

**BENCHMARKING GROWTH IN
DEMAND-DRIVEN LABOR MARKETS
2006**



Benchmarking Growth In Demand-Driven Labor Markets - 2006*

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EXECUTIVE SUMMARY

This report presents an assessment of Connecticut's economy and its potential for growth given the market forces that exist today. It argues that the relatively high per capita income in Connecticut precludes attracting firms that follow the more traditional growth path of cheap land and labor. Instead, to maintain the relative income advantage of its mature economy, Connecticut needs to foster economic development in industries where a highly educated workforce is critical in production.

This scenario results from two economic forces pressuring Connecticut, and any relatively affluent region, towards lower real wages and underemployment:

- Innovation that reduces the skill sets required for a region's production.
- Innovation resulting in use of substitute goods or services produced outside the region.

If preferences shift away from a region's products and services, then the region that does not innovate will stagnate. The questions addressed are:

- Is Connecticut at or near a point of economic inertia?
- If so, are there reasons to be concerned, given its per capita income ranking?

The analysis indicates that Connecticut's level of creative market forces declined earlier and more sharply than similar measures for the U.S. If people "vote with their feet" and locate in an area where they can maximize expectations of future well being, then Connecticut can expect difficulty competing for young, educated workers with states experiencing more robust development. Attracting and retaining firms capable of generating wealth from outside the State requires improvements in education, transportation, availability of affordable housing, and investments in industries that have a strategic advantage in the world economy. Sustaining the State's ranking in per capita income into the next generation is not possible without an increase in the real returns of preschool through college education, particularly in developing the creative skills commonly associated with entrepreneurs and innovators. A review of the literature shows other states already increasing their investment levels not only to improve education, but also to improve the transportation infrastructure, to lower crime rates and to provide affordable housing.

Consequently, it is important that Connecticut focus on four broad strategies for the kind of economic development that could maintain the State's high per capita ranking into the next generation:

1. Invest in education, from pre-school to post-secondary.
2. Invest in improvements to Connecticut's transportation systems.
3. Increase the supply of affordable housing.
4. Foster a workforce for Connecticut's high demand, high skill, and high growth careers, such as those in healthcare, finance, engineering, and teaching.

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INTRODUCTION

This study, germinating from a recent Connecticut Economic Resource Center (CERC) report¹ that asked whether there could be economic development without economic growth,² assesses the impact of national and global trends on demand-driven labor markets. This is an especially important issue in a densely populated state, where following a mantra of “more jobs equals growth” may negatively impact the quality of life for the majority of residents in certain communities.

We believe there **can** be economic development without economic growth. Following an analysis of historical measures of the State’s economy, we link together the seemingly different economic goals for demographic and economic cohorts by recommending “boutique” economic plans with a common dynamic: *A successful firm or industry attracts competition, which encourages the type of innovation that reduces the skill sets required for production or distribution.* Such innovation pressures a region to accept either lower real wages or firms relocating to regions where the average skill sets imply a lower real wage. **Therefore, a relatively affluent region must invest in innovation that results in new products or services, attract firms from an even more affluent region, or lose its vitality.**³

This “Darwinian” process optimizes growth in the larger economy, but suggests a “dismal science” for regional economists.⁴ Because Connecticut is one of the most affluent states in one of the most affluent countries in the world, there is incessant pressure on the State to reinvent its mix of products and services or accept a lower standard of living. We find the level of job reallocation⁵ in Connecticut declined several years before comparable measures for the U.S. did so, and it continues to lag behind the national average. Specifically, the non-cyclical component of job destruction in Connecticut’s existing firms was not compensated by a relative increase in job creation in new firms. The outlook for the State is that without a concerted implementation of the recommended growth plan, Connecticut’s high per capita income ranking will not continue into the next generation.

¹ See, http://www.cerc.com/pdfs/bmkfullrpt_final.pdf, page 11.

² Specifically, should there be concern that the State’s job growth over the last fifteen years is below the national average?

³ 2006 Nobel Laureate Edmund Phelps defines the healthy combination of entrepreneurs and financiers as *dynamism*.

⁴ Dismal science was Thomas Carlyle’s label to Malthusian economics.

⁵ Job reallocation is one measure of the responsiveness of a regional economy to larger market forces.

To develop and implement a “boutique” economic plan requires an understanding of the difference between increasing production by simply increasing employment in existing facilities and developing the productive capacity of each worker (economic development). The Corporation for Enterprise Development characterizes economic development thus:⁶

“Economic development is frequently equated with economic growth, but in our view, the terms refer to different things. First, development is both a prerequisite to and a result of growth. Development, moreover, is a qualitative change, which entails changes in the structure of the economy including innovations in institutions, behavior, and technology. Growth, on the other hand, is a quantitative change in the scale of the economy – in terms of measures of investment, output, jobs, consumption, income, and others. Hence, development is prior to growth in the sense that growth cannot continue long without the sort of innovations and structural changes implicit in development. But growth, in turn, will drive new changes in the economy, causing new products and firms to be created as well as countless small incremental innovations.”

We define the region’s economic growth as the *change in real output per unit of the labor force* and its development as the *change in real output per unit of employed labor*. Therefore, it is possible to have economic growth without development and development without growth. Using this characterization, we assess the future prospects for Connecticut’s standard of living, quality of life, and individual economic opportunities by describing the current economic situation and offering strategies to address the following questions:

- How has the growth in Connecticut’s wealth and income performed relative to the U.S., and comparable states and regions?
- How have Connecticut’s culture, public policy, institutions, business attitudes and industry-mix, and the scale and urbanization of its local economies affected its ability to quickly and successfully respond to recent shifts in global competitiveness?
- Has there been broad-based participation by Connecticut’s residents in wealth and income gains, or have benefits been confined to narrow segments of the population, based on geographic area and socioeconomic stratum?
- If the benefits of the growth in wealth and income have been significantly skewed, why? Is Connecticut significantly different to comparable places? If so, why?

⁶ Schweke, W., Brian Dabson and Carl Rist (1996). “Improving Your Business Climate A Guide to Smarter Public Investments in Economic Development,” CFED, ISBN 1-883187-10-9, Washington, DC.

Literature Review

New Jersey's Challenge

Connecticut is not alone in confronting a mature economy that faces severe challenges from the global marketplace. In their recent paper describing New Jersey's growth challenges, Hughes and Seneca (2006)⁷ assert that that state faces its most uncertain economic future since the Great Depression. The new reality is that "advanced, leading-edge corporate investment and employment growth in America is largely taking place outside of New Jersey." The authors state that New Jersey's declining cost-competitiveness both nationally and globally results from forces that are driving fundamental geographic realignment of the U.S. economy. These forces include globalization, deregulation, and accelerating technological change as well as aggressive investments by other states and nations in their economic infrastructures. The trends are evident in the migration of industries from the Northeast to the lower cost Sunbelt. Hughes and Seneca cite employment declines in Massachusetts, Connecticut and New York in several new economic sectors and contrast them with employment gains in these same sectors in Maryland, Virginia, North Carolina and Florida, states that have relatively lower cost structures. In addition, some of these new employment gains are taking place outside the U.S. as several global, knowledge-based competitors have significantly lower cost structures (e.g., India, China and Russia).

The Growing Wage Gap

There has been much written recently about the growing difference between the average and median wage in the U.S. In terms used below, the U.S. income distribution is becoming more right-skewed, that is, the average (mean) income lies above the median income (see the Technical Aspects section of this report for more detail). Dew-Becker and Gordon (2005)⁸ maintain that productivity growth is the classic source of growth in real income per capita. The first half of this decade witnessed a sharp contrast between the strong growth in U.S. output and slow growth in both employment and median income. Taken together, strong growth in output combined with weak growth in hours resulted in the 2001-04 "explosion" in U.S. labor productivity growth, implying an underlying trend in productivity growth faster than any previous sub-period of the postwar era. Yet those who received the benefits of this productivity growth explosion were not the workers creating it.

⁷ Hughes, J and J. J Seneca (2006). "New Jersey's New Economy Growth Challenges," Rutgers Regional Report, Edward J. Bloustein School of Planning and Public Policy, Issue Paper Number 25, July.

⁸ Dew-Becker, I. and Robert J. Gordon (2005). "Where Did the Productivity Growth Go? Inflation Dynamics and the Distribution of Income," National Bureau of Economic Research Working Paper No. 11842, www.nber.org/papers/w11842.

U.S. median household income fell by 3.8 percent from 1999 to 2004 and grew cumulatively from 1995 to 2004 at an annual rate of only 0.9 percent per year, much slower than the growth rate of nonfarm private business output per hour over the same period of 2.9 percent. Similarly, the median real (adjusted for inflation) wage for all workers grew between 1995 and 2003 at 1.4 percent per year, less than half the rate of productivity growth. The failure of productivity growth to boost the real incomes and wages of the median family and median worker in this country highlights an important difference between global and regional economic growth.

Dew-Becker and Gordon (2005) show that over the period 1966-2001, as well as over the shorter period 1997-2001, only the top 10 percent of the income distribution enjoyed a growth rate of real wage and salary income equal to or above the average rate of economy-wide productivity growth. Median real wage and salary income barely grew at all while average wage and salary income kept pace with productivity growth, because half of the income gains went to the top 10 percent of the income distribution, leaving little for the bottom 90 percent. Half of this inequality effect is attributable to gains of the 90th percentile over the 10th percentile; the other half is due to increased skewness within the top 10 percent. In addition, the authors find that an acceleration (deceleration) of the productivity growth trend of one percent actually decreases (increases) the inflation rate by at least one percent.

What causes rising income inequality? The authors suggest that economists have placed too much emphasis on “skill-biased technical change” and too little attention to the sources of increased skewness at the very top, that is, within the top one percent of the income distribution. Dew-Becker and Gordon distinguish two complementary explanations, the “economics of superstars,” that is, the pure rents earned by sports and entertainment stars, and the escalating compensation premia of CEOs and other top corporate officers. These sources of divergence at the top, combined with the role of deunionization, immigration, and free trade in pushing down incomes at the bottom, have led to the wide divergence between the growth rates of productivity, average compensation, and median compensation. In the 1989-1997 period, total real compensation of CEOs increased by 100 percent, while compensation in occupations related to math and computer science increased only 4.8 percent and engineers’ compensation decreased by 1.4 percent.

A reasonable explanation of the increasing incomes of the top 10 percent is that as corporate profits have increased over the past decade, sometimes because of outsourcing or relocating production. In addition, firms have recently shifted their profits more to increasing shareholder value than rewarding productivity. Alan Greenspan has testified on this phenomenon to the

House Financial Services Committee.⁹ The Center on Budget Policy and Priorities confirms the Dew-Becker and Gordon (2005) findings in their summary of another important study.¹⁰

Consequences of Income Divergence

The national income divergence trend is certainly true in Connecticut as the Center on Budget Policy and Priorities reported in an earlier study.¹¹ The consequences of severe income inequality are manifold. First, housing affordability is compromised (as we show in Section I-A) because Connecticut's median income households are not able to afford the median price house. The Boston Federal Reserve Bank presented similar evidence at a recent conference.¹² Second, households with income around the median are losing purchasing power relative to their wealthier neighbors and may have to rely on credit more often to make ends meet (see *The State of Working Connecticut, 2006*, reviewed below). This increases the vulnerability of our debt-burdened society to downturns in the economy, increasing interest rates and natural or other disasters.¹³ Third, the affordability of early childcare and education is beyond many lower income households, a situation that bodes poorly for Connecticut's (and the nation's) economic future.¹⁴ Fourth, the affordability of post-secondary education is beyond many lower income households' reach. These economic traps hinder lower income households from attaining a more desirable economic status.

⁹ Testimony given July 20, 2005. Text available on request.

¹⁰ "New Data Show Extraordinary Jump in Income Concentration in 2004," available at <http://www.cbpp.org/7-10-06inc.pdf>.

¹¹ Bernstein, J., Boushey, H., McNichol, E., and Robert Zahradnik (2002). "Pulling Apart: A State by State Analysis of Income Trends," The Center on Budget Policy and Priorities and the Economic Policy Institute, April, available at: <http://www.cbpp.org/1-18-00sfp.htm>.

¹² "The Lack of Affordable Housing in New England: How Big a Problem? Why Is It Growing? What Are We Doing About It?" by Alicia Sasser, Bo Zhao and Darcy Rollins, presented at: "Housing and the Economy: Trends, Impacts and Potential Responses," May 22, 2006, New England Public Policy Center, Federal Reserve Bank of Boston.

¹³ Douglas Hall (2006). "Connecticut Through Katrina-Colored Glasses," Communities and Banking, Federal Reserve Bank of Boston, <http://www.bos.frb.org/commdev/c&b/index.htm>.

¹⁴ See the CT child care industry study at <http://ccea.uconn.edu/studies/Child%20Care%20Report.pdf>, and the 2006 CED study, "The Economic Promise of Investing in High-Quality Preschool," at http://www.ced.org/docs/report/report_prek_econpromise.pdf.

In "Connecticut Metro Patterns: A Regional Agenda for Community and Prosperity in Connecticut,"¹⁵ Myron Orfield and Thomas Luce (2003) describe Connecticut's geographic patterns of inequality that hide beneath its nation-leading per capita income and provide further evidence of the consequences of income divergence. The authors find that:

- A growing number of small cities and older suburbs, home to nearly half of the State's population, face significant and growing poverty with weak local tax bases. Their tax bases are 25 to 35 percent below average and poverty in schools is growing even more quickly in these places than in the major cities.
- Another group of outlying areas must cope with rapidly growing populations with lower-than-average tax bases that are also growing much more slowly than in the rest of the State. A large group of fast-growing, middle-class suburbs is struggling to provide schools and infrastructure with just average resources.
- Only a small share of the population lives in affluent suburbs with sizeable tax bases and few social needs.
- Geographic stratification concentrates the State's poor in cities and towns with inadequate tax bases. Especially hard hit are Connecticut's central cities. As a group, they must cope with poverty rates nearly three times the statewide average with local tax bases that are just 40 percent of average and growing slowly. In part due to subtle housing discrimination, Connecticut's black and Latino residents are more likely than other groups to live in these struggling communities.

Transportation

A well-oiled transportation system provides efficient means of moving goods and people to and from firms. An inefficient transportation system impedes growth and development and may drive workers and firms to other regions. The Texas Transportation Institute in its 2005 Urban Mobility Report¹⁶ shows congestion from 1982 through 2003 for many of the 85 reported metropolitan areas in the U.S. increased significantly. These areas were separated into four groups: very large (3 million or more population, 13 areas), large (between 1 and 3 million population, 26 areas), medium (500,000 to 1 million population, 30 areas), and small (less than 500,000 population, 16 areas).

¹⁵ Available at www.oua-adh.org/Connecticut_Jan29.pdf.

¹⁶ Shrank, D. and Tim Lomax (2005). "The 2005 Urban Mobility Report," Texas Transportation Institute, The Texas A&M System, available at: http://tti.tamu.edu/documents/mobility_report_2005_wappx.pdf. The tables are available at http://mobility.tamu.edu/ums/congestion_data/national_congestion_tables.stm.

Connecticut's Bridgeport-Stamford area (in the medium-sized group) ranked 31st among the 85 areas studied in its change (between 1982 and 2003) in annual hours of delay per traveler (a rank of 1 means the area had the largest growth in delay time). Among the 30 urban areas in the medium-sized area cohort, the Bridgeport-Stamford area ranked 7th highest in the increase in delay time (equal to 27 hours). In 2003, the latest year for which data are available, the Bridgeport-Stamford area ranked 9th with respect to its medium area cohort and 37th overall in annual delay time per traveler. While there are areas of comparable size that compete for Connecticut's business (for example, Austin, Charlotte, Raleigh-Durham) that have similar congestion problems, they evidently have lower cost structures that make them more attractive for business expansion or relocation. Despite the Washington, DC-VA-MD (very large) area congestion rank of 4 overall in 2003, putting it among the most congested, it is one of the faster growing regions of the country. Although there must be other compensating differentials that offset congestion costs, the Connecticut Transportation Strategy Board created a set of recommendations that addresses the spectrum of transportation issues in the State (see Appendix II).

Demographics

In the sequel to their 1993 report "Beyond 2000: Demographic Change, Education and the Work Force," Professors Coelen and Berger recently released "New England 2020: A Forecast of Educational Attainment and Its Implications for the Workforce of New England States."¹⁷ The authors' principal prediction is that by 2020 each New England state will experience a decline in the fraction of their young populations holding a bachelor's degree or higher. This does not bode well for the economic prospects of Connecticut as we show that sustaining wealth requires retaining a highly educated workforce. The primary demographic issue in this educational transition is the change in the region's minority population. Coelen and Berger show that Connecticut's exodus of whites during the 1990s was so great that the substantial minority inflow during that period was insufficient to provide positive population growth.

The authors state: "The future growth of the region's minority population depends much on its fertility, age-related migration pattern and the degree to which it is youthful. For example, Connecticut's Asian and Hispanic in-migration rates are strongly positive almost regardless of the age of migrants, yet the State's white migration rate is never positive (i.e., net inflow) even among the 15-24 year-olds that typically contribute a 'bump' as they arrive for college." The long-term consequence is that Connecticut's minority population will be younger and have higher fertility

¹⁷ Coelen and Berger (2006), available at www.nmefdn.org/uimages/documents/NE_2020_FR.pdf.

and in-migration rates than the majority population and therefore grow significantly faster than the latter. The consequence of this demographic trend is that Connecticut and its immediate neighbors are predicted to have problematic declines in their working age populations even as the minority component increases. By 2020 the authors predict Connecticut's workforce will consist of 28% minority workers compared with 20% in 2000.

Coelen and Berger predict that Connecticut and Massachusetts will suffer the largest losses in the proportion of their young workforces with bachelor's degrees among the New England states even as they are the most developed in the region. Connecticut's proportion of its workforce with a bachelor's degree will decline from 34% (in 1993) to 30.5% in 2020. Firms looking to expand or locate in Connecticut will likely have to import their high skilled labor from outside the region, or, go elsewhere.

In "*The State of Working Connecticut, 2006*," Connecticut Voices for Children presents recent Census data that show that nearly four years into economic recovery a *larger* share of Connecticut's residents are living in poverty (family income less than \$19,961 per year for a family of four). In 2000-01, about 7.5% of Connecticut residents lived in poverty; in 2004-05, more than 9% (about 326,000 residents) did so. And today more than 12% of Connecticut's children live in poverty. In 2000-2001, 10% of Connecticut's residents reported lacking health insurance *for a full year*, compared to 11.3% in 2004-2005 (about 394,000 residents). Counting residents who lacked insurance for some part of the year would produce higher numbers of uninsured. As reported above, four years into economic recovery, Connecticut's median household income has declined – from \$57,853 in 2000-2001 to \$56,889 in 2004-2005.

The *Voices* report shows that over both the most recent past – 2000 to 2005 – and over a longer time period – 1997-2005, Connecticut's productivity growth exceeded its median wage growth. These findings echo those of other studies reviewed above and our own analysis below. Over the period 1997-2005, growth in productivity was *more than double* the growth in median wages (19% growth in productivity compared to 9% growth in wages). More recently (between 2000 and 2005), productivity growth was *four times* greater than median wage growth (8% compared to 2%). Although Connecticut's economy continues to grow (despite a period of stagnation during the worst parts of the State's recession), growth in wages for Connecticut workers – from very low-wage workers to all but the very highest paid workers – has lagged. The loss of economic ground has been particularly severe for some subgroups of Connecticut workers, such as those who lack a high school education.

There is a strong association between the level of educational attainment and rates of unemployment in Connecticut (as elsewhere the lower the level of educational attainment, the more likely a worker would be unemployed). In Connecticut the 'education premium' is dramatic – those with less than a high school education experienced unemployment rates that were five times greater than for those with a bachelor's degree or higher (15% vs. 2.7%). Only three states (Mississippi, Michigan, and Alaska) and the District of Columbia had higher unemployment rates among those lacking a high school education.

Disparities in unemployment by race and ethnicity are striking in Connecticut. The Connecticut economy treats workers very differently depending on their race and ethnicity. The unemployment rate among white workers in Connecticut in 2005 was 3.8%, less than half the unemployment rate for African-American workers (8.1%), and less than a third the rate for Hispanic workers (11.6%). This difference may reflect, in part, racial/ethnic differences in level of educational attainment (this echoes the Coelen and Berger point made above).

Finally, Connecticut Voices for Children reports that measured by the metric of the Self-Sufficiency Standard, the hourly wages of at least 1 in 5 Connecticut workers is less than what is required for a family of four to be economically self-sufficient, even if both parents work full-time for the year. The hourly wages of at least half of Connecticut's workers are less than needed for a family of three to be economically self-sufficient, even if the single parent is working full-time and full-year. These findings indicate Connecticut has workforce issues that, if not addressed, pose problems for firms looking to expand or locate in the State.

A recent report by 1000 Friends of Connecticut¹⁸ articulates the issues and challenges Connecticut faces now and in the near future that we raise above as well. This report is clearly in the development camp and argues for maintaining and enhancing Connecticut's quality of life in terms of smart growth that reduces economic and racial segregation, enhances school quality and its product namely, a highly talented workforce, improves the transportation network, creates more affordable housing, values and uses our historic assets for creating density,¹⁹ enhances government efficiency and regional cooperation, and, restructures taxes to reduce property tax dependence, among others. We would add to the 1000 Friends arguments that early child education, a program the Governor has already recognized, is a policy paying large dividends.

¹⁸ See: <http://www.1000friends-ct.org/policy/briefingbook.pdf>.

¹⁹ See the Georgetown Land Development Corporation's plan for redeveloping the Gilbert and Bennett Wire Mill and the Windham Mills Development Corporation's accomplishments in redeveloping the American Thread Company Mill (www.georgetownland.com and <http://www.windhammills.com/history.asp>) as examples

Overview of the Connecticut Economy

We begin by addressing the consequences of several facts uncovered in the CERC benchmark report mentioned at the beginning of the introduction:

- The State ranked 47th in relative population growth between 1990 and 2000. During this period, Connecticut had the greatest relative loss in the 18-34 year age group of any state, with more than 200,000 fewer people in this age bracket in 2000 compared to 1990. *Consequence: Connecticut's college bound youth and young adults that form the backbone of its industries' next generation of innovators and leaders must be imported or firms will locate and/or expand elsewhere.*
- The Northeast and Connecticut in particular have been adding jobs at a slower rate than the rest of the country, and these differences have become more pronounced over time. On average, the Northeast added only two jobs for every three that the U.S. has added over the past half-century. While there have been changes in the type and quality of available jobs, overall the net number of jobs has not increased for the past 15 years. *Consequence: firms like to locate or expand in a thriving and growing region. High paying manufacturing jobs have been replaced with lower paying service sector jobs.*
- Connecticut, the most affluent state in the nation, is home to three of the poorest cities in the nation. There are a variety of complex challenges facing Connecticut's urban centers (e.g., Hartford, New Haven, Bridgeport, Waterbury, and New Britain). These cities experienced declines in jobs, businesses and income over the past few decades, and there is little indication of an immediate turnaround. *Consequence: cities have been the historic engines of growth in the U.S. as the nexus of industry and culture and knowledge exchange; their decline represents an increasing poverty of these vital assets.*
- While there has been appreciable growth in the net number of new businesses in both the Northeast and nation, there has been no discernible business growth in Connecticut since 1990. *Consequence: small businesses can be engines of new economic growth as larger firms may be more likely to shed workers as their economies of scale and scope accelerate. Therefore, relatively small (new) firms are more innovative and nimble, provided they have access to investment capital.*

- Next, we use the literature review (above) and the detailed analysis of our model (below) to glean the following facts and posit their consequences:

Demographics

The 25 to 44 age group in the U.S. is declining relative to other cohorts, but Connecticut's share is declining faster, that is, this cohort is leaving the State (See Table 2 and Chart III-A1).

Consequence: Connecticut's managerial and creative class is shrinking creating workforce availability problems.

The fastest growing group is Hispanic (Coelen and Berger, 2006). *Consequence: this group tends historically to be lower educated and will create workforce quality and availability issues.*

Mean and median incomes are separating more rapidly in Connecticut than in the U.S. Specifically, Connecticut is first out of the top ten states in which income inequality grew the most between top and bottom income groups between the 1980s and the 1990s. Connecticut is fifth out of the top ten states in which income inequality grew the most between the top and the middle income groups between the 1980s and the 1990s (CBPP 2002, Douglas Hall (2006) and Tables II-F1 and II-F2). *Consequence: housing affordability decreases, median income and below households have greater reliance on credit, are more vulnerable to economic downturns, are less likely to have health insurance, are less likely to have access to early child care and education, less likely to have access to post-secondary education. These consequences imply decreased workforce quality as lower paying jobs replace higher paid jobs. Connecticut's workforce will not be as desirable for high tech firm expansion or location.*

Incomes for top one percent and one-tenth of one percent are growing faster than all others (Dew-Becker and Gordon, 2005). *Consequence: the housing affordability problem is exacerbated.*

Wealth is growing for homeowners because of appreciating real estate and investment income, but differences exist across Connecticut regions (Section I-A). *Consequence: some homeowners will be at greater risk as the housing market softens such that their valuation (wealth) diminishes their net worth and their capacity to borrow and spend. Chart I-5 shows that 60% of the population is not saving outside of pension funds, etc., so that appreciation of housing prices is a substantial component of increased wealth for homeowners in the group.*

The labor force participation rate has been falling since 2000, and falling with respect to the U.S. since 2002 (Charts III-1 and III-2). *Consequence: this trend reduces the available workforce.*

Fewer workers relative to the population means less tax revenue for State and local governments with which to provide public services.

Connecticut's population, especially the 25 to 44 age group, is growing slower than U.S. overall and its share is declining (Table 2). *Consequence: this trend indicates a decline in workforce availability.*

Connecticut's real income relative to the U.S. is declining (1969 through 2004), although there were periods (1988-1989 and 1999-2000) when it increased relative to the U.S. (Tables I-C1 and I-C2). *Consequence: Connecticut residents' purchasing power is declining relative to the U.S. and people will relocate to maintain or increase their purchasing power.*

Connecticut is a net exporter of labor to other states, principally New York. *Consequence: income earned in other states is not taxed in Connecticut and such workers create demand for public services for which others have to pay.*

Connecticut's capitol city has a child poverty rate (41.3%) second only to Brownsville, Texas (Douglas Hall, *Connecticut Through Katrina Eyes*). *Consequence: children in poverty are more likely to not succeed in school and have behavioral problems leading to increased downstream costs. Second, they are less likely to complete high school and post-secondary education decreasing the quality and availability of Connecticut's workforce.*

Connecticut's threshold for income tax liability has remained unchanged since 1991 and has eroded because of inflation from 73% above the poverty line to today's level of 21% above the poverty line comparable to Alabama (Douglas Hall, *Connecticut Through Katrina Eyes*). *Consequence: some households find it increasingly difficult to afford decent housing and health care, as well as early child and post-secondary education. This situation contributes to an ongoing low quality workforce and a disproportionate dependence on public services.*

Housing Affordability

Housing in Connecticut is less affordability these days for first time buyers than in earlier years (Tables I-A1 through I-A5). *Consequence: workers must look for work where they can afford adequate housing, which may not be in Connecticut. Workers must live further away from their Connecticut jobs stressing the transportation network. Firms re-evaluate their location and expansion decisions based on worker availability and the premia that they may have to pay to get some workers to live closer to the place of business.*

Median house prices are rising faster than median income and vary by congressional district (Table I-A5). *Consequence: housing affordability is exacerbated in certain Connecticut areas.*

Industry Structure

Manufacturing provides a smaller share of Connecticut's GSP than in earlier years (Table I-C5). *Consequence: Connecticut must attract and grow industries that create as much wealth as manufacturing has; that is, industries that create high value added products, such as biotech, nanotech, space technology, medical technology, etc.*

Financial, insurance and real estate services provide a larger share of Connecticut's GSP than in earlier years (Table I-C5). *Consequence: This reflects Connecticut's changing industrial structure.*

Average wages by sector increased significantly for Finance & Insurance and Management of Companies, but modestly for Manufacturing. *Consequence: Utilities posted intermediate gains (Table I-C4 and Chart II-D2).*

With respect to the U.S., Connecticut's average wages gained in the Finance & Insurance, Education, Management of Companies, and the Utilities sectors (Chart II-E2). *Consequence: This reflects Connecticut's changing industrial structure. Some industries in this group pay lower wages than manufacturing.*

With respect to the U.S., Connecticut's employment in the Agriculture, Utilities, Health Services, and Education sectors increased modestly, while employment in other industries declined with respect to the U.S. (Chart II-E1). *Consequence: This reflects the drain of manufacturing and other high value added industries' workers from Connecticut.*

Assumptions, Forecasts and Strategies

Assumptions

We assume people choose to locate where they maximize their level and change of wealth, relative to other residents. For example, low skilled workers generally live in a region where the goods and services are geared toward their current and accumulated earnings, but close enough to wealthy people to achieve spillover effects in the return on taxes (e.g. community services). Younger, highly educated workers (medium-to-high skills) do not need to live as close to the wealthy, because the accumulated wealth in their neighborhoods provides a sufficient base for the quality of public services, without excessively taxing their budgets. The wealthy will congregate, often trying to distance themselves from other groups as much as possible. These seemingly disparate motivations are united by one market dynamic: whenever innovation reduces the skill set required for a given level of productivity sufficiently to price the workers in a region out of competition, that region must develop new products and services to retain its relative level of wealth or offer a lower cost alternative to another region whose higher skills sets are now overpriced.

Given a population and an economic structure, there are optimal levels of consumption and savings, determined in part by the acceptable or desired standard of living. Importantly, the level of supply (that is, output or sales) in a region is influenced by net exports, which can have a substantial impact on a region's ability to create sustainable wealth.²⁰ Within a region, residents' preferences and their income distribution are critical in achieving the optimal growth rate of wealth. However, the major source of sustainable accumulation of wealth in an economy is innovation,²¹ that is, economic development.²²

Of particular importance for Connecticut, we find that the creation of new products and services, a component of innovation, is critical for an affluent region to continue offering a high quality of life. This is because innovation can result in *reducing* the skill sets required in the production of goods and services that puts strong downward pressure on wages and salaries. A region that cannot sufficiently adjust to lower wage rates may lose production facilities to other regions with lower average skill sets (the New Jersey study described above supports this conclusion).

²⁰ Porter, Michael. *The Competitive Advantage of Nations*. New York: Basic Books, 1990.

²¹ Kydland, Finn E. and Prescott, Edward C. "Time to Build and Aggregate Fluctuations." *Econometrica*, November 1982, 50(6), pp. 1345-1371.

²² That entails the substitution of new products and services for established consumption goods and the substitution of capital (labor) for labor (capital).

Forecasts

Our analysis finds that inflation and population are not major determinants of changing wealth in a region (Chart 1), implying per capita measures are more important. After 1990, average real wages (and salaries) and employment are the major determinants of per capita income (which includes dividends, rental income, resident-based adjustments, etc.) in Connecticut (Chart 2), as gains in housing are largely the result of speculation (Charts 3a and 3b).

Chart 4 indicates that Fairfield County, a historically significant source of high average wages in Connecticut, that is, offering firms a lower *economic* cost alternative to New York, has almost exhausted the infrastructure resources of Fairfield County and neighboring communities (Chart 4 and Table 1).

Chart 1. 1969-2004 Percent Growth in Total Income, Total Real Income and Population for Connecticut. Visually correlating population growth with growth in total real income implies that population is not the major driver of total real income and that real income is a more revealing measure than nominal income.

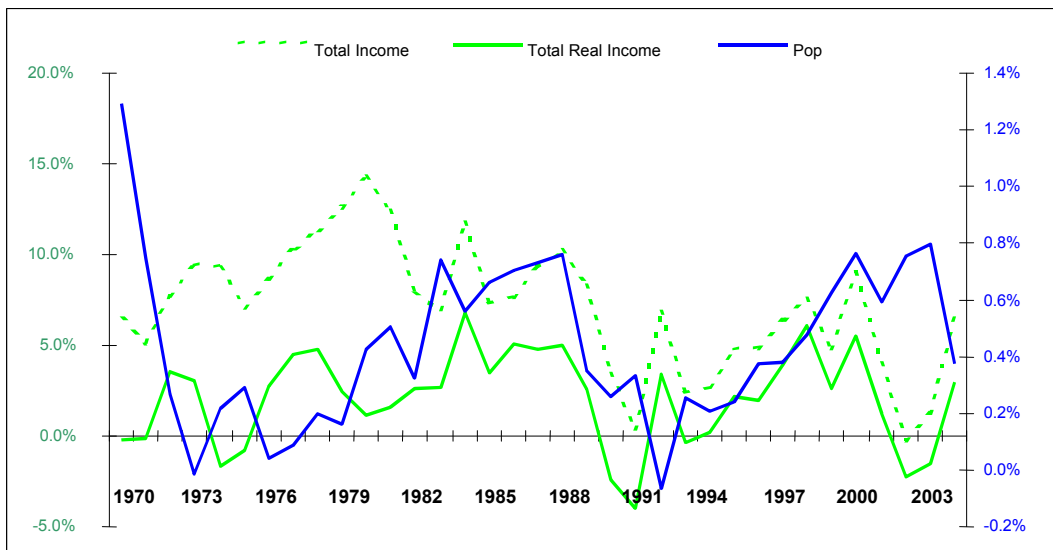


Chart 2. 1970-2004 Percent Growth for Connecticut in Per Capita Income, Real Average Wages and Per Capita Income, Employment and Population. Although the State routinely records one of the highest per capita incomes from financial asset returns and residence-based adjustments, real average wages track closely with real per capita incomes after the late 1980's.

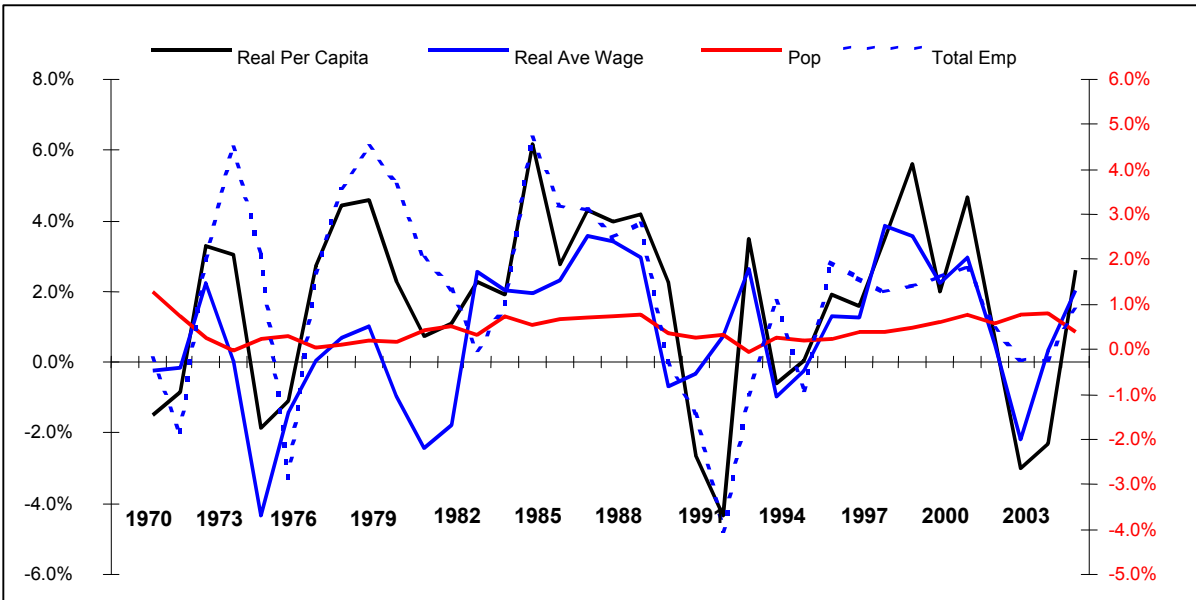


Chart 3a. 1990-2004 Regional Changes in Personal Accounting of Net Assets. The West Region acquired substantial debt from 2002-2004. Analysis of microdata (not shown) indicates this debt is primarily from speculating on appreciation of housing prices.

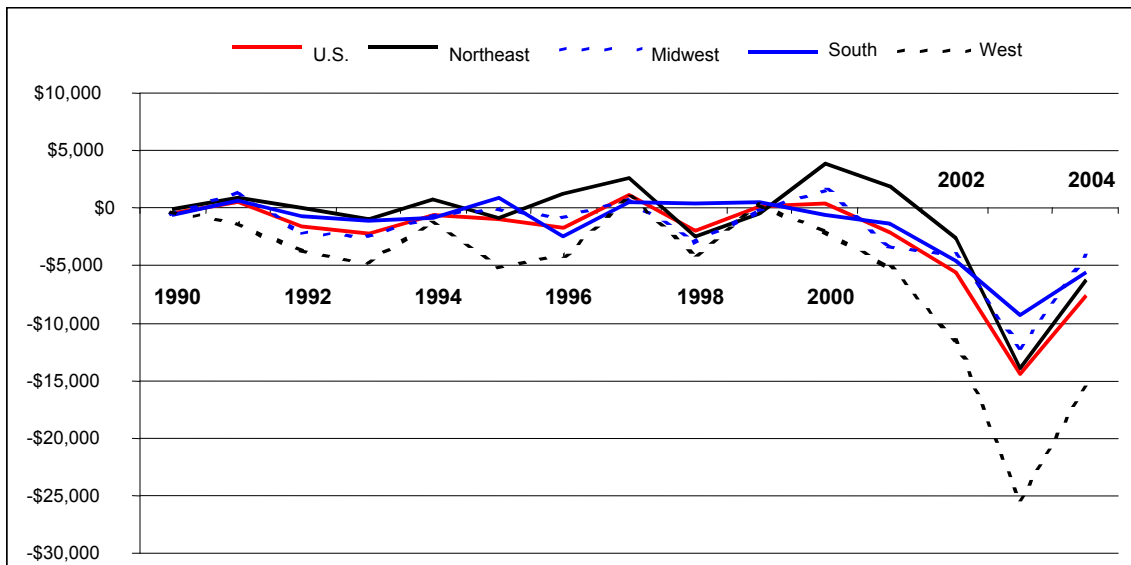


Chart 3b. 1990-2004 Regional Analysis of Return on Investment in Housing. Investment is the sum of mortgage payments, property taxes and maintenance, repairs, insurance, etc. Return is the change in housing prices plus reduction in principal. In 2003, returns are over 150%.

