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CONNECTICUT ECONOMIC ACTIVITY REPORT

Summer 2019



University of
New Haven

COLLEGE OF BUSINESS

THE ONLY STUDENT ECONOMIC COLLECTIVE IN THE NATION



Prepared by the
**New Haven Economic
Performance Laboratory**

Online at
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in association with the

**Department of Economics and
Business Analytics
College of Business
University of New Haven**

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University of New Haven

COLLEGE OF BUSINESS

May, 2019



The Summer 2019 edition of the Connecticut Economic Activity Report represents a collaborative and pedagogical effort by faculty and students of the Department of Economics and Business Analytics in the College of Business at the University of New Haven. It contains socioeconomic information and analysis that focuses on the economic conditions of Connecticut.

As has been our vision from the start, this issue contains a set of economic data series analyzed and reported on by our undergraduate economics capstone students. This was intended to further their understanding of the regional economic conditions but also to provide clear, understandable interpretations of our economic climate. The University of New Haven student analysts of today are our future analysts. Their names and e-mails are enclosed. Please do not hesitate to contact them.

Also included in this report are short pieces prepared jointly by faculty and students. Especially noteworthy is the New Haven Regional Economic Performance Index. A new initiative is also underway that seeks to provide clarity into the Connecticut state budgetary process. The purpose of this report and future reports is to report on Connecticut's and the New Haven Region's strengths and weaknesses and to provide insights and guidance for fostering economic development and growth and a revitalization of the state's economy, which includes spurring entrepreneurship and innovation.

Last, I invite you to visit a student initiative that involves posts, commentary, and noteworthy contributions from students, faculty, alumni, and members of the broader community: the Economics Collective (unheconomiccollective.ning.com). The Collective, as it is affectionately known, is a thought-leadership and learning space that fosters the integration of economics theory, technical competencies, real-life learning, and communication skills.

With my very best,

Brian T. Kench, Ph.D.
Dean, College of Business

EXECUTIVE SUMMARY







Connecticut's new Governor, Ned Lamont, assumed the office in January 2019 and has begun tackling the State's economic woes. As discussed in the last issue of the Connecticut Economic Activity Report (EAR), national economic performance continues to improve, as evidenced by the latest published unemployment rate of 3.4%. Connecticut's unemployment rate also declined, and as of this writing Connecticut's overall employment has increased to 1.92 million jobs, a slight improvement over our 2018 Winter EAR publication. The general trend of the reported economic indicators is modestly positive, except for energy, as shown in the dashboard below; housing prices, have increased to near-2010 levels, which is also encouraging. The dashboard below summarizes the specific content and analyses produced by the College of Business Economics Major students.

Students and faculty in the Department of Economics and Business Analytics continue to explore the disparity between Connecticut and other states in its recovery from the Great Recession. According to the forecast of the Connecticut and the New Haven Region Economic Performance Indices, the near-term prediction suggests a modest, albeit temporary, improvement, followed by a decline.

In this publication we begin to expand on student research and analysis of existing Connecticut businesses along with a timely article on "Why Connecticut," an interview with Shana Schlossberg, CEO of Upward Hartford, one of Connecticut's newest and hottest incubators for "start-ups." This publication also includes additional student research focused on Connecticut taxes; "The Impact of Taxation and Regulation on Connecticut Small Businesses"; "Avery's Soda Case Study," a small Connecticut-based business located in New Britain, Connecticut, and its struggle with Connecticut regulations; and finally an analysis by Brian Kench, Ph.D., and Armando Rodriguez, Ph.D.: "Connecticut Job Totals Have Yet to Recover From the Great Recession: Why?"

One last and exciting addition to the report is focused on venture capital investment in Connecticut as compared with that in the Tri-State Area (New York and New Jersey). Here we attempt to better understand Connecticut trends as compared to our neighbors, not necessarily absolute dollars. As you will find, venture capital investment is generally down, and the new commissioner of the Department of Economic and Community Development (DECD), John Lehman, formerly an executive at Goldman Sachs, will have his work cut out for him as he tries to encourage business expansion and third-party investment in the state of Connecticut.

Connecticut Performance at a Glance

KPI	STATUS	COMMENTARY
Connecticut Employment		Improving; still lagging behind the U.S.
Real GDP		Improving, but evidence of weakness; ranks 23rd among the states
Housing Starts		Improving, but evidence of weakness; has yet to return to 2010 levels
CPI – Energy		Rising; ranked 4th highest in the U.S.
Economic Performance Index		Declining; wages improved, but building permits dropped from prior year
Venture Capital Investment		Based on the downward trends for the region and the state, VC investment is anticipated to decline further

Key

GOOD	WARNING	NEEDS IMPROVEMENT
		

NEW HAVEN REGION ECONOMIC PERFORMANCE INDEX

By Michael Kandolin

The New Haven Region Economic Performance Index (NHREP Index), recently updated to January 2019, measures the performance and strength of the economy in southeastern Connecticut, specifically the New Haven Region. *Figure 1* reflects the data from January 2010 to January 2019. When we compare the performance of the index to that of a year ago we can see that it is up 4.38%. When compared with the prior month, it is down 14.84%. The Index gave a 191.144 reading as of January 2019.

The NHREP Index is comprised of 5 separate components. These include: Education and health services for all employees in New Haven, CT; Building Permits CT; Average Weekly Hours in New Haven, CT; Average Weekly Earnings in New Haven, CT; and Unemployment (Reversed) for New Haven. The reversed unemployment jumped 12.50% over the past year, indicating a decrease over the past year. Building permits decreased 22.27% over the last year. The current reading of the NHREP Index is 191.144. Based on our forecasts, there will be a steady increase into the summer months of 2019.

Figure 1: New Haven Region Economic Performance

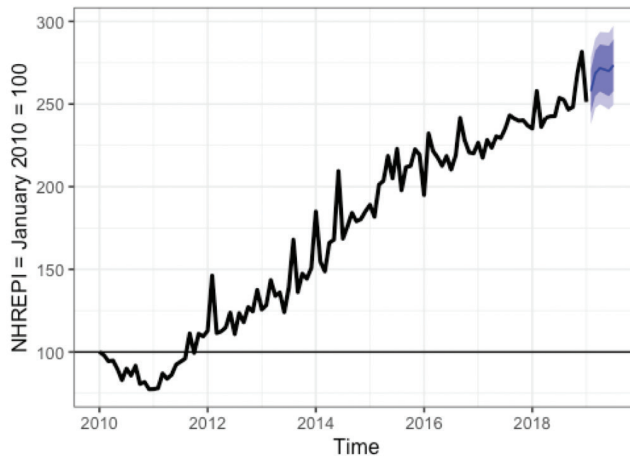


Table 1

MEASUREMENT	% CHANGE FROM PREVIOUS MONTH	% CHANGE FROM PREVIOUS YEAR
NHREP Index	-14.84%	4.38%
Building Permits – Connecticut	-84.51%	-22.27%
Average Weekly Hours – New Haven	-2.69%	.60%
Average Weekly Earnings – New Haven	-4.04%	3.13%
Eds and Meds – New Haven	-.36%	2.31%
Unemployment Rate – New Haven (Reversed)	-5.36%	12.50%

The Index shows a slight increase over the past year with a large decrease from the previous month. We see a massive decrease in building permits in both year over year and month over month. Unemployment has dropped over the past year (the table shows Unemployment Reversed; a positive result translates to a decrease in unemployment). This is not much of a surprise, considering, the unemployment of the United States is under

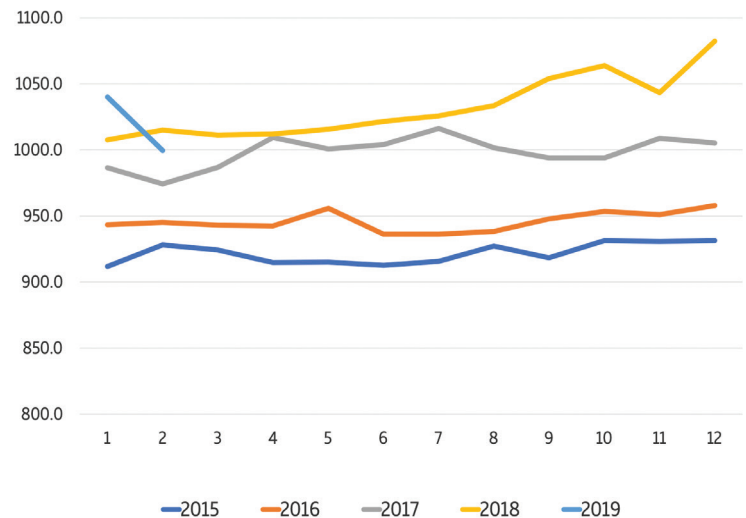
4%, the lowest level in over 10 years. A decrease in building permits can explain some of the decrease in the Index. Both Average Weekly Hours and Earnings increased slightly year over year by .6% and 3.13%, respectively. One may infer that both of those variables are closely correlated. Our forecasts, shown in *Table 2*, shows a steady increase into July of 2019.

