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Memorandum

To: Steve Klein, Chief Fiscal Officer, Joint Fiscal Office
From: Tom Kavet, Nic Rockler
CC: Sara Teachout, JFO
Date: April 30, 2017
Re: Proposed Five Year Minimum Wage Increase to \$15.00/hour in 2022

Background

As requested, we have performed a preliminary quantitative analysis of potential economic impacts associated with a slightly revised version of the proposed minimum wage increase to \$15.00/hour in 2022, previously reviewed during the session.¹ The current analysis consists of three minimum wage increases of \$1.00 each between 2019 and 2021 (to \$11.50, \$12.50 and \$13.50, respectively), and a \$1.50 increase in 2022 (to \$15.00). Overall impacts are reported for the entire period from 2018 (assuming a current law minimum wage in nominal dollars of \$10.50) to 2022.

It should be noted that analyses of events five-plus years into the future, utilizing data that is two to six years old, introduces greater uncertainty than analyses of more proximate events for which current data may be available. This analysis involves considerable adjustment of the core wage data used in the analysis (2015 basis, however, constructed from surveys between 2011 and 2015),² expected future inflation rates,³ assumptions of constant labor market conditions and adjustment of the economic impact model baseline to 2018.⁴

Adding to this variability, the proposed wage change level in 2022 will be well above the historical experience of the minimum wage in Vermont or any other U.S. state or any nation (see chart on following page).⁵ Although other states have enacted future wage changes of this magnitude and relative level, none are effective to date and none have been studied. As a result of this, impact estimates are based on projections that are accordingly uncertain. Although the percent change in the proposed real minimum wage between 2018 and 2022 would be 29% (43% nominal), the growth between 2014, when a series of minimum wage

¹ See JFO memo of February 8, 2017 on the same subject.

² American Community Survey (ACS) data utilized by Deb Brighton in estimating State and Federal social assistance program impacts, which we used as inputs to this analysis, are based on pooled data from 2011 to 2015, the Occupational Employment Survey data used to estimate jobs by wage category are based on adjusted semi-annual panel data from 2012 to 2015.

³ Based on JFO and Administration Consensus Economic Forecasts from December 2016.

