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Connecticut's Covid-19 Long-Range Forecast: Retarded Recovery 2020-2030

It is important to put the Connecticut *Forecast* in a national context because it is increasingly clear that the national recovery has slowed dramatically from the anticipated "snap back" of late spring and summer. Forecasts from leading financial firms—JP Morgan, Moody's, Goldman Sachs—have all scaled back their growth forecasts. Infection rates are surging in many states: 31 are now in the "Red Zone" and some a reporting among the highest infection rates in the world. Colder weather is likely to accelerate infections, both because the virus survives longer in cooler temperatures and people will be spending more time indoors and thus more exposed to infection.

As the "Executive Summary" makes clear, Connecticut's economy was in deep trouble before pandemic shutdowns: the worst record of any state since 2008, never having recovered in either jobs or real output (state GDP). In February 2020, Connecticut's economy was still about 6% smaller than it was at its previous peak; employment was still 17,000 jobs short of its previous peak and barely 20,000 above employment in February 1989. Critically, Connecticut saw its economy shift away from the modern, data-driven, digitally dependent economy with job creation focused in low-wage, low-skill sectors as it lost high-wage, high-skill jobs. Connecticut was going backwards.

National employment recovery has stalled. The Bureau of Labor Statistics reported Thursday morning initial filings for unemployment benefits has plateaued, now averaging 811,250 per week. The most recent data, for the week ending October 17, dipped down to 756,000 initial claims. More than 23 million Americans continue to receive unemployment benefits. That implies a national unemployment rate of about 16%. With airline, hotel, and other layoffs now mounting, it is unlikely the numbers will improve significantly in the near term. If COVID-19 infections and deaths continue to rise, the economy may go into reverse. Forecasting in this context is fraught with challenges; our hope is that the pessimistic projections in this long-term assessment are wrong, that America will soon reverse this dynamic, reduce infection rates, and enjoy strong growth. But even if nationally we do better, Connecticut faces a steep, but not impossible, climb to recovery.

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Executive Summary

It looks bad. Even an optimistic scenario argues recovery will be slow and painful; a more realistic assessment sees Connecticut struggling to recover in employment, real output, personal income, and state revenues out past 2030. Connecticut's economy was in trouble before the COVID-19 shutdown. In February 2020, Connecticut had not yet recovered from the contraction the 2007-2009 Great Recession wrought; both employment and output (state GDP) were still below their previous peaks. It is the worst record on any state. Looking at sector dynamics and detailed occupational data, it is clear the state disconnected from the modern data-driven, digitally economy, and thus saw weak growth or even losses in dynamic, high-wage, high-skill sectors. Connecticut's finance and insurance sector—increasingly IT intensive—shrank by nearly a quarter. Its information sector did grow faster than any other sector measured by value of output but was growing slower than the national average and has a smaller share in the economy. Remarkably, direct employment was shrinking. Striking confirmation to how Connecticut has fallen behind.

Connecticut's neighbors all enjoyed robust growth following the Great Recession, well surpassing their previous peaks in employment and real output. All enjoyed strong expansion in the IT-related occupations. The contrasting performance underlines how Connecticut's dismal performance was anomalous, with job creation in low-skill, low-wage sectors: tourism, hospitality, logistics, and elder care. None are growth drivers.

Connecticut had been progressively weakening since the 1980s. Every recovery since the recession of the early 1990s had seen progressively slower recovery in jobs. Strong growth in state GDP 1997-2007 masked the deteriorating competitive health of the economy. Despite little job creation and weak population growth, Connecticut had per capita growth in those years nearly a third higher than the national pattern. *By that measure, Connecticut ranked best in nation at that time; it now ranks worst.*

Combining the history weakened economic performance over the last three decades with the shock of the pandemic points to a very difficult economic and fiscal future for Connecticut, absent aggressive, smart state initiatives. Neither raising taxes nor cutting programs and public sector employment is going to change the projected trajectory. This CCEA long-term forecast provides detailed assessments of where Connecticut is headed in terms of jobs, real output, household income, disposable income, and fiscal performance. Then this report points to an array of policies and initiatives that potentially will mitigate, even reverse, the painful downward slide the analysis sees extending to and beyond 2030.

Introduction

This Outlook is a sharp departure from its predecessors. The quarterly *CCEA Outlooks* typically evaluated the likely economic trajectory for just 10 quarters; this inaugural annual *CCEA Long Term Forecast* considers where Connecticut may be headed over the next 10 years. The *Outlooks* concentrated on short-term corrections to realize growth opportunities; this *Forecast* suggests policies to redress Connecticut's long-term decline in competitiveness and population. Among other factors, Covid-19 pandemic shutdowns and disruptions has imposed the worst of times while, if grasped, emerging technologies may deliver the best of times. It is now clear there will be no V-shaped recovery, as early modelling of the Covid-19 economy suggested. *Recovery is going to be long, arduous, and uneven.*

Even as this forecast is written, infections are again surging in many states, some seeing their highest case numbers; thirty-one states now have infections in the "Red Zone." Europe, where governments thought they had gotten control, is now seeing new daily cases catching up with and perhaps surpassing America's rising rate. All this promises further disruptions and possible shutdowns. Only Asia seems to have fully controlled the pandemic; China's economy is again growing strongly. The IMF credit China with holding the global economy up.

By the end of 2020, Covid-19 is now expected to kill at least one out of every thousand Americans and cause permanent damage to another 1,510,000 "survivors," nearly four per 1,000 citizens. Of all those who recover 20% to 30%, it now seems, will have on-going disabilities and chronic conditions. To state the obvious, the dead do not work and disabled may be less productivity. There is great confidence in the medical community that we will get an effective vaccine, but its politicization has significantly reduced willingness of Americans to take the vaccine, possibly extending yet further the impacts of COVID-19. *En masse* premature adoptions of vaccines risk adverse reactions: 10,000 thalidomide babies were born with deformed limbs as a result of premature release.[1]

Brief Economic Background

The University of Michigan (RSQE), REMI, and most pundits expect a snap-back recovery in the next year or two, as Table 1 lays out.

