

Labour Market Power in Canada: Long-Term Trends and Cyclical Dynamics

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Working paper – guy-djolaud.github.io

Motivation

- ▶ Employer concentration is a leading measure of **labour market power**: few employers, less competition for workers, lower pay
- ▶ Evidence on its evolution comes almost entirely from the **United States** and the **United Kingdom**
 - local concentration declined while national concentration rose (Rinz 2022; Autor et al. 2020)
 - little is known about *what drives* these changes
- ▶ Recessions reallocate jobs and wage bills across sectors and trigger exit: they may **reshape employer power** at the local level
- ▶ In Canada, the **public sector** is a large, highly concentrated employer that most measures leave out

How has labour market concentration evolved in Canada, what drives it, and does it matter for pay?

This paper

What I do.

- ▶ First time series of concentration in Canada, 2001–2019 (BEAM), with a **wage-bill HHI**
- ▶ Decompose changes: within-industry competition, reallocation, geography, turnover
- ▶ Effect of concentration on the **firm component of pay** (AKM, leave-one-out IV)
- ▶ Study fiscal policy in a **TANK model** with a cyclical wage markdown

Main findings.

- ▶ Long-run decline, but local concentration **+14%** in the Great Recession
- ▶ Public Administration: **54%** of the long-run within-province decline
- ▶ Private sector: within-industry deconcentration; turnover *amplifies* the recession rise
- ▶ Wage-premium elasticity **−0.028**; fiscal expansions narrow markdowns and shift income to wages

Data and measurement

BEAM (Statistics Canada)

- ▶ Linked employer–employee records, 2001–2019
- ▶ Earnings, employer, industry and **province of work**
- ▶ All workers with positive T4 earnings, all provinces and territories

Local labour market

- ▶ 2-digit NAICS industry $\times$ province

Wage-bill HHI

$$HHI_m = \sum_j s_{jm}^2, \quad s_{jm} = \frac{w_{jm}n_{jm}}{\sum_{j'} w_{j'm}n_{j'm}}$$

- ▶ Captures how *payroll*, not headcount, is spread across employers
- ▶ Earnings and size jointly determine an employer's weight

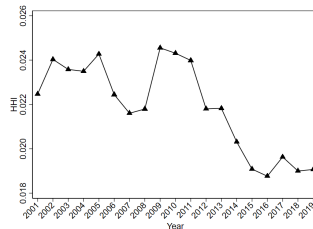
National vs. local concentration

National (NC): industry treated as one national market

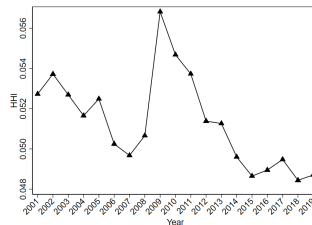
$$HHI^{NC} = \sum_k s_k HHI_k$$

Aggregate local (ALC): industry within each province

$$HHI^{ALC} = \sum_l s_l \sum_k s_{kl} HHI_{kl}$$



(a) NC



(b) ALC

All industries, including Public Administration. Source: BEAM microdata, author's calculations.

- ▶ Both decline over 2001–2019
- ▶ ALC jumps **+14%** in 2007–2009; NC barely moves

Decomposing changes in local concentration

Across provinces

$$\Delta HHI_t^{ALC} = \underbrace{\sum_l s_{l,t-1} \Delta HHI_{lt}}_{\text{within-province}} + \underbrace{\sum_l HHI_{l,t-1} \Delta s_{lt}}_{\text{between-province}} + \underbrace{\sum_l \Delta s_{lt} \Delta HHI_{lt}}_{\text{covariance}}$$

Within each province, across industries

$$\Delta HHI_{lt} = \underbrace{\sum_k s_{kl,t-1} \Delta HHI_{klt}}_{\text{within-industry}} + \underbrace{\sum_k HHI_{kl,t-1} \Delta s_{klt}}_{\text{between-industry}} + \underbrace{\sum_k \Delta s_{klt} \Delta HHI_{klt}}_{\text{covariance}}$$

- ▶ Adapted from productivity decompositions (Foster, Haltiwanger and Krizan 2001)
- ▶ Changes expressed as **fractions of base-year ALC**: -0.075 = a 7.5% decline
- ▶ Survivors-only version isolates the contribution of **entry and exit**

Economy-wide: what moved local concentration?

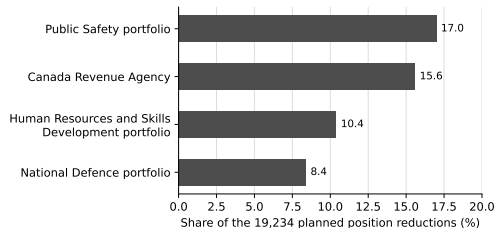
	2001–19	2007–09
Total change	−0.076	+0.144
Within-province	−0.092	+0.128
within-industry	−0.146	+0.040
between-industry	+0.067	+0.087
covariance	−0.013	+0.001

Fractions of base-year ALC. All industries.