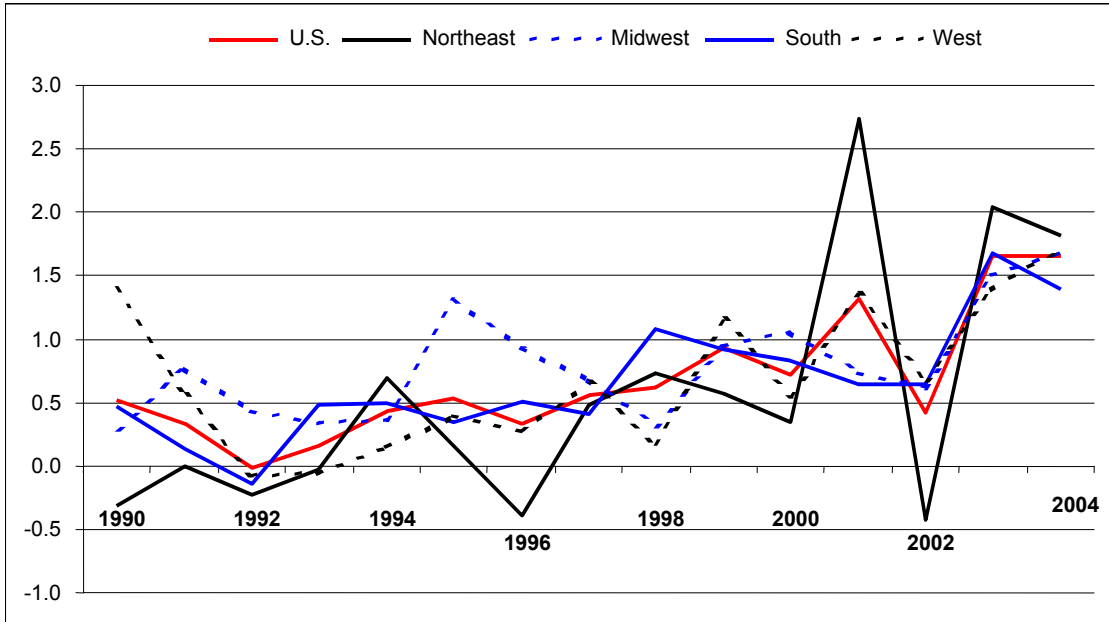


Chart 4. Annual Growth in Average Wage and Employment by Connecticut Labor Market Area from 1990-2004. The Norwich-New London and Willimantic-Danielson LMAs posted the most substantial gains in employment, but the Bridgeport-Stamford LMA registers the significant annual gains in average wages and salaries.

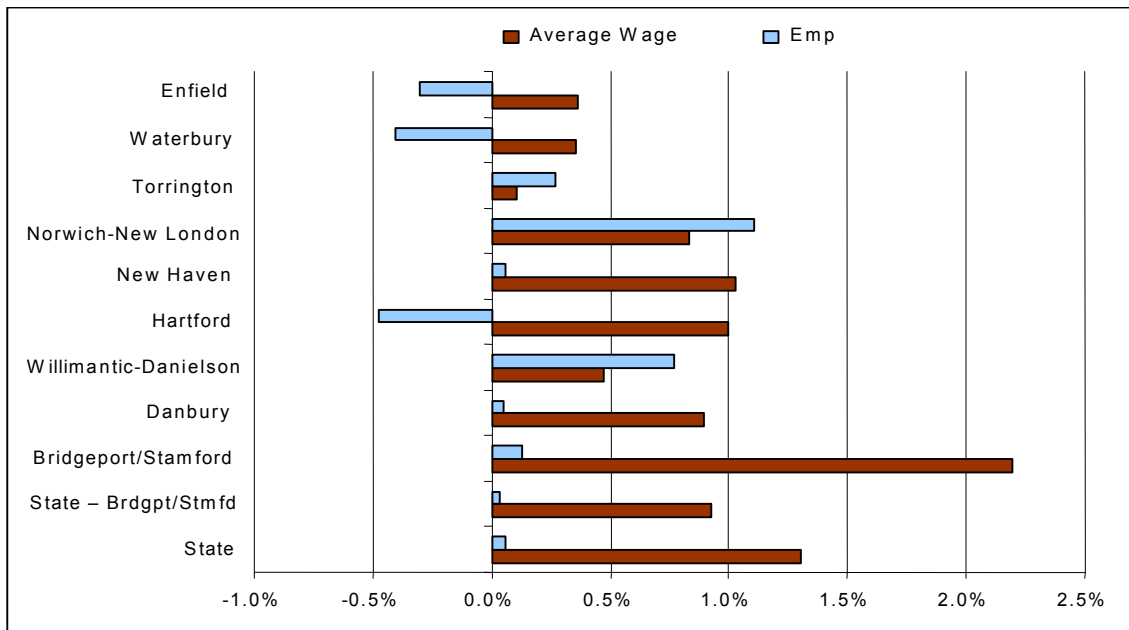


Table 1. Dichotomy Between Change of Wealth Due to Appreciation of Homes and Affordability for First-Time Buyers. Due to data availability and consistency, Table I breaks down the information from the tables in Section I-A by Congressional District for 2001-2004. The result indicates housing is not affordable in the 4th Congressional District of Connecticut for recent graduates, but longer-term owners attained a significant increase in wealth. Note: the mill rate of 30 is realistic for many regions of the State.

Connecticut	Percent Change 2001 to 2004		Difference Between Median Income and Income Required if Buying Home at Median Price – 2001 to 2004			
			15 Mill Rate		30 Mill Rate	
			Variable Interest Rate		Fixed Interest Rate	
			5.5%	4.25%	7.0%	5.75%
Congressional District	Home Price*	Household Income*	2001	2004	2001	2004
1st	32.1%	3.2%	\$19,039	\$15,018	\$9,457	\$2,761
2nd	47.0%	15.0%	\$21,006	\$19,197	\$11,662	\$5,893
3rd	26.8%	7.4%	\$11,285	\$10,218	-\$53	-\$3,697
4th	31.1%	7.6%	-\$14,326	-\$22,474	-\$38,170	-\$52,747
5th	7.8%	-2.3%	\$12,093	\$12,921	-\$1,034	-\$780

* Median Values

Comparing Table 1 with Table 2 shows the lack of affordable housing correlates with an exodus of the 25-44 age cohort. The exodus could indicate that Connecticut firms are less competitive (younger workers are typically underpaid), thereby skewing the income distribution because of a senior labor force (Table 3). This can result in lower returns to non-labor inputs (Table 4), reducing the likelihood of the State's economy supporting levels of job creation and job destruction (Chart 5) sufficient to maintain its relatively high average wage into the future.

Table 2. 1970-2004 Population Trends for 25 to 44 Year Old Demographic: Connecticut and U.S. The table depicts that during the 1990's, the State lost in this demographic, while the nation gained.

Year/ Decade	Connecticut		U.S.	
	Population	Pop %	Population	Pop %
2004	962,968	28.4%	82,264,093	28.8%
2000-04	-55,998		-2,776,158	
2000	1,018,966	30.9%	85,040,251	30.2%
1990-00	-75,912		4,285,416	
1990	1,094,878	33.3%	80,754,835	32.5%
1980-90	233,727		17,935,906	
1980	861,151	27.7%	62,818,929	27.7%
1970-80	130,872		14,841,357	
1970	730,279	24.1%	47,977,572	23.6%
1960-70	25,058		47,977,572	

Table 3. Gini Coefficients²³ of U.S. and State Household Incomes for Selected Years during 1969-1999.

Rank	Region	Household		
		1999	1989	1979
1	District of Columbia	0.549	0.492	0.450
2	New York	0.499	0.467	0.419
3	Louisiana	0.483	0.476	0.438
4	Mississippi	0.478	0.475	0.440
5	Connecticut	0.477	0.434	0.390
6	Alabama	0.475	0.458	0.427
7	California	0.475	0.441	0.408
8	Texas	0.470	0.457	0.415
9	Florida	0.470	0.450	0.421
10	Kentucky	0.468	0.456	0.420
11	West Virginia	0.468	0.448	0.406
12	Tennessee	0.465	0.451	0.418
13	United States	0.463	0.445	0.415
14	Massachusetts	0.463	0.428	0.398

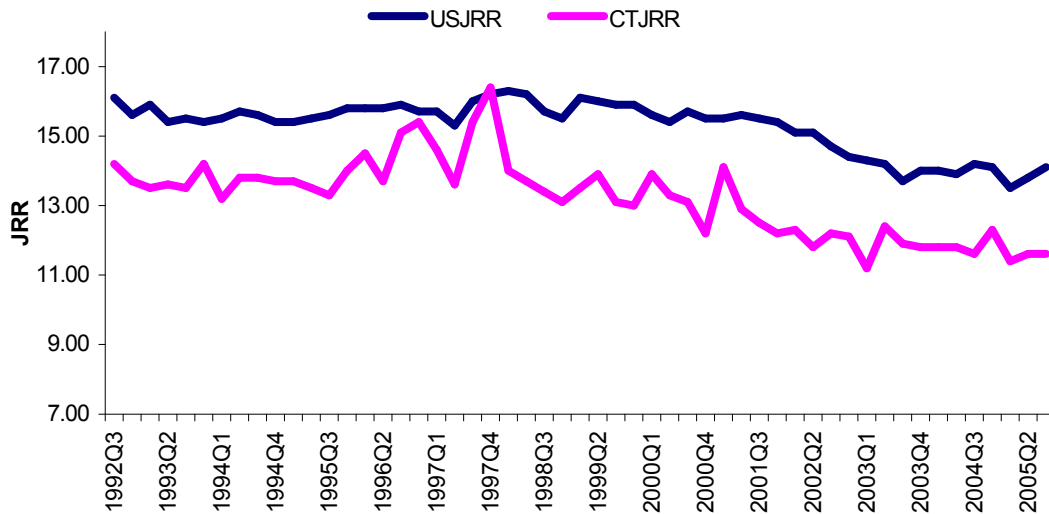
Table 4. Average Hourly Gross Operating Surplus for Selected States. Using BEA measures of value-added and wages, only Delaware suffered a greater loss of gross profit per worker from 2001-2004, than Connecticut, reducing the incentive for investing in this State.

Average Hourly Gross Profit Per Worker For Selected Regions

Rank	Region	2001	2002	2003	2004	\$ Loss	% Loss
1	Delaware	\$56.85	\$47.06	\$41.95	\$39.64	-\$17.21	-30.3%
2	Connecticut	\$51.85	\$42.73	\$37.58	\$35.08	-\$16.77	-32.3%
3	Washington	\$50.64	\$43.71	\$37.12	\$33.89	-\$16.76	-33.1%
4	California	\$54.03	\$46.48	\$40.30	\$37.90	-\$16.14	-29.9%
5	New York	\$50.37	\$42.21	\$37.07	\$34.46	-\$15.91	-31.6%
6	New Jersey	\$48.73	\$40.43	\$35.62	\$32.82	-\$15.91	-32.6%
7	FAR WEST	\$52.15	\$45.02	\$38.88	\$36.46	-\$15.68	-30.1%
8	Georgia	\$47.10	\$39.46	\$33.98	\$31.76	-\$15.34	-32.6%
9	Colorado	\$49.59	\$42.94	\$37.10	\$34.41	-\$15.18	-30.6%
10	Arizona	\$45.91	\$39.64	\$34.02	\$30.79	-\$15.13	-32.9%
11	District of Columbia	\$51.16	\$42.76	\$37.80	\$36.26	-\$14.90	-29.1%
12	North Carolina	\$45.43	\$38.40	\$33.24	\$30.57	-\$14.86	-32.7%
13	Texas	\$49.97	\$42.37	\$37.15	\$35.34	-\$14.62	-29.3%
14	Massachusetts	\$46.39	\$39.23	\$34.90	\$31.80	-\$14.59	-31.4%
15	MIDEAST	\$45.54	\$38.06	\$33.45	\$31.13	-\$14.42	-31.7%
16	SOUTHWEST	\$47.68	\$40.45	\$35.47	\$33.47	-\$14.21	-29.8%
17	Nevada	\$46.71	\$40.69	\$35.38	\$32.70	-\$14.01	-30.0%
18	NEW ENGLAND	\$45.37	\$38.02	\$33.83	\$31.55	-\$13.83	-30.5%
19	Virginia	\$44.40	\$37.06	\$32.59	\$30.63	-\$13.77	-31.0%
20	Michigan	\$45.37	\$39.86	\$35.32	\$31.63	-\$13.74	-30.3%
21	U.S.	\$45.36	\$38.84	\$34.07	\$31.81	-\$13.55	-29.9%

²³ Gini coefficients measure the divergence from perfect equality (zero is perfect equality): the larger the coefficient, the greater the inequality (one means perfect inequality). See Damgaard, Christian. "Gini Coefficient." From *MathWorld--A Wolfram Web Resource*, created by Eric W. Weisstein, <http://mathworld.wolfram.com/GiniCoefficient.html>.

Chart 5. 1992:Q3-2005:Q3 CONN and US Job Reallocation Rates (JRR): Connecticut's JRR is less than similar measures for the U.S. and declines more sharply in 1998 and 2000.



Therefore, the economic picture for Connecticut's relatively near future is somewhat knife-edged; the State sits atop the national rankings in per capita income, but is unlikely to hold that distinction much longer. For one, there appears to be little room for "low cost" growth in such a densely populated state. In addition, the rate of job reallocation in Connecticut, one measure of the level of innovation in a region's economy, fell off much earlier than for the U.S. However, the longer-term prognosis for the Connecticut economy is clearer; projections of demographics, infrastructure and costs of doing business in the State do not support a climate where future entrepreneurs find easy access to venture capital.²⁴ Therefore, unfortunately, without a coordinated, comprehensive implementation of a stylized growth plan, the State may become poorer before experiencing a resurgence of economic growth.

²⁴ See the Coelen and Berger review above for demographic analysis. See also the Hartford Courant article, "The Venture Gap," Sunday, July 25, 2006 for an assessment of Connecticut's pessimistic venture capital prospects.

Strategies – “Boutique” Growth Plans

Attracting firms capable of generating positive net exports outside of the region requires significant improvements in transportation, education, crime rates and availability of affordable housing in desirable neighborhoods. Without these improvements, Connecticut must accept a natural change in its relative position in the national and global economy.

The nation's income distribution has become increasingly right-skewed, that is, one in which the average or mean income lies above (that is, to the right of) the median income (see the Technical Aspects section). There is considerable evidence from academic, private and government studies that not only are earnings in the highest quintile growing at a much faster rate than the rest of the distribution, but also this inequality accelerates the higher the percentile (the Dew-Becker and Gordon study emphasizes this point).

We model this inequality as an indication of excessive investment in mature markets, resulting in firms relocating and outsourcing, which further skews the income distribution.²⁵ The fact that Connecticut's income distribution reflects a national trend, almost to an extreme, could imply the State is even more heavily invested in industries that can be expected to relocate employment outside of the region in the near future. The increasingly right-skewness of the income distribution in those mature industries, which we argue is one result of innovation, encourages other executives to be equally compensated.²⁶

If our institutions of higher learning offer the most cost effective method of developing workers with the new skill sets required for innovating, then worker turnover is a necessary component of growth from innovation. However, job creation, destruction and reallocation rates for Connecticut between 1992 and 2004 indicate that the State's creative responsiveness to market forces dropped off several years before the U.S.²⁷

Research shows that younger employees are usually underpaid, subsequently capturing lost wages during senior years of employment;²⁸ therefore, a region must attract young workers for

²⁵ Capitalism almost encourages geographic separation of ownership and production. Note as well that outsourcing prevents lower paid employees from appearing on U.S. payroll estimates.

²⁶ There are other reasons for excessive executive compensation, but this assumption provides a simple explanation for recent trends.

²⁷ Kennedy, Daniel and Jolly, Nicholas. "Connecticut's Labor Market Dynamics: Job Creation, Destruction and Reallocation." Occasional Paper, Office of Research, Department of Labor, August 2006.

²⁸ Couch, Kenneth A. "Tenure, Turnover, and Earnings Profiles in Germany and the United States." *International Business and Economics Research Conference, Program and Proceedings*, October 2002.

firms to be competitive. However, the costs of living in Connecticut are such that a region must be able to attract *highly skilled* and young workers for firms to be competitive.

The implications of this model for Connecticut's economic future are:

- Retaining senior, highly educated workers (highly skilled) requires wealthy townships and firms where the income distribution for the uppermost percentiles is right-skewed (very high earnings relative to region).
- Attracting younger, educated workers requires "middle-class" towns and firms where the income distribution is (more) left-skewed, i.e., it doesn't take 20 years to earn in the uppermost income quintile.
- Retaining or attracting firms capable of generating positive net exports requires offering a highly educated workforce as the key barrier to entry from competitors. Such firms generate positive economic profits, that is, they capture higher returns to innovation than firms producing line goods.

Retaining Highly Skilled Workers

Fairfield County seems ideal for retaining the top-tier skill sets, as there are communities that are wealthy and the income distribution is exceedingly right-skewed. Because Manhattan and Stamford are employment centers for the finance industry, the distribution of the positive net exports to Connecticut residents indicate this region will remain a key driver of the State's per capita income.

Avon and West Hartford offered similar amenities to the highly skilled, but shifts in the insurance and aerospace industries changed the future growth opportunities of those regions. Similarly, the pockets of wealth near New London cannot rely on defense spending anymore.

Attracting Younger, Educated Workers

Fairfield County seems ideal for attracting the younger, educated workforce, providing they can live elsewhere. However, years of growth have stretched this pattern to the limit, with the transportation infrastructure almost at a point of failure. Additionally, a growth rate of new homes that is slower than demand, at least in desirable neighborhoods, limits new entrants into the housing market. Because maturing industries gravitate toward regions with increasingly right-skewed income distributions, Connecticut's industry mix indicates that few regions within the State offer this younger cohort the most attractive compensation. Therefore, a significant fraction

of younger, educated workers has been locating in regions outside Connecticut where firms can operate profitably with production processes that require lower-to-medium skill sets.

Note that even firms producing regionally constrained goods and services are finding they must abandon the traditional right-skewed distribution of income. *For example, a landscape and architecture firm recently had to offer new hires part-ownership!*

Retaining or Attracting Firms Capable of Positive Net Exports

Firms with production processes requiring high skill sets will find that New Haven is ideal and that labor market area can be expected to grow with urban planning. In fact, sufficient urban revitalization could serve as a stimulus to growth up the Interstate 91 corridor and into the Norwich-New London area along Interstates 95 and 395.

Connecticut schools must require stronger technical skills (in math and science) from their students to compete with in the global economy; otherwise, Connecticut graduates will not find wealth-maximizing opportunities in this State. This implies strengthening the students prior to primary and secondary education. One approach to consider is to construct education centers for children in urban areas, which will realize cost benefits in guidance and counseling services, recreation and physical education, technology resources and elective educational opportunities. Additionally, health care and police protection can be localized, creating safety zones that provide a wealth of educational resources.

Summary of Development Strategy

The information available to us advises that Connecticut focus on four broad strategies for the kind of economic development that could maintain the State's high per capita ranking into the next generation. First, as the Committee for Economic Development points out (see footnote 12), the societal benefits of high-quality preschool education far outweigh the program costs by improving the later education, employment, earnings and crime outcomes of children attending such programs. In addition, significant investment in preschool programs can improve the State's fiscal position by reducing education and criminal justice costs, while boosting income tax revenue. These investments contribute to the long-term economic growth and development of Connecticut. As Minneapolis Federal Reserve economists Arthur Rolnick and Rob Grunewald point out, high quality early childhood investment provides an annual long-term return of 16%, significantly greater than many other uses of public (or private) monies.²⁹ We recall the Coelen

²⁹ Rolnick, Art and Rob Grunewald (2003). "Early Childhood Development: Economic Development with a High Public Return," Fed gazette, March.

and Berger report that suggests that significant investments in higher education pay substantial benefits.

Second, the Transportation Strategy Board's recommendations provide a sound and thoughtful framework for a vastly improved Connecticut transportation system. Additionally, the State could establish a consortium of cutting-edge researchers to develop the next generation of transportation technology including patentable biofuel cultivars (including algae), processes and products, as the returns to Connecticut for such technological breakthroughs would be substantial.

Third, Connecticut needs to foster an increased supply of affordable housing so that more workers can live close to where they work. Taken together, these strategies require a shift in priorities and large, sustained investment by both the public and private sectors.

A fourth development strategy is tied to fostering a workforce for Connecticut's high demand, high skill, and high growth career areas of healthcare, finance, pre-engineering, and teaching. A recommendation that our comprehensive high schools offer a mandate for our students to take 1-2 credits of career and technical education courses can stimulate students' exploration in these labor demand areas. Additionally, such courses could offer high school students dual enrollment in college, providing students a spring board to post secondary courses and the pursuit of further career development.

Detailed Empirical Analysis of Connecticut's Economy

The Drivers of Wealth

Percent growth in population is not the primary determinant of percent growth in income, so our model links the population to changes in total wealth via three major components: (I) changes in wealth, (II) wages (and salaries) resulting from the labor force, (III) the labor force in the population.

$$(I) \text{ Total Wealth} = \text{Return on: Assets} + \text{Taxes} + \text{Total Income (Wages, Transfers, etc.)}$$

$$(II) \text{ Wages} = \frac{\text{Wages}}{\text{Employees}} \times \frac{\text{Employees}}{\text{Worksites}} \times \frac{\text{Worksites}}{\text{Labor Force}} \times \text{Labor Force}$$

$$(III) \text{ Labor Force} = \frac{\text{Labor Force}}{\text{Population}} \times \text{Pop}$$

Results*

Section I: Wages and salaries and owning a home are the greatest sources of changes in wealth for most of the population, but are not closely correlated with the net changes in assets.³⁰ The uppermost percentiles fare much better in their percentage growth of wealth than the rest of the workforce, as does the Bridgeport-Stamford LMA.

Section II: Average (percentile) wages³¹ and changes in employment are the major determinants of total wages, which may be expected in a densely populated state. Changes in the number of firms or in the size of the labor force are not as relevant. Analysis of wages and salaries by percentiles and LMA supports the trends observed in Section I. Additionally, the Finance and Insurance sector supplants the Manufacturing sector as the largest contributor to total wages in the State.

Section III: Age demographics reveal that Connecticut's workforce is aging faster than the U.S., as the 25-44 age cohort has been steadily declining over the last fifteen years. Essentially, their real wage, or real disposable wage, is declining relative to other states.

* Primary data sources are Connecticut Department of Labor, Bureau of Labor Statistics, Bureau of Economic Analysis and the Census Bureau.

³⁰ Owners may have used equity from the capital appreciation of their homes to pay down personal debt or for personal consumption. However, the large decreases in net assets after 2000 suggest that housing prices surged from increases in income, relatively slow growth in housing starts, and low interest rates.

³¹ Wages and salaries.

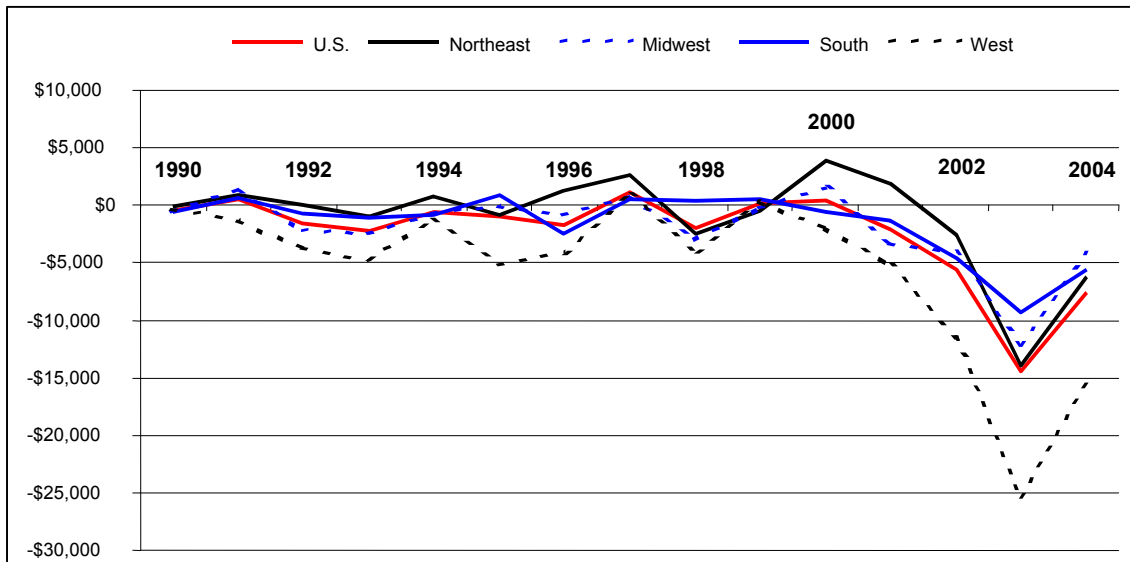
I. Change in Total Wealth: Assets, Taxes, Income

Section I begins by recording trends in components of net assets by U.S. region and percentile. Then Section I-A presents measures the trends for housing prices between states and within Connecticut, finding desirable portions of the State almost unattainable for prospective first-time buyers. Section I-B assesses the value-added from taxes. Section I-C records changes in the composition of personal income, finding that wages and salaries become more prominent in the State's per capita income ranking during the 1980's, mostly from the industry mix realigning to higher paying service sector jobs.

*1990-2004 Changes in Wealth for U.S. by Region*³²

Chart I-1 shows changes in net assets for the U.S. and four sub-regions. Noticeably, Chart I-2 shows the average savings³³ for all regions are higher after 2000. Chart I-3 confirms that the return on housing is a major component of changes in net assets, although large increases in equity relate to even larger increases in liabilities.

Chart I-1. 1990-2004 Regional Changes in Personal Accounting of Net Assets. The West Region acquired substantial debt from 2002-2004, primarily from speculating on appreciation of housing prices.



³² This first section measures wealth changes for representative members of the U.S. population, in order to assess the primary determinants of changes in personal wealth. Specifically, using Consumer Expenditure Surveys (CES) from the Bureau of Labor Statistics (BLS), the income flow is compared with changes in assets and liabilities in aggregate, by region and by quintile.

³³ Income (less taxes and expenditures).

Chart I-2. 1990-2004 Regional Analysis of Average Savings. All regions show significant gains in savings post 1997.

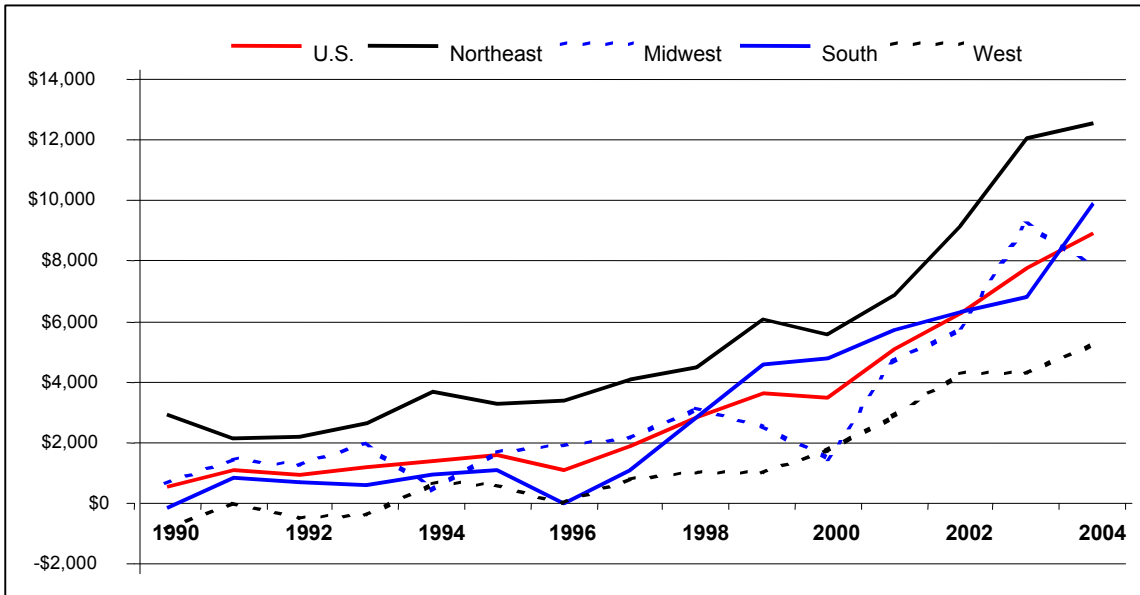
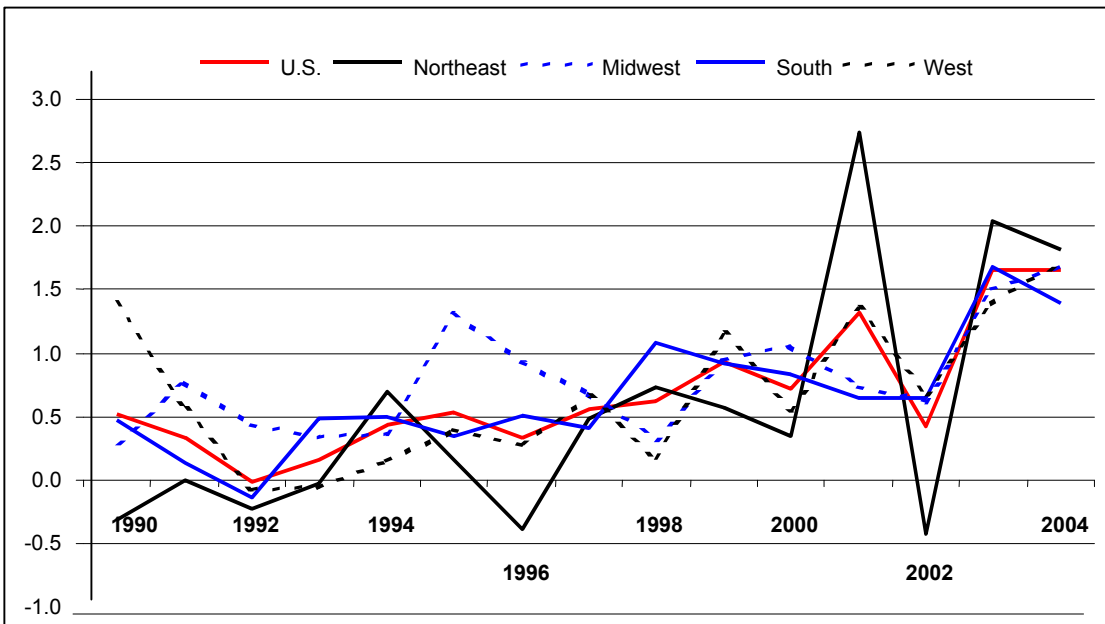


Chart I-3. 1990-2004 Regional Analysis of Return on Investment in Housing. Investment is calculated as the sum of mortgage payments, property taxes and maintenance, repairs, insurance, etc. Return is the change in housing prices plus reduction in principal. In 2003, returns are over 150%.



1990-2004 Changes in Wealth for U.S. by Quintile

Changes in **average** net wealth by region can be misleading. Chart I-4 shows that higher incomes accumulated more debt, mostly related to increases in mortgage principals. Chart I-5 shows that 60% of the population is not saving outside of pension funds, etc. Chart I-6 confirms that since 2000, housing has been a very lucrative investment, except for the lowest tier of homeowners.

Chart I-4. 1990-2004 U.S. Changes in Net Assets by Income Quintiles. The chart uses BLS data from the Consumer Expenditure Survey (CES) to show that changes in Net Assets is fairly consistent across quintiles up through 2001.

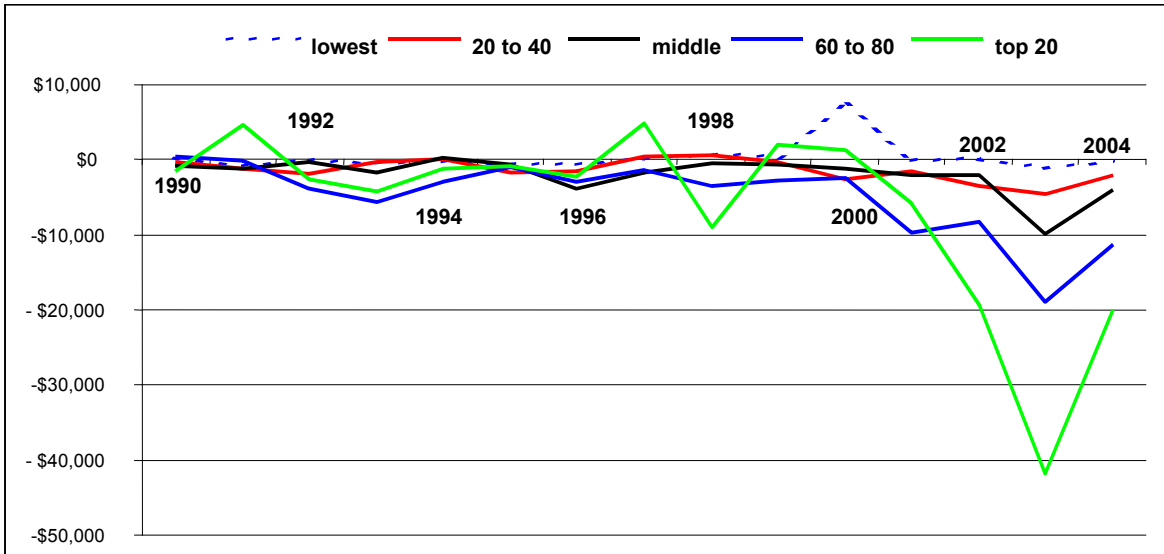


Chart I-5. Savings for U.S. by Income Quintile during 1990-2004. On average, the lower three quintiles spend at least as much as they earn.

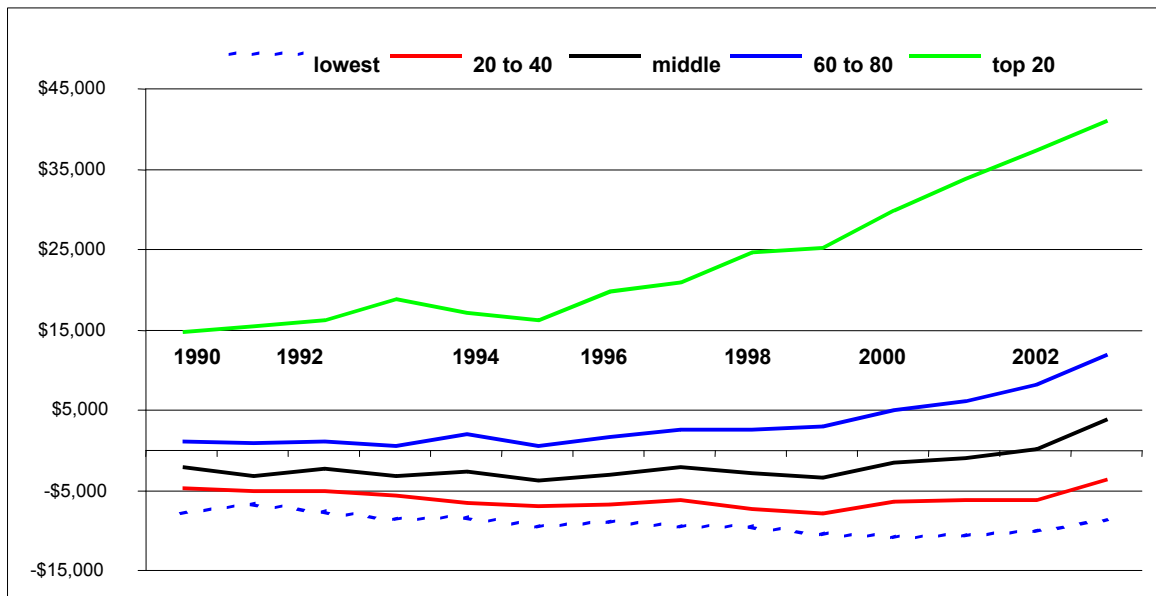
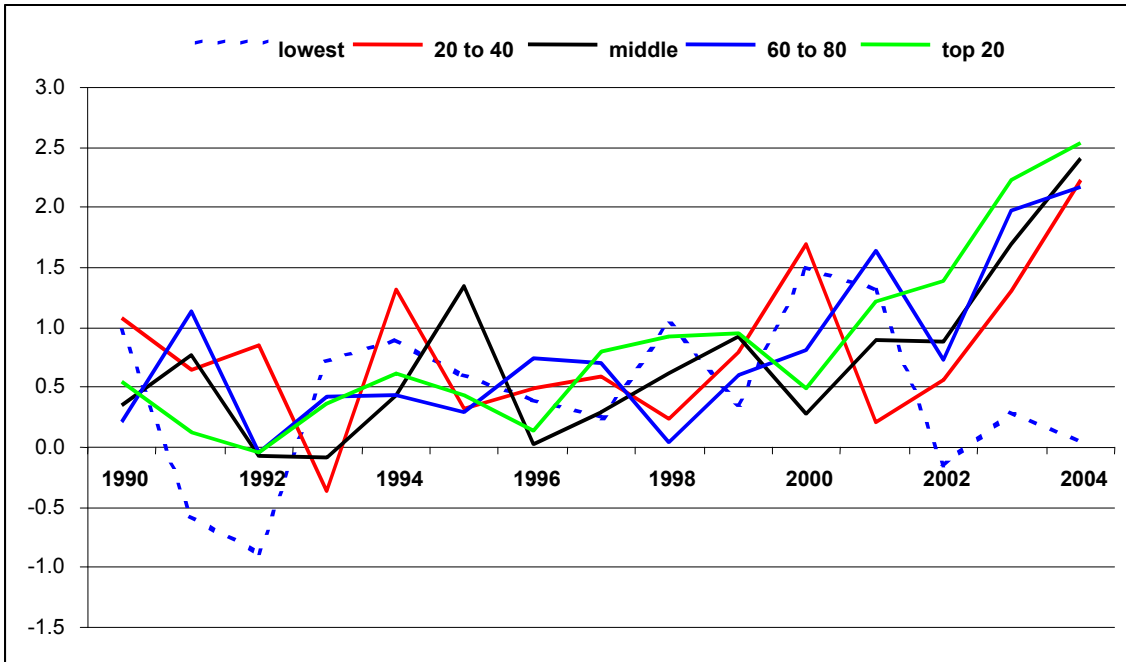


Chart I-6. Return Ratio on Investment in Housing. Investment is calculated as the sum of mortgage payments, property taxes and maintenance, repairs, insurance, etc. Return is the change in housing prices plus reduction in principal. By 2003, returns are over 150% for all but the lowest quintile.