Table 2

DATE	POINT FORECAST	LO 80	HI 80	LO 95	HI 95
FEB-19	199.038	174.199	219.234	166.565	227.152
MAR-19	201.272	171.329	222.026	161.454	229.324
APR-19	202.353	165.379	225.289	156.567	232.755
MAY-19	202.976	161.828	222.772	148.894	231.079
JUN-19	203.866	155.55	224.611	140.529	233.192
JUL-19	204.095	148.586	226.625	134.204	235.433

As Figure 2 shows, the average weekly earnings through 2019 have recently dipped below the average for February. At the end of 2018 we saw a large gap between 2017 wages and 2018 wages. It will be interesting to see if the average weekly wages will continue to be below the 2018 average.

Figure 2: Average Weekly Wages in New Haven, CT



Michael Kandolin '19
 Major: Finance & Behavioral Economics
 Hometown: Columbia, Connecticut

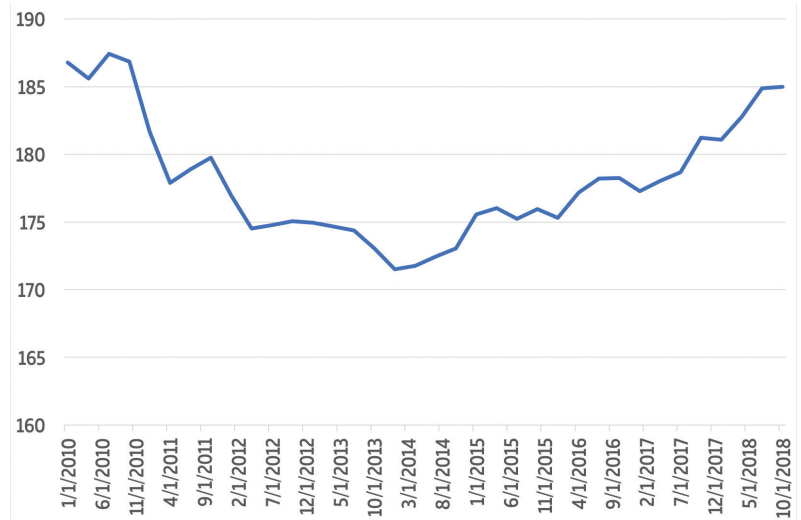
Data are from the Federal Reserve Bank of St. Louis FRED data (<https://fred.stlouisfed.org>)

HOUSING

By Klerisa Kimca

Housing prices in the region have increased during the past months, almost achieving the level of 2010, compared with housing prices from the beginning of 2018. It has seen continuous growth since 2014. [The figure represents the Housing Price Index (HPI), including the 2010 HPI level, as reported by the Federal Housing Finance Agency. It measures the movement of single-family house prices, the average price changes in repeat sales or refinancing on the same properties, and it is a weighted and repeat-sales index.]

Figure 3: All-Transactions House Price Index, New Haven–Milford (Msa)



Klerisa Kimca '19

Major: Economics

Hometown: Shkoder, Albania

Data are from the Federal Reserve Bank of St. Louis FRED data
<https://fred.stlouisfed.org/series/ATNHPIUS35300Q>

UNEMPLOYMENT

By Anthony DiCioccio

Unemployment increased significantly in the waning months of 2018 and into early 2019. *Figure 4* shows that Connecticut is one full percentage point higher in relation to unemployment than the national average. Moreover, the state is still below what is typically considered the natural rate of unemployment. Another obvious trend indicated in *Figure 9* is that this can be considered a seasonal trend, as we also see spikes in unemployment in January of 2017 and 2018. We expect the unemployment rate to contract below four percent in the next fiscal quarter.

Labor projects slated for the fourth quarter of this fiscal year are expected to continue to reduce the cumulative unemployment across the state. Electric Boat in New London County was recently awarded \$2 billion for the production of submarines of various types for the U.S. Navy, which we believe will not only reduce unemployment but also stimulate the local economy both directly and indirectly. This is complemented by the offshore wind farm project mentioned in the previous issue of the economic activity report, which is still projected to create directly and indirectly 1,400 jobs across New London County. The project is also scheduled to refurbish the port of New London with a \$15 million investment to facilitate operational success and serve as a staging point for future ventures in the region.

While the state's largest employer, United Technologies Corporation, is still in the process of splitting itself into three separate corporations, it still holds strong in Hartford, maintaining a workforce of over 200,000 employees in facilities throughout the state that manufacture parts and products for the military and civilian sectors.

The Connecticut labor force has reached a new peak, reaching 1.91 million as of August 2018 and surpassing 1.92 million in recent months. We expect that Connecticut will continue to keep pace with the rest of New England regarding its labor force, despite its marginal declines in population size over previous years.

Figure 4: Connecticut and National Unemployment Rate

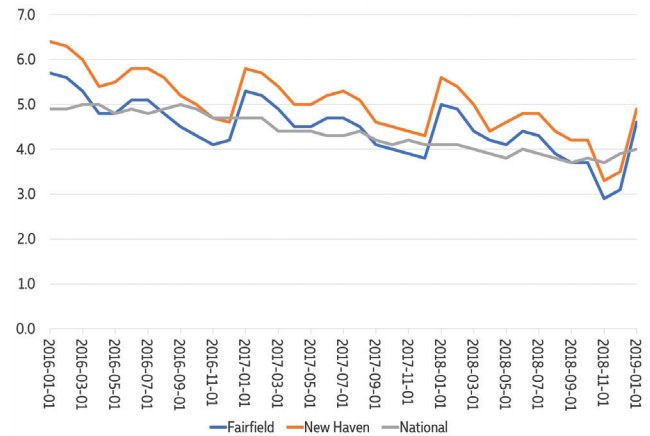
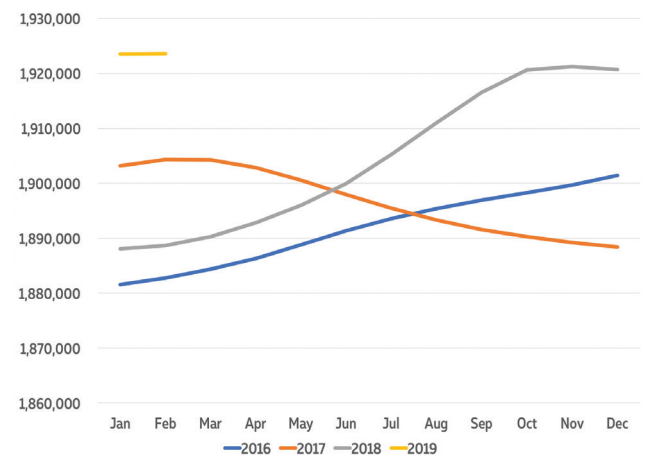


Figure 5: Connecticut Civilian Labor Force



Anthony DiCioccio '19

Major: International Business Economics

Hometown: Colchester, Connecticut

Data are from the Federal Reserve Bank of St. Louis FRED data

<https://data.bls.gov/pdq/SurveyOutputServlet>

<https://fred.stlouisfed.org/series/CTNEWH9URN>

<https://fred.stlouisfed.org/series/UNRATE>

<https://fred.stlouisfed.org/series/CTFAIR1URN>

GROSS DOMESTIC PRODUCT

By Marcellus Morris

This analysis evaluates Real Gross Domestic Product ("Real GDP"), a measurement of economic output, which is price adjusted. In essence, Real GDP focuses on economic growth. The most recent posting from the Federal Reserve Bank of St. Louis (FRED) has shown that the U.S. Real GDP fell to 2.2% in the fourth quarter in 2018. This has been another drop in percentage since the second quarter of 2018, which was at 4.2%, and the third quarter, at 3.4%. This percentage for Real GDP for the U.S. falls to the same 2.2% that it was for the first quarter of 2018.

Figure 6 depicts U.S. Real GDP annual growth from the first quarter of 2016 through the fourth quarter in 2018. The trend during this period is one of positive economic growth, which could be driven by increases in defense spending of just under \$700 billion and military pay increases of 2.4%. In the first quarter of 2018, the annual rate was 2.2%; in the second quarter, it rose to 4.2%; and in the third quarter, it went down to 3.5% to end the year once again with 2.2%.

According to Bloomberg, in 2018, the Connecticut Real GDP is on track for growth of more than 2%. With all industries, the State of Connecticut Real GDP equaled \$243,092 in Q3 of 2018 [in millions of dollars]. In Figure 7, FRED data shows that since Q4 of 2017 there has been a growth in Real GDP. In 2018 the lack of decline shows positive growth in Real GDP throughout the entire year. Connecticut economic growth has been fluctuating, suggesting weakness in the economy; however, since the beginning of 2017 we have observed continued positive growth.

