First to $15:
Alberta's Minimum Wage Policy on Employment by Wages, Ages, and Places

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First to $15: History of Alberta's Policy

- following 44 consecutive years (1971-2015) of conservative party rule (under the Progressive Conservative Association), the New Democratic Party (NDP) formed Alberta's only one-term government (2015-2019) due to party vote splitting
- prior to the NDP, the province followed a formula-based approach to its minimum wage, based equally on changes to its annual average weekly earnings and consumer price index
- with a $15 minimum wage as part of their election platform, Alberta became the first state or province in North America to reach this threshold by October 1st, 2018 (47% increase, over just 3 years, in 4 increments: from $10.20 to $11.20, to $12.20, to $13.60, to $15.00), where it remains in 2022

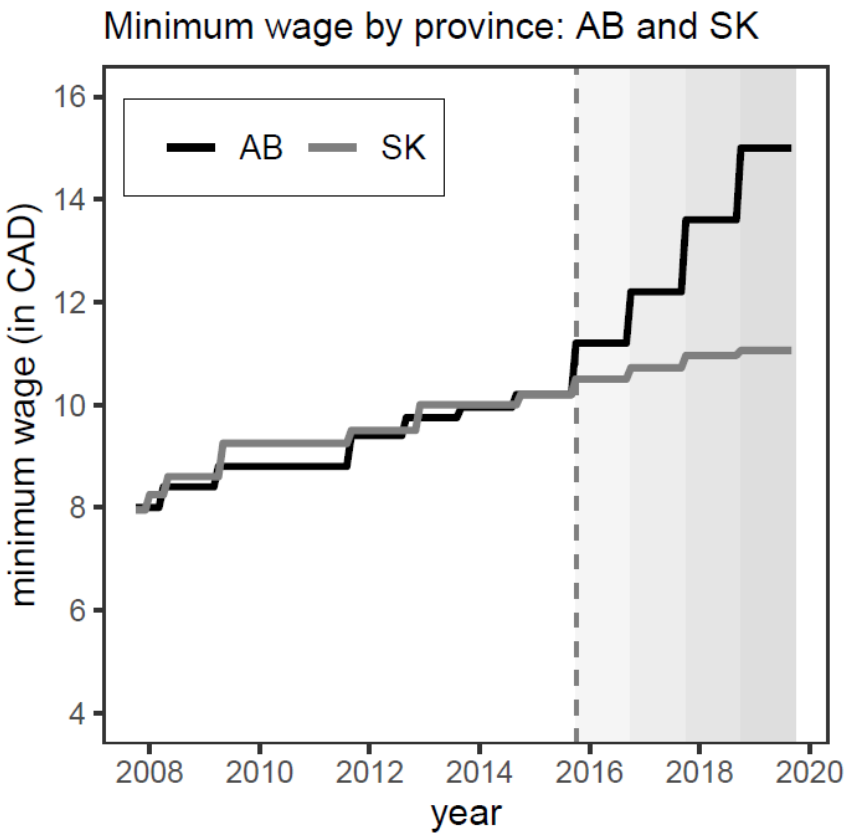
First to $15: Origins of Alberta's Policy