Summary

The analysis reveals that key components of changes in wealth are housing and wages/salaries, with the possible exception of the uppermost earners, whose investments in assets other than real property are substantial.

I-A. RETURN ON ASSETS

This section uses housing prices as a measure of return on assets,³⁴ showing that Connecticut is becoming less affordable for prospective homeowners. Although other taxes and costs are important in assessing changes in wealth, Tables I-A3 and I-A4 in this section adjust the affordability of homes only by its property tax rate (mill rate). One reason is many costs are implicit in bank lending requirements that limit housing costs to a specified percent of nominal income. Another is that fiscal policies vary greatly between regions, because governments are firms that specialize in the production of infrastructure goods and services; Section I-B assesses those returns.

³⁴ For selected states. Appendix I presents the data for fifty states.

Table I-A1. Growth in Median Home Prices. Median home prices indicate changes in wealth for the population. Recent Connecticut gains were above the U.S. average, but well below the U.S. for the sample period. *The selected states are ranked by annual average increase from 1989-2004.*

Percent Changes in Median Home Price								
	A	B	C	D	E	F	(F-A)	
	Ann Avg 1989 - 1999	2000 - 2001	2001 - 2002	2002 - 2003	2003 - 2004	Ann Avg 2000 - 2004	Difference	Ann Avg 1989 - 2004
District of Columbia	2.9%	6.0%	20.5%	16.8%	34.9%	25.3%	22.4%	12.5%
Colorado	10.2%	11.0%	6.4%	5.7%	0.6%	6.4%	-3.8%	11.2%
Minnesota	6.6%	13.1%	11.4%	9.4%	6.7%	11.8%	5.1%	10.4%
Nebraska	7.6%	7.3%	2.4%	6.7%	6.1%	6.1%	-1.5%	8.1%
Nevada	4.9%	5.4%	6.1%	8.2%	19.1%	11.1%	6.2%	8.1%
Iowa	8.1%	4.7%	5.5%	3.7%	4.9%	5.0%	-3.1%	7.9%
Massachusetts	1.4%	15.3%	12.0%	24.3%	6.9%	17.9%	16.5%	7.4%
California	0.9%	11.0%	15.1%	21.4%	16.9%	20.3%	19.4%	7.2%
Kansas	6.1%	4.9%	6.8%	6.7%	2.2%	5.5%	-0.6%	7.0%
Virginia	3.9%	6.8%	7.8%	11.4%	10.6%	10.5%	6.6%	7.0%
Florida	3.8%	7.9%	10.2%	12.8%	3.3%	9.6%	5.8%	6.8%
United States	5.2%	6.0%	7.2%	7.6%	2.8%	6.4%	1.2%	6.6%
Maryland	2.6%	3.1%	9.3%	12.3%	16.3%	11.8%	9.2%	6.2%
Arizona	5.2%	5.8%	6.2%	7.1%	-0.3%	5.0%	-0.2%	5.9%
New Jersey	0.6%	7.3%	13.4%	16.7%	18.6%	17.1%	16.5%	5.8%
Rhode Island	0.0%	7.4%	11.9%	24.0%	17.0%	18.6%	18.6%	5.8%
New York	1.4%	5.1%	11.4%	12.7%	11.1%	11.6%	10.2%	5.0%
Texas	4.0%	4.9%	7.8%	4.8%	0.7%	4.9%	0.9%	5.0%
Pennsylvania	4.0%	4.7%	3.7%	6.9%	5.9%	5.7%	1.7%	4.9%
New Hampshire	0.3%	9.0%	15.1%	20.0%	4.0%	14.1%	13.8%	4.8%
North Dakota	4.7%	4.9%	2.9%	1.8%	3.1%	3.3%	-1.4%	4.8%
Maine	1.3%	2.9%	14.3%	11.4%	6.2%	9.8%	8.5%	4.6%
Vermont	1.7%	4.9%	8.2%	6.1%	11.5%	8.6%	6.9%	4.4%
Hawaii	1.2%	-3.9%	5.5%	11.3%	12.4%	6.7%	5.5%	3.6%
Connecticut	-0.6%	6.1%	10.4%	15.3%	4.6%	10.3%	10.9%	2.4%

Source: U.S. Census Bureau - American Community Survey

Table I-A2. Difference Between Growth in Median Home Price and Median Income. This is an important metric for attracting younger workers, as it reveals whether homes are becoming more or less affordable for new owners. *The table ranks selected states by changes between 2000 and 2004, during which Connecticut median home prices rose 7.3% faster than median household incomes.*

Difference Between Percent Changes in Median Home Price and Median Income								
	A	B	C	D	E	F	(F-A)	
	Ann Avg 1989 - 1999	2000 - 2001	2001 - 2002	2002 - 2003	2003 - 2004	Ann Avg 2000 - 2004	Difference	Ann Avg 1989 - 2004
District of Columbia	0.1%	-5.4%	-14.5%	-20.4%	-24.3%	-21.9%	-22.0%	-8.8%
California	2.4%	-7.7%	-11.8%	-20.4%	-15.0%	-17.9%	-20.2%	-4.2%
Rhode Island	3.1%	-9.6%	-5.2%	-17.0%	-17.3%	-15.8%	-18.8%	-2.1%
Massachusetts	2.2%	-9.9%	-6.7%	-27.3%	-3.1%	-15.0%	-17.2%	-3.8%
New Jersey	2.9%	-3.7%	-8.9%	-17.0%	-13.9%	-13.8%	-16.7%	-2.2%
New Hampshire	3.3%	-6.0%	-11.7%	-20.6%	-0.9%	-11.8%	-15.1%	-1.0%
Minnesota	-1.4%	-8.7%	-12.4%	-7.9%	-5.2%	-10.1%	-8.8%	-5.8%
Nevada	-0.5%	-2.0%	-5.9%	-4.9%	-20.8%	-9.7%	-9.2%	-4.9%
New York	1.8%	-4.4%	-9.3%	-9.9%	-8.6%	-9.6%	-11.3%	-1.8%
Maryland	0.8%	-0.6%	-5.8%	-9.5%	-16.0%	-9.4%	-10.2%	-3.0%
Virginia	0.1%	-3.7%	-7.0%	-7.7%	-8.8%	-8.0%	-8.2%	-3.1%
Florida	0.3%	-7.9%	-7.0%	-11.2%	0.1%	-7.5%	-7.9%	-3.2%
Connecticut	3.5%	-1.9%	-10.1%	-14.9%	2.0%	-7.3%	-10.8%	0.8%
Maine	2.1%	-0.8%	-7.3%	-11.8%	-0.3%	-6.0%	-8.1%	-0.9%
Hawaii	1.6%	0.7%	-4.3%	-10.9%	-6.9%	-5.8%	-7.4%	-0.9%
Colorado	-4.6%	-8.7%	-4.7%	-1.0%	-5.3%	-5.4%	-0.9%	-6.9%
Vermont	2.1%	-1.1%	-3.7%	-6.6%	-4.9%	-4.8%	-6.9%	-0.4%
Kansas	-1.2%	-8.0%	-4.1%	-4.1%	-0.8%	-4.7%	-3.4%	-3.2%
United States	-1.3%	-4.0%	-5.5%	-6.4%	-0.2%	-4.5%	-3.2%	-3.2%
Pennsylvania	-0.2%	-1.4%	-3.2%	-6.2%	-2.4%	-3.7%	-3.4%	-1.5%

Source: U.S. Census Bureau - American Community Survey

Table I-A3. Difference (\$) Between the Median Income and the Income Required to Purchase the Median-Priced Home: Assumed Lower Rates. For selected states, this table assumes a property tax rate of \$15 per every \$1000 in assessed value; calculated as 70% of market price. Also, the interest is assumed at the variable rate. Essentially, this table minimizes the costs of ownership. *The states are ranked by affordability in 2004.*

Difference (\$) Between the Median Income and the Income Required to Purchase the Median House								
Assumed Mill Rate: 15.00								
Assumed Interest Rate: Variable								
	8.5%	6.0%	1999-	7.0%	5.5%	5.0%	4.0%	4.25%
	1989	1999	1989	2000	2001	2002	2003	2004
California	-\$21,254	-\$2,328	\$18,926	-\$9,072	-\$5,655	-\$9,239	-\$14,553	-\$26,513
District of Columbia	-\$5,007	\$3,097	\$8,104	-\$1,992	\$1,589	-\$1,790	-\$5,949	-\$19,920
Hawaii	-\$32,405	-\$14,417	\$17,988	-\$22,601	-\$12,119	-\$11,848	-\$12,095	-\$18,927
Massachusetts	-\$10,674	\$6,758	\$17,433	-\$7	\$2,495	\$1,932	-\$6,381	-\$10,140
Rhode Island	-\$6,783	\$10,760	\$17,544	\$8,217	\$9,549	\$10,217	\$9,101	\$1,013
New York	-\$5,324	\$8,365	\$13,689	\$4,821	\$8,425	\$7,156	\$7,674	\$3,448
New Jersey	-\$6,406	\$14,912	\$21,318	\$9,617	\$14,531	\$13,704	\$11,024	\$3,489
Nevada	\$3,028	\$11,131	\$8,103	\$6,086	\$10,511	\$10,235	\$12,404	\$4,329
Colorado	\$5,945	\$7,959	\$2,014	\$2,901	\$5,454	\$5,677	\$9,787	\$6,133
Florida	\$5,020	\$13,967	\$8,947	\$10,239	\$11,926	\$11,841	\$11,882	\$11,577
New Hampshire	-\$1,637	\$18,067	\$19,704	\$15,209	\$18,565	\$17,044	\$13,545	\$12,541
Arizona	\$4,138	\$11,985	\$7,847	\$7,205	\$12,035	\$11,968	\$12,460	\$13,041
Connecticut	-\$10,163	\$14,620	\$24,783	\$10,890	\$16,462	\$14,558	\$12,991	\$13,532
Maine	\$2,220	\$13,990	\$11,770	\$10,049	\$13,572	\$14,082	\$13,720	\$13,718
Maryland	\$5,472	\$18,476	\$13,004	\$14,483	\$19,680	\$20,163	\$21,166	\$14,407
United States	\$7,006	\$13,821	\$6,815	\$10,393	\$13,628	\$13,747	\$15,039	\$14,613
Minnesota	\$9,269	\$18,278	\$9,010	\$15,954	\$18,536	\$16,128	\$17,217	\$14,875
Vermont	\$1,721	\$14,591	\$12,870	\$10,834	\$14,933	\$15,982	\$16,880	\$15,885
Virginia	\$6,784	\$17,138	\$10,354	\$14,520	\$18,288	\$17,855	\$19,412	\$16,090
Pennsylvania	\$8,779	\$17,257	\$8,477	\$15,206	\$18,692	\$19,151	\$20,169	\$19,793
Nebraska	\$11,335	\$18,521	\$7,186	\$15,240	\$19,210	\$19,742	\$21,933	\$20,468
Kansas	\$12,081	\$20,955	\$8,874	\$18,606	\$19,222	\$19,929	\$21,657	\$21,283
Texas	\$9,721	\$20,493	\$10,772	\$17,827	\$20,842	\$21,135	\$21,472	\$21,921
Iowa	\$12,869	\$20,035	\$7,166	\$17,579	\$20,867	\$20,414	\$22,818	\$22,298
North Dakota	\$8,385	\$17,078	\$8,694	\$15,169	\$17,663	\$19,045	\$21,711	\$22,689

Source: U.S. Census Bureau - American Community Survey

Table I-A4. Difference (\$) Between the Median Income and the Income Required if Buying the Median House: Higher Rates. For selected states, this table calculates first-time buyer affordability for fixed, 30-year mortgage rates of interest and a mill rate equal to \$30 per \$1000 of assessed real property value. For some states in the table, such as California and Hawaii, this higher mill rate is not currently relevant. It is relevant for many regions in Connecticut, however.

Difference (\$) Between the Median Income and the Income Required if Buying the Median House								
Assumed Mill Rate: 30.00								
Assumed Interest Rate: Fixed								
	10.0%	7.5%	1999-	8.5%	7.0%	6.5%	5.5%	5.75%
	1989	1999	1989	2000	2001	2002	2003	2004
California	-\$34,321	-\$15,900	\$18,421	-\$23,210	-\$20,844	-\$26,503	-\$34,948	-\$50,534
Hawaii	-\$48,721	-\$31,917	\$16,804	-\$41,435	-\$29,647	-\$30,117	-\$31,895	-\$41,334
District of Columbia	-\$13,192	-\$6,991	\$6,202	-\$12,887	-\$9,592	-\$15,100	-\$21,084	-\$40,476
Massachusetts	-\$21,583	-\$5,158	\$16,425	-\$12,652	-\$11,617	-\$13,679	-\$25,271	-\$30,481
New Jersey	-\$17,247	\$3,952	\$21,199	-\$1,721	\$2,757	\$516	-\$3,952	-\$14,401
Rhode Island	-\$15,708	\$2,226	\$17,934	-\$811	\$165	-\$150	-\$3,416	-\$13,737
New York	-\$14,094	-\$1,177	\$12,917	-\$5,057	-\$1,625	-\$3,899	-\$4,455	-\$10,124
Nevada	-\$3,381	\$2,019	\$5,400	-\$3,133	\$1,101	\$372	\$2,016	-\$8,134
Colorado	\$403	-\$2,732	-\$3,135	-\$8,140	-\$6,411	-\$6,794	-\$3,044	-\$6,872
Connecticut	-\$22,047	\$3,910	\$25,957	-\$87	\$5,189	\$2,268	-\$804	-\$997
New Hampshire	-\$10,333	\$9,513	\$19,846	\$6,131	\$8,990	\$6,161	\$836	-\$764
Maryland	-\$2,296	\$9,107	\$11,403	\$4,845	\$10,059	\$9,776	\$9,814	\$1,109
Florida	-\$124	\$7,197	\$7,322	\$3,178	\$4,551	\$3,813	\$3,069	\$2,408
Minnesota	\$4,312	\$10,424	\$6,112	\$7,881	\$9,699	\$6,403	\$6,863	\$3,750
Arizona	-\$1,222	\$4,201	\$5,423	-\$752	\$3,883	\$3,419	\$3,549	\$4,090
Maine	-\$3,651	\$7,657	\$11,308	\$3,306	\$6,856	\$6,498	\$5,497	\$4,924
Virginia	\$704	\$9,091	\$8,386	\$6,242	\$9,729	\$8,742	\$9,528	\$5,085
United States	\$1,727	\$6,146	\$4,419	\$2,500	\$5,528	\$5,168	\$6,057	\$5,316
Vermont	-\$4,708	\$7,436	\$12,144	\$3,301	\$7,283	\$7,806	\$8,436	\$6,408
Pennsylvania	\$4,132	\$11,032	\$6,900	\$8,997	\$12,397	\$12,706	\$13,459	\$12,636
Nebraska	\$7,972	\$12,874	\$4,902	\$9,620	\$13,374	\$13,840	\$15,802	\$13,918
Kansas	\$8,597	\$15,596	\$6,999	\$13,107	\$13,639	\$14,039	\$15,542	\$14,991
Texas	\$5,760	\$15,199	\$9,439	\$12,351	\$15,279	\$15,211	\$15,426	\$15,788
Iowa	\$9,809	\$14,741	\$4,932	\$12,349	\$15,565	\$14,889	\$17,242	\$16,408
North Dakota	\$4,988	\$12,304	\$7,316	\$10,293	\$12,711	\$14,013	\$16,723	\$17,508

Source: U.S. Census Bureau - American Community Survey

Table I-A3 indicates that Connecticut is becoming less attractive for new homeowners and Table I-A4 shows that the State may not be affordable, at least for desirable housing. However, the above estimates are statewide medians and Table I-A5 breaks down the analysis into Congressional Districts. The median price home in the 4th District, essentially Fairfield County, is not affordable for the median wage earner in that district by over \$50,000. Essentially, the County offers a right-skewed distribution of wealth, which appeals more to exceptionally high earners and senior, highly educated residents.

Table I-A5. Dichotomy between Change of Wealth Due to Appreciation of Homes and Affordability for First-Time Buyers. Due to data availability and consistency, Table I-B1 breaks down the information from the tables in Section I-A by Congressional District for 2001-2004. The result indicates housing is not affordable in the 4th Congressional District of Connecticut for recent graduates, but longer-term owners attained a significant increase in wealth. Note that a mill rate of 30.00 is realistic for many regions of the State.

Connecticut	Percent Change 2001-2004		Difference Between Median Income and Income Required if Buying Home at Median Price			
			15.00 Mill Rate Variable Interest Rate		30.00 Mill Rate Fixed Interest Rate	
Congressional District	Home Price*	Household Income*	5.50% 2001	4.25% 2004	7.00% 2001	5.75% 2004
1st	32.1%	3.2%	\$19,039	\$15,018	\$9,457	\$2,761
2nd	47.0%	15.0%	\$21,006	\$19,197	\$11,662	\$5,893
3rd	26.8%	7.4%	\$11,285	\$10,218	-\$53	-\$3,697
4th	31.1%	7.6%	-\$14,326	-\$22,474	-\$38,170	-\$52,747
5th	7.8%	-2.3%	\$12,093	\$12,921	-\$1,034	-\$780

* Median Values

Summary of Section I-A

The Connecticut housing market benefited from low interest rates, a highly skilled senior workforce and increasing congestion in New York and Boston. However, interest rates are much higher, the workforce continues to age and Fairfield County suffers serious urban congestion problems.

I-B. RETURN ON TAXES

As identified by Dr. Robert Tannenwald, the Director of the New England Public Policy Center at the Federal Reserve Bank of Boston, assessing the return on taxes is generally a difficult valuation, except perhaps when using representative tax and representative expenditure

systems.³⁵ The systems assume six government-funded functions must account for other factors than just population: elementary and secondary education, higher education, public welfare, health and hospitals, highways, and police and corrections. Other uses of taxes are assumed to be proportional to the population.

Tannenwald and Turner (2006) focus on fiscal need, fiscal capacity, fiscal comfort (*fiscal need* relative to *fiscal capacity*) and fiscal disparity (differences in *fiscal comfort* across regions). Particularly, they find that Connecticut had a relatively high tax base in 1999, but an even higher relative capacity to tax. The State recorded one of the highest rankings for fiscal comfort, but also one of the highest for *tax effort*, a measure of the extent to which fiscal capacity is being taxed.

Their findings indicate that Connecticut can afford to invest in the recommended growth strategies, but must remain judicious as to the allocation of public funds. For example, Tannenwald and Turner (2006, p. 88) show that less educated workers in Connecticut earn comparatively higher wages (compared to other states) than workers with a graduate or professional degree. This statistic does not encourage firms to locate in the State unless their production processes require highly educated workers (see Section IV). Even then, without a significant improvement in transportation, Connecticut's most vital engine of economic growth, Fairfield County, can not hope to continue to attract firms that find it profitable to pay wages that are sufficient to retain graduates of State-funded schools such as the University of Connecticut and Southern Connecticut State University. Because education is the dominant theme in the recommended growth plan for all regions of the State, we focus our analysis on returns to education, but include the Transportation Strategy Board's objectives in Appendix II.

Education

Connecticut has relied on its reputation as an "education State" to justify its relatively high per capita income, but faces two distinct challenges to its educational future. First, the performance differential between rich and poor students is alarming. Second, it is becoming increasingly difficult to maintain a sufficient skills advantage between the median student in Connecticut and the median student in another region to profitably justify historical ratios of real wages.

As the Committee for Economic Development points out, the societal benefits of high-quality preschool education far outweigh the program costs by improving the later education, employment, earnings and crime outcomes of children attending such programs. In addition,

³⁵ Tannenwald, Robert and Turner, Nicholas. "Interstate Fiscal Disparity in State Fiscal Year 1999." *Public Policy Discussion Papers*, Federal Reserve Bank of Boston, April 2006, No. 04-9, pp. 1-90.

significant investment in preschool programs can improve the State's fiscal position by reducing education and criminal justice costs, while boosting income tax revenue. These investments contribute to the long-term economic growth and development of Connecticut. According to Minneapolis Federal Reserve economists Arthur Rolnick and Rob Grunewald, high quality early childhood investment provides an annual long-term return of 16%, significantly greater than many other uses of public (or private) funds.

Despite Rolnick and Grunewald's assertion that the average long-term return for high quality early childhood education is 16%, the reality is the return on taxes for education is a difficult issue to assess because one needs to measure the quality of the public services provided in relation to taxes paid, that is, a quality-adjusted return. Education garners the largest share of State and local taxes in many regions, so it is not surprising that one of the most researched areas in education has been in the field of school finance and measures of school quality. Hundreds of studies have looked at the manner in which communities allocate their monies in order to attain educational quality.

These studies, which go back to the turn of the last century (1900's), show a relatively positive relationship between cost and quality. Using the four Indicators of Quality in surveys of elementary and secondary education,³⁶ Michael Zotos finds that specific school expenditures such as library books, teacher salaries, new buildings, class size, and teacher characteristics reflect a significant relationship.³⁷ However, Zotos established that Finance and Staff only account for about 60-64 percent of the relationship to educational success; the remaining 36-40 percent is attributable to differences in parental income. This implies that children's readiness for school,³⁸ parental involvement in the schools, technology, abundant educational opportunities in home environments, private schooling, and homework support are additional indicators that result in higher achievement. As these environmental factors are absent in lower achieving schools, do we really expect programs such as "No Child Left Behind" to bridge this gap?

While more affluent communities tend to score higher on these tests, areas with higher rates of low income families and child poverty tend to score lower. Among poor children as reported in

³⁶ Individualization of instruction, grouping, creativity and interpersonal regard were the four quality-based measures of classroom performance developed at the Institute of Administrative Research at Teachers College, Columbia University.

³⁷ Zotos, Michael H. "An Examination of Relationships Between Certain School Financial and Staffing Variables and a Measure of the Educational Process." *Doctorate of Education Dissertation*, 1970, Teachers College, Columbia University, NY.

³⁸ The literature generally accepts that there are four factors that predict school readiness at entry to kindergarten: (a) income level; (b) maternal education level; (c) single parenthood; (d) if English is the primary language.

the 2000 Census, according to Connecticut Voices for Children: “In Connecticut, about 4 percent of non-Hispanic white children live in families with incomes below the federal poverty level, compared to 25 percent of African-American children and 31 percent of Hispanic children.”

According to the “Education Trust 2005”,³⁹ educational entities are “postponing the day when we will give poor students ... the education they deserve and need.” Is this discrepancy due to the income level, parental educational status, quality of the school systems, peer relationships, the physical environment, or the differences in family structure? Many studies related to wealth, poverty, crime, drugs, and alcohol, and unequal funding for various initiatives have been conducted with mixed results. Zotos (1970) shows that performance in secondary schools is more directly linked to capital expenditures than is found at the elementary level, although it may be difficult to differentiate what effects are residual. Therefore, we focus on pre-K and elementary preparation, before addressing issues of higher education.

Early Childhood Education Policy

Janice Gruendel⁴⁰ asserts the State must first have a performance (or readiness baseline) at entry to Kindergarten in order to know:

- (i) If early childhood investment can reduce the likely incidence of unready children among risk groups.
- (ii) If these ready children are performing at Mastery at 3rd or 4th grade and what it costs to get them there.
- (iii) If unready children at Kindergarten can reach proficiency/mastery and with what level of education investment.

Centralization as Elementary Education Policy

The Education Trust argues that a cost effective school model to deal with current and future social and economic issues is of the highest priority. We turn to the centralization of services in our economy to provide such a model. One has only to look at the modern example of the shopping center mall approach in retail sales. For many years, Main Street predominated and was the only retail center for people to shop for goods. Following WW II, with the popularity and increase of automobile ownership and the improvement of roads and interstate highways, the shift from Main Street to centralized shopping centers occurred. This phenomenon not only changed the manner in which people shopped and spent money, it also resulted in major socio-economic changes such as the growth of the suburbs and the decline of many cities.

³⁹ Randolph-McCree, Isis and Pristoop, Eli. 2005.

⁴⁰ Janice Gruendel is the co-president of Connecticut Voices for Children, currently Senior Advisor on Early Childhood for Connecticut's Governor M. Jodi Rell and Lecturer at the Yale University Child Study Center.

This concept can be effectively implemented by centralizing education in economically disadvantaged areas, thereby substantially upgrading the overall quality of schooling at a considerable savings compared to the present manner in which children are educated. It is the intent of this program to provide surrogate services such as tutoring, technology resources, social and medical assistance, child care, transportation, and a wealth of educational materials that ostensibly equalize the educational playing field. Therefore, this argues against a strict interpretation of the smaller, decentralized approach typically associated with the 21st Century School paradigm.⁴¹ Essentially, a number of buildings make up the “education village”, thereby preserving the goal of low student/teacher ratios in main subject areas, but realizing cost externalities for educational experiences other than “reading, writing and arithmetic.”

An example of this concept in the Hartford area would be to identify property in the city where a school offering educational and other comprehensive services could be built, replacing a minimum of 3-6 existing pre-K through 3rd grade schools. Transportation costs would be minimal due to a short commute.⁴² Plans could also include a phase-in process for grades 4-6 using this same model.

Proposal

In this proposal, we detail a 21st century approach⁴³ as the backbone of our *education village*. The first step in such a project is to assess the needs of the community and its children, as follows:

- Child care, before and after school programs
- Medical and dental services
- Transportation, busing
- Food services
- Class size
- Special Education needs, such as physical, emotional and learning disabilities
- Skilled career programs as well as college preparation
- Guidance and counseling availability
- Extent of parental involvement in programs
- Resources such as library, computers, and other instructional aids
- Physical education in both indoor and outdoor sports

⁴¹ For example, Sterling Professor of Psychology *Emeritus* Ed Zigler, Yale University.

⁴² Costs are a major issue whenever participation in Magnet schools is noticeably below expectations.

⁴³ 21st Century Schools Design Manual, New Jersey Schools Construction Corporation, Trenton, NJ, September 2004.

The 21st century school is very different from the past when reading text or listening to a teacher lecture was the primary mode of instruction. Today's schools provide a learning atmosphere that utilizes technology, and an environment consisting of spaces of various sizes and functions. The educational spaces include areas for cooperative learning in groups of various sizes, areas where students can work independently, and conference rooms for one-on-one sessions with a counselor, tutor, coach or fellow student. Space for individualized testing and counseling, areas for organized study programs, and areas that can be utilized for student and faculty research purposes should be provided.

The quality of the educational program will be enhanced considerably by providing facilities and space to accommodate music, theater and art activities, as well as physical education and recreation areas. The curriculum basics include Mathematics, English, Science and Social Studies, but should also be enriched with an expanded course of study. Some of these courses are Foreign Languages, Art, Music, Writing, Computer Science, Environmental Education and Physical Education. The needs assessment, combined with the educational expertise of school administrators and consultants, will determine the final curriculum, answering such questions as "Which courses are essential for an educated person to be effective in the 21st century? What role will this education have in helping the graduate achieve a satisfying and productive life? How will the separate subjects be best integrated into the total program?"

Recommendations:⁴⁴

- Include Gymnasium, Library/Learning Center, Cafeteria/Kitchen, Auditorium/Theatre/Arts, Indoor Swimming Pool.
- Consider "green" school opportunities – i.e. energy efficient design, natural lighting and ventilation, photovoltaic energy panels, and water conservation.
- Incorporate technology assets into the routine facility and management systems.
- Allow enough gross square footage per pupil.
- Hire parents as tutors and for child-care.
- Involve senior citizens in training students in technology, the teaching of foreign languages, student-mentor programs, etc.

⁴⁴ The Gross Square Footage Per Pupil Table, as developed by a team of experts from the architectural and building firm of Reed Construction Data/RS Means of Kingston, Massachusetts, USA, provides guidelines for educators and school construction planners to determine the inherent quality of the educational program, based on space.

Higher Education

In the 21st century, higher education must respond to an expanding, knowledge-based global marketplace. For example, in just one decade, the United States declined from first to seventh in the proportion of young adults (ages 25 to 34) who have earned a postsecondary degree.

Fortunately, a summit meeting of the nation's governors recognized that every high school graduate must be ready to undertake college-level education or training. Coelen and Berger (2006) document that much of Connecticut's in-migration is college-bound youth (the 18-29 year old age group captures entering and returning undergraduate as well as graduate students).⁴⁵

Connecticut would benefit from knowing whether these students end up staying in state after graduation, particularly at the graduate school level. Also, the Department has made important strides in encouraging Connecticut residents to attend college in state (58% of recent college-bound high school graduates today versus under 50% in 1992), but there was still a significant exodus of degree status students between 1990-2004.

Although ranked 1st in 1990 in percentage of State population 25 years and older with a bachelor's degree or higher, Connecticut's rank on this important measure of workforce competitiveness fell to as low as 6th, before reemerging as 1st in the 2005 Current Population Survey. This is true despite the fact that our colleges have increased degree production by 14% since 2002, as the State still lags the national average in the number of new degrees per 100,000 in population.⁴⁶ Clearly investment in higher education will sustain the influx of college bound youth, but there has to be a strategy to keep more of them here when their studies are completed. We offer that investment in early childhood education is a cost effective method to put more Connecticut youth through college (increase completion rates in Connecticut) and we suspect keep them in Connecticut if there are job opportunities here. Coelen and Berger state, "Anything we can do to raise college participation, retention, and completion rates beyond their current levels will have lasting demographic and economic consequences."

More recent graduates would remain in the State if they could afford to do so, which implies an increase in the number of firms that find the highly skilled labor force of Connecticut make it the most profitable state in which to locate. However, results of the National Assessment of Adult Literacy (NAAL), although much debated, suggest that the abilities of the nation's college

⁴⁵ Coelen and Berger (2006), available at www.nmefdn.org/uimages/documents/NE_2020_FR.pdf.

⁴⁶ "Higher Education Counts: Achieving Results (*Executive Summary*). Connecticut Department of Higher Education, 2006.

graduates have slipped during the same period.⁴⁷ Also, the Secretary of Education's Commission on the Future of Higher Education will shortly make recommendations that address the major issues identified by National Center for Public Policy and Higher Education (NCPPE) in its *Measuring Up* reports.⁴⁸

The NCPPE report grades the 50 states based on six indicators: preparation for college, participation, completion, affordability, benefits and learning. In the first measure, **preparation** (grade received: A-), Connecticut shows an appreciable decline in 8th graders scoring at or above "proficient" on national reading assessments moving from 42% in the early 1990s to 34% in 2005, a position of fourth among the four states (behind Arizona, New Mexico and West Virginia) showing such declines. As well, the State exhibits a decline in 8th graders scoring at or above "proficient" on national science assessments falling from 36% to 33% slightly above Maine's performance decline (41% to 34%). There were no improvements in other aspects of the preparation measure.

In the **participation** measure (grade received: A-), Connecticut was one of four states in which 18- to 24-year-olds enrolled in college improved: Rhode Island: 31% to 41%, Connecticut: 34% to 42%, California: 32% to 40%, Kentucky: 24% to 32%. Significant disparities exist in participation with 58% from high income and 16% from low-income households. In the **affordability** measure (grade received: F), Connecticut, along with 42 other states, experienced deterioration in college affordability. With respect to the **completion** measure (grade received: B+), significant disparities exist. Measured as certificates, degrees, and diplomas awarded per 100 undergraduate students enrolled, Connecticut grants 18 to whites, and 13 each to blacks and Hispanics.

In the **benefits** measure (grade received: A), Connecticut improved its performance with adults (ages 25 to 65) with a bachelor's degree or higher moving from 30% to 37% since the early 1990s. The State improved as well in its increase in total personal income as a result of the percentage of the population holding a bachelor's degree or higher. In the **learning** measure, Connecticut receives an incomplete along with 45 other states because they have not provided data to assess the quality of their "educational capital" by comparing the information provided by the thousands of professional licensure and graduate admissions examinations completed by the nation's college graduates each year.

⁴⁷ Justin D. Baer, Andrea L. Cook, and Stéphane Baldi, *The Literacy of America's College Students* (Washington, D.C.: The National Survey of America's College Students, American Institutes for Research, January 2006).

⁴⁸ Reports available at www.highereducation.org

The NCPPE summary of Connecticut's performance is that: "Connecticut performs well in preparing students for and enrolling them in college", although the average may not reflect discrepancies in performance correlated with demographic cohorts. The Connecticut Department of Higher Education agrees with the general message of *Measuring Up* in that they estimate a shortfall of financial aid for qualified applicants enrolled in public colleges of at least \$20 million per year and \$46 million short of "full formula" funding (both Connecticut Aid to Public College Student Program and Connecticut Independent Student Grant Program). However, as noted earlier, the State's strong performance in higher education could be undermined by large disparities in opportunity based on ethnicity and income.⁴⁹ Additionally, the U.S. Education Department recently issued its assessment of the status of high quality teachers in the States' public schools.⁵⁰ Under the No Child Left Behind law, states were to have highly qualified teachers in each core academic class by the end of the last school year. None did.

Summary Section I-B

Education continues to be the main engine for growth and high per capita income. However, macroeconomic trends increase the impact of competition and demographic shifts on State industries, indicating that Connecticut needs to improve its return on investment at all levels of education, if the residents are to maintain current standards of living.

I-C. RETURN ON INCOME

Tables I-C1 and I-C2 show that the relative importance of investments in assets other than housing diminished after 1969, but their contribution to the State's per capita income is still significant.

⁴⁹ The Connecticut Department of Higher Education responds to the State's changing demographics in their accountability report by addressing issues dealing with educational attainment of minorities: www.ctdhe.org/info/pdfs/2006/2006AccountabilityReport.pdf.

⁵⁰ "States Fall Short on Teacher Quality," Ben Feller, Boston Globe, August 16, 2006.

Table I-C1. Selected Connecticut/U.S. Ratios of Income during 1969–2004. The table shows that Connecticut's per capita income, the broadest measure of income defined by the BEA, has increased relative to the U.S., but not as much as average wages.

Conn/U.S. Ratios

	1969	1979	1985	1989	1995	1999	2004
Per capita personal income	1.26	1.19	1.27	1.39	1.35	1.37	1.37
Per capita Net Earnings (Place of Residence)	1.24	1.19	1.32	1.42	1.39	1.43	1.43
Per capita Dividends, Interest, etc.	1.52	1.35	1.27	1.46	1.32	1.33	1.40
Per capita Personal Current Transfer Receipts	1.02	1.00	1.00	1.05	1.17	1.14	1.08
Average Wage	1.09	1.04	1.10	1.21	1.25	1.27	1.29
Average Wage Supplements	1.09	1.03	1.08	1.19	1.18	1.19	1.23
Average Wage: Proprietor	1.25	1.04	0.98	1.10	1.24	1.34	1.47

Table I-C2. Tracking Changes in Importance of Components of Income during 1969–2004. The table shows that currently Connecticut's per capita income does not depend as much on adjustments to resident income and superior earnings in dividends, interest, etc., as it did in 1969.

Percent of Total Income

Components of Personal Income	Difference Between Conn and U.S.						
	1969	1979	1985	1989	1995	1999	2004
Earnings by place of work	-6.8%	-4.7%	-1.6%	-2.0%	-2.1%	-2.0%	-0.3%
Less: Contrib. for gov. social ins.	-0.5%	-0.2%	-0.1%	-0.4%	-0.6%	-0.6%	-0.7%
Employee contribution	-0.3%	-0.1%	0.0%	-0.2%	-0.3%	-0.3%	-0.3%
Employer contribution	-0.2%	-0.1%	-0.1%	-0.2%	-0.3%	-0.3%	-0.3%
Plus: Adjustment for residence	5.0%	4.3%	4.1%	3.4%	3.8%	4.2%	2.5%
Equals: Net resident earnings	-1.3%	-0.1%	2.5%	1.8%	2.3%	2.8%	2.8%
Plus: Div, interest, and rent	2.8%	2.0%	0.0%	1.1%	-0.4%	-0.6%	0.3%
Plus: Personal transfer receipts	-1.5%	-1.8%	-2.5%	-2.9%	-1.8%	-2.2%	-3.1%
Wage/salary disbursements	-3.9%	-2.1%	0.6%	-0.2%	-0.8%	-0.9%	-0.9%
Supplements to wages/salaries	-0.4%	-0.5%	-0.1%	-0.3%	-0.9%	-1.0%	-0.8%
Employer contrib: pens/ins funds	-0.2%	-0.4%	-0.1%	0.0%	-0.6%	-0.6%	-0.5%
Proprietors' income	-0.2%	-0.1%	-0.1%	-0.2%	-0.3%	-0.3%	-0.3%
Farm proprietors' income	-2.5%	-2.0%	-2.1%	-1.6%	-0.4%	-0.2%	1.4%
Nonfarm proprietors' income	-1.5%	-0.9%	-0.5%	-0.7%	-0.3%	-0.3%	-0.4%

Connecticut has been one of the highest, if not the highest, per capita income State each year between 1969 and 2004. However, during the 1970's, its average real wage ranks the State much lower, usually between 10th and 20th. The two measures track closely by the end of the

1980's, so that Connecticut is one of the highest ranked states in average real wages from 1989-2004.

