



Fizzle?

Whether the Weak Recovery?

The Connecticut Economic Outlook: August 2010

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Will the Weak Recovery Fizzle?

Dramatic revisions in federal economic data show that the Great Recession was significantly worse than previous thought; thus Connecticut's economy probably has been weaker than previously recognized. More critically, the Federal Reserve has revised its outlook for future growth down; some private sector economists have lowered their forecast for national growth below 2%. Now persistently high filings for unemployment benefits domestically and cooling growth in China, a weakening Euro, and a burgeoning U.S. trade deficit internationally spell more trouble. These external developments argue that the weak recovery that Connecticut has enjoyed may fizzle out, with job losses re-emerging in the near future. Even more optimistic assumptions about national and state growth offer little hope for significant gains in jobs, leaving state employment well below its previous peak. And the threat of significant public sector reductions, resulting from the massive deficits the state faces over the next few years, would likely thwart any major recovery in employment. The central challenge is whether state policy initiatives will change this trajectory, a challenge to which the May CCEA Outlook spoke directly.

There is a small silver lining to the state's economic performance. An in-depth analysis of job creation and loss in Connecticut over the past decade offers a more nuanced picture, one with some good news. Though Connecticut has seen no aggregate job growth in two decades, a detailed analysis of available job data suggests Connecticut regained higher wage positions and saw a contraction in lower wage positions in the last few years. Previous analysis that looked at long-term jobs shifts since 1990 found a loss of higher wage jobs; but the pattern reversed during the past decade as Connecticut employment opportunities improved in many higher-wage categories. But the data also show worrisome losses in critical, high-pay occupations--e.g., Chief Executive Officers (CEOs), Lawyers, and General and Family Practitioners—which point to serious issues for the long term health of both the business sector and the quality of life in Connecticut. These findings also bring into sharp focus the difficulty, given currently available data, in understanding both the evolving employment picture in the state and the dynamics of its business base.

Introduction

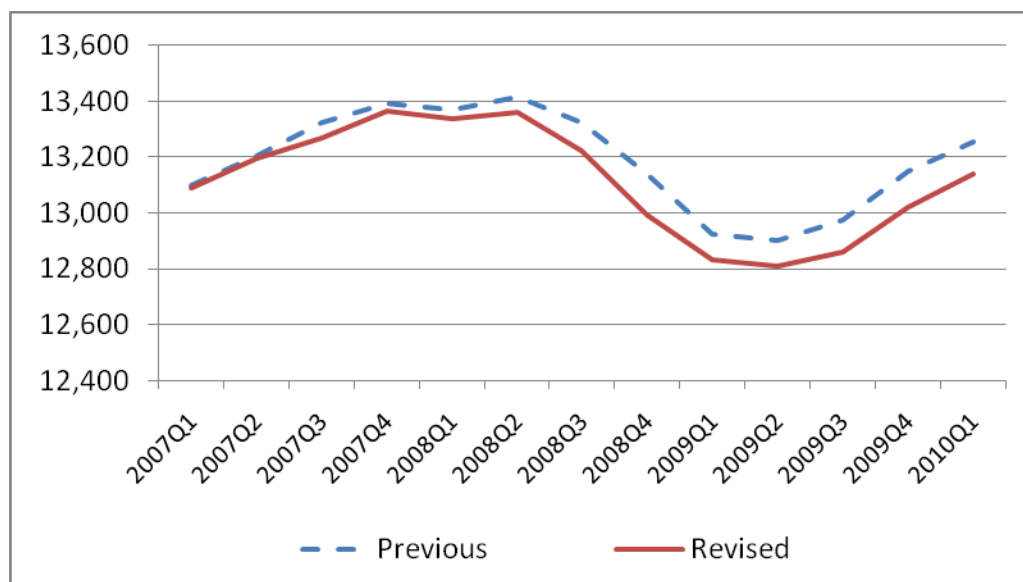
Ben Bernanke recently testified that the national economic picture was “unusually uncertain.” Driving that point home, the Bureau of Economic Analysis (BEA) made unusually large revisions to its data on National Real Gross Domestic Product (RGDP) from 2007Q1 to the present that directly impact our understanding of Connecticut’s economic performance and this CCEA/UConn Outlook. The BEA revisions demand that first we reconsider previous analyses before discussing the current forecast.

Reconsidering the record

RGDP Revisions

National adjustments: Chart 1 shows BEA’s RGDP revisions over the last ten quarters; these revisions are particularly sharp for the last six quarters. BEA’s quarterly adjustment for 2008Q4 of \$148 billion was the largest; BEA also reduced national output by more than \$100 billion for each of the three most recent quarters, through the first quarter of 2010.

Chart 1: RGDP Revisions (Chained Billions 2005 \$ SA)



Source: <http://www.bea.gov/national/nipaweb/SelectTable.asp?Popular=Y> July 30, 2010.

In a remarkably important study relying on RGDP estimates made before BEA released its revisions, Blinder and Zandi demonstrate that the dramatic policy interventions of the Bush and Obama administrations (TARP and the stimulus package) averted a virtual economic melt-down. The Blinder-

Zandi simulations, using Moody's Analytics economic model, found both fiscal and monetary policy contributed to averting a much worse economic contraction; combined, the two policy components were more effective than either would have been in isolation. Thus Blinder and Zandi declare that, for fiscal policy:

The *differences* between the baseline and the scenario based on no fiscal stimulus ... represent our estimates of the sizable effects of all the fiscal stimulus efforts. Because of the fiscal stimulus, real GDP is about \$460 billion (more than 6%) higher by 2010, when the impacts are at their maximum; there are 2.7 million more jobs; and the unemployment rate is almost 1.5 percentage points lower.¹