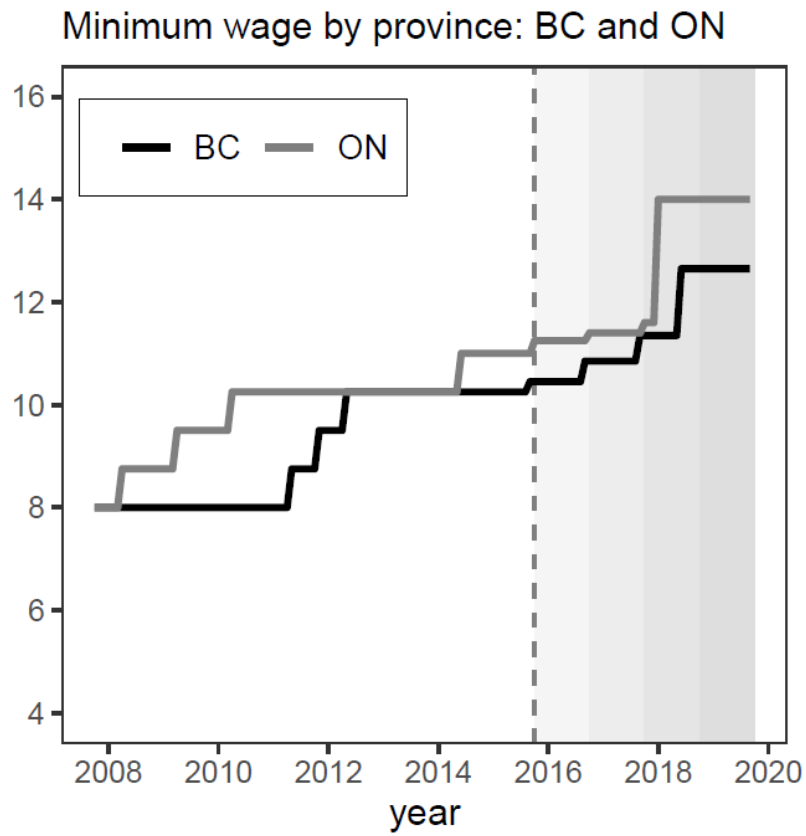
- the North American concept of a $15 minimum wage originated at the city level in 2012, as the "Fight for 15" movement among fast food workers in New York City
- prior to Alberta, minimum wages of such a nominal level were only relegated to a pair of US cities (Seattle, San Francisco), but has since spread to other high-priced cities as well (ex. Washington DC) (for city level, see Dube and Lidner, 2021)
- several provinces/states now have/will follow or pass $15.00 (BC on Jun. 1st, 2021; NY on Dec. 1st, 2021; CA and ON on Jan. 1st, 2022; CT and MA in 2023, MD and NJ in 2024; DE, IL, and RI in 2025; FL and VA in 2026)
- a national policy of $15 was adopted for Canadian federally regulated industries on Dec. 29th, 2021; the US will do the same with $15 for federal contractors on Mar. 30th, 2022

First to $15: Twin of Alberta's Policy

- according to Neumark et al. (2014, p. 610), "the identification of minimum wage effects requires"
  - "a valid counterfactual control group for what would have happened absent increases in the minimum wage"
  - "a sufficiently sharp focus on potentially affected workers"
- for the valid counterfactual control group, a "twin" province of Saskatchewan exists for Alberta
  - economy reliant on agriculture and energy extraction
  - follows same formula-based minimum wage approach
- for the sufficiently sharp focus on potentially affected workers, we cut the data by wages, ages, and places
  - wage bin approach similar to Jales (2018), Cengiz et al. (2019)
  - Cengiz (2019) finds age to be the strongest predictor to being an affected worker, with rural being fifth most important factor