Table I-C3 shows this change occurred primarily during 1986-1989, when all of New England recorded substantial gains in average real wages. Table I-C4 indicates this gain in wages and salaries during the middle 1980's primarily resulted from the service sector. Table I-C5 presents the case that substitution is a major driver behind this movement along the production possibilities frontier, the result of innovation.

Table I-C3. 1969-2004 Growth in Real Wages for Connecticut, by Selected Time Period.
The table shows Connecticut leads the nation in increases in average real wages during 1986-1989. This trend extended throughout the Northeast Region. After 1989, Connecticut ranks near the top in average real wage and per capita income.

Rank	Area	Average Annual Change In Real Wage				
		1969-1985	1986-1994	1995-2004	1986-1989	1990-1994
1	Connecticut total	0.1%	1.1%	1.5%	5.5%	2.1%
2	Hawaii total	-0.7%	1.0%	0.5%	4.8%	1.9%
3	New Jersey total	0.2%	1.1%	1.1%	4.2%	2.6%
4	Rhode Island total	-0.3%	0.6%	1.3%	3.7%	0.2%
5	New England region	0.1%	0.8%	1.7%	3.7%	0.9%
6	Massachusetts total	0.2%	0.9%	1.7%	3.1%	1.6%
7	New Hampshire total	0.3%	0.5%	1.7%	2.8%	-0.7%
8	District of Columbia total	0.6%	1.0%	2.2%	2.6%	4.3%
9	Maine total	0.0%	0.3%	1.1%	2.2%	-1.6%
10	Delaware total	0.1%	0.0%	1.8%	2.1%	-0.9%
11	North Carolina total	0.4%	0.7%	1.7%	2.0%	2.2%
12	Maryland total	0.1%	0.5%	1.8%	1.9%	1.1%
13	California total	-0.3%	0.3%	1.6%	1.7%	-0.6%
14	Virginia total	0.5%	0.4%	2.2%	1.6%	1.2%

Table I-C4. Industry Sector Contributions to Growth in Real Wages for Connecticut between 1969-1997. During 1986-1989, *Manufacturing* contributed to the strong growth in real wages, but the *Retail Trade* and the *Finance, Insurance and Real Estate* sectors contributed more. Most notable is the contribution of the *Services* sector.

Industry Sector	Industry Sector Contributions to Growth In CT Avg. Real Wage					
	1969-1985	1986	1987	1988	1989	1986-1989
Agricultural services, forestry, fishing	-0.3%	0.0%	0.4%	0.0%	0.0%	0.4%
Mining	0.0%	-0.1%	0.1%	0.1%	0.0%	0.0%
Construction	0.1%	0.1%	0.4%	0.1%	-0.1%	0.5%
Manufacturing	4.2%	0.6%	0.8%	0.3%	0.0%	1.7%
Transportation, and public utilities	0.5%	0.0%	0.2%	-0.1%	0.0%	0.2%
Wholesale trade	0.3%	0.1%	0.7%	0.4%	-0.1%	1.2%
Retail trade	-2.2%	0.7%	0.8%	0.4%	-0.1%	1.8%
Finance, insurance, and real estate	-0.4%	0.4%	0.3%	1.3%	-0.1%	1.9%
Services	-0.1%	0.8%	2.4%	1.0%	1.0%	5.3%
Government and government enterprises	2.8%	0.0%	0.5%	0.4%	0.4%	1.3%

Table I-C5. 1969-1997 Changes in Contribution to Percent of Gross State Product for Selected Industries. The table highlights the substantial shift in both Connecticut's and the U.S. industry mix in terms of gross production. Although the national share of durables dropped 6.1% during 1969-1997, Connecticut's share of state product dropped 18.4%.

1969-1997 Changes in Contribution to Percent of Gross State (National) Product for Selected Industries			
Industry	Conn	U.S.	Difference
Construction	-2.1%	-0.6%	-1.5%
Manufacturing	-22.7%	-10.0%	-12.7%
Durable goods	-18.4%	-6.1%	-12.4%
Primary metal industries	-2.2%	-1.5%	-0.7%
Fabricated metal products	-2.1%	-0.6%	-1.5%
Industrial machinery and equipment	-4.5%	-0.7%	-3.8%
Electronic and other electric equipment	-1.4%	-0.1%	-1.3%
Motor vehicles and equipment	0.1%	-1.2%	1.4%
Other transportation equipment	-6.8%	-1.0%	-5.8%
Nondurable goods	-4.3%	-4.0%	-0.3%
Transportation	0.3%	-1.0%	1.3%
Railroad transportation	-0.1%	-1.1%	1.0%
Transportation by air	0.3%	0.6%	-0.3%
Communications	-0.1%	0.4%	-0.5%
Wholesale trade	1.6%	-0.2%	1.8%
Retail trade	-2.5%	-0.9%	-1.6%

Finance, insurance, and real estate	16.0%	4.8%	11.2%
Depository institutions	0.4%	1.2%	-0.8%
Security and commodity brokers	2.1%	1.5%	0.7%
Insurance carriers	6.5%	0.8%	5.7%
Insurance agents, brokers, and services	0.2%	0.2%	0.0%
Real estate	5.5%	0.7%	4.8%
Services	10.0%	9.8%	0.2%
Health services	3.4%	3.3%	0.1%
Legal services	0.5%	0.7%	-0.3%
Educational services	0.3%	0.2%	0.1%
Government	0.2%	0.1%	0.1%
Federal, civilian	-0.4%	-0.7%	0.3%
Federal military	-0.5%	-0.9%	0.5%
State and local	1.1%	1.7%	-0.7%
Addenda			
<i>Electronic equipment and instruments</i>	-1.6%	-0.1%	-1.5%
<i>Depository and nondepository institutions</i>	1.2%	1.4%	-0.2%
<i>Business services and other services</i>	5.7%	5.2%	0.5%

Summary of Section I-C

Wage and salary increases in the *Service* sector of the industry mix contribute the most to Connecticut's strong upward growth in income during the 1980's. Traditionally important sectors, such as *Manufacturing*, experienced a nationwide decline as a generator of income, signaling a substitution of production workers (moving outside the country) or a substitution effect in consumer preferences.

Summary of Section I

This section details the importance of recent gains in relative real income, particularly from increased importance of the service sector, and housing prices (less property taxes) for increased wealth for established homeowners in the workforce. However, first-time buyers faced increasingly difficult scenarios, as salaries did not keep pace with housing prices. When assessing affordability within Connecticut, several of the more desirable regions are seen as not affordable. Therefore, Connecticut's gain in wealth, particularly during 2001-2004, should attract new inhabitants, particularly in the labor force, but the rapid increase in housing prices relative to increases in salaries may limit the State's ability to recruit the next generation of workers.

II. Total Wages From the Labor Force

Why do total real wages change so much relative to the population, particularly between 1990 and 2004? To answer this question, this section develops linkages between labor force and changes in total (real) wages, showing employment and average wage are most important.

II-A. Connecticut's Total Wages From Labor Force

The first two charts show that increases in wages are not necessarily the result of increases in the labor force. Therefore, additional determinants of income are analyzed.

Chart II-A1. 1990-2004 Trends in Total Wages and Labor Force in Connecticut. The Connecticut labor force is lower in 2004 than 1990, but total real wages are significantly higher.

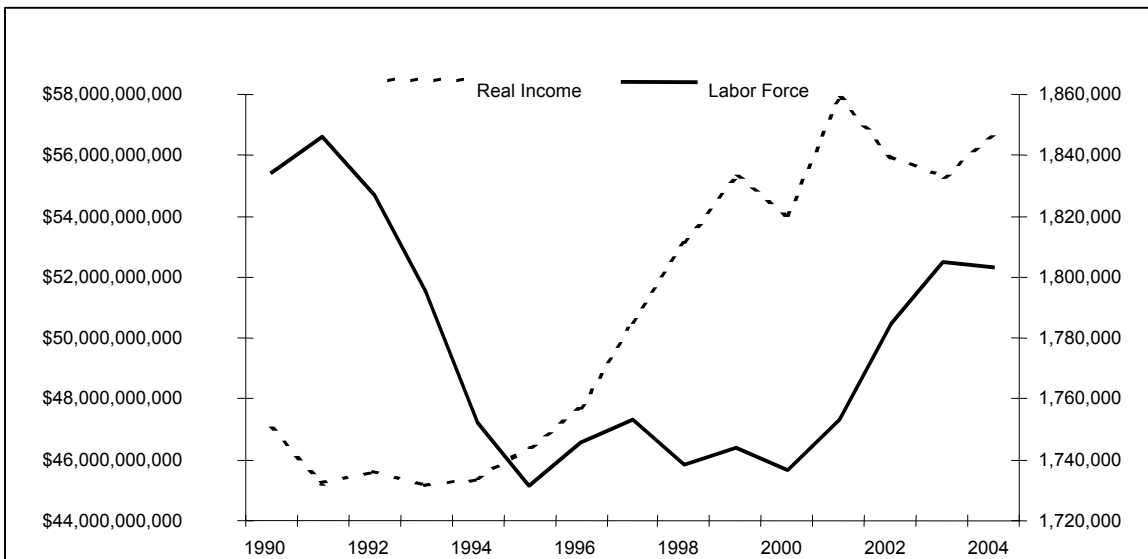
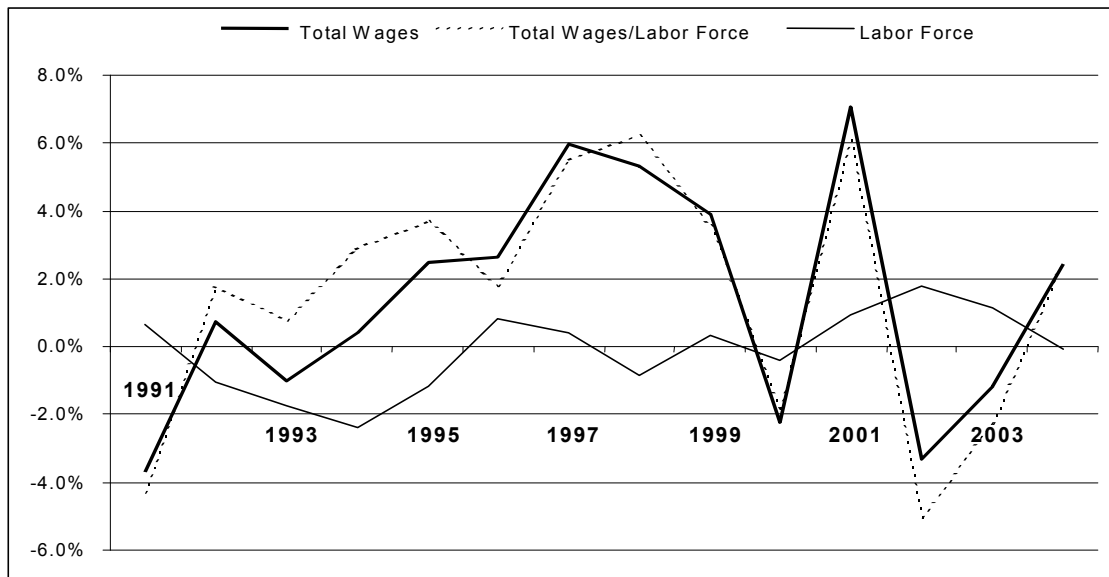


Chart II-A2. 1990-2004 Growth in Total Wages and Labor Force in Connecticut. Chart II-A2 measures components of total wages and finds that changes in the size of the labor force is not the dominant determinant of changes in total real wages.



Percent Changes in Total Wages from Employee Wages, Employment, Worksites and Labor Force

This subsection measures trends of income per employee, employment and worksites against total real income:

$$(II) \quad Total\ Wages = \frac{Total\ Wages}{Employees} \times \frac{Employees}{Worksites} \times \frac{Worksites}{Labor\ Force} \times Labor\ Force$$

This equation implies the following:

$$(II-a) \quad \% \Delta Total\ Wages \approx \% \Delta \frac{Total\ Wages}{Employment} + \% \Delta Employment$$

$$(II-b) \quad \% \Delta Employment \approx \% \Delta \frac{Employment}{Worksites} + \% \Delta Worksites$$

$$(II-c) \quad \% \Delta Worksites \approx \% \Delta \frac{Worksites}{Labor\ Force} + \% \Delta Labor\ Force$$

Chart II-A1a shows mixed results. **Wages per employee** is an important driver of total wages, but after 1999, **employment levels** have a substantial effect on total income. In Appendix I, detailed analysis of equations (II-b) and (II-c) rule out changes in the number of worksites or the size of the labor force as primary determinants of changes in total income in Connecticut during the sample period.

Chart II-A1a. 1990-2004 Growth in Wages and Employment for Connecticut. Percent changes in average real wage tracks closely with changes in real wages until 2000, when changes in employees dominate the changes in wages.



Summary of II-A

Connecticut has increased its total real wages and exhibited slight gains in employment and population, and losses in labor force. This indicates that some portion of lower paid workers may be leaving the workforce, either by retirement or relocation.

II-B. Connecticut/U.S. Ratios of Total Wages From Labor Force

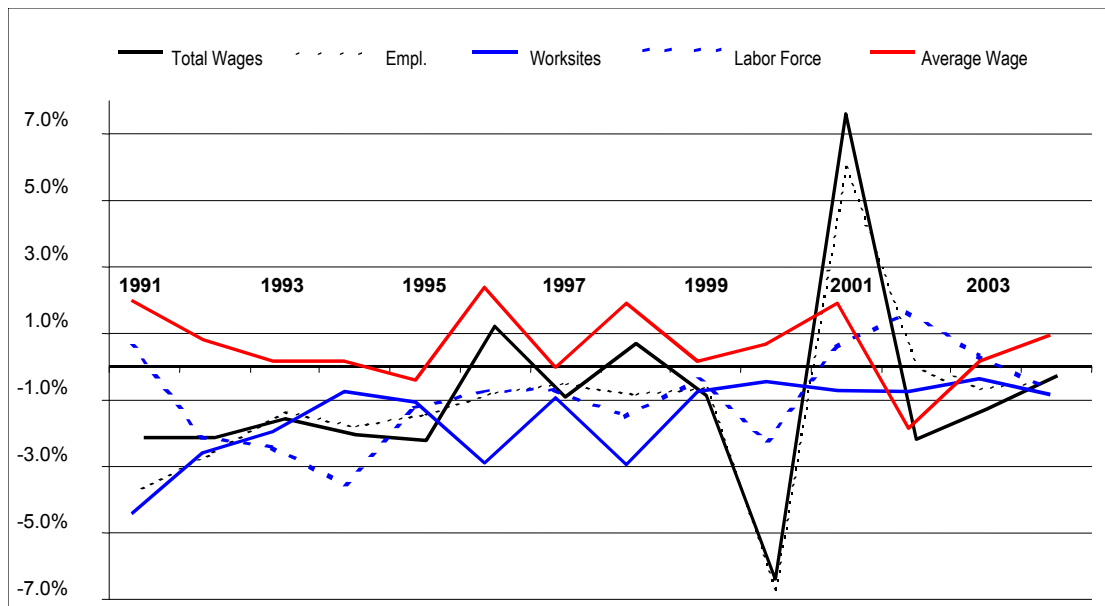
Changes in the number of worksites or the size of the labor force may be significant determinants of the State's declining national share of wages and salaries. However, we find that net changes in worksites (or firms) and the labor force are not the major drivers of Connecticut's declining national share.

First, Chart II-B1 shows that Connecticut gains in relative real wage. Next, Chart II-B2 assesses percent changes in Connecticut/U.S. ratios of average real wage, labor force, worksites and employment on percent changes in Connecticut/U.S. ratios of total wages. In particular, prior to 2000, gains in the relative wage helped boost the State's national share of total wages, but after 2000, the levels of employment are the largest determinant.

Chart II-B1. 1990-2004 Connecticut/U.S. Ratio of the Average Real Wage. The State gains in relative real wage per employee against the national average.



Chart II-B2. 1990-2004 Growth of Connecticut/U.S. Ratios of Total Wages and Population. Changes in the number of worksites or the size of the labor force have some impact on the changes in Connecticut's share of total wages during 1990-2004, but the State's national share is determined primarily by relative changes in employment or wages.



Summary of II-B

Connecticut/U.S. ratios show the State gaining in relative wage, but losing national share in employment, worksites, labor force and population. At this stage of analysis, this may seem like an acceptable scenario, especially if it is workers whose skills do not warrant sizeable levels or growth in their wages that are relocating. The next section analyzes these changes for the State's labor market areas.

II-C. Total Wages from Labor Force by Labor Market Area (LMA)

The previous section revealed that growth in statewide measures of total real wages are primarily determined by growth in average wages and employment levels, and not by the net change in worksites or labor force. This section uses LMA classifications to determine if these results hold uniformly throughout regions of the State. They do not, implying that statewide policies may not be optimal.

Chart II-C1 shows the Bridgeport-Stamford LMA represents a large portion of the State's increase in total wages. Chart II-C2 shows widely divergent contributions from LMAs to statewide wages and employment levels. Notably, outside of the Bridgeport-Stamford LMA, Connecticut's total wages fell during 1990-2004, but that region's gain is so large as to result in a net gain for the State. Chart II-C3 indicates that only Hartford, New Haven and Waterbury lost both worksites and labor force during the sample period.

Chart II-C.1. 1990-2004 Total Gain in Average Wage by Connecticut Labor Market Area. Average real wage increased for all LMAs during the sample period, it also shows that gains were less than \$4,000 outside of the Bridgeport-Stamford LMA.

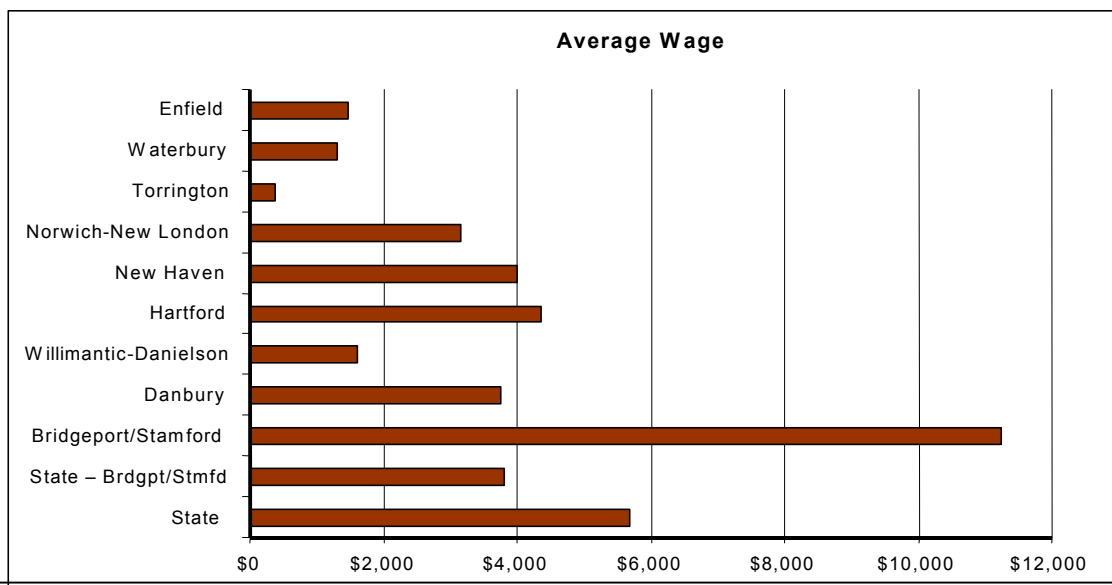
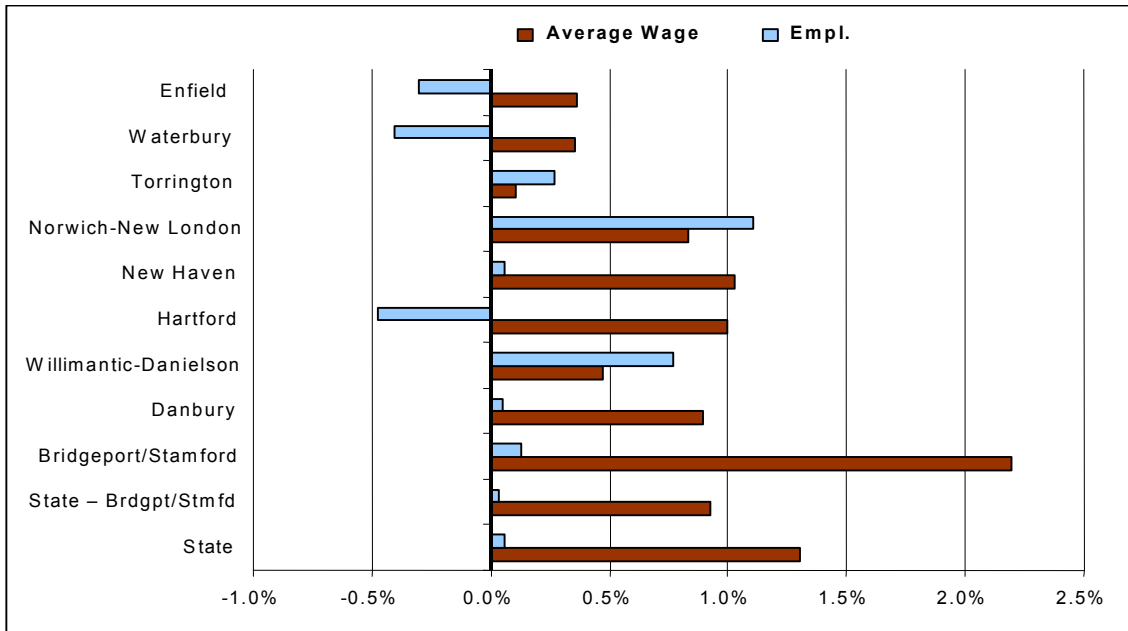


Chart II-C2. Annual Growth in Average Wage and Employment by Connecticut Labor Market Area from 1990-2004. The Norwich-New London and Willimantic-Danielson LMAs posted the most substantial gains in employment.



Summary of Section II-C

There is considerable difference between the economic fortunes of the Bridgeport-Stamford labor market area and the remainder of the State, although Danbury could be grouped together with the Bridgeport-Stamford LMA. Most telling is that average real wages grew over two percent annually for Bridgeport-Stamford and one percent or less for the remaining regions. When combining this with the results of previous sections, it appears that employees are leaving not only from LMAs losing in relative real wages, but from the Bridgeport-Stamford LMA as well.⁵¹

II-D. Changes in Total Wages by Connecticut Industry Sectors

Analyses of Connecticut industry sectors help determine if the aggregate changes in statewide components of growth are masking underlying shifts in the competitive climate. In other words, to what extent is Connecticut’s industry mix affecting growth? As with much of the U.S., the value of the Manufacturing sector declines.

⁵¹ If we include the Danbury LMA, the loss of labor force is significantly smaller.

Charts in Section II-D and II-E use the North American Industry Classification System (NAICS) to represent industry sectors. Note the large gain in *Finance and Insurance* (NAICS 52) occurs from exceptional gains in average wages, overcoming downsizing in the sector, while even larger gains in total wages in *Education* (NAICS 61) are more the result of large increases in employment than gains in average wages. *Manufacturing* NAICS (31-33) gains in average wages, but substantial losses in employment result in losses in total wages.

Chart II-D1. 1990-2004 Percent Changes in Total Wages by Connecticut Industry Sector. There were large relative gains of total wages for the *Education* (61) and *Finance and Insurance* (52) sectors. Losses occur in *Mining* (21), *Manufacturing* (31-33) and *Other Services* (81).

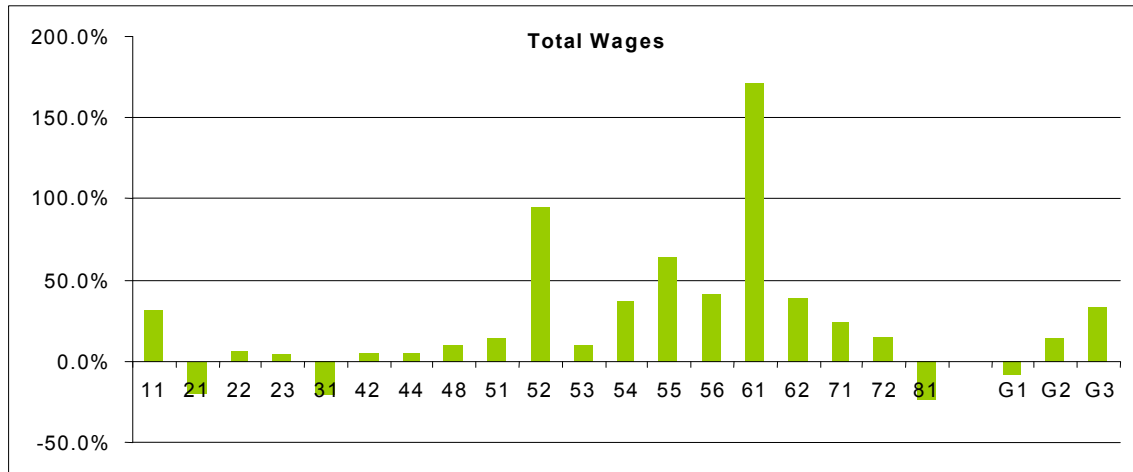
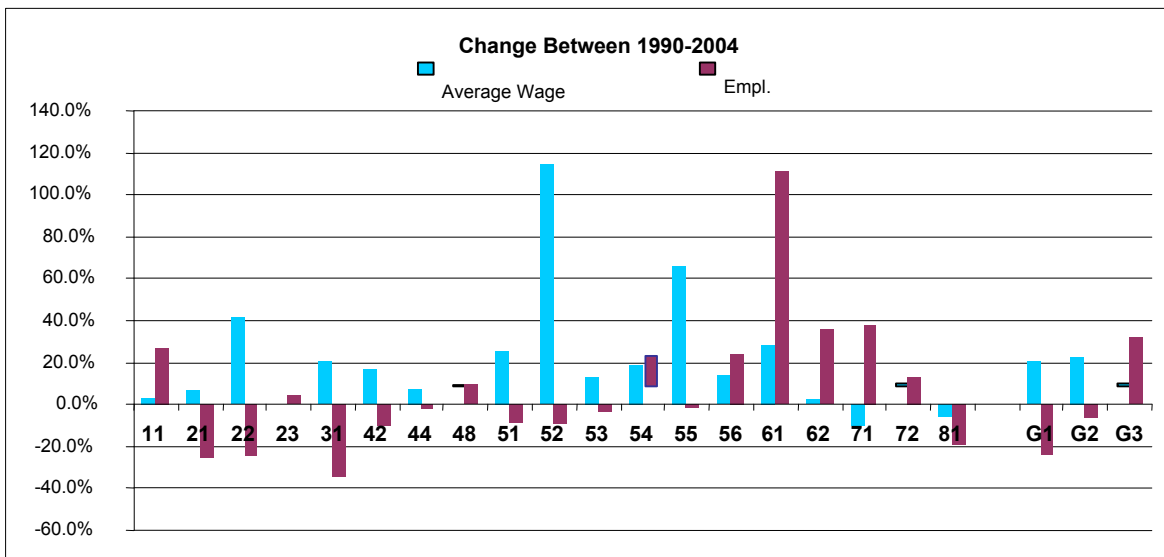


Chart II-D2. 1990-2004 Growth in Average Wages and Employment by Connecticut Industry Sector. The gains in total wages in the *Finance and Insurance* (52) sector occurred because of substantial increases in the average wage. The salary gains in *Education* (61) are modest compared to that sector's gains in total wages. The number of employees in *Education* doubled from 1990-2004. The large relative losses in *Manufacturing* (31-33) translate into large losses in employment, as that sector represented a significant portion of total State employment.



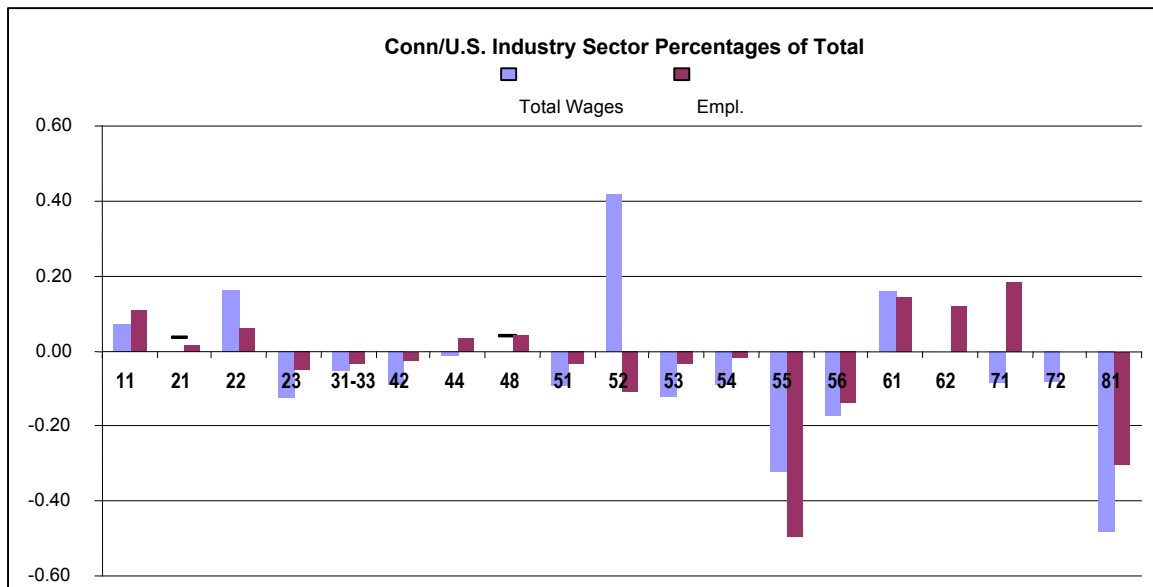
Summary of Section II-D

The analysis of average wages and employment levels by Connecticut industry sector shows that only Finance and Insurance (52), Education (61) and Management of Companies (55) record impressive gains in either category. Of equal importance is the increase in the average wage in Manufacturing (31-33) that does not sufficiently compensate for the loss of employment, as total wages fall during the period.

II-E. Connecticut/U.S. Ratios of Wages and Employment by Industry Sector

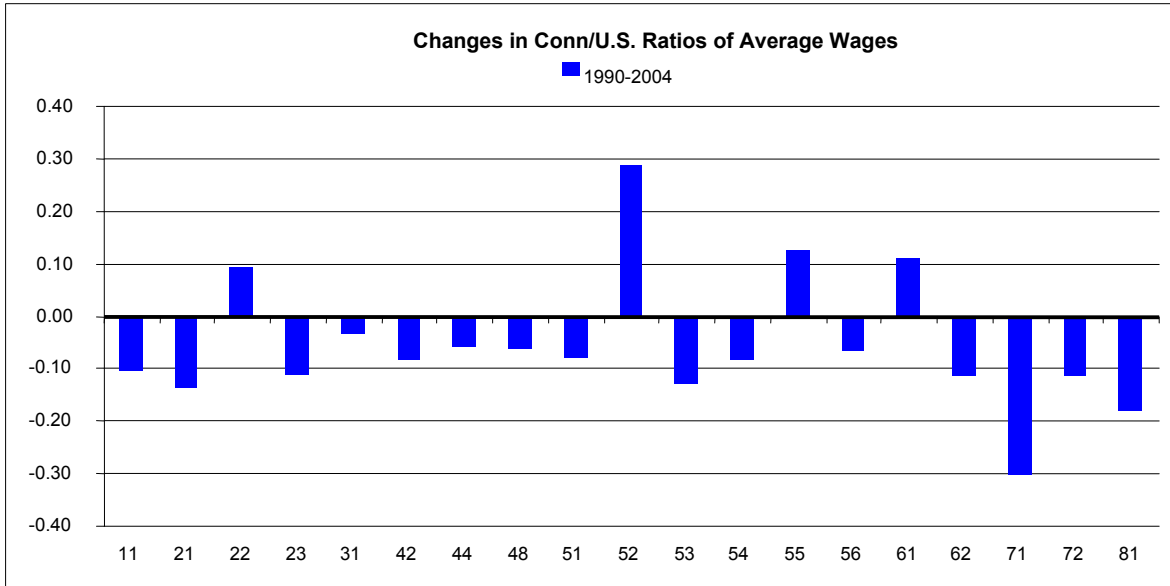
This section shows relative gains or losses by industry for Connecticut, compared to U.S. averages. This is comparable to the local assessment in a shift-share analysis. Essentially, this section tests whether changes in market components of industry sectors result from national trends. Charts II-E1 and II-E2 show the State losing national share in almost every industry for each determinant of total wages.

II-E1. 1990-2004 Changes in Connecticut/U.S. Ratios of Total Wages and Employment by Industry Sectors. This chart measures Connecticut’s economic investment during 1990-2004, relative to the U.S., and shows it is in *Finance and Insurance* (NAICS 52), *Education* (61), *Utilities* (22) and *Agriculture, Forestry, etc.* (11). However, Connecticut invested the workforce in *Health Services* (62), *Arts, Entertainment and Leisure*⁵² (71), *Retail Trade* (44) and *Transportation and Warehousing* (48), without the relative gain in total wages.



⁵² This category may not reflect the actual economic picture, as a portion of income and employment switched from being recorded in NAICS 71 to NAICS 92 in Connecticut during the sample period.

II-E2. 1990-2004 Changes in Connecticut/U.S. Ratios of Average Wages by Industry Sectors. This chart identifies that employees in only four sectors increased their relative real wages: *Utilities* (22), *Finance and Insurance* (52), *Management of Companies* (55), and *Education* (61). Such a measure helps identify potential employment clusters in industries where the products or services can be exported outside of the region.



Summary of Section II-E

Several key industry sectors drive the changes in real wages and employment for Connecticut during 1990-2004. Combining this analysis with the differences in average real wages and employment by labor market area implies that positive economic growth in this State is highly correlated with firms that operate at a **significant economic profit** within their respective industry sectors. Examples are firms established in high-end, niche markets, firms exhibiting strong clustering⁵³ or industries that are dominated by a few firms.

II-F. Total Wages From Labor Force by Percentiles

Table II-F1 uses quintiles from two surveys (1980-82 and 2001-03) to assess changes in real income and wages. Clearly the wage distribution in the State is becoming even more right-skewed during the last two decades. Although skewed distributions are expected in market economies, this demonstrates a gap in the State incentive structure that could entice lower compensated laborers to leave. Importantly, this could include educated, younger workers, as they are typically not in the highest percentiles.

⁵³ Professor Michael Porter, Harvard Business School.

**Table II-F1. Economic Policy Institute and Center on Budget and Policy Priorities
Measure of Connecticut Compensation by Quintile**

Percent Increase in Income for CT 1980-1982 to 2001-2003	
	Tax Adjusted Real Income
Quintile	2002 \$
Lowest (20%)	13.10%
Second	21.97%
Third	31.70%
Fourth	44.94%
Highest (80%)	67.03%
Top 5%	81.86%

Table II-F2 indicates there is a substantial change in the income distribution in the U.S. during the last two decades.

Table II-F2. U.S. Census Measure of U.S. Compensation by Quintile

U.S. Percent Increase in Mean Income 1979-2001				
Quintile	Money Income less Capital Gains		Composite Measure of Wealth	
	2001 \$	CPI-U-RS adj	2001 \$	CPI-U-RS adj
Lowest (20%)	147.94%	9.74%	158.67%	14.49%
Second	156.86%	13.69%	155.73%	13.18%
Third	151.81%	11.45%	172.46%	20.59%
Fourth	182.38%	24.98%	179.42%	23.67%
Highest (80%)	238.11%	49.64%	242.61%	51.64%

Combining the information in Table II-F2 with Table II-F1 shows that the mean income is increasing with respect to the median across the country, but even more so in Connecticut. Chart II-F1 measures the State's wage distribution by LMA and finds that the Bridgeport-Stamford LMA dominates the average wage for the State and is the only region showing a ratio greater than one for the 90th percentile of wage earners. In essence, the wage distribution in this LMA is substantially above the State, except in the lowest percentile.

Chart II-F1. 2005 LMA/State Ratios for Wage Distribution. The ratios are the LMA wages over the corresponding value for the State. For example, the average wage for Bridgeport-Stamford LMA is approximately 10% greater than statewide average wage.