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[1] https://www.theguardian.com/society/2009/jul/29/thalidomide-birth-defects-asbestos-drugs

Table 1: Short-Term US or Connecticut Growth Outlooks (%)

Forecaster/Indicator	2019-2020		2020-2021		2021-2022	
	GDP	Employment	GDP	Employment	GDP	Employment
United States						
RSQE (Aug 27 2020)	-4.13	-6.92	4.50	2.64	3.99	2.14
REMI (June to Sept)	-1.58	-5.53	3.24	1.12	1.59	1.14
Connecticut						
REMI (Base June Outlook)	-2.76	-1.65	4.27	1.44	2.20	1.66

RSQE revised its outlook in August, significantly deepening and extending expected declines and slow growth in national GDP and employment. Such downward adjustments have been common among pundits with JP Morgan cutting its 4Q GDP forecast from 3.5% at annual rates to 2.5%; Goldman Sachs cut its 4Q GDP outlook in half, from 6% to 3%, but with an expectation of a snap-back recovery of growth in 2021 of 5.8%. REMI's earlier outlook missed the deep employment cuts related to Covid-19, especially in its Connecticut outlook.

In Connecticut, before April's deep plunge of 277,000 jobs losses and the April-May 400,000 applications for Unemployment Insurance (UI), many clung to optimistic expectations of recovery within a year. Risks of Covid-19, lack of a proven vaccine, capacity constraints, Covid-19 mutations, and the depth and breadth of the recession make CCEA's forecast of a prolonged recovery more likely.

The official unemployment rate is usually seen as the key indicator of surplus labor capacity. That metric's inadequacies are well-known: during recessions and depressions discouraged workers stop participating in the labor force and are by definition excluded from the labor force, creating the appearance of lower unemployment. But Covid-19 has exacerbated this situation. School closures have forced children to stay home, requiring an adult to remain at home to look after them and supervise their education. Parents who could not work from home have been forced to leave the labor force and/or curtail employment. In reality, these departures from the labor force are among the unemployed due to Covid-19; with the eradication of Covid-19, they would return to the labor force and look for employment.

Connecticut's historically high seasonally unadjusted rate of labor force participation rate reached 73.5% in July 1991, which should be understood as the maximum rate the state might ever see. The rate then declined steadily until 2004 when it ranged from 66.2% in March to

67.8% in July. Connecticut's participation rate then rose again to 70.2% in July 2008. The Great Recession saw sharp a sharp decline to 66.7% in July 2013; there was little recovery until July 2019, when it crawled back to 67.5%. In April 2020, Covid-19 closures plunged the rate from March's 66.6% to 61%. In July it bounced back to the seasonal high of 67% but has subsequently declined to 65% in August.[2] Given the state's weak population growth and overall aging,[3] the 2008 rate is the best available measure of the maximum participation rate which Connecticut can achieve in a perfect economic environment i.e. Covid-19 free and with broad geographic access to jobs. *Using that 2008 number implies adding as much as 5% to the official unemployment rate, so current unemployment is likely 12% or higher.*

Even that number does not include workers receiving support through the Covid-19 driven Federal Paycheck Protection Plan (PPP), inclusive of airline workers who were out of work on September 12, but continued to be technically employed by their employees. Nor does It cover those remaining on pay roles through other support programs. In Connecticut alone there were 1,797 employed in air transportation and 1,480 who identified themselves as air transportation workers.[4] Including similarly supported workers in other industries, Connecticut's September realistic unemployment rate was at least 13.5% compared to the official rate of 10.3% in August.

Of the over quarter million newly unemployed in Connecticut in April 2020, the largest number, 74,600, had worked in leisure and hospitality a month earlier. Operating at only 50% of restaurant indoor capacity as well as take-out and patio services will continue to characterize food services, so recovery will necessarily be prolonged. Other sectors may recover more quickly, but Connecticut's primary job growth since 2008 was in similarly vulnerable sectors. The medical jury is still out on whether or not having had Covid-19 once will result in a durable immunity against having it again, so expectations of herd inoculation in the most severely infected locales are risky, likely premature, and most certainly deadly, prior to proven and administered vaccines accompanied by, hopefully, rare mutations of Covid-19.[5] Further, Connecticut's never recover from the Great Recession in real output (state GDP) or employment; it had the worst record of any state.

For these reasons, CCEA's optimistic recovery path is REMI's projected employment recovery by 2025, a year behind the Federal Reserve's expectations for the nation. CCEA then modified the analysis to account for both the historic weakness of Connecticut's pre-pandemic economy and

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[2] Federal Reserve bank of St Louis, Economic Research, Labor Force Participation Rate for Connecticut. (Oct.12, 2020)

[3] Connecticut has seen little population growth and has aged significantly; the maximum participation rate is surely now lower than the 1991 level, but it still serves as a useful reminder of how misleading the official unemployment rate can be in the current volatile economy environment.

[4] REMI model documentation.

[5] The purposes of vaccines are to protect both vaccinated individuals and prevent individuals carrying and transmitting the virus. With these vaccines still in early trial stages, their ability to fulfill either purpose remains unknown. An effective vaccine remains critical to how quickly the entire population will be sufficiently protected.

CCEA's conservative view of the depth and duration of COVID-19 impacts; the result is a forecast that sees a state recovery requiring a decade (to 2030), similar to the difficulty restoring the economy after 2008. Because CCEA's outlooks modify REMI's projection of a snap-back recovery, it is useful to understand the severity of REMI's base outlook before describing CCEA's more prolonged recovery.

REMI Snap-Back Recovery

REMI's snap-back recovery is based on assumptions that Connecticut unemployment in 2020 would fall short of that in the previous year by 34,000. This is 47,000 below potential, demonstrated by extending first quarter growth in 2020 through the year to see what would have achieved. But barring a recovery in the rest of this year that would break historic growth rates, even that annual decline is insufficient to cover severe employment loses, noted above, in April and May.

The above reasons lead CCEA to expect that sector recoveries will follow different paths. Essential sectors, hospitals and medical services have not stopped working. Others have avoided shutting down by shifting to networked home offices. Similarly, sectors where workers are more easily protected are reopening sooner than those where workers are more vulnerable. Particularly in K-12 education, timing is tied to the school year. For those reasons, CCEA has made some quite strong assumptions about the pace at which specific sectors labor forces will return to work. Table 2 summarizes those assumptions for two cases; the first a five-year period to full recovery period and, the second a ten-year horizon.