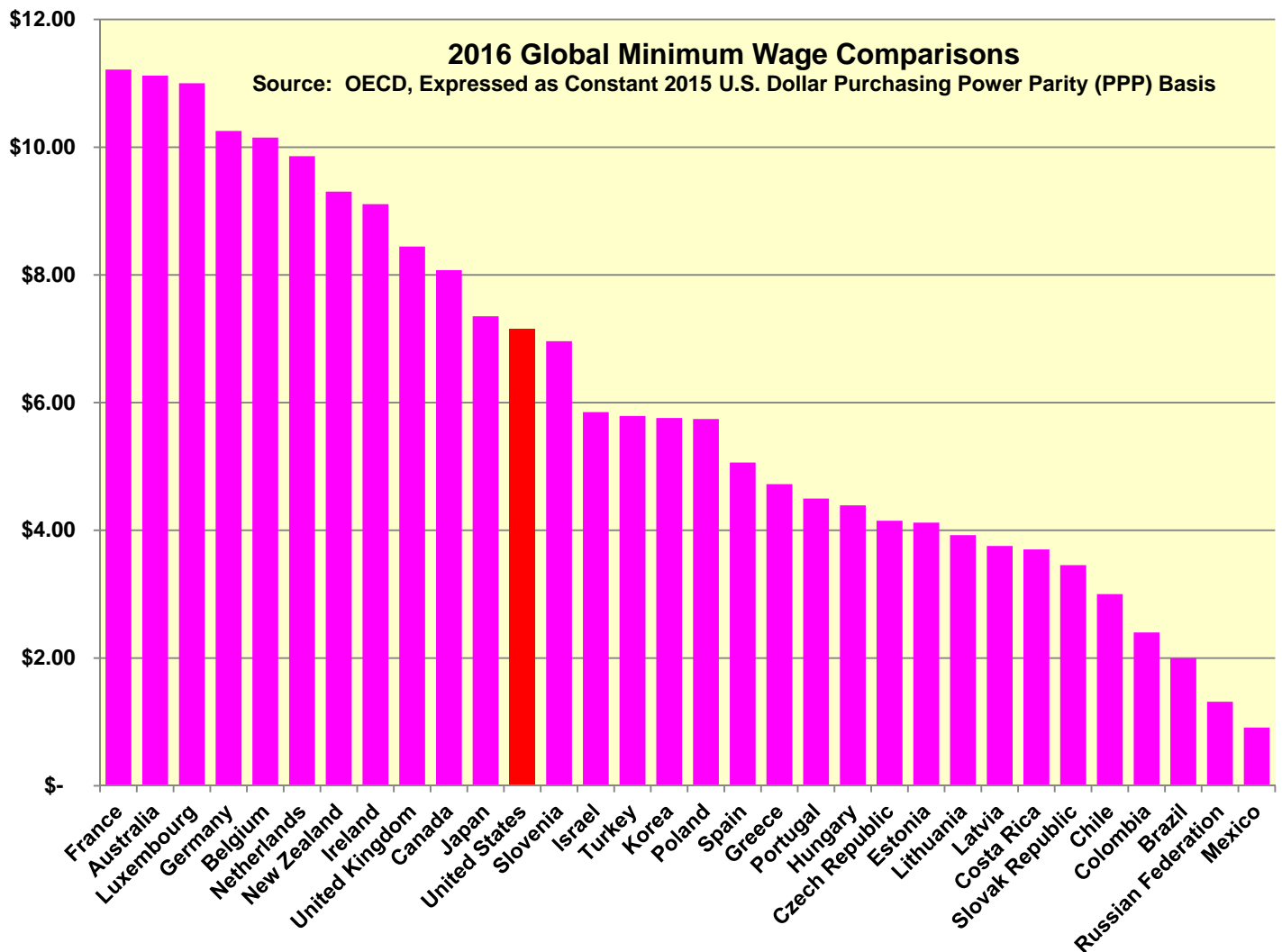
⁴ The current Regional Economic Models, Inc. (REMI) model used in this analysis utilizes actual data through 2014. Because Vermont enacted three minimum wage increases above rate of inflation between 2014 and 2018, we updated the model with actual 2015 employment data and adjusted the baseline model to reflect minimum wage changes between 2015 and 2018.