Policies: Alberta, Saskatchewan, British Columbia, Ontario





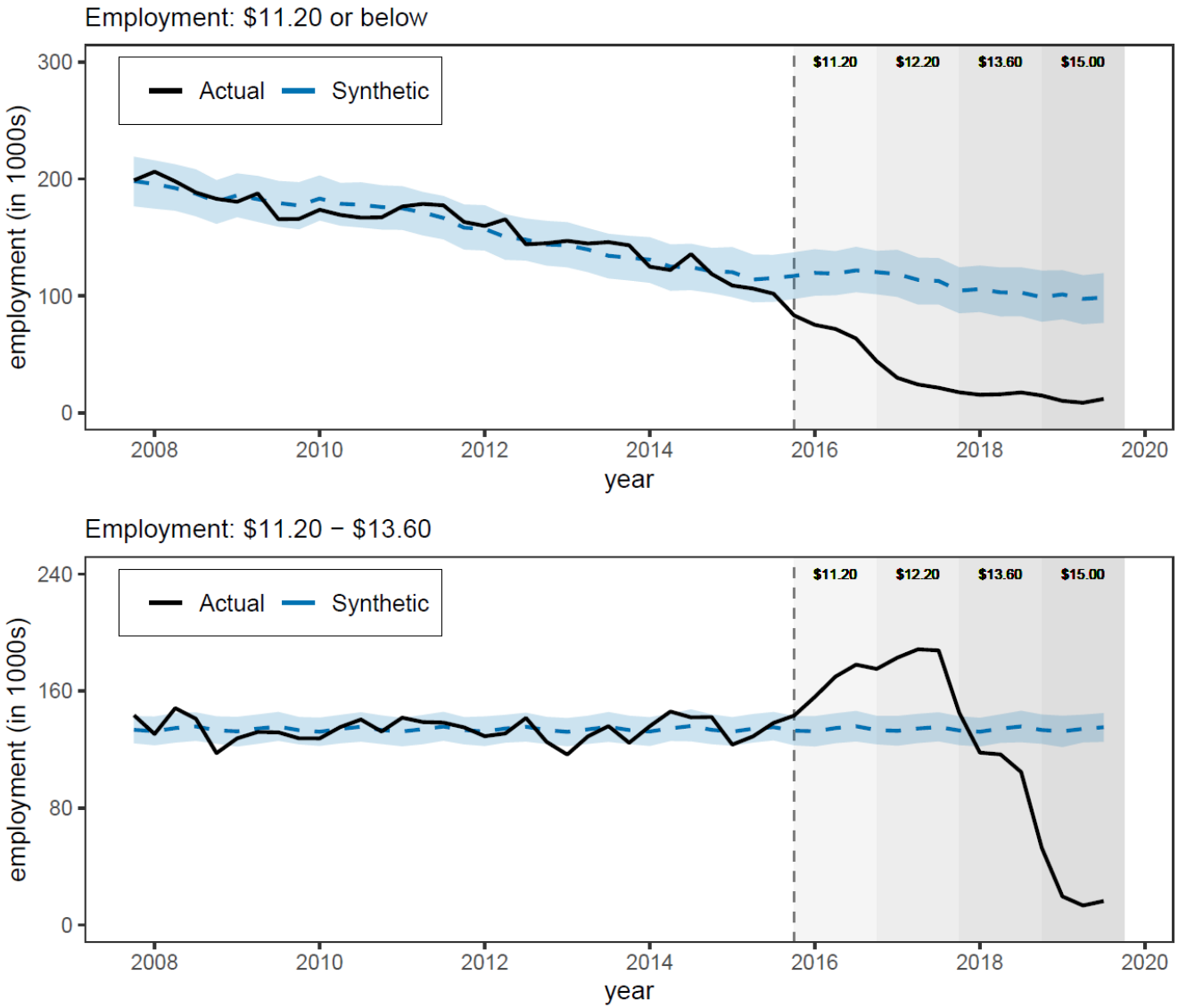
Methods: Application of Synthetic Control

- most studies identified on many very small changes rather than large, quick, and unexpected changes in Alberta
- synthetic control methods are used to explore what would have happened in Alberta without this policy
- applications of synthetic control to examine minimum wages:
  - Sabia et al. (2012), Neumark et al. (2014), Dube and Zipperer (2015), Allegretto et al. (2017), Neumark and Wascher (2017), Powell (2017), Reich et al. (2017) (on Seattle), Jardim et al. (2018) (on Seattle), Nadler et al. (2019)
- specifically, we use Bayesian Structural Time Series approach (Varian, 2014; Brodersen et al., 2015)