Table 2: Scenario Definitions: Quick (2025) and Slow (2030)

	Quick recovery		Slow recovery
Construction	2 months to 95% to SA January to March average		4 months to 90% to SA January to March average
Durables	6 months to 90% to SA January to March average		8 months to 85% to SA January to March average
Non-Durables	7 months to 90% to SA January to March average		9 months to 85% to SA January to March average
Trade, Transportation, and Utilities	6 months to 95% to SA January to March average		8 months to 90% to SA January to March average
Professional and Business Services	7 months to 95% to SA January to March average		9 months to 90% to SA January to March average
Educational	3 months to 95% to SA January to March average		3 months to 90% to SA January to March average
Leisure and Hospitality	6 months to 90% to SA January to March average		12 months to 85% to SA January to March average
Other Services	5 months to 90% to SA January to March average		7 months to 90% to SA January to March average
State and Local Government	3 months to 85% to SA January to March average		7 months to 80% to SA January to March average

Note: January to March seasonally adjusted averages are annualized for 2020.

In each case, CCEA's assumptions force a good deal of recovery to occur fairly shortly due to the special characteristics of each sector. It remains possible that some readers will feel that CCEA remains optimistic. The results clarify how readers can make adjustments based on their own priors.

CCEA based its depth of the recession for each sector as the lesser of the April and May employment data. In doing so, CCEA implicitly assumes that any future wave of the pandemic in Connecticut would be relatively mild compared to what has been experienced. Further, CCEA assumed impacts could be simulated from the above with reactions in other sectors dependent on economic linkages to the impacted ones. The chosen sectors experienced at least 7.6% employment cutbacks in April and May relative to January to March averages of annualized seasonally adjusted levels of Connecticut employment.

As indicated by the Table, with construction projects in the midst of building, large shares of construction workers are expected to resume quickly as restrictions to work are removed.

Similarly, in this scenario private education is expected to return for the new school-year in August and September. In the slow recovery scenario, labor resumes more gradually and generally to a lesser extent than under the quick scenario. Overtime in each scenario the rest of these sector workforces returns at a constant rate to REMI expected levels in 2025 in the quick recovery scenario and 2030 in the slow one.

Some sectors are obvious from their absence in the above list, particularly, finance and real estate, and the public sector. May employment data for Connecticut for the omitted private sectors above indicated that they had been hit hard. CCEA treats public sector employment as a matter of public policy with variants on each of the scenarios taking account of possible public sector tightening in the face of fiscal constraints. By way of numerical example, CCEA impacted each of the Quick and Slow scenarios by cutting employment by 5,000 this year from the state's payroll and 10,000 from local governments which grow back along a straight line to the end of each scenario. These considerations generated two additional scenarios suffixed by "with public sector cuts".

REMI Impacts

Using REMI's snap-back Outlook (version 2.4.1 5331) as its base, CCEA has run the above scenarios to generate more realistic outlooks over the next decade. This approach identifies Covid-19 impacts in two stages – first within REMI's initial base case and second by identifying additional initially unexpected durations, severities, rates of incidences. The following describes different outcomes of the above scenarios and policy options on employment, labor force participation, population, Gross Domestic Product (GDP), personal income and disposable personal income, and fiscal positions of governments.

Employment Impacts

The initial years in Chart 1 identify the depths of the employment impacts of Covid-19 on Connecticut's economy. In the near-term, REMIs initial forecast (uppermost line) is for modest job growth from 2,335,000 in 2019 to 2,368,000 in 2022 with a severe Covid-19 related dip in 2020 of 47,000 under potential, even assuming a snap-back recovery will foreshorten the worst. As noted above, subsequent data releases by the Bureau of Labor Statistics (BLS), and mounting Covid-19 infections nationally suggest greater reductions in Connecticut near-term employment. Additional impacts come from the quick recovery scenario with a loss of another 72,000 jobs or 119,000 inclusive of the contractions already in the REMI base. Government cuts will add a further 25,000 job losses in 2020. Given that Connecticut job creation performed well for the first three months of 2020, this decline is an extreme reversal, but mild compared to the slow recovery scenarios with job losses of 144,000 without government cuts and 180,000 if accompanied by government cuts.

Chart 1: Connecticut Jobs Before and after Covid-19 2020-2030
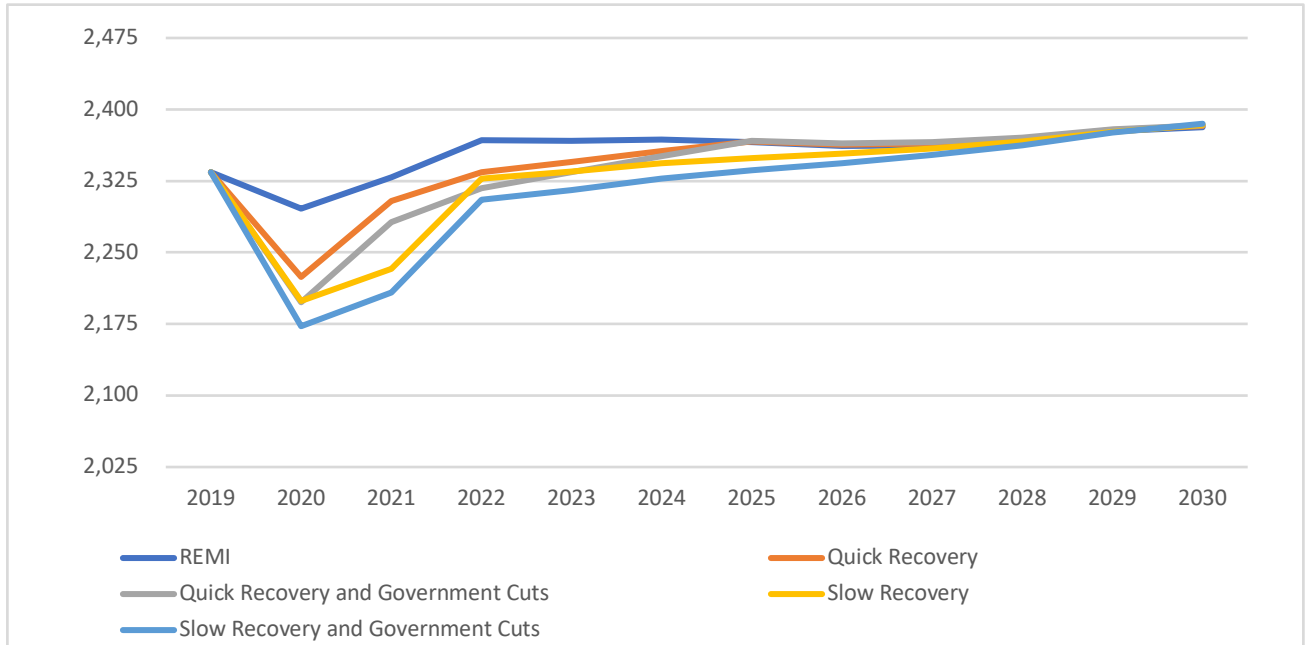
Due to the assumptions in Table 1, recoveries over the next year to two are substantial in each scenario. But even the slow recovery forecast may prove to be optimistic given the rising tide of Covid-19 infections and/or its mutations, continuing inappropriate behavior, and/or the failure to develop better therapeutics and effective vaccines. Unless the economic impacts this year are further exacerbated, implications of any more gradual recovery may be approximated by drawing a line linking the bottom point of the slow recovery case to its 2030 results.

