuing. Between January and June 2014, the U.S. LF has grown by 234,000, and again, the largest contributor to the growth has been the 55 years and older cohort, which increased by 521,000. So, where are all these retirements the conventional wisdom is telling us about? Again, continuing the pattern over this recovery, the 16-24 year-old cohort contributed a modest 333,000 to U.S. LF-growth over the first half of 2014. Meanwhile and also continuing the pattern over the current jobs-recovery, between January and June 2014, 211,000 of those 25-54 years old left the U.S. LF. Again, as noted above, with the prime-aged cohort, those most strongly attached to the labor force, were the only demographic group to subtract, and significantly so, from labor-force growth over the first half of 2014. Again, as argued above, this seems to strongly indicate that principal driver of the behavior of labor-force participation, over the current recovery, and into 2014 (at least over the first half, at any rate), is an insufficient demand for labor.

One final note on the labor-force trends over this cycle, and the first half of 2014, the results discussed in this section are the product of a dynamic process. .There is a process by which individuals are constantly entering and exiting the labor force. The net result is the snapshot of the labor force observed at a point in time. For instance, in Graph IX-7, above, it shows that there was a 4.4 million increase, between January 2010 and June 2014, in the segment of the labor force aged 55 years, and older. This was a snapshot of the net result of two dynamic processes that are constantly churning below the surface. The Net Result of these dynamic processes is the reported snapshot at a point in time, which will reflect an increase if more entered, then left, the labor force, a decrease, if more left than entered, and no-change, if the number that left is exactly equal to the number that entered. Returning to Graph IX-7, as mentioned above, over the current jobs recovery, the segment of the labor force composed of those 55 years old, and older, increased by 4.4 million. This was the net result of those 55 years old, and older, retiring, becoming disabled, or for some other reason, leaving the labor force between January 2010 and June 2014, and those, in this age-cohort, who entered the labor force, by coming out of retirement, in some cases, entering the labor force for the first time, and for other reasons, came into the labor force over the first six months of 2014. The net result was that there were 4.4 million new entrants, 55 years old, or older, who entered the labor force over the first half of 2014. It is not that those 55 years old, or older, are not retiring, it is that there are also a large number of those 55 years old, and older, who are “un-retiring” too. It is this last part that seems to be missed by the conventional narrative.

PART 4: THE CURRNT STATE OF THE CONNECTICUT ECONOMY: Mid-2014

IX. FOCUS ON THE CONNECTICUT LABOR MARKET: In Its Fifth Year of Recovery

Given the state of the U.S. Labor Market, as discussed in Part 3, above, what is the state of the Connecticut Labor Market as we enter the second half of 2014? And, how does Connecticut's Labor Market stack up compared to the U.S.? To answer these questions, this section now turns to a discussion of the current conditions of the Connecticut Labor Market as we close out the first half of 2014. But before assessing the current state of Connecticut's Labor Market, it will be instructive to review the results of the 2014 Non-Farm Employment Benchmark completed, as usual, in March. The discussion in Sub-Section A now turns to Connecticut's 2014 Benchmark.

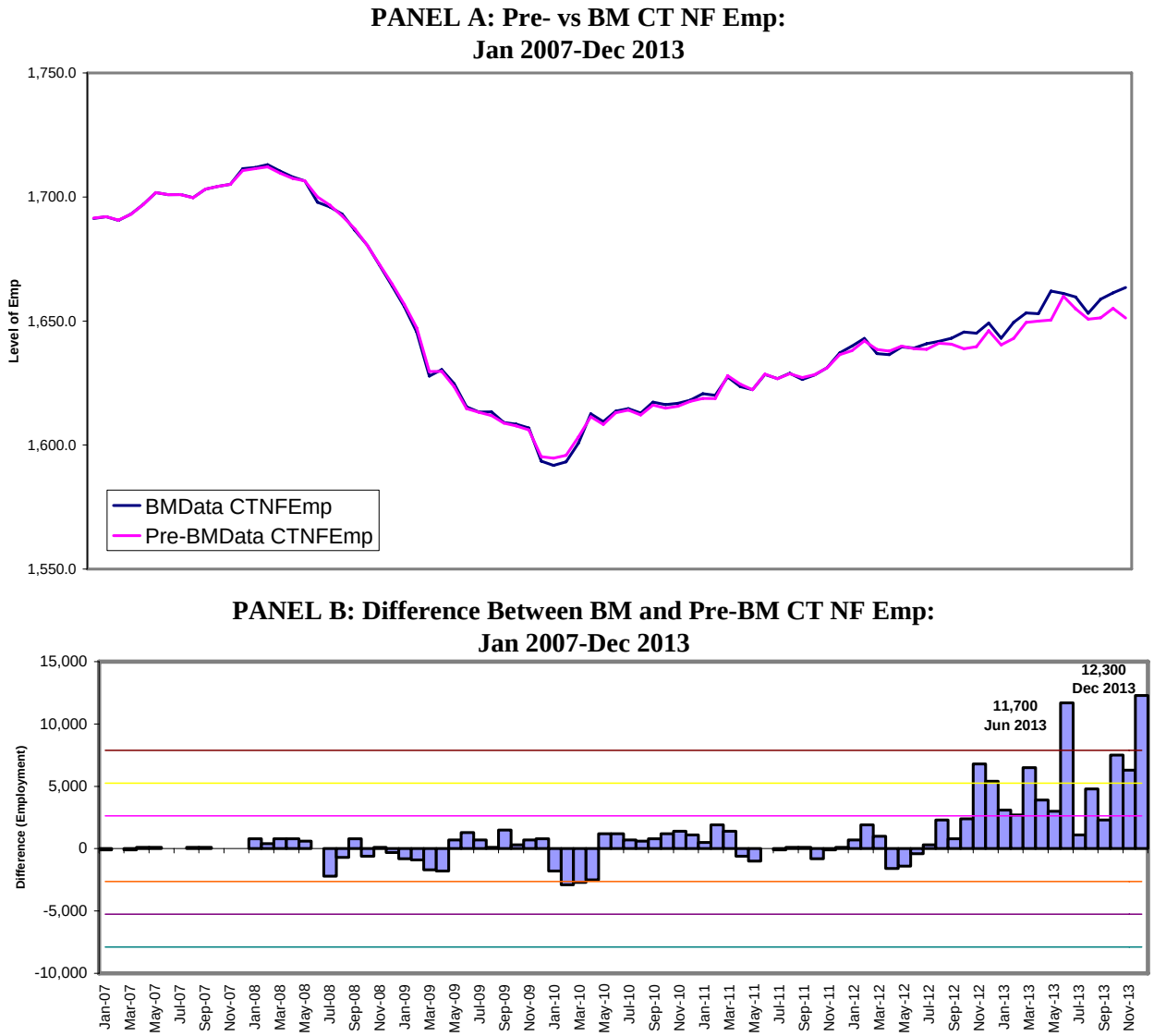
A. THE 2014 BENCHMARK OF NON-FARM EMPLOYMENT

Graph IX-1 tracks the Connecticut Non-Farm Employment Series, both the Pre-Benchmarked (BM) and March 2014, Post-BM'd series in Panel A, from January 2007 to December 2013. As can be seen, the two series begin to significantly part ways after February 2013, and continue to diverge until September, when the gap between the two really opens up. At this point, the Post-BM'd series begins a strong upward climb, while the Pre-BM'd series goes in the opposite direction. The dramatic growth in the difference between the Pre-BM'd and Post-BM'd series has been a function of the centralization of the Establishment Survey to the U.S. Bureau of Labor Statistics (BLS) in Washington. Particularly, after 2012 the variation between the two series becomes larger, and more volatile. This is really apparent in Panel B of Graph IX-1.

Panel B is a Shewhart Control Chart, which tracks whether or not a process is in, or out of, control. Warning tracks indicate that the process is out of control an observation exceeds three standard deviations. There are those that argue that a Shewhart Control Chart is not valid if the data are not Normally distributed, and that the process is homogeneous[126]. However, those restrictions on modeling a process-control are disputed. Donald J. Wheeler, a Fellow of both the

[126] For instance, see. Breyfogle III, Forrest W, *Non-normal Data Needs Alternate Control Chart Approach* (February 26, 2010) SIX SIGMA < http://www.isixsigma.com/tools-templates/control-charts/non-normal-data-needs-alternate-control-chart-approach/ > Accessed on August 1, 2013.

GRAPH IX-1: Differences Between the 2014 BM-ed CT NF Data and the Pre-BM-ed Series
(SOURCE: CT DOL-Research and author's calculations.)



American Statistical Association and the American Society for Quality, and others, have argued that, in fact, the data does not necessarily have to be Normally distributed, and the process does not have to be homogeneous[127]. According to Chebyshev's Theorem, regardless of the distribution, that the percent of observation, within k standard deviations from the mean will be:

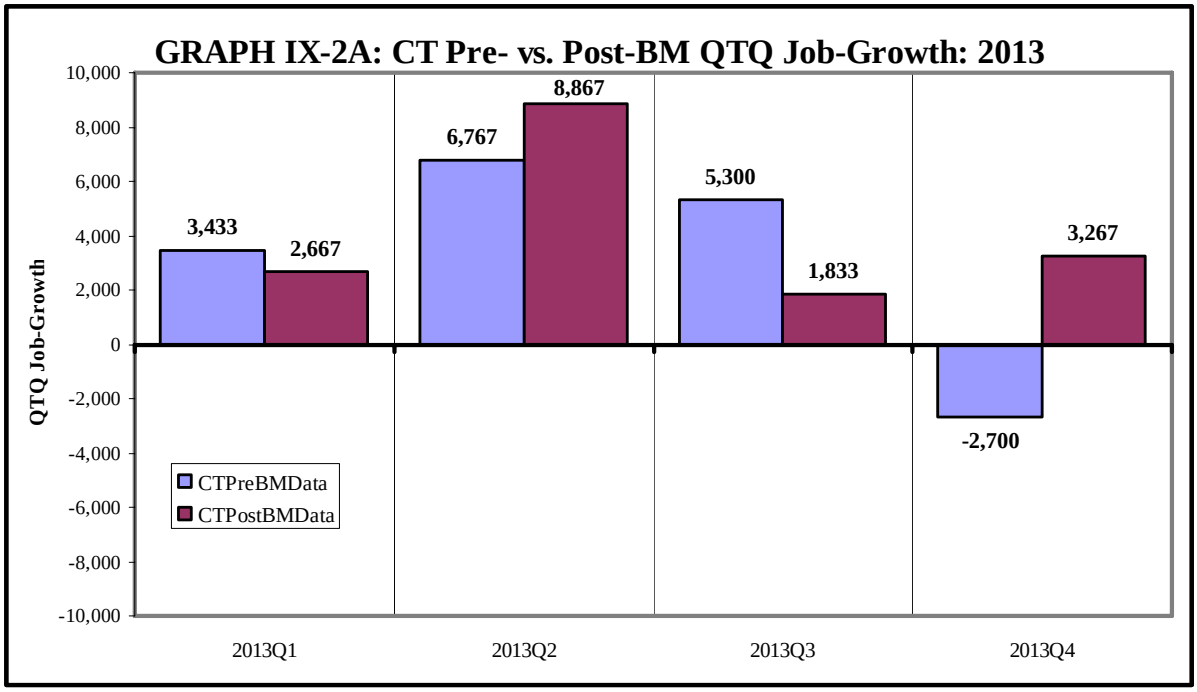
[127] Wheeler, Donald J., *Are You Sure We Don't Need Normally Distributed Data?* (November 1, 2010) QUALITYDIGEST < http://www.qualitydigest.com > Accessed on August 1, 2013.

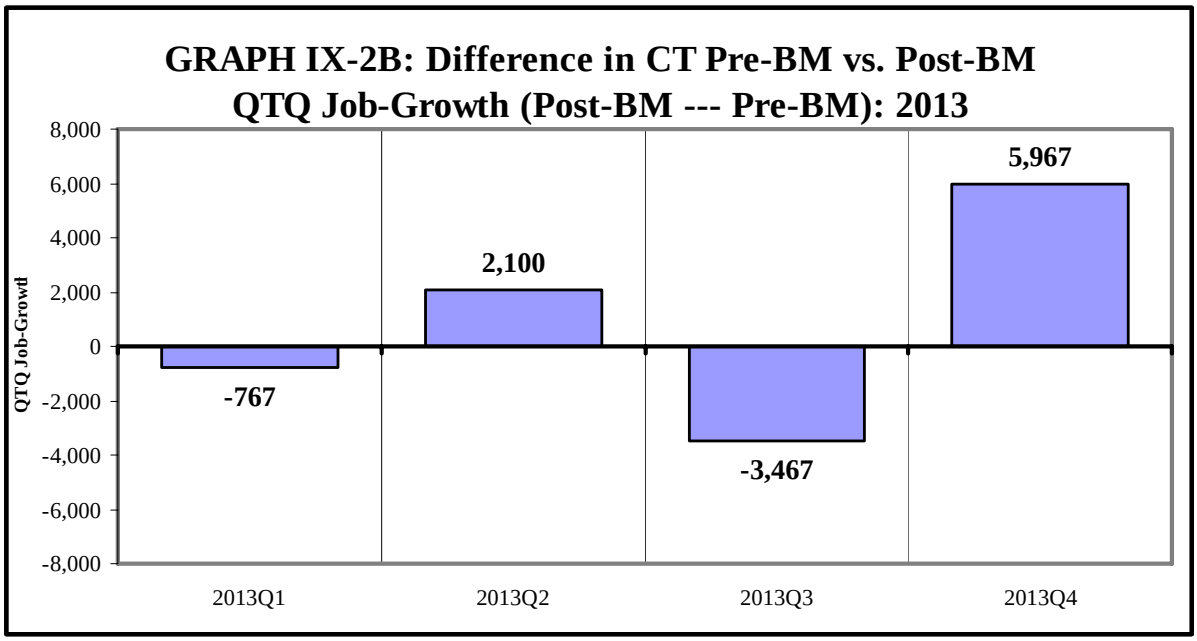
$$1 - 1/k^2 \qquad (1.)$$

Since the warning track on the Shewhart Control Chart in Panel B of Graph IX-1 is three Standard Deviations (SD) from the mean, we know by Chebyshev's Theorem that no matter what the shape of the distribution, or whether or not the process is homogeneous, at the very *least* 88.9% ($=1 - 1/3^2$), of the observations fall within 3 SD's with the mean. Therefore, at most, 11.1% of the observations fall outside 3 SD's from the mean. Upon addressing these issues, the discussion now turns to the results in Panel B.

As noted above, the volatility of the series of differences plotted in Panel B, Graph IX-1 in 2012, when for the first time in the process, plotted from January 2007 to December 2013, BM revisions ever exceeded 2 SD's. This was the revision of 6,800 in November 2012. Then, in June and December 2013, the first revisions that go beyond the 3 SD-warning-track are observed. The revision for June 2013 was 11,700, and for December 2013 it was 12,300. Hence, the large divergence in the pre- and post-BM'd data observed toward the end of 2013 in Panel A of Graph IX-1.

To get another perspective of the 2014 Benchmark, Graph IX-2A looks at the less volatile quarterly frequency of Connecticut (CT) Non-Farm data, and tracks the Quarter-to-Quarter (QTQ) changes in employment for both the Pre- and Post-BM'd employment series over the four quarters of 2013. Graph IX-2B tracks the differences between the Pre- and Post-BM'd, QTQ changes over the four quarters of 2013.





SOURCE: CT DOL-Research and Author's calculations.

From Graph IX-2A, it is especially the third and fourth quarters, or the last half of 2013 in which the 2014-BM significantly differed from the Establishment Survey data. The Establishment data originally showed that Connecticut (CT) Non-Farm (NF) Employment grew by 5,300 in 2013Q3. But when BM'd to the Unemployment Insurance (UI) Tax Database, known as the Quarterly Census of Employment and Wages (QCEW), which serves as the population frame from which

the Establishment Survey is drawn, it showed that CT NF jobs had actually grown by only 1,833. However, the biggest difference produced by the 2014-BM was for the fourth quarter. Initially, the NF data showed a loss of 2,700 jobs in 2013Q4, but after benchmarking, that decline was significantly upgraded to a gain of 3,367 jobs.

The differences in growth of jobs over the four quarters of 2013, before and after benchmarking, are summarized in Graph IX-2B. Again, it can be seen, that the most significant revisions were over the last half of 2013. In 2013Q3, the growth in CT NF Employment was revised downward by 3,467. And, in the fourth quarter, CT job-growth, as discussed above, was revised from a 2,700 employment loss to a gain of 3,267 jobs (see Graph IX-2A, above). The result was the largest revision in 2013. Job-growth was revised upward by 5,967, in 2013Q4 (see Graph IX-2B). This, of course, is the quarter containing the month of December, and December 2013 was the largest revision depicted in Graph IX-1, Panel B at 12,300 (see discussion above) The second largest revision was also in 2013. In June 2013, the revision was 11,700. Both the June and December 2013 revisions were upward revisions (again, see Panel B, Graph IX-1).

Table IX-1 presents the 2014-BM results by the nine major industry sectors for the year 2013. From left-to-right: the first column shows the major sector, the two middle columns present the Pre- and Post-BM employment levels, and the fourth and fifth columns show the difference between the Pre- and Post-BM employment levels, and the percent difference.

The level of CT NF Employment was upwardly revised by 4,200, or 0.25%. The largest revision, in absolute value, and largest upward revision, was Financial Services, which was revised upward by 1,817, or 1.40%, followed by Goods Production, with an upward revision of 1,600, or 0.74%. Information was upwardly revised by 1,142, and it was the largest percent revision at 3.71%.

TABLE IX-1 : CT. 2014 Benchmark				
Annual Averge CT CES Emp Data (NSA) for 2013				
Major Sector	Pre-BM	Post-BM	Diff	%Diff
Total Non-Farm	1,650,500	1,654,700	4,200	0.25
Goods Prod	216,500	218,100	1,600	0.74
Trade-Trns-Util	297,750	298,700	950	0.32
Information	30,758	31,900	1,142	3.71
Financial Serv	129,883	131,700	1,817	1.40
Prof-Bus Serv	205,425	204,600	-825	-0.40
Educ-HCSA	323,508	321,900	-1,608	-0.50
Leisure-Hosp	147,083	147,300	217	0.15
Other Serv	61,192	62,100	908	1.48
Government	238,400	238,500	100	0.04

SOURCE: CTDOL-Research and Author's calculations.

Two other major sectors' upward revisions exceeded 900, but were leas than 1,000: Trade-Transport-Utilities, revised up by 950 (or, 0.32%), and Other Services, upward by 908 (or, 1.48%). There were two small revisions. Leisure and Hospitality was revised upward by 217, or 0.15%, and Government was revised upward by 100, or 0.04%. The largest downward revision was that for Education and Health Care and Social Assistance (Ed-HCSA). Ed-HCSA was downwardly revised by 1,608, or 0.50%. Professional and Business Services was also downwardly revised by 825, or 0.40%.

Finally, Table IX-2 presents the changes in the jobs gained, and lost, over the current business cycle, and even a change in a turning-point date, due to the 2014BM process.

TABLE IX-2: Pre- and Post-BM CT NF Jobs Lost and Recovered-Current Cycle								
	PEAK (Mar 2008)	TROUGH*	Dec-13	RECESSION Pk-Tr	RECESSION Tr-Dec 2013	% Jobs Recovered	Months of Recession	Months of Recovery
Post-BM	1,713,000	1,591,800	1,663,500	-121,200	71,700	59.16	23	46
Pre-BM	1,712,200	1,595,300	1,651,200	-116,900	55,900	47.82	22	47

*Pre-BM Trough was January 2010, Post-BM Trough is February 2010.
SOURCE: CTDOL-Research and Author's calculations.

The peak of the previous cycle remains in tact, but the peak-level of CT NF Employment is revised upward by 800 to 1,713,000. The level of CT NF Employment, at the trough of the recession, was revised downward by 4,300 to 1,591,800. And, the date of the trough was moved from January to February 2010. This increased the number of months of recession from 22 to 23, and reduced the number of months of recovery from 47 to 46, as of December 2013. The 2014 also changed the total number of jobs lost over the recent recession, and the number of jobs recovered over the current recovery, up to December 2013. The absolute value of the number of jobs lost, over Connecticut's Recession (March 2008 to February 2010), has been upwardly revised by 4,300 (this was reflected in the lower level of employment in the previous-peak period, see discussion above). The total number of Post-BM'd jobs lost, at 121,200, showed a steeper loss than the Pre-BM'd estimate of 116,900. The 2014-BM also upwardly revised the number of jobs Connecticut has recovered since the recession. The 2014BM showed that Connecticut gained back 15,800 more jobs than previously estimated, over the current recovery, up to December 2013. Post-BM results show that Connecticut recovered 71,700 jobs between the rough, February 2010, and December 2013, as opposed to the original estimate of 55,900 jobs recovered.

In summary, it appears to be the "Good-News-Bad-News" thing. First the bad news: Connecticut lost more jobs over the recent recession than originally thought. Thus, the recent recession was steeper than originally thought. Now the good news: the recovery, through December 2013, has been stronger than originally thought.

B. CONNECTICUT'S LABOR MARKET OVER THE CURRENT RECOVERY

Tables IX-3A and IX-3B show the average, annual levels of Connecticut (CT) Non-Farm (NF) Employment and the nine major sectors the year of peak-level employment over the previous expansion (second column from the left), the year of the trough of the recent recession, 2010 (third column from the left), and the latest full-year of data permitting the calculation of an annual average, 2013 (center column). The three columns to the right of the center column present the changes in jobs from the peak-year to the trough-year (2008-10), the trough-year to the latest year of annual data (2010-13), and the changes in employment from the previous-peak year to the latest year of annual data (2008-13).