Real Gross Domestic Product ("Real GDP") which is also known as GDP is described as, "a measurement of economic output, which accounts for the effects of inflation or deflation"

Figure 6: Real Gross Domestic Product, Percentage Change from Preceding Period, Quarterly, Seasonally Adjusted Annual Rate

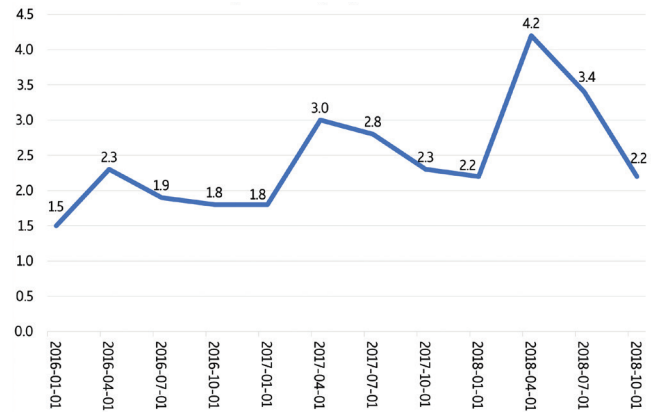
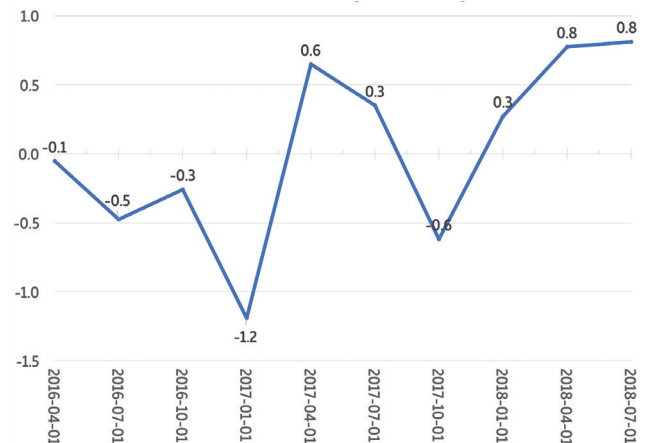


Figure 7: Connecticut Real GDP Changes in Percentages



Marcellus Morris '19

Major: Economics with Behavioral Econ Focus
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Fox, J. (2019, March 5). Connecticut's Great Depression May be Over. Retrieved April 2, 2019, from www.bloomberg.com/opinion/articles/2019-03-05/connecticut-s-great-depression-may-be-over

Data are from the Federal Reserve Bank of St. Louis FRED data <https://fred.stlouisfed.org/series/GDPCL/>

CONSUMER PRICE INDEX – ENERGY

By Gabriel Hubieres

Connecticut energy prices, as measured by the Consumer Price Index (“CPI”) for Energy, have continued to rise over the last four years. Since the Great Recession, such prices have stayed higher than most of the surrounding region. According to Electricity Local, a website that details electricity prices in a specific state, region, or locale, Connecticut residential and commercial energy prices ranked, on average, the 4th highest in the nation, while industrial ranked 3rd highest in the nation. This analysis examines the CPI for Energy applicable to “All Energy” and “Households” for the period January 2015 through September 2018, as compared with January 2008. CPI measures price changes in consumer goods and services purchased by households.

Figure 8 focuses on the New England Region, including Connecticut, through September 2018. From 2015 to today, energy prices in the region have continually increased.

Similarly, Figure 9, which focuses on the New York region, including Connecticut, shows a comparable trend in energy prices. However, prices in the New York region were slightly higher than in the New England region.

The potential impact of continued higher energy prices for Connecticut vis-à-vis other states and the nation is a continued drag on economic performance.

According to new data compiled between October 2018 and February 2019, energy prices have continued to increase throughout the past few months, thereby continuing the trend seen in the previous report of rising energy prices with no foreseeable drop in sight.

Figure 8: CPI, Household Energy Monthly – New England

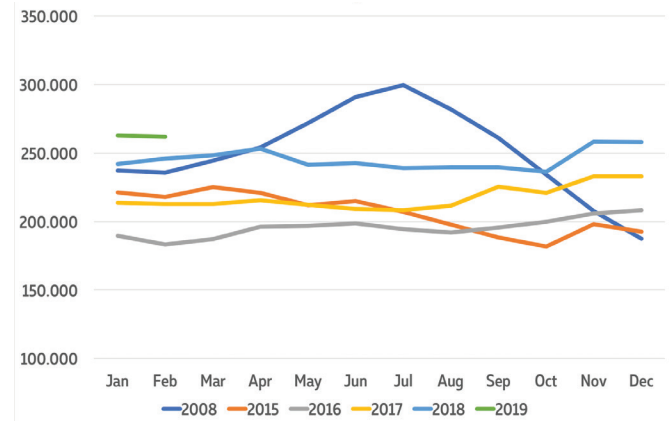
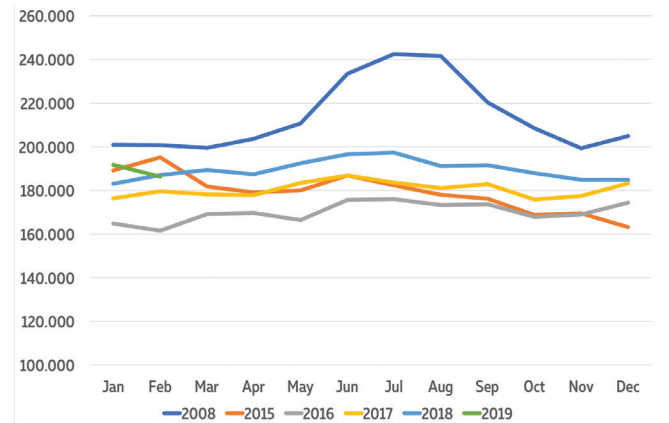


Figure 9: CPI, Household Energy Monthly – New York Metropolitan



Gabriel Hubieres '19

Major: Economics

Hometown: Salem, Massachusetts

Data are from the Federal Reserve Bank of St. Louis FRED data
<https://fred.stlouisfed.org/>

VENTURE CAPITALISM IN CONNECTICUT

By Ethan McGee

Connecticut typically boasts a healthy venture capital scene, but in comparing it to the colossal averages of the tri-state area (Connecticut, New York, New Jersey) one might think that the “Constitution State” has been underperforming. This is not necessarily the case. New York has the second-highest amount of venture capital activity in the United States, and New Jersey is home to a population of almost 9 million citizens (compared with Connecticut's 3.6 million). But despite its being the smallest member of its region in every sense, Connecticut's venture capital activity has followed trends similar to those of its counterparts until recently.

With data gathered from the National Venture Capital Association's VYearbook,¹ information on the tri-state area's performance was derived from the average of its member states in a given year. It should be noted that this average is heavily bolstered by the astronomical size and number of investments made in New York from 2013 onward.

Following Connecticut's spike in venture capital activity circa 2017, a 160% reduction in investment dollars was reported for the 2018 fiscal year – one that seems to mirror the trends of 2014–2015's 180% reduction, a decrease that also followed a spike in investments.

Given the patterns of venture capital expenditures for both the region and the state, Connecticut will most likely see a further decline in VC investments in 2019, though to a much lesser degree than was witnessed in the last year. Heavy spikes seem to be followed by “cool-down” periods, in which firms seem to wait to see the results of their investments.

Figure 10: Venture Capital Investment

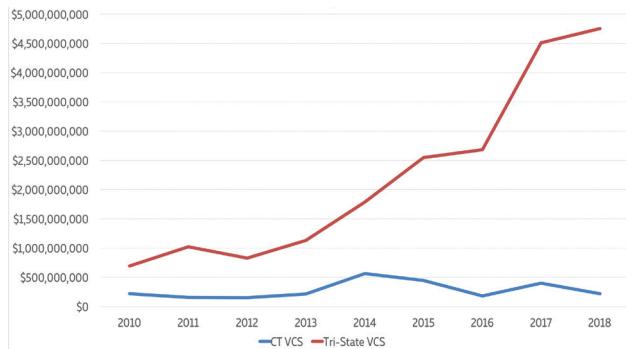


Figure 11: Number of Deals

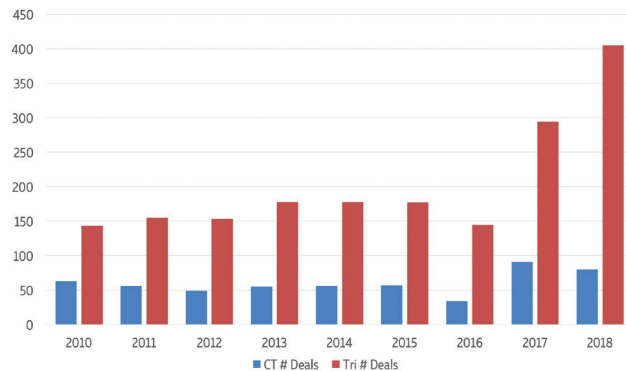
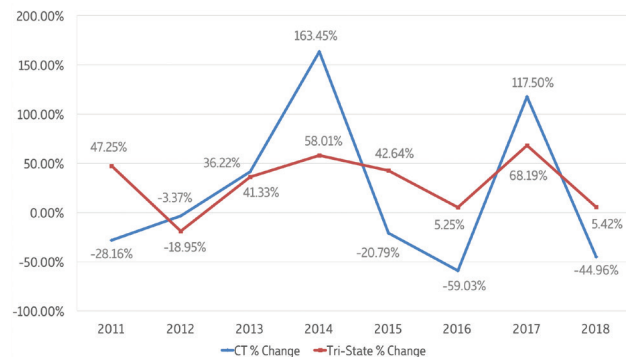


Figure 12: Venture Capital Investment % Change



Ethan McGee '19

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Hometown: New Haven, Connecticut

¹“NVCA Yearbook.” Research Resources, National Venture Capital Association, 2019, nvca.org/research/research-resources.