- ▶ **Long run:** concentration fell **within industries**; a shift of payroll toward concentrated industries partly offset it
- ▶ **Great Recession:** **reallocation** across industries explains 68% of the within-province rise
- ▶ Counterfactuals tell the same story: holding composition at 2001, the recession spike almost disappears

The public sector drives economy-wide dynamics

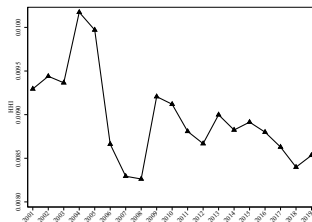
- ▶ **2001–2019:** Public Administration = **54%** of the within-province decline
 - within-industry -11.7% , composition $+9.3\%$, covariance -2.5%
 - same within-industry decline among continuing employers
- ▶ Consistent with **Budget 2012:** 19,234 positions targeted, half in four large portfolios; Ottawa–Gatineau public employment falls sharply in 2013
- ▶ **2007–2009:** payroll shifted *into* the public sector as private employment fell: **80%** of the within-province rise



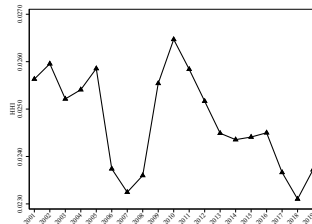
Share of planned position reductions after Budget 2012. Source: Treasury Board of Canada Secretariat (2012).

Private sector: trends

- ▶ Excluding the public sector isolates competition among **private employers**
- ▶ NC: decline of 8.3% (vs. 15.8%)
- ▶ ALC: long-run decline $\approx$ 7.5% and recession spike $\approx$ 14% in both samples
- ▶ Private ALC keeps rising until **2010**: recession window 2007–2010



(a) NC



(b) ALC

Excluding Public Administration (NAICS 91). Source: BEAM microdata, author's calculations.

Private sector: decomposition

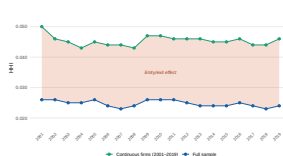
	2001–19	2007–10
Total change	−0.075	+0.139
Within-province	−0.075	+0.107
within-industry	−0.067	+0.081
between-industry	−0.035	+0.010
covariance	+0.027	+0.016

Fractions of base-year ALC. Excluding Public Administration.

- ▶ **Long run:** within-industry (88%) and a shift toward less concentrated industries (47%) **reinforce** each other
- ▶ Leaders: Information & culture (61.5%), Utilities (41.0%), Health care (26.3%)
- ▶ Against the trend: Finance & insurance, via its growing weight
- ▶ **Recession:** rise **within industries** (75% of the within-province effect); led by Health care, Utilities, Retail

Entry, exit and continuing firms

- ▶ **Long run:** among firms present in 2001 and 2019, the within-province decline is **35% larger** (-0.102 vs. -0.075)
 - net entry *raised* concentration, offsetting **26%** of incumbents' deconcentration
- ▶ **Recession:** survivors' ALC rises by 12.0% vs. 13.9% for all firms
 - entry and exit **amplified** the rise (about one seventh of it)



(a) 2001–2019



(b) 2007–2010

Private-sector ALC, all firms vs. continuing firms. Source: BEAM microdata, author's calculations.

Does concentration lower firm pay? Design

- **Outcome:** market wage premium $\bar{\psi}_{m,t}$ = employment-weighted mean of AKM firm effects
 - removes worker composition; firm effects estimated on a connected set that **includes public employers**
- **Instrument:** leave-one-out concentration of the same industry in all other provinces (Azar et al. 2022; Rinz 2022)

$$HHI_{k,t}^{-l} = \frac{\sum_{z \neq l} HHI_{zk,t} Emp_{zk,t}}{\sum_{z \neq l} Emp_{zk,t}}$$

- **Specification:** $\bar{\psi}_{m,t} = \beta \ln \widehat{HHI}_{m,t} + \delta_m + \delta_t + \varepsilon_{m,t}$
 - employment-based HHI; 190 private markets $\times$ 19 years; 2007 weights; clustered by market

Concentration and the firm wage premium

	(6)	(7)	(8)
$\ln HHI_{m,t}$	-0.046* (0.021)	-0.020 (0.018)	-0.028** (0.010)
Industry + province FE	Yes		
Market FE		Yes	Yes
Year FE			Yes
First-stage F (robust)	28	4.4	4.2

IV estimates; $N = 3,610$. * $p < 0.05$, ** $p < 0.01$. Full table in appendix.