TABLE IX-3A: Level and Ch in Ann CT NF Emp: Current Cycle						
CT CES Emp (X 1,000)	Peak Yr	Trough Yr	Latest Yr	Change in Jobs (X 1,000)		
Major Sector	2008	2010	2013	2008-10	2010-13	2008-13
Total Non-Farm	**1,699.0**	**1,608.0**	**1,654.7**	**-91.0**	**46.7**	**-44.3**
Goods Prod	253.3	216.1	218.1	-37.2	2.0	-35.2
Trade-Trns-Util	309.9	289.8	298.7	-20.1	8.9	-11.2
Information	37.8	31.7	31.9	-6.1	0.2	-5.9
Financial Serv	143.4	135.2	131.7	-8.2	-3.5	-11.7
Prof-Bus Serv	204.9	189.9	204.6	-15.0	14.7	-0.3
Educ-HCSA	296.7	306.9	321.9	10.2	15.0	25.2
Leisure-Hosp	137.3	133.6	147.3	-3.7	13.7	10.0
Other Serv	63.1	60.5	62.1	-2.6	1.6	-1.0
Government	252.5	244.2	238.5	-8.3	-5.7	-14.0

U.S. BLS, CTDOL-Research, and Author's calculations

TABLE IX-3B: Distribution of Annual CT NF Emp: Current Cycle						
Share of CT CES Emp	Peak Yr	Trough Yr	Latest Yr	Pct-Pt Change in Jobs Share		
Major Sector	2008	2010	2013	2008-10	2010-13	2008-13
Total Non-Farm	**100.00**	**100.00**	**100.00**	**0.00**	**0.00**	**0.00**
Goods Prod	14.91	13.44	13.18	-1.47	-0.26	-1.73
Trade-Trns-Util	18.24	18.02	18.05	-0.22	0.03	-0.19
Information	2.22	1.97	1.93	-0.25	-0.04	-0.30
Financial Serv	8.44	8.41	7.96	-0.03	-0.45	-0.48
Prof-Bus Serv	12.06	11.81	12.36	-0.25	0.56	0.30
Educ-HCSA	17.46	19.09	19.45	1.62	0.37	1.99
Leisure-Hosp	8.08	8.31	8.90	0.23	0.59	0.82
Other Serv	3.71	3.76	3.75	0.05	-0.01	0.04
Government	14.86	15.19	14.41	0.32	-0.77	-0.45

U.S. BLS, CTDOL-Research, and Author's calculations

Connecticut's Labor Market over the Recession

On an annual, average basis, Connecticut lost 91,000 over the 2008-10 recession years. Between 2010 and 2013, the State's Economy gained back 46,700 jobs. But, this still left Connecticut's 2013 level of Non-Farm Employment 44,300 jobs down from its 2008 annual level. The major sector that shed the most jobs, on an annual, average basis, was the Goods Producing Sector, which lost 37,200 over the 2008-10 recession period. Between 2010 and 2013, the Goods Producing Sector only gained back 2,000 jobs, which left it still down by 35,200 jobs in 2013, compared to 2008, the peak-year of the previous expansion.

The sector with the second-largest decline in jobs between 2008 and 2010 was Trade-Transportation-Utilities, which shed 20,100 jobs. Another sector that lost a significant number of jobs over the recession years was Professional and Business Services, which lost 15,000 jobs. Financial Services and Government both lost more than 8,000 jobs, on an annual-average basis, and the Information Sector declined by 6,100 jobs. Leisure and Hospitality (-3,700 jobs), and Other Services (-2,600 jobs) also lost jobs over the recession years, but their losses were smaller than those of the other six sectors that eliminated jobs over the recession years.

Following the national trend, largely driven by demographics, one major Sector added jobs to Connecticut's Economy over the 2008-10 recession years: Education and Health Care and Social Assistance (Ed-HCSA). Between 2008 and 2010, Ed-HCSA added 10,200 jobs. The Education Sector contributed 2,000 jobs to the growth of the Ed-HCSA major sector over the recession years. The HCSA Sector contributed the remaining 8,100 jobs created between 2008 and 2010. Within the HCSA Sector, the Health Care Sub-Sector accounted for 6,400 jobs and Social Assistance for the remaining 2,600 jobs added over the 2008-10 recession years.

Connecticut's Recovery

Turning to the current recovery years presented in Table IX-3A, seven of Connecticut's nine major sectors have added jobs to its economy, on an annual, average basis, over the recovery years 2010 to 2013, and three major sectors have continued to eliminate jobs, even in economic recovery. The net result: Connecticut's Economy had regained 46,700 jobs as of 2013. Again, it was Ed-HCSA that led the way by adding 15,000 jobs to Connecticut's Economy from 2010 to 2013, on an annual, average basis. Next came Professional and Business Services (Prof-Bus), which added 14,700 over the 2010-13 recovery years. Leisure and Hospitality has added 13,700 jobs, and Trade, Transport, and Utilities added 8,900 jobs between 2010 and 2013, on an annual, average basis. Three of Connecticut's major sectors made smaller contributions to job-growth over the recovery years. The Goods Producing Sector, after shedding 37,200 over the recession years, added 2,000 between 2010 and 2013, on an annual, average basis. Other Services added 1,600 jobs, and Information added 200 jobs over the 2010-13 recovery years. Two major sectors continued to lose jobs as the economy recovered: Financial Services and Government.

Connecticut's Government Sector lost another 5,700 jobs over the 2010-13 recovery years, and the State's Financial Services Sector shed another 3,500.

By How Much Has Connecticut's Economy Recovered, and How Has It Changed?

The question now arises as to what extent has Connecticut's Economy recovered from the 2008-09 Recession and Crisis, and how have those events, and their aftermath, altered the State's Economy? To explore answers to these questions, Table IX-4 compares the jobs lost, and recovered, as well as the intensity of those losses and recoveries of Connecticut to those of neighboring states and the U.S. From left to right, Table IX-4 shows the level of employment (X 1,000), at the peak and trough of the employment-recession in columns two and three. Columns four and five list the dates of peaks and troughs, and columns six and seven list the lengths, in months, of the recessions and recoveries, and Column 8 presents the levels of employment as of May 2014, the latest period of data, at the state level, at the time of writing. Columns 10-12 show the percent decline in jobs over the recession, compounded, annualized percent decline, the percent gain over the recovery, the compounded, annualized percent-gain over the recovery, and in the last column, the percent of jobs lost, that were recovered by May 2014.

The average number of months of recession for Connecticut, its neighboring states, and the U.S. was 24 months (not shown). The longest recession was the 31 months for Rhode Island, while the shortest recession was that of Massachusetts at 18 months. The length of Connecticut's recession was between the two extremes, and at 23 months, was one month shy of the average.

TABLE IX-4: Jobs Lost and Recovered Over the Current Busines Cycle: CT, the U.S., and Neighboring States

Area	Emp Level Peak	Emp Level Trough	Date of Peak	Date of Trough	No of Mo of Decline	No of Mo of Recovery	As of May-14	%Decline	CompAnn %Decline	%Recovery	CompAnn %Recovery	%Recovered As of May2014
CT	1,713.0	1,593.9	Mar-08	Feb-10	23	51	1,665.5	-6.95	-3.69	4.49	1.04	60.12
NY	8,817.0	8,499.8	Apr-08	Feb-10	22	52	9,011.4	-3.60	-1.98	6.02	1.36	161.29
MA	3,325.0	3,184.2	Apr-08	Oct-09	18	55	3404.6	-4.23	-2.84	6.92	1.47	156.53
RI	495.7	455.9	Dec-06	Jul-09	31	58	477.6	-8.03	-3.19	4.76	0.97	54.52
U.S.	138,350.0	129,655.0	Dec-07	Feb-10	26	52	138492	-6.28	-2.95	6.82	1.53	101.63

SOURCE: U.S. BLS and Author's calculations.

The average percent-decline in employment, over the recent recession, was 5.82% (not shown). The steepest was Rhode Island at 8.03%, and the shallowest was New York at 3.60% (see Table IX-4). Connecticut's employment declined by 6.95% over the recent recession, which was steeper than the declines of the U.S., Massachusetts, and New York. Only Rhode Island had a steeper decline in employment than Connecticut. Since each jurisdiction, in Table IX-4, had differing lengths in their recessions, in order to gauge the intensity of each decline in employment, the compounded, annualized rate of decline was calculated, and the results are presented in Column 10 (from the left). The average, compounded rate of decline was 2.93% (not shown). Connecticut clearly had the steepest rate of decline. Employment, over the recent recession, contracted at an annualized rate of 3.69%. New York had the shallowest rate of job-loss, declining at a compounded, annualized rate of 1.98% (see Table IX-4). For the U.S., the job-loss rate was 2.95%, not nearly as steep as Connecticut's rate of job loss, but steeper than that of New York, and slightly steeper than that for Massachusetts.

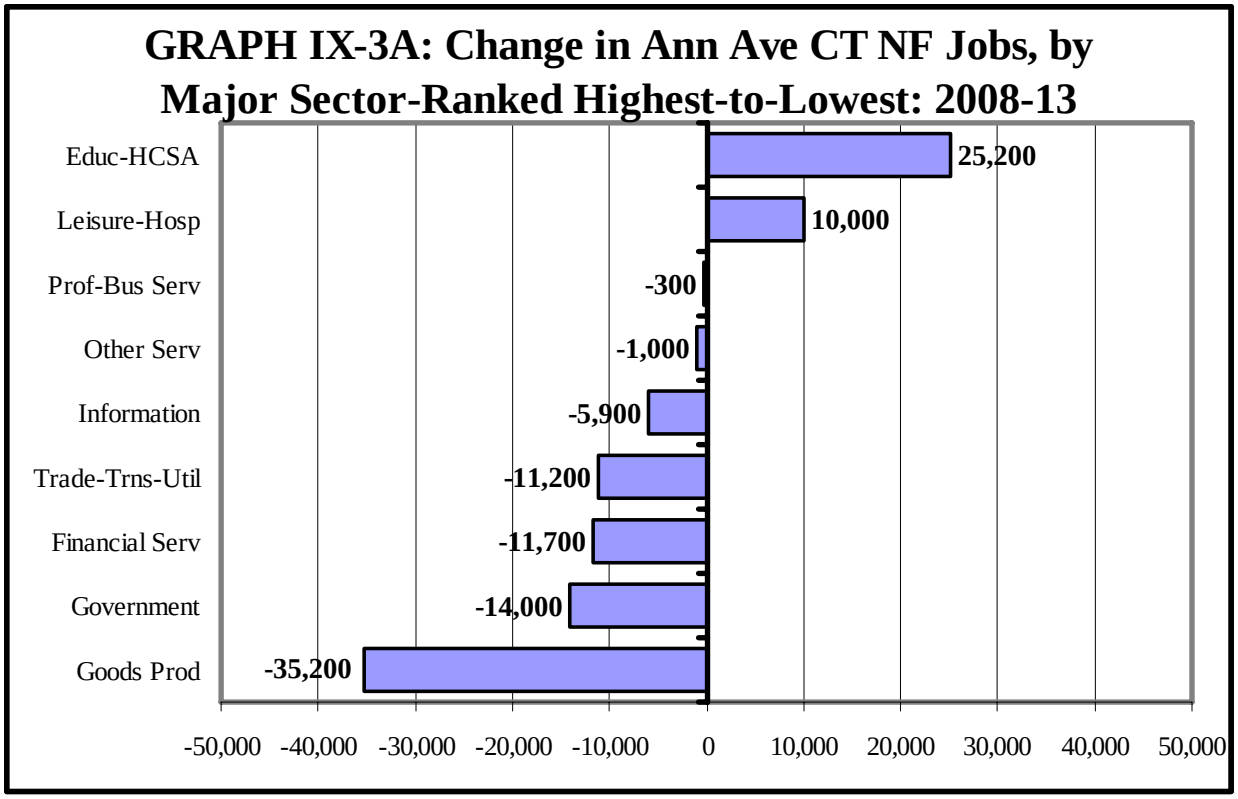
Given Connecticut's steeper rate of job-loss, over the recent recession, how has its recovery fared compared to neighboring states and the U.S.? The average number of months of the current recovery, from the respective troughs, up to May 2014 (the latest period of available data, at the time of writing), is 53.6 months (see Table IX-4, Column 7 from the left). At 58 months, Rhode Island's recovery has been the longest, while the shortest has been Connecticut's 51 months. The average percent-growth in jobs since the trough of the last recession has been 5.80% for the jurisdictions in Table IX-4 (not shown). Massachusetts (+6.92%), the U.S. (+6.82%), and New York (+6.02%) have all had their employment-growth exceed 6% since their troughs in the last recession, up to May 2014. Both Rhode Island (+4.76%) and Connecticut (+4.49%) have had their employment rebound by less than 5% since their troughs in the last recession. Connecticut has, in fact, had the weakest rebound compared to the U.S. and neighboring states. And, when adjusted for different recovery lengths, the average, compounded rate of employment-recovery, up to May 2014, was 1.27% (not shown). The strongest rate of jobs-recovery is that of the U.S. Since the trough of the U.S. jobs decline in February 2010, the National Economy has been adding back jobs at an annualized, compounded rate of 1.53%. The weakest recovery has been that of Rhode Island's, adding back jobs at an anemic annualized rate of 0.97%. Connecticut's

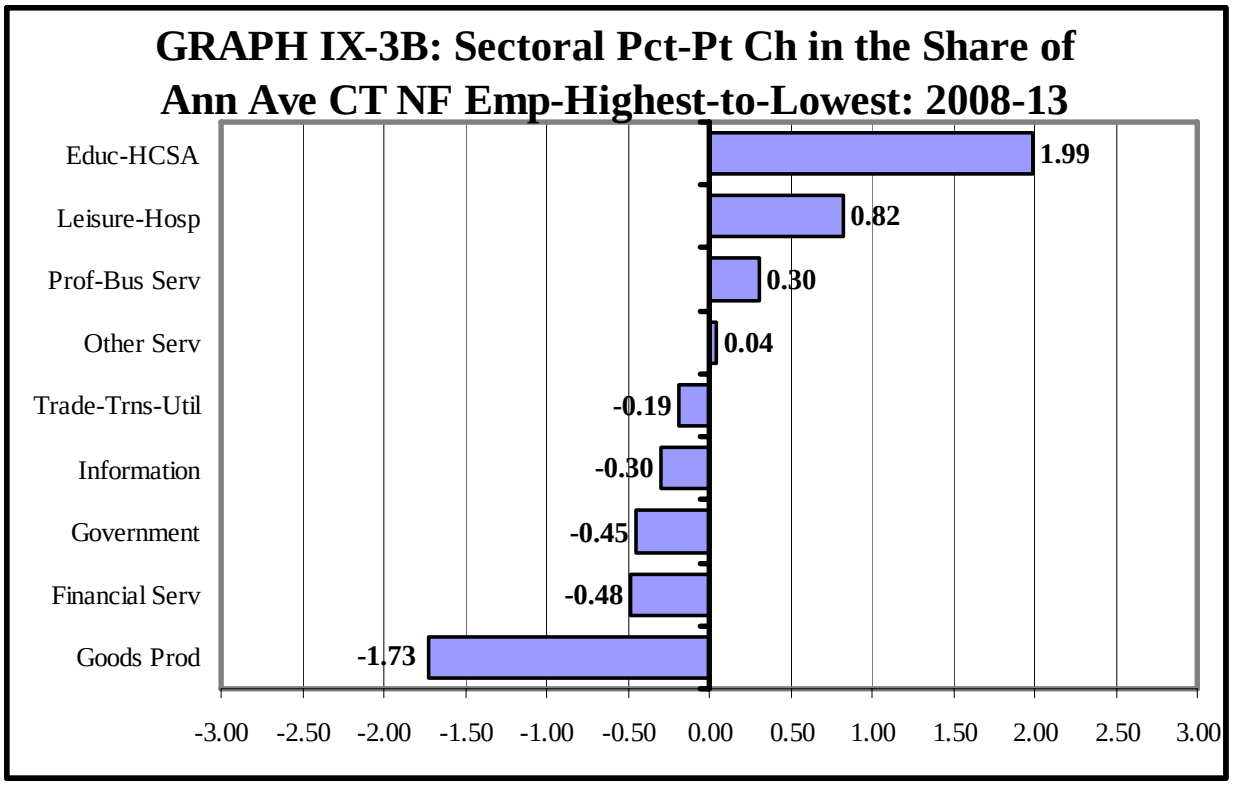
recovery has been the second weakest, adding jobs back at a compounded, annualized rate of 1.04% between February 2010 and May 2014.

As a consequence, Rhode Island has only gained back 54.52% of the jobs they lost in the previous recession. The flip side is that Rhode Island, by May 2014, was still down by 45.48% from their employment-level in December 2006. Connecticut also has not recovered all the jobs lost over the previous recession. As of May 2014, Connecticut had recovered 60.12% of the jobs lost over the recession. That means that, as of May 2014, the State was still 39.88% below its employment level in March 2008. The average percent-recovered employment was 106.85% (not shown). The U.S. was slightly below this, as of May 2014, at 101.63%, while New York, at 161.29%, and Massachusetts at 156.53%, had not only recovered previously lost jobs by May 2014, but had entered the expansion phase of their cycles by being up 61.29% and 56.53% from the employment peaks of their previous expansions.

What may account for both New York and Massachusetts regaining all their lost jobs from the previous recession, and then proceeding to the expansion phases of their business cycles, while Connecticut and Rhode Island are still stuck in their recovery phases, and have, as of May 2014, yet to recover the jobs lost in the previous recession? For one thing, though Connecticut and Rhode Island have medium-sized centers, such as Harford and Providence, both New York and Massachusetts have larger centers of economic mass around New York City and Boston. Between New York State's trough in February 2010 and May 2014, New York City had an average share of 44.1% of New York State's Employment, but they accounted for 69.1% of all the job growth in New York State over their current recovery. Likewise, the average share of total Massachusetts Employment in the Boston-Cambridge-Quincy Metro Area between their trough, in October 2009, and May 2014, was 52.5%, but the Boston Area's share of Massachusetts's job growth over their current recovery is 60.6%. Fairfield County is part of the Newark-New York-Bridgeport CSA, and within the sphere of New York City, it too has had outsized job growth over Connecticut's current recovery. On average, between Connecticut's trough in February 2010, and May 2014, Fairfield County was 28.9% of the State's total level of employment, but it accounted for 43.3% of the State's job-growth over the current recovery. Outside of the New Haven Area, the rest of the state falls outside the sphere of economic mass

around New York City. The areas in northern Windham County, in the Northeastern part of Connecticut, are beginning to fall within the sphere of Greater Boston Economy. The rest of the State however, falls outside the spheres of New York City and Boston. There are, of course, other factors at play here too, but these two are important factors, in and of themselves.





SOURCE: U.S. BLS and Author's calculations.

Graph IX-3A and IX-3B summarized the last rows on the right, in Tables IX-3A and IX-3B, depicting the level of employment in 2013, relative to the annual averages for 2008, by major sector (Graph IX-3A) and the change in shares of total employment, of each major sector from the peak year of 2008, and the most recent year of complete annual, average data, 2013 (Graph IX-3B). The information in these two sets of tables and graphs can give us a sense as to how the recession affected Connecticut's Economy, and what residual effects we are still dealing with in the current recovery. And, further, how did the 2007-09 Recession/Crisis change the structure of the State's Economy.

As discussed above, and presented in Table IX-3A, on an annual, average basis, by 2013, Connecticut had gained back 46,700 jobs lost over the 2008-10 recession years, but this still left the State 44,300 jobs below its annual, average employment-level for 2008. Graph IX-3A (which summarizes Table IX-3A), breaks out the annual, average employment-levels for 2013, relative to their peak-year levels in 2008, by the nine major sectors. By 2013, only two of Connecticut's nine major sectors had employment levels that exceeded their peaks over the previous expansion: Education and Health Care and Social Assistance (Ed-HCSA) and Leisure and Hospitality (Leisure-Hosp).

By 2013, Connecticut's Ed-HCSA Sector had an annual, average employment level that exceeded its 2008 annual, average level by 25,200 jobs. Also, in 2013, the Leisure-Hosp Sector had 10,000 more jobs than it did in 2008. By 2013, the remaining seven sectors had not recovered all the jobs they had lost since the peak-year of 2008. It is no surprise that given the collapse in the housing bubble, which effected Construction and the decline in durable-goods purchases over the recession, which effected Manufacturing that the Goods Producing Sector shed 37,500 jobs over the recent recession (see Table IX-3A). And, with housing struggling to come back, the Construction Sector is still weak, and though automobile sales have soared over this recovery due to pent-up demand, Connecticut's Manufacturing Sector would have only had peripheral benefit from this, as the vehicle-Manufacturing sectors do not have a strong presence in the State. Consequently, Connecticut's Goods Producing Sector only added back 2,000 jobs between 2010 and 2013, on an annual, average basis. The net result: by 2013, Connecticut's

Goods Producing Sector was still 35,200 jobs below it peak-year level in 2008 (see Graph IX-3A).

The next-biggest 2013 jobs-deficit, compared to 2008, was that of Connecticut's Government Sector. By 2014, the State's Government Employment was still 14,000 jobs below its 2008 level. This was the result of both national factors (nationally, the U.S. Economy has shed 800,000 over this recovery, which is unprecedented in the Post World War II Era), and, specific to Connecticut, the job losses at the Tribal-Nation casinos due to the recession, and at the same time, increased regional competition.

Due to the Financial Crisis, losses in Banks' mortgage divisions and Insurance companies' life insurance business, Connecticut's Financial Services Sector was still down by 11,700 in 2013, compared to its 2008 employment level. And, by 2013, the employment level in Trade, Transportation, and Utilities (Trade-Trans-Util), was down by 11,200 jobs compared to its 2008 level. Other Services employment, in 2013, was down by 1,000 compared to its 2008 level, and Professional and Business Services (Prof-Bus) was down by 300 jobs compared to 2008.

Graph IX-3B, which summarizes Table IX-3B, turns to assessing the changes in the structure of Connecticut's Labor Market due to the 2007-09 Recession/Crisis, and its residual effects. Graph IX-3B shows the percentage-point changes in the shares of the annual, average employment, for the nine major sectors of total Connecticut Non-Farm Employment, between 2008, the peak-year for annual employment, before the recession, and 2013, the last year of available annual data. Over these recession/recovery years, four of Connecticut's major sectors have increased their shares of the State's Non-Farm Employment, and five major sectors have had their shares of total employment decline. This has resulted in a shift in the structure of Connecticut's Labor Market.

As would be expected, based on the above discussion, between 2008 and 2013 (on an annual, average basis), Ed-HCSA has increased its share of total Connecticut Non-Farm Employment by 1.99 percentage pints, or 199 basis points. In 2008, Ed-HCSA accounted for 17.46% of Connecticut's Total Non-Farm Employment, by 2013, that share had grown to 19.45%, or nearly one-in-five of Connecticut's Non-Farm Jobs (see Table IX-3B), by 2013, were in Education and

HCSA. Leisure and Hospitality (Leisure-Hosp) also increased, as a share of Connecticut Non-Farm Employment between 2008 and 2013. In 2008, Leisure-Hosp accounted for 8.08% of the State's Non-Farm Jobs, by 2013 that share had risen to 8.90%--a 0.82 percentage-point, or 82 basis-point increase. Professional and Business Services increased its share of Connecticut Non-Farm Employment by 0.30 percentage points, or 30 basis points, between 2008 and 2013, and Other Services increased its share by 0.04 percentage points, or 4 basis points.