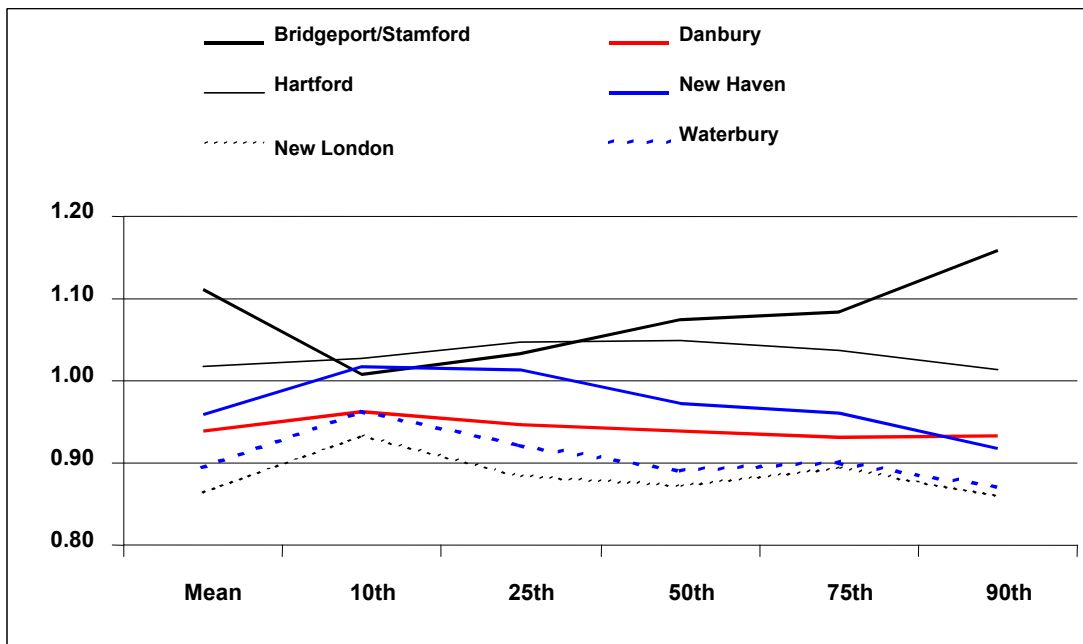


Chart II-F1 indicates one region (Bridgeport-Stamford) is contributing to almost all the growth of the average wage in Connecticut. One reason could be the particular industry mix of this region gives it a dominant position relative to the rest of the country.

If the wage distribution is skewed substantially, then the relative measures of the mean in the previous sections may be masking important determinants of the State's economic growth. This section measures statewide gains by percentiles. This is then used to compare against current distributions by labor market area, by industry sector and against the U.S.

To assess this, Charts II-F2 through II-F4 compare Connecticut's wage distribution to the U.S. across industry sectors for 2005, using 10th, 25th, 50th, 75th and 90th percentiles of wages. The only significant positive gap in total distribution for Connecticut is in the *Finance and Insurance* sector, although the 10th percentile of wage earners in *Construction, Education, Management and Utilities* are better paid relative to their respective region than the national average.

Chart II-F2. 2005 Ratios of Industry Sector's Percentile Wage To Percentile Wage For All Industries in Region. Shows lowest to highest percentile for each industry.

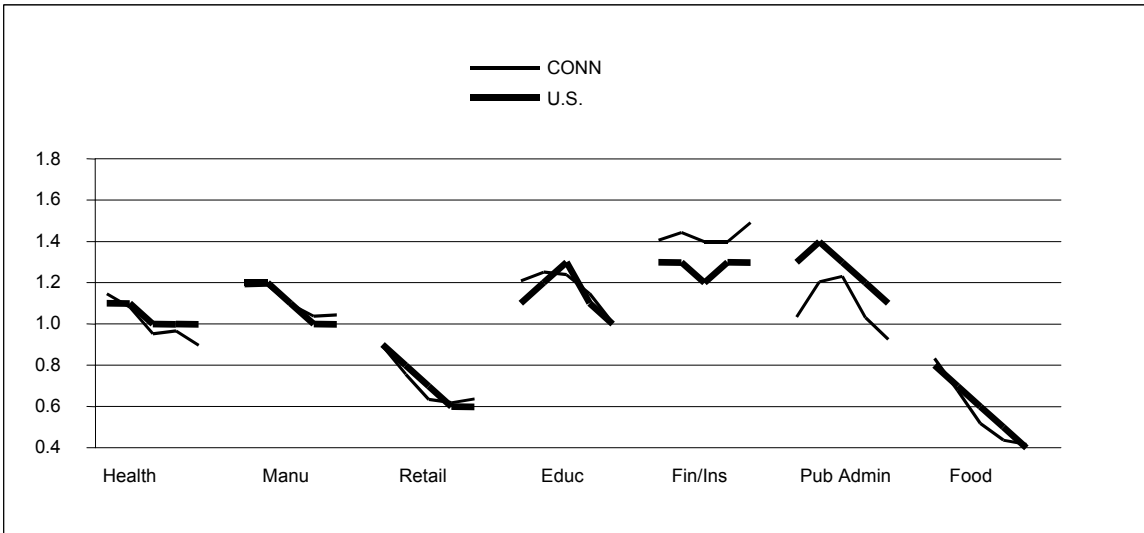


Chart II-F3. 2005 Ratios of Industry Sector's Percentile Wage To Percentile Wage For All Industries in Region. Shows lowest to highest percentile for each industry.

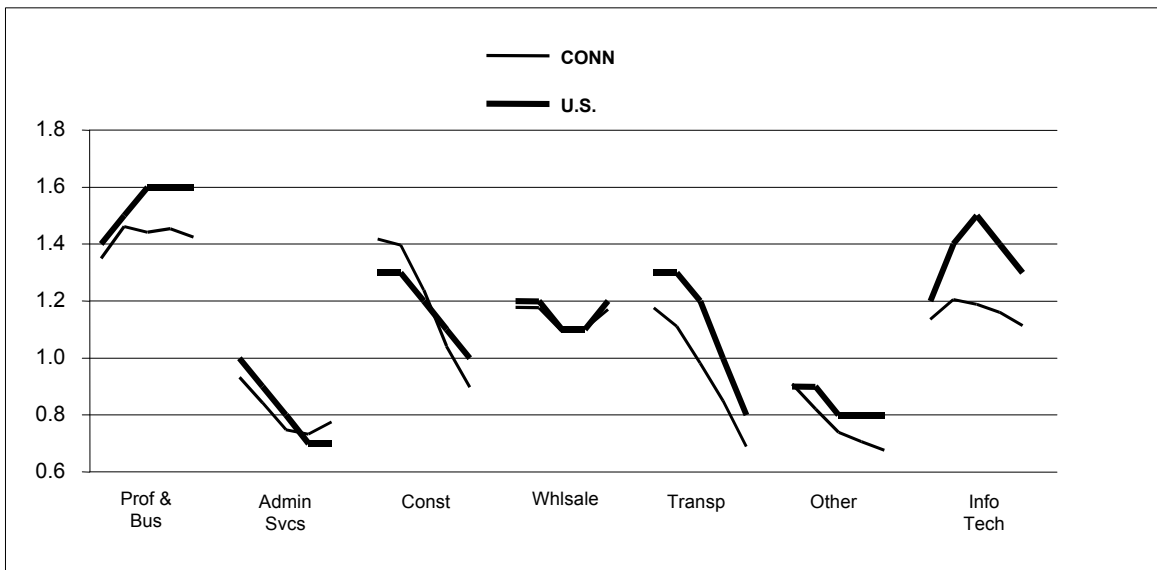
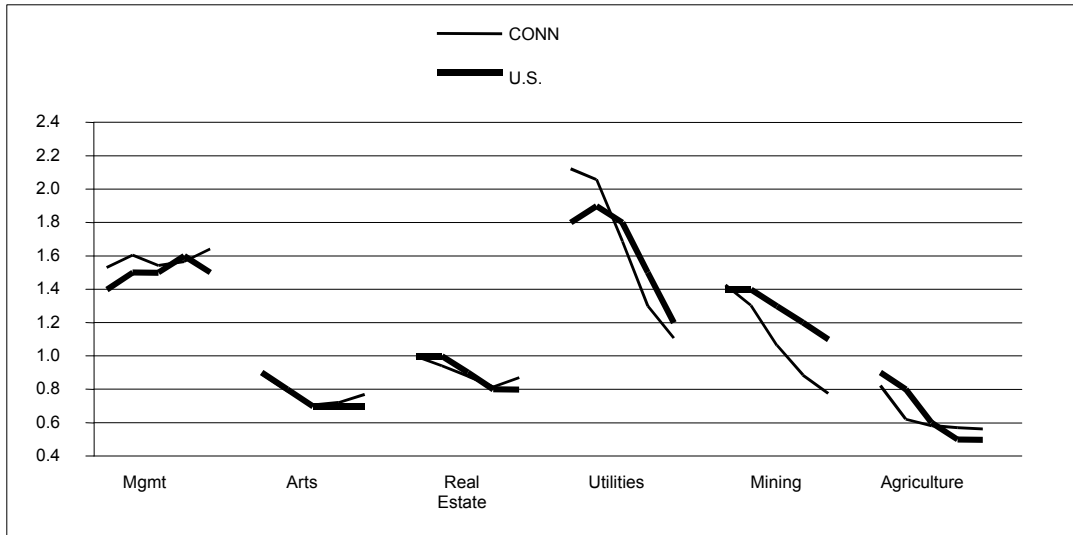
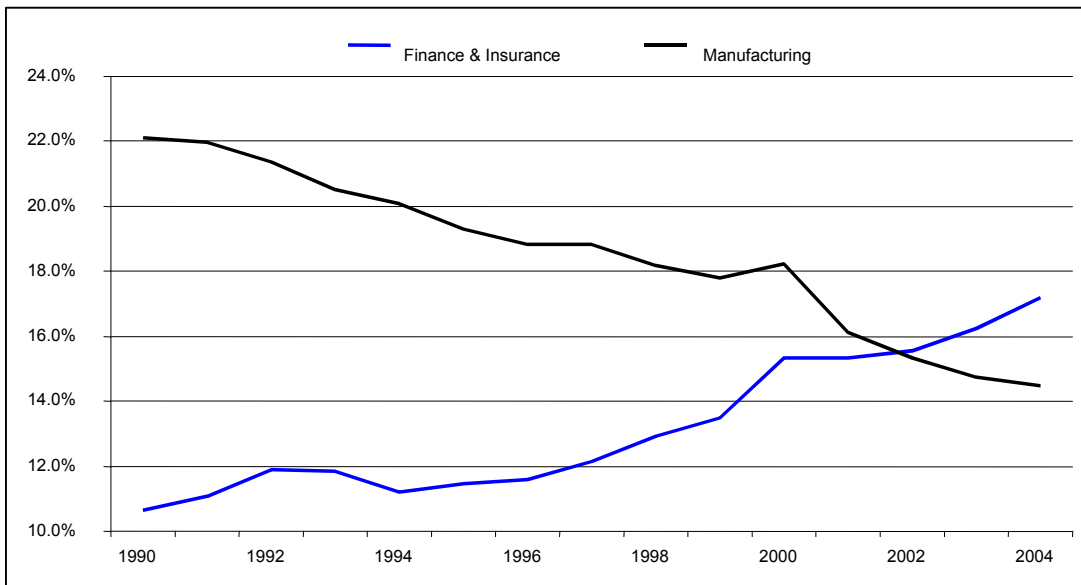


Chart II-F4. 2005 Ratios of Industry Sector's Percentile Wage To Percentile Wage For All Industries in Region. Shows lowest to highest percentile for each industry.



The relatively high wages in the *Finance and Insurance* sector can help explain the Bridgeport-Stamford LMA dominance in growth of income per employee, if the industry is significant enough in the State's economy, which Chart II-F5 indicates may be the case.

Chart II-F5. 1990-2004 Percent of Total State Wages for Manufacturing and Finance and Insurance Industry Sectors. This chart shows that by 2003, the *Finance and Insurance* sector had replaced *Manufacturing* as the largest contributor to State income.



Summary of Section II-F

The distribution of wages by percentile and by industry sector indicates that extraordinary gains in wages in the upper percentiles of the *Finance and Insurance* sector are the major component of Connecticut's gain in the national share of real income per employee.

Summary of Section II

High wage earners in the Bridgeport-Stamford LMA *Finance and Insurance* sector and substantial gains in employment in the New Haven LMA *Education* sector mask a general weakening of the State's economy.

III. Connecticut Labor Force in the Population.

The combination of an increase in average real wage, a slight increase in employment and a decrease in the size of the labor force for Connecticut during 1990-2004 indicate that there may be changes in the distribution of wages that are reducing the effectiveness of analyzing average wages. However, net changes in the number of worksites and size of the labor force did not adequately explain changes in total wages. This implies there may be changes in the demographics of employed workers that explain the discrepancies in changes in employment and the labor force. In this section, the demographics for the workforce are derived from population, as there is a strong correlation for the statistics of the age cohorts. Particularly, the 25-44 age cohort is shrinking in the State during this time period.

Chart III-1 confirms that growth in the labor force is not highly correlated to growth in the population during this period, and Chart III-2 confirms this for changes in Connecticut's national share of labor force and population.

$$(III-1) \quad \% \Delta Labor \ Force \approx \% \Delta \frac{Labor \ Force}{Population} + \% \Delta Pop$$

Chart III-1. 1990-2004 Growth in Labor Force and Population for Connecticut. Using equation III-1 (see above), the chart shows that the population is not the prime determinant of the labor force for the State during the sample period.

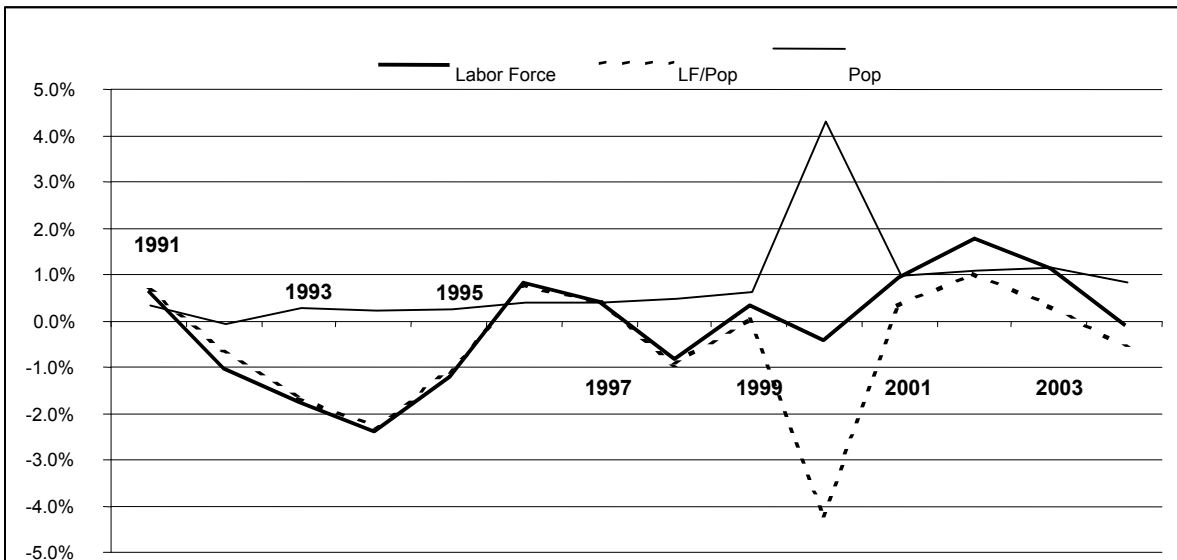
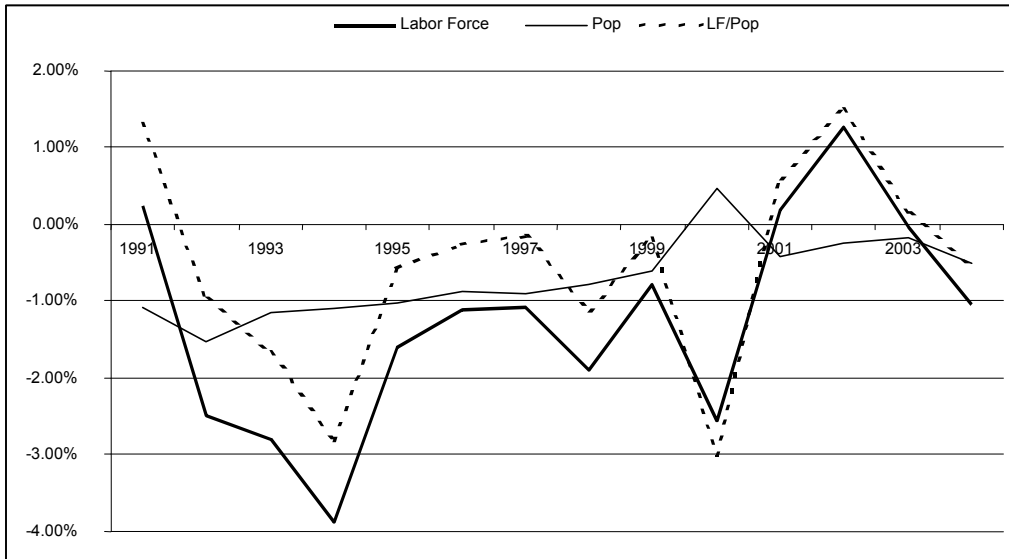


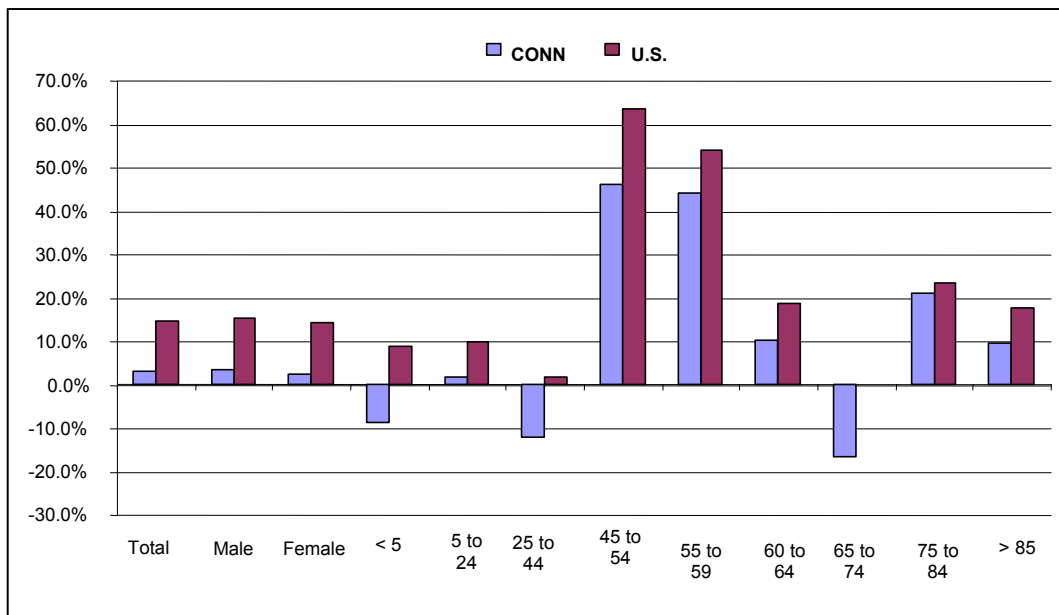
Chart III-2. 1990-2004 Growth of Connecticut/U.S. Ratios of Total Wages and Population. Changes in the State's share of the U.S. population are not the main factor affecting its share of the nation's labor force.



III-A. Changes in Labor Force Demographics

Projecting the State's population demographics for the age groups associated with the workforce indicates that during 1990-2004 there is a shift in both percentage and number of workers from the 25-44 to the 45-54 age workers.

Chart III-A1. 1990-2004 Connecticut/U.S. Comparison of Growth in Population Cohorts. While the 45-54 and 55-59 age cohorts both record significant gains for the State and the nation, the Connecticut 25-44 cohort loses 12%, while the U.S. gains 2%.



Summary of Section III

Although there is a nationwide shift out of the 25-44 age cohort, the national shift is less than 4%, while Connecticut's shift is almost 5%. More importantly, the nation gains in number of people in this age group, while Connecticut's net loss is over 130,000. Because Connecticut has one of the highest rates of education for their workforce in any age cohort, the State is losing a valuable component of its workforce to other states.

IV. Firm Behavior

The previous three sections establish linkages of the population to measures of changes in total wealth. In the analysis, the primary determinants of the changes in total wealth in a region were determined to be changes in income per employee and levels of employment, but the latter was dominant only after 2000. Perhaps surprisingly, net changes in the number of establishments, in the size of the labor force or in the size of the population are not the primary drivers of total income for Connecticut from 1990-2004. Most importantly, extraordinary increases in income for the uppermost percentile of workers, primarily in the *Finance and Insurance* industry sector of the Bridgeport-Stamford LMA, account for the dichotomy of an increase in real average income per employee by national standards, while experiencing a decline in labor force.

Therefore, projections of Connecticut's economic future, as well as the development of a strategic policy for improvement, require assessing why:

- (i) Changes in employment are not a more consistent determinant of the changes in total income?
- (ii) Changes in the number of establishments did not play a more significant role in the creation of wealth during the sample period?

To answer (i), we decompose changes of employment into measures of job creation (JC) and job destruction (JD),⁵⁴ tools of emerging economic importance, to describe economic climates of growth, stagnation or contraction. Further refinement assigns JC and JD to either existing or new (closed) firms, revealing that Connecticut had high volatility of JD in existing firms compared not only to JD in closed firms, but to JC in new firms.

The second question (ii) addresses the profitability of firms choosing to locate in Connecticut. To measure this, we compare time trends of average output per employee to average income per employee. Calculating this measure for each industry sector gives a reasonable metric of the profitability of a firm locating to Connecticut.

⁵⁴ The sum of the absolute value is referred to as job reallocation (JA).

IV-A. Job Creation, Job Destruction and Job Reallocation⁵⁵

The focus of this section is to go beyond an analysis of net outcomes and reveal the dynamics that produce the observed, labor-market outcomes. Net job changes are the result of the continuous process of the **creation of jobs** from firms coming into existence (*openings*) or from existing firms adding to their current workforce (*expansion*), and the **destruction of jobs** by firms ceasing to exist (*closings*) or from existing firms reducing their current workforce (*contraction*). The intensity of this *churning* process is measured by adding the *Job Creation Rate* (JCR) and the *Job Destruction Rate* (JDR) together to obtain the *Job Reallocation Rate* (JRR).⁵⁶ The following example illustrates why researchers and policymakers interested in understanding the critical forces behind an economy's performance and potential need to focus on job creation and destruction.

The popular press indicated that jobless recoveries characterized the previous two expansions in the U.S. because the *net employment change* was relatively low. However, in the first of the two expansions, the JDR remained at its recession-level highs, despite the recovery of job creation, which resulted in low net job-growth. It also produced a high JRR, which reflected the intense economic churning/reallocation that characterized the early Nineties. During the most recent expansion, although job destruction fell back to its pre-recession levels, job creation did not recover until much later in the recovery-expansion, producing the same, observed low net employment growth. Therefore, the level of JRR, and not the level of net job growth, reflected the different dynamics of the two expansions.⁵⁷

The difference in the JRR over the two jobless recoveries has some important implications. In general, a relatively high JRR could signify a dynamic economy characterized by a high level of "creative destruction", i.e. a restructuring economy going through a transformation of its economic base. Conversely, a relatively low JRR could signify a stagnating economy that has lost its dynamism, and thus, the ability to re-invent itself. Understanding these differences can provide critical information on the growth and development prospects for Connecticut's economy, and particularly, its labor markets.

⁵⁵ This section draws on, and updates, research reported in Nicholas A. Jolly and Daniel W. Kennedy, THE DYNAMICS OF THE CONNECTICUT LABOR MARKET: Job Creation, Job Destruction, and Job Reallocation (August 2005), Office of Research, Connecticut Labor Department: Wethersfield, CT.

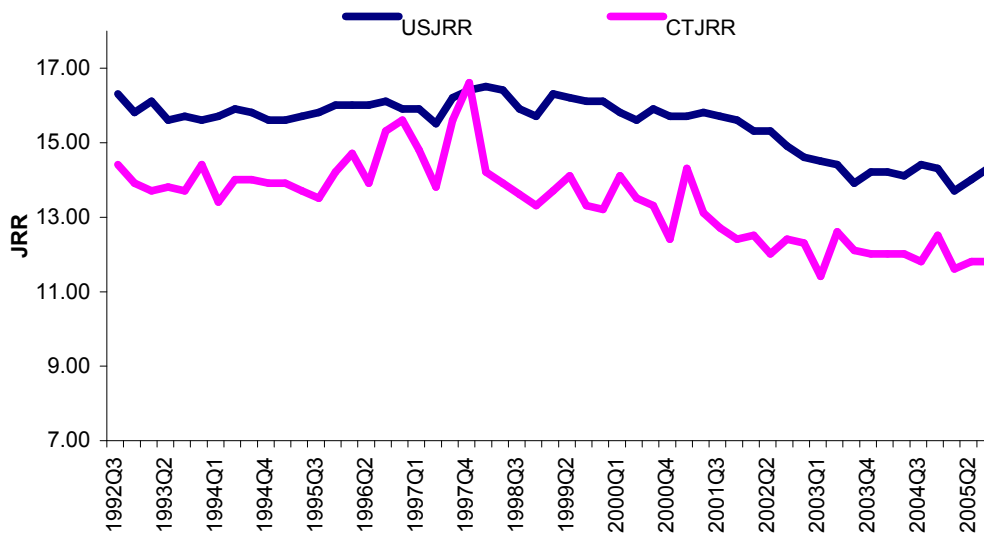
⁵⁶ The rates are calculated by using the average of the current and previous quarter's employment figures as the denominator, as is standard practice in the literature.

⁵⁷ Faberman, R. Jason. "Gross Job Flows Over the Past Two Business Cycles: Not all 'Recoveries' are Created Equal." *Bureau of Labor Statistics Working Paper Number 372*, U.S. Bureau of Labor Statistics, Office of Employment and Unemployment Statistics: Washington (June 2004).

Job Reallocation in Connecticut's Economy

Graph IV-A1 tracks the JRR⁵⁸ for Connecticut and the U.S. between 1992:Q3 to 2005:Q3. After 1997:Q4, Connecticut's JRR steadily declines, and although the U.S. JRR also declines after the second quarter of 1998, the decline is not nearly as steep as that for Connecticut. In addition, the Connecticut JRR was converging to the U.S. rate until the last quarter of 1997, after that, the gap between the two widened.

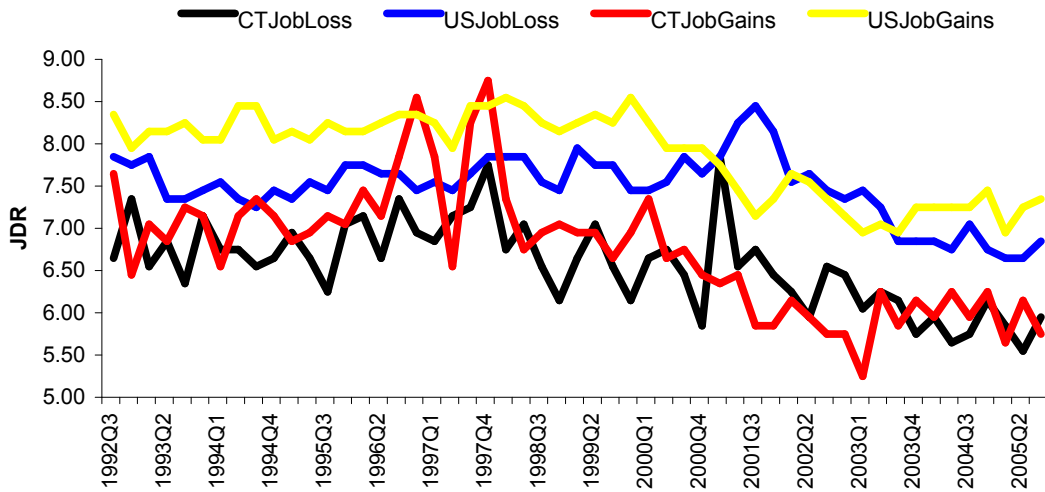
Graph IV-A1. 1992:Q3-2005:Q3 CONN and US Job Reallocation Rates. Note that Connecticut's JRR is below that of the U.S. throughout the entire period and clearly has considerably more variation than the U.S. reallocation rate.



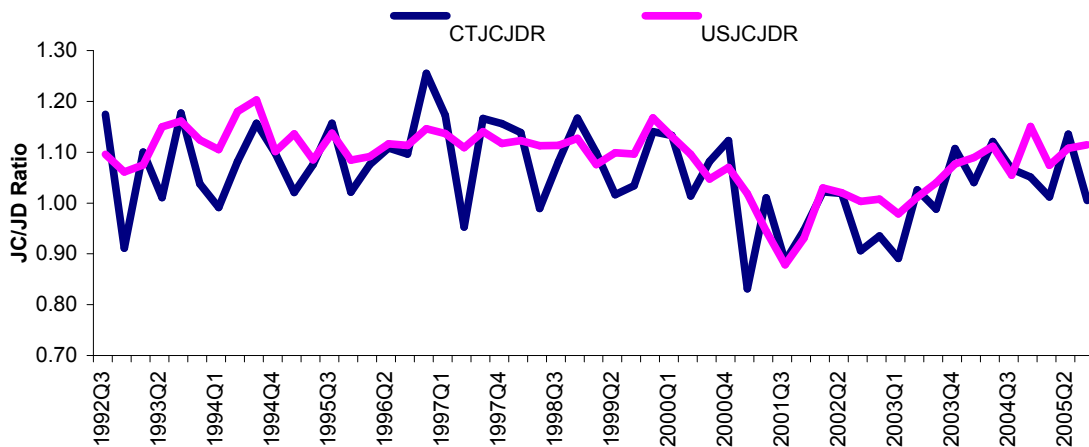
To get a better sense of what might be driving the phenomena observed for the Connecticut and the United States JRR distributions, Graph IV-A2 decomposes the JRR into the Job Creation Rate (JCR) and the Job Destruction Rate (JDR), and Graph IV-A3 shows ratios of Job Creation/Destruction. Note in Graph IV-2 that there is a larger gap between the U.S. JCR and JDR series than there is between the Connecticut JCR and JDR series. In fact, both Connecticut series track each other fairly closely, with the difference between the average JCR and average JDR for Connecticut is only 0.17 percentage points, while that for the U.S. is 0.39 percentage points. Since the difference between the JCR and JDR is the *Net Employment Growth Rate*, this indicates that the average net growth for Connecticut over the period was less than one-half that of the U.S.

⁵⁸ The JC-JD data are recently revised. JC-JD data are available from the U.S. BLS and cover the period 1992:Q3 to 2005:Q3 for Connecticut, and 2005:Q4 for the U.S.

Graph IV-A2. 1992:Q3–2003:Q3 CONN versus U.S. Job Creation and Destruction Rates. Both the JCR and JDR series for the U.S. are above the Connecticut JCR and JDR series for virtually the entire period.



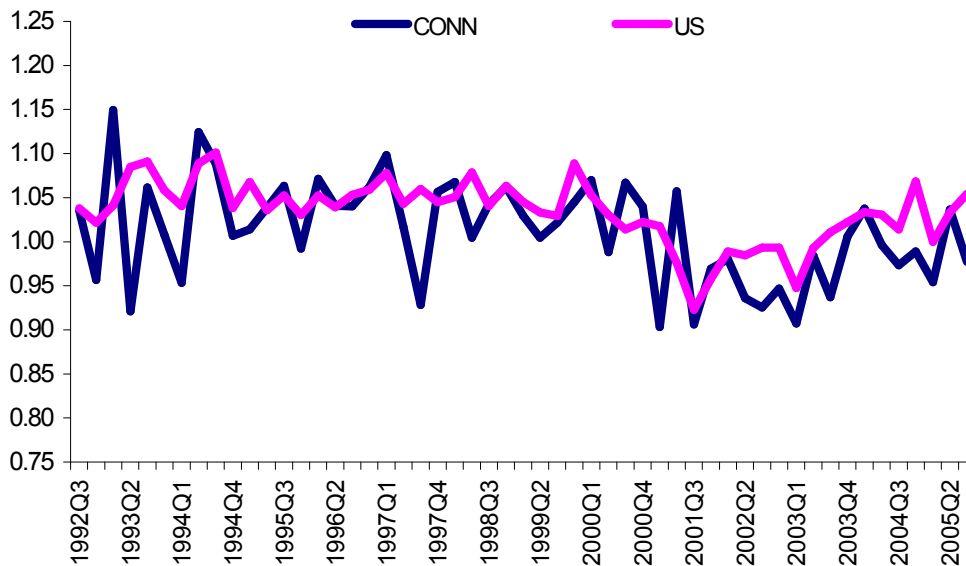
Graph IV-A3. 1992:Q3-2005:Q3 CONN versus U.S. Job Creation/ Destruction Ratios. The graph shows the ratios of JC/JD for Connecticut are more volatile than the U.S. This can imply the State is more heavily invested in cyclical industries.



Establishment Dynamics and Job Creation

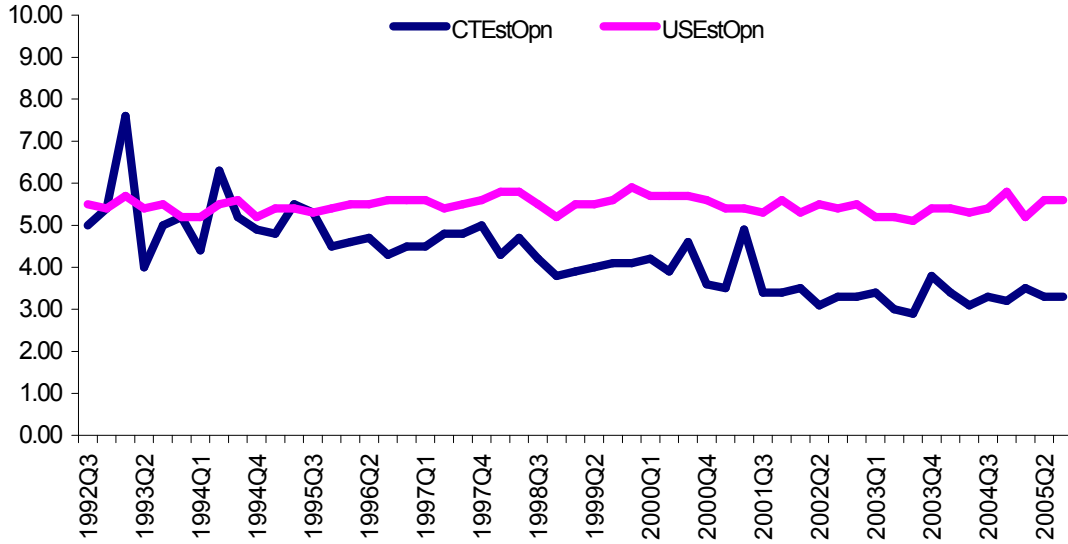
As mentioned at the outset, jobs are created because new firms come into existence, existing firms expand their workforce, or jobs are destroyed because existing firms go out of business, or existing firms reduce the size of their workforce. Thus, the next section turns to the activity of establishments, and their role in job-churning activity. To explore this connection, Graph IV-A4, below, presents the ratio of the total number of establishments creating jobs, to the total number of establishments destroying jobs for Connecticut and the U.S. Once again, the larger variation in Connecticut's activity, compared to the U.S., is apparent. And, once again, both series track fairly closely. However, the net formation of establishments is higher for the U.S.

Graph IV-A4. 1992:Q3-2005:Q3 CONN versus U.S. Ratios of Number of Establishments Creating Jobs/Destroying Jobs. The mean ratio of establishments creating jobs to establishments destroying jobs is 1.01. This indicates that for Connecticut, on average, the number of establishments creating jobs is 1% greater than the number of establishments destroying jobs. For the U.S., the cushion is 3%.

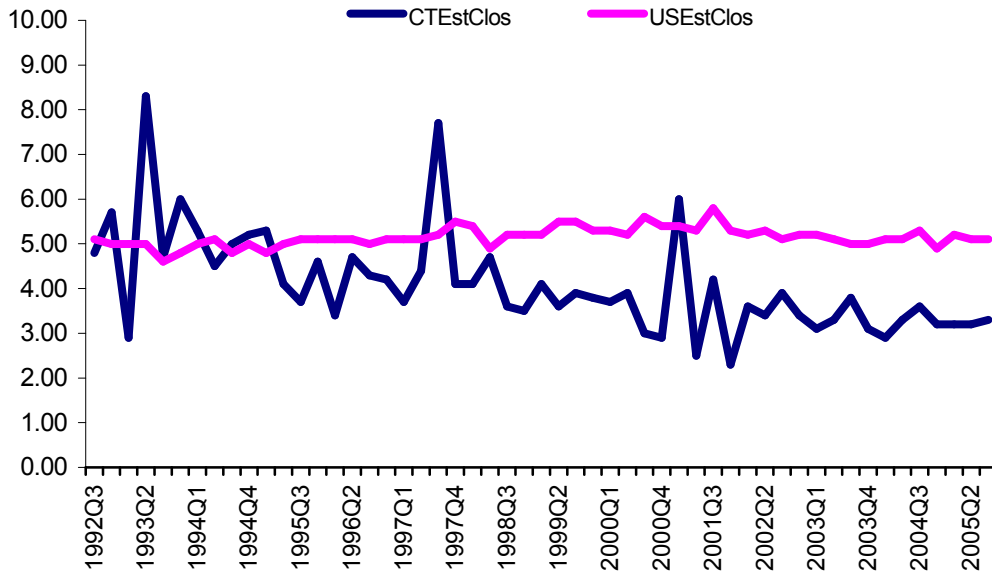


Graphs IV-A5 and IV-A6 record the Connecticut and U.S. establishment opening and closing rates. The closing rate leveled off in the third quarter of 2001, one quarter before the NBER designated end of the U.S. Recession.

Graph IV-A5. 1992:Q3-2005:Q3 CONN versus U.S. Rates of Establishment Openings. The U.S. rate of establishment openings dominates the Connecticut rate after 1994.



Graph IV-A6. 1992:Q3-2005:Q3 CONN versus U.S. Rates of Establishment Closings. Connecticut's establishment closing rate is even more volatile than its opening rate (see Graph IV-A5).