For monetary policy, they conclude:

By 2011, real GDP is almost \$800 billion (6%) higher because of the policies, and the unemployment rate is almost 3 percentage points lower. By the second quarter of 2011—when the difference between the baseline and this scenario is at its largest—the financial-rescue policies are credited with saving almost 5 million jobs. ... The recession ends in the fourth quarter of 2009 and expands very slowly through summer 2010. Real GDP declines almost 4% in 2009 and increases only 1% in 2010 (see Table 7). The peak-to-trough decline in employment is more than 10 million. The economy finally gains some traction by early 2011, but by then unemployment is peaking at nearly 12%. The federal budget deficit reaches \$1.6 trillion in fiscal year 2010, \$1.3 trillion in FY 2011, and \$1 trillion in FY 2012.¹

In combination, they come to this powerful conclusion:

By 2011, real GDP is \$1.8 trillion (15%) higher because of the policies; there are almost 10 million more jobs, and the unemployment rate is about 6½ percentage points lower. The inflation rate is about 3 percentage points higher (roughly 2% instead of -1%). That's what averting a depression means.¹

Given the demonstrated impact of these policies, winding them down is just reason for concern and reveals risks inherent in the premature declaration of victory. The most recent data on unemployment filings, housing, retail sales, and consumer confidence all raise warning flags. And these concerns the looming possibility of massive public sector layoffs, now delayed if not averted by new federal intervention.

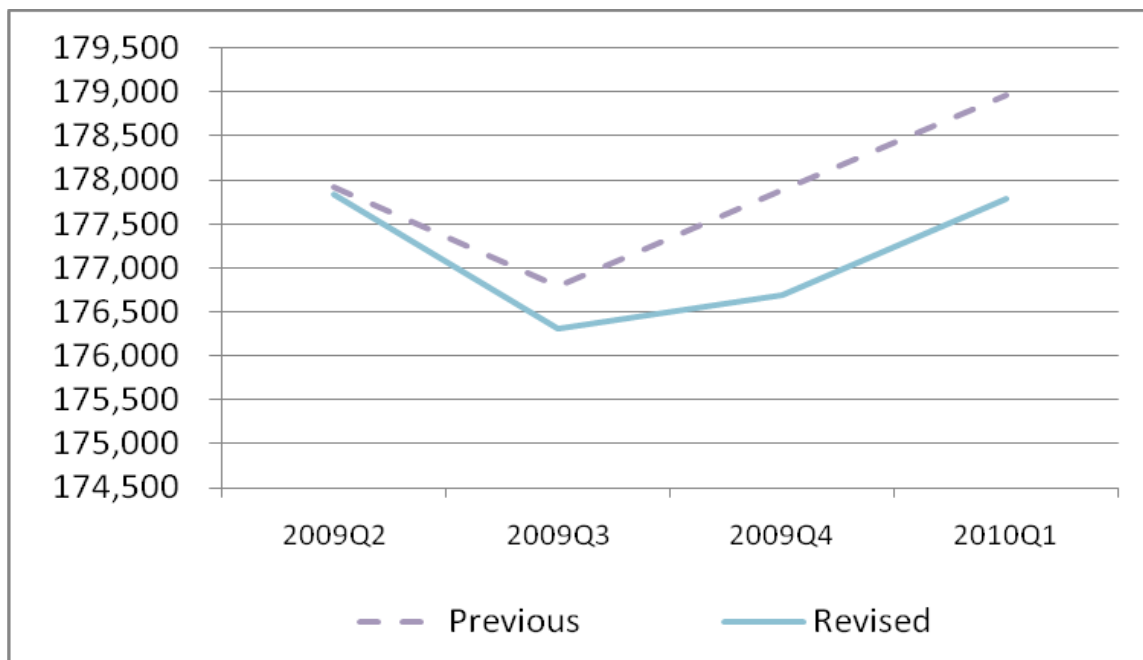
The challenge at the national level of driving employment recovery is daunting. A general rule of thumb is that RGDP must grow above 1.47% to generate private employment growth. Every additional one percent of RGDP growth above that benchmark will generate private employment growth of 0.997%. But this assumes public sector employment is also growing; with public sector employment constant RGDP gains below 1.76% will result in declining employment. And public sector contraction—already happening at an accelerating pace and likely to continue for at least two more years—raises the threshold for generating jobs even higher. So high, indeed, that the current consensus forecast barely exceeds it, and some anticipate growth in RGDP below 2%, which would translate into job losses.

¹ Alan S. Blinder, Rentschler Memorial Professor of Economics, Princeton University and Mark Zandi, Chief Economist, Moody's Analytics, *How the Great Recession was Brought to an End*, July 27, 2010, p. 7.

Connecticut Adjustments: Worse than expected national performance in recent years led CCEA to make parallel adjustments in its estimates of Connecticut’s real gross output (CTR GDP). Chart 2 shows these changes through the end of the second quarter of 2010.

CTR GDP estimates for the last quarter of the previous year and the first quarter of this are about \$1.18 billion lower than in the previous Outlook. While large, these adjustments are proportionately smaller—about two-thirds—of the national BEA revisions. In November, BEA will issue further revisions for 2007, 2008 and initial estimates for 2009, so we may see additional significant changes.

Chart 2: CtRGDP Revisions (Billions 2000# SA)



This steeper decline accompanied by solid national growth in 2010Q1 positions the economy to expand at a higher rate than anticipated in previous Outlooks. A scenario discussed later in this Outlook that assumes upward revisions to the 2010Q2 RGDP and slightly more rapid growth in estimated CtRGDP 2009Q1 to 2010Q2 re-enforces this perspective.