In 2020, the assumption was state and local government employment would grow from 215,000 to 222,000 jobs. In the REMI base case it is trimmed by 2,539 to 3,406 jobs in the quick and slow recovery scenarios due to private sector cutbacks in employment prior to any explicit civil service cuts. The assumption of an additional 15,000 in public sector cuts in 2020 deepens total public sector job cutbacks to 18,155 and 19,506 in the quick and slow recovery cases.

**Chart 2: Above Base Case Annual Losses in State and Local Government Jobs 2020-2030 (#)**
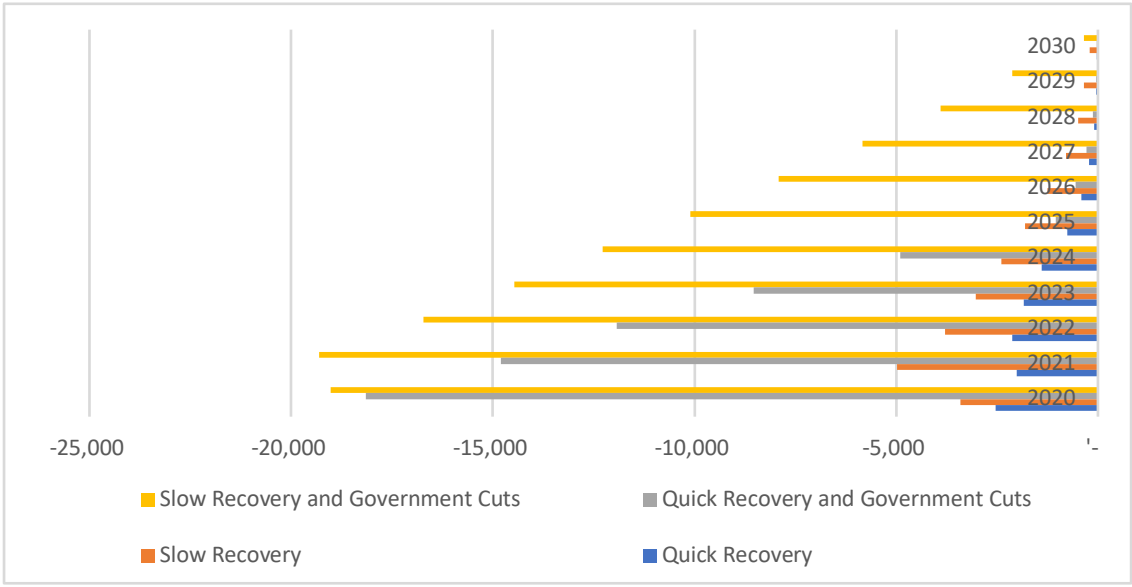
The excess in 2020 gaps over 15,000 between the series with and without explicit cuts represents the indirect impacts of laying off the civil servants. Chart 2 illustrates the adverse impacts on employment of public sector cuts going out to 2030 with the explicit cuts decreasing after the second year by 20% annually in the quick case and after the third year by 10% annually in the slow recovery one.

Labor Force Participation

REMI recognizes worker cuts by lowering labor force participation and accelerating net emigration so that the above employment cuts include those leaving the labor force to remain at home as illustrated in Chart 3. These data do not represent annual labor force changes but annual differences from the REMI base cases. In the REMI base case labor force fell by 9,449 in 2020 while population declined by 15,131. These adjustments arise largely from Covid-19 and are additional to those identified in CCEA modelling of the more serious outcomes than expected when REMI did its modelling.