AVERY'S SODA CASE STUDY

By Adam Gregg

Avery's Soda is a small, family-run soda manufacturing and bottling operation in New Britain. It has been in business since 1904 and is known for its unique flavors and high-quality homemade products. Rob Metz, a managing member of the company, provided some valuable insights on doing business in Connecticut and how the current regulatory environment is affecting his operation. Rob shared some of the concerns facing the company, which employs around a dozen mostly part-time employees, including the potential impact of a recently proposed soda tax and an increase in the minimum wage.

Of Avery's employees, four are full-time and the remainder are part-time and consist of high school and college students as well as some individuals with mild intellectual disabilities. A small number of their workforce earns the current minimum wage of \$10.10, with the majority earning above that but under \$15.00. Because much of their workforce is low-skilled, Rob fears that an increase in the minimum wage would result in many being pushed out of the workforce. The logic behind such adjustment is clear, as Metz puts it: "If I am forced to pay someone \$15 an hour, I am going to find a skilled worker who can handle more tasks and responsibilities than I would expect from a high-schooler." Those who may feel the first pinch would be the employees who cannot keep pace with their current co-workers. He goes on to explain how such an increase in the minimum wage would increase costs: "An increase in the minimum wage would increase my labor costs across the board... if I am currently paying a supervisor \$14 per hour and the minimum goes to \$15, I will need to increase his/her pay to \$18 or \$19. This would ultimately result in a 35% increase in my overall labor costs." Associated fees would also increase per employee, including Social Security, Medicare,

unemployment, and worker's compensation insurance. Avery's also works with a sheltered workshop that provides packaging and fulfillment services and pays "a piece rate based on what an able-bodied worker earning minimum wage can accomplish." Metz's concern is that "an increase in the minimum wage would make this system less viable." Although he could not predict precisely how many jobs at Avery's would be lost at a minimum wage of \$15 an hour, he pointed out that their entry-level, low-skilled positions would be the first to go. He also explains that their operation would be hit particularly hard due to their labor-intensive circa-1950s bottling technology. He also fears that "... there is not a great deal of room to absorb the extra costs. I am really not sure that we could survive the way we are at a \$15 minimum."

According to Metz, the most detrimental tax facing Avery's is the proposed 1.5 cent per ounce soda tax. He estimates that this tax would be pushed to the consumer at an increased cost of 25% and fears that this would result in significant loss of customers. This tax would exacerbate the already high tax burden in a state that has the fourth worst tax climate for small businesses according to a study by The Tax Foundation, a leading independent tax policy nonprofit. A result of this difficult tax climate is that common carriers who handle raw material and finished product shipments for Avery's charge a premium for their services in Connecticut, which increases costs to bring their product to market. Because of this transportation and distribution component, Avery's is also bracing for the proposal to reenact tolling along major Connecticut highways, which Metz believes will make this situation worse.



Adam Gregg '20

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Minors: Business Management and Marketing

Hometown: Bellville, Ohio

WHY CONNECTICUT?

AN INTERVIEW WITH SHANA SCHLOSSBERG, CEO OF UPWARD HARTFORD

By Alicia Post Lindstadt

In 2016, newly elected Hartford Mayor Luke Bronin issued warnings in his first State of the City speech: Hartford was facing a fiscal emergency, increasing levels of violence, and rental vacancy issues. As corporate tenants moved out of Hartford, empty real estate was left unfilled as there were no new tenant prospects (Hartford Courant, 2016). While Hartford was struggling, so too, was the state of Connecticut. From 2010 to 2017, the state saw a steady increase in the retirement age population and a small, steady decrease in the working age population (DeJonge, 2019). The state also experienced an overall population decrease from 2014 to 2016 (DeJonge, 2019). Connecticut's growth has failed to fully recover since the Great Recession. The Real Total GDP for Connecticut was 259,721.9 in 2008, declining to 241,681.7 in 2016 and further declining to 238,942.6 in 2017. The state continues to see high estate, property, and wealth taxes. These factors have limited new business growth and have caused some companies, such as Alexion and General Electric, to leave the state. Despite these economic factors, CEO Shana Schlossberg saw promise in Hartford, establishing Upward Hartford in the Stilts Building in May 2017.

As a social entrepreneur, Schlossberg likes to "work on things that matter" (Innovation Destination: Hartford, 2018). She realized that Hartford has the elements that would make her business successful. Hartford is home to many corporate headquarters, such as Aetna, The Hartford, Coventry Health Care, Hartford HealthCare, Travelers, and Cigna, and is close to other major headquarters, including United Technologies and Stanley Black & Decker. Hartford is also home to entrepreneurs and investors. However, there was no existing entity to bring the three elements together. Investors didn't know who the clients were, what their ideas were, or how to access them. Entrepreneurs didn't know how to access funding or make connections that would allow them to pitch their ideas to large corporations. Schlossberg stepped in to create a hub to bring these elements together. Upward Hartford began as a physical space that would bring people together and create organic connections. It has since evolved into an ecosystem that fosters interactions between investors, entrepreneurs, and corporations through shared workspaces and artistic and professional events.

Since Upward Hartford was created, new entrepreneurs have made Hartford their home. Stanley Black & Decker created a collaborative technology center in downtown Hartford with goals of creating new commercial-industrial products and services and improving efficiency and production processes. HALO and Think Synergy established co-working office spaces. This spring, Serendipity Labs and MakerspaceCT will open in Hartford. Instead of seeing these new entrepreneurs as competitors or threats, Schlossberg sees them as potential partners. Upward Hartford has built relationships with Stanley Black & Decker and with reSET, a non-profit social enterprise incubator. Partnerships such as these facilitate connections, and allow for new start-ups to gain investors, mentorships, and other connections. By working with reSET, Upward Hartford can work to strengthen the investor network in Connecticut, and bring money to Hartford rather than New York City or Boston (Stearns, 2018).

According to Schlossberg, as entrepreneurial hubs and accelerators such as Upward Hartford become successful, new entrepreneurs are attracted to the city, which then entices the millennial generation to work and live in the city. This reinvigorates and revitalizes cities. The recent activity is, then, a sign of a better and improving Hartford. Schlossberg's assessment was reflected in Hartford Mayor Bronin's 2019 State of the City Speech, in which he stated that Hartford is seeing increased business and investment activity along with improving finances (Singer, 2019). While these gains are promising, Hartford has more work to do to improve the city, and continue attracting investors.



Shana Schlossberg
CEO, Upward Hartford

Hartford, and Connecticut, continue to face challenges. Corporate giants Alexion and GE have left their headquarters in New Haven and Fairfield. Aetna briefly considered leaving before a merger with CVS Health Corporation resulted in retaining the existing headquarters. To bring new growth and attract millennials to Connecticut, the state must attract other startups such as Upward Hartford. However, both state and local municipalities need to change their mindsets and actions to better attract startup companies. Schlossberg cited a few deterrents to locating to a new city. One deterrent is a lot of bureaucracy in a city. Bureaucracy makes it more difficult to launch a business, which deters entrepreneurs. Another potential deterrent is the views of city leaders. Cities need to have forward-thinking mayors and leaders who are willing to work with entrepreneurs and build sustainable models. They must accept the outsider's point of view, and give them a chance to enact change. If local leaders are unwilling and unable to think this way, entrepreneurs will have more difficulty establishing their businesses. A third potential deterrent is the behaviors and actions of local citizens. Local citizens must be helpful, supportive, and welcoming. They need to respect outsiders and outsider opinions. Forming relationships is crucial to the success of entrepreneurial hubs such as Upward Hartford, which rely on connections. Therefore, the more accepting and helpful local citizens are, the more likely that startup companies will grow and succeed.

In conclusion, there are some positives in both Hartford and Connecticut's economic outlooks. Hartford is home to the corporate offices of many companies, including many insurance companies. As the insurance industry undergoes transformation, integrating technology and new ideas, entrepreneurs and startups will be attracted to Hartford (DeJonge, 2019). Hartford must capitalize on this and on their recent success and continue to support entrepreneurial activity. In order to continue on this path, the next mayor – should the current mayor lose re-election in November 2019 – must be open-minded, forward-thinking,

and continue to support the elements that attracted Schlossberg to Hartford. On the other hand, the state of Connecticut needs to focus on changing other economic factors, such as reducing taxes, in order to reverse the trend of population decline and attract new businesses. Other cities hoping to attract businesses and entrepreneurs must be mindful and focus on limiting bureaucracy, promoting forward-thinking leaders, and displaying openness to partnerships and outsider opinions. Undertaking these actions should open cities and the state to new entrepreneurial activity.