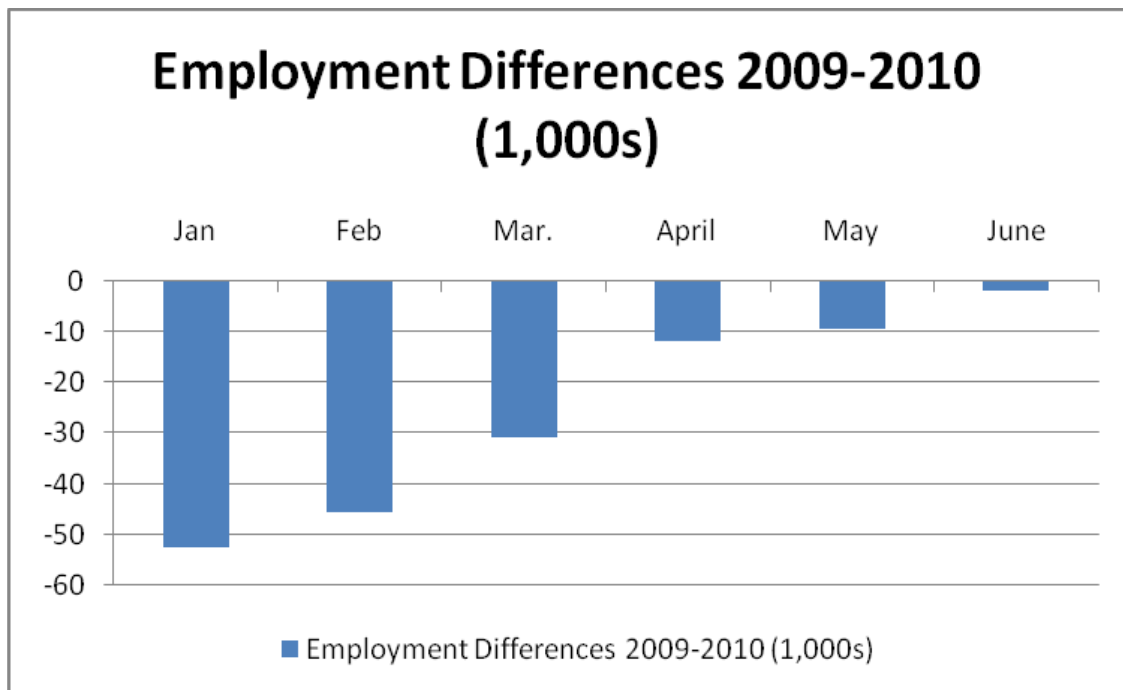
Connecticut Conditions:

Employment

Despite these adjustments, seasonally unadjusted employment for 2010Q2 was a little stronger than expected, reaching 1,628,000; adjusting for seasonal variation moves the number down to 1,620,000, about 100,000 below recent peak employment levels. This result leaves considerable room for sustained improvement. Connecticut's recent results are inflated by about 1,000 employees because of short-term employment by the Census and from the last remnants of federal fiscal incentives for private residential housing.

Chart 3 below indicates that monthly differences in seasonally unadjusted Connecticut non-farm employment from January to May in 2009 and 2010. During January 2010 there were 1,586,800 non-farm employees compared to 1,639,300 in January 2009, a gap of 52.5 thousand. Subsequent monthly data through preliminary figures for June 2010 reveal steady restoration of jobs, with the gap closing to just 1,700, with 1,638,600 thousand employed. But this is deceptive; seasonal employment in June exaggerates the health in labor markets. Seasonally adjusted (SA) employment for 2010Q2 remained at 1,620,000, still 90,000 - 100,000 shy of the previous peak. The Bureau of Labor Statistics confirmed this pattern at the national level, as recent data show in July showed 202,000 cuts in government employment from June to July, 155,000, including census workers, were federal, 10,000 worked for states, 37,000 worked for local governments. These results indicate that even with census set aside public sector cutbacks overwhelmed employment gains in the private sector. These July employment results underline the threat from premature closure of countercyclical fiscal policy.

Chart 3: Closing the Employment Gap: First Half of 2010 versus Same Months in 2009



As in the national economy, underlying productivity gains would reduce state private sector employment by 1.47% annually² unless offset by gains in RGDP and CtRGDP. Absent state policy interventions, a one percent increase in national RGDP will generally result in a 0.304% increase in Connecticut private sector employment. Similarly, a one percent increase in CtRDGP will improve Connecticut employment by 0.359%.

Because both national and state growth has a small percentage impact on Connecticut employment, Connecticut must generate higher rates of output growth than the nation to avoid declining employment. Connecticut needs to achieve a benchmark of 2.22% growth in each of RGDP and CtRGDP to increase state employment. Consistent with higher productivity and incomes in Connecticut than national averages, private sector Connecticut employment will only rise by 0.66% for every one percent that the combined RGDP and CtRGDP rise above the 2.22%. For example a 1.51% increase in both RGDP and CtRGDP above the 2.22% benchmark (i.e., growth of 3.73%) would yield a one percent growth in Connecticut private sector employment. If public sector employment kept pace with private sector employment, total employment would rise at the same rate.

If public sector employment stays constant or shrinks, then the benchmark to achieve employment growth rises. With public sector employment remaining constant, RGDP and CtRGDP would need to increase at 1.78% to stimulate employment growth in Connecticut. Public sector layoffs will raise the hurdle for job creation even further, and may contribute to an aggregate loss of jobs in the next two to three years as Connecticut confronts massive state deficits. The threat of such job losses underlines the potential role than unleashing the accumulated research and development tax credits Connecticut firms have earned—but can not now utilize—could have in thwarting such an outcome.