Chart 3: Labor Force Participation and Net Emigration Impacts with Government Cuts 2020-2030 (#)
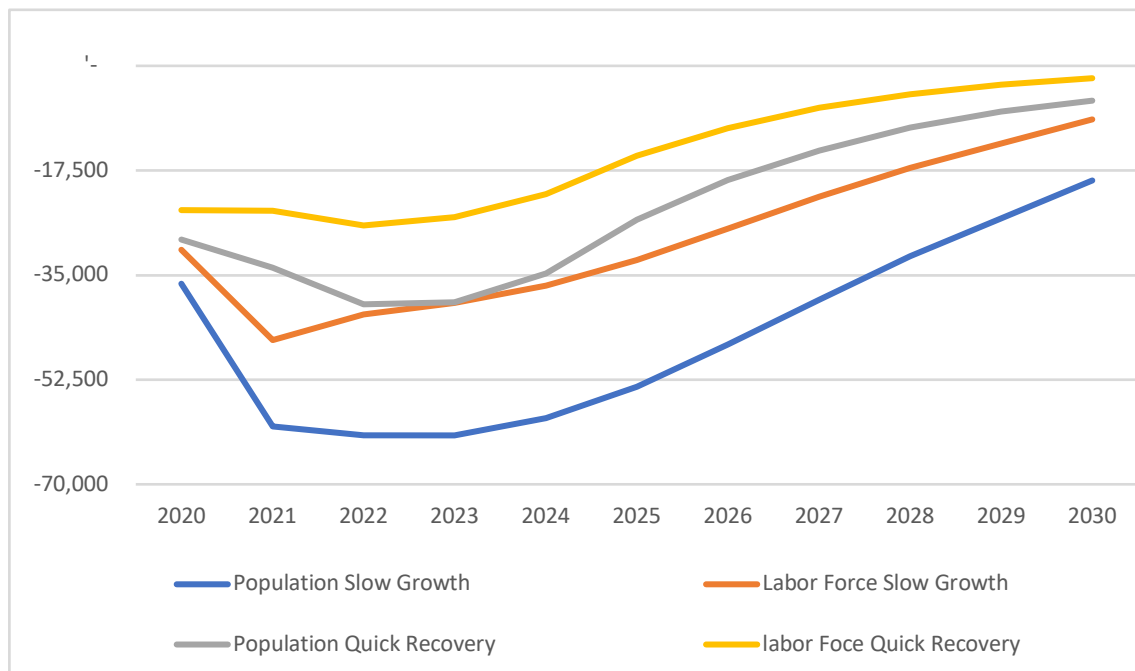
Combined 2020 labor force impacts this year are stark. In the quick recovery case, labor force declines by 33,630 while emigration accelerates to 40,259. In the slow recovery scenario, the situation is more dire. In 2020, labor force shrinks by 44,212 and the population by 52,624.

Lagged impacts on population and the labor force last over the entire decade. Even in the quick recovery case, by 2022 the labor force declines by 26,700 and the population by 39,888, relative to the REMI base. In 2021, the deepest labor force cut in the slow recovery case are much more severe at losses of 45,872 with lagged impacts on population losses in 2022 of 61,800 being virtually sustained for an additional year. While the exodus of these younger labor force participants lessens the welfare burden in the short-term, it is a double-edged sword because it permanently reduces longer term labor force availability, as noted in the Chart. Current modelling of migration may be overly strong because the equations are based on business as usual elsewhere, which is clearly not the case. That the rest of the country is in similar, albeit not as dire straits as Connecticut, could mollify and reduce migration estimates.

GDP and Personal Income

These labor force cutbacks curtail the value of what incremental unemployed would have added to the Connecticut Gross Domestic Product (GDP) in Chart 4. In its base model, REMI established decline (GDP in 2000$) of $7,475 million.

At the extreme, the slow recovery case with public sector cuts in GDP will result in a further 7.5% to 8.5% drop in GDP of $20.8 to $23.2 billion in 2020 and a third less in 2021. All in, avoiding civil service layoffs would keep total GDP impacts down to losses of $25.8 and $28.2 billion this year. Shrinking recovery to five years could reduce GDP losses by $20.8 billion without civil service layoffs to $25.9 billion with them. Especially in the slow recovery case, the extended time before starting recovery leads to larger impacts.

Chart 4: GDP Impacts above Base Case 2020-2030 (Millions of 2020 $)
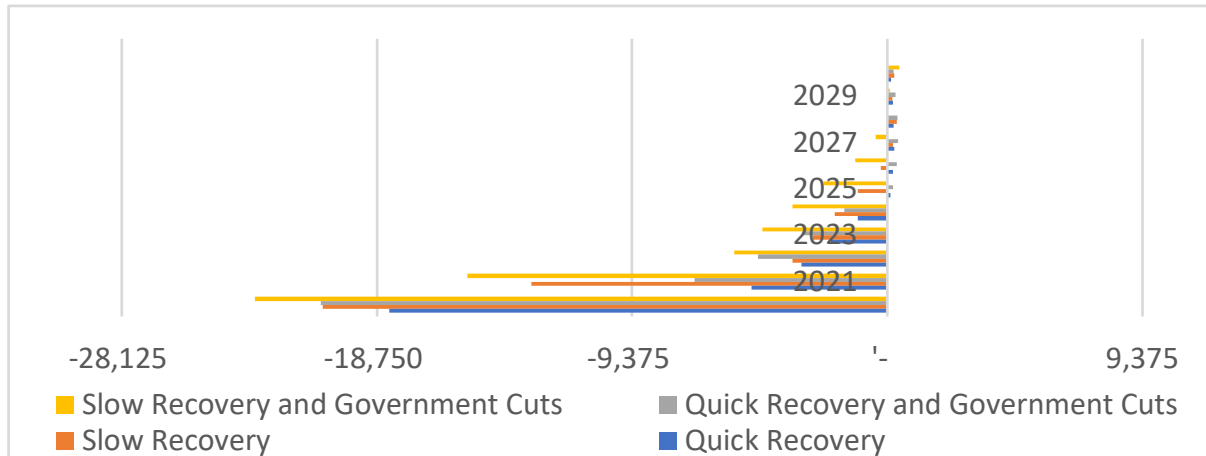
Personal income is in millions of current rather than constant dollars so that, with inflation, more distant impacts appear to be larger in absolute terms than in GDP metrics. Unlike GDP impacts, relative to the REMI base case, *personal incomes remain negative through to 2030 for both cases and past 2030 for the slow recovery one.* See Chart 5. Unlike the other metrics, the REMI base case still indicated $3,055 million in growth for 2020 so that relative to 2019 the impacts are smaller and the PI recovers to 2019 levels by 2024 to 2026.