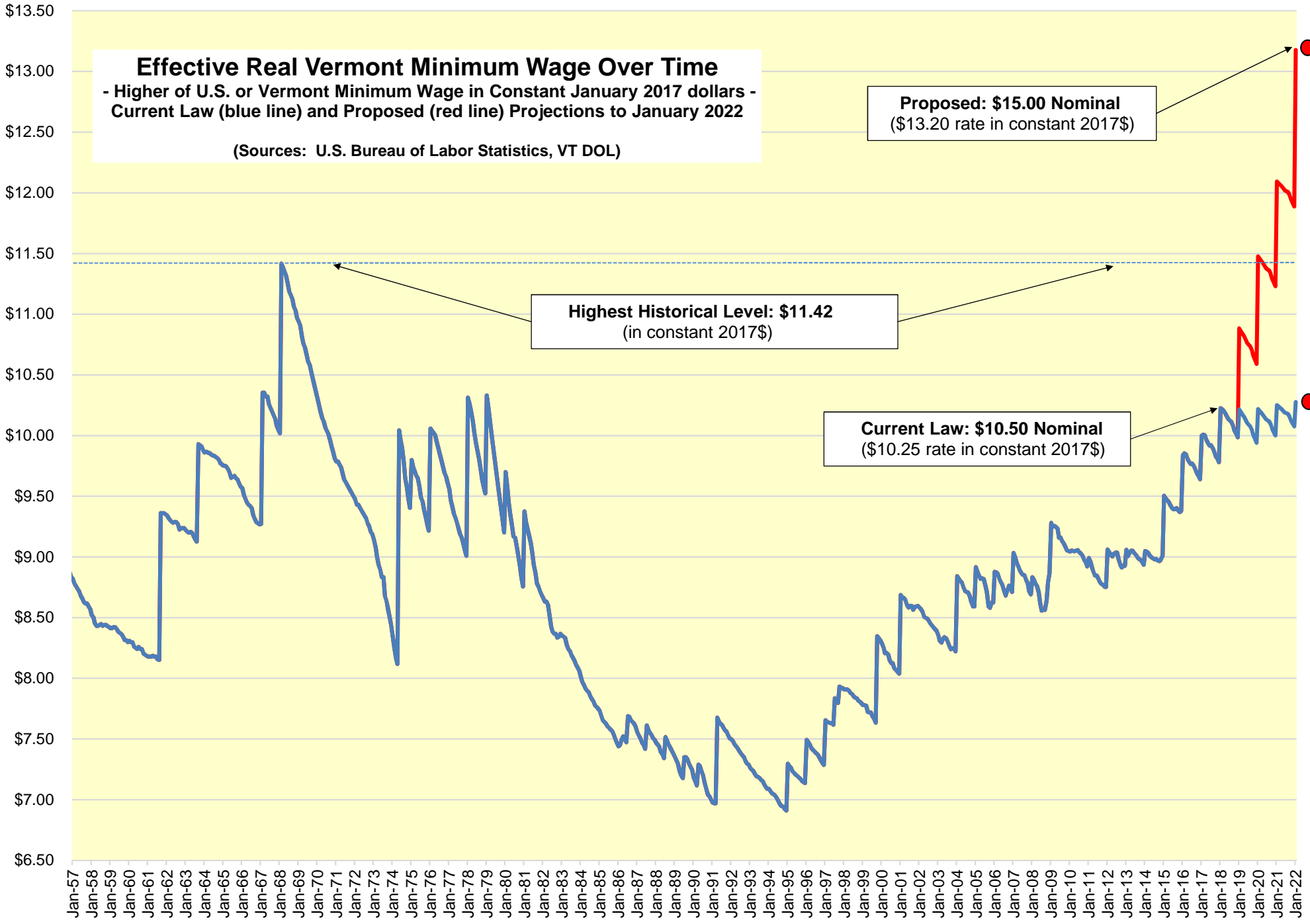
⁵ Based on Purchasing Power Parity basis in constant 2015 U.S. Dollars, as reported by the OECD as of 2016.

changes exceeding inflation rates began, and 2022, would be more than 45% (72% nominal) - well above any prior comparable period studied.

The chart on the following page depicts both the current law and proposed minimum wage in constant (inflation-adjusted) January 2017 dollars, to 2022, based on the most recent consensus forecasts of inflation. In 2017 constant dollars, the \$15.00/hour rate in 2022 would be about \$13.20. The current law level would otherwise be about \$10.25/hour (\$10.50 in 2018, adjusted for inflation each year) in 2017 dollars. Based on the proposed change, the minimum wage would exceed its prior all-time high (reached in February of 1968 at \$11.42/hour in 2017 dollars) in 2020 (at about \$11.47/hour) and every year thereafter (leveling off at a top real rate of \$13.20 in 2022 and beyond).