Again, based on the above discussion, it would be no surprise to learn that, by far, the largest decline in the share of Connecticut Non-Farm Employment was that of the Goods Producing Sector. In 2008, on an annual average basis, nearly 15% (14.91%) of Connecticut's Non-Farm Employment was in the Goods Producing Sector, by 2013, that share had declined by 1.73 percentage points, or 173 basis points, to 13.18%. Two other major sectors had their shares decline by nearly 0.50 percentage points, or 50 basis points: Financial Services (-0.48) and Government (-0.45). Smaller declines in shares were in Information (-0.30 basis points), and Trade-Trans-Util (-0.19 basis points).

Clearly, the two biggest restructuring forces in Connecticut's Labor Market over the current cycle (recession/recovery phases), between 2008 and 2013, on an annual, average employment basis, was the nearly two percentage-point increase in Ed-HCSA's share of Connecticut Employment, and the one and three-quarters decline in Goods Producing Employment as a share of the State's Non-Farm Employment. This accelerated the State Economy's shift from a producer of goods to a provider of services.

A More Detailed Look at Connecticut's Recovery

The above analysis and discussion sheds some light on how Connecticut's Economy responded to the 2007-09 Recession/Crisis, and how it has been faring over the current, weak recovery. However, there are also some new questions raised by the above discussion. Though clearly, New York and Massachusetts, with large centers of economic mass, have fared better than Connecticut and Rhode Island over the current recovery, which both lack a Boston or New York City, and the rise of Ed-HCSA and the decline in share of Goods Producing also go along way to explaining Connecticut's performance over this recovery, there are still some questions whose

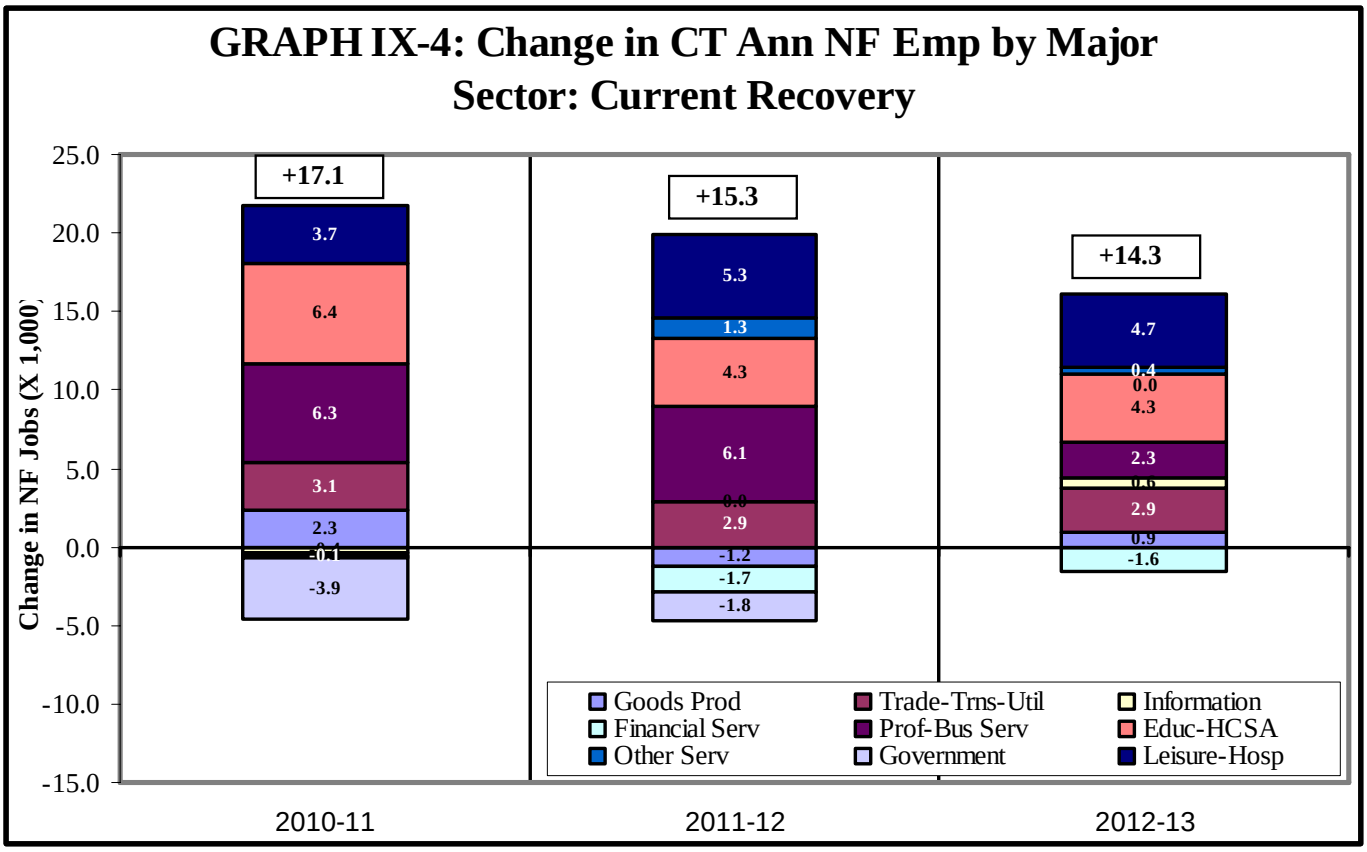
answers could shed further light on the current recovery's performance. With that in mind, Table IX-5 shows the year-by-year annual, average levels and growth of Connecticut's Total Non-Farm Employment, and its nine major sectors for each recovery year: 2010, 2011, 2012, and 2013 (the last year of complete, annual data).

TABLE IX-5: Growth in Annal CT Non-Farm Employment: Current Cycle

CT CES Emp (X 1,000)	TroughYr	Recovery	Recovery	Recovery		Change	Change	Change		%Change	%Change	%Change
Major Sector	2010*	2011*	2012*	2013*		2010-11	2011-12	2012-13		2010-11	2011-12	2012-13
Total Non-Farm	**1,608.0**	**1,625.1**	**1,640.4**	**1,654.7**		**17.1**	**15.3**	**14.3**		**1.06**	**0.94**	**0.87**
Goods Prod	216.1	218.4	217.2	218.1		2.3	-1.2	0.9		1.06	-0.55	0.41
Trade-Trns-Util	289.8	292.9	295.8	298.7		3.1	2.9	2.9		1.07	0.99	0.98
Information	31.7	31.3	31.3	31.9		-0.4	0.0	0.6		-1.26	0.00	1.92
Financial Serv	135.2	135.0	133.3	131.7		-0.2	-1.7	-1.6		-0.15	-1.26	-1.20
Prof-Bus Serv	189.9	196.2	202.3	204.6		6.3	6.1	2.3		3.32	3.11	1.14
Educ-HCSA	306.9	313.3	317.6	321.9		6.4	4.3	4.3		2.09	1.37	1.35
Leisure-Hosp	133.6	137.3	142.6	147.3		3.7	5.3	4.7		2.77	3.86	3.30
Other Serv	60.5	60.4	61.7	62.1		-0.1	1.3	0.4		-0.17	2.15	0.65
Government	244.2	240.3	238.5	238.5		-3.9	-1.8	0.0		-1.60	-0.75	0.00

U.S. BLS, CTDOL-Research, and Author's calculations *Totals might not add up due to rounding.

The second to fifth columns, left-to-right, in Table IX-5, shows the levels of employment (X 1,000) for Connecticut Non-Farm, and the nine major sectors for 2010, 2011, 2012, and 2013. The next three columns show the annual job-changes for 2010-11, 2011-12, and 2012-13. The last three columns show the percent-change for 2010-11, 2011-12, and 2012-13. The changes presented in Table IX-5 are summarized graphically in Graph IX-4.



SOURCE: U.S. BLS and Author's calculations.

The first thing to note in Table IX-5 and Graph IX-4, is that when presented in the more detailed, year-to-year depiction of the current recovery, that Connecticut's Total Non-Farm job-growth decelerates from +17,100 (+1.06%), over 2010-11, to 15,300 (+0.94%), over 2011-12, and then to 14,300 (0.87%), over 2012-13. So, what has driven this deceleration in job-growth over this recovery? Between 2010 and 2011, five major sectors added nearly 22,000 jobs to Connecticut's Economy, on an annual basis, and four sectors subtracted just over 4,000 jobs from the State's Economy, for the net-increase of 17,100 jobs. Then, between 2011 and 2012, five sectors added,

just under, 20,000 jobs, while one sector had no change, and three sectors subtracted, just under 5,000 jobs. The significant change in job-growth comes in the 2012-13 period. The number of jobs subtracted from Connecticut's Economy over this period declines to only one sector shedding 1,600 jobs, and again, one sector with no change. The critical difference is in the reduced addition of jobs to the State's Economy, rather than the subtraction of jobs. Between 2012 and 2013, there wee actually seven sectors with positive job growth (the most over the recovery), but that job growth contribution declined to 16,000, the lowest contribution, over the thee periods shown in Table IX-5 and Graph IX-4. The most dramatic decline in job growth over the current recovery was in Professional and Business Services (Prof-Bus Services). Between 2010 and 2011, Prof-Bus Services added 6,300 jobs, and over 2011-12 this sector added 6,100, but between 2012 and 2013, Prof-Bus Services only added 2,300 jobs to Connecticut's Economy, on an annual, average basis. Though this sector did not subtract jobs from the State's Economy, this was, nevertheless, quite a collapse in job-growth. What drove this significant decline in job growth over the 2012-13 period?

Table IX-6 breaks out the Prof-Bus Services Sector into greater detail. The table breaks the major sector down into its three major sub-sectors: Professional, Scientific, and Technical (Prof-Scien-Tech), Management of Companies and Enterprises (Manage), and Administrative, Support, and Waste (Admin-Supp). Each sub-sector is then broken into its NAICS, three-digit industry level. For each level, the annual job-changes over the current recovery are shown.

TABLE IX-6: Detail of CT Prof-Bus Serv Sector: Annual Job-Changes Current Recovery (2010-2013)

SECTOR/SUB-SECTOR	2010-11	2011-12	2012-13
PROF-BUS SERV	**6,300**	**6,100**	**2,300**
Prof-Scien-Tech	**2,100**	**1,400**	**1,000**
Legal Serv	-100	-100	200
Account-Book	100	0	0
Arch-Engin	0	300	400
Computer Sys Design	1,200	800	-100
Man-Tech Consult	700	600	400
Advertize	0	0	0
Manage of Com	**1,100**	**1,700**	**100**
Admin Supp-Waste	**3,100**	**3,100**	**1,100**
Emp Serv	1,800	1,200	300
Invest-Security	100	200	100
Serv to Bldg	1,100	1,200	600

SOURCE: U.S. BLS and Author's calulations.

Several industries are highlighted in Table IX-6. It is these highlighted industries that may shed light on the behavior of the Prof-Bus Sector over the current recovery. Under the Prof-Scien-Tech Services Sub-Sector, in Table IX-6, the three-digit industry, Computer Systems and Design is highlighted. It is this industry that appears to have played the critical role in the decline in Prof-Scien-Tech job growth. After adding 1,200 between 2010 and 2011, its contribution to job growth then declined to 800 between 2011 and 2012, and then between 2012 and 2013, Computer Systems and Design lost 100 jobs. But the biggest decline in job-growth was in Admin-Supp. This sub-sector added 3,100 jobs over both the 2010-11 and 2011-12 periods, but then its job-growth fell by two-thirds, to 1,100 between 2012 and 2013. The main drivers of this decline in job growth appears to be centered on two three-digit industries within the Admin-Supp Sub-Sector: Employment Services and Services to Buildings. Employment Services are made up largely of Temporary Help. After adding 1,800 jobs between 2010 and 2011, job-growth then slowed to 1,200 between 2011 and 2012, and then collapsed to 300 over the 2012-13 period. The other industry with a significant deceleration in job-growth was Services to Buildings, which added 1,100 jobs between 2010 and 2011, and then actually added 1,200 between 2011 and 2012, but then job-growth fell in half to 600 between 2012 and 2013. The increases and decreases in job-growth in Management of Companies and Enterprises was largely driven by coding changes, which resulted in moving jobs into different bins, with no overall effect on Non-

Farm Employment levels. However, the other changes discussed were "real" changes in job-growth, and contributed to the deceleration in Connecticut's job-growth over the current recovery.

The Ed-HCSA Sector had a strong burst of growth between 2010 and 2011 adding 6,400 jobs, and then cooling off after that, adding 4,300 jobs over the 2011-12 and 2012-13 periods. Table IX-7 does a similar breakdown of the Ed-HCSA Sector as was done for the Prof-Bus Services Sector in Table IX-6. The decline in growth from 2010-12 to 2011-12 appears to be driven by the decline in job-growth in Education from 1,700 (2010-11) to 700 (2011-12). Education recovered somewhat and added 1,000 jobs between 2012 and 2013. The HCSA division also had a slowing down of its job-growth over the 2011-12 period, compared to 2010-11. Both the Health Care and Social Assistance breakouts had declines in job growth. At the NAICS three-digit level, the slowdown in Health Care job-growth was driven by Hospitals and Residential Care.

TABLE IX-7: Detail of CT Educ-HCSA Sector: Annual Job-Changes Current Recovery (2010-2013)

SECTOR/SUB-SECTOR	2010-11	2011-12	2012-13
EDUC-HCSA	**6,400**	**4,300**	**4,300**
Education	**1,700**	**700**	**1,000**
HCSA	**4,700**	**3,600**	**3,300**
Health Care	**3,200**	**2,500**	**2,100**
Ambulatory	1,600	1,800	1,600
Physicians	400	500	500
Hospitals	800	300	-300
Res Care	400	-100	300
Social Assistance	**1,900**	**1,600**	**1,700**
Child Day-Care	400	100	-300

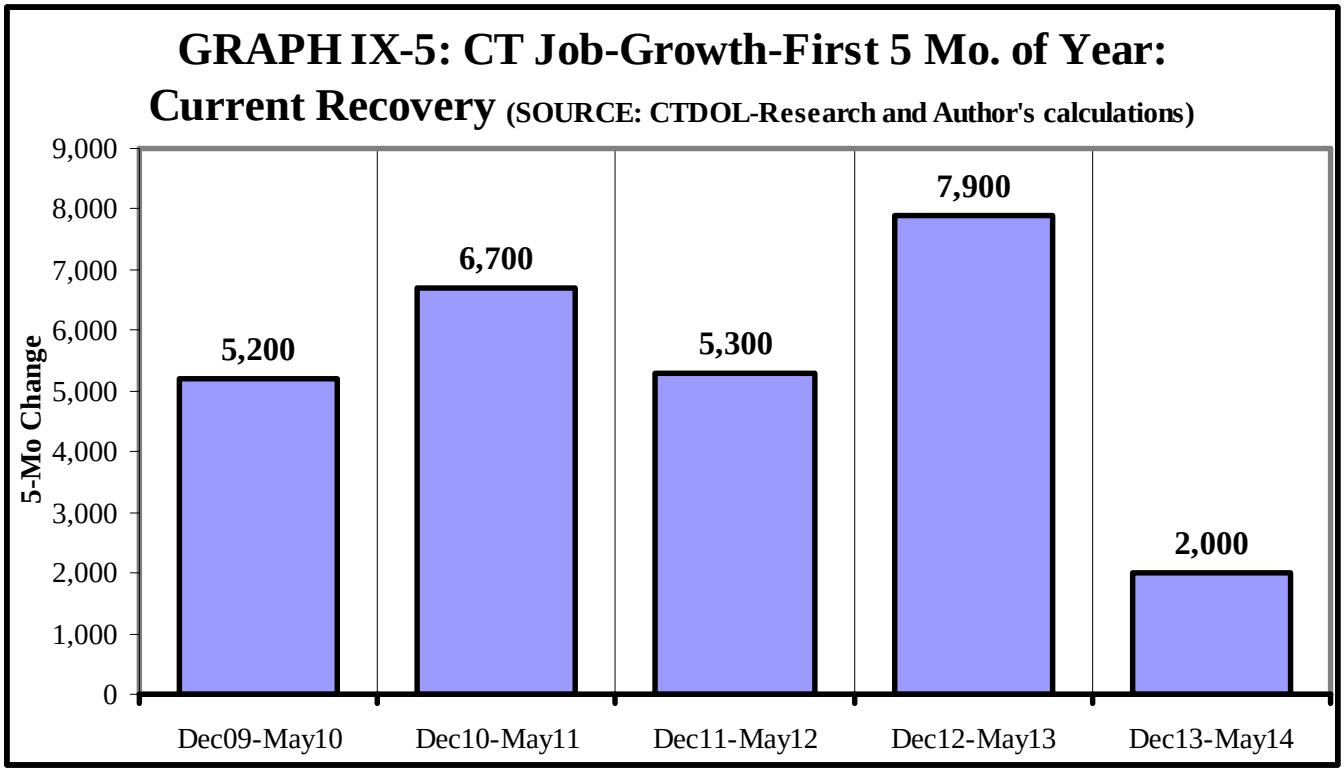
SOURCE: U.S. BLS and Author's calulations.

Hospital Employment, after increasing by 800 between 2010 and 2011, then decelerated to 300 between 2011 and 2012, and then between 2012 and 2013, Hospitals shed 300 jobs. Residential Care was also a contributor to the deceleration in Health Care growth from 2010-11 to 2011-12. Residential Care added 400 jobs between 2010 and 2011, but then subtracted 100 jobs between

2011 and 2012. Social Assistance job-growth has remained fairly strong. Any weakness seems to be concentrated in the Child Day-Care NAICS three-digit industry, where job-growth has decelerated from 400 between 2010 and 2011, to 100 between 2011 and 2012, to shedding 300 jobs between 2012 and 2013.

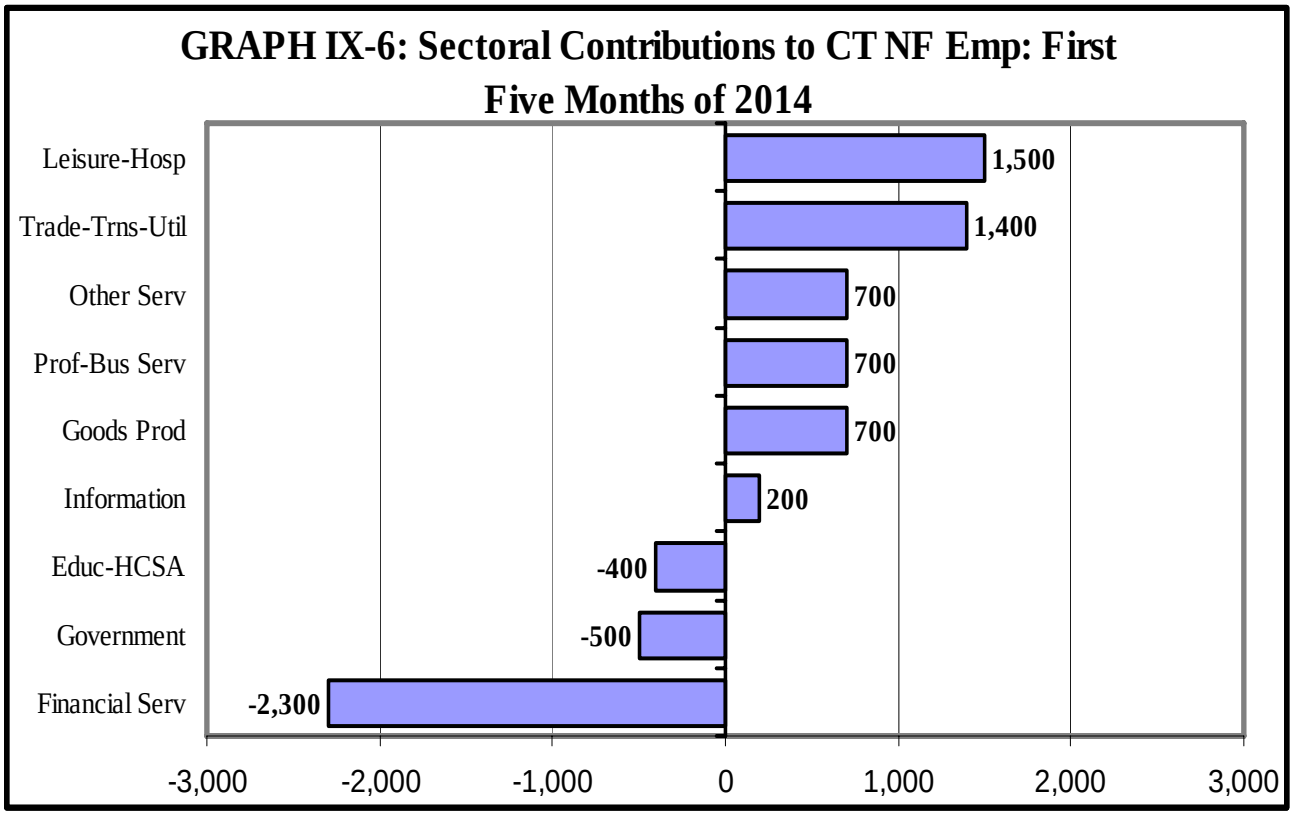
C. CURRENT STATE OF CONNECTICUT'S LABOR MARKET: Heading into the Second Half of 2014

After the cold and harsh winter of 2013-14, there has been much talk of a bounce-back, and with strong job-growth numbers for U.S. Non-Farm Employment for June, the question then becomes: has the economy hit an inflection point, where it is now on a trajectory of stronger growth, or after the bounce-back from the winter, will things start to slow down again? Specifically, how has Connecticut's job-growth performed over the first five months of 2014? At the time of writing, the latest available Non-Farm Employment data available was for May 2014. Consequently, Graph IX-5 shows the number of Non-Farm jobs added to Connecticut's Economy over the first five months of each year of the current recovery.