¹ Real Total Gross Domestic Product for Connecticut. Data are from the Federal Reserve Bank of St. Louis FRED data (<https://fred.stlouisfed.org>)

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THE IMPACT OF TAXATION AND REGULATION ON CONNECTICUT'S SMALL BUSINESSES

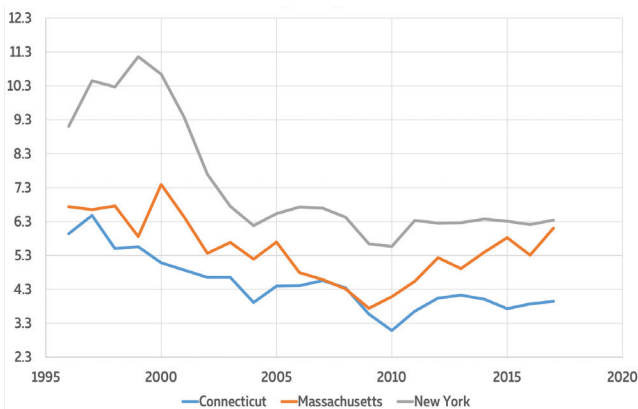
By Klerisa Kimca, S. Alexandria Caron, and Ketsia V. Kimpioka

The aim of this study is to understand how taxation and regulation have affected small businesses in Connecticut. Taxation and regulation have a huge effect on a country's economy, with tax rates affecting the decisions that most small business owners make regarding the future of their businesses. It was necessary to consider the average number of jobs, the rate of new entrepreneurs, the changing rates of total employment, and the overall tax rates from 1991 forward. This data was then compared with that of other states in the region (i.e., New York and Massachusetts). These comparisons allowed us to understand how Connecticut small businesses are faring following the 2008 recession. From this we can determine if the recovery systems the Connecticut government have put in place are as effective as those of neighboring states.

I. Average number of jobs

The average number of jobs created by new startups in their first year in Connecticut has been relatively steady from 2010 until the most recent data (2018). However, this follows a substantial decline. Compared with Massachusetts and New York, the average number of jobs in Connecticut is lower, with significant discrepancies following the economic recession of 2008.

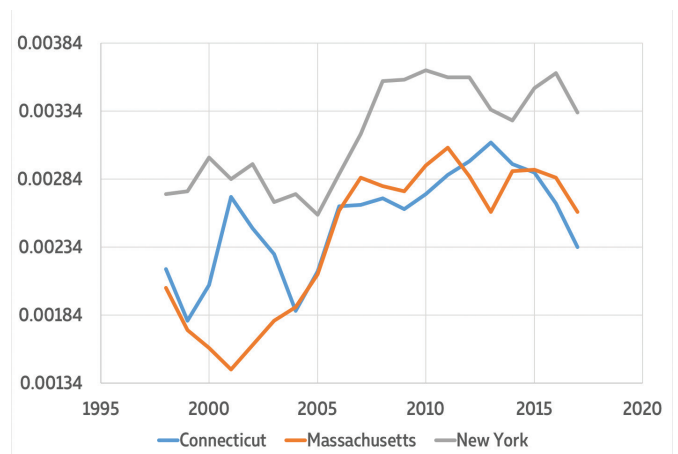
Figure 13: Average Number of Jobs Created by Startups in their First Year (per capita)



II. Rate of New Entrepreneurs

The rate of new entrepreneurs in Connecticut has been negatively affected after 2015, not only in Connecticut but also in other states such as New York and Massachusetts. Nevertheless, Connecticut has a lower rate than other states. There are positive spikes after 2010 for Connecticut, but the average levels of new entrepreneurs are still lower than in the other states.

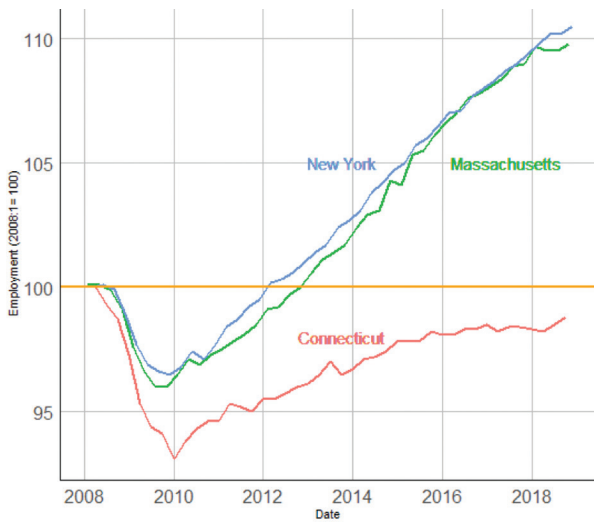
Figure 14: Rate of New Entrepreneurs



III. Total Employment

Based on the employment data from January 2008 to December 2018, total employment in Connecticut decreased in 2010, but Connecticut still has the lowest total employment rate of the states presented in the graph below. The great recession affected all states, but Connecticut has yet to recover its employment rate before the recession in 2008. Other states surpassed that level in 2012. The yellow line in the graph at 100 represents expected total employment, and indicating that Connecticut is underperforming.

Figure 15: Total Employment



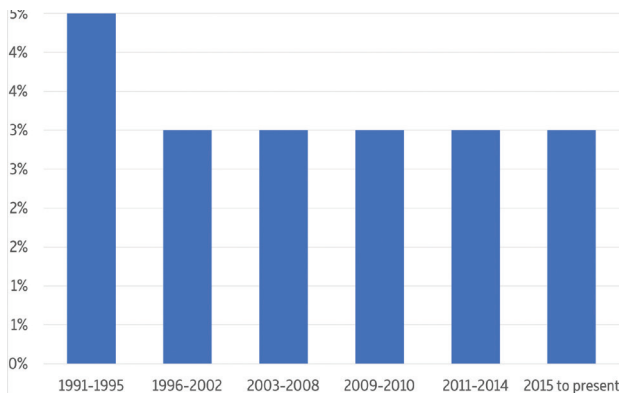
IV. Tax Rates since 1991 to present (Lowest bracket)

The table and the graph present the highest bracket tax rates from 1991 to the present.

Table 3

TAX YEAR	TAX RATES
1991-1995	5%
1996-2002	3%
2003-2008	3%
2009-2010	3%
2011-2014	3%
2015 to present	3%

Figure 16: Tax Rates (Lowest Bracket)



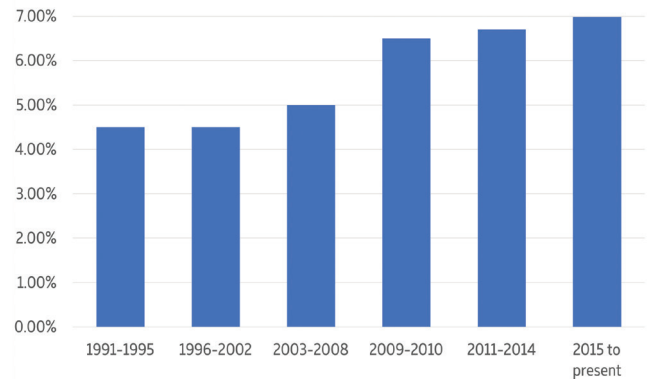
V. Tax Rates since 1991 to present (Highest Bracket)

The table and the graph present the highest bracket tax rates from 1991 to the present.

Table 4

TAX YEAR	TAX RATES
1991-1995	4.5%
1996-2002	4.5%
2003-2008	5%
2009-2010	6.5%
2011-2014	6.7%
2015 to present	6.99%

Figure 17: Tax Rates (Highest Bracket)



Continued on page 16

The Impact of Taxation and Regulation on Connecticut's Small Businesses

Continued from page 15

Table 5 presents all the brackets of tax rates from 1991 to the present. It appears that when tax rates went higher after 2008, the total employment went down in Connecticut. Tax rates continued to go up reaching 6.99% levels from 2015 to present. Employment rates went up after 2010 in Connecticut, but it is still underperforming compared to other states.

Connecticut Compared to Selected Other States

It is essential to examine how the most impactful taxes on small business vary in Connecticut compared with its neighbors New York and Massachusetts, the New England regional average, and the U.S. national average. The Connecticut Business & Industry Association highlighted the following taxes as some of the most significant burdens on modern small business: property tax, income tax, and corporate tax.¹

An annual report by WalletHub ranks individual states by tax burden, with no. 1 having the highest burden and no. 50 having the lowest.² As of 2018, Connecticut is ranked no. 6. The following statistics show the percentage of each tax as a share of personal income. The New England ranking and statistics are based on the averages of the included states: Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, and Connecticut.³

Figure 18 shows the total tax burden for each state in New England, as well as how each state falls within or outside one standard deviation of 1.85. Connecticut may not have the highest total tax burden to account for, but its falling numbers in new employment opportunities and new startup business creation speak for themselves. Part of this discrepancy is how individual states have met the most recent recessions. While Connecticut is still suffering losses in GDP and employment, other states such as New York have created incentives for new small businesses and for businesses that contribute to growing employment each year.