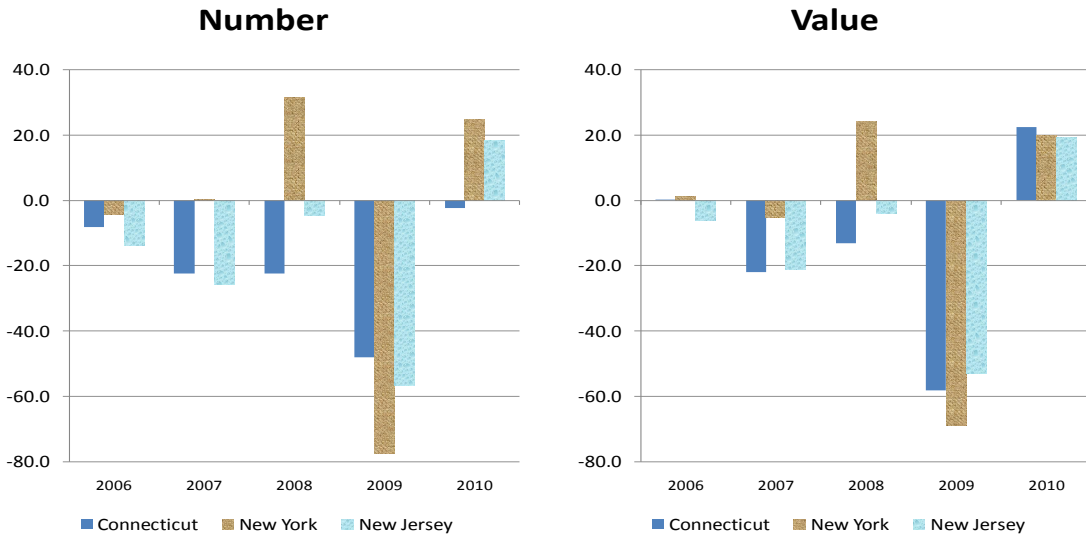
Housing

Private residential housing permits remain depressed. During the first six months of the year, Connecticut is the only Tri-state member (New York, New Jersey and Connecticut) to have had the number of housing permits decline for five successive years. During the first half of 2009, numbers and values of permits among in the three states contracted by more than 40%. New York was particularly hard hit with cuts in excess of 60%. Coming off these low bases, there has been a slight recovery in permits in both New York and New Jersey and in all three states in the value of permits, where Connecticut leads. Even this modest uptick is too tiny in any of the states to reach half the value of residential permits issued in 2008. Over the next several months, the end of federal tax incentives supporting purchases of homes will likely result in a weakening housing market.

² The coincident rates of growth in productivity for the nation and the state indicate that Connecticut's productivity advantage relative to the nation is being gradually eroded.

Chart 4:

Percentage Changes In Housing Permits First Six Months: Year-Year



In addition to falling permits, average house prices have been declining in reporting CT municipalities, as Table 1 shows, with the Hartford area starting with more modest prices and suffering the smallest decline. When prices are falling, the exact meaning of this data is not clear because average housing prices can really be falling or the mix of housing being sold is concentrated in smaller, less valuable units.

Table 1: Housing Price Declines by Connecticut Metropolitan Area

Metropolitan Area	Previous Peak	Decline (%)
Bridgeport-Stamford-Norwalk	2006Q2	-14.3%
Norwich-New London	2006Q4	-11.4%
Hartford-West Hartford-East Hartford	2007Q1	-8.1%
New Haven-Milford	2007Q1	-13.2%

Source: Federal Housing and Finance Agency.

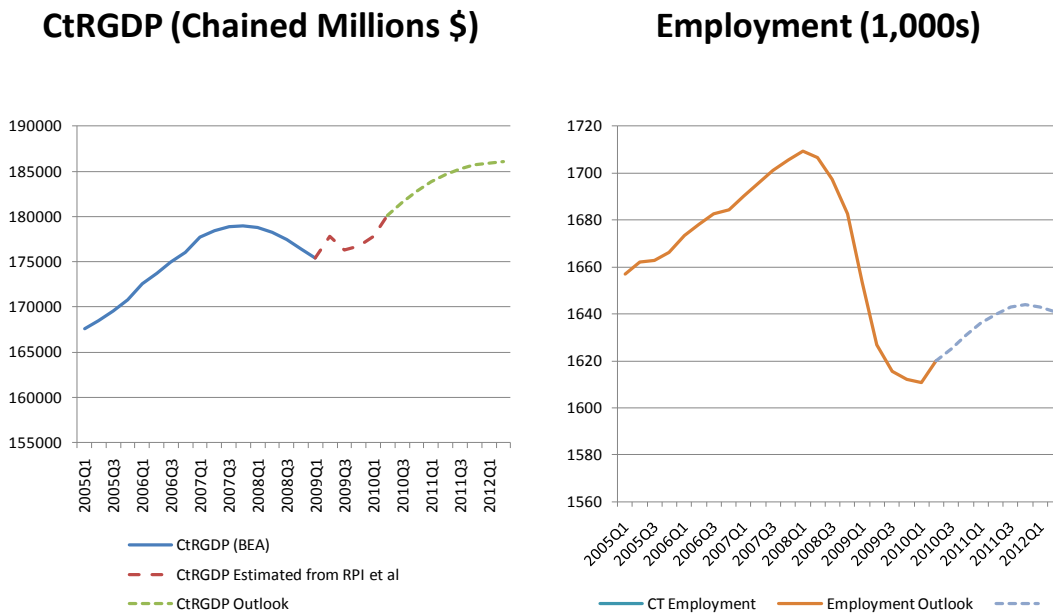
Outlook: 2010Q3 to 2012Q2

The discussion above provides the foundation for the base scenario in this Outlook, against which we contrast a more optimistic view. Given the above context, it is distinctly possible the fledging recovery will fizzle out. The Outlook starts with national RGDP growing at 1.7% for the next four quarters, but it

falls to 0.4% in the subsequent four. Adding to the misery, the number of seasonally adjusted housing permits in Connecticut continues to decline from 725 in 2010Q2 to 520 in 2012Q2. Under these conditions, CtRGDP follows the path shown in the first part of Chart 5, with growth rates over the next four quarters of 2.5% and over the final four of 0.7%. With this abnormally high CtRGDP growth rate relative to the nation, state seasonally adjusted employment growth remains sluggish, as depicted in the second part of Chart 5.