The average number of Non-Farm Jobs created by Connecticut's Economy over the first five months of the year, over the current recovery, is 5,420 (not shown). From Graph IX-5, the strongest first five months was in 2013, when the State's Economy added 7,900 jobs. As is apparent, the first five months of 2014 has had the weakest job-creation over the first five months of the year over the entire current recovery. The question as to what sectors are inhibiting growth and what sectors may be contributing to what growth there is, is now turned to.

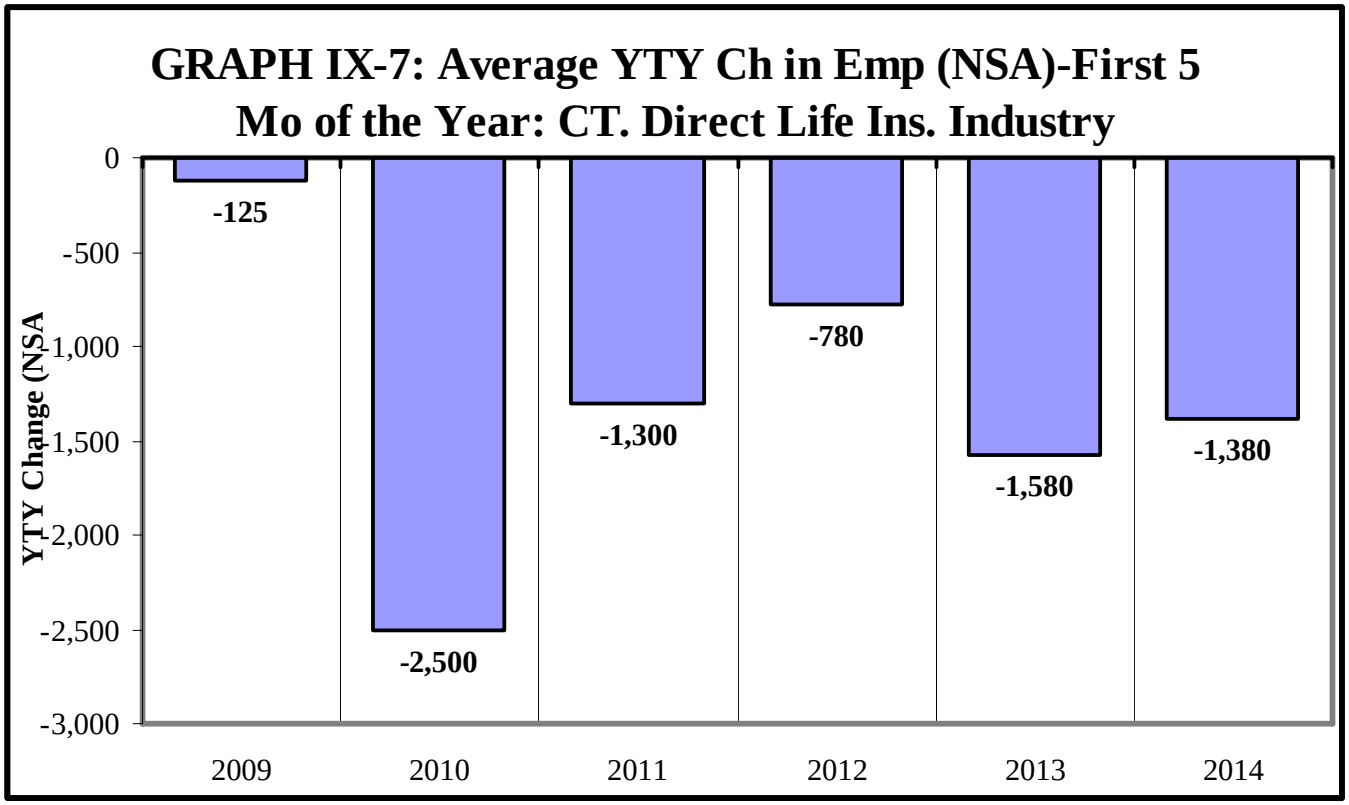
Graph IX-6 ranks the nine major sectors by their contributions to the growth in Connecticut Non-Farm Employment over the first five months of 2014. Two major sectors, Leisure-Hosp and Trade-Trans-Util added nearly 3,000 net, new jobs to Connecticut's Economy between December 2013 and May 2014, despite the harsh winter. In fact, six of the nine major sectors added jobs, Other Services, Prof-Bus Services, and Goods Producing each added 700 jobs, and Information added 200 jobs. However, over that same period, the State's Financial Services Sector subtracted 2,300 jobs from the economy. Government shed another 500 jobs, and in a reversal of its trend over this entire cycle, including the recession and recovery phases, Ed-HCSA actually eliminated 400 jobs.



SOURCE: U.S. BLS and Author's calculations.

What drove the steep declines in Financial Services? Most of Connecticut's job declines in the Financial Services Sector were concentrated in the Insurance Carriers Industry, and those losses, in turn, were concentrated in the NAICS, four-digit level Direct Life Insurance Industry. This industry has been going through a decline and restructuring over the last decade, or more[128].In Connecticut, after adding 300 jobs in 2002, on an annual, average basis, the State's Direct Life Industry then eliminated 500 jobs in 2003 and 2,500 jobs in 2004. Over the next thee out of four years, the State's Direct Life Industry added jobs until the 2007-09 Recession/Financial Crisis. In 2009, Connecticut's Direct Life Insurance Industry shed 900 jobs, and another 2,400 jobs were lost in 2010. Another 1,000 jobs were eliminated in each year in 2011 and 2012. In 2013, Direct Life Insurance Employment declined by 1,500. Graph IX-7 looks at the employment situation in the State's Direct Life Insurance Industry over the first five months of 2014, compared to the same period in previous years.

[128] See



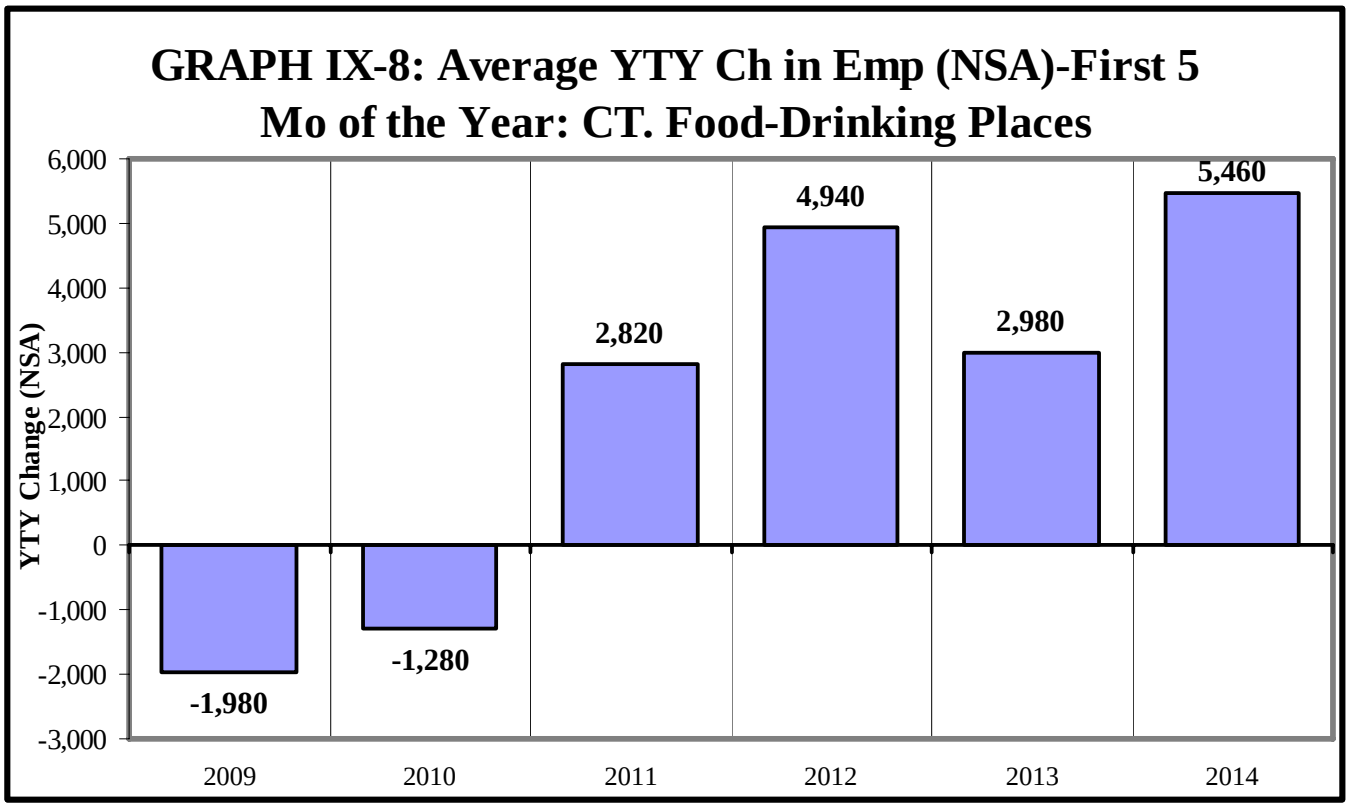
SOURCE: U.S. BLS and Author's calculations.

In order to get more employment detail at the state level, Graph IX-7 presents data, using unseasonalized employment for Connecticut's Direct Life Insurance Industry, and shows the average, Year-to-Year (YTY) monthly change in jobs for the first five months of each year from 2009 to 2014. Between 2009 and 2014, the average YTY, monthly decline in Direct Life jobs, over the first five months of the year, has been 1,278 (not shown). The steepest average monthly, YTY decline, was the -2,500 over the first five months of 2010, while the shallowest was the -125 over the first five months of 2009. Between December 2013 and May 2014 (the last period of available data at the time of writing), the average employment level in Connecticut's Direct Life Insurance Industry has been 1,380 jobs below the level over the comparable period in 2013.

Turning to the two major sectors that added nearly 3,000 jobs between December 2013 and May 2014 on a seasonally adjusted basis), and beginning with Leisure and Hospitality (Leisure-Hosp), which is a major sector where employment has been on the rise both nationally, and at the state level. On an annual, average basis, Connecticut's Leisure-Hosp Sector has been adding 2,015

jobs per year between 2001 and 2013, for a total number of 26,200 jobs added to the State's Economy over the 13-year period. Eighty-nine percent, or 23,400 of those jobs have been in the Accommodation and Food Services (Accom-Food) Sub-Sector. And, virtually all of those jobs have been created in the Food Services and Drinking Places (Food-Drink), NAICS three-digit Industry. And, it is this sub-sector, and the industries within it, that have the highest percentage of part-time workers, which in 2012, was about 40% of those employed in this sector[129]

Graph IX-8 reproduces the same analysis as that in Graph IX-7, except for the Food Services and Drinking Places Industry (Food-Drinking). Even after two fairly steep declines in employment over the first five months of the 2009 and 2010 recession/crisis years, the average YTY increase in Food-Drinking jobs, over the first five months, between 2009 and 2014, was 2,157.



SOURCE: U.S. BLS and Author's calculation.

[129] U.S. BLS

The steepest decline in Food-Drinking jobs was the -1,980 in 2009, at the depth of the recent recession. The strongest growth was over the most recent period. From December 2013 to May 2014, Food-Drinking employment was, on average, higher by 5,460, compared to the previous period in 2013.

The next biggest contribution to job growth over the first five months of 2014, on a seasonally adjusted basis, was Trade, Transportation, and Utilities (Trade-Trans-Util), which added 1,400 jobs to Connecticut's Economy. On a longer-term basis, all the sub-sectors that make up this major sector have been eliminating jobs for more than a decade. On an annual, average basis, Retail Trade eliminated 13,900 between 2001 and 2013, and Wholesale Trade had eliminated 4,900 jobs over the same period. And, while YTY, over the first five months of 2014 (unseasonalized data), Retail was up, on average, by 600 jobs, it was Wholesale Trade that drove the growth in this major sector over the first five months of 2014. On average, on a YTY basis, between December 2013 and May 2014, Wholesale Trade Employment was up by 1,300 jobs, accounting for 93% of the increase in employment for the Trade-Trans-Util Sector. The growth in Wholesale jobs, over the first five months of 2014, appears to be driven by Electronic Wholesale Markets, averaging 800 jobs above its 2013, (i.e., on a YTY basis), for the first five months of 2014, and Wholesale, Durable Goods, which averaged 400 jobs above its 2013 levels, over the same period (not seasonally adjusted). Together, these two NAICS, three-digit industries account for 92% of the job growth in the Wholesale Trade Sub-Sector.

The most complicated story seems to be that of Education and Health Care and Social Assistance (Ed-HCSA). Though its growth-rate has decelerated somewhat over the last couple of years, since the recent recession and financial panic, nevertheless, following the national trend, this major sector has exhibited strong growth for more than a decade. Between 2001 and 2013, the Ed-HCSA Sector has, on average, added 5,892 jobs per year, for a total of 76,600 new jobs over the 13-year period. But, unlike the employment data for the other sectors, in which both seasonalized, and unseasonalized data, showed the same trends. That is, both employment series showed either increases, or decreases in jobs over the periods of analysis. But, in the case of Connecticut's Ed-HCSA Sector the two employment-data series contradict each other. The seasonalized data used to calculate the job changes between December 2013 and May 2014,

show, that over the first five months of 2014, Connecticut's Ed-HCSA Sector actually lost 400 jobs. However, the calculations using unseasonalized data to obtain the YTY, monthly change in jobs for the State's Ed-HCSA Sector shows that, on average, this sector's job-level was up 5,720 compared to that comparable period in 2013. Again, as noted above, the reason for going to the unseasonalized data, when digging down to more detailed levels, is that seasonalized data is not generally available at the more detailed level, especially for smaller states like Connecticut. Unfortunately, this leaves us with a paradox with regard to the Ed-HCSA Sector, and its employment conditions over the first five months of 2014.

X. CONNECTICUT'S HOUSING MARKET

How is the Connecticut housing market faring as we enter the second half of 2014? Has the State's housing sector participated in what appeared to be a national recovery in 2013, and how does it compare to neighboring states?

A. CONNECTICUT'S HOUSING MARKET IN MID-2014: Permits and Starts

One closely watched indicator of housing activity is Residential Building Permits. Table X-1 shows CoreLogic's release of Residential Building Permits for May 2014. It includes Permits for Connecticut, its MSA's, the U.S., two regions, and neighboring states, for January 2013 and 2014, and May 2013 and 2014, the latest period of available data, at the time of writing.

Between January and May, nationwide, 346,000 Permits were issued (Year-to-Date, YTD). This was 5.14% above the 329,100 issued in 2013 over the same period. From the regional perspective, New England's Permit activity was down by 11% in 2014, compared to the same period in 2013, while Permit activity in the Mid-Atlantic Region was up by 30%. Connecticut, like the New England Region, had a decline in Permit activity between Jan and May 2014, compared to the January-May period in 2013. From January to May 2013, Connecticut issued 2,100 Total Residential Building Permits, but over the same period in 2014, that number fell to 1,200, a 42% decrease (see Table X-1). Over this same period, the growth in Permits in Massachusetts was flat (+0.23%), but Rhode Island's Permit activity grew by 14.73%, and the number of Permits issued in New York, between January and May 2014, compared to the same period in 2013, was 67.74%.

Behind the decline in Connecticut's Permit activity, between January and May 2014, appears to be Lower Fairfield County, or the Bridgeport-Stamford-Norwalk Metro Area. Between January and May 2013, there were 911 Permits issued in the Lower Fairfield Region, over the same period in 2014 that fell to 411 Permits. Thus, while it was the Bridgeport-Stamford-Norwalk MSA that drove the strength in Connecticut's Permit activity over the first five months of 2013, it was also this region that acted as a drag on Connecticut's Permit activity over the same period in 2014. Permits, in the region, were down by 16.84% in May 2014, compared to May 2013. The Hartford Region was also down in May, YTY, by an even steeper 26.74%.

TABLE X-1: Total Res Bldg Permits-U.S., CT, MSA's, Regions, and Neighboring States: May 2014

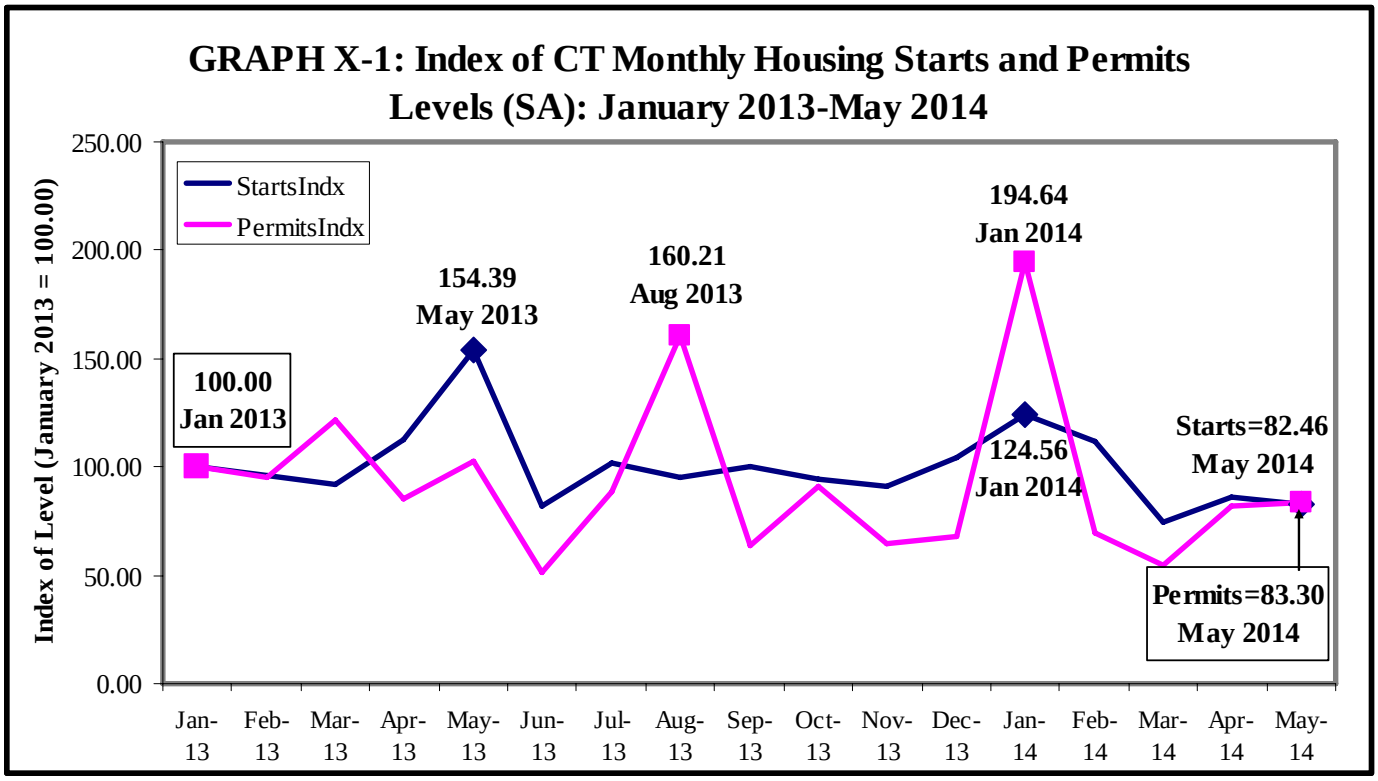
	TOTAL* (YTD) Jan-13	TOTAL* (YTD) Jan-14	TOTAL* (YTD) May-13	TOTAL* (YTD) May-14	CH2013 (YTD) Jan-May	CH2014 (YTD) Jan-May	CH13-14 (YTY) Jan-Jan	CH13-14 (YTY) May-May	%CH13-14 (YTY) Jan-Jan	%CH13-14 (YTY) May-May
U.S.	**63.74**	**64.97**	**392.84**	**410.97**	**329.1**	**346.0**	**1.23**	**18.13**	**1.93**	**4.62**
New Eng	1.41	2.00	10.50	10.10	9.1	8.1	0.59	-0.41	42.08	-3.86
Mid-Atlantic	5.22	4.09	27.54	33.22	22.3	29.1	-1.13	5.67	-21.58	20.60
CT	**0.26**	**0.53**	**2.36**	**1.75**	**2.1**	**1.2**	**0.27**	**-0.61**	**102.66**	**-25.92**
Bridge-Stam-Nor	0.08	0.39	0.99	0.82	0.9	0.4	0.31	-0.17	413.33	-16.84
HartfWHart-EHart	0.09	0.05	0.48	0.35	0.4	0.3	-0.04	-0.13	-44.09	-26.74
NH-Mil	0.03	0.06	0.21	0.25	0.2	0.2	0.03	0.04	82.35	18.31
Nor-NL	0.02	0.02	0.12	0.22	0.1	0.2	-0.01	0.10	-27.27	80.65
MA	**0.76**	**1.08**	**5.14**	**5.46**	**4.4**	**4.4**	**0.31**	**0.32**	**41.21**	**6.30**
NY	**2.19**	**1.22**	**9.90**	**14.15**	**7.7**	**12.9**	**-0.97**	**4.26**	**-44.15**	**43.00**
RI	**0.06**	**0.05**	**0.35**	**0.38**	**0.3**	**0.3**	**-0.01**	**0.03**	**-15.52**	**9.71**

*All data X 1,000 (Except percents)

SOURCE: National Association of Home Builders (NAHB) and Author's calculations.

Shifting the focus to the month of May 2014 itself, and looking at the relationship between data on Residential Building Permits, and Housing Starts, retrieved from the Federal Reserve Economic Database (FRED), at the Saint Louis Fed, allows the comparison of data on actual activity, Housing Starts, with that of expectations, Housing Permits. There were 188 Housing Starts in Connecticut in May, down 4.08% from April, and down 46.59% from May 2013. Also, in May 2014, there were 404 Housing Permits issued in Connecticut. This was up 1.76% from April, but down by 19.04% from May 2013. So, Permits were up MTM, but down YTY, and Starts were down both MTM and YTY.

To get some context, Graph X-1 tracks indices for Connecticut Housing Starts and Permits, as reported by the U.S. Census Bureau, from beginning of what has been called the national housing recovery (see Section III above), January 2013, and the last period of available data, at the time of writing, May 2014. Both indices equal 100.00 at January 2013.