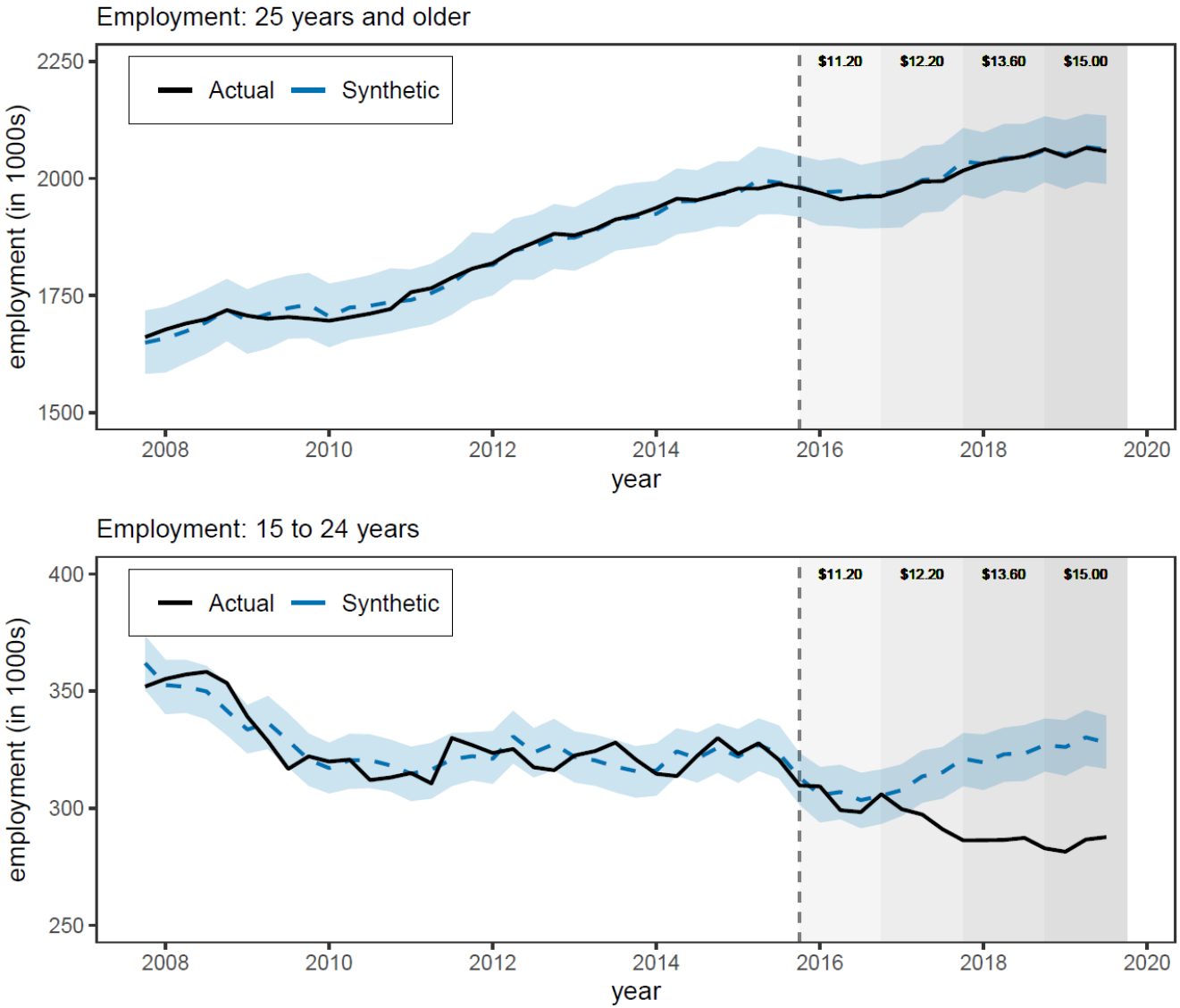
Methods: Application of Synthetic Control