Chart 5: Connecticut Outlook

Base Case CtRGDP and Employment



In addition to these indicators of deteriorating economic performance, real manufacturing earnings fall slightly at about a dollar year, undercutting consumer capacity to turn the economy around.

This base case Outlook is predicated on the national recovery fizzling out. As Blinder's and Zandi's results indicate, the nation may avoid a double dip recession. National stimulus may come from:

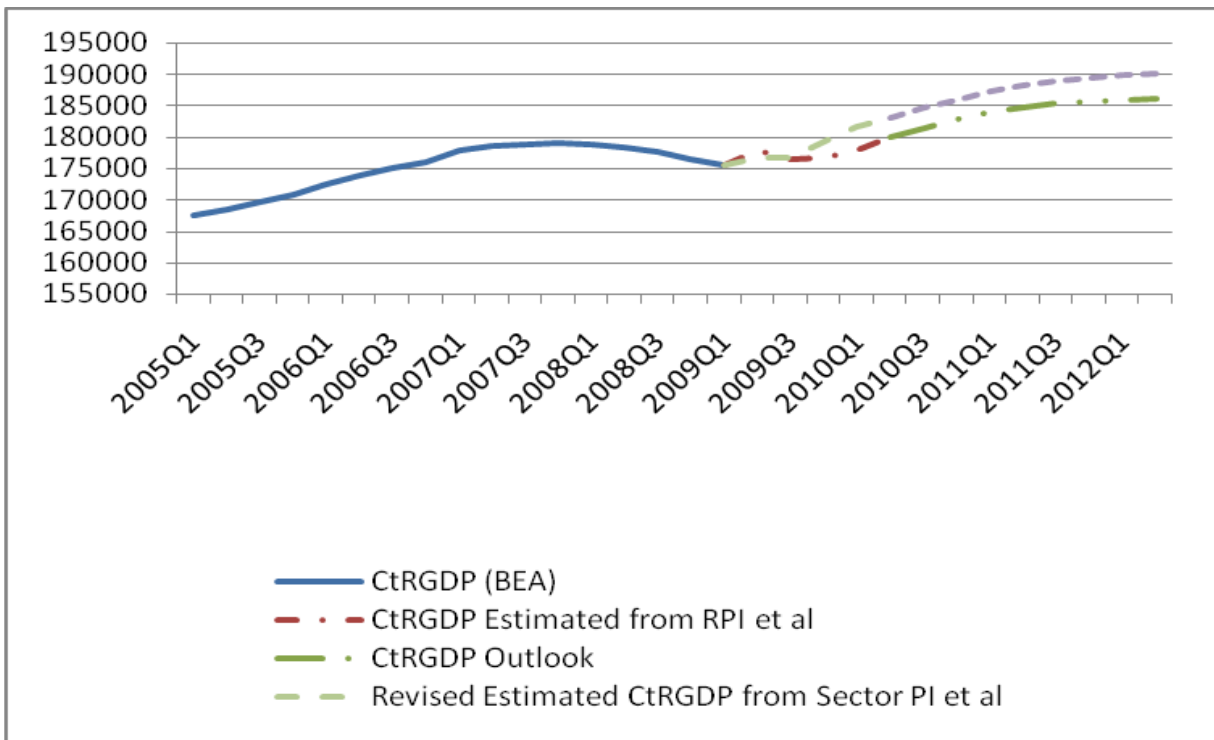
- Prolonged effects of recovery policies, as Blinder and Zandi suggest;
- Investing corporate and private savings in plant, equipment to adopt new and efficient technologies, leading to better than expected results;

- Elimination of outmoded constraints and regulations that are now inhibit growth;
- Accelerated processing of paper work and/or capitalizing on better information systems.

Remembering the size of revisions to preliminary RGDP outlooks, there is also room for the most recent modest quarterly growth to be adjusted upward, once more complete information becomes available. BEA's preliminary estimate of second quarter RGDP was made prior to earnings reports that exceeded expectations. In addition, our own extrapolation techniques applied among sectors yield higher CtRGSP estimates than that achieved on aggregate CtRGDP itself. For those reasons, CCEA ran a second, an Optimistic Case, based on national annual growth of 3.6% in the 2010Q2 and the generally higher CtRGDP series amounting to \$183 billion at annual rates in 2010Q2.

Chart 6 presents the impacts of these bullish revisions on CtRGDP in contrast with the Base case.

Chart 6: Optimistic and Base Case SA CtRGDP (Millions \$)



Starting the Outlook in 2010Q2 at \$3 billion above the Base Case leads to CtRGDP \$4 billion higher in the Optimistic Case relative to the Base Case by the end of the Outlook. The corresponding employment impacts are larger by 5,500, while Real Manufacturing Earnings per week shrink less than in the Base Case by \$1.09. Even in the Optimistic Case, this Outlook is pointing toward the Connecticut economy flattening out and employment peaking at 1,648,000, well below its previous peak.

There is still room for national economic recovery to accelerate. Based on pent-up savings among consumers and businesses, national expansion could take hold in 2011, providing more stimulus to the Connecticut economy than incorporated in either of the above scenarios.