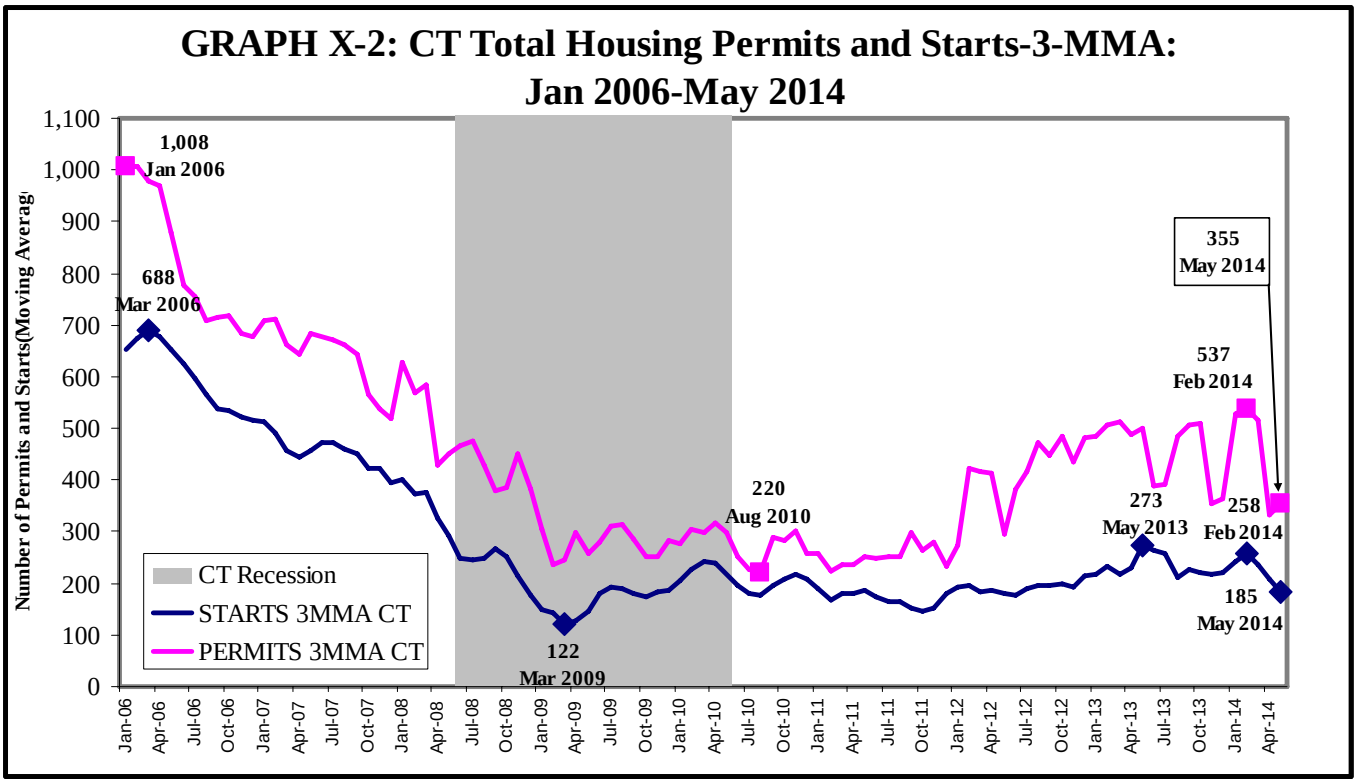
SOURCE: FRED-FRBStL and Author's calculations

The first thing to note is that the Housing Permits Series is significantly more volatile than the Housing Starts Series, especially given that both series are seasonally adjusted. Connecticut's Housing Starts, over the January 2013-May 2014 period peaked in May 2013, when they were 54.39% above their January 2013 level. They declined steeply in June, then rebounded slightly until January 2014, when they hit a secondary, lower peak, 24.56% above their January 2013 level, but still 19.32% below their global peak in May 2013. By May 2014, the Starts Index was at 82.46, meaning that Starts were down 33.80% from January, and down 46.59% from the global peak in May 2013, and down 17.54% from their level in January 2006. This seems to follow the same up-and-down pattern exhibited by the so-called national "housing recovery", as it seems to lose steam after the first half of 2013 (again, see discussion above, in Section III).

Turning to Connecticut Housing Permits, also depicted in Graph X-1, the peaks, since the bust, do not seem to follow a seasonal pattern. The first peak, in Permit activity, was in August 2013 when Connecticut's Housing Permits were 60.21% above their January 2013 level. Then in January 2014, they reached their global peak when they were 94.64% above their January 2013 level. Again, as mentioned above, each peak occurred in different seasons. They then fell over the next few months, bouncing back slightly in April and May. The Permits Index level for May 2014 was 83.30, which means that the level Housing Permits in Connecticut was 16.70% below their January 2013 level. Another trend that catches the eye in Graph X-1 is that without the two spikes in each series they would both be essentially flat, to slightly declining over the period January 2013 to May 2014.

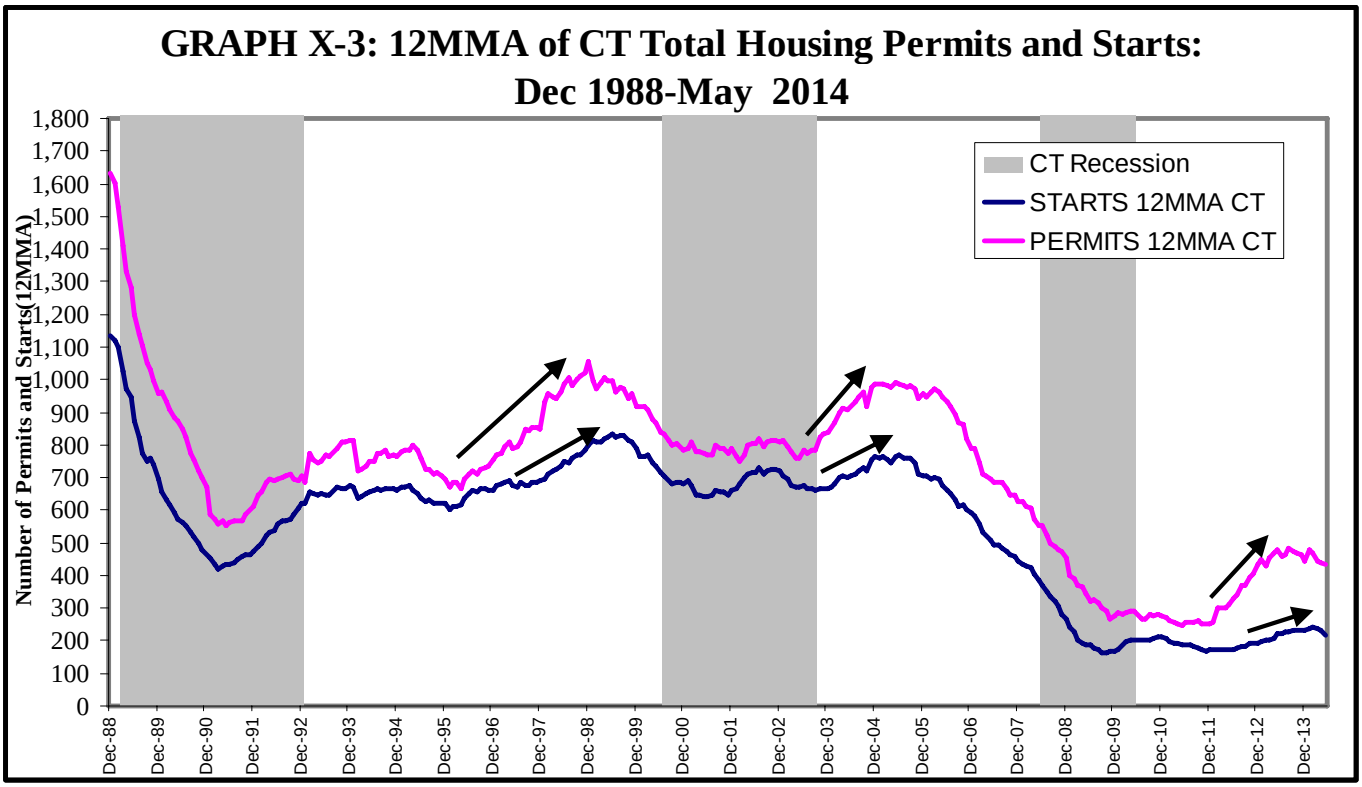
Graph X-2 turns to a medium- or mid-term perspective of the behavior of Connecticut Housing Starts and Housing Permits, and Graph X-3 looks at the long-run perspective on these two housing activity indicators.

Looking at the medium-term behavior of Connecticut Housing Permits, Graph X-2 presents the 3-Month Moving Average (3-MMA) of both Starts and Permits to smooth out the volatility, and thus filter out some of the noise, especially in the Permits Series, covering the period from the first month of the peak-year of the housing bubble, January 2006, to May 2014, the latest period of available data.



SOURCE: FRED-FRBStL and Author's calculations.

Housing Permits peaked in January 2006, at 1,008, after the housing bust and recession they bottomed out at 220 in August 2010. By February 2014, Connecticut Housing Permits reached a post-bust peak of 537, by May Permits fell to a level of 355. The year of the peak of the national housing bubble, 2006, Connecticut Housing Starts peaked at 688 in May. Like Permits, Housing Starts began to fall after the housing bubble burst. Starts bottomed at 222 in March 2009. After some ups-and-downs, Housing Starts reached a post-bubble peak of 273 in May 2013. After falling again, Starts recovered to 258 in February 2014, but then fell back to 185 by May. Of note in Graph X-2 is the relationship between Housing Starts and Housing Permits. The gap between Permits and Starts closed up after the housing bust, and the tracks of the two series seemed to pretty much parallel each other until about February 2011. From that point on, the gap between Permits and Starts appears to open up again, as Permits grew faster than Starts. To explore this more, Graph X-3 tracks both the Housing Starts and Housing Permits series over a longer-run time-frame.



SOURCE: FRED-FRBStL and Author's calculations.

Graph X-3 tracks both the Connecticut Housing Permits and Housing Starts series over the entire range of currently-available data, December 1988 to May 2014. Unfortunately, data for most of the New England Housing Bubble of the 1980's is not available, so both series begin as the regional real estate bubble was popping. So, we are restricted to observing the behavior of the two series before, during, and after the last two recessions.

Permits can be viewed as based on expectations. They are authorizations to construct housing units, but that construction, at the time the permit is issued, has not started. Whereas, Housing Starts, are based on actual activity, that is underway at the time of reporting. With that in mind, as indicated by the arrows in Graph X-3, right before housing-construction activity declined before the Tech Bubble burst in 2000, and then again, when the Housing Bubble burst in 2006, expectations seemed to run ahead of reality. In both cases, the gap between the Housing Permits Series, and the Housing Starts Series, began to open up, as Housing Permits began growing at a faster rate than Housing Starts. That is, as expectations started to get ahead of actuality.

In each case, the housing market began to turn down. Note, on Graph X-3, that this same phenomenon seems to have taken place in the beginning of 2012 when many started talking about a turnaround in the housing market. Then, after August 2013, Connecticut Housing Permits began turning down, with a bump-up in January 2014, and then resumed its downward trend, and Housing Starts also peaked in January, and have trended downward since then. Whether this portends a decline in housing in 2014, after a bounce-back from the harsh winter, remains to be seen, but the pattern that preceded a downturn in the previous two cycles is clearly present.

B. CONNECTICUUT'S HOUSING MARKET IN MID-2014: Home Prices

In addition to Permits and Starts, discussed above, another closely-watched housing-market indicator is Home Prices. Before discussing where Connecticut's Home Prices are in Mid-2014, Table X-1 recaps the 2000's Housing Bubble-Bust Cycle, tracking the behavior of the Median Home Price for the Upper Tier, Middle Tier, and Low Tier Median Home values. That is, the Median Home value for the Upper-Third, Middle-Third, and Lower-Third of Home Values, as reported by Zillow[130], on a monthly basis. Table X-1 tracks the Upper-, Middle-, and Lower-Tier for Connecticut Home Values from January 2000 to June 2014, the latest period of available data at the time of writing. The housing cycle in Connecticut, over the period of the national bubble, and the major milestones, or cycle dates are presented in Table X-1.

Connecticut's Home-Value Tiers Over the Current Housing Cycle

The first thing to note in Table X-1 is the exaggerated amplitude of the cyclical behavior of Connecticut's Lower-Tier of Home Values over the 2000's Housing Cycle. This is, not only consistent with the behavior of the lower-tier homes nationally, but it is also consistent with the findings of Mian and Sufi (2014)[131] in their research into the causes and consequences of the housing bubble and its collapse.

[130] Previous outlooks used data on the three tiers of Connecticut Home Values from the Center for Real Estate and Urban Economic Research at the University of Connecticut, but they discontinued this series in 2013.
[131] Mian and Sufi, HOUSE OF DEBT (2014), see especially Chapter 6.

TABLE X-1: CT Median House Price by Tier Over CT's Housing Cycle: Jan 2000-Jun 2014

Cycle Dates	HighTier	MidTier	LowTier
Peak	Aug-06	Jun-06	Apr-07
Trough	Sep-12	Dec-12	Jan-Mar 13
2nd Peak	-----	-----	Feb-14
2nd Trough	-----	-----	-----
3rd Peak	-----	-----	-----
Price-Change	**HighTier**	**MidTier**	**LowTier**
Jan 2000-Peak	74.89	82.00	95.14
Peak-to-Trough	-16.59	-19.81	-27.13
Trough-to-2nd Peak/Jun 2014	5.14	4.14	2.78
2nd Peak-to-2nd Trough/Jun 2014	-----	-----	-0.42
2nd Trough-to-Jun 2014	-----	-----	-----
No of Qtrs	**HighTier**	**MidTier**	**LowTier**
Jan 2000-Peak	79	77	87
Peak-to-Trough	73	78	69
Trough-to-2nd Peak/Jun 2014	21	18	11
2nd Peak-to-2nd Trough/Jun 2014	-----	-----	4
2nd Trough-to-Jun 2014	-----	-----	-----
Comp Ann Grw-Rate	**HighTier**	**MidTier**	**LowTier**
Jan 2000-Peak	8.86	9.78	9.66
Peak-to-Trough	-2.94	-3.34	-5.35
Trough-to-2nd Peak/Jun 2014	2.91	2.74	3.04
2nd Peak-to-2nd Trough/Jun 2014	-----	-----	-1.24
2nd Trough-to-Jun 2014	-----	-----	-----

SOURCE: Zillow and Author's Calculations

From Table X-1, it is the High Tier of homes that had their peak in prices in August 2006. Between January 2000 and August 2006, High-Tier prices grew for 79 consecutive months by 74.89%. The Middle Tier had the earliest peak in prices, June 2006, two months before for High-Tier peak. Between January 2000 and June 2006, Mid-Tier prices grew for 77 consecutive months, the shortest bubble period of the three tiers. Over that period, Mid-Tier prices grew by 82.00%, exceeding the High-Tier price-growth. The bubble in Connecticut's Low Tier, following the national trend, lasted the longest, 87 months, from January 2000 to April 2007. The Low Tier also had the highest growth in prices, increasing by 95.14%.

Once the housing bubble popped, it seems the "higher they rose, the farther they fell". After peaking, the High Tier home values fell 16.59% over 73 months bottoming out in September 2012. As of June 2014, High-Tier home values had been recovering for 21 months, regaining 5.14% of their value. After their peak, Mid-Tier home values contracted by 19.81%, over a 78 month period, the longest price-deflation period of the three tiers. Over the 18 months of recovery, as of June 2014, Mid-Tier home values have increased by 4.14%. As noted above, it is the Low Tier that has had the greatest amplitude in its housing cycle. After the peak in Low Tier home values, prices fell by 27.13%, the steepest decline of the three tiers. However, at 69 months, it also had the shortest period of home-price decline. But, also unlike the other two tiers, the Low Tier, as of June 2014, is into its second cycle, while the other two tiers have not entered a second cycle. The Low Tier's trough lasted for three months, January to March 2013 then a brief recovery began after March. An 11 month recovery began, over which Low-Tier home values recovered by 2.78%, before hitting a second cycle-peak in February 2014. Low Tier-prices then declined in May, falling by 0.62%, or -2.47%, on a compounded, annualized basis. Between May and June, Connecticut's Low Tier home-values increased by 0.18%, or 2.18%, on an annualized basis.

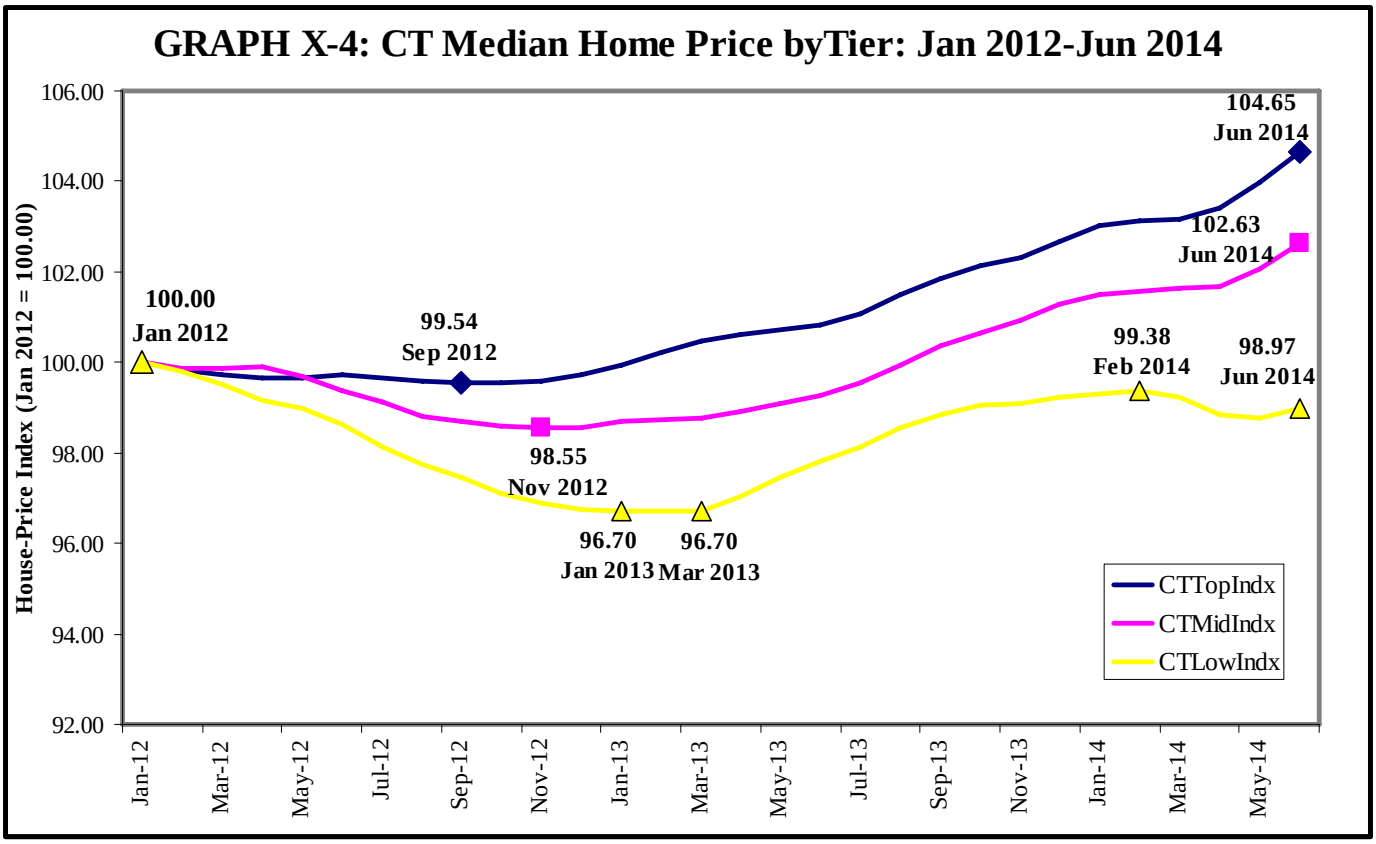
In the bottom section of Table X-1, titled "Comp Ann Grw-Rate", the growth and declines in prices of the three tiers, presented in the "Price-Change" Section of the table, are recalculated on a compounded, annualized basis, to account for the different lengths of the cycle-stages for the three different tiers. This also allows a standardized comparison across the three tiers to gauge the intensity of their price increases and decreases over the cycle.

Based on the compounded, annualized price-change, it appears that the Middle Tier had the fastest rate of price-growth over the bubble-stage of the housing boom. On an annualized basis, Mid-Tier home values increased at a rate of 9.78% per year. This was followed by the Low Tier in which home values increased at an annualized rate of 9.66% over the bubble-stage of the housing cycle. The High Tier rate, at 8.66% per year, was the lowest growth-rate of the three tiers. However, it was the Low Tier that had the steepest rate of decline over the bust phase of the housing cycle. Low Tier home values fell at an annualized rate of 5.35%. Mid-Tier home prices fell at a rate of 3.34% per year, and at 2.91% per year, High Tier prices fell at the slowest rate after the housing bust. As discussed above, unlike the other two tiers, the Low Tier has actually entered into a second cycle. As discussed above, the Low Tier's second contraction in values began after February 2014, and then appeared to trough in May, with a slight recovery in June. Nevertheless, June's median price for the Lower Tier was still 0.42% below that in February. Though it was much shorter, at four months, the Low Tier recovery, at an annualized rate of 3.04%, was stronger than the High Tier rate of 2.91% (as of June 2014), and the Middle Tier rate of 2.74% (again, as of June 2014). Though one month of datum is certainly not enough to determine a turning point, or inflection point, if price increases do continue over the next couple of months, then the Lower Tier will have entered its second recovery phase.

Connecticut's Home-Value Tiers in Mid-2014

Graph X-4 tracks Connecticut's three home-price tiers over what has been deemed the current housing recovery: January 2012 to June 2014, the latest period of available data, at the time of writing. An index was contracted for the median price for each tier, with January 2012, the Base Period, equal to 100.00.

In June 2014, the index value for the Top Tier was 104.65, which means that Connecticut's Top-Tier home-values were 4.65% above their level in January 2012. By June 2014, Mid-Tier values were 2.63% above their January 2012 levels, but the median price for a Lower-Tier home was 1.03% below its January 2012 value in June 2014. Again, this is consistent with national trends, and with the findings the research done by Mian and Sufi (2014), in their research on the hosing bubble and bust, and discussed above. It was the lower-income, and therefore, lower-tier housing that was most vulnerable to the housing bubble.