- we need to identify relevant untreated control units (the donor pool) and decide how to determine the regression coefficients
- the set of untreated units includes
  - Saskatchewan employment levels by wage bins (under $10.20, $10.20 to $11.20, $11.20 to $12.20, $12.20 to $13.60, $13.60 to $15, $15 to $20, and over $20)
  - Alberta's employment level for those earning more than $20
  - regularized priors on the regression coefficients
- pre-intervention sample for model: 2007 Q4 - 2015 Q3
- post-intervention sample for policy: 2015 Q4 - 2019 Q3
- Labour Force Survey data, all publicly available
  - wage bin cuts were through Government of Alberta request
  - age cuts are for 15-24 year olds, and aged 25 and over
  - geographical cuts for Alberta into 7 economics regions (2 urban, 7 non-urban)

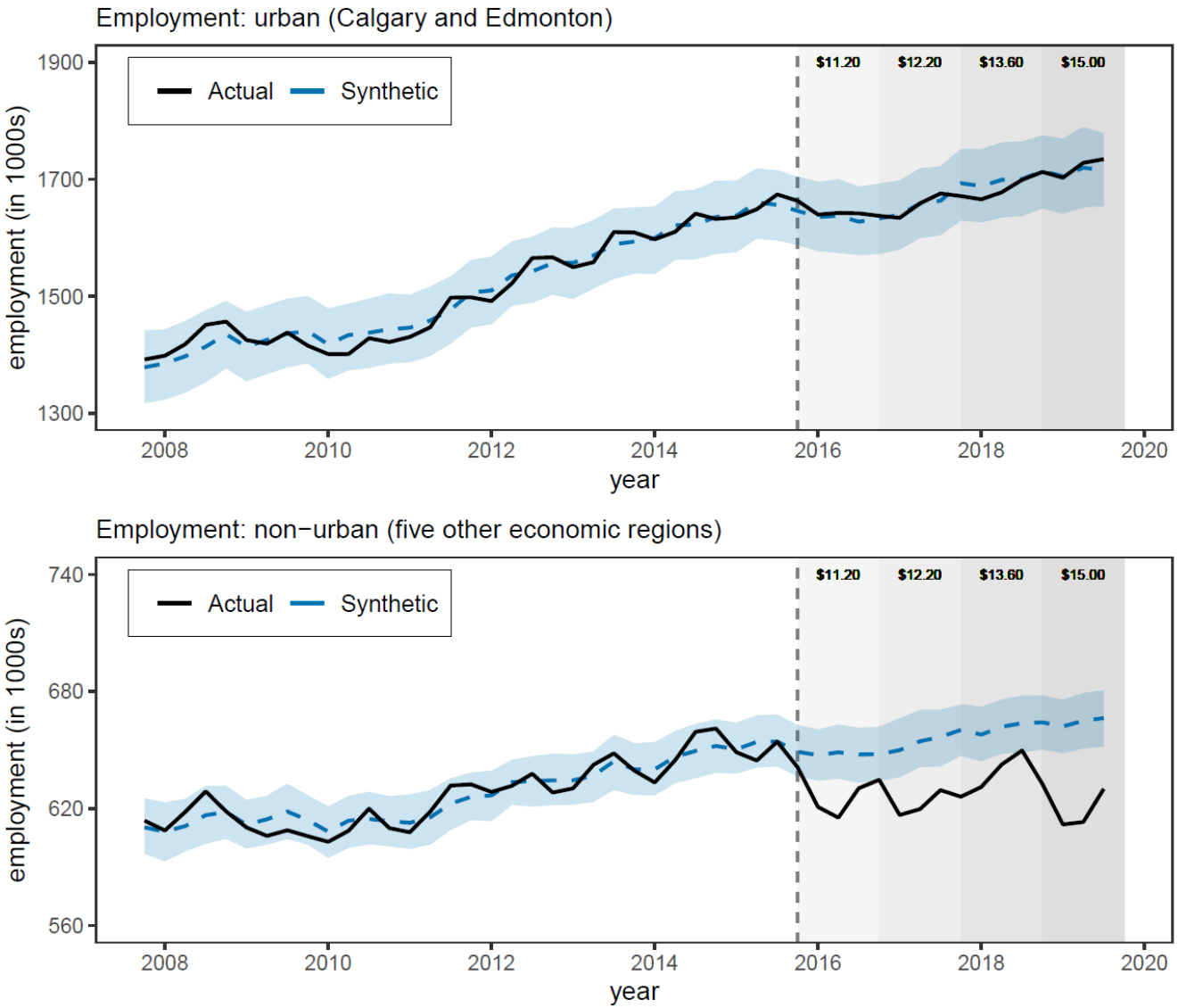
Wages: Employers Complied; Workers Moved Up Bins