There is also considerable room for major public policy initiatives such as:

- A thorough review and adjustment of the state tax system to a more equitable basis, and exploiting the vast potential of accumulated R&D tax credits;
- A review and elimination of outmoded regulations that are now prohibitive barriers to growth;
- Adoption of cost effective energy-savings technologies; and
- Initiatives to restore faith in capital markets to redress the longer-term recessionary drivers.

Offsetting this possible optimism is the realization that the BEA has not as yet adjusted its estimates of CtRGDP for 2007 and 2008 downward consistent with its revised national estimates.

Growth of employment midst quite slow national and state growth raises concerns about the quality of the jobs being generated. Are they part-time or fulltime? Are they good quality jobs with relatively highly paid salaries that are apt to sustain Connecticut's relatively high incomes compared to the nation's or lower quality ones that will erode Connecticut's income advantage? The following dissection of recent labor market transformations assesses sector and occupational shifts on wages and salaries.

Dissecting Employment Transformations

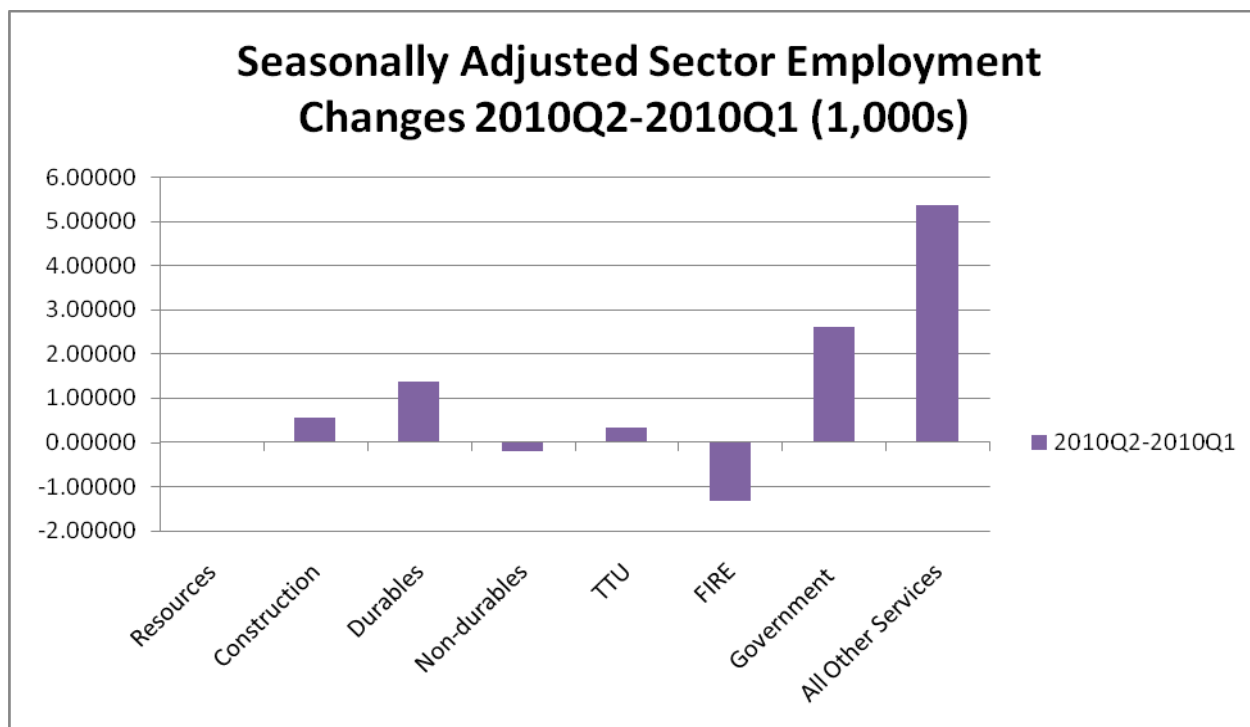
Introduction

Connecticut Employment has been shifting among both sectors and occupations. This section observes recent sector shifts, while taking a decade-long view of occupational shifts.

Short-term Sector Shifts

Aggregate statistics obscure deteriorations of employment in sectors requiring highly trained individuals and the quality of employment opportunities – Non-durable Manufacturing and Finance, Insurance and Real Estate (FIRE). Chart 7 compares changes in sector employment from 2009Q2 to 2010Q2. About a ten percent of the growth in Government employment is attributable to hiring of temporary census takers during the quarter and is therefore unlikely to be sustained. While there may be some quality jobs in the expanding Durable Manufacturing, the majority of the increased employment has occurred in Services other than Trade, Transportation and Utilities (TTU) and FIRE.

**Chart 7: Connecticut Sector Employment Shifts 2010Q2 Less 2009Q2
(1,000s of Employees)**



Decennial Occupational Adjustments

Introduction

This section contains a preliminary analysis of changes in 708 Connecticut occupations from 1999 to 2009 to assess employment and income impacts of changes in the state’s occupational structure. Based on Standard Occupational Classifications (SOC) published by the Bureau of Labor Statistics (BLS) for each year, it asks, “To what extent did Connecticut’s labor force adjust away from lowering paying occupations to occupations paying above average wages and salaries?” And then: “What have been the implications for Connecticut employment and incomes?”

At the more micro-level, there have been significant cuts among occupations with above average remuneration as well as significant gains among others. It is these shifts among occupations that signal the nature of occupational transitions and possible prospective career opportunities.

Data

The BLS provides Connecticut SOC data for 1999 and 2009 for each of 552 occupations. In addition, employment data was available for one of the years for another 50 job categories. There were 106 job categories where confidentiality precluded publication at the state level. Overall the 2009 SOC data for Connecticut cover 95.8% of state employment. While the standard errors of remuneration varied

among SOCs, BLS results were within 10% of two standard deviations for 503 out 694 SOCs for which data were available in 2009.