Table 5

TAX YEAR	TAX RATES	BRACKETS
1991-1995	4.5%	None (flat)
1996-2002	3% and 4.5%	Two
2003-2008	3% and 5%	Two
2009-2010	3%, 5%, and 6.5%	Three
2011-2014	3%, 5%, 5.5%, 6%, 6.5%, and 6.7%	Six
2015 to present	3%, 5%, 5.5%, 6%, 6.5%, 6.9%, and 6.99%	Seven

Figure 18: Total Tax Burden by State

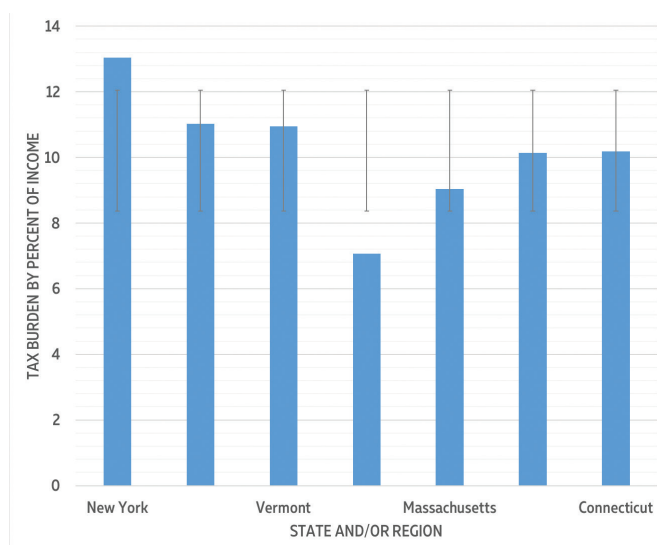


Table 6

RANKING	STATE	TOTAL TAX BURDEN (%)	PROPERTY TAX BURDEN (%)	INDIVIDUAL INCOME TAX BURDEN (%)	CORPORATE TAX (%)	TOTAL SALES & EXCISE TAX BURDEN (%)
1	New York	13.04%	4.62%	4.78%	6.50	3.64%
6	Connecticut	10.19%	4.17%	3.34%	8.25	2.68%
18	Massachusetts	9.03%	3.60%	3.40%	8.00	2.03%
12.143	New England	10.204%	4.67%	2.71%	—	2.824%

Personal (or Individual) Income Tax

Not only has personal income tax increased as a percentage of personal income, but it has also increased the number of brackets in Connecticut. Since 1991 Connecticut has gone from a flat tax system of 4.5% to a seven-bracket system of varying percentages from 3% to 6.99%.⁴ In comparison, the average personal income tax in New England is 2.71% of personal income.

Corporate Tax and Surtax

Connecticut's corporate tax rate is higher than that of either of its neighbors New York and Massachusetts. However, even that is not the full story. Connecticut also charges a flat surtax on top of all corporate earnings. This tax is similar to that in New York and Massachusetts, but it is the highest of the three, and New York's will be phased out by 2021.⁵

Figure 19: Individual Income Tax Burden

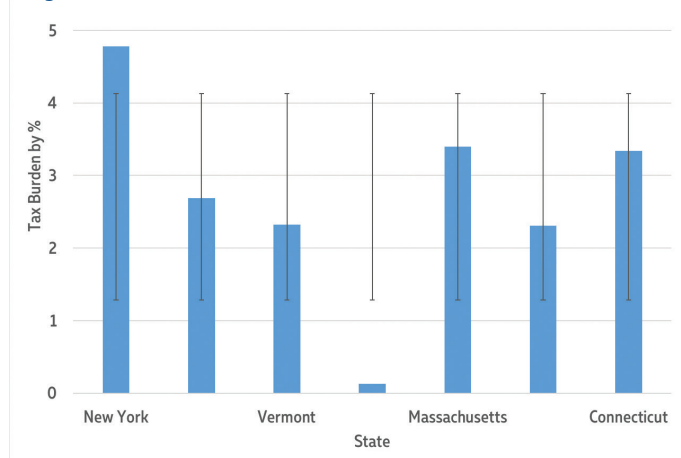
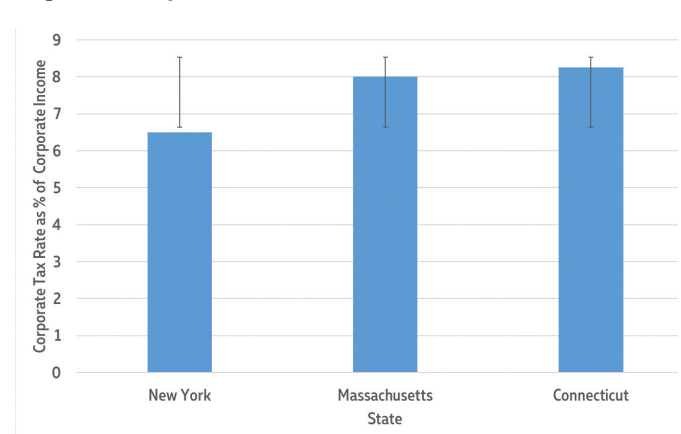


Figure 20: Corporate Tax Rate %



Continued on page 18

The Impact of Taxation and Regulation on Connecticut's Small Businesses

Continued from page 17

Table 7: Corporation Tax Rates in Connecticut, New York, and Massachusetts for the 2018 Tax Year

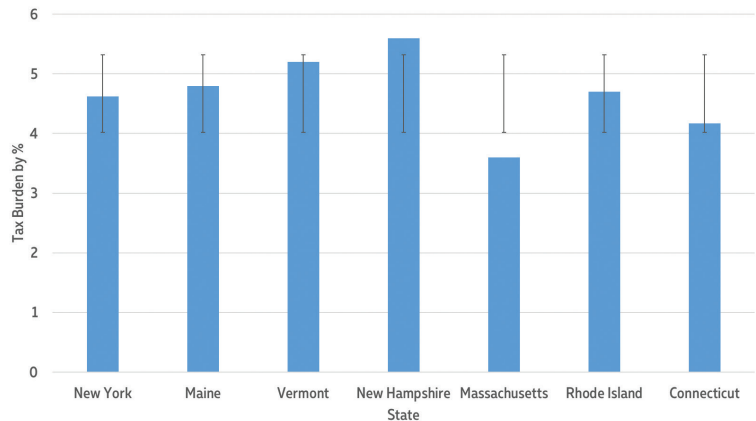
CONNECTICUT	NEW YORK	MASSACHUSETTS
<p>Greater of:</p> <ul style="list-style-type: none"> • 7.5% of net income, • 0.31% of capital base (up to \$1 million) or • \$250 minimum tax <p>Additional 10% surcharge applies for the 2018 income year for companies whose gross income exceeds \$1 million and tax liability exceeds the minimum tax</p> <p>Financial services companies are excluded from the capital base method</p>	<p>Greater of:</p> <ul style="list-style-type: none"> • 6.5% of net income, • 0.075% of business, • capital base (up to a for qualified manufacturers and technology companies and \$5 million for all other taxpayers) or • minimum tax (between \$25 and \$200,000, depending on amount of New York receipts) <p>Capital base rate is scheduled to decrease to 0.05% in 2019, 0.025% in 2020, and 0% in 2021 and later years</p> <p>Businesses with activity or property attributable to the Metropolitan Commuter Transportation District pay a surcharge of 28.6% of the portion of the tax liability attributable to the district</p> <p>Other rates, bases, and minimums apply to specific types of companies, including certain small businesses, manufacturers, and technology companies</p>	<p>Greater of:</p> <ul style="list-style-type: none"> • 8% of net income and 0.26% of tangible property or net worth • or \$456 minimum tax <p>Other rates and bases apply to specific types of companies, including financial institutions</p>

Source: CCH Answer Connect

Property Tax

Property tax, along with property regulations and licensing fees, is one of the largest barriers between Connecticut business owners and the survival of their business. Many startups still require a brick-and-mortar operation, and Connecticut's property tax often is in the way. In 2019 a Wallethub report ranked Connecticut no. 48, with 50 being the highest property tax in the United States.⁶

Figure 23: Property Tax Burden



Conclusion

Connecticut is ranked as one of the states with the highest property and income taxation. It has the highest corporate tax rate compared with its neighbors New York and Massachusetts and is ranked as the state with the sixth highest tax burden in the U.S. As mentioned above, the Connecticut state government faces difficulties creating new jobs or welcoming new entrepreneurs and reaching, let alone exceeding, the growth levels seen before 2008. There are more factors that affect the small businesses in Connecticut, but these were the ones we were able to identify.

¹(Connecticut Business & Industry Association 2018)

²(McCann 2018)

³(Bureau of Labor Statistics 2019)

⁴(Pinho 2018)

⁵(Office of Legislative Research 2018)

⁶(Kiernan 2019)



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CONNECTICUT JOB TOTALS HAVE YET TO RECOVER FROM THE GREAT RECESSION: WHY?

By A.E. Rodriguez & Brian T. Kench

Although the Great Recession ended nearly a decade ago, the Nutmeg State continues to feel its impact. Total employment is one measure of the health of an economy. As of March 2019, 48 states have seen their total employment levels rebound beyond pre-recession levels. Unfortunately, Connecticut is not one of those states.

For 135 months and counting, Connecticut's total employment has been below its pre-recession total. Worse, the state's employment level has lagged in both absolute and relative measures. The dramatic differences are keenly observed in *Figure 24*, where the total employment indices for Connecticut, Massachusetts, and New York are compared.

The current state of affairs is not optimal. And thus, it is the purpose of this article to 1) examine the factors that impact post-recession employment recovery across all 50 states and 2) draw policy lessons for Connecticut.