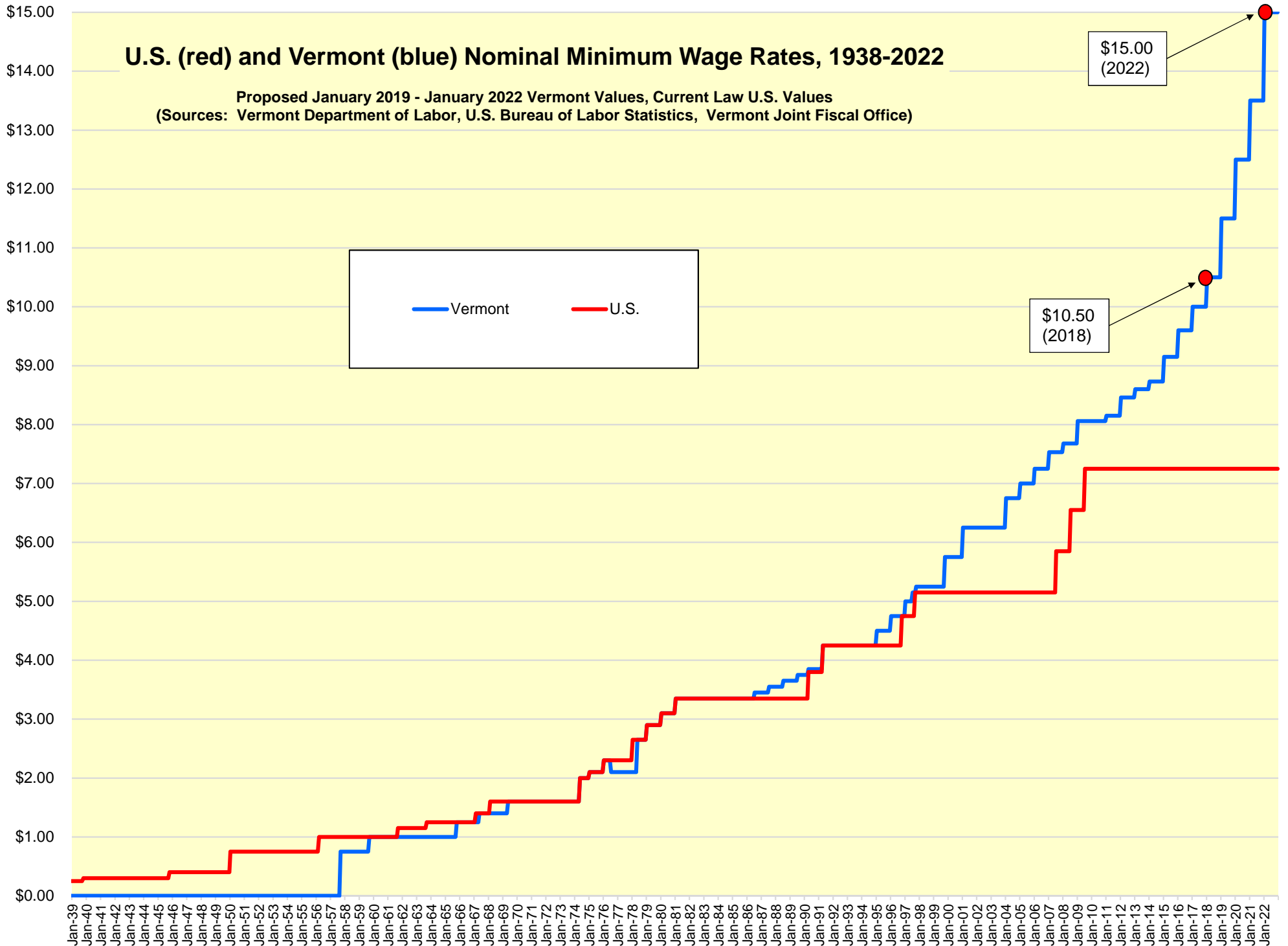
With respect to competitive relative wage conditions, a record 19 states raised their minimum wages in January of 2017, with Massachusetts and Washington raising theirs to \$11.00/hour, just below that of Washington, D.C. at \$11.50/hour, the highest in the nation. Vermont is tied for the sixth highest state rate with Arizona, at \$10.00/hour and the third highest in New England. Quebec's minimum wage in Canadian dollars is now \$10.50/hour, the lowest of any Canadian province, but will go up to \$11.25 CAD in May – the equivalent of about \$8.50 USD at current exchange rates.





U.S. (red) and Vermont (blue) Nominal Minimum Wage Rates, 1938-2022

Proposed January 2019 - January 2022 Vermont Values, Current Law U.S. Values
 (Sources: Vermont Department of Labor, U.S. Bureau of Labor Statistics, Vermont Joint Fiscal Office)



While many states have adopted automatic inflation indexing of their minimum wages, many have also now passed multi-year future wage increases, independent of inflation rates, such as that proposed in Vermont. California has passed a series of minimum wage increases that are almost identical to those proposed in Vermont (ending at \$15.00/hour in 2022). Only the District of Columbia has enacted a minimum wage increase that is higher (at \$15.00/hour two years earlier, in 2020).