Results

The results of the 1999 to 2009 comparison are broken out first by those occupations that are strictly comparable, as data is available in both years, and second for those for which only 2009 data are available. Each of these groups is broken out by occupations with above average wages and salaries and occupations with below average wages and salaries, as in the columns of Table 2. Within each of these groupings some occupations expanded and others contracted. In each case the changes in the numbers employed have been calculated, showing net additions or deletions.

The first column shows that the employment in strictly comparable occupations which pay above average wages and salaries increased 96,810 during the decade among those high-paying occupations that were gaining employees. Partially offsetting this gain were cuts in other high-pay occupations of 44,052, resulting in a net gain in high-paying occupations of 52,758. Column 2 illustrates that there was a net shift from occupations paying below average wages and salaries, where gains of 95,475 were outpaced by cuts of 130,392 for a net loss of 34,917 in low-paying occupations. The data in the last two columns were zero in one of the two years so are not strictly comparable, though expansion in these occupations remains important relative to average wages and salaries. Third column results, as in the first one, indicate a shift to relatively high paying wages and salaries. That is not true of those in non-matching occupations accepting below average wages and salaries by 2009 where employment gains outpace employment cuts.

**Table 2: Employment Changes 1999 to 2009 in Connecticut
Occupations with Above and Below Average Wages and Salaries
(W&S)**

Gains or Cuts	Change in Employment 1999-2009 of Those in Matching Occupations with Above Average W&S by 2009	Change in Employment 1999-2009 of Those in Matching Occupations with Below Average W&S by 2009	Change in Employment 1999-2009 of those in Non-Matching Occupations accepting Above Average W&S by 2009	Change in Employment 1999-2009 of those in Non-Matching Occupations accepting Below Average W&S by 2009
Gains	96,810	95,475	45,990	29,180
Cuts	(44,052)	(130,392)	(40)	(8,320)
Net	52,758	(34,917)	45,950	20,860

Valued at the average wage and salary for each occupation in 2009, total income gains are \$15.9 billion and losses from cuts in employment and acceptance of below average paying jobs \$9.0 billion, leaving a net gain of \$6.9 billion. Deeper into the recession this advantage may have narrowed.

Contracting Occupations with Income Impacts Exceeding \$100 Million

There are significant and obvious exceptions to this encouraging picture. Some very high-paying and high-profile Connecticut occupations have been severely adversely impacted over the last decade. There are two reasons for data indicating severe curtailments. The first is that real cuts occurred. The second is that finer classifications deployed in 2009 data than used in 1999 appear as cuts but are offset later in discussions of expansions at the more detailed level.

There are eight occupations where employment cuts resulted in wage and salary cuts of more than \$100 million, as shown in Table 3. At \$1.9 billion annually, shrinkage in these occupations accounts for half the income reductions from high-paying jobs.

Table 3: Leading Occupations with Income Declines in Excess of \$100 Million 1999-2009

Occupations	Employment Cuts	Income Cuts (Millions 2009 \$)
Chief Executive Officers	(3,460)	(\$660.7)
Computer Programmers	(4,800)	(\$395.1)
Surgeons	(840)	(\$174.2)
Sales Representatives Wholesale and Manufacturing Except Scientific	(2,210)	(\$166.9)
First-Line Supervisors/Managers of Production and Operating Workers	(2,600)	(\$161.2)
Lawyers	(1,240)	(\$156.7)
Family and General Practitioners	(650)	(\$104.9)
Advertisers and Promotions Managers	(1,050)	(\$100.2)
Total	(16,850)	(1,919.9)

Source: http://www.bls.gov/oes/current/oes_CT.htm

The key occupational shift out of Connecticut is that of CEO's. Other business cuts have also sliced deeply into Sales Representatives Wholesale and Manufacturing except Scientific and First-Line Supervisors/Managers of Production and Operating Workers. Cuts to Computer Programmers and Advertisers and Promotions Managers, as noted later, are offset by expansions of computer and other management groups. There has also been a severe drop in employment of lawyers.

The two sets of medical personnel, Surgeons, and Family and General Practitioners, are both offset by expansions of more detailed groups of medical practitioners discussed below. Nevertheless, cutbacks in the number of Family Practitioners as the population ages and demands for their services expands underscores the need to expand medical schools and to more evenly share practices within the licensed capabilities of nurse practitioners working in teams with doctors.

Expanding Occupations with Income Impacts Exceeding \$100 Million

The expansion of high-paying occupations within Connecticut has been somewhat lower-profile and more dispersed than reductions in high-paying occupations. Unlike the previous section where there were data on all the occupations for both years, that is not the case for “Expanding” occupations. For this reason, this section looks at those occupations that are strictly comparable, because there are data in both years, before proceeding to the occupations for which there is 2009 data only. Occupations accounting for over \$100 million each in expanded wages and salaries account for 63.7% of the total income impacts from positive economic shifts.

Strictly Comparable Occupations

Strictly comparable occupations listed by the size of their wage and salary direct expansions are presented in Table 4. Clearly medical occupations play an important and expanding role in the Connecticut economy. With registered nurses having strongest impacts in expanded employment and in direct income impacts. Other expanding medical occupations include Medical Scientists except Epidemiologists, Dentists, Physical Therapists, Internists, and Medical and Health Service Managers.

It is also clear that the decline in CEO’s is in part being overcome with expansion of middle-management occupations, including Managers for Finance, Computer and Information Systems, Sales, Marketing, Engineering, and General and Operations. While incomes in these occupations are above state averages, the margin is less than for CEOs.