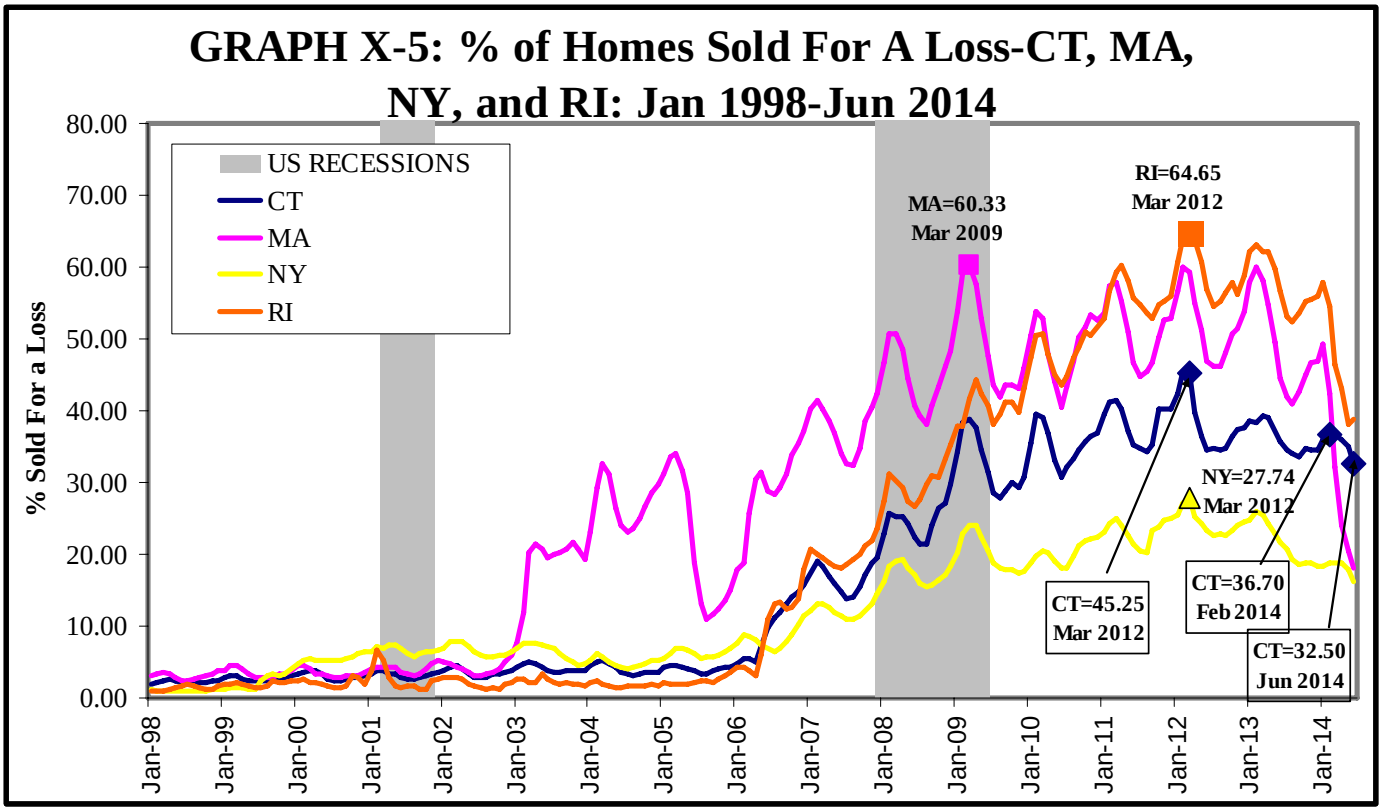


SOURCE: Zillow and Author's calculations.

Even the Top Tier dropped slightly after January 2012, as it approached the trough of its price-decline phase of the cycle. From January to September, the month of the Top-Tier trough, home-values fell by 0.46%. Top-Tier prices then recovered, and by June 2014, they had increased by 5.13%. The Middle Tier median price bottomed out in November 2012, and into December, when Mid-Tier values turned around. Between January 2012 and November-December 2012, Middle-Tier median value fell by 1.45%. Upon recovery, Mid-Tier values increased by 4.14% between December 2012 and June 2014. It is the Lower Tier that, not only declined more steeply, and over a longer period of time, but also, unlike the other two tiers, entered a second cycle. Between January 2012 and the Lower-Tier trough, January-March 2013, the median home value declined by 3.30%. Lower-Tier median value then recovered, increasing by 2.77%, and hit a second peak in February 2014. Lower-Tier home-values then fell by 0.62%, hitting a second trough in May 2014. In June the median value of a Lower-Tier home increased by 0.21%. Whether, or not, June 2014 is a second trough for the Lower Tier remains to be seen.

Percent of Connecticut Homes Selling for a Loss in Mid-2014

By June 2014, the latest period of data from Zillow's home-value index for the three tiers discussed above, High (upper-third median price), Middle (middle-third median price), and Lower (lower-third median price), at the time of writing, the median value of Connecticut's High-Tier homes were still 12.30% below their bubble-peak value, the median value of Middle-Tier homes was 16.49% below its bubble-peak level, and Lower-Tier homes had a median value that was 25.41% below their bubble-peak level. Since a significant number of homes for sale on the current market were purchased at, or near, the peak of the 2000's Housing Bubble, many of these homes are selling for a loss. Graph X-5 tracks the percent of homes sold at a loss for Connecticut, and neighboring states from January 1998 to June 2014.



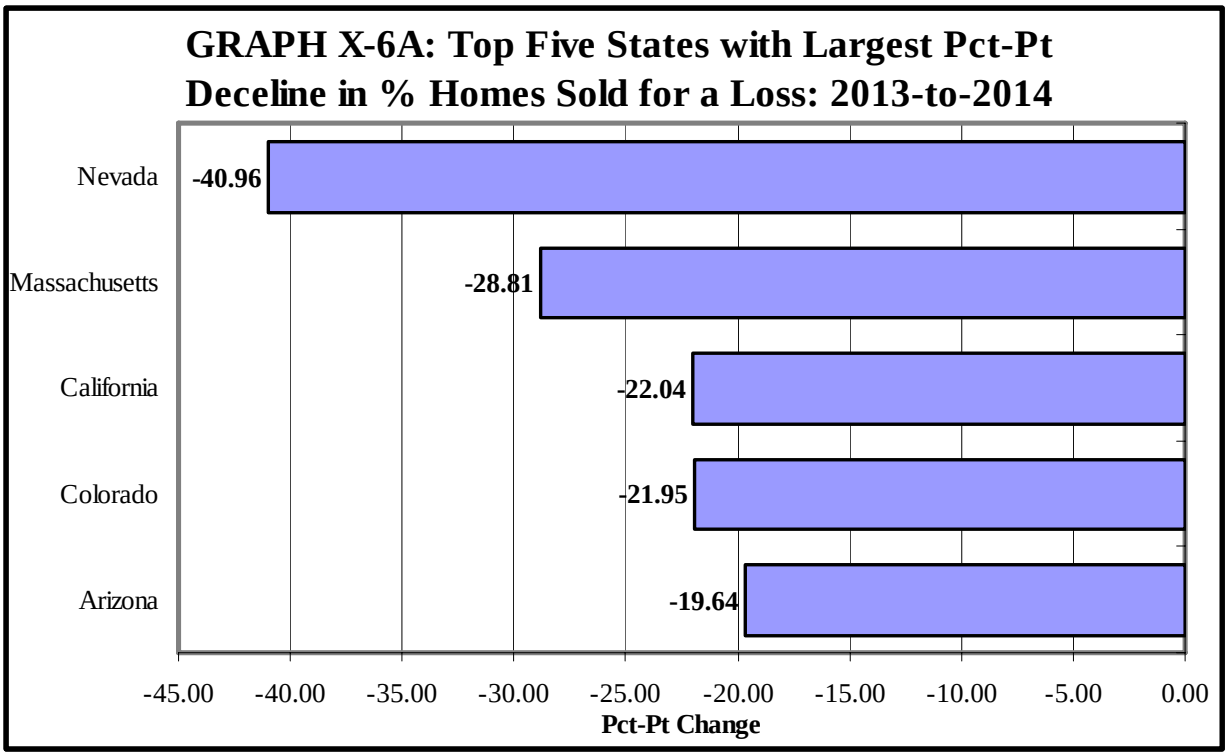
SOURCE: Zillow and Author's calculations.

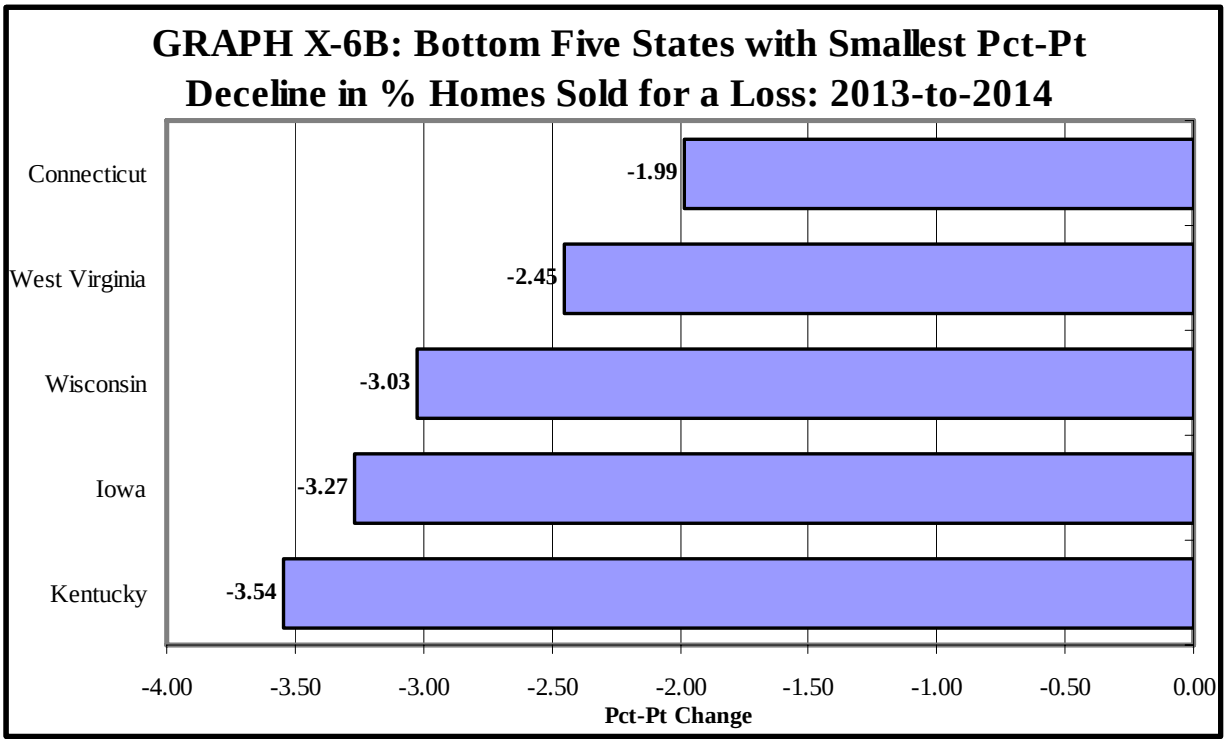
The first thing to note in Graph X-5 is that the percent of homes that sold for a loss in Massachusetts, not only had a more abrupt jump than Connecticut, New York, and Rhode Island, but that jump in homes sold for a loss occurred three years (2003) before there was a jump in the

percent of homes sold for a loss in Connecticut, New York, and Rhode Island. This jump in Massachusetts sales resulting in a loss even pre-dated the jumps in homes selling for a loss in two of the housing-bubble epicenter states, Florida and Arizona. The Massachusetts jump in 2003 did coincide with that of Nevada's. The jump in the percent of homes sold for a loss did not occur in Connecticut, New York, and Rhode Island until 2006, three years later. In addition the peak percent of homes sold for a loss in Connecticut (45.25%) and New York (27.74%) never hit the much higher peaks in Massachusetts (60.33%) and Rhode Island (64.65%). However, the percent of homes sold for a loss seems to have dropped rapidly in Massachusetts and Rhode Island, especially over the first half of 2014. New York has seen significant decline since 2013. But, though Connecticut certainly did not participate in the housing bubble to the extent Massachusetts and Rhode Island did, it is having a harder time recovering. By February 2014, 36.70% of Connecticut homes sold were sold at a loss, but by June that percent had only declined slightly to 32.50%, a 4.2 percentage-point decline. Meanwhile, 57.92% of the homes sold in Rhode Island in February 2014, sold for a loss, but then that dropped to 38.85% in June, a 19.07 percentage-point decline. Over the same period, the percent of homes sold for a loss in Massachusetts declined from 49.19% to 18.11%, a 31.08 percentage-point decline. It should be noted that the percent of homes sold for a loss did increase slightly between May and June in both Massachusetts and Rhode Island.

Of the 36 states and the District of Columbia tracked by Zillow in 2013, Connecticut ranked 9th in the percent of homes sold for a loss, in 2014 it ranked 3rd. Again, this is not because the percent of homes selling at a loss in Connecticut increased, but the decline in the percent of homes selling for a loss has been much slower in Connecticut. In fact, Connecticut ranked last among the 36 states and D.C., tracked by Zillow, in the percentage-point decline in the percent of homes sold for a loss between 2013 and 2014. Meanwhile, Massachusetts dropped from 3rd in 2013 to 25th in 2014. New York's rank was almost unchanged, going from 29th in 2013 to 28th in 2014, and Rhode Island remained number one in the percent of homes sold for a loss in 2014, even though it had 17.98 percentage-point decline between 2013 and 2014.

Graph X-6A shows the top five states, ranked largest to smallest, with the largest percentage-point declines in the percent of homes sold for a loss between 2013 and 2014. Graph X-6B presents the five states with the smallest declines, ranked by smallest to largest decline.





SOURCE: Zillow and Author's calculations.

From Graph X-6A, two states that were at the epicenter of the housing bubble-and-bust, Nevada (-40.96 percentage points), Arizona (-19.54 percentage points), as well as California (-22.04 percentage points), were among the top five in the percentage-point decline in the percent of homes sold at a loss between 2013 and 2014. The second largest percentage-point decline in the percent of homes sold at a loss, between 2013 and 2014, was Connecticut's neighboring state, Massachusetts (-28.81 percentage points). Even though Rhode Island, another neighboring state, was not among the top five, its 17.98 percentage-point decline in the percent of homes sold for a loss, ranked as the seventh-largest decline between 2013 and 2014.

From Graph X-6B, Connecticut has the dubious honor of having the smallest percentage-point decline (-1.99) in its percent of homes sold for a loss between 2013 and 2014, of the 36 states and D.C. that are tracked by Zillow. The other four states on the bottom-five list, with Connecticut, were states that did not participate in the housing bubble, but have had problems with sub-prime mortgages. And, as noted in the discussion on the effects of the bubble, and especially sub-prime mortgages on lower-income, lower-tier homes and homeowners, states with higher percentages of low income and poor, are more likely to be effected by the sub-prime mortgage crisis. Especially, the two Border States, appearing in Graph X-6B, Kentucky and West Virginia, fall in that category. On the other hand, Connecticut has the highest per capita income in the U.S. but it also has one of, if not, the highest concentrations of income and wealth of any state. Thus, there are extremes within the state, which results in lower-income areas of the state with sub-prime mortgage problems. This will be discussed further below with regard to the findings of the HAAS Institute study.

C. CONNECTICUUT'S HOUSING MARKET IN MID-2014: Foreclosures

Table X-2 summarizes data on foreclosures released by CoreLogic for May 2014. Connecticut is compared to its surrounding states, and the U.S. There were 753,698 foreclosures in the U.S. between May 2012 and May 2013. That number declined by 158,753, or 21.06%, to 694,945 between May 2013 and May 2014. In May 2014, the U.S. foreclosure inventory accounted for 1.70% of all homes with a mortgage, and that was down by 0.90 percentage points compared to May 2013. Also, in May 2014, 4.40% of mortgages were in serious delinquency. Though the

foreclosure situation is certainly not back to pre-crisis conditions, the U.S. Housing Market appears to moving, albeit slowly, in the right direction.

TABLE X-2: Completed Foreclosures: The U.S., CT., and Neighboring States

	COMPLETED FORECLOSURES			Judicial	ForeInven	Pct-Pt CH	Serious
	May 2012-13	May 2013-14	%Change	State?	May-14	May 13-14	DelinqRate
U.S.	753,698	594,945	-21.06	-----	1.70%	-0.90	4.40%
CT	3,650	5,748	57.48	Yes	2.80%	-1.40	5.90%
NY	5,105	5,938	16.32	Yes	4.30%	-0.60	7.50%
MA	4,002	2,817	-29.61	Yes	1.10%	-0.70	4.30%
RI	1,582	1,601	1.20	No	1.80%	-0.60	5.70%

SOURCE: CoreLogic and Author's calculations

Connecticut's completed foreclosures, between May 2013 and May 2014, moved in the opposite direction of the U.S. Completed foreclosures in Connecticut increased from 3,650 between May 2012 and May 2013, to 5,748 between May 2013 and May 2014. That is an increase of 2,098, or 57.48%. Connecticut's foreclosure inventory was 2.80% in May 2014, one and two-thirds times that of the U.S. rate, and ranking it as the sixth-highest in May 2014 among the 50 states[132]. However, Connecticut did have a much steeper decline in its foreclosure inventory, compared to the U.S. Connecticut's foreclosure inventory fell by 1.40 percentage points between May 2013 and May 2014, one and one-half times faster than that for the U.S. At 5.90%, Connecticut's serious delinquency rate in May 2014 was significantly higher than that for the U.S.

How Connecticut is doing compared to its neighboring states with regard to the post-crisis foreclosure problem depends on the metric studied. Clearly, Connecticut's 57.48% increase in completed foreclosures between May 2013 and May 2014, compared to May 2013-May 2014 is much higher than the 16.32% increase for New York, and the 1.20% increase for Rhode Island. The conventional wisdom tells us the problem is with Judicial States[133]. But, though Connecticut and New York are Judicial states, so is Massachusetts, and that neighboring state had a 29.61%

[132] Figure-2*: Foreclosure Inventory as of May 2014*, FORECLOSURES GALLERY (May 2014) CoreLogic.
[133] For an explanation of Judicial versus Non-Judicial foreclosure procedures, *see Judicial Versus Non-Judicial Foreclosure*, Mortgage Bankers Association. For an up-to-date list of Judicial and Non-Judicial states, see *List of U.S. States which are Judicial or Non-Judicial Foreclosure*, (October 2011) RealtyTrac.

decline in completed foreclosures between May 2013 and May 2014, which exceeded the U.S. decline of -21.06%. Rhode Island is a Non-Judicial state.

Connecticut's foreclosure inventory was less than half that of New York's 4.30% in May 2014, but more than double that of Massachusetts (1.10%), and higher than that of Rhode Island (1.80%). Connecticut's decline in its foreclosure inventory was much faster than any of its neighboring states. Connecticut's 1.40 percentage-point decline between May 2013 and May 2014 was double the percentage-point decline in Massachusetts's foreclosure inventory, and two and one-third times faster than the declines in New York and Rhode Island.

Connecticut's serious delinquency rate at 5.90% is above the U.S. rate of 4.40% (see discussion above), and is also above that of Massachusetts (4.30%), and slightly above that of Rhode Island's (5.70%). However, it is significantly below New York's rate of 7.50%.

C. CONNECTICUUT'S HOUSING MARKET IN MID-2014: Negative Equity

In a study recently released by the HAAS Institute at the University of California, of the cities with metro areas with a population of one million or more, Connecticut had two cities that ranked in the top ten cities with the highest percent of homeowners with a mortgage, underwater. Number one is Hartford, with 56% of homes underwater, and tenth is Bridgeport, with 42% underwater[134]. So even though the housing bubble was less severe in Connecticut, as noted in the discussion, in Sub-Section B, above, the State seems to be taking longer to recover from it.

Nationally, in RealtyTrac's *U.S. Home Equity & Underwater Report for 2014Q2*, they reported that over 9.1 million U.S. residential properties were seriously underwater (i.e., where the combined loan amount secured by the property is at least 25%higher than the property's estimated market value), representing 17% of all properties with a mortgage. In 2014Q2, there was a modest percent-decrease in homes that were seriously underwater 17.2% versus 17.4% in 2014Q1. The 2014Q2 level is the lowest since RealtyTrac began reporting negative equity in 2012Q1. The recent peak in negative equity was the second quarter of 2012, when 12.8 million

[134] Underwater America, (May 2014) HAAS Institute: University of California-Berkeley, p. 14.

U.S. residential properties representing 29% of all properties with a mortgage were seriously underwater.

Re-focusing on Connecticut, with 46% of mortgaged homes underwater, Connecticut ranked seventh out of the fifty states with homes with a mortgage underwater[135]. And, New Haven-Milford ranked eight, with 30% of residential properties underwater, of all MSA's with a population of 500,000, or more. Further, 32% of Connecticut's residential properties, in foreclosure, had equity, in 2014Q2.

Further, in their 2014Q1 Report on Negative Equity, Zillow noted that "The bulk of negative equity has accumulated in the bottom tier – the bottom third of homes by home value – in most markets across the nation, which has led to especially tight inventory conditions among lower valued homes."[136] And, this factor is likely to be the driver of the behavior of the median price, of especially, Connecticut's Lower Tier, discussed in Sub-Part B, above. Connecticut's Lower Tier home-prices fell by more than the Top and Middle Tiers (see Table X-1, above), and though the Lower Tier's rate of home-price recovery, at first, was stronger than the other two tiers, as noted in the discussion above, after February 2014, Lower-Tier home-prices began declining again. It is most likely Connecticut's Lower-Tier homes that are driving its inability to bring down the percent of houses sold at a loss compared to the U.S. and neighboring states (again, see discussion in Sub-Part B, above).