Ages: Prime-Age and Older Did Not Lose Jobs; Young Did



Places: Urban Areas Did Not Lose Jobs; Non-Urban Did



Robustness: Pre-Intervention, Donor Pool, Backdating

- we follow Samartsidis et al. (2019) and Abadie (2021 in JEL)
  - changes to the sample used for estimation:
    - pre-intervention sample: 2011 Q4 - 2015 Q3
    - pre-intervention sample: 2005 Q4 - 2015 Q3
  - changes to the donor pool:
    - drop Alberta employment data
    - add British Columbia employment data by wage bins
    - use British Columbia and Saskatchewan employment data by economic regions
  - changes to the intervention date:
    - backdate two years: to 2013 Q3
    - backdate four years: to 2011 Q3

Robustness: Pre-Intervention, Donor Pool, Backdating

	by age		by place	
	25-and-over	15-to-24	urban	non-urban
A: Main results				
Average employment effects	-3,861	-23,405	504	-28,652
As fraction of 2015Q3 employment	0.00	-0.07	0.00	-0.04
Employment elasticities	0.00	-0.15	0.00	-0.09
B: Changing the pre-intervention sample				
2011Q4 - 2015Q3 (4 years)	0.00	-0.10	0.00	-0.04
2005Q4 - 2015Q3 (10 years)	0.00	-0.08	0.00	-0.04
C: Changing the donor pool				
Only SK wage bin data	0.01	-0.07	0.01	-0.04
Adding BC wage bin data	0.00	-0.07	0.00	-0.07
Using regional data	0.02	-0.16	-0.06	-0.12
D: Backdating to 2013Q3				
2013Q4 - 2015Q3 (in-time placebo test)	0.01	-0.01	0.01	-0.01
2015Q4 - 2019Q3 (intervention)	0.01	-0.09	0.01	-0.05
E: Backdating to 2011Q3				
2011Q4 - 2015Q3 (in-time placebo test)	0.02	0.01	0.02	-0.02
2015Q4 - 2019Q3 (intervention)	0.03	-0.08	0.03	-0.07

Summary and Discussion: Alberta as $15 Example

- Alberta is first state or province with a $15 minimum wage, with many $15 policies to follow
- main results:
  - 1. workers moved up the wage distribution, bin by bin
  - 2. employment losses were found among young workers
  - 3. employment losses were found outside of two main cities
- interpretation of evidence may depend on priors; in our case,
  - older group and urban areas were placebos
  - younger group and non-urban areas were expected
- job losses were modest for large, quick, unexpected increases (47% increase over three years in four annual increments)

Further Reading: Recent, Relevant Canadian Work

- Fossati S., Marchand, J. 2021. First to $15: Alberta's Minimum Wage Policy on Employment by Wages, Ages, and Places. University of Alberta, Department of Economics, Working Paper, No. 2020-15. Updated October 22nd, 2021 on IDEAS.

- Campolieti, M. 2020. Does an Increase in the Minimum Wage Decrease Employment? A Meta-Analysis of Canadian Studies. Canadian Public Policy, 46(4), 531-564.

- Rybczynski, K., Sen, A. 2018. Employment Effects of the Minimum Wage: Panel Data Evidence from Canadian Provinces. Contemporary Economic Policy, 36(1), 116-135.