Implications for Connecticut's Economic Prospects

So, what does it all mean? To begin with, it appears that, though some structural shift, which apparently occurred in 1997, occurred in both Connecticut and the U.S., it seems to have affected job reallocation in the two economies differently. The structural shift affected the shape of the U.S. job-reallocation distribution, but it reduced the level of Connecticut's job reallocation activity much more significantly. Thus, this phenomenon, while increasing the heterogeneity of the process of creating and destroying jobs in the U.S. economy, seems to have reduced the level of job reallocation, and therefore, the dynamism, or intensity, of Connecticut's economic activity, relative to the U.S.

The variance in Connecticut's JCR is twice the size of the variance in its JDR and the variance between the two is not as large for the U.S. There are a couple of possible sources of Connecticut's greater volatility. One could be the small size of its economy and labor market. The larger the statistical sample, the smaller the variance is going to be. Also, aggregation reduces variation. Thus, aggregated U.S. data should have a smaller variance. But, there is also some evidence that Connecticut's economic base may be a significant contributor to its greater volatility. A study of the behavior of Connecticut's business cycle found that, in spite of the retrenchment in the manufacturing sector following the end of the Cold War, by 2004, 9.0% of Connecticut's nonfarm employment was still in durable goods manufacturing, while only 6.8% of U.S. employment was in the sector. Further, it was found that, for the U.S., the variance in the net employment growth rate for durable goods manufacturing was seven times greater than for total nonfarm employment⁵⁹. Further, a significant portion of Connecticut's durable goods manufacturing employment is in the transportation equipment industry, which is even more volatile.

When tracking the rates at which establishments create jobs through expansion, or destroy jobs through contraction (i.e., the expansion-to-contraction ratio), the Connecticut and U.S. time-series track each other very closely throughout the entire period. However, despite Connecticut's high output-per-worker, the lack of firm openings and closings resulted in Connecticut's averaging a net growth rate in employment that was less than half of that of the U.S. over the entire 15 year period. Therefore, although the results here point to a direction that further research should pursue, such as identifying industries and labor market areas that may play a major role in the above-discussed findings, there are also some initial indications about Connecticut's current growth-and-development path that can be informed from the findings reported here.

⁵⁹ See Kennedy, Daniel W., JOBS AND CYCLES: Historical Patterns in Connecticut's Employment Behavior CONNECTICUT ECONOMIC DIGEST, November 2005.

One suggestion concerns the way to reverse Connecticut's declining economic vitality. It is important to not just encourage the formation of new entrepreneurial firms, but to create the institutional, financial, and particularly, the physical environmental conditions conducive to providing the spatially proximate network needed to promote a critical mass of economic activity, including the geographic concentration of knowledge-spillovers, as well as the conduits for channeling that knowledge-spillover into the market, promoting a close geographic concentration of specialized suppliers, and to build and retain a readily available pool of skilled labor, within a reasonable commuting distance. The foundation for developing such a strategy can be found in the rapidly developing literature, and the examples of actual successes, in combining the ideas from entrepreneurship and regional development, industry-clusters and regional development, and research, development, and education and workforce development and regional competitiveness.

IV-B. Gross Operating Surplus

Profit margins are critical to owners, so that return from non-labor inputs (gross operating surplus) is one indication of the desirability of a region for new firms and investment capital. Tables IV-B1 and IV-B2 show that Connecticut still ranks near the top in this measure, but only Delaware lost more hourly return between 2001 and 2004.

Table IV-B1. 2001-2004 Average Hourly Gross Operating Surplus. The complete table is in the Appendix. Connecticut is one of the highest-ranking states in gross profit in 2004.

Region	2001	2002	2003	2004	\$ Loss	% Loss
Alaska	\$52.60	\$46.60	\$41.39	\$40.95	-\$11.64	-22.1%
Delaware	\$56.85	\$47.06	\$41.95	\$39.64	-\$17.21	-30.3%
California	\$54.03	\$46.48	\$40.30	\$37.90	-\$16.14	-29.9%
FAR WEST	\$52.15	\$45.02	\$38.88	\$36.46	-\$15.68	-30.1%
District of Columbia	\$51.16	\$42.76	\$37.80	\$36.26	-\$14.90	-29.1%
Texas	\$49.97	\$42.37	\$37.15	\$35.34	-\$14.62	-29.3%
Connecticut	\$51.85	\$42.73	\$37.58	\$35.08	-\$16.77	-32.3%
Illinois	\$48.44	\$41.66	\$37.37	\$35.00	-\$13.44	-27.7%
Wyoming	\$46.86	\$39.69	\$36.23	\$34.60	-\$12.26	-26.2%
New York	\$50.37	\$42.21	\$37.07	\$34.46	-\$15.91	-31.6%
Colorado	\$49.59	\$42.94	\$37.10	\$34.41	-\$15.18	-30.6%
Washington	\$50.64	\$43.71	\$37.12	\$33.89	-\$16.76	-33.1%
SOUTHWEST	\$47.68	\$40.45	\$35.47	\$33.47	-\$14.21	-29.8%
New Jersey	\$48.73	\$40.43	\$35.62	\$32.82	-\$15.91	-32.6%
Nevada	\$46.71	\$40.69	\$35.38	\$32.70	-\$14.01	-30.0%
U.S.	\$45.36	\$38.84	\$34.07	\$31.81	-\$13.55	-29.9%
Massachusetts	\$46.39	\$39.23	\$34.90	\$31.80	-\$14.59	-31.4%
Georgia	\$47.10	\$39.46	\$33.98	\$31.76	-\$15.34	-32.6%
Michigan	\$45.37	\$39.86	\$35.32	\$31.63	-\$13.74	-30.3%
Minnesota	\$43.66	\$37.84	\$33.64	\$31.57	-\$12.09	-27.7%
NEW ENGLAND	\$45.37	\$38.02	\$33.83	\$31.55	-\$13.83	-30.5%
Oregon	\$43.19	\$38.29	\$32.50	\$31.45	-\$11.74	-27.2%
MIDEAST	\$45.54	\$38.06	\$33.45	\$31.13	-\$14.42	-31.7%
GREAT LAKES	\$44.06	\$38.26	\$33.82	\$31.12	-\$12.94	-29.4%
Arizona	\$45.91	\$39.64	\$34.02	\$30.79	-\$15.13	-32.9%
Virginia	\$44.40	\$37.06	\$32.59	\$30.63	-\$13.77	-31.0%

Table IV-B2. Average Hourly Gross Operating Surplus for Selected States. Using BEA measures of value-added and wages, only Delaware suffered a greater loss of gross profit per worker from 2001-2004.

Average Hourly Gross Profit Per Worker For Selected Regions							
Rank	Region	2001	2002	2003	2004	\$ Loss	% Loss
1	Delaware	\$56.85	\$47.06	\$41.95	\$39.64	-\$17.21	-30.3%
2	Connecticut	\$51.85	\$42.73	\$37.58	\$35.08	-\$16.77	-32.3%
3	Washington	\$50.64	\$43.71	\$37.12	\$33.89	-\$16.76	-33.1%
4	California	\$54.03	\$46.48	\$40.30	\$37.90	-\$16.14	-29.9%
5	New York	\$50.37	\$42.21	\$37.07	\$34.46	-\$15.91	-31.6%
6	New Jersey	\$48.73	\$40.43	\$35.62	\$32.82	-\$15.91	-32.6%
7	FAR WEST	\$52.15	\$45.02	\$38.88	\$36.46	-\$15.68	-30.1%
8	Georgia	\$47.10	\$39.46	\$33.98	\$31.76	-\$15.34	-32.6%
9	Colorado	\$49.59	\$42.94	\$37.10	\$34.41	-\$15.18	-30.6%
10	Arizona	\$45.91	\$39.64	\$34.02	\$30.79	-\$15.13	-32.9%
11	District of Columbia	\$51.16	\$42.76	\$37.80	\$36.26	-\$14.90	-29.1%
12	North Carolina	\$45.43	\$38.40	\$33.24	\$30.57	-\$14.86	-32.7%
13	Texas	\$49.97	\$42.37	\$37.15	\$35.34	-\$14.62	-29.3%
14	Massachusetts	\$46.39	\$39.23	\$34.90	\$31.80	-\$14.59	-31.4%
15	MIDEAST	\$45.54	\$38.06	\$33.45	\$31.13	-\$14.42	-31.7%
16	SOUTHWEST	\$47.68	\$40.45	\$35.47	\$33.47	-\$14.21	-29.8%
17	Nevada	\$46.71	\$40.69	\$35.38	\$32.70	-\$14.01	-30.0%
18	NEW ENGLAND	\$45.37	\$38.02	\$33.83	\$31.55	-\$13.83	-30.5%
19	Virginia	\$44.40	\$37.06	\$32.59	\$30.63	-\$13.77	-31.0%
20	Michigan	\$45.37	\$39.86	\$35.32	\$31.63	-\$13.74	-30.3%
21	U.S.	\$45.36	\$38.84	\$34.07	\$31.81	-\$13.55	-29.9%

Table IV-B3 shows which industries generate the greatest hourly return to non-labor inputs.

Table IV-B3. 2000-2004 U.S. Gross Operating Surplus by Industry Sector. The table shows the average gross operating surplus per U.S. industry sector. Despite the variance in this measure between industries in an industry sector, a general assessment of the industry mix indicates that some of Connecticut's most important industry sectors, as measured by percentage contribution to gross state product, are declining in gross operating surplus at the national level.

Gross Operating Profit on \$100 Investment						
INDUSTRY SECTOR	2000	2001	2002	2003	2004	2000-04
Information	38	41	45	46.3	49	11
Management of companies and enterprises	17.7	19.5	22.4	23.1	25.1	7.4
Mining	59.5	55.4	52.7	62.5	65.3	5.8
Construction	27.9	29.1	29.8	31.4	33.2	5.3
Professional and business services	23.9	24.6	26.5	27.5	28.3	4.4
Professional	26.3	26.9	29	29.9	30.5	4.2
Wholesale trade	21.6	22.7	23.4	22.7	25.1	3.5
Retail trade	18.9	20	20.9	21.8	22	3.1
Administrative and waste management serv.	22.4	22.3	23	24.8	25.3	2.9
Private industries	36.7	37.2	37.6	38.4	39	2
Gross domestic product	34.3	34.6	34.8	35.5	36.1	1.8
Health care and social assistance	18.9	19.9	20.4	20.3	20.4	1.5
Educational services	17.6	18.4	18.8	18.7	18.8	1.2
Arts	29.4	30.6	31.8	30.8	30.5	1.1
Utilities	59.2	63.3	58.6	59.5	59.8	0.6
Arts, Entertainment, Recreation	26	25.6	26.5	26.3	26.4	0.4
Transportation and warehousing	28.6	28.1	27.8	31.5	28.8	0.2
Accommodation and food services	24.8	23.7	24.5	24.7	25	0.2
Finance and insurance	40.7	40.2	41.5	42.7	40.8	0.1
Nondurable goods	42.1	43	42.3	42	42	-0.1
Finance	65.2	65.3	65.2	65.4	64.9	-0.3
Real estate and rental and leasing	80.5	80.7	80	80	80	-0.5
Manufacturing	32.7	31.5	32.1	31	32.2	-0.5
Educational services	7.8	6.9	7	6.8	6.9	-0.9
Other services	24.6	24.8	23.4	23.5	23.4	-1.2
Durable goods	26.6	23.2	24.4	22.9	25.1	-1.5
Government	16.8	16.3	15.9	15.5	15.2	-1.6
Agriculture	79	76.1	65.8	75	75.3	-3.7
Addenda:						
<i>Info-comm-tech-producing industries</i>	14.9	12.3	18.8	21.1	21.8	6.9
<i>Private services-producing industries</i>	37.1	38	38.6	39.2	39.5	2.4
<i>Private goods-producing industries</i>	35.5	34.5	34.2	35.6	37.6	2.1

Summary of Section IV

Measures of profit margins for Connecticut firms exhibit a downward trend. The skill sets of the labor force are not generally sufficient to warrant the high relative salaries, with the possible exception of Fairfield County. However, that market is saturated, as transportation constraints dampen any additional growth from younger workers seeking employment in that county while living in a less expensive area. Therefore, capital investment in the State should be declining.

One measure that can reflect lower capital investment is the job reallocation rate. By decomposing net job growth into job creation and job destruction and summing their absolute values, we find that Connecticut records lower levels of “creative destruction” than the U.S. average, particularly after 1997. Therefore, the natural and necessary process of the State reinventing its product mix is not at a sufficient level to indicate the high per capita income ranking will continue through 2010-2020.

V. Concluding Remarks

Connecticut's position as the highest per capita state is unlikely to continue into the next generation. While it is true that the extraordinary increases in income (wages and salaries) at the highest percentiles of earners skew measures of average income, there is more going on in this State. The lack of affordable communities (when factoring in costs of crime, transportation, desirable housing, etc.) for the typical younger, educated worker has induced this important demographic to leave the State.

The type of firm that would choose the Hartford area to locate and be able to attract students from schools such as Wesleyan and the Universities of Connecticut, Hartford and Southern Connecticut must operate at a significant economic profit, preferably due to production technologies that require significant levels of education. A crucial issue is whether those schools provide sufficiently advanced skill sets for their graduates to be competitive for the types of jobs that could afford living in Connecticut.

Allegorically, Connecticut suffers the same problem as vacation resorts: the people critical to the success of the place can't afford to live there. More to the point, the State is out of the price range for the average person to enter its labor force. This is particularly noticeable in younger workers, but more experienced labor force participants must weigh carefully all the costs associated with relocation.

Outside of the Bridgeport-Stamford Labor Market Area, the relative incomes of Connecticut residents lost ground to the U.S. average between 1990 and 2004. More recently, higher interest rates reduced some of the unrealized capital gains from housing; within ten to fifteen years the retirement of the baby boomers will further affect the housing market. Therefore, the State can upgrade the skill sets and compensation of the typical entrant into the labor force, offer significant benefits to compensate new firms for locating here, or significantly improve transportation. Otherwise, residents can accept a lower growth rate of wealth, which will eventually translate into a lower state ranking in per capita income.

TECHNICAL ASPECTS

Standard microeconomic theory efficiently allocates resources and production, subject to a variety of constraints, such as asymmetric information, endowments, distribution costs and monopolies. However, even without any of the aforementioned constraints, an economy cannot remain in general equilibrium over time because of innovations. Although this may seem to complicate any analysis, it has the opposite effect, reducing the importance of multiple constraints in explaining behavior. Essentially, modeling innovation implies that much of the dynamics in economics is a movement toward perfectly competitive markets, i.e. outsourcing and relocating. This is very important in assessing Connecticut's economic future as the highest per capita income state.

Economy

People locate in an area, using available resources (natural, physical and human capital) to maximize utility, primarily by maximizing their change of wealth. Innovations upset the equilibrium, changing the relative expected value of a region next time period.

Change of Wealth = Return on Assets + Return on Taxes + Return on Net Income

Net Income, Taxes = Consumption and Investment

Return on Assets = Return other than Components of Per Capita Income

Return on Taxes = Consumption of Gov Expenditures (Local, State, Federal)

Return on Net Income = Consumption

Examples of Consumption Goods and Services:

PHYSICAL: Food, Clothing, Shelter, Safety, Medical, Transportation, Justice

MENTAL: Education, Mental Health, *Leisure – Entertainment, Climate*

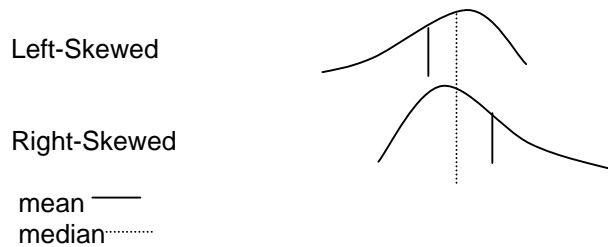
SPIRITUAL: Family (includes well-being of children), Religious, Community, Anti-Social

Quantifying the utility of some returns is not always straightforward, such as relating a lower crime rate from an increase in taxes (police force) to a change in wealth for the residents. The resulting increase in demand for housing in the area may be reflected in a higher median home price and/or an increase in residential construction. Therefore, we adopt additional metrics to measure changes in wealth from taxes: educational expenditures per school age child, crime rates per tax dollar, etc. Unless otherwise noted, 'income' will imply **net income** for the remainder of the document.

Model

Projecting Connecticut's future economic wealth requires assessing the costs and benefits for a population to live and/or work in the region. The distribution of wealth for an entity (e.g., firm, industry, or region) is determined by entrepreneurial, specialized or general skills (risks) and experience. On average, we equate skill levels with a combination of education and experience, such that holding experience constant, higher education implies higher skill levels. We also expect the distribution of wealth for senior agents to be highly correlated with the distribution of the expected rate of change of wealth (e.g., income) through retirement. However, this is not true for junior agents, implying a new theory of agent behavior.

If the medians for changes in wealth (e.g., income) are nearly identical, then a right-skewed distribution of wealth is preferred by those who either have little chance of achieving the skills necessary to achieve the median or by those who expect to achieve at least n standard deviations greater than the median. A left-skewed distribution is preferred by those that expect to be rewarded around the median or higher, but do not expect their relative real income to grow by at least n standard deviation.⁶⁰



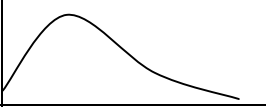
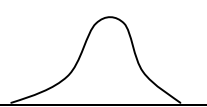
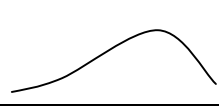
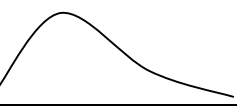
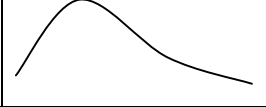

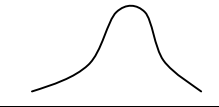
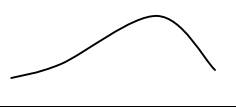
Therefore, senior, highly educated workers prefer a right-skewed distribution, but educated junior workers generally prefer the opposite, at least in the short term. Minimally educated workers also prefer right-skewed distributions,⁶¹ unless there is a high likelihood of significant upward mobility. For example, the right-skewed distribution of Wall Street may not appeal to an actuary, but does appeal to certain types of telemarketers, Ivy League type MBA's and mathematical physicists.

⁶⁰ The rationale is the lower the likelihood of achieving the median income, the smaller the difference in income the agent prefers. Additionally, the greater the likelihood of achieving several standard deviations above the median, the greater the gap in actual income the agent prefers.

⁶¹ A symmetric distribution may minimize the gap between income of senior, minimally educated workers and the median.

Although fiat measures of wealth are commonly accepted and highly correlated with utility, it is important to note that agents are actually choosing between bundles of goods.⁶² Therefore, in each period agents face a consumption-investment decision with their time (leisure or labor) and production. This implies that the availability of spatially constrained goods and services should be considered, as well as externalities in utility.

For example of utility externalities, a spouse makes a conscious decision to locate in an area, but children do not. Children can decide how much to study, conditional on a home environment, but may not always be able to choose their optimal educational path (e.g. private vs. public). This choice is available for colleges via external sources of funding, so parental externalities concerning their children’s welfare through 12th grade are considered a portion of the bundle of consumption goods. Since a combination of levels and growth rates of wealth are highly correlated with the availability of quality education, etc., the following assumptions will describe preferences.⁶³





	Agent Skill Level			
	Low Skill	Low-Medium Skill	Medium-High Skill	High Skill
	Preferred Distribution in Region			
Change in Wealth				
Wealth				

The levels of wealth associated with the distribution are determined by the size of the marketplace relative to the size of the production crews. However, the larger the market a firm trades in, the greater the competition.⁶⁴ The closer to perfectly competitive a market is, the more pressure on a firm for an increasingly right-skewed distribution of production. Young, highly skilled workers would generally prefer an environment where education provides strong barriers to competition: (i) within the industry, (ii) for access to “fast-track” career advancement, (iii) in upward mobility within the marketplace (i.e. general skill sets associated with higher education).

⁶² One example is the high pay offered for working in the oil extraction business in Alaska. Many people would not move there, as the higher salary did not equate to higher utility.

⁶³ On average and subject to constraints.

⁶⁴ Or the greater the incentive to restrict competition.

Barriers to Firm Entry into a Market			
Very High	High	Medium	Low
Evolution of Firm (Industry) Distribution of Production Among Workers			
			

A firm requires an appropriate proportion of younger workers to remain competitive. Excepting for artificial (political) barriers to entry, a firm that maximizes profits must choose to invest in new and differentiated products and services, or to minimize the skill set required each unit of production. For example, if the market determines that innovations do not sufficiently differentiate the product or service from competitors, then profit-maximizing behavior indicates investment in physical capital in order to lower wages. The regional distribution of wealth may not support the lower wages, encouraging such firms to relocate their production of goods or outsource services.

Therefore, if a firm is to both retain high-skilled senior workers and attract high-skilled junior workers, then it must offer a right-skewed distribution within the industry, but more left-skewed with respect to the larger marketplace competing for the firm's wage earners in the middle quintile. In this sense, the firm must offer both high real income and high growth rates in real income, relative to other regions.⁶⁵ A region that both retains high-skilled senior workers and attracts high-skilled junior workers offers a right-skewed distribution, but not as right-skewed as other regions competing for the younger wage earners. Examples are regions with employment clusters⁶⁶ of growing importance or with an industry mix that includes firms continually investing in human capital in order to develop new or differentiated products or services.

Summarizing, the model expects people to locate in a region where they can use available resources to maximize growth in real wealth. Maximizing growth creates an ever-widening marketplace, which pressures the production facilities (firms) of that good or service to offer an increasingly right-skewed distribution of production. As economic profits approach zero, there is incentive for owners and senior managers of these firms to continually reduce production costs, particularly by investing in innovations that reduce the required skill sets per unit of production of good or service. This natural, long run equilibrium has consequences for regions where

⁶⁵ Growth rates of income reflect the acceleration of wealth with respect to time.

⁶⁶ Porter, Michael. *The Competitive Advantage of Nations*. New York: Basic Books, 1990.

innovations have rendered their skills sets excessive; their profit maximizing behavior requires developing new products and services that replace or exceed historical levels of economic profit, moving to another region, or accepting the new rate of change in real wealth.

Methodology

We use factors of ratios to link population to changes in wealth.⁶⁷ To project the economic well being of a region, one requires at least the current level and the expected rate of change of wealth. Since there is entry and exit from the market and phenomena such as business cycles, levels and rates of change are assessed at intervals.⁶⁸ Finally, we assume people “vote with their feet”; i.e. we expect the population to go where they can maximize their economic wealth. Therefore, in the short-term it would be expected that percent changes in population track very closely with percent changes in wealth. This simple correlation breaks down over longer periods because of changes in productivity from economic development (innovation), changes in the supply capabilities of trading partners (demand), changes in the demographics of the population, and changes in the sources of wealth (e.g. retirement, asset appreciation).

Nobel laureates Finn E. Kydland and Edward C. Prescott established the importance of innovation in economic growth. Assuming schools are the most cost effective methods for improving human capital, any period of sustained real growth must then have a healthy level of worker turnover. Essentially, younger workers are hired to implement new technologies, and older workers either retrain or retire. However, a ten percent increase in production capacity per work hour at *Firm A* does not imply a ten percent increase in real income, as demand for *Firm A*'s production may increase by only 5%.

Then the new technology results in some combination of lower real wages and fewer employees (substitute capital for labor); such firms tend to invest in research that reduces the required skill levels (wages) of workers. Also, innovation that results in new products and services creates another *substitution effect*, where a consumer does not respond to a change in real income by purchasing the same bundle of goods, or at least in the same proportion. These scenarios result in **job creation** and **job destruction**, measures that include worker turnover and substitution effects in the marketplace.

Traditionally, changes in wealth relate almost entirely to changes in income. However, capitalism allows separation of ownership and management of production, which implies that owners may

⁶⁷ Similar in concept to the DuPont extended analysis of return on equity.

⁶⁸ Data sources are primarily Connecticut DOL, BLS, BEA and U.S. Census Bureau.

be physically separated from the region where production occurs. More recently, percent increases in worker productivity, primarily as a result of investment in physical capital, has generally outstripped demand. Concurrently, social reform in work conditions and improvements in transportation has significantly increased the value of homeownership for employees. The result of combining those changes with greater competition in the finance sector is that housing prices and market portfolios also constitute significant determinants of changes in wealth. Therefore, the model will also treat these components of wealth as relevant in the decision-making of the population.

Appendix I

Tables and charts are labeled according to the text for easy reference (A: 3 ® Table 3)

Table A: 3. Gini Coefficients of U.S. and State Households and Families Incomes for Selected Years during 1969-1999.

Rank	Region	Household			Families		
		1999	1989	1979	1999	1989	1979
1	District of Columbia	0.549	0.492	0.45	0.562	0.489	0.434
2	New York	0.499	0.467	0.419	0.472	0.434	0.378
3	Louisiana	0.483	0.476	0.438	0.453	0.446	0.4
4	Mississippi	0.478	0.475	0.44	0.446	0.435	0.401
5	Connecticut	0.477	0.434	0.39	0.446	0.401	0.348
6	Alabama	0.475	0.458	0.427	0.435	0.418	0.385
7	California	0.475	0.441	0.408	0.458	0.422	0.372
8	Texas	0.47	0.457	0.415	0.449	0.434	0.379
9	Florida	0.47	0.45	0.421	0.445	0.422	0.385
10	Kentucky	0.468	0.456	0.42	0.434	0.421	0.385
11	West Virginia	0.468	0.448	0.406	0.429	0.406	0.363
12	Tennessee	0.465	0.451	0.418	0.431	0.414	0.381
13	United States	0.463	0.445	0.415	0.434	0.414	(NA)
14	Massachusetts	0.463	0.428	0.398	0.425	0.387	0.35
15	Georgia	0.461	0.446	0.421	0.437	0.417	0.387
16	New Mexico	0.46	0.448	0.415	0.438	0.431	0.383
17	New Jersey	0.46	0.431	0.393	0.43	0.395	0.354
18	Arkansas	0.458	0.45	0.428	0.422	0.405	0.389
19	Rhode Island	0.457	0.42	0.397	0.416	0.377	0.347
20	Illinois	0.456	0.44	0.396	0.425	0.407	0.352
21	Oklahoma	0.455	0.445	0.419	0.42	0.412	0.376
22	South Carolina	0.454	0.428	0.406	0.423	0.396	0.369
23	Pennsylvania	0.452	0.435	0.391	0.413	0.396	0.345
24	North Carolina	0.452	0.43	0.403	0.421	0.394	0.365
25	Arizona	0.45	0.439	0.399	0.429	0.413	0.365
26	Missouri	0.449	0.438	0.408	0.413	0.4	0.362
27	Virginia	0.449	0.425	0.399	0.423	0.398	0.368
28	Ohio	0.441	0.427	0.385	0.404	0.39	0.34
29	Michigan	0.44	0.429	0.389	0.406	0.395	0.35
30	Colorado	0.438	0.426	0.392	0.411	0.394	0.354
31	Oregon	0.438	0.421	0.394	0.408	0.39	0.353
32	Montana	0.436	0.421	0.395	0.399	0.379	0.351
33	Nevada	0.436	0.42	0.387	0.411	0.386	0.35
34	Washington	0.436	0.414	0.388	0.406	0.378	0.346
35	Kansas	0.435	0.428	0.399	0.396	0.388	0.353
36	Maine	0.434	0.414	0.382	0.396	0.373	0.342
37	Maryland	0.434	0.41	0.385	0.407	0.384	0.352
38	Hawaii	0.434	0.408	0.39	0.401	0.381	0.365
39	South Dakota	0.434	0.394	0.409	0.397	0.381	0.37
40	Delaware	0.429	0.411	0.396	0.398	0.363	0.361
41	North Dakota	0.429	0.409	0.397	0.383	0.379	0.358
42	Wyoming	0.428	0.395	0.372	0.386	0.392	0.33
43	Idaho	0.427	0.421	0.39	0.398	0.386	0.354
44	Minnesota	0.426	0.418	0.391	0.387	0.379	0.346
45	Nebraska	0.424	0.414	0.396	0.384	0.375	0.351
46	Indiana	0.424	0.411	0.379	0.386	0.372	0.337
47	Vermont	0.423	0.385	0.386	0.388	0.367	0.349
48	Iowa	0.418	0.412	0.39	0.376	0.368	0.344
49	New Hampshire	0.414	0.387	0.372	0.377	0.344	0.33
50	Wisconsin	0.413	0.402	0.381	0.372	0.365	0.335
51	Utah	0.41	0.395	0.371	0.386	0.369	0.337
52	Alaska	0.402	0.397	0.393	0.377	0.387	0.369

Using Homeownership to Assess Changes in Wealth for Connecticut

Table A: I-Aa. Homeowners in Occupied Housing Units. This table shows the percentage of homeowners in each state.

Percent of Homeowners in Occupied Housing Units

Region	Census Year		Difference
	2000	1990	
United States	66.2%	64.2%	-2.0%
Alabama	72.5%	70.5%	-2.0%
Alaska	62.5%	56.1%	-6.4%
Arizona	68.0%	64.2%	-3.8%
Arkansas	69.4%	69.6%	0.2%
California	56.9%	55.6%	-1.3%
Colorado	67.3%	62.2%	-5.1%
Connecticut	66.8%	65.6%	-1.2%
Delaware	72.3%	70.2%	-2.1%
District of Columbia	40.8%	38.9%	-1.9%
Florida	70.1%	67.2%	-2.9%
Georgia	67.5%	64.9%	-2.6%
Hawaii	56.5%	53.9%	-2.6%
Idaho	72.4%	70.1%	-2.3%
Illinois	67.3%	64.2%	-3.1%
Indiana	71.4%	70.2%	-1.2%
Iowa	72.3%	70.0%	-2.3%
Kansas	69.2%	67.9%	-1.3%
Kentucky	70.8%	69.6%	-1.2%
Louisiana	67.9%	65.9%	-2.0%
Maine	71.6%	70.5%	-1.1%
Maryland	67.7%	65.0%	-2.7%
Massachusetts	61.7%	59.3%	-2.4%
Michigan	73.8%	71.0%	-2.8%
Minnesota	74.6%	71.8%	-2.8%
Mississippi	72.3%	71.5%	-0.8%
Missouri	70.3%	68.8%	-1.5%
Montana	69.1%	67.3%	-1.8%
Nebraska	67.4%	66.5%	-0.9%
Nevada	60.9%	54.8%	-6.1%
New Hampshire	69.7%	68.2%	-1.5%
New Jersey	65.6%	64.9%	-0.7%
New Mexico	70.0%	67.4%	-2.6%
New York	53.0%	52.2%	-0.8%
North Carolina	69.4%	68.0%	-1.4%
North Dakota	66.6%	65.6%	-1.0%
Ohio	69.1%	67.5%	-1.6%
Oklahoma	68.4%	68.1%	-0.3%
Oregon	64.3%	63.1%	-1.2%
Pennsylvania	71.3%	70.6%	-0.7%
Rhode Island	60.0%	59.5%	-0.5%
South Carolina	72.2%	69.8%	-2.4%
South Dakota	68.2%	66.1%	-2.1%
Tennessee	69.9%	68.0%	-1.9%
Texas	63.8%	60.9%	-2.9%
Utah	71.5%	68.1%	-3.4%
Vermont	70.6%	69.0%	-1.6%
Virginia	68.1%	66.3%	-1.8%
Washington	64.6%	62.6%	-2.0%
West Virginia	75.2%	74.1%	-1.1%
Wisconsin	68.4%	66.7%	-1.7%
Wyoming	70.0%	67.8%	-2.2%

Table A: I-A1. Growth in Median Home Prices. Median home prices indicate changes in wealth for the population. Recent Connecticut gains were above the U.S. average, but well below the U.S. for the period 1989-2004.

Percent Changes in Median Home Price

	A Ann Avg. 1989-99	B 2000-01	C 2001-02	D 2002-03	E 2003-04	F Ann Avg. 2000-04	(F-A) Difference	Ann Avg. 1989-2004
United States	5.2%	6.0%	7.2%	7.6%	2.8%	6.4%	1.2%	6.6%
Alabama	6.0%	6.0%	3.5%	2.3%	-1.5%	2.6%	-3.4%	5.6%
Alaska	5.3%	6.6%	5.4%	7.1%	3.0%	6.0%	0.7%	6.4%
Arizona	5.2%	5.8%	6.2%	7.1%	-0.3%	5.0%	-0.2%	5.9%
Arkansas	5.8%	2.5%	5.0%	5.9%	-5.6%	1.9%	-3.9%	5.1%
California	0.9%	11.0%	15.1%	21.4%	16.9%	20.3%	19.4%	7.2%
Colorado	10.2%	11.0%	6.4%	5.7%	0.6%	6.4%	-3.8%	11.2%
Connecticut	-0.6%	6.1%	10.4%	15.3%	4.6%	10.3%	10.9%	2.4%
Delaware	3.1%	4.0%	4.5%	14.3%	3.5%	7.2%	4.1%	5.2%
Dist. of Columbia	2.9%	6.0%	20.5%	16.8%	34.9%	25.3%	22.4%	12.5%
Florida	3.8%	7.9%	10.2%	12.8%	3.3%	9.6%	5.8%	6.8%
Georgia	5.7%	9.3%	5.8%	7.2%	-2.7%	5.1%	-0.6%	6.7%
Hawaii	1.2%	-3.9%	5.5%	11.3%	12.4%	6.7%	5.5%	3.6%
Idaho	8.3%	3.2%	6.8%	2.1%	2.2%	3.8%	-4.6%	7.7%
Illinois	6.3%	5.4%	7.6%	9.0%	4.5%	7.3%	1.0%	7.8%
Indiana	7.6%	4.2%	2.1%	6.0%	3.0%	4.0%	-3.6%	7.5%
Iowa	8.1%	4.7%	5.5%	3.7%	4.9%	5.0%	-3.1%	7.9%
Kansas	6.1%	4.9%	6.8%	6.7%	2.2%	5.5%	-0.6%	7.0%
Kentucky	7.3%	5.5%	5.2%	6.1%	-5.4%	2.8%	-4.5%	6.9%
Louisiana	4.7%	4.8%	6.8%	4.7%	-3.3%	3.3%	-1.3%	4.7%
Maine	1.3%	2.9%	14.3%	11.4%	6.2%	9.8%	8.5%	4.6%
Maryland	2.6%	3.1%	9.3%	12.3%	16.3%	11.8%	9.2%	6.2%
Massachusetts	1.4%	15.3%	12.0%	24.3%	6.9%	17.9%	16.5%	7.4%
Michigan	9.2%	6.2%	6.9%	6.1%	2.7%	5.9%	-3.3%	10.1%
Minnesota	6.6%	13.1%	11.4%	9.4%	6.7%	11.8%	5.1%	10.4%
Mississippi	5.8%	1.8%	3.2%	7.2%	-7.2%	1.1%	-4.7%	5.4%
Missouri	5.2%	5.6%	6.6%	6.2%	7.7%	7.2%	2.1%	7.0%
Montana	7.6%	6.9%	1.1%	11.4%	0.4%	5.2%	-2.4%	7.9%
Nebraska	7.6%	7.3%	2.4%	6.7%	6.1%	6.1%	-1.5%	8.1%
Nevada	4.9%	5.4%	6.1%	8.2%	19.1%	11.1%	6.2%	8.1%
New Hampshire	0.3%	9.0%	15.1%	20.0%	4.0%	14.1%	13.8%	4.8%
New Jersey	0.6%	7.3%	13.4%	16.7%	18.6%	17.1%	16.5%	5.8%
New Mexico	5.5%	5.8%	3.6%	2.3%	-6.7%	1.2%	-4.3%	4.2%
New York	1.4%	5.1%	11.4%	12.7%	11.1%	11.6%	10.2%	5.0%
North Carolina	6.6%	6.8%	4.9%	3.5%	-6.1%	2.2%	-4.4%	5.7%
North Dakota	4.7%	4.9%	2.9%	1.8%	3.1%	3.3%	-1.4%	4.8%
Ohio	6.5%	6.3%	3.2%	5.2%	2.9%	4.7%	-1.8%	6.8%
Oklahoma	4.9%	3.3%	4.6%	7.1%	-0.5%	3.8%	-1.1%	5.6%
Oregon	12.8%	6.3%	0.6%	6.8%	6.1%	5.3%	-7.5%	12.3%
Pennsylvania	4.0%	4.7%	3.7%	6.9%	5.9%	5.7%	1.7%	4.9%
Rhode Island	0.0%	7.4%	11.9%	24.0%	17.0%	18.6%	18.6%	5.8%
South Carolina	5.6%	5.1%	6.7%	4.0%	-6.1%	2.4%	-3.2%	6.3%
South Dakota	7.7%	5.7%	3.7%	7.7%	-1.5%	4.1%	-3.6%	8.0%
Tennessee	6.0%	4.2%	5.9%	3.7%	0.2%	3.7%	-2.4%	6.4%
Texas	4.0%	4.9%	7.8%	4.8%	0.7%	4.9%	0.9%	5.0%
Utah	11.3%	3.8%	1.6%	3.2%	0.4%	2.3%	-9.0%	9.2%
Vermont	1.7%	4.9%	8.2%	6.1%	11.5%	8.6%	6.9%	4.4%
Virginia	3.9%	6.8%	7.8%	11.4%	10.6%	10.5%	6.6%	7.0%
Washington	8.1%	7.3%	4.1%	5.9%	2.2%	5.2%	-2.8%	8.5%
West Virginia	5.3%	5.7%	5.4%	4.9%	-4.5%	2.9%	-2.4%	5.1%
Wisconsin	8.1%	7.3%	4.5%	7.9%	4.4%	6.6%	-1.5%	8.7%
Wyoming	5.7%	2.4%	9.6%	5.2%	2.8%	5.4%	-0.3%	6.7%

Source: U.S. Census Bureau – Census and American Community Survey

Table A: I-Ab. Growth in Median Household Income. The table displays the change in income for one measure of the typical household. Connecticut median household income rose above the U.S. average from 2000-2004, but was below the U.S. average between 1989-2004.