D. CONNECTICUUT'S HOUSING MARKET IN MID-2014: In Summary

The analogy that seems to best describe Connecticut's housing market as we pass the halfway point of 2014 is a medical one. As noted in this section's discussion, from a statewide perspective, Massachusetts and Rhode Island seemed to have been much more affected by the national housing bubble than Connecticut or New York. However, while Massachusetts and Rhode Island are like patients who contracted life-threatening pneumonia, but, and especially in the case of Massachusetts, they are recovering, though Rhode Island had a more severe case of pneumonia, and therefore still has a ways to go to recover, but is recovering (so far). On the

[135] RealtyTrac, *U.S. Home Equity & Underwater Report* (July 24, 2014.
[136] Zillow, *Negative Equity Report for 2014Q1* (May 19, 2014)

other hand, Connecticut and New York had a bad cold, rather than pneumonia. Statewide, New York seems to be shaking the cold. However, though statewide, Connecticut had a cold, rather than pneumonia, it cannot seem to shake the cold—it hangs on. That point comes through in the above discussion on homes sold for a loss. Though the percent of homes sold at a loss never approached the levels of Massachusetts and Rhode Island, as of Mid-2014, the percent of homes sold at a loss, especially in Massachusetts, has fallen significantly below that of Connecticut. Again, though Connecticut's percent of homes sold at a loss never approached that of Massachusetts, it cannot seem to bring its rate down, and it remains stuck just above 30%, as of June 2014.

PART 5: THE FORECAST FOR CONNECTICUT JOB-GROWTH IN 2014 AND 2015

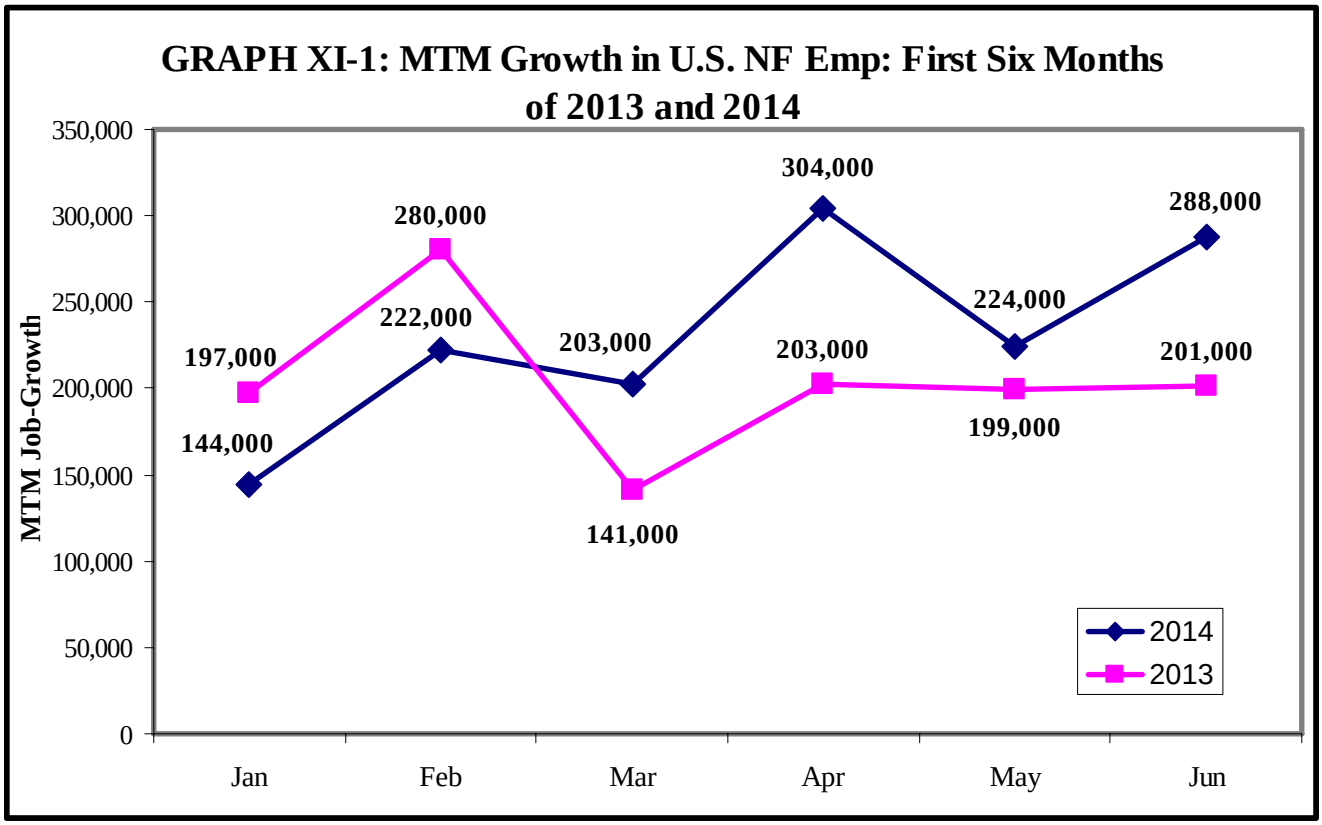
XI. IS IT JUST THE WEATHER? Connecticut's Baseline Forecast Suggests Slower Growth in 2014-15

The current outlook now comes full circle. The INTRODUCTION opened with the title "Is It Just the Weather?", and now to conclude the outlook with the forecast and outlook, we return to the opening question: "Is It Just the Weather?" And, if it is more than just the weather, than what does it imply about the outlook for 2014 and 2015?

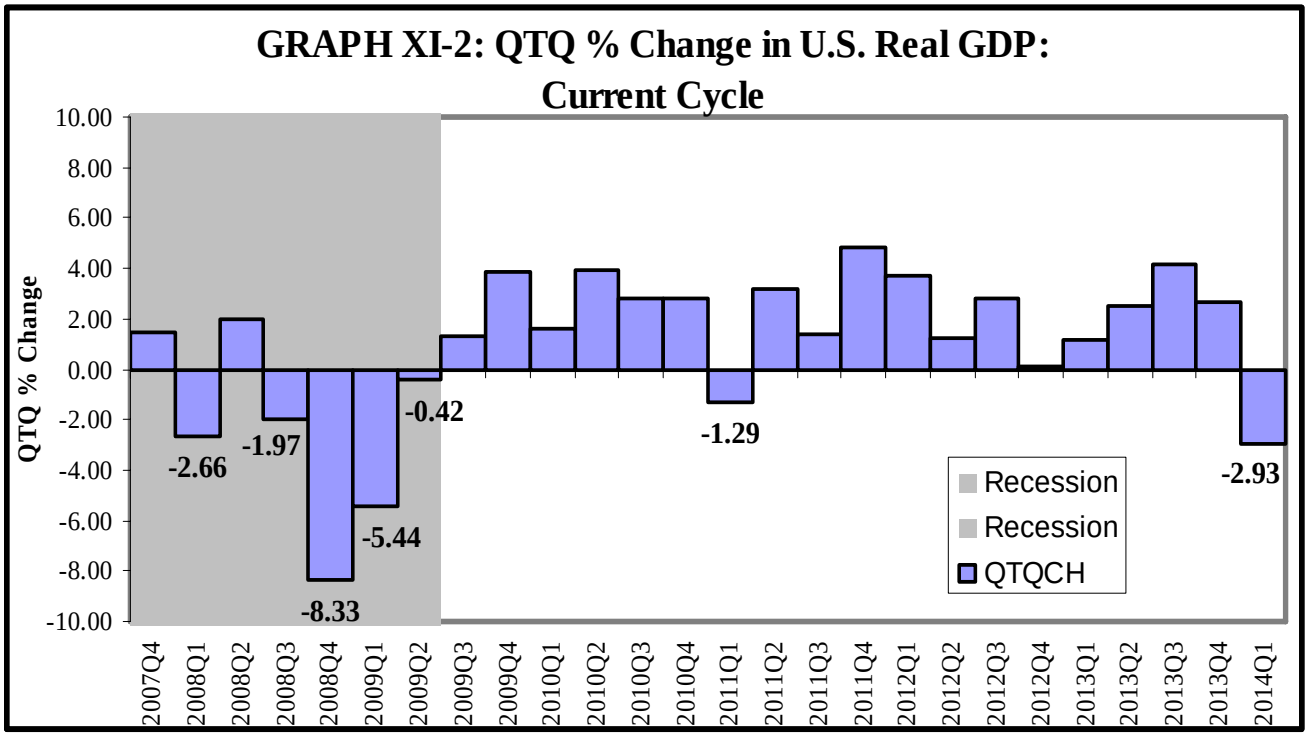
As shown in Graph XI-1, the Month-to-Month (MTM) growth in U.S. Non-Farm Employment in 2014 was below that of 2013 in January and February, but from March until June (the last month of data at the time of writing), the MTM growth in U.S. Non-Farm Employment has been much stronger than over the same period in 2013. In fact, between January and June 2014, on average, U.S. job-growth has been at a 230,833 jobs per month, compared to 203,500 over the same period in 2013. Though, as can be seen on Graph XI-1, job growth is more volatile over the first half of 2014, compared to the first half of 2013. Nevertheless, the Unemployment Rate (UR) was down to 6.1% in June 2014, the lowest since August 2008. The July jobs report (for June) was certainly stronger than most had expected, and the numbers for May and April were revised upward. However, after increasing, on average by 430,000 per month, over the first three months of 2014, the U.S. Labor Force contracted by 806,000, in April, which was followed by weak growth in May and June resulting in the Labor Force contracting, on average by 177,667 per month between April and June[137].

Critical to where the U.S. Economy may be going in the second half of 2014 is the July 30th release of the first estimate for 2nd-Quarter U.S. GDP. It is especially critical given the 3rd estimate for 2014Q1 U.S. GDP. As depicted in Graph XI-2, U.S. Real GDP-growth for the first quarter of 2014 showed that it contracted by 2.93%[138], which is the steepest contraction in U.S. Real GDP since the 5.44%, in 2009Q1, during the 2007-09 Recession. Again, raising the question: Is it just the weather?

[137] U.S. BLS, THE EMPLOYMENT SITUATION —JUNE 2014 (July 3, 2014) U.S. Department of Labor: Washington
[138] U.S. BEA, GROSS DOMESTIC PRODUCT: FIRST QUARTER 2014 (Third Estimate) (June 25, 2014) U.S. Department of Commerce: Washington



SOURCE: U.S. BLS and Author's calculations.



SOURCE: U.S. BEA and Author's calculations.

Dragging down GDP growth was Private Inventory Investment, Exports, State and Local Government spending, Nonresidential and Residential Fixed Investment. Many have pointed to weather as the principal culprit, and expect economic growth to follow the same pattern as that in job-growth and re-accelerate with the end of a record harsh and long, winter. Though weather certainly played a role, it is not the whole story as to why the economy has recently slowed and cannot seem to attain "escape velocity" and go into a sustained expansion, as opposed to the "fits-and-starts" recovery pattern that has persisted since the official end of the last recession.

As noted in previous forecasts as well as in Section I, WHY THE WEAK RECOVERY?: How We Got Here, in this outlook, this long and weak recovery is the consequence of the first Post World War II recession that followed a Worldwide, systemic financial panic, and a nationwide collapse of an asset bubble in housing, the primary (or only) asset on the balance sheets of most middle and working class households, and therefore producing a much wider impact on the economy than the collapse of the Tech Bubble in 2000, or the 1987 Stock Market Crash. Further, since 2010, active fiscal policy has been off the table in the U.S., as well as in Europe, and manufactured crises such as the clown show over the debt ceiling in 2011, and consequent Sequestration, the "Fiscal Cliff", and the government shutdown in October 2013, have certainly not helped matters any. In addition, the failure to extend UI Benefits, has neutralized an important automatic stabilizer by reducing income to households with large spending multipliers This has left only the Federal Reserve's Quantitative Easing policy to try to stimulate the economy, or at least, to hold deflation at bay.

A. HOUSING, THE RECOVERY, AND THE OUTLOOK

In particular, and as discussed previously, in detail, in Section III-THE U.S. HOUSING MARKET: Is It the Weather?, the persistent drag on the economy from the bursting of the housing bubble is the result of two effects: (1.) Negative Wealth Effects from the asset-side of households' balance sheets from the bursting of the housing bubble, and (2.) the Default and Deleveraging Process from the liabilities side of households' balance sheets from the accumulation of unsustainable debt-levels[139]. But, it is not just over this cycle that housing has

[139] Boshara, Ray and William Emmons, *AFTER THE FALL: Rebuilding Family Balance Sheets; Rebuilding the Economy* (May 2013), 1. INTRODUCTION, Center for Household Financial Stability: Federal Reserve Bank of St. Louis < http://www.stlouisfed.org/publications/ar/2012/pages/ar12_2a.cfm > Accessed on April 1, 2014

played a critical role; housing has always been an important driver of the business cycle[140]. And, due to the bursting of the housing bubble, that driver has been absent, with a vengeance, over this recovery.

As Fed Chair Janet Yellen said in her May Congressional testimony, "The recent flattening out in housing activity could prove more protracted than currently expected, rather than resuming its earlier pace of recovery."[141] There are several reasons why it may be more protracted than expected. First, without the exotic mortgages of the bubble era, homes are not as affordable as they appear, and mortgage rates have been going up since the Fed began its tapering program. Also, the student-loan debt burden is keeping a lot of would-be homebuyers off the market[142]. Further, there are still a number of homeowners that have negative equity, or near negative equity, despite the decline in those who are under water—and, there has been significant improvement[143]. But, given these, and other factors, what drove the "recovery" in the first place? The answer seems to be: investors, and not typical homebuyers. When home values bottomed out and started to rise in 2013, as sales picked up, much of it was driven by investors buying homes at fire-sale prices to hold onto and rent out, profiting from the rental income. However, rising interest rates made such investments less profitable[144]. By the summer of 2013, investors began retreating, and that coincides with the deceleration and decline in the housing indicators discussed above. By 2014Q1, mortgage lenders originated just $235 billion in mortgages, the weakest production quarter in 14 years[145]. As a consequence, there may not be enough demand from ordinary buyers to support price gains throughout 2014.

Is Connecticut's housing sector following the national trends? Is it a driver or a drag on the State's Economy? Connecticut certainly did not participate in the housing bubble to the extent

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[140] Leamer, Edward E., *Housing and the Business Cycle* (August 3, 2007) SYMPOSIUM-FRBKC: Jackson Hole, WY.
[141] Newman, Rick, *Why the housing market is suddenly struggling* (May 8,2014) THE DAILY TICKER < http://finance.yahoo.com/blogs/daily-ticker/why-the-housing-market-is-suddenly-struggling-201005280.html > Accessed on May 8, 2014.
[142] ibid
[143] Look up reference.
[144] ibid and Olick, Dianna, CNBC, March 3, 2014)
[145] l Muolo, Pau, Mortgage *Bankers Continue to Shed Jobs, Industry Lost 4,500 Positions in March* (April 2014) IMF http://www.insidemortgagefinance.com/imfnews/1_344/daily/mortgage-lenders-shed-more-workers-in-march-1000027129-1.html > Accessed on May 9, 2014.

that the epicenter states did. At the peak of the fallout from the bubble, 70.51% of Nevada's houses sold at a loss in June 2012[146]. Even surrounding states had a higher percent of homes selling for a loss. In March 2009, 60.33% of homes in Massachusetts sold at a loss, and for Rhode Island it peaked at 64.65% in March 2012[147]. Connecticut's peak was in March 2012 when 45.25% of its homes sold for a loss. However, Massachusetts and Rhode Island are recovering more quickly. Though the percent of homes selling at a loss has been falling since the peak, by March 2014, 31% of Connecticut's homes still sold for a loss, making the state the sixth highest of the 36 states and the District of Columbia that Zillow had data on[148]. This put Connecticut ahead of Massachusetts (30%) and Rhode Island (29.7%), and far above New York (17.5%). Further, in a study recently released by the HAAS Institute at the University of California, of the cities, with metro areas with a population of one million, ore more, Connecticut had two cities that ranked in the top ten cities with the highest percent of homeowners with a mortgage, underwater. Number one is Hartford, with 56% of homes under water, and tenth is Bridgeport, with 42% underwater[149]. So even though the housing bubble was less severe in Connecticut, the State seems to be taking longer to recover from it.

As has been emphasized throughout this outlook is the importance of housing as a driver of the business cycle. Not just over this cycle, in which housing took front-and-center in its importance in economic activity, but over all business cycles, housing has played a critical role, whether when going into recession, or coming out of one. This point was emphasized by Edward Leamer in his presentation at the Kansas City Fed's Jackson Hole Conference in 2007, and in his paper, *HOUSING IS THE BUSINESS CYCLE*[150]*:*

> The good news is that I am not a macro-economist. That frees me from the heavy conceptual burdens that most macro economists seem to carry. It allows me to conclude that Keynesian thinking, monetarism, rational expectations and real business cycles all suffer from the same problem – too much theory and not enough data. In particular, none of these comes to grips with the role of housing in modern US recessions[151]

[146] Zillow Research Data < http://www.zillow.com/research/data/ > Accessed on May 8, 2014, and Author's calculations.
[147] ibid.
[148] ibid
[149] Underwater America, (May 2014) HAAS Institute: University of California-Berkeley, p. 14.
[150] Leamer, Edward E., HOUSING IS THE BUSINESS CYCLE (September 2007) National Bureau of Economic Research: Cambridge, MA.
[151] ibid, p. 1.

Housing and Construction are important drivers of the Business Cycle, and their strong multiplier-effects are not there for this recovery. This is especially critical over this recovery, not just because a housing-bubble bust was an important cause of the recession and crisis, but also because, due to political gridlock, after 2010, Fiscal Stimulus of the economy has been off the table. With Fiscal Stimulus and housing both out of the picture, what we have been left with is the weakest recovery in the Post World War II Era. And, particularly, with regard to housing, housing plays several distinct and critical roles in the economy with each role generating its own independent and distinct set of multiplier effects on output, income, and employment.

Housing straddles, at least, three separate markets:

- ASSET MARKET: Housing is an asset and the construction and sale of structures generates increases in construction activity, including increased income and jobs.

- PROPERTY MARKET: The activity in the Property Market where living space is demanded and supplied generates a separate set of increases in jobs and income.

- DURABLE-GOODS CONSUMPTION: Housing is also a Durable Good, which yields a stream of services over multiple time periods. Further, the consumption of housing services generates the consumption of *complementary goods and services*. This produces another set of independently generated multipliers as homeowners purchase furniture, appliances, landscapers,. And other goods and services connected to homeownership.

It is because housing plays these critical roles in driving aggregate spending, and that those generators of spending have been missing from this recovery, the following outlook and forecast for Connecticut Employment for 2014 and 2015 is directly dependent on what happens to the housing market, both nationally, and of course, within Connecticut itself. And, according to Zillow's *Real Estate Market Reports* released on July 21, 2014, at the current rate of recovery, national home prices will not return to pre-bust levels until the first quarter of 2017. For some regional and local markets, it would be even later.

B. THE OUTLOOK FOR CONNECITUT'S JOB-GROWTH: 2013Q4-15Q4

So what are the implications for Connecticut's employment outlook to 2015Q4? A critical clue to the answer to that question lies in the U.S. jobs market since Connecticut is more closely tied to the national employment trends in the 21st Century then it was over the last two decades of the 20th. A crucial indicator for providing a clue as to the state of aggregate demand, as reflected in the derived demand for labor to produce the goods and services in order to fill the direct demand for businesses' products, is the Job Openings and Labor Turnover Survey (JOLTS) from the U.S. Bureau of Labor Statistics (BLS).

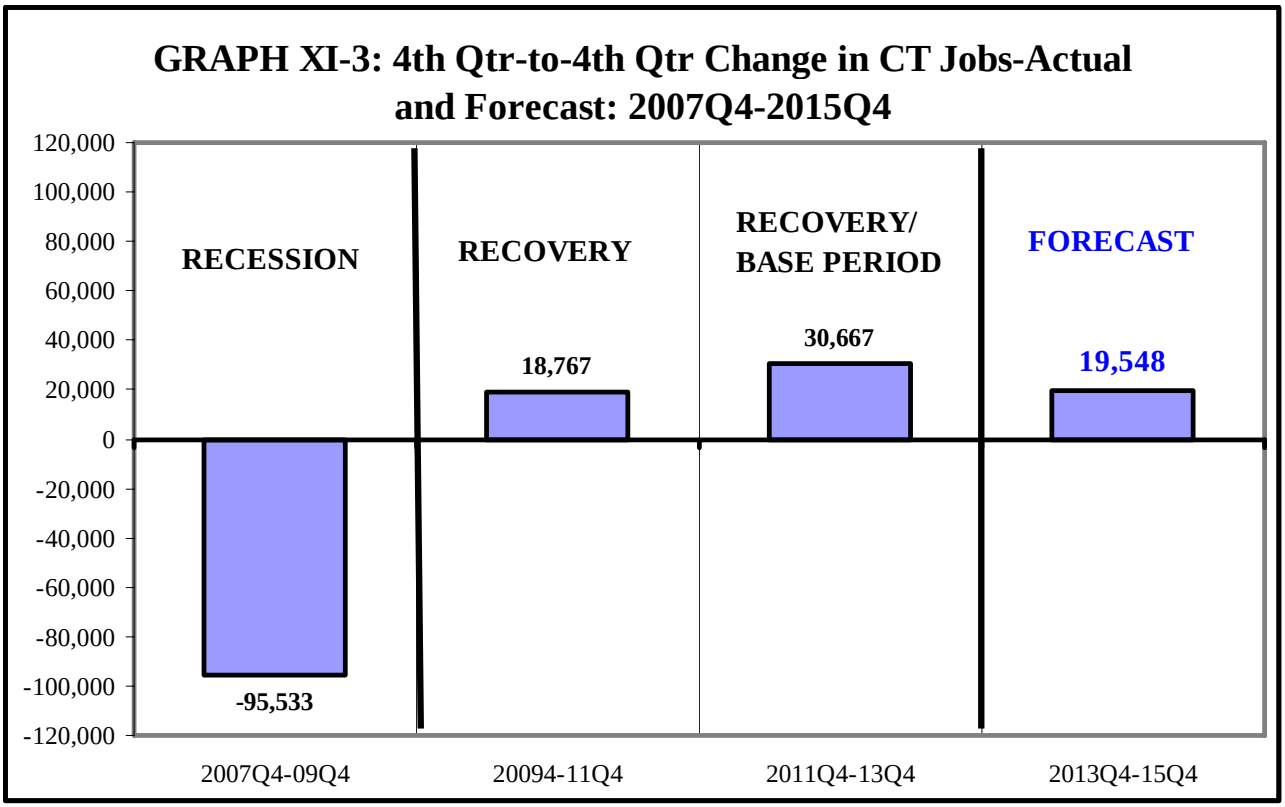
The weak aggregate demand, and consequent weak demand for labor over this recovery, is clearly reflected in the discussion of the JOLTS data above, in Section VII, and depicted in Graph VII-3 (see Section VII, above). As of March 2014, there were still only 38 JO's for every 100 unemployed (and, that was down from 39 in February). However, by June, the number of JO's had jumped to 47. Though certainly above the low of 15, in July 2009, over the recent recession, and finally above the previous recession's low of 34 in September 2003, it is still far below the previous expansion's peak of 69 in May 2007. Again, the questions arises as to just where we are on the cycle as 2014 passes its halfway point. If the 9-point jump from March to May in JO's continues, and if Hires keep pace, the clearly mid-2014 is the inflection point many are talking about, and the economy is on a trajectory of sustained, stronger growth. On the other hand, if the number of JO's per 100 Unemployed stalls then it may be a continuation of the fits-and-starts of this, up-to-now, weak recovery. Finally, in the worst case, if 2nd Quarter GDP also shows a decline, then the economy could be at a turning point in mid-2014. Whichever trajectory the U.S. Economy is on, as noted in the introductory remarks to this sub-section, it will strongly determine the trajectory of Connecticut's Economy, over the 2013-15, Forecast Horizon.