**Chart 5: Personal Income Impacts 2020-2030 (Millions of Current $)**

11
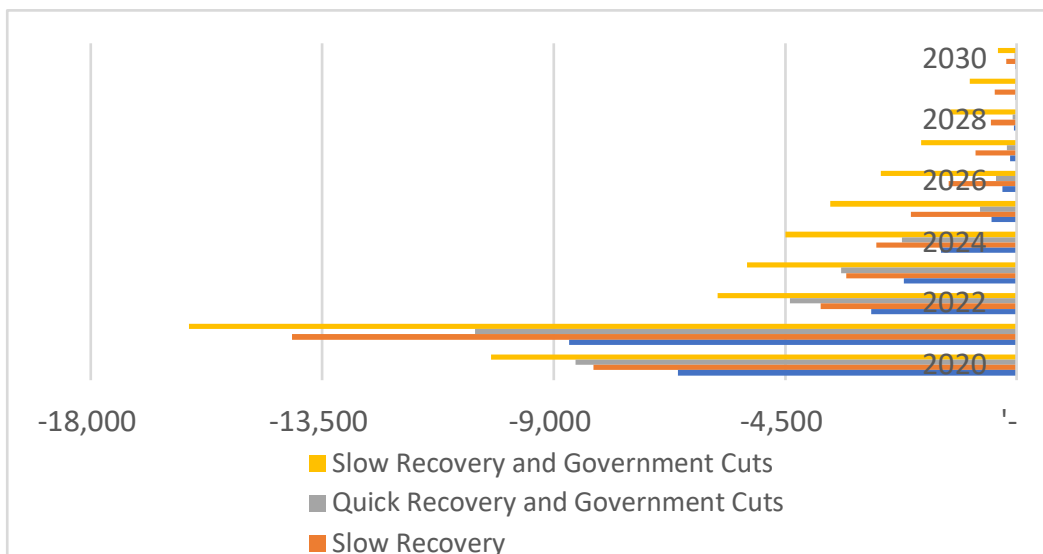
Due to lagged effects, the deepest hit on personal income occurs next year. The worst case modelled is for the slow recovery with civil service layoffs with a loss of $16 billion which would be eased by a faster pace of recovery in five, rather than ten years, with losses of just over $14 billion. Those would be further reduced to $10.5 billion to $8.7 billion by avoiding civil service layoffs.

Disposable Personal Income

Chart 6 traces recoveries relative to the REMI base case which through income support programs, boosts 2020 Disposable Personal Income (DPI) by $4,424 million, sufficient to offset much of the negativity shown in other metrics for 2020. Another billion plus in assistance is currently being debated in the Senate and, if passed, could have a more modest impact on 2021 results.

The pace of recovery with the upper pair of plots demonstrates impacts without civil service cutbacks and the lower pair includes them. In each instance the vertical difference between personal income and disposable personal income represents cutbacks in personal income taxes paid to the Federal and State governments.

Chart 6: Personal Income, Disposable Personal Income and Personal Income Taxes 2020-2030 (Millions of Current $)
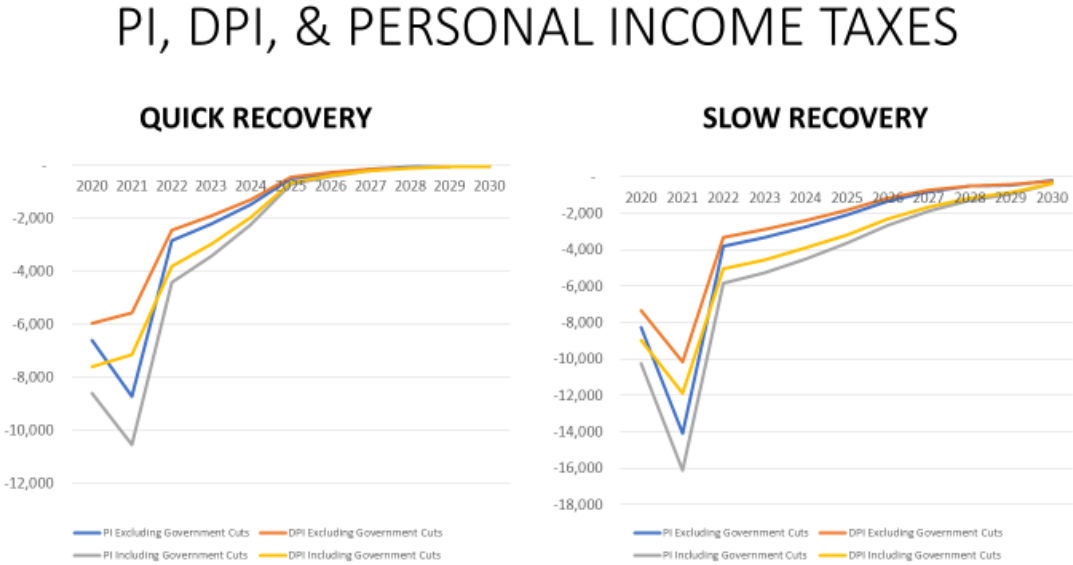
Because personal income taxes come from personal income, curtailing incomes shrinks personal income taxes, directly impacting government revenues. Curtailment of incomes also negatively impacts consumption and therefore sales taxes accruing Connecticut. Combined, these two revenue sources make up two-thirds of revenues raised by the State from other than Federal transfers.

Personal Income Taxes

Chart 7 tracks annual shortfalls in personal income taxes impacting both Federal and State governments.   Noting the changes in the vertical axis, the majority of these revenues initially accrue to the Federal Government. By making use of jointly funded policies and projects the state can, of course, claw back some of what initially goes to federal coffers. These charts capture only the differences in personal income taxes between the REMI base case and the deteriorating situation. In 2020 the REMI base case already had cuts of $1,889 million to federal personal income taxes from Connecticut households and $580 million state personal income taxes raised by the state.

Consistent with the previous Chart, impacts from the slow, rather than quick adjustment scenario result in greater losses of income tax revenues for both levels of government. Those losses would be further exacerbated by civil service layoffs.

Chart 7: Connecticut Based Reductions in Federal and State Personal Income Tax Revenues 2020-2030 (Millions of Current $)