States Enacting Phased-In and Future Minimum Wage Rates

State	Highest Future Rate	Year
District of Columbia	\$15.00	2020
California	\$15.00	2022
Washington	\$13.50	2020
Oregon	\$13.50	2022
New York	\$12.50	2021
Maine	\$12.00	2020
Colorado	\$12.00	2020
Arizona	\$12.00	2020
Vermont	\$10.50	2018
Maryland	\$10.10	2018
Hawaii	\$10.10	2018
Michigan	\$9.25	2018

As noted in the prior JFO analysis this year, the pronounced and growing minimum wage rate differential with New Hampshire and other states at or near the Federal minimum wage of \$7.25 represents a potential economic risk that further study could help assess.

Source data used in this analysis include Vermont Department of Labor estimates of employment by 10 cent increments from \$9.15 to \$14.00 per hour,⁶ by industry for the year, 2015. These data are based on BLS Occupation Employment Survey statistics. Although we regard these as the best available estimates currently available, many observations are estimated, and are not actual data points. We have been working with the Department to consider other analytic approaches that could improve these estimates and expect to have more accurate estimates for use with 2016 data (recently released) in the event further analysis is requested by the legislature over the summer in connection with this issue. These estimation techniques could also be used to extract comparable information for NH and other states for use in competitive analyses discussed in committee hearings during the current session.

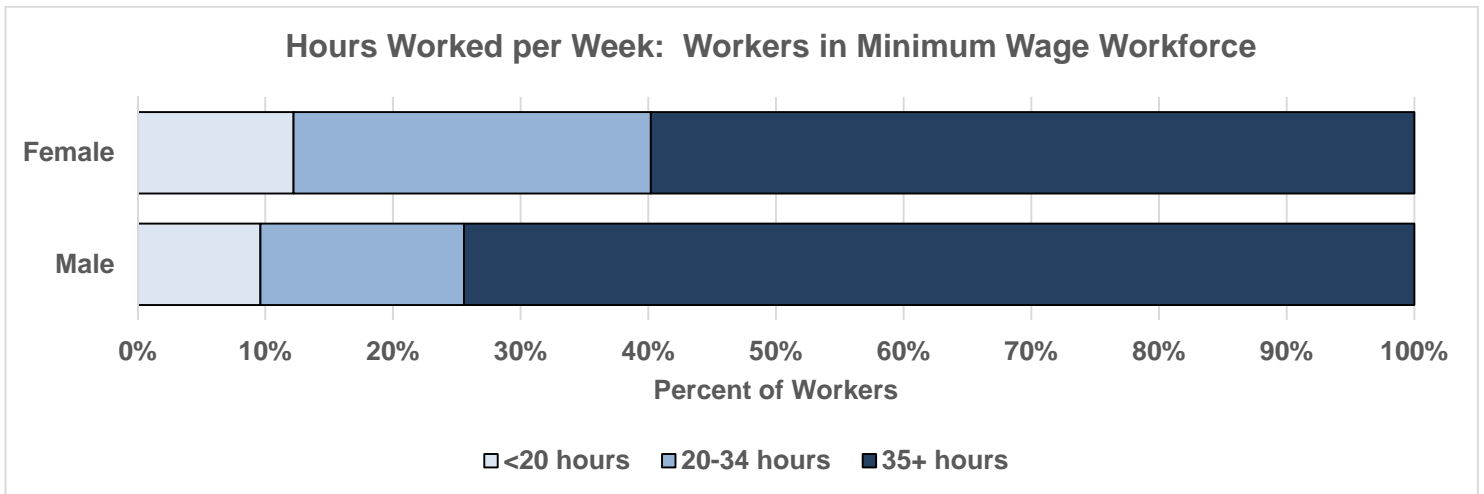
Summary of Findings to Date

- The share of the employed labor force in 2018 expected to be earning below the proposed \$15.00 per hour minimum wage in 2022 will exceed 25% of all jobs, with so-called “spillover” effects (wage increases above the new minimum wage given to workers just below and just above a new minimum wage, so as to preserve some