Top-Line Forecast: 2013Q4-2015Q4.

The forecast for Connecticut Employment is in conformance with the requirements by the U.S. Employment and Training Administration (ETA) that they not only forecast employment eight quarters ahead, under the Short-Term Industry Projections Program (STIP), but they are also used inputs into the Short-Term Occupational Forecasts, which means that they are projected on a fourth-quarter-to-fourth quarter basis. Therefore, the Short-Term Connecticut Employment

Forecasts presented, as follows, are on a fourth-quarter-to-fourth quarter basis, and forecast Connecticut Employment eight quarters, or two years ahead, with a Base Period, for the current forecast, of 2013Q4, and a Forecast Horizon of 2015Q4.

Given the pick-up in U.S. job-growth from March on, as well as the up-tick in some other indicators, the U.S. Economy may very well gather strength in the second quarter to compensate for the depressing effects of the harsh winter in the first quarter. And, after steep losses in January, Connecticut's Non-Farm Employment has had five straight months of growth. However, the forecast assumes that if the stronger growth in 2014Q2 is driven by a bounce-back from the effects of the harsh winter in the first quarter, then growth may very well begin to slow again going into the third and fourth quarters, which would temper the growth for all of 2014. Given the recent slowing in housing activity, which appears to have begun in the summer of 2013, to continue, interest rates on the rise, and no active fiscal policy on the horizon, in conjunction with a slowing housing sector, not to mention that 2014 is an election year (for both Congress, and for Governor at the State level), the baseline forecast for Connecticut employment over the eight-quarter 2013Q4-2015Q4 Period expects a slowing of Connecticut job-growth over the forecast horizon, especially, given, as noted above, that the State's housing market is taking so long to recover.



Graph XI-3 presents the eight-quarter recession period (2007Q4-09Q4), the two eight-quarter recovery periods (2009Q4-11Q4 and 2011Q4-13Q4, which also serves as the Base Period for the forecast), and the eight-quarter forecast period (2013Q4-15Q4). After accelerating from just under 19,000 over the 2009Q4-11Q4 Period, Connecticut's job growth accelerated to nearly 31,000 between 2011Q4 and 2013Q4. The forecast projects that the State's job growth will slow to just under, 20,000 between 2013Q4 and 2015Q4.

Scratching Below the Surface

Table XI-1 presents the 2013Q4-2015Q4 Connecticut Forecast by the nine major industry sectors. The levels and changes shown in Table XI-1 are exactly the same periods depicted in Graph XI-3, except at the major-sector level of detail. Panel (A) shows the 4th quarter employment levels and Panel (B) presents the 4th Quarter-to-4th Quarter changes in employment. Graphs XI-4A and XI-4B rank the contribution of each major sector to Connecticut's job-changes over the Base Period, 2011Q4 to 2013Q4 (Graph XI-4A) and the Forecast Period, 2013Q4 to 2015Q4.

From Graphs XI-4A and XI-4B, the same four major sectors that contributed the most to Connecticut's job growth over the 2011Q4-2013Q4 Base Period are the same four major sectors that are expected to make the most major contributions to job growth over the 2013Q4-2015Q4 Forecast Horizon. However, the rankings change slightly. Education and Health Care and Social Assistance (Ed-HCSA) is expected to make the biggest contribution over the 2013Q4-2015Q4 Forecast Horizon, it was Professional and Business Services that made the largest contribution over the 2011Q4-2013Q4 Base Period. Leisure and Hospitality, which made the second-largest contribution over the Base Period, is expected to make the second-largest contribution over the Forecast Period too.

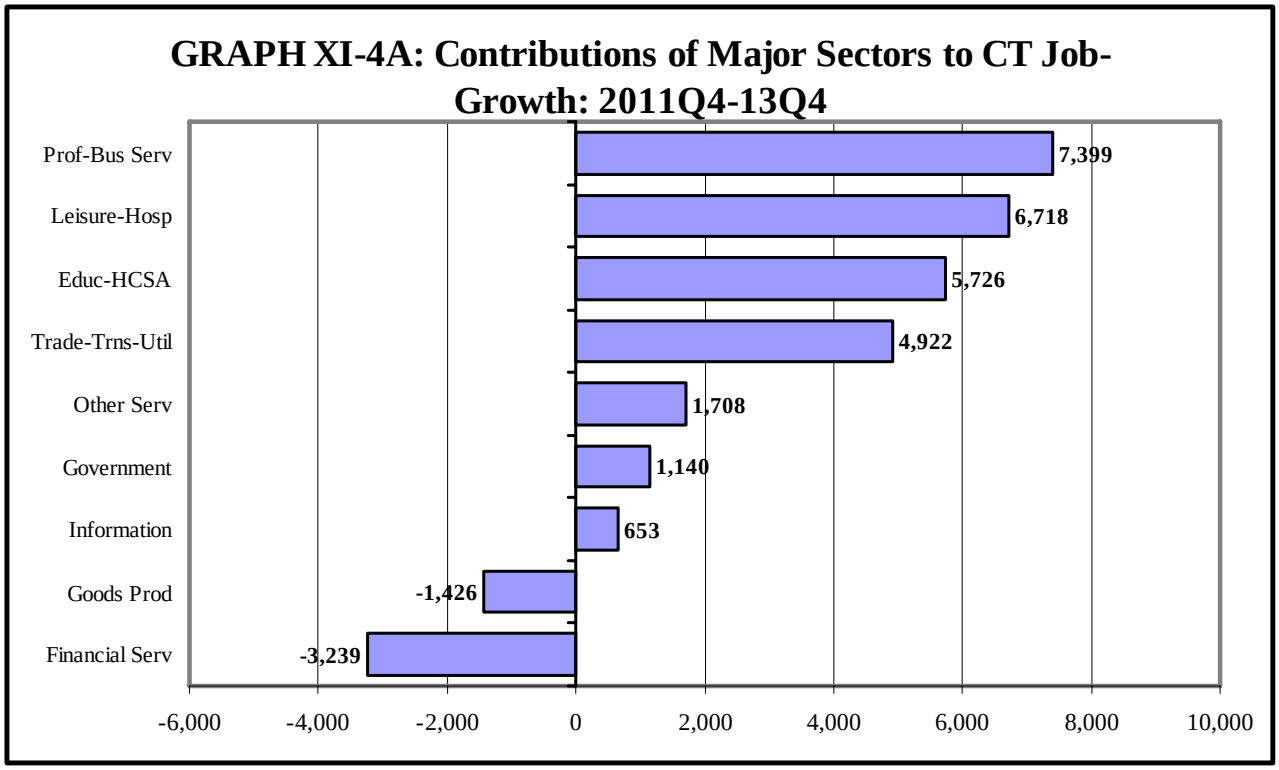
Two major sectors subtracted jobs over the Base Period: Goods Producing and Financial Services. Over the Forecast Period, it is expected that four major sectors will subtract jobs from Connecticut's Economy: Government, Information, Goods Producing, and Financial Services.

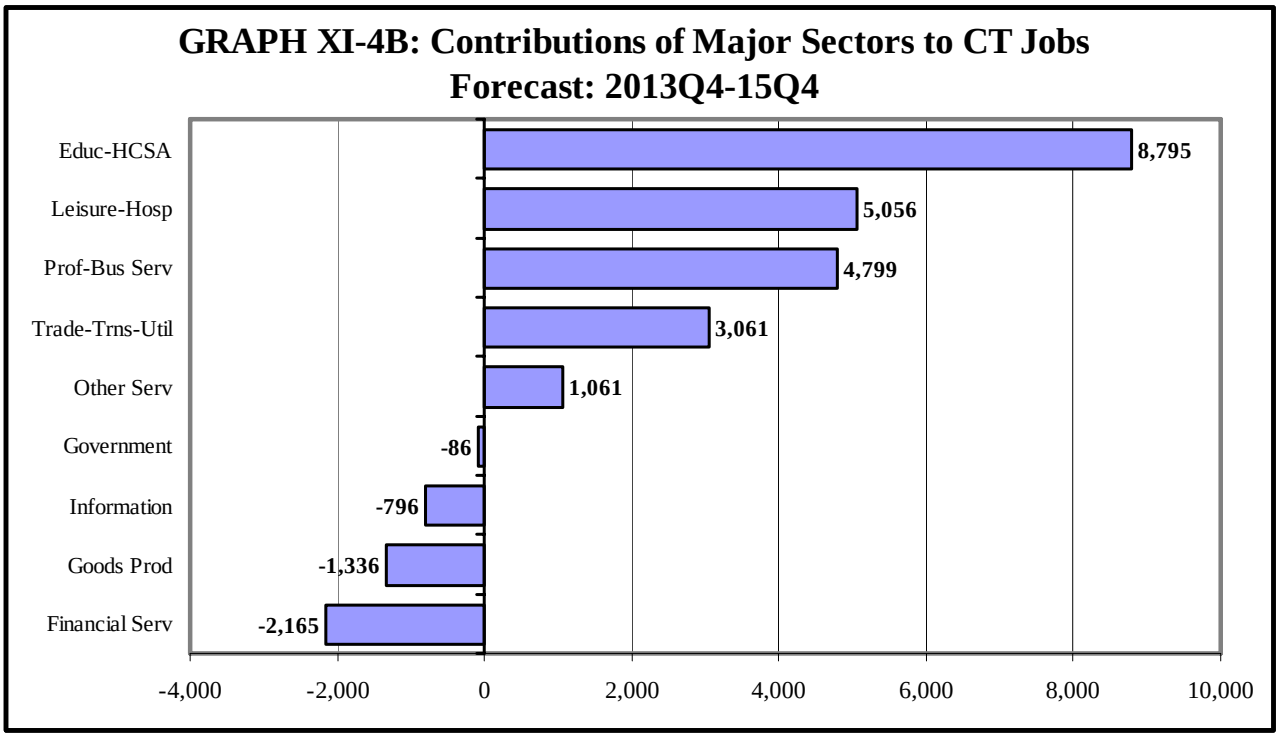
TABLE XI-1 : CT. 4th Qtr-to-4th Qtr Job-Growth Actual and Forecasts: 2007-15

CT 4th-Quarter Employment Levels						CT 4th Qtr-to4th Qtr Job-Changes			
	U.S./CT. RECESSION		U.S./CT. RECOVERY		FORECAST	RECESSION	U.S./CT. RECOVERY		FORECAST
Major Sector	**2007Q4**	**2009Q4**	**2011Q4**	**2013Q4**	**2015Q4**	**2007Q4-09Q4**	**20094-11Q4**	**2011Q4-13Q4**	**2013Q4-15Q4**
Total Non-Farm	**1,723,100**	**1,627,567**	**1,646,333**	**1,677,000**	**1,696,548**	**-95,533**	**18,767**	**30,667**	**19,548**
PNC's	14,615	14,647	16,002	*22,728*	*24,032*	32	1,355	6,726	1,305
Total Non-Agri	**1,708,485**	**1,612,920**	**1,630,331**	**1,654,272**	**1,672,516**	**-94,937**	**17,320**	**23,601**	**18,388**
Goods Prod	261,873	221,030	220,203	218,776	*217,440*	-40,843	-827	-1,426	-1,336
Trade-Trns-Util	326,168	303,058	305,182	310,104	*313,165*	-23,110	2,124	4,922	3,061
Information	38,133	34,020	31,285	31,938	31,142	-4,113	-2,735	653	-796
Financial Serv	143,803	135,680	132,320	129,081	126,916	-8,123	-3,360	-3,239	-2,165
Prof-Bus Serv	210,499	189,340	200,802	208,201	213,000	-21,159	11,463	7,399	4,799
Educ-HCSA	433,524	444,969	452,278	458,004	*466,799*	11,445	7,309	5,726	8,795
Leisure-Hosp	155,678	150,690	155,007	161,726	166,782	-4,988	4,318	6,718	5,056
Other Serv	58,648	56,556	57,197	58,905	59,966	-2,092	641	1,708	1,061
Government	79,334	77,380	75,768	76,907	76,821	-1,954	-1,612	1,140	-86
Unknowns	826	198	289	629	*485*	-628	91	340	-144

U.S. BLS, CTDOL-Research, and Author's calculations

PNC's = Presumed Not Covered in the CES Survey.


GRAPH XI-4A: Contributions of Major Sectors to CT Job-Growth: 2011Q4-13Q4
Prof-Bus Serv
Leisure-Hosp
Educ-HCSA
Trade-Trns-Util
Other Serv
Government
Information
Goods Prod
Financial Serv
7,399
6,718
5,726
4,922
1,708
1,140
653
-1,426
-3,239
-6,000
-4,000
-2,000
0
2,000
4,000
6,000
8,000
10,000


GRAPH XI-4B: Contributions of Major Sectors to CT Jobs Forecast: 2013Q4-15Q4
Educ-HCSA
Leisure-Hosp
Prof-Bus Serv
Trade-Trns-Util
Other Serv
Government
Information
Goods Prod
Financial Serv
8,795
5,056
4,799
3,061
1,061
-86
-796
-1,336
-2,165
-4,000
-2,000
0
2,000
4,000
6,000
8,000
10,000

Again, from Table XI-1, the major sector that is expected to contribute the most to Connecticut's job growth over the forecast horizon is Education-Health Care and Social Assistance (Ed-HCSA). After a slowdown in growth in 2011Q4-13Q4 from the 2009Q4-11Q4 pace, job growth in Ed-HCSA is expected to pick up somewhat over the forecast period. Of the nearly 20,000 additional new jobs, Ed-HCSA is expected to contribute 8,795 new jobs, or 45% of the growth. There will be two principal drivers of this major sector's growth: Social Assistance from the HCSA sub-sector, in particular, Individual and Family Services (NAICS Industry 6241), and Ambulatory Care (NAICS Industry 621) in the Health Care sub-sector, which will account for more than 70% of the growth. It, in turn, is being driven by the strong job growth in Services for the Elderly and Those with Disabilities (NAICS 62412), which is expected to continue over the forecast horizon, adding 3,624 new jobs. Ambulatory Care (NAICS 621), in the Health Care sub-sector, which includes physicians' practices, dentists' practices, and other medical practitioners, is also expected to continue its strong growth contribute 2,722 of the expected new jobs in the Ed-HCSA major sector.

Leisure-Hospitality is expected to contribute the second greatest number of jobs over the forecast period (+5,056). This is a slight slowdown from its 2011Q4-13Q4 pace, but still strong growth. From the beginning of the recovery this major sector's job growth has been driven by the Accommodation and Food Services sub-sector, and, in particular, Food Services and Drinking Places (NAICS 722), which, in many quarters, since the beginning of the recovery has accounted for virtually all of the growth in Accommodation and Food Services, and even the entire the Leisure-Hospitality major sector.

The Professional and Business Services (Prof-Bus Services) major sector has experienced the largest deceleration in growth of the major sectors that have added jobs over Connecticut's current recovery. After subtracting 21,159 jobs from the State's Economy (the third largest subtraction by a major sector behind Goods Producing and Trade-Transport-Utilities), Prof-Bus Services then came roaring out of the gate over the first eight quarters of recovery by adding 11,463 net, new jobs between 2009Q4 and 2011Q4, by far the biggest gain of any major sector. That pace then decelerated to 7,399 between 2011Q4 and 2013Q4, and the forecast projects that that pace will slow further to 4,799 over the 2013Q4-15Q4 Forecast Period. The industries

within this major sector that seem to drive this volatility are Computer Systems and Design (NAICS 5415) under Professional and Technical Services, and Employment Services (NAICS 5613), which includes Temporary Help, under Administration-Support and Waste Management. These two industries, under these two sub-sectors, have displayed large amplitudes over the cycle, and into the recovery. Both of these industries grew strongly over the first four quarters of recovery (2009Q4-2010Q4), but have not grown as strongly since. And, the forecast expects their growth to remain modest, at best, over the forecast horizon.

Trade-Transport-Utilities is expected to add 3,061 jobs over the 2013Q4-15Q4 Forecast Period. This is stronger than the growth of 2,124 jobs added over the 2009Q4-2011Q4 initial recovery period, but not as strong as the 2011Q4-13Q4 base period in which Trade-Transport-Utilities added 4,992 net, new jobs. The growth is expected to be fairly evenly split between Wholesale and Retail Trade, with a slight decline in Utilities. Further, all of the growth will continue to be in both the Consumer Durables and Non-Durables, with Non-Store Retailers continuing a flat to modest decline in jobs.

The two major sectors projected to make significant subtractions from Connecticut's job growth between 2013Q4 and 2015Q4 are Financial Services (-2,165) and Goods Producing (-1,336). Three industries are expected to account for virtually all of the losses: Insurance (NAICS Industry 524, -867), Securities, Commodities, and Brokers (NAICS Industry 523, -844), Credit Intermediation (NAICS Industry 522, -303). Real Estate is projected to have modest losses.

The Goods Producing major sector is projected to shed 1,336 jobs between 2013Q4 and 2015Q4. Offsetting the losses in the Manufacturing sub-sector, over the forecast horizon, is growth in the Construction sub-sector, which is expected to continue to add jobs as it has since job losses turned around after 2011Q4. Virtually all of the 1,108 net, new jobs over the Forecast Period are expected to be in Specialty Trades Contractors (NAICS Industry 238, +1,478), which continues the trend since the turn-around. Construction of Buildings (NAICS Industry 236) is projected to shed 379 jobs. Though Commercial Building Construction is expected to add jobs, the subtraction from Residential Construction is expected to result in a net decline in jobs over the 2013Q4-2015Q4 Forecast Period, at the three-digit industry level.

Driving all of the losses in the Goods Producing major sector is Manufacturing. Manufacturing is expected to lose another 2,418 jobs between 2013Q4 and 2015Q4. The Durable Goods Sub-Sector is projected to eliminate 1,465 jobs, and employment is expected to decline by 953 in Non-Durable Goods. Although nearly half of all of Connecticut's merchandise exports, in 2013, were in Transport Equipment (NAICS Industry 336), that has not necessarily translated into net, new job growth for the State. Save 2010-11, Transport Equipment has sustained net job losses in every other 4th quarter-to-4th quarter period since the 2008-09 Period. This trend is expected to continue as the forecast projects the Transport Equipment Industry to shed another 1,861 jobs between 2013Q4 and 2015Q4. In addition, four other Durable Goods industries are expected to each have job-losses of between 500 and 1,000 over the Forecast Period. The expected losses in Non-Durable Goods are spread over a number of industries, but, in particular, employment in the Printing and Related Industries (NAICS Industry 323) is projected to decline by 632.

C. RISKS TO THE FORECAST

If there is a significant deviation from the assumptions behind the baseline-forecast, then the baseline will either under-forecast Connecticut's job growth, or over-forecast Connecticut's job-growth between 2013Q4 and 2015Q4, the forecast horizon. In other words, there are both *Positive* and *Negative* risks to the forecast. Factors that result in employment growing faster than forecasted over the forecast horizon represent a *Positive Risk* to the forecast. *Negative Risks* are those factors that cause job growth to fall below what is forecasted.

As with any contemporary forecast, critical to this one is housing. And, the biggest Positive Risk to the forecast is, in fact, housing. The forecast assumes (as noted above), that there could be a second-quarter burst of growth to compensate for the suppressed economic activity in the first quarter, due to the long and harsh, winter. But, that growth should then return to a slower pace over the third and fourth quarters. However, if the retreat of investors is followed by the entry of "normal" homebuyers, in conjunction with the return of warmer weather, and the housing market gets its "second wind" then housing would provide a bigger boost to spending than anticipated, and growth could be stronger than expected in the last half of 2014, making the forecast too pessimistic.

The biggest Negative Risk to the forecast is potentially the expiration of the federal transportation bill and the impending insolvency of the Highway Trust Fund. If Congress does not act, the highway and mass-transit programs would take a 92% cut[152]. Authorization for transportation projects expires in September. If there is no bounce-back in growth in the second quarter, then the U.S. Economy would slow, but, if in addition, the transportation fund dries up, then the hit to the economy would be significant. This is an election year, and that usually means policy stalemate, and political deadlock has already prevented meaningful action on the economy. And, in fact, Connecticut has a Gubernatorial Election this year. Further, continued rising gasoline prices, which act as a regressive tax increase, and possible shocks from China's financial situation could bring down growth to rate lower than that assumed by the forecast. And, the EU may already be in deflation, which could generate another debt crisis[153] But, this has a direct impact on Connecticut, as more than one-quarter of the State's exports went to the EU in 2013. Finally, how the Fed's tapering and consequent rising interest rates effect the market will have implications for economic growth, and could make the forecast overly optimistic.

[152] Natale, Patrick, *Failure to pass long-term highway bill could bring economy to a halt* (February 6, 2014) THE HILL < http://thehill.com/special-reports/transportation-february-6-2014/197603-failure-to-pass-long-term-highway-bill-could > Accessed on May 12, 2014.
[153] Evans-Pritchard, Ambrose, *How Europe is incubating an even bigger debt crisis by letting deflation take root* (April 4,2014) THE TELEGRAPH < http://business.financialpost.com/2014/04/04/how-europe-is-incubating-an-even-bigger-debt-crisis-by-letting-deflation-take-root/ > Accessed on May 12, 2014