Percent Changes in Median Household Income

	A Ann Avg. 1989-99	B 2000-01	C 2001-02	D 2002-03	E 2003-04	F Ann Avg. 2000-04	(F-A) Difference	Ann Avg. 1989-2004
United States	4.0%	2.0%	1.7%	1.2%	2.6%	1.9%	-2.0%	3.5%
Alabama	4.5%	1.1%	4.8%	-0.7%	4.4%	2.4%	-2.0%	4.0%
Alaska	2.5%	5.7%	1.1%	-7.1%	8.6%	1.9%	-0.5%	2.7%
Arizona	4.7%	6.1%	0.6%	-1.0%	3.0%	2.2%	-2.5%	3.7%
Arkansas	5.2%	-0.7%	4.4%	-0.5%	-3.7%	-0.2%	-5.4%	4.0%
California	3.3%	3.3%	3.3%	1.0%	1.9%	2.4%	-0.8%	3.1%
Colorado	5.7%	2.3%	1.7%	4.7%	-4.6%	1.0%	-4.7%	4.3%
Connecticut	2.9%	4.2%	0.3%	0.5%	6.6%	3.0%	0.0%	3.2%
Delaware	3.6%	3.0%	1.8%	1.1%	-0.5%	1.4%	-2.2%	3.2%
Dist. of Columbia	3.1%	0.6%	6.1%	-3.6%	10.6%	3.5%	0.4%	3.7%
Florida	4.1%	0.0%	3.2%	1.5%	3.4%	2.1%	-2.0%	3.6%
Georgia	4.6%	2.9%	-1.0%	1.6%	0.7%	1.1%	-3.6%	3.4%
Hawaii	2.8%	-3.2%	1.2%	0.4%	5.4%	1.0%	-1.9%	2.7%
Idaho	4.9%	-1.7%	0.9%	6.0%	1.1%	1.6%	-3.3%	4.2%
Illinois	4.4%	1.1%	0.7%	3.1%	2.0%	1.8%	-2.7%	3.7%
Indiana	4.4%	2.3%	0.5%	0.4%	0.3%	0.9%	-3.6%	3.3%
Iowa	5.0%	3.8%	-0.9%	3.2%	2.0%	2.1%	-3.0%	4.1%
Kansas	4.9%	-3.1%	2.7%	2.6%	1.4%	0.9%	-4.0%	3.8%
Kentucky	4.9%	2.5%	3.9%	-1.7%	2.6%	1.8%	-3.1%	4.0%
Louisiana	4.8%	8.3%	-0.7%	2.5%	2.8%	3.3%	-1.5%	4.3%
Maine	3.4%	2.1%	7.0%	-0.4%	5.8%	3.8%	0.4%	3.7%
Maryland	3.4%	2.5%	3.5%	2.8%	0.4%	2.4%	-1.1%	3.3%
Massachusetts	3.7%	5.4%	5.3%	-3.0%	3.8%	2.9%	-0.7%	3.6%
Michigan	4.4%	2.6%	-1.6%	1.4%	1.1%	0.9%	-3.5%	3.2%
Minnesota	5.2%	4.4%	-1.0%	1.5%	1.5%	1.6%	-3.6%	4.6%
Mississippi	5.6%	-1.8%	-1.4%	2.4%	-2.5%	-0.8%	-6.4%	4.1%
Missouri	4.4%	5.6%	2.5%	1.3%	1.8%	2.9%	-1.5%	4.1%
Montana	4.4%	-1.0%	7.6%	0.4%	-0.5%	1.6%	-2.8%	3.8%
Nebraska	5.1%	6.7%	0.1%	3.8%	0.6%	2.9%	-2.2%	4.3%
Nevada	4.4%	3.4%	0.2%	3.3%	-1.6%	1.3%	-3.1%	3.1%
New Hampshire	3.6%	3.0%	3.3%	-0.6%	3.1%	2.3%	-1.4%	3.8%
New Jersey	3.5%	3.6%	4.5%	-0.3%	4.7%	3.3%	-0.2%	3.6%
New Mexico	4.2%	2.4%	5.2%	-3.4%	3.6%	2.0%	-2.2%	3.5%
New York	3.2%	0.7%	2.1%	2.8%	2.5%	2.1%	-1.1%	3.1%
North Carolina	4.7%	2.8%	-1.6%	0.1%	3.1%	1.1%	-3.6%	3.4%
North Dakota	4.9%	2.4%	2.9%	3.6%	5.0%	3.7%	-1.2%	5.0%
Ohio	4.3%	2.9%	-0.5%	1.6%	2.2%	1.6%	-2.7%	3.4%
Oklahoma	4.2%	-1.2%	5.5%	-1.2%	0.6%	0.9%	-3.3%	3.6%
Oregon	5.0%	4.0%	-0.7%	-0.1%	3.7%	1.7%	-3.3%	3.8%
Pennsylvania	3.8%	3.4%	0.4%	0.7%	3.5%	2.1%	-1.7%	3.4%
Rhode Island	3.1%	-2.3%	6.7%	7.1%	-0.3%	2.8%	-0.3%	3.7%
South Carolina	4.1%	6.2%	-2.0%	1.4%	3.6%	2.3%	-1.8%	3.7%
South Dakota	5.7%	5.4%	1.4%	3.1%	0.1%	2.6%	-3.1%	5.1%
Tennessee	4.7%	-0.7%	2.7%	2.6%	1.4%	1.5%	-3.1%	4.0%
Texas	4.8%	2.9%	2.0%	-1.7%	2.7%	1.5%	-3.3%	3.9%
Utah	5.5%	1.0%	1.0%	0.9%	0.4%	0.8%	-4.7%	4.3%
Vermont	3.7%	3.8%	4.5%	-0.5%	6.5%	3.7%	0.0%	4.0%
Virginia	4.0%	3.1%	0.8%	3.7%	1.7%	2.4%	-1.6%	3.9%
Washington	4.7%	1.3%	0.5%	1.8%	1.7%	1.3%	-3.3%	3.8%
West Virginia	4.3%	1.7%	4.7%	0.1%	1.6%	2.1%	-2.2%	3.7%
Wisconsin	4.9%	1.8%	1.5%	1.1%	2.8%	1.8%	-3.0%	3.9%
Wyoming	4.0%	1.1%	5.2%	5.4%	2.2%	3.7%	-0.3%	4.5%

Source: U.S. Census Bureau – Census and American Community Survey

Table A: I-A2. Difference Between Growth in Median Home Price and Median Income. This is an important metric for attracting younger workers, as it reveals whether homes are becoming more or less affordable for new owners. The chart ranks states by changes between 2000 and 2004, during which Connecticut median home prices rose 7.3% faster than median household incomes.

Difference Between Percent Changes in Median Home Price and Median Income

Region	A Ann Avg. 1989-99	B 2000-01	C 2001-02	D 2002-03	E 2003-04	F Ann Avg. 2000-04	(F-A) Difference	Ann Avg. 1989-2004
Dist. of Columbia	0.1%	-5.4%	-14.5%	-20.4%	-24.3%	-21.9%	-22.0%	-8.8%
California	2.4%	-7.7%	-11.8%	-20.4%	-15.0%	-17.9%	-20.2%	-4.2%
Rhode Island	3.1%	-9.6%	-5.2%	-17.0%	-17.3%	-15.8%	-18.8%	-2.1%
Massachusetts	2.2%	-9.9%	-6.7%	-27.3%	-3.1%	-15.0%	-17.2%	-3.8%
New Jersey	2.9%	-3.7%	-8.9%	-17.0%	-13.9%	-13.8%	-16.7%	-2.2%
New Hampshire	3.3%	-6.0%	-11.7%	-20.6%	-0.9%	-11.8%	-15.1%	-1.0%
Minnesota	-1.4%	-8.7%	-12.4%	-7.9%	-5.2%	-10.1%	-8.8%	-5.8%
Nevada	-0.5%	-2.0%	-5.9%	-4.9%	-20.8%	-9.7%	-9.2%	-4.9%
New York	1.8%	-4.4%	-9.3%	-9.9%	-8.6%	-9.6%	-11.3%	-1.8%
Maryland	0.8%	-0.6%	-5.8%	-9.5%	-16.0%	-9.4%	-10.2%	-3.0%
Virginia	0.1%	-3.7%	-7.0%	-7.7%	-8.8%	-8.0%	-8.2%	-3.1%
Florida	0.3%	-7.9%	-7.0%	-11.2%	0.1%	-7.5%	-7.9%	-3.2%
Connecticut	3.5%	-1.9%	-10.1%	-14.9%	2.0%	-7.3%	-10.8%	0.8%
Maine	2.1%	-0.8%	-7.3%	-11.8%	-0.3%	-6.0%	-8.1%	-0.9%
Delaware	0.5%	-1.0%	-2.7%	-13.2%	-4.1%	-5.8%	-6.3%	-2.0%
Hawaii	1.6%	0.7%	-4.3%	-10.9%	-6.9%	-5.8%	-7.4%	-0.9%
Illinois	-1.9%	-4.4%	-6.9%	-5.8%	-2.4%	-5.5%	-3.6%	-4.1%
Colorado	-4.6%	-8.7%	-4.7%	-1.0%	-5.3%	-5.4%	-0.9%	-6.9%
Michigan	-4.8%	-3.6%	-8.5%	-4.7%	-1.5%	-5.1%	-0.2%	-6.9%
Vermont	2.1%	-1.1%	-3.7%	-6.6%	-4.9%	-4.8%	-6.9%	-0.4%
Wisconsin	-3.2%	-5.4%	-3.0%	-6.8%	-1.6%	-4.7%	-1.5%	-4.8%
Kansas	-1.2%	-8.0%	-4.1%	-4.1%	-0.8%	-4.7%	-3.4%	-3.2%
United States	-1.3%	-4.0%	-5.5%	-6.4%	-0.2%	-4.5%	-3.2%	-3.2%
Missouri	-0.8%	0.0%	-4.1%	-4.9%	-5.9%	-4.3%	-3.5%	-2.9%
Georgia	-1.1%	-6.4%	-6.8%	-5.6%	3.4%	-4.1%	-3.0%	-3.2%
Alaska	-2.8%	-0.9%	-4.3%	-14.3%	5.7%	-4.0%	-1.2%	-3.7%
Washington	-3.4%	-6.0%	-3.6%	-4.1%	-0.6%	-3.9%	-0.5%	-4.8%
Pennsylvania	-0.2%	-1.4%	-3.2%	-6.2%	-2.4%	-3.7%	-3.4%	-1.5%
Montana	-3.2%	-7.9%	6.6%	-11.0%	-0.8%	-3.6%	-0.3%	-4.1%
Oregon	-7.8%	-2.3%	-1.2%	-6.9%	-2.5%	-3.6%	4.2%	-8.5%
Texas	0.8%	-2.0%	-5.8%	-6.5%	1.9%	-3.4%	-4.1%	-1.1%
Nebraska	-2.5%	-0.6%	-2.3%	-3.0%	-5.5%	-3.2%	-0.7%	-3.8%
Indiana	-3.2%	-1.9%	-1.6%	-5.6%	-2.7%	-3.2%	0.0%	-4.2%
Ohio	-2.2%	-3.4%	-3.7%	-3.6%	-0.7%	-3.1%	-0.9%	-3.4%
Iowa	-3.1%	-0.9%	-6.4%	-0.5%	-2.9%	-3.0%	0.1%	-3.8%
Oklahoma	-0.7%	-4.5%	0.9%	-8.3%	1.2%	-2.9%	-2.2%	-2.1%
Arizona	-0.5%	0.3%	-5.5%	-8.1%	3.3%	-2.8%	-2.3%	-2.2%
Idaho	-3.5%	-5.0%	-5.9%	3.9%	-1.1%	-2.2%	1.2%	-3.6%
Tennessee	-1.4%	-4.9%	-3.2%	-1.1%	1.3%	-2.1%	-0.7%	-2.4%
Arkansas	-0.6%	-3.2%	-0.6%	-6.3%	1.9%	-2.0%	-1.4%	-1.1%
Mississippi	-0.3%	-3.6%	-4.6%	-4.7%	4.6%	-1.9%	-1.7%	-1.3%
Wyoming	-1.7%	-1.3%	-4.4%	0.2%	-0.7%	-1.7%	0.0%	-2.2%
South Dakota	-2.0%	-0.3%	-2.2%	-4.6%	1.6%	-1.5%	0.6%	-3.0%
Utah	-5.8%	-2.8%	-0.6%	-2.3%	0.0%	-1.5%	4.3%	-4.9%
North Carolina	-1.9%	-4.0%	-6.5%	-3.4%	9.2%	-1.1%	0.7%	-2.3%
Kentucky	-2.4%	-3.0%	-1.3%	-7.8%	8.1%	-1.0%	1.4%	-2.9%
West Virginia	-1.0%	-4.0%	-0.7%	-4.8%	6.1%	-0.8%	0.2%	-1.5%
Alabama	-1.5%	-4.9%	1.3%	-3.0%	5.9%	-0.2%	1.4%	-1.6%
South Carolina	-1.5%	1.1%	-8.7%	-2.6%	9.6%	-0.1%	1.5%	-2.6%
Louisiana	0.2%	3.5%	-7.5%	-2.2%	6.2%	0.0%	-0.2%	-0.4%
North Dakota	0.2%	-2.5%	0.1%	1.8%	1.9%	0.3%	0.2%	0.2%
New Mexico	-1.3%	-3.4%	1.6%	-5.7%	10.3%	0.8%	2.1%	-0.6%

Source: U.S. Census Bureau – Census and American Community Survey

Table A: I-A3. Difference (\$) Between the Median Income and the Income Required to Purchase the Median-Priced Home: Assumed Lower Rates. For selected states, this table assumes a property tax rate of \$15 per every \$1000 in assessed value; calculated as 70% of market price. Also, the interest is assumed at the variable rate. Essentially, this table attempts to minimize the costs of ownership. **The states are ranked by affordability in 2004.**

Difference (\$) Between the Median Income and the Income Required to Purchase Median House

Region	Assumed Mill Rate: 15.00			Assumed Interest Rate: Variable				
	8.5% 1989	6.0% 1999	1999- 1989	7.0% 2000	5.5% 2001	5.0% 2002	4.0% 2003	4.25% 2004
United States	\$7,006	\$13,821	\$6,815	\$10,393	\$13,628	\$13,747	\$15,039	\$14,613
Alabama	\$7,976	\$14,089	\$6,113	\$11,324	\$13,405	\$15,309	\$16,544	\$17,901
Alaska	\$13,690	\$17,603	\$3,914	\$15,569	\$21,286	\$21,747	\$18,769	\$21,406
Arizona	\$4,138	\$11,985	\$7,847	\$7,205	\$12,035	\$11,968	\$12,460	\$13,041
Arkansas	\$7,640	\$15,033	\$7,393	\$14,230	\$16,034	\$17,483	\$18,035	\$17,287
California	-\$21,254	-\$2,328	\$18,926	-\$9,072	-\$5,655	-\$9,239	-\$14,553	-\$26,513
Colorado	\$5,945	\$7,959	\$2,014	\$2,901	\$5,454	\$5,677	\$9,787	\$6,133
Connecticut	-\$10,163	\$14,620	\$24,783	\$10,890	\$16,462	\$14,558	\$12,991	\$13,532
Delaware	\$5,600	\$16,664	\$11,064	\$13,261	\$17,962	\$18,986	\$18,482	\$16,226
Dist. of Columbia	-\$5,007	\$3,097	\$8,104	-\$1,992	\$1,589	-\$1,790	-\$5,949	-\$19,920
Florida	\$5,020	\$13,967	\$8,947	\$10,239	\$11,926	\$11,841	\$11,882	\$11,577
Georgia	\$8,262	\$16,239	\$7,977	\$11,994	\$14,621	\$13,981	\$15,484	\$15,837
Hawaii	-\$32,405	-\$14,417	\$17,988	-\$22,601	-\$12,119	-\$11,848	-\$12,095	-\$18,927
Idaho	\$8,227	\$12,532	\$4,305	\$10,476	\$12,570	\$12,486	\$16,603	\$15,930
Illinois	\$8,732	\$15,779	\$7,046	\$12,201	\$15,448	\$14,987	\$16,881	\$15,635
Indiana	\$13,088	\$19,354	\$6,266	\$16,337	\$19,535	\$20,338	\$21,374	\$20,338
Iowa	\$12,869	\$20,035	\$7,166	\$17,579	\$20,867	\$20,414	\$22,818	\$22,298
Kansas	\$12,081	\$20,955	\$8,874	\$18,606	\$19,222	\$19,929	\$21,657	\$21,283
Kentucky	\$7,823	\$13,249	\$5,426	\$10,037	\$12,714	\$13,968	\$14,205	\$15,713
Louisiana	\$4,919	\$12,543	\$7,625	\$9,125	\$13,616	\$13,022	\$14,925	\$16,056
Maine	\$2,220	\$13,990	\$11,770	\$10,049	\$13,572	\$14,082	\$13,720	\$13,718
Maryland	\$5,472	\$18,476	\$13,004	\$14,483	\$19,680	\$20,163	\$21,166	\$14,407
Massachusetts	-\$10,674	\$6,758	\$17,433	-\$7	\$2,495	\$1,932	-\$6,381	-\$10,140
Michigan	\$13,373	\$17,436	\$4,063	\$13,102	\$16,513	\$15,268	\$17,017	\$16,063
Minnesota	\$9,269	\$18,278	\$9,010	\$15,954	\$18,536	\$16,128	\$17,217	\$14,875
Mississippi	\$6,893	\$14,511	\$7,618	\$13,206	\$14,854	\$14,689	\$15,975	\$15,943
Missouri	\$8,950	\$16,757	\$7,807	\$13,707	\$17,670	\$18,311	\$19,686	\$18,223
Montana	\$6,398	\$9,586	\$3,188	\$7,609	\$9,035	\$12,410	\$12,372	\$11,534
Nebraska	\$11,335	\$18,521	\$7,186	\$15,240	\$19,210	\$19,742	\$21,933	\$20,468
Nevada	\$3,028	\$11,131	\$8,103	\$6,086	\$10,511	\$10,235	\$12,404	\$4,329
New Hampshire	-\$1,637	\$18,067	\$19,704	\$15,209	\$18,565	\$17,044	\$13,545	\$12,541
New Jersey	-\$6,406	\$14,912	\$21,318	\$9,617	\$14,531	\$13,704	\$11,024	\$3,489
New Mexico	\$3,592	\$8,669	\$5,077	\$6,108	\$9,076	\$11,172	\$11,802	\$14,033
New York	-\$5,324	\$8,365	\$13,689	\$4,821	\$8,425	\$7,156	\$7,674	\$3,448
North Carolina	\$7,473	\$13,673	\$6,200	\$9,876	\$12,886	\$12,265	\$13,940	\$16,031
North Dakota	\$8,385	\$17,078	\$8,694	\$15,169	\$17,663	\$19,045	\$21,711	\$22,689
Ohio	\$10,237	\$16,528	\$6,292	\$13,146	\$16,277	\$16,494	\$18,310	\$17,927
Oklahoma	\$9,600	\$16,746	\$7,146	\$15,057	\$16,562	\$18,478	\$18,569	\$18,459
Oregon	\$7,636	\$5,087	-\$2,548	\$423	\$4,862	\$6,090	\$7,191	\$5,728
Pennsylvania	\$8,779	\$17,257	\$8,477	\$15,206	\$18,692	\$19,151	\$20,169	\$19,793
Rhode Island	-\$6,783	\$10,760	\$17,544	\$8,217	\$9,549	\$10,217	\$9,101	\$1,013
South Carolina	\$8,433	\$14,727	\$6,295	\$9,605	\$14,166	\$12,974	\$14,975	\$17,207
South Dakota	\$9,290	\$16,531	\$7,242	\$13,628	\$17,212	\$17,983	\$19,632	\$19,495
Tennessee	\$7,777	\$14,453	\$6,676	\$11,742	\$13,807	\$14,576	\$16,942	\$16,902
Texas	\$9,721	\$20,493	\$10,772	\$17,827	\$20,842	\$21,135	\$21,472	\$21,921
Utah	\$9,298	\$11,311	\$2,013	\$8,356	\$12,409	\$13,955	\$16,531	\$15,829
Vermont	\$1,721	\$14,591	\$12,870	\$10,834	\$14,933	\$15,982	\$16,880	\$15,885
Virginia	\$6,784	\$17,138	\$10,354	\$14,520	\$18,288	\$17,855	\$19,412	\$16,090
Washington	\$3,817	\$6,131	\$2,314	\$1,532	\$4,997	\$5,553	\$8,085	\$6,988
West Virginia	\$6,818	\$12,547	\$5,729	\$10,166	\$12,167	\$13,495	\$14,407	\$15,248
Wisconsin	\$11,208	\$17,361	\$6,153	\$14,051	\$16,691	\$17,447	\$18,535	\$17,953
Wyoming	\$9,009	\$15,137	\$6,128	\$13,192	\$16,387	\$17,428	\$20,795	\$20,504

Source: U.S. Census Bureau – Census and American Community Survey

Table A: I-A4. Difference (\$) Between the Median Income and the Income Required if Buying the Median House: Higher Rates. This table calculates first-time buyer affordability for fixed, 30-year mortgage rates of interest and a mill rate equal to \$30 per \$1000 of assessed real property value. Note that California has a very restrictive property tax rate and Hawaii relies heavily on state funding for schools, etc., so the numbers in this table do not reflect their actual markets, but do reflect many communities in Connecticut.

Difference (\$) Between the Median Income and the Income Required if Buying the Median House								
Assumed Mill Rate: 30.00			Assumed Interest Rate: Fixed					
Region	10.0% 1989	7.5% 1999	1999- 1989	8.5% 2000	7.0% 2001	6.5% 2002	5.5% 2003	5.75% 2004
United States	\$1,727	\$6,146	\$4,419	\$2,500	\$5,528	\$5,168	\$6,057	\$5,316
Alabama	\$4,398	\$8,628	\$4,230	\$5,711	\$7,647	\$9,424	\$10,683	\$12,087
Alaska	\$7,341	\$8,350	\$1,009	\$6,090	\$11,502	\$11,564	\$8,149	\$10,393
Arizona	-\$1,222	\$4,201	\$5,423	-\$752	\$3,883	\$3,419	\$3,549	\$4,090
Arkansas	\$4,546	\$10,362	\$5,815	\$9,417	\$11,260	\$12,530	\$12,930	\$12,435
California	-\$34,321	-\$15,900	\$18,421	-\$23,210	-\$20,844	-\$26,503	-\$34,948	-\$50,534
Colorado	\$403	-\$2,732	-\$3,135	-\$8,140	-\$6,411	-\$6,794	-\$3,044	-\$6,872
Connecticut	-\$22,047	\$3,910	\$25,957	-\$87	\$5,189	\$2,268	-\$804	-\$997
Delaware	-\$1,105	\$8,296	\$9,401	\$4,520	\$9,161	\$9,901	\$8,374	\$5,688
District of Columbia	-\$13,192	-\$6,991	\$6,202	-\$12,887	-\$9,592	-\$15,100	-\$21,084	-\$40,476
Florida	-\$124	\$7,197	\$7,322	\$3,178	\$4,551	\$3,813	\$3,069	\$2,408
Georgia	\$3,507	\$9,103	\$5,596	\$4,555	\$6,750	\$5,759	\$6,901	\$7,429
Hawaii	-\$48,721	-\$31,917	\$16,804	-\$41,435	-\$29,647	-\$30,117	-\$31,895	-\$41,334
Idaho	\$4,326	\$5,711	\$1,385	\$3,598	\$5,697	\$5,234	\$9,397	\$8,510
Illinois	\$3,345	\$7,385	\$4,040	\$3,694	\$6,764	\$5,754	\$7,089	\$5,334
Indiana	\$9,490	\$13,302	\$3,813	\$10,129	\$13,273	\$14,024	\$14,858	\$13,581
Iowa	\$9,809	\$14,741	\$4,932	\$12,349	\$15,565	\$14,889	\$17,242	\$16,408
Kansas	\$8,597	\$15,596	\$6,999	\$13,107	\$13,639	\$14,039	\$15,542	\$14,991
Kentucky	\$4,454	\$7,685	\$3,232	\$4,242	\$6,797	\$7,819	\$7,856	\$9,667
Louisiana	\$1,018	\$7,089	\$6,071	\$3,575	\$7,986	\$7,083	\$8,874	\$10,166
Maine	-\$3,651	\$7,657	\$11,308	\$3,306	\$6,856	\$6,498	\$5,497	\$4,924
Maryland	-\$2,296	\$9,107	\$11,403	\$4,845	\$10,059	\$9,776	\$9,814	\$1,109
Massachusetts	-\$21,583	-\$5,158	\$16,425	-\$12,652	-\$11,617	-\$13,679	-\$25,271	-\$30,481
Michigan	\$9,331	\$10,018	\$687	\$5,414	\$8,606	\$6,918	\$8,393	\$7,147
Minnesota	\$4,312	\$10,424	\$6,112	\$7,881	\$9,699	\$6,403	\$6,863	\$3,750
Mississippi	\$3,860	\$9,929	\$6,069	\$8,250	\$9,970	\$9,712	\$10,783	\$11,090
Missouri	\$4,962	\$10,988	\$6,026	\$7,757	\$11,588	\$11,904	\$13,061	\$11,035
Montana	\$2,598	\$3,201	\$603	\$1,136	\$2,335	\$5,722	\$5,122	\$4,206
Nebraska	\$7,972	\$12,874	\$4,902	\$9,620	\$13,374	\$13,840	\$15,802	\$13,918
Nevada	-\$3,381	\$2,019	\$5,400	-\$3,133	\$1,101	\$372	\$2,016	-\$8,134
New Hampshire	-\$10,333	\$9,513	\$19,846	\$6,131	\$8,990	\$6,161	\$836	-\$764
New Jersey	-\$17,247	\$3,952	\$21,199	-\$1,721	\$2,757	\$516	-\$3,952	-\$14,401
New Mexico	-\$1,103	\$1,732	\$2,835	-\$828	\$1,970	\$3,899	\$4,559	\$7,229
New York	-\$14,094	-\$1,177	\$12,917	-\$5,057	-\$1,625	-\$3,899	-\$4,455	-\$10,124
North Carolina	\$3,081	\$6,723	\$3,642	\$2,791	\$5,560	\$4,672	\$6,291	\$8,798
North Dakota	\$4,988	\$12,304	\$7,316	\$10,293	\$12,711	\$14,013	\$16,723	\$17,508
Ohio	\$6,007	\$9,874	\$3,867	\$6,393	\$9,330	\$9,409	\$11,055	\$10,410
Oklahoma	\$6,399	\$12,209	\$5,810	\$10,214	\$11,720	\$13,476	\$13,354	\$13,234
Oregon	\$3,143	-\$4,673	-\$7,816	-\$9,393	-\$5,241	-\$3,947	-\$3,240	-\$5,422
Pennsylvania	\$4,132	\$11,032	\$6,900	\$8,997	\$12,397	\$12,706	\$13,459	\$12,636
Rhode Island	-\$15,708	\$2,226	\$17,934	-\$811	\$165	-\$150	-\$3,416	-\$13,737
South Carolina	\$4,350	\$8,638	\$4,287	\$2,792	\$7,235	\$5,668	\$7,578	\$10,211
South Dakota	\$6,263	\$11,423	\$5,160	\$8,243	\$11,704	\$12,342	\$13,718	\$13,628
Tennessee	\$3,876	\$8,485	\$4,609	\$5,442	\$7,451	\$7,930	\$10,233	\$10,133
Texas	\$5,760	\$15,199	\$9,439	\$12,351	\$15,279	\$15,211	\$15,426	\$15,788
Utah	\$4,677	\$1,935	-\$2,742	-\$1,083	\$2,929	\$4,445	\$6,977	\$6,170
Vermont	-\$4,708	\$7,436	\$12,144	\$3,301	\$7,283	\$7,806	\$8,436	\$6,408
Virginia	\$704	\$9,091	\$8,386	\$6,242	\$9,729	\$8,742	\$9,528	\$5,085
Washington	-\$2,451	-\$4,669	-\$2,218	-\$9,566	-\$6,527	-\$6,298	-\$4,126	-\$5,585
West Virginia	\$3,617	\$7,876	\$4,259	\$5,362	\$7,250	\$8,376	\$9,180	\$10,223
Wisconsin	\$7,031	\$10,161	\$3,130	\$6,903	\$9,268	\$9,787	\$10,491	\$9,495
Wyoming	\$4,866	\$8,938	\$4,072	\$6,738	\$9,987	\$10,499	\$13,699	\$13,155

Source: U.S. Census Bureau – Census and American Community Survey

Changes in Wealth Resulting from Per Capita Income

Table A: I-C1. 1969-2004 Growth in Annual Average Real Wages. Connecticut recorded the highest gains in average annual real wages from 1985-1989.

Average Annual Change In Real Wage						
Rank	Region	1969-1984	1985-1994	1995-2004	1985-1989	1990-1994
1	Connecticut	-0.1%	0.9%	1.6%	10.8%	-0.9%
2	New England region	-0.1%	0.6%	1.8%	9.3%	-2.2%
3	New Hampshire	0.0%	0.4%	1.8%	9.2%	-3.7%
4	New Jersey	0.0%	0.9%	1.3%	8.8%	-0.5%
5	Massachusetts	0.0%	0.7%	1.8%	8.5%	-1.3%
6	Rhode Island	-0.4%	0.5%	1.4%	8.3%	-2.9%
7	Hawaii	-0.7%	0.8%	0.4%	7.6%	-0.6%
8	Maine	-0.2%	0.1%	1.1%	6.8%	-4.2%
9	New York	-0.1%	0.4%	1.4%	6.5%	-2.0%
10	North Carolina	0.1%	0.7%	1.6%	6.5%	0.1%
11	Georgia	0.1%	0.6%	1.7%	5.8%	0.1%
12	Florida	-0.3%	0.3%	1.5%	5.5%	-1.4%
13	Vermont	-0.4%	0.0%	1.3%	5.3%	-3.7%
14	South Carolina	0.2%	0.4%	1.2%	5.2%	-1.0%
15	Mideast	0.0%	0.3%	1.5%	5.2%	-1.9%
16	Virginia	0.3%	0.3%	2.3%	5.1%	-1.5%
17	Minnesota	-0.3%	0.4%	1.9%	5.1%	-0.8%
18	District of Columbia	0.5%	0.9%	2.4%	5.1%	0.9%
19	Maryland	0.0%	0.4%	2.0%	4.8%	-2.2%
20	California	-0.4%	0.1%	1.6%	4.6%	-3.1%
21	Illinois	-0.4%	0.3%	1.3%	4.5%	-0.7%
22	Southeast region	0.1%	0.3%	1.6%	4.3%	-0.8%
23	United States	-0.2%	0.1%	1.4%	3.7%	-1.8%
24	Tennessee	0.1%	0.4%	1.3%	3.5%	0.6%
25	Far West region	-0.4%	0.0%	1.4%	3.3%	-2.6%
26	Wisconsin	-0.6%	0.4%	1.2%	3.1%	0.4%
27	Alabama	0.2%	0.3%	1.2%	2.9%	-1.1%
28	Great Lakes region	-0.5%	0.2%	1.0%	2.7%	-0.7%
29	Mississippi	0.2%	0.3%	1.1%	2.7%	-0.9%
30	Pennsylvania	-0.2%	0.0%	1.2%	2.6%	-2.3%
31	Delaware	0.1%	-0.2%	1.9%	2.3%	-4.1%
32	Missouri	-0.3%	0.0%	1.1%	1.9%	-1.7%
33	Michigan	-0.6%	0.1%	0.7%	1.7%	-0.4%
34	Nevada	-0.9%	0.0%	1.0%	1.7%	0.0%
35	Plains region	-0.2%	0.0%	1.4%	1.6%	-1.6%
36	Indiana	-0.5%	0.1%	1.0%	1.6%	-0.8%
37	Arizona	-0.2%	-0.3%	1.5%	1.1%	-3.5%
38	Iowa	-0.3%	0.1%	1.3%	1.1%	-0.8%
39	Arkansas	0.3%	0.1%	1.5%	1.0%	-0.8%
40	Ohio	-0.5%	-0.1%	0.9%	0.8%	-1.5%
41	South Dakota	0.1%	0.1%	1.5%	0.8%	-0.1%
42	Nebraska	-0.2%	0.0%	1.3%	0.1%	-1.3%
43	Oregon	-0.5%	0.0%	0.9%	-0.1%	-0.5%
44	Kentucky	0.0%	-0.1%	1.5%	-0.2%	-1.1%
45	Kansas	0.1%	-0.3%	1.2%	-0.3%	-1.6%
46	Washington	-0.4%	0.0%	1.5%	-0.6%	0.5%
47	Texas	0.5%	-0.4%	1.5%	-1.4%	-1.6%
48	Southwest region	0.4%	-0.4%	1.5%	-1.5%	-2.1%
49	Colorado	0.3%	-0.4%	1.7%	-2.2%	-1.2%
50	Idaho	-0.1%	-0.3%	0.4%	-2.8%	-1.6%
51	North Dakota	0.2%	-0.5%	1.4%	-2.9%	-2.6%
52	Louisiana	0.2%	-0.5%	1.0%	-3.0%	-2.3%
53	Rocky Mountain region	0.2%	-0.5%	1.3%	-3.4%	-1.4%
54	Utah	0.1%	-0.6%	0.9%	-3.4%	-1.8%
55	New Mexico	-0.2%	-0.6%	0.9%	-3.8%	-1.8%
56	Oklahoma	0.5%	-1.1%	1.0%	-5.2%	-4.1%
57	Montana	-0.3%	-0.9%	0.9%	-6.2%	-1.6%
58	West Virginia	0.3%	-1.3%	0.5%	-6.4%	-6.0%
59	Alaska	0.6%	-1.7%	-0.1%	-8.8%	-4.4%
60	Wyoming	0.7%	-1.5%	1.2%	-10.8%	-4.3%

Table A: I-C2. 1963-1997 Connecticut/U.S. Comparisons of Changing Industry Proportions of Gross Product. This table uses BEA measures to assess changes in an industry's importance of gross state (national) product between 1963 and 1997.

Percentage of Total Gross State (National) Product			
Industry	Conn	U.S.	Diff.
Private industries	-0.2%	-0.1%	-0.1%
Agriculture, forestry, and fishing	-0.5%	-1.8%	1.3%
Farms	-0.6%	-2.0%	1.4%
Agricultural services, forestry, and fishing	0.2%	0.2%	0.0%
Mining	0.0%	-0.6%	0.6%
Metal mining		-0.1%	
Coal mining	0.0%	-0.1%	0.1%
Oil and gas extraction		-0.3%	
Nonmetallic minerals, except fuels	0.0%	-0.1%	0.1%
Construction	-2.1%	-0.6%	-1.5%
Manufacturing	-22.7%	-10.0%	-12.7%
Durable goods	-18.4%	-6.1%	-12.4%
Lumber and wood products	0.0%	-0.2%	0.2%
Furniture and fixtures	-0.2%	-0.1%	0.0%
Stone, clay, and glass products	-0.5%	-0.5%	0.0%
Primary metal industries	-2.2%	-1.5%	-0.7%
Fabricated metal products	-2.1%	-0.6%	-1.5%
Industrial machinery and equipment	-4.5%	-0.7%	-3.8%
Electronic and other electric equipment	-1.4%	-0.1%	-1.3%
Motor vehicles and equipment	0.1%	-1.2%	1.4%
Other transportation equipment	-6.8%	-1.0%	-5.8%
Instruments and related products	-0.2%	0.0%	-0.2%
Miscellaneous manufacturing	-0.7%	-0.1%	-0.6%
Nondurable goods	-4.3%	-4.0%	-0.3%
Food and kindred products	-1.3%	-1.5%	0.2%
Tobacco products	0.0%	-0.4%	0.4%
Textile mill products	-0.8%	-0.5%	-0.3%
Apparel and other textile products	-0.8%	-0.6%	-0.1%
Paper and allied products	0.0%	-0.4%	0.4%
Printing and publishing	-0.4%	-0.2%	-0.2%
Chemicals and allied products	0.0%	-0.1%	0.1%
Petroleum and coal products	0.1%	0.0%	0.0%
Rubber and misc. plastics products	-1.1%	0.0%	-1.1%
Leather and leather products	-0.1%	-0.2%	0.1%
Transportation and public utilities	0.0%	-0.6%	0.6%
Transportation	0.3%	-1.0%	1.3%
Railroad transportation	-0.1%	-1.1%	1.0%
Local and interurban passenger transit	0.0%	-0.1%	0.1%
Trucking and warehousing	-0.3%	-0.3%	0.0%

Water transportation	0.1%	-0.2%	0.2%
Transportation by air	0.3%	0.6%	-0.3%
Pipelines, except natural gas	0.0%	0.0%	0.0%
Transportation services	0.3%	0.2%	0.1%
Communications	-0.1%	0.4%	-0.5%
Electric, gas, and sanitary services	-0.2%	-0.1%	-0.1%
Wholesale trade	1.6%	-0.2%	1.8%
Retail trade	-2.5%	-0.9%	-1.6%
Finance, insurance, and real estate	16.0%	4.8%	11.2%
Depository institutions	0.4%	1.2%	-0.8%
Nondepository institutions		0.3%	
Security and commodity brokers	2.1%	1.5%	0.7%
Insurance carriers	6.5%	0.8%	5.7%
Insurance agents, brokers, and services	0.2%	0.2%	0.0%
Real estate	5.5%	0.7%	4.8%
Holding and other investment offices	0.4%	0.2%	0.2%
Services	10.0%	9.8%	0.2%
Hotels and other lodging places	0.1%	0.3%	-0.2%
Personal services	-0.4%	-0.4%	0.1%
Business services	3.5%	3.3%	0.3%
Auto repair, services, and parking	0.3%	0.3%	0.0%
Miscellaneous repair services	0.0%	0.0%	0.0%
Motion pictures	0.0%	0.1%	-0.1%
Amusement and recreation services	0.2%	0.3%	-0.1%
Health services	3.4%	3.3%	0.1%
Legal services	0.5%	0.7%	-0.3%
Educational services	0.3%	0.2%	0.1%
Social services	0.5%	0.4%	0.1%
Membership organizations	-0.2%	-0.1%	-0.1%
Other services	2.2%	1.9%	0.3%
Private households	-0.5%	-0.5%	0.0%
Government	0.2%	0.1%	0.1%
Federal, civilian	-0.4%	-0.7%	0.3%
Federal military	-0.5%	-0.9%	0.5%
State and local	1.1%	1.7%	-0.7%
Addenda	0.0%	0.0%	0.0%
Electronic equipment and instruments	-1.6%	-0.1%	-1.5%
Depository and nondepository institutions	1.2%	1.4%	-0.2%
Business services and other services	5.7%	5.2%	0.5%

Changes in Total Income Resulting From Changes in Worksites

Using equation (II-b), Chart A:II-A1b indicates that the percent changes in worksites are not a consistent determinant of the percent changes in employment levels. Chart A:II-A1c plots equation (II-c); the results do not suggest strong connections between the labor force and the worksites. The implications are that **employment and income per employee**, not net changes in the number of establishments, **are the primary cause of the changes in total income** in Connecticut during the sample period.

$$(II-b) \quad \% \Delta Employment \approx \% \Delta \frac{Employment}{Worksites} + \% \Delta Worksites$$

$$(II-c) \quad \% \Delta Worksites \approx \% \Delta \frac{Worksites}{Labor\ Force} + \% \Delta Labor\ Force$$

Chart A: II-A1b. 1990-2004 Growth in Employment and Worksites for Connecticut.