13
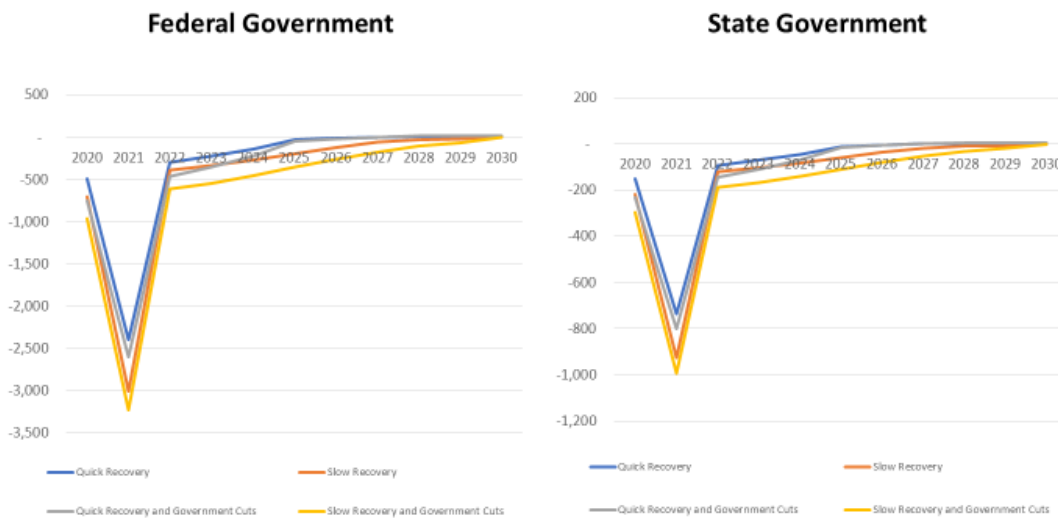
The federal cutbacks depicted above are only for losses from the shrunken Connecticut tax base. With serious infections of Covid-19 throughout the country, Federal personal income tax revenue cuts from all states could be expected to be roughly a hundred times those derived from Connecticut, thereby, along with shortfalls in other revenues, limit Federal capacity to bail states out of their adverse fiscal situations, absent a Congressional willingness to carry historically large deficits.

State Sales Taxes

State revenues generated by the sales tax fall with the decline in employment, and recover gradually as the economy returns to fuller capacity. Under both quick and slow recovery scenarios, annual impacts on the state government remain negative to 2025 and 2030 respectively. These results are limited to only the fiscal impacts of increased unemployment attributable to Covid-19 either including or excluding resultant civil service lay-offs. No account has been taken of either other short-term government expenditures and any subsequent cutbacks for increased tax rates to rebalance those budgets.

In 2020, Chart 8 reveals state sales tax reductions range from $885 to $965 million and in 2021 from $92 to $257 million with the deeper cuts being associated with the civil service layoffs.

## Chart 8: Connecticut Reduction of State Sales Taxes Revenues 2020-2030 (Millions of Current $)
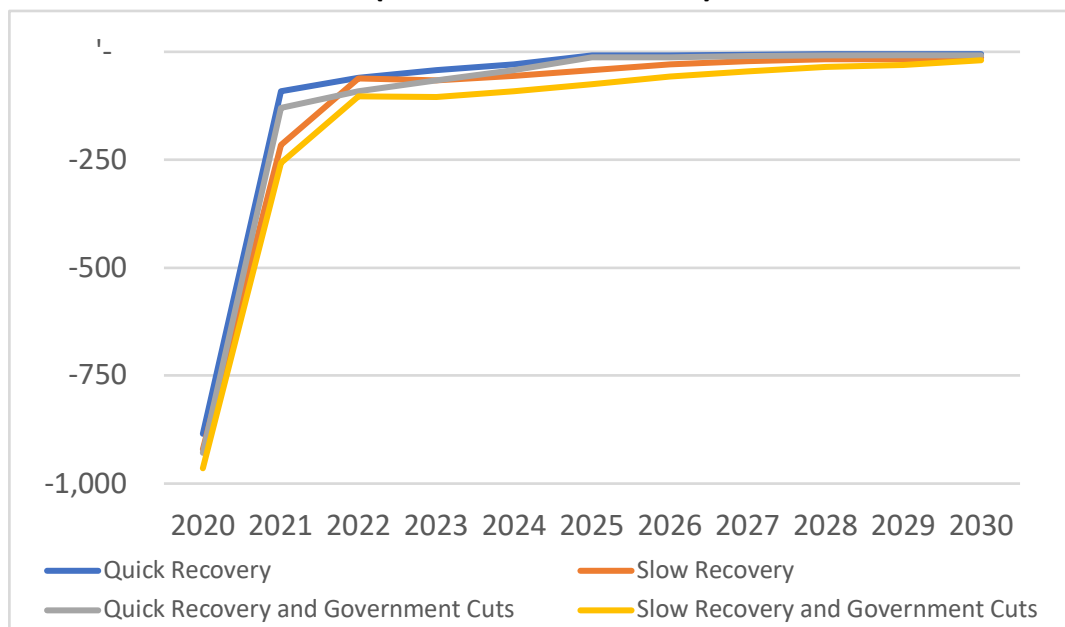
State Fiscal Impacts

Extrapolating the cuts in these major taxation sources to other revenues raised by Connecticut and modelling state expenditures, including state unemployment assistance payments, but without any other extraordinary expenditures, Chart 9 captures expected state deficits.

Chart 9: Connecticut Modeled Deficit 2020-2030 (Millions of Current $)
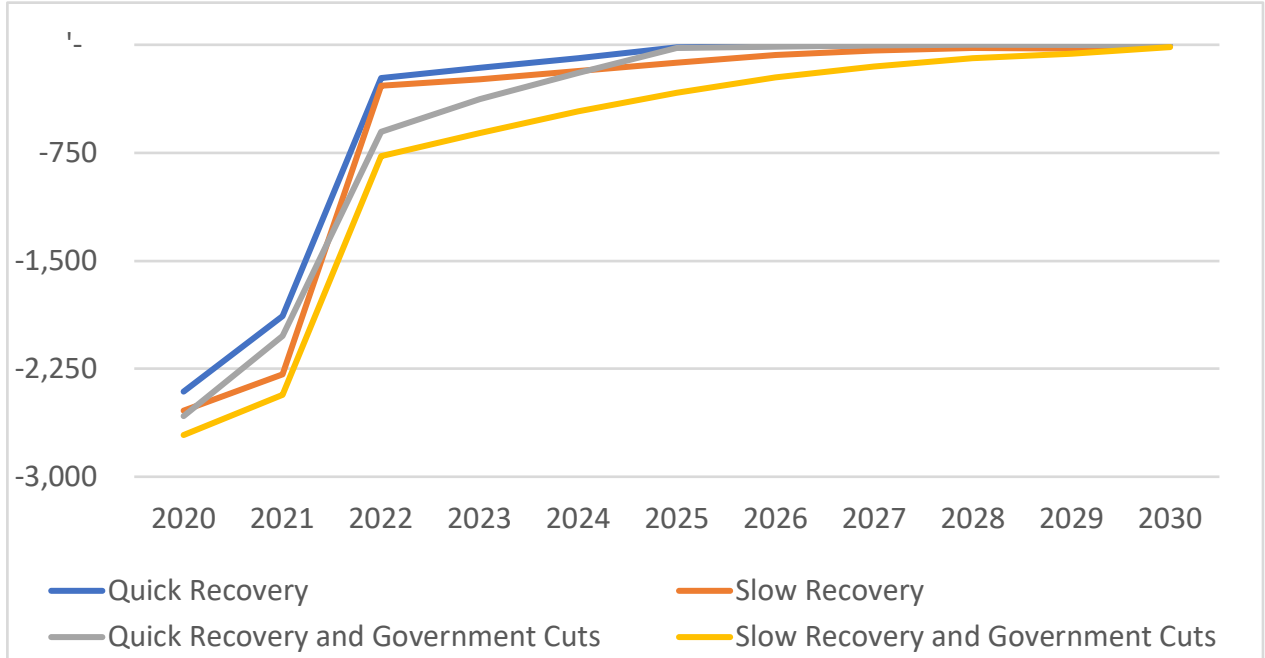
Potential Growth Initiatives