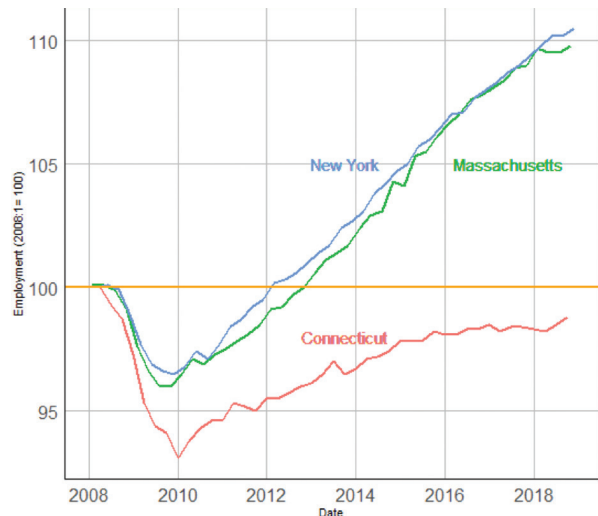
Using machine learning tools taught in our economics and business analytics programs, we find that Connecticut's higher-than-median state minimum wage and higher-than-median top marginal personal tax rate are contributing factors to the state's anemic recovery in total employment. Lowering each would improve employment outcomes and protect the state as the next recession inevitably approaches.

Method, Data and Results

To determine which state-based variables influence the duration of employment below pre-recession levels, we use survival (or duration) analysis. The period of observation starts in January 2008. The time-to-recovery is recorded when a state surpasses its January 2008 total employment levels for two consecutive months. *Figure 25* displays the duration experience of the 50 states.¹ For the states that have recovered, the median time to recovery is 79.5 months or nearly 6.5 years.

We use data for 15 variables from the latest edition of the ALEC-Laffer State Economic Outlook and Performance Rankings Report, which are listed and defined in *Table 8*.² ALEC-Laffer

Figure 24: Total Employment Index



The horizontal line set at 100 on the y-axis represents the January 2008 level of employment; it has been converted to 100 to facilitate comparisons. A line coursing below the horizontal lines set at 100 represents underperformance; the x-axis is the amount of time since January 2008.

Figure 25: Total Employment Time to Recovery

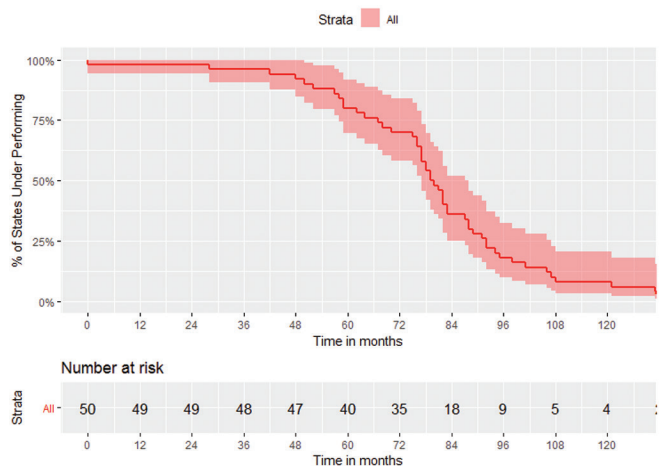


Table 8: Variable Definitions used in ALEC-Laffer rankings.

VARIABLE	DEFINITION
Top Marginal Personal Income Tax Rate	The marginal tax rate is the percentage taken from your next dollar of taxable income above a pre-defined income threshold. The marginal tax rate includes federal, state, and local income taxes, as well as federal payroll and self-employment taxes.
Top Marginal Corporate Income Tax Rate	The amount of state tax – as a percentage – paid by corporations on the additional dollar of income earned; includes local taxes, if any.
Personal Income Tax Progressivity	This measures the difference between the average tax liability per \$1000 at incomes of \$50,000 and \$150,000. The average tax rate is the total tax paid as a percentage of total income earned.
Property Tax Burden	Tax revenues from property taxes per \$1,000 of personal income.
Sales Tax Burden	Tax revenues from sales taxes per \$1,000 of personal income.
Remaining Tax Burden	Tax revenues from all taxes per \$1,000 of personal income. It excludes personal income, corporate income, property, sales and severance taxes.
Estate/Inheritance Tax Levied?	Yes or no.
Recently Legislated Tax Changes	Relative change in tax burden over the 2014–2015 legislative session.
Debt Service as a Share of Tax Revenue	Interest paid on debt as a percentage of total tax revenue.
Public Employees per 10,000 of Population	Full-time equivalent public employees per 1,000 population.
State Liability System Survey	Quality of state legal system. A ranking of tort systems by state.
State Minimum Wage	State minimum wage, if applicable. Otherwise, the federal rate is used.
Average Workers' Compensation Costs	Worker's Compensation Index Rate per \$100 of payroll.
Right to Work State?	Yes or no. Whether a state requires union memberships for its employees.
Number of Tax Expenditure Limits	Whether the state has (i) a state expenditure limit; (ii) a mandatory voter approval of tax increases; and (iii) a supermajority requirement for tax increases.

Continued on page 22

Connecticut Job Totals Have Yet to Recover from the Great Recession: Why?

Continued from page 21

variables are useful for two reasons: they are reflections of state government policy decisions, and they are variables that impact individual wealth and income and associated work incentives.

Next, we use a Random Forest machine learning algorithm to ascertain which ALEC-Laffer variables contribute to the prediction of time-to-recovery of total employment by using a split-rule optimization process. The results of this variable-importance ranking process are shown in *Figure 26*. A variable importance score near zero reveals that the variable contributes nothing to predictive accuracy. A negative value indicates that the predictive accuracy does not improve when the variable is misspecified and is no different from noise.

Our analysis identifies three variables that contribute to how fast a state recovers its lost employment: the quality of the states' legal system, the personal tax rate, and the level of the state's minimum wage. To understand each variable's impact on time-to-recovery, we split each state into "high" or "low" for each variable (e.g., high (or low) quality state legal system, high (or low) top marginal tax rate, and high (or low) state minimum wage).

After the high-low categorizing, we measure the median months to total employment recovery. The results are reported in *Table 9*, and they reveal a faster median time to total employment recovery when the quality of a state's legal system is high, when a state's top marginal personal income tax rate is low, and when a state's minimum wage is low.

Conclusion

A cautionary tale emerges from our examination of state-level data. Connecticut's present policy discussions involve changing two of the variables considered most important in explaining

the relative performance in jobs recovery among the states: the minimum wage and the personal marginal tax rate. The evidence indicates that states with high personal marginal tax rates and high minimum wage levels underperformed the others during the recovery period, Connecticut among these. To visualize the differences, we display the Kaplan-Meier duration estimate comparisons for states grouped according to their minimum wage position in *Figure 27* and display the Kaplan-Meier duration estimate comparisons recovery performance for states grouped according to their top marginal personal income tax rate in *Figure 28*. With increasing concern that an economic slowdown is upon us, altering these variables in the wrong direction would be ill-advised based on our analysis of the data.

Figure 26: Variable-Importance Ranking

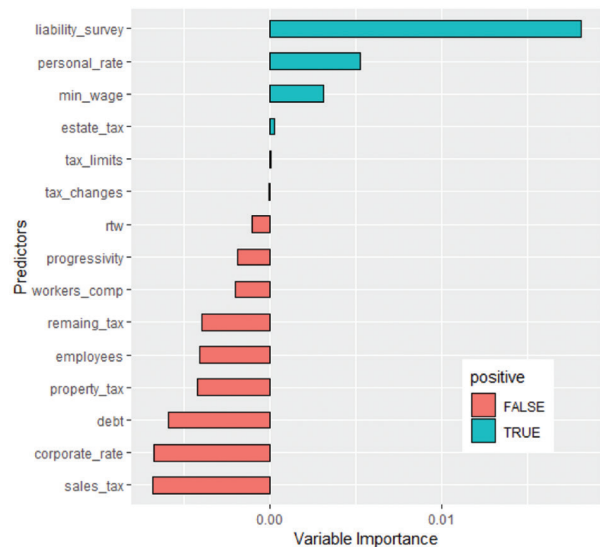


Table 9: Median Time to Recovery of States (Time in Months)

PREDICTOR	LOW	HIGH	CONNECTICUT
Quality of State Legal System	82	78.5	High
Top Marginal Personal Income Tax Rate	76	82.5	High
State Minimum Wage	79	82	High

Figure 27: Kaplan-Meier Duration Estimate for Minimum Wage

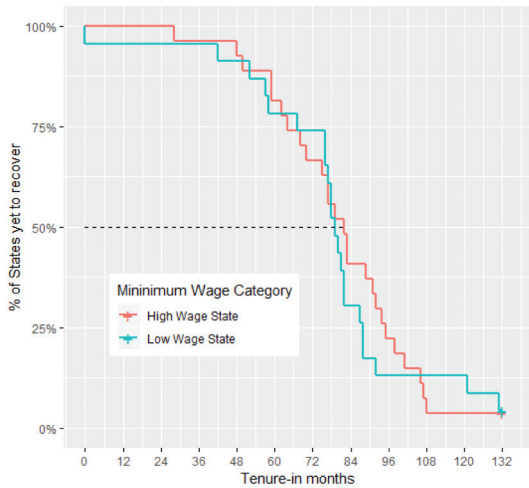
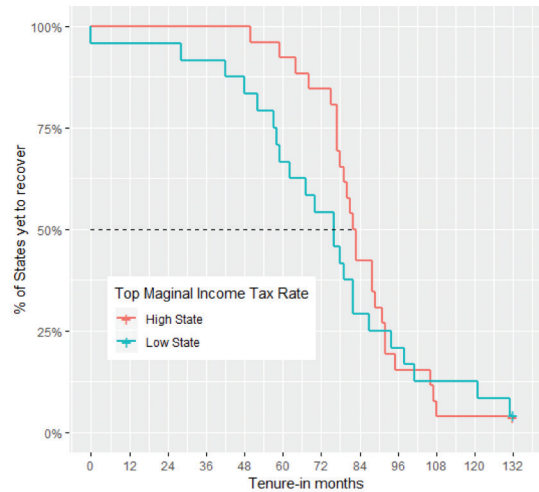


Figure 28: Kaplan-Meier Duration Estimate for Top Marginal Tax Rate



¹ The duration level is of 100% from the curve origin until the moment of the first occurrence of a state's pre-recession time-to-recovery of total employment. Once a state hits its pre-recession level of employment, the curve drops to the new duration level. Every step corresponds to the occurrence of one or several recovery moments.