Changes in the number of worksites are not the primary determinant of changes in employment levels.

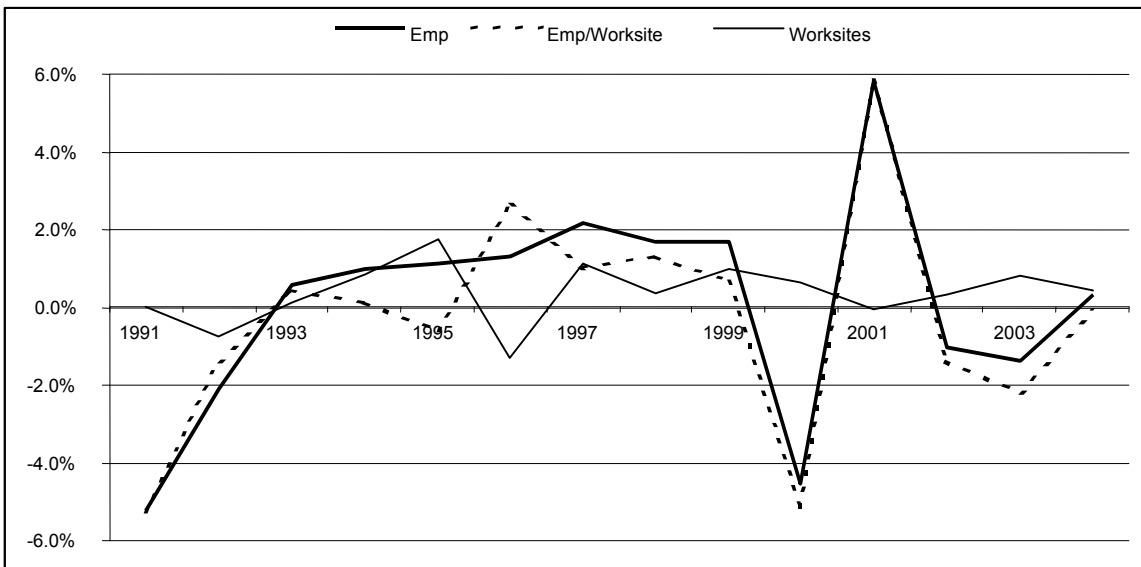
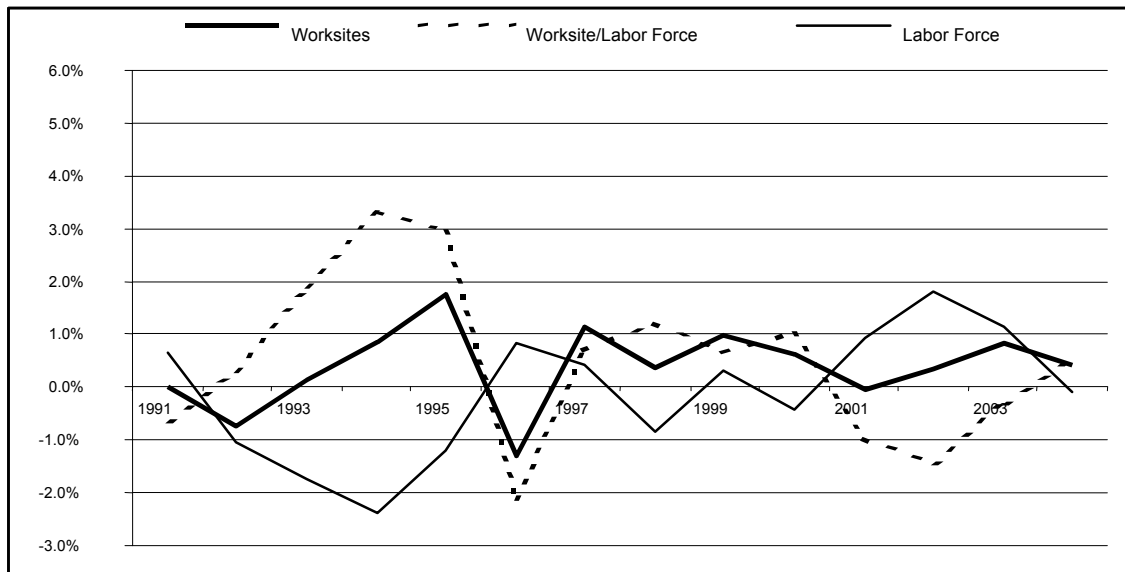


Chart A: II-A1c. 1990-2004 Growth in Worksites and Labor Force for Connecticut. Although a factor, particularly during the late 1990's, changes in the size of the labor force are not the primary determinant of changes in the number of worksites.

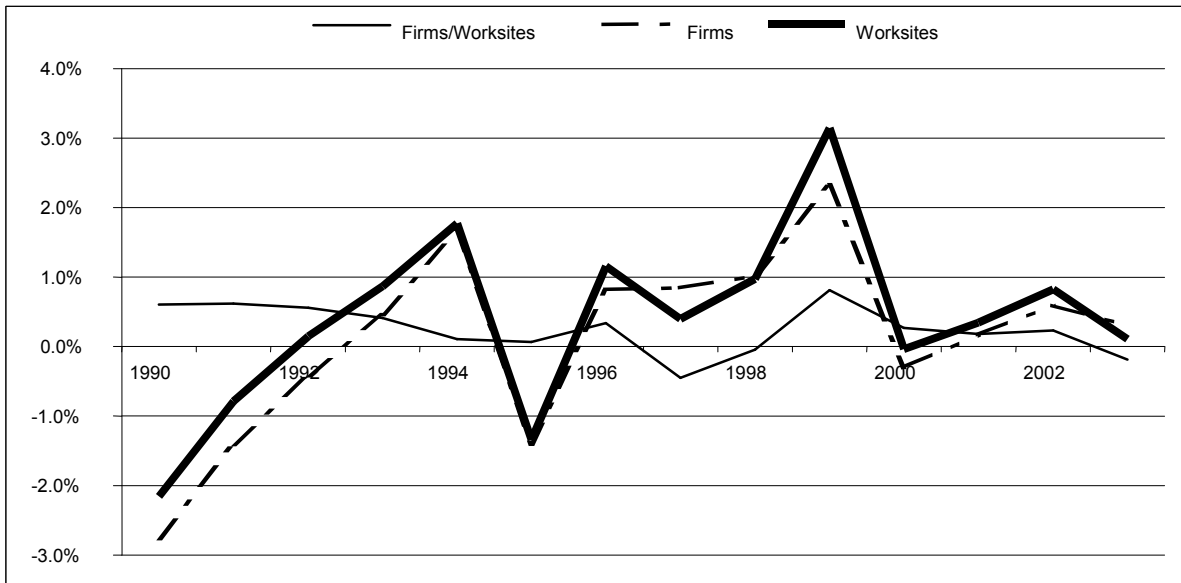


Worksites per Firm

Assessing ratios of worksites per firm can reveal if a production economy is consolidating within established companies or if there are changes in the business climate regarding small firms or start-ups.

$$(II-d) \quad \% \Delta \text{Worksites} \approx \% \Delta \frac{\text{Worksites}}{\text{Firms}} + \% \Delta \text{Firms}$$

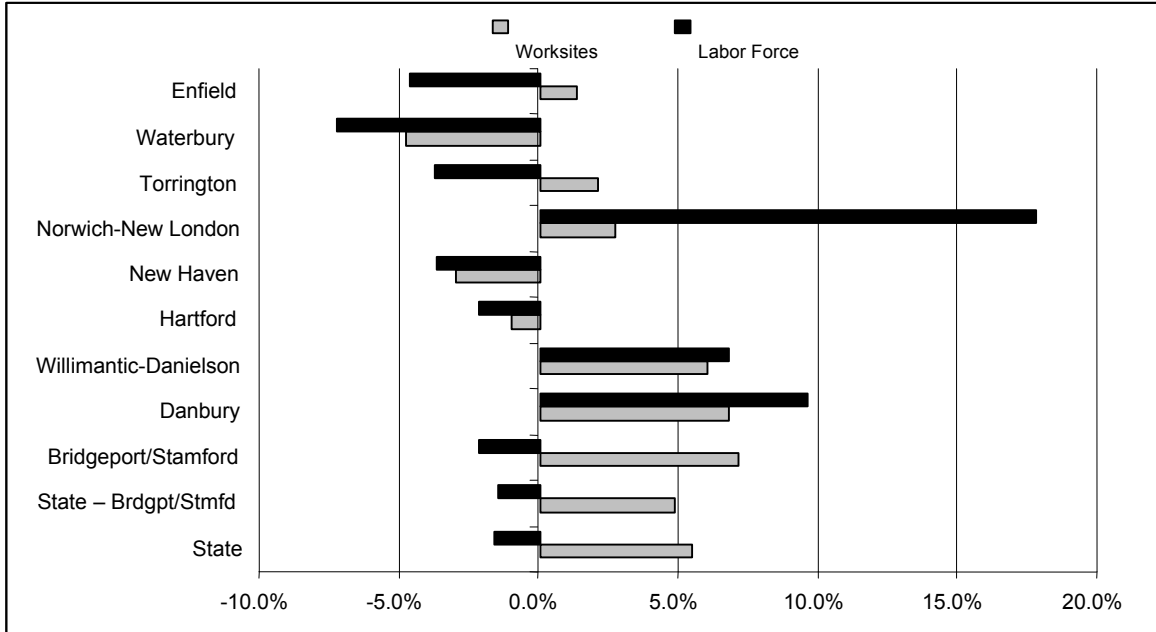
Chart A: II-A1d. The Number of Firms and Ratios of Worksites-to-Firms in Connecticut from 1990-2004. Using equation (II-d) shows that the net change in the number of firms is the more pervasive indicator of changes in the number of worksites. Therefore, the report uses worksites as a proxy for firms.



Changes in Worksites by Labor Market Area (LMA)

The potential linkage between worksites and labor force is explored by LMA. Chart A:II-A1c shows the connection is not strong at the State level of aggregation. This pattern persists region-by-region, as seen in Chart A:II-C3.

Chart A: II-C3. 1990-2004 Percent Gains in Worksites and Labor Force by Connecticut Labor Market Area. The connection between worksites and labor force is dependent on each LMA, and not consistent throughout the State. For example, the Bridgeport-Stamford LMA increases worksites and employment, but employment does not increase relative to other LMAs by as much as might be expected based on the increase in income per employee.



Changes in Worksites by Industry Sector

In Chart A:II-D2, changes in worksites for *Finance and Insurance* (51), *Management of Companies* (55) and *Education* (61) do coincide with increases in total income. However, Section II-D shows this is not the dominant linkage, as *Finance and Insurance* declined in employment, while *Education* increased substantially. Chart A:II-D3 shows that almost all of Connecticut's industry sectors have loss in national share of worksites, but this is not true for all sectors with respect to national shares of total income. Finally, since *Manufacturing* (31-33) experienced declining employment and worksites, Chart A:II-D4 examines whether worksites are a primary determinant of total income in this vital sector.

Chart A: II-D2. 1990-2004 Growth in Worksites by Connecticut Industry Sector. *Education (61), Management of Companies (55) and Finance and Insurance (52) represent the largest gains in numbers of worksites. Mining (21), Construction (23), Manufacturing (31-33) and Federal Government (G1) show losses.*

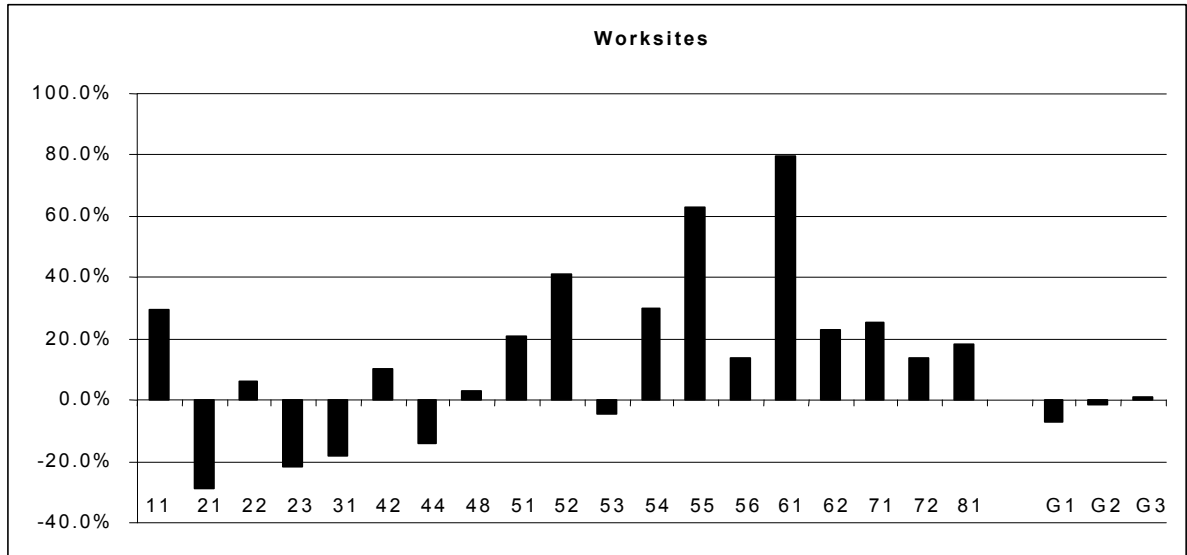


Chart A: II-D3. 1990-2004 Growth in Connecticut/U.S. ratios of Worksites. The State's national share of worksites is down for all industry sectors, except Agriculture (11).

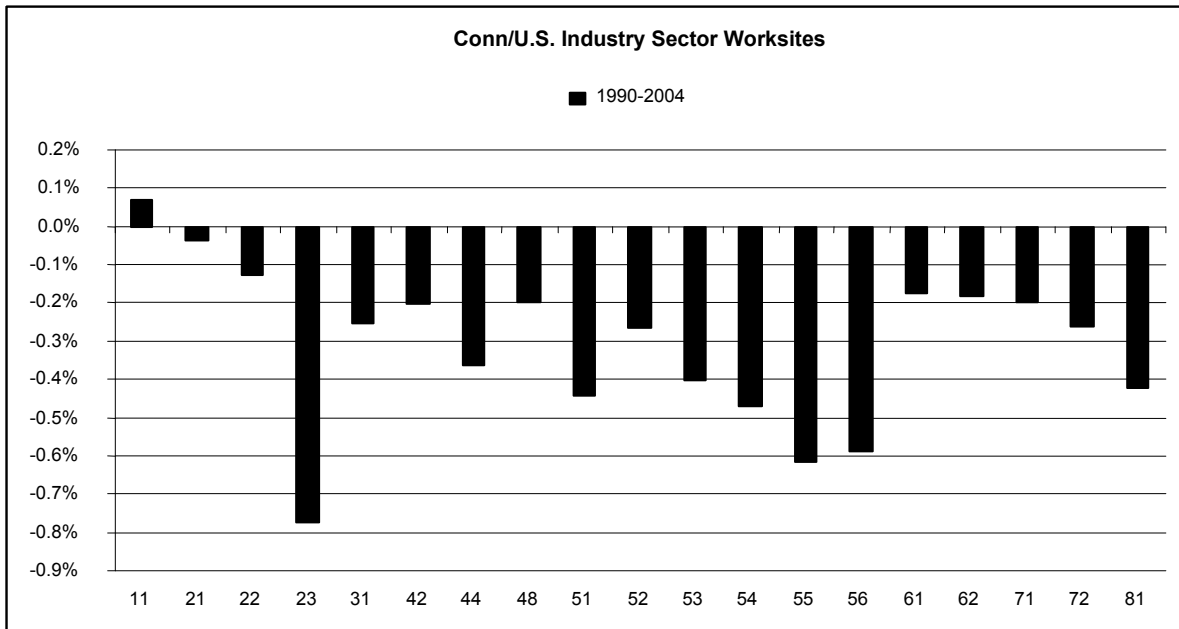
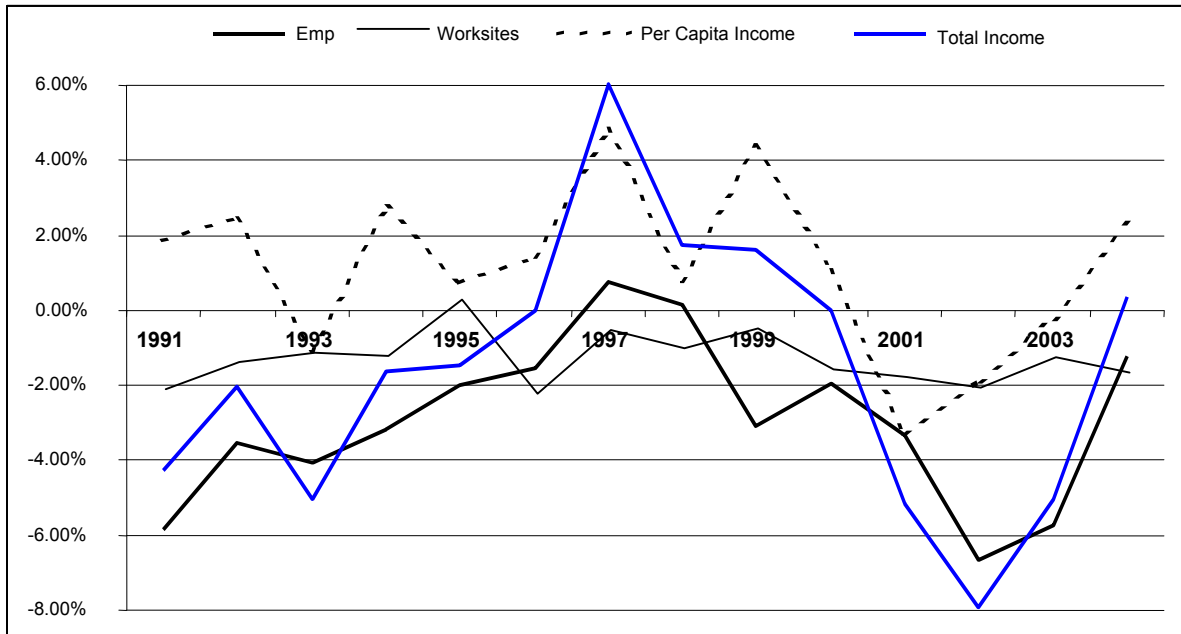


Chart A: II-D4. 1990-2004 Growth in Employment, Worksites, Per Capita and Total Income in Connecticut's Manufacturing Sector. The loss of employment, worksites and total income for the Manufacturing sector suggest there may be a stronger linkage in this sector between the number of worksites and total income than indicated in previous sections. However, the chart shows that changes in total income are mostly independent of the number of worksites.



Theory of Firm Behavior

Table A: IV-B2. Average Hourly Gross Operating Surplus (Output – Wages). Only Delaware suffered a greater loss between 2001 and 2004 than Connecticut.

Rank	Region	2001	2002	2003	2004	\$ Loss	% Loss
1	Delaware	\$56.85	\$47.06	\$41.95	\$39.64	-\$17.21	-30.3%
2	Connecticut	\$51.85	\$42.73	\$37.58	\$35.08	-\$16.77	-32.3%
3	Washington	\$50.64	\$43.71	\$37.12	\$33.89	-\$16.76	-33.1%
4	California	\$54.03	\$46.48	\$40.30	\$37.90	-\$16.14	-29.9%
5	New York	\$50.37	\$42.21	\$37.07	\$34.46	-\$15.91	-31.6%
6	New Jersey	\$48.73	\$40.43	\$35.62	\$32.82	-\$15.91	-32.6%
7	FAR WEST	\$52.15	\$45.02	\$38.88	\$36.46	-\$15.68	-30.1%
8	Georgia	\$47.10	\$39.46	\$33.98	\$31.76	-\$15.34	-32.6%
9	Colorado	\$49.59	\$42.94	\$37.10	\$34.41	-\$15.18	-30.6%
10	Arizona	\$45.91	\$39.64	\$34.02	\$30.79	-\$15.13	-32.9%
11	District of Columbia	\$51.16	\$42.76	\$37.80	\$36.26	-\$14.90	-29.1%
12	North Carolina	\$45.43	\$38.40	\$33.24	\$30.57	-\$14.86	-32.7%
13	Texas	\$49.97	\$42.37	\$37.15	\$35.34	-\$14.62	-29.3%
14	Massachusetts	\$46.39	\$39.23	\$34.90	\$31.80	-\$14.59	-31.4%
15	MIDEAST	\$45.54	\$38.06	\$33.45	\$31.13	-\$14.42	-31.7%
16	SOUTHWEST	\$47.68	\$40.45	\$35.47	\$33.47	-\$14.21	-29.8%
17	Nevada	\$46.71	\$40.69	\$35.38	\$32.70	-\$14.01	-30.0%
18	NEW ENGLAND	\$45.37	\$38.02	\$33.83	\$31.55	-\$13.83	-30.5%
19	Virginia	\$44.40	\$37.06	\$32.59	\$30.63	-\$13.77	-31.0%
20	Michigan	\$45.37	\$39.86	\$35.32	\$31.63	-\$13.74	-30.3%
21	U.S.	\$45.36	\$38.84	\$34.07	\$31.81	-\$13.55	-29.9%
22	Hawaii	\$43.45	\$37.48	\$32.29	\$29.99	-\$13.46	-31.0%
23	Illinois	\$48.44	\$41.66	\$37.37	\$35.00	-\$13.44	-27.7%
24	SOUTHEAST	\$42.94	\$36.25	\$31.56	\$29.57	-\$13.37	-31.1%
25	South Carolina	\$39.51	\$33.41	\$29.00	\$26.17	-\$13.34	-33.8%
26	ROCKY MOUNTAIN	\$43.47	\$37.27	\$32.48	\$30.37	-\$13.09	-30.1%
27	Florida	\$42.61	\$36.09	\$31.44	\$29.63	-\$12.97	-30.5%
28	GREAT LAKES	\$44.06	\$38.26	\$33.82	\$31.12	-\$12.94	-29.4%
29	Louisiana	\$43.04	\$35.16	\$31.58	\$30.52	-\$12.52	-29.1%
30	Kentucky	\$39.61	\$33.94	\$29.24	\$27.17	-\$12.44	-31.4%
31	Tennessee	\$42.16	\$36.40	\$31.70	\$29.72	-\$12.44	-29.5%
32	Maryland	\$41.62	\$35.04	\$30.84	\$29.18	-\$12.44	-29.9%
33	Missouri	\$40.78	\$35.03	\$30.75	\$28.43	-\$12.35	-30.3%
34	Wyoming	\$46.86	\$39.69	\$36.23	\$34.60	-\$12.26	-26.2%
35	New Mexico	\$42.29	\$35.55	\$31.50	\$30.11	-\$12.18	-28.8%
36	Wisconsin	\$40.11	\$34.56	\$30.22	\$27.97	-\$12.14	-30.3%
37	Pennsylvania	\$39.12	\$33.01	\$29.09	\$26.99	-\$12.13	-31.0%
38	Utah	\$39.54	\$34.03	\$29.48	\$27.43	-\$12.11	-30.6%
39	Minnesota	\$43.66	\$37.84	\$33.64	\$31.57	-\$12.09	-27.7%
40	Ohio	\$41.62	\$36.27	\$31.81	\$29.59	-\$12.03	-28.9%
41	Oregon	\$43.19	\$38.29	\$32.50	\$31.45	-\$11.74	-27.2%
42	Rhode Island	\$40.13	\$34.23	\$30.60	\$28.42	-\$11.71	-29.2%
43	Alaska	\$52.60	\$46.60	\$41.39	\$40.95	-\$11.64	-22.1%
44	New Hampshire	\$39.32	\$33.57	\$29.72	\$27.69	-\$11.64	-29.6%
45	Alabama	\$38.71	\$32.90	\$28.79	\$27.18	-\$11.53	-29.8%
46	PLAINS	\$39.87	\$34.55	\$30.53	\$28.41	-\$11.46	-28.7%
47	Indiana	\$40.84	\$35.78	\$31.90	\$29.56	-\$11.28	-27.6%
48	Kansas	\$37.93	\$32.69	\$28.81	\$26.76	-\$11.17	-29.5%
49	Arkansas	\$36.91	\$31.38	\$27.23	\$26.12	-\$10.79	-29.2%
50	Mississippi	\$35.31	\$29.60	\$26.30	\$24.59	-\$10.72	-30.4%
51	Nebraska	\$37.85	\$32.72	\$29.55	\$27.15	-\$10.69	-28.3%
52	Idaho	\$36.89	\$31.26	\$27.00	\$26.22	-\$10.68	-28.9%
53	West Virginia	\$33.73	\$28.26	\$24.86	\$23.17	-\$10.56	-31.3%
54	Maine	\$35.07	\$29.88	\$26.12	\$24.54	-\$10.53	-30.0%
55	Oklahoma	\$37.96	\$32.33	\$29.28	\$27.57	-\$10.39	-27.4%
56	Vermont	\$33.89	\$28.60	\$25.57	\$23.70	-\$10.18	-30.1%
57	Iowa	\$37.87	\$33.35	\$29.52	\$27.69	-\$10.18	-26.9%
58	Montana	\$34.48	\$29.62	\$26.15	\$24.37	-\$10.11	-29.3%
59	South Dakota	\$37.85	\$34.49	\$29.95	\$28.22	-\$9.63	-25.4%
60	North Dakota	\$33.65	\$29.64	\$26.97	\$24.38	-\$9.27	-27.5%

Table A: IV-B3. 2000-2004 U.S. Gross Operating Surplus by Industry Sector. Some of the State's important industry sectors are losing gross operating surplus at the national level.

U.S. Industry Sectors Gross Operating Surplus per \$100 Investment						
	2000	2001	2002	2003	2004	2000-04
Gross domestic product						
Compensation of employees	59.0	58.7	58.2	57.7	57	-2.0
Taxes on production and imports less subsidies	6.8	6.6	6.9	6.9	6.9	
Gross operating surplus	34.3	34.6	34.8	35.5	36.1	1.8
Private industries						
Compensation of employees	55.4	55	54.3	53.6	53	-2.5
Taxes on production and imports less subsidies	7.8	7.7	8.1	8.0	8.0	
Gross operating surplus	36.7	37.2	37.6	38.4	39	2.4
Agriculture						
Compensation of employees	35.3	36.9	38.2	31.6	27.7	-7.6
Taxes on production and imports less subsidies	-14.4	-12.9	-4	-6.6	-3.0	
Gross operating surplus	79.0	76.1	65.8	75.0	75.3	-3.7
Mining						
Compensation of employees	29.7	32.7	35.4	27.3	25.3	-4.4
Taxes on production and imports less subsidies	10.8	11.9	11.9	10.3	9.5	
Gross operating surplus	59.5	55.4	52.7	62.5	65.3	5.8
Utilities						
Compensation of employees	24.5	23.9	24.7	23.7	23.6	-0.9
Taxes on production and imports less subsidies	16.3	12.7	16.7	16.8	16.6	
Gross operating surplus	59.2	63.3	58.6	59.5	59.8	0.6
Construction						
Compensation of employees	70.9	69.8	69	67.3	65.5	-5.4
Taxes on production and imports less subsidies	1.2	1.1	1.2	1.2	1.2	
Gross operating surplus	27.9	29.1	29.8	31.4	33.2	5.3
Manufacturing						
Compensation of employees	64.4	65.4	64.6	65.7	64.4	0.0
Taxes on production and imports less subsidies	2.8	3.1	3.3	3.3	3.4	
Gross operating surplus	32.7	31.5	32.1	31.0	32.2	-0.5
Durable goods						
Compensation of employees	71.8	75.0	73.7	75.2	72.9	1.1
Taxes on production and imports less subsidies	1.6	1.8	1.9	2.0	2.0	
Gross operating surplus	26.6	23.2	24.4	22.9	25.1	-1.5
Nondurable goods						
Compensation of employees	53.1	52.0	52.5	52.9	52.8	-0.3
Taxes on production and imports less subsidies	4.8	4.9	5.1	5.1	5.2	
Gross operating surplus	42.1	43.0	42.3	42.0	42.0	-0.1
Wholesale trade						
Compensation of employees	55.5	55.0	54.2	54.5	52.9	-2.6
Taxes on production and imports less subsidies	22.9	22.3	22.4	22.8	22.0	
Gross operating surplus	21.6	22.7	23.4	22.7	25.1	3.5
Retail trade						
Compensation of employees	59.9	59.4	58.7	57.7	57.1	-2.8
Taxes on production and imports less subsidies	21.2	20.6	20.4	20.6	20.9	
Gross operating surplus	18.9	20.0	20.9	21.8	22.0	3.1
Transportation and warehousing						
Compensation of employees	66.1	68.5	67.0	64.1	66.0	-0.1
Taxes on production and imports less subsidies	5.3	3.3	5.2	4.4	5.1	

Gross operating surplus	28.6	28.1	27.8	31.5	28.8	0.2
Information						
Compensation of employees	54.1	51.2	47.2	45.8	43.5	-10.6
Taxes on production and imports less subsidies	7.9	7.8	7.9	7.9	7.5	
Gross operating surplus	38.0	41.0	45.0	46.3	49.0	11.0
Finance						
Compensation of employees	25.2	25.2	24.8	24.7	25.1	-0.1
Taxes on production and imports less subsidies	9.6	9.5	9.9	9.9	10.0	
Gross operating surplus	65.2	65.3	65.2	65.4	64.9	-0.3
Finance and insurance						
Compensation of employees	55.3	55.8	54.5	53.2	55	-0.3
Taxes on production and imports less subsidies	4.1	4.0	4.1	4.1	4.2	
Gross operating surplus	40.7	40.2	41.5	42.7	40.8	0.1
Real estate and rental and leasing						
Compensation of employees	6.5	6.4	6.4	6.4	6.4	-0.1
Taxes on production and imports less subsidies	13.0	12.9	13.6	13.7	13.6	
Gross operating surplus	80.5	80.7	80.0	80.0	80.0	-0.5
Professional and business services						
Compensation of employees	74.2	73.5	71.6	70.5	69.9	-4.3
Taxes on production and imports less subsidies	1.9	1.9	1.9	1.9	1.9	
Gross operating surplus	23.9	24.6	26.5	27.5	28.3	4.4
Professional, scientific, etc.						
Compensation of employees	72.1	71.5	69.4	68.4	67.8	-4.3
Taxes on production and imports less subsidies	1.6	1.6	1.7	1.7	1.7	
Gross operating surplus	26.3	26.9	29.0	29.9	30.5	4.2
Management of companies and enterprises						
Compensation of employees	80.4	78.7	75.9	75.3	73.4	-7.0
Taxes on production and imports less subsidies		1.8	1.7	1.7	1.5	
Gross operating surplus	17.7	19.5	22.4	23.1	25.1	7.4
Administrative and waste management services						
Compensation of employees	75.0	75.0	74.3	72.6	72.2	-2.8
Taxes on production and imports less subsidies	2.6	2.7	2.7	2.6	2.5	
Gross operating surplus	22.4	22.3	23.0	24.8	25.3	2.9
Educational services, healthcare, etc.						
Compensation of employees	81.2	80.4	80.0	80.1	80.0	-1.2
Taxes on production and imports less subsidies	1.2	1.2	1.2	1.2	1.2	
Gross operating surplus	17.6	18.4	18.8	18.7	18.8	1.2
Educational services						
Compensation of employees	90.8	91.8	91.7	92.0	91.8	1.0
Taxes on production and imports less subsidies	1.4	1.4	1.3	1.3	1.3	
Gross operating surplus	7.8	6.9	7.0	6.8	6.9	-0.9
Health care and social assistance						
Compensation of employees	79.9	78.9	78.4	78.5	78.4	-1.5
Taxes on production and imports less subsidies	1.2	1.2	1.2	1.2	1.2	
Gross operating surplus	18.9	19.9	20.4	20.3	20.4	1.5
Arts, entertainment, recreation, food, etc.						
Compensation of employees	62.3	63.0	62.3	62.3	62.1	-0.2
Taxes on production and imports less subsidies	11.7	11.5	11.2	11.4	11.4	
Gross operating surplus	26.0	25.6	26.5	26.3	26.4	0.4
Arts, entertainment, etc.						
Compensation of employees	60.4	59.5	58.5	59.3	59.3	-1.1
Taxes on production and imports less subsidies	10.2	9.9	9.7	10.0	10.2	

Gross operating surplus	29.4	30.6	31.8	30.8	30.5	1.1
Accommodation and food services						
Compensation of employees	63.0	64.2	63.7	63.4	63.2	0.2
Taxes on production and imports less subsidies	12.2	12.1	11.8	11.9	11.9	
Gross operating surplus	24.8	23.7	24.5	24.7	25.0	0.2
Other services						
Compensation of employees	68.6	68.6	70.0	69.9	69.8	1.2
Taxes on production and imports less subsidies	6.8	6.6	6.6	6.6	6.7	
Gross operating surplus	24.6	24.8	23.4	23.5	23.4	-1.2
Government						
Compensation of employees	84.0	84.6	85.1	85.4	85.7	1.7
Taxes on production and imports less subsidies	-0.9	-0.9	-1.0	-1.0	-1.0	
Gross operating surplus	16.8	16.3	15.9	15.5	15.2	-1.6
Addenda:						
Private goods-producing industries						
Compensation of employees	62.4	63.1	62.9	61.6	59.5	-2.9
Taxes on production and imports less subsidies	2.1	2.4	2.9	2.8	2.9	
Gross operating surplus	35.5	34.5	34.2	35.6	37.6	2.1
Private services-producing industries						
Compensation of employees	53.2	52.7	51.8	51.2	51.0	-2.2
Taxes on production and imports less subsidies	9.6	9.3	9.6	9.6	9.5	
Gross operating surplus	37.1	38.0	38.6	39.2	39.5	2.4
Information-communications-technology-producing industries						
Compensation of employees	83.5	85.8	79.3	76.9	76.2	-7.3
Taxes on production and imports less subsidies	1.6	1.9	2.0	2.0	2.0	
Gross operating surplus	14.9	12.3	18.8	21.1	21.8	6.9

Appendix II: The Connecticut Transportation Strategy Board's Objective and Strategies

SECTION I - CONNECTICUT'S TRANSPORTATION STRATEGY: 2003 THROUGH 2023

Overreaching Objective

Strengthen and expand the State's transportation system over the next 20 years to enhance Connecticut's prospects for sustainable economic growth and a premier quality of life in a manner consistent with environmental standards; use evaluation techniques and metrics to support major capital investments and operating in the system; and ensure the proper integration of land use planning with transportation planning and investment decisions to support the intelligent management of the State's projected growth in population densities, commercial development, automobile usage, and freight shipments.

STRATEGIES

- **Economic Strategy** – Ensure that the State's Transportation Investment Areas remain vibrant and competitive economic engines for Connecticut and attractive gateways to the State by leveraging existing transportation and other infrastructure assets, especially in Connecticut's urban centers, and by focusing appropriate resources on the mitigation and management of road congestion throughout the State with a focus in the near term on the Coastal Corridor.
- **Movement of People Strategy** – Facilitate the movement of people within and through the State by: expanding the quality and quantity of options (e.g. air, bike, bus, ferry, flex-time, rail, ridesharing, telecommuting) to single occupancy automobile trips; encouraging employer participation in demand management programs; enhancing the customer's transit experience; improving transit travel times through better integration of all transportation options; increasing capacity of roads through continued focus on information, safety, and incident management tools; and expanding targeted portions of certain roads.
- **Movement of Goods Strategy** – Facilitate the movement of goods to and through the State by: expanding and coordinating the State's air, rail, road and water infrastructure; improving the flow and safety of commercial truck traffic; and providing a broader range of competitive options to commercial trucks.
- **Special Funding Strategy** – Implement a comprehensive and dedicated 10 year financing plan, that begins with FY 2004 and ends with FY 2013, to raise monies exclusively to fund the recommended capital investments needed to implement the foregoing Strategies.
- **Ongoing Funding Strategy** – Ensure that the State's biennial budget provides adequate and reliable financial support for the State's annual transportation needs, both capital and operating, including the amounts needed (i) for its public transit system to respond timely and satisfactorily to evolving public needs and (ii) for greater flexibility within the State's annual transportation budget regarding the amount required to service outstanding debt.