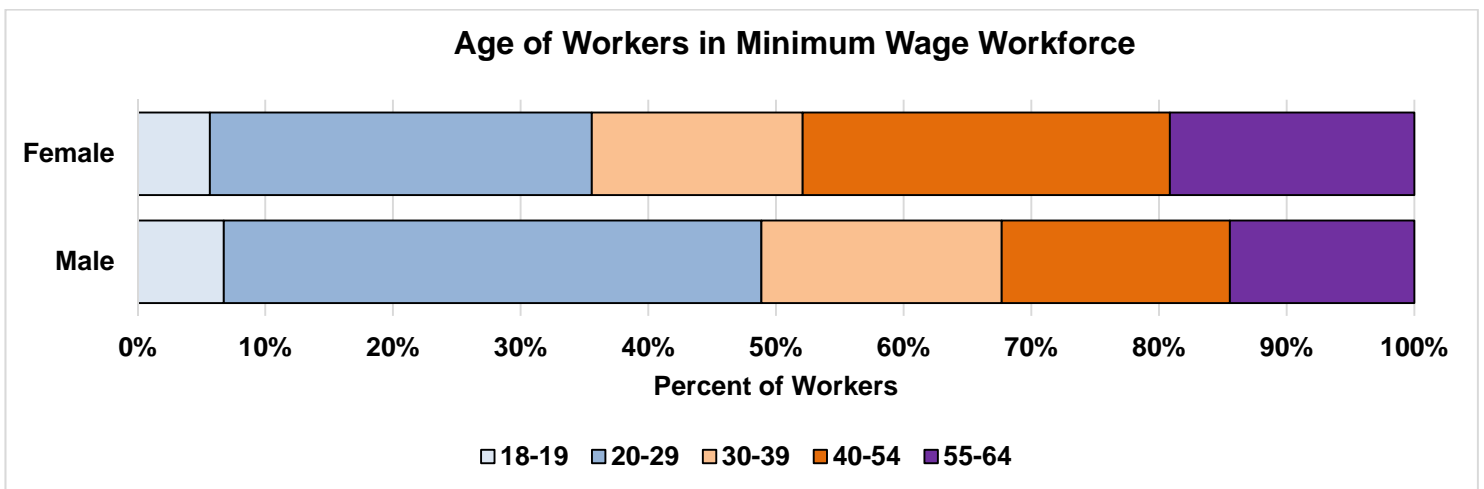
⁶ The first employment category provided was \$9.15 to \$9.20. The source file was extended from \$14.00 to \$14.60 using source OES data in order to accommodate higher wage “spillover” and “ripple” effects (wage changes given to workers just below and just above a new minimum wage, so as to preserve some pay hierarchy among existing workers).

compensation hierarchy among existing workers), extending this to more than a third (35%) of all employment (see chart on page 8).

- Of the workers expected to earn \$15/hour in 2022, 44% are female and 56%, male. Per the below chart, two-thirds of all minimum wage workers are employed in full-time jobs.⁷



- 42% of all minimum wage workers are the head of a family (a couple or single parent family). 40% of these head-of-family minimum wage workers earn at least half of their family income. 59% of all minimum wage workers are over age 30. While 48% of all female minimum wage workers are older than 40, only 32% of all male workers are older than 40. Conversely, 49% of all male minimum wage workers are under the age of 30, while only 36% of all female minimum wage workers are younger than 30.⁸



- Academic literature that finds diminutive (or no) negative employment impacts from minimum wage changes, has largely been confined to studies in which the wage changes were relatively “modest” – sometimes described as affecting 10% or less of

⁷ Based on ACS data developed for the JFO by Deb Brighton.

⁸ Ibid.

those employed.⁹ As noted above, the proposed change would substantially exceed this threshold.

- By 2022, total income gains among affected workers will total more than \$240 million per year in 2015 dollars, providing powerful, positive local economic effects, including fiscal gains to the State in the form of higher income and other tax revenues and lower expenditures for social assistance programs totaling nearly \$20 million (see below table).
- These positive effects will be largely offset by negative cost of production increases, reduced federal transfer payments to the State, higher Federal income and payroll tax payments by Vermont businesses and workers, higher local prices and associated reductions in demand, reductions in employee benefits, and the longer-term substitution of capital for labor in the most highly affected industry sectors.