In addition to Financial Managers, there has also been a proliferation of other financial professionals encompassing; Security, Commodities, and Financial Sales Services Agents, Accountants and Auditors, Personal Financial Advisors, and Insurance Underwriters. Despite the earlier cuts to Computer Programmers, specific occupational expansions were related to servicing computers including; Computer Software Engineers, Applications, Computer Software Engineers, Systems Software, and Network Systems and Data Communications Analyst.

Certain pedagogical occupations also expanded, particularly in Psychology Teachers at the Post Secondary Level, Middle School Teachers except Special and Vocational Education, Elementary School Teachers, except Special Education, and, Management Training Analysts.

Table 4: Strictly Comparative Leading Occupations with Income Expansions in Excess of \$100 Million 1999-2009

Occupations	Expanded Employment	Income Growth (Millions \$)
Registered Nurses	4,920	353.9
Security, Commodities, and Financial Sales Services Agents	2,030	327.1
Financial Managers	2,680	294.7
Accountants and Auditors	4,070	289.5
Computer and Information Systems Managers	2,190	248.7
Computer Software Engineers, Applications	2,580	228.3
Psychology Teachers, Post Secondary	1,785	227.1
Medical Scientists Except Epidemiologists	2,385	225.2
Sales Managers	1,740	202.2
Personal Financial Advisors	1,610	201.6
Computer Software Engineers, Systems Software	1,960	186.1
Marketing Managers	1,630	183.6
Mechanical Engineers	2,240	177.5
Middle School Teachers Except Special and Vocational Education	2,390	161.8
Elementary School Teachers, Except Special Education	2,320	154.7
Engineers, All Other	1,815	151.3
Engineering Managers	1,250	149.2
Dentists, General	860	142.0
Compliance Officers Except Agriculture, Construction, Health and Safety, and Transportation	1,940	133.6
General and Operations Managers	940	122.2
Network Systems and Data Communications Analyst	1,620	120.7
Management Training Analysts	1,350	117.2
Insurance Underwriters	1,490	114.3
Physical Therapists	1,400	111.0
Internists, General	570	109.8
Medical and Health Service Managers	1,000	103.8
Total	50,765	4,836.8

Source: See Table 3.

Other engineering occupations that expanded were in Mechanical and other.

Not Strictly Comparable Expanding Occupations

In addition to the above, other occupations for which there was only limited data grew relative to 1999. As noted earlier, some of these apparent expansions really occur from shifts in the occupational definitions BLS utilized and therefore partially or wholly offset earlier apparent cuts. For example, expansion of medical personnel in Table 5 under “Physicians and Surgeons, All Others” overcomes apparent earlier cuts to Physicians and Surgeons, even without the noted expansion in Anesthesiologists.

Table 5: Not Strictly Comparative Leading Occupations with Income Expansions in Excess of \$100 Million 1999-2009

Occupations	Expanded Employment	Income Growth (Millions \$)
Business Operations Specialist, and All Others	7,330	513.3
Physicians and Surgeons, All Others	2,500	484.1
Managers, All Others	3,730	380.3
Sales Representatives Services, All Others	4,360	295.6
Teachers and Instructors, All Others	4,500	248.9
Aerospace Engineers	2,320	198.4
Post Secondary Teacher, All Others	2,570	163.5
Human Resource Managers and Others	1,420	151.8
Human Resource, Training, Labor Relations Specialists, and All Others	1,960	131.0
Anesthesiologists	550	125.1
Total	31,240	2,691.9

Source: See Table 3.

On a smaller scale, this table picks up on the previous themes with expansions among middle level management positions, particularly: Business Operations Specialist, and All Others, Managers, All Others, Sales Representatives Services, All Others, and Human Resource Managers and Others. Expanding pedagogical occupations also included Teachers and Instructors, All Others, Post Secondary Teacher, All Others and, Human Resource, Training, Labor Relations Specialists, and All Others. This set also adds Aerospace to the expanding engineering occupations in the state.

Conclusions

Employment cuts in CEOs and lawyer occupations have adversely impacted Connecticut employment and incomes. While expansions of lower-level executive and managerial jobs more than offset cuts in CEOs, the extent of the decline in CEO positions is large, represents a shift of final decision making out of the state, and may need to be redressed. Shifts in CEOs may be linked to the decline in the employment of lawyers. Similarly, reductions in Family Practitioners underlines the American Medical Association demand that medical schools increase graduation by 15% in 2015 and Connecticut medical schools attempts to comply.

Occupational expansions with significant wage and salary implications have been concentrated in middle to senior management occupations, as well as those related to medicine and a broad distribution of pedagogical activities, information technologies, and engineering.

Over the decade employment adjustments to higher income occupations have contributed a net of \$6.9 billion to the growth of the Connecticut economy from 1999 to 2009.

This is a preliminary analysis. Available data for the intervening years between the benchmark years have not been examined. Such an examination would allow CCEA to fill data holes with estimates,

establish growth rates by occupation and to pinpoint recent departures from those trends, thereby assessing the impacts of the recession and delineating likely expansion paths needed to tailor training programs for the emerging labor supply.

Connecticut faces a difficult economic future. Despite the modest improvement in the quality of jobs in the state over the past decade, there has been no aggregate job creation in twenty years, the data about CEO positions suggest a significant departure or disappearance of firms, and the shrinking numbers of family practitioners in the face of a rapidly aging population may significantly impact access to medical services. Connecticut has poor administrative data, knows little about the dynamics of firm creation or disappearance, and has not developed an integrate data system to track its general economic performance. We know the general outlines of what is happening in the state's economy, but developing responsive, effective policy requires quality, timely data integrated into the process through which that policy is developed. Developing such data and the analysis that it permits is central to meeting the staggering fiscal challenges the state now faces.