Given the severely and long duration of expected deficits and therefore program and employment cuts and/or tax increases, Connecticut policy makers clearly have to address the challenge of changing the state's economic trajectory. That Connecticut never recovered following the Great Recession underlines the urgency of this challenge.

There are a range of initiatives and policies Connecticut could pursue to mitigate the damage of the COVID-19 pandemic shutdowns and the residual weakness pre-pandemic. Of special importance is strengthening the state's IT infrastructure; the sectoral and occupational data argue strongly that Connecticut essentially disengaging from the data-drive, digitally dependent modern economy after 2008, becoming the Florida of the northeast, focused on low-skill, low-wage tourism, hospitality, and logistics.

- Make Connecticut competitive to attract major data center investment;

- Strengthen Connecticut's IT infrastructure to be fully competitive

- Undertake major infrastructure projects, including redevelopment of Sikorsky airport and exploiting the opportunities the state's three deep water ports offer.

- Greening of electricity generation with offshore wind generation farms;

- Installation of residential solar and battery storage systems;

- Replacement of fossil fueled cars and trucks with electricity vehicles;

- Construction of the inland multimodal port of Naugatuck;

- Pushing rapid development of intellectual property developed at the University of Connecticut, especially the School of Medicine, as well as supporting such development following from other institutions of higher education.

- Creation of strong multi-university collaboratives to support aerospace engineering, biomedical initiatives (including a broad JAX Lab genomic advanced research and graduate effort), and IT development;

- Legalization of Marijuana.

- An aggressive, coordinate effort to secure federal funding; Connecticut is the worst performer in the nation, heavily reliant in own-source revenue, in large measure a result of the spending cap and dismembering the State Data Center that would develop the critical social-economic data required for most applications for federal funding.

Greening of the electricity grid is moving ahead with the signed Park City Wind initiative for 804MW which can be scaled up into the future. East Coast offshore development provides opportunities to develop the Bridgeport port and support businesses to build and service new wind farms. At sea locations have several advantages to land-based solar farms in that they are unobtrusive, noiseless for residents and have no surrounding impediments to wind and therefore are more efficient.

Last year Green Bank assisted in residential solar construction expected to generate 73 gigawatt hours annually slowing this year with only 47 gigawatt hours of expected production installed by October 1[6]. Solar investments in 2019 were valued at $229 million and in the first three quarters of 2020, at $147 million. Some of this increased generating capacity will be dedicated to fueling EVs. Sales of them reached 11,677 last year[7] compared to about 3,849 in 2018[8]. 2020 vehicle sales including EVs are expected to slow due to reduced travel from Covid-19.

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[6] Green Bank, Residential Solar Investment Program.

[7] Data based on CT DMV Registration Database dated December 31, 2019

[8] EV-HUB https://www.atlasevhub.com/materials/state-ev-registration-data/ 2017 data were not available but are estimated at half 2916 and 2918

The inland port of Naugatuck can reduce congestion and improve freight handling on the East Coast while taking traffic off roads from Maine to New York thereby limiting accidents, debilitating injuries and highway deaths.

Attraction of information intensive industries and even topnotch academics to Connecticut demands that their large data processing needs be met by the construction of a series of well-integrated Clouds for low-cost storage and processing. That opportunity is at hand.

Yale and UConn continue to produce promising intellectual property including lower cost relatively pain-free procedures that replace surgeries. But there is international competition for those processes that requires seed money. It is time to reduce health care costs by establishing lower-cost DNA therapies with short recuperation time to replace high-cost surgeries with prolonged recovery time.

Conclusions

Nationally, By the end of March 2021, CDC now expects US deaths directly from covid-19 to reach possibly 1.5/1000 people. Recently, CDC has indicated that for every covid-19 death, overcrowded hospitals and reluctance of the ailing patients to enter them is resulting in an additional 0.47 deaths indirectly related t covid-19 brining direct and indirect deaths to 2.2 per thousand people by end of Q3 2021.

Even with a quick recovery and no Connecticut government layoffs, over the next two years State deficits are expected to reach at least $4.2 billion. The slower or more gradual recovery over the same timeframes produces a deficit of $5.1 billion. Resulting government layoffs and program reductions force deficits higher, reaching $4.6 and $5.8 billion.

Remaining below employment capacity currently means that unemployment is understated by over 60,000 above those captured as being currently unemployed, 3.5% of Connecticut's labor force.

Even these views are optimistic because they are based on Connecticut not being hit hard by further bouts of Covid-19. Due to strong assumptions about outmigration, state government also avoids welfare payments, but with the strong prevalence of Covid-19, migration rates may fall, leaving the state government to meet continuing obligations.

Further Covid-19 related medical damages incurred, to date, have impacted 1.5 million Americans survivors. This toll can reasonably be expected to double, approaching one percent of the population by the time Covid-19 has run its course. Those disabilities may have negative lasting effects on US productivity.

Under both scenarios with government cutbacks, Connecticut suffered losses in labor force and population that last over the decade. Aggressive leadership by the State could mitigate or even reverse these projected economic outcomes.