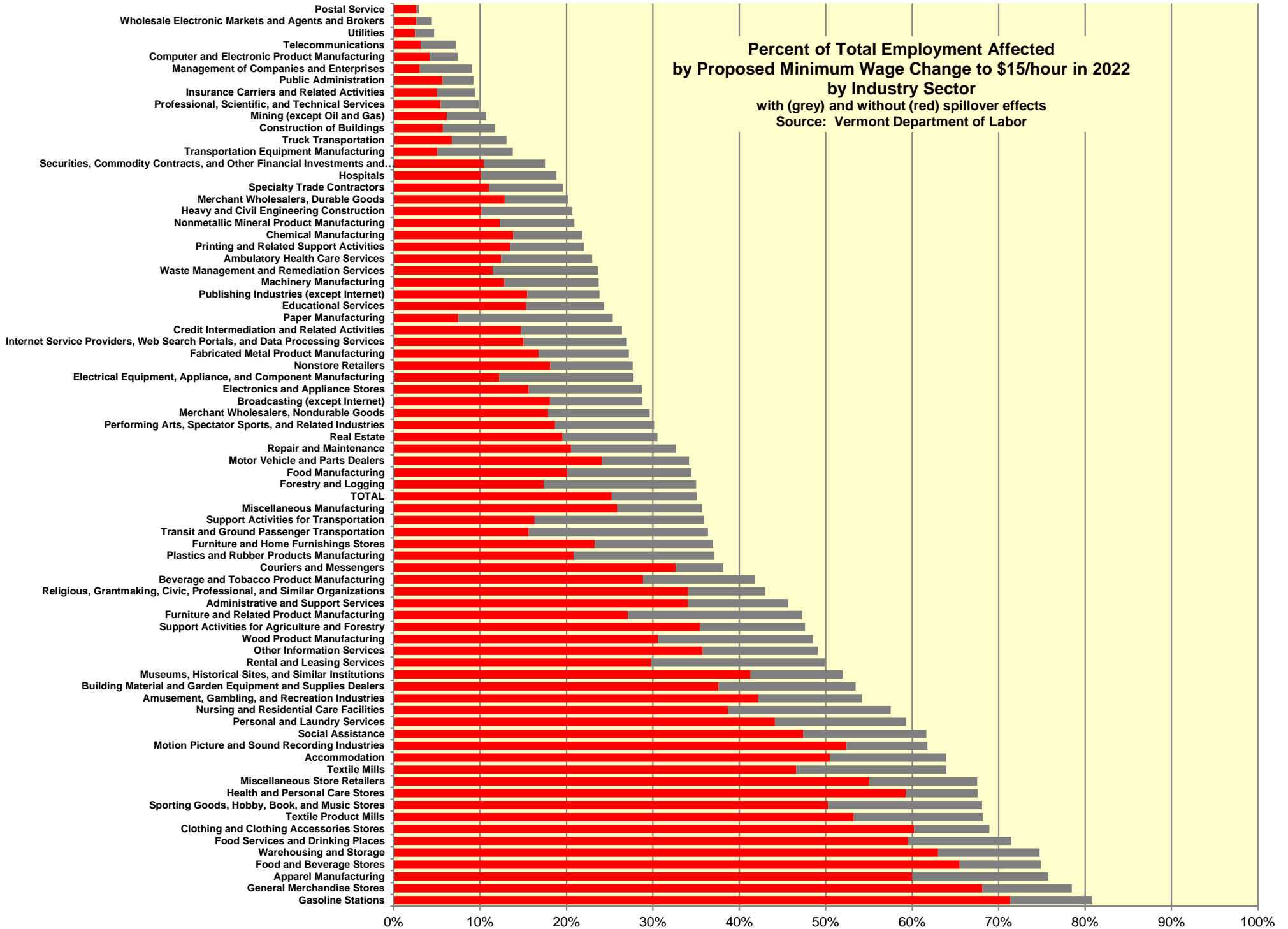
Federal and State Changes in Income Tax and Transfer Payments based on proposed 2022 \$15 minimum wage, relative to 2018 (Millions of 2015 dollars)			
Federal		State	
SNAP savings	\$8.2	Income Tax increase	\$8.0
Income Tax increase	\$26.0	HO Rebate savings	\$0.4
Payroll Tax employee	\$17.3	Renter Rebate savings	\$0.2
Payroll Tax employer	\$17.3	PTA savings	\$1.5
EITC savings	\$4.1	CCFAP savings*	\$0.0
Medicaid savings	\$21.0	VT EITC savings	\$1.3
Health Subsidy payments	-\$23.3	Medicaid	\$7.0
Child Medicaid/SCHIP	\$1.0	Premium + cost sharing payments	-\$1.3
		Doctor Dynasaur	\$1.4
		LIHEAP	\$0.9
TOTAL	\$71.8	TOTAL	\$19.5