² Methodologically, ALEC-Laffer is a "ranking of rankings" whereby the 50 states are initially ranked across 15 select economic variables. In turn, the final ranking is an equally weighted average of the resulting variable rankings. The final tally constitutes the published Economic Outlook Rankings. The ALEC-Laffer report authors describe the chosen predictors as having "a proven impact on the migration of capital – both investment and human – into and out of states" (Laffer, et al., 2016).



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A COLLECTION FROM THE COLLECTIVE

The University of New Haven Economics Collective is an online space for faculty, students, and business industry leaders to connect and network by sharing content, whether it be report analysis, political commentary, or anything else on their mind. Members can comment on each other's posts, creating a meaningful and enriching dialogue that extends beyond the traditional classroom educational experience. On the Collective, all members are economists, whether the poster is a freshman student or a Nobel Prize winner. The lines of stature are blurred through the medium of the internet, lending to a more thoughtful and genuine discussion. These moments of connectivity construct social capital, which helps build up the Economics Department as more than an office of the University of New Haven, but rather a community that cares for one another beyond the academic setting. The Collective has already been used as a method of surveying and will be used as such in the future to further employ the method of using the wisdom of crowds. The following selections are just a glimpse of content shared on the collective.

Who Does the President Listen To? Confirmation Bias Explained

"In the leaked schedule, President Trump routinely has five hours of what is referred to as "Executive Time," in which the President takes personal time to consume information from media sources, primarily through television. The influence of cable news anchors on the President has been mentioned before, but most recently is thought to have extended to the President's strategy on his declared national emergency. Specifically, on February 12th Fox News anchor Sean Hannity stated, 'The important third step needs to happen simultaneously...and that would be the president would need to declare a national emergency.' Hannity was discussing how the President should sign a spending bill, only to immediately follow it with the national emergency declaration. A few days later on February 15th, the President did exactly that."

— D.W.

<https://unheconomicscollective.ning.com/blog/who-does-the-president-listen-to-confirmation-bias-explained>

Has Baseball's New \$300M Man Fixed Free Agency? "Over the past two years of free agency, players of all ages have found themselves devalued by teams to a point where some vocal players have talked about a possible strike. Now, with the aforementioned contracts, you might be thinking, why would anyone strike when players are being handed those types of contracts? The problem is, they aren't. Top players have often signed their new deals by

mid-January so that they have plenty of time to accumulate to their new team and plan for their new work destination. This year and last, the top free agents have had to hold out longer in order to get deals close to what they want. While the value of the contract is there for Machado, last year some of the top free agents took fewer years for a higher value. Teams have started to guarantee more money for fewer years as they've seen what has happened to such players as Albert Pujols and Joe Mauer, who may have seemed valuable the first few years of the contract, but have become closer to dead money."

— S.K.

<https://unheconomicscollective.ning.com/blog/has-baseballs-new-300m-man-fixed-free-agency>

Amazon and Antitrust Law An Economic Analysis of Amazon's Monopolistic Traits

"An October 2018 article from the Motley Fool questions the integrity of the online retail giant Amazon, claiming it to be a monopolist in the market. We examine statements from its author, Adam Levine-Weinberg, and contrast them with historic and current antitrust policy. This paper suggests that the findings of Adam Weinberg and the Motley Fool are flawed; Amazon is not a monopoly."

— A.D.

<https://unheconomicscollective.ning.com/blog/amazon-and-antitrust-law-an-economic-analysis-of-amazon-s-monopol>

Patriots 33 – Rams 32 Patriots: 56 percent chance of winning

"The Patriots are not too shabby on offense, fourth in the league, coming in at 17 percent above average. The Rams are fair to middling in terms of their defense. They come in at a mere 2 percent over the average, ranked 20th in the league. Again, the combination of an OK-ish offense facing a so-so defense offset each other. The result of the first iteration of the model based on regular season data alone predicted the Patriots 28.4 to the Rams 27.6. Conundrum. This is almost impossible to call. So I included the results from the playoffs into the mix. I did this to use all the data available but realistically to try to achieve a little distance. I know it's arbitrary — and once you start assuming things, there is no end to that rabbit hole. I justify it by saying that I am using all the data available."

— A.E.R.

<https://unheconomicscollective.ning.com/blog/patriots-33-rams-32-patriots-56-percent-chance-of-winning>

JPMorgan Asset Says Cash Better Than Stocks for First Time in

Decade "According to a Bloomberg article, investors can get a lot more from safe, liquid securities than from the S&P 500 Index adjusted for volatility. This is all due to a statement from JPMorgan Asset Management. 'Cash isn't only a safe place to invest, it now offers a better risk-adjusted return than equities.' The firm had a multi-asset strategy team with \$260 billion under management. This upgraded its recommendation on U.S. cash to overweight for 2019. John Bilton, head of global multi-asset strategy at JPMorgan Asset Management, stated, Our cash and duration overweights really distill down to overweights in U.S. cash and Treasuries, where ex-ante Sharpe ratios are now well ahead of those for U.S. stocks for the first time in a decade.' Sharpe ratio is a measure of the performance of an asset relative to its volatility."

— K.K.

<https://unheconomicscollective.ning.com/blog/jpmorgan-asset-says-cash-better-than-stocks-for-first-time-in-dec>

Sea to Sea: Trekking the Israeli Highlands "Starting atop the valley we just hiked up the previous evening, we started walking down the slopes, getting ever more inland towards the Galilee. The first day of not showering, we all did start to feel rather ripe, but we had our goal to keep moving. We set off through more highlands, following an extensive trail network covered by forests. Gadi gave some of us a chance to try out finding the path, using the map of the trail network. I had the first turn but found I had to slow my pace as we walked for others to catch up. Remarkably, we saw no one on the wooded trails the first half of the day. Crossing over the Khziv river, which was the upstream origin of the pools we had swam in on the first day, we set uphill to come finally out of the forests into the Israel farmlands. After having lunch in a clearing with yet another crusader ruin, which was much less impressive than Montfort castle, the vista opened, and we could see out for miles. Gadi pointed out the looming Mt. Meron, the second tallest mountain in Israel, in the distance. Our goal was to camp at the base that night before ascending the next day."

— B.A.

<https://unheconomicscollective.ning.com/blog/sea-to-sea-trekking-the-israeli-highlands>

ABOUT THE NEW HAVEN ECONOMIC PERFORMANCE LABORATORY

The **Connecticut Economic Activity Report** is a publication of the Department of Economics and Business Analytics, College of Business, University of New Haven, 300 Boston Post Road, West Haven, Connecticut 06516.

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The research staff are upperclassmen and -women in the Department of Economics and Business Analytics. Although all students work under the auspices of the supervising faculty and research directors, each student is individually responsible for interpreting and analyzing the data. The Laboratory is a teaching space, and this report is a product of that space. In addition, staff members work closely with the University of New Haven Economic Collective (<http://unheconomiccollective.ning.com>), which brings together students, faculty, alumni, and members of the broader community to foster a meaningful and relevant exchange of ideas. A fundamental focus of the Laboratory is to formulate, construct, and examine non-traditional socioeconomic metrics applicable to the southern region of Connecticut by employing traditional empirical methods as well as data and text-mining methods.

The Connecticut Economic Performance Laboratory is affiliated with the University of New Haven Department of Economics and Business Analytics. Any opinions contained herein do not reflect the opinion of the University of New Haven or its College of Business. The funding of the Laboratory and the printing of the report are funded by the College of Business, the College of Business Advisory Board, and other sponsors of the Laboratory. If you are interested in supporting this student initiative, please contact Ms. Kimberly Williams, Director of Development, University of New Haven, at kpwilliams@newhaven.edu or **+1.203.923.7143**.



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The University of New Haven, founded on the Yale campus in 1920, is a private, coeducational university situated on the coast of southern New England. It's a diverse and vibrant community of more than 6,800 students with campuses around the country and around the world.

Within its colleges and schools, students immerse themselves in a transformative, career-focused education across the liberal arts and sciences, fine arts, business, engineering, public safety, and public service. More than 100 academic programs are offered, all grounded in a long-standing commitment to collaborative, interdisciplinary, project-based learning.

At the University of New Haven, the experience of learning is both personal and pragmatic, guided by a distinguished faculty who care deeply about individual student success. As leaders in their fields, faculty provide the inspiration and recognition needed for students to fulfill their potential and succeed at whatever they choose to do.