*Assuming no decrease in CCFAP for families <185% FPL for LIHEAP and SNAP, and all for Section 8
Source: Deb Brighton analysis for JFO, prior to iterative job loss estimates

- Given the above caveats regarding the unprecedented nature of the proposed wage change, State economic impact model runs suggest net disemployment effects of about 1,500 jobs in 2022, rising to about 3,000 jobs per year in 2028 and beyond, less than 1% of total employment at that time and about 3% of those working at the new minimum wage. These effects are lower than comparable minimum wage increases previously analyzed, due to more comprehensive REMI modelling of transfer payment changes and Affordable Care Act low income healthcare subsidies totaling more than \$23 million that were not previously available to offset other healthcare-related transfer payment reductions from the federal government (see above table).

⁹ See JFO memo of March 13, 2014, pages 9-14, for a more complete description of these effects.

**Percent of Total Employment Affected
by Proposed Minimum Wage Change to \$15/hour in 2022
by Industry Sector
with (grey) and without (red) spillover effects
Source: Vermont Department of Labor**



- The industries most likely to be negatively affected are those with high out-of-state exports, high shares of affected workers (see chart on preceding page), and relatively high labor costs as a share of total production costs. Although firms with highest export reliance are characterized by relatively highly paid workforces and capital intensive production processes, some still have 30% or more of their workforce that could be affected by the proposed minimum wage change. In the manufacturing sector, these include furniture and wood product manufacturing, textile and apparel manufacturing and the large food product manufacturing sector.
- The largest employment losses, however, are likely to occur in the retail trade, food service and accommodation industries, where labor costs can account for 50% or more of total operating costs. These three sectors are expected to account for nearly half of the disemployment effects through reduced hours, labor substitution and job relocation or closure.
- It should be noted that even in some industries, typically considered to be less affected by external competition, such as retail sales, there would be effects associated with competition from both internet sales and border firms in New Hampshire, where the minimum wage could be less than half the Vermont rate by 2022, the largest historical spread on record. This suggests that collection of relevant data, ongoing review and analysis of potential cross-border negative impacts could be important prior to and during the period from 2018 to 2022.
- Related analysis performed for the JFO by Deb Brighton¹⁰ shows that earned income growth among some of the lowest income workers can result in state and federal public benefit reductions, substantially offsetting and in some cases completely negating improvements in net family income from minimum wage changes. These benefit reductions can eliminate incentives to work for many low-wage workers. A comprehensive analysis of benefit loss interactions with earned income gains would allow adjustment of public benefit programs wherever possible in order to preserve work incentives at all wage levels, especially those below a livable income.
- Potential reductions in federal transfer payments can generate substantial negative economic impacts, as earned income replaces federal aid. Specific program options could be explored with federal program administrators and Vermont's Congressional delegation so as to determine whether any redirection of reduced federal transfer payments may be possible.
- Federal (especially) and State income taxes consume a significant proportion of marginal income well below livable income levels. These high marginal tax rates in tandem with public benefit reductions diminish work incentives and delay achievement of a livable income. In tandem with potential minimum wage and benefit program changes, consideration should be given to a mix of State tax changes and benefit programs that can most efficiently maximize low wage workers' incomes and State revenues, minimize public benefit expenditures and preserve incentives to work.
- Additional REMI model output and other analytic details associated with this proposed minimum wage change are available from the Joint Fiscal Office. The data and models developed as a part of this analysis will be available in the event that further legislative work on this issue is mandated during the balance of the year.

¹⁰ http://www.leg.state.vt.us/jfo/issue_briefs_and_memos/Benefits%20and%20Min%20Wage%20DRAFT%20ESI%20032017.pdf