► Market + year FE: a 10% rise in concentration lowers the wage premium by **0.28%**

► Within-market first stage is weak ($F \approx 4$); with industry and province FE it is strong and the elasticity is **-0.046**

► Same order as Rinz (2022) for U.S. earnings (≈ -0.03)

Fiscal policy under employer market power: model

TANK (Cantore and Freund 2021)

- ▶ Workers ($\lambda = 0.75$): labour income, bonds with portfolio cost
- ▶ Capitalists: own firms, receive profits
- ▶ Calvo prices; Taylor rule with smoothing
- ▶ Spending financed by lump-sum taxes and debt

Cyclical monopsony (Bredemeier et al. 2026)

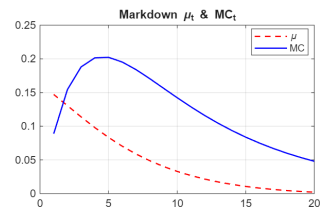
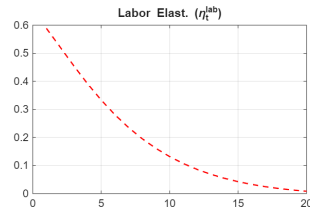
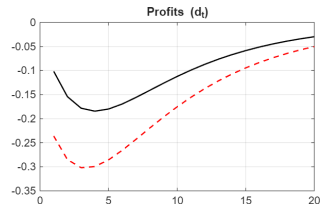
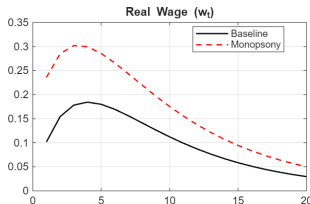
$$W_t = \mu_t \text{MRPL}_t, \quad \mu_t = \frac{\eta_t}{1 + \eta_t}$$

$$\hat{\eta}_t = \Gamma (w_t - c_t^W + n_t^W)$$

- ▶ Tighter labour market $\Rightarrow$ higher elasticity $\Rightarrow$ **narrower markdown**
- ▶ $\mu_{ss} = 0.75, \eta_{ss} = 3, \Gamma = 0.78$

A government spending shock: the markdown narrows

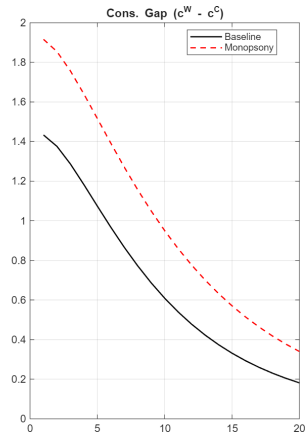
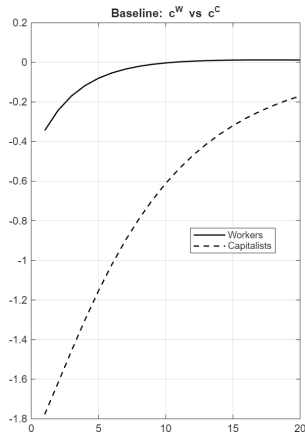
- ▶ Hours, output and consumption: nearly **identical** with and without cyclical monopsony
- ▶ With monopsony, the real wage rises more (peak $\approx 0.30\%$ vs. 0.18%) and profits fall more
- ▶ Elasticity rises, μ_t rises: firms pay a **larger share** of the marginal revenue product



Responses to a 1% spending shock, % deviation; quarters. Black: baseline TANK; red dashed: cyclical monopsony.

Distribution: from profits to wages

- ▶ Capitalists cut consumption sharply; workers much less
- ▶ Consumption gap $c^W - c^C$ on impact: **1.45%** baseline, **1.9%** with monopsony
- ▶ Labour income relative to profits ($w_t + n_t - d_t$): **+0.5%** vs. **+0.8%** on impact
- ▶ Fiscal policy redistributes more where employers have market power



Left: consumption of workers and capitalists (baseline TANK). Right: consumption gap $c^W - c^C$; black: baseline, red dashed: cyclical monopsony.

Conclusion

- ▶ Canadian labour markets became **less concentrated** over 2001–2019, but local concentration **rose 14%** in the Great Recession
- ▶ Economy-wide dynamics are driven by the **public sector**: Budget 2012 restructuring in the long run, reallocation toward government in the recession
- ▶ Among private employers, concentration fell *within* industries; entry offset part of it, and turnover amplified the recession rise
- ▶ Higher concentration lowers the **firm component of pay**
- ▶ Government spending **narrows markdowns** and shifts income from profits to wages

Local, cyclical and public-sector forces matter for measuring employer power.

Thank you

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Appendix: IV estimates, all specifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\ln HHI_{m,t}$	-0.0043 (0.0078)	0.0372** (0.0128)	-0.0046 (0.0081)	0.0412*** (0.0100)	-0.0048 (0.0081)	-0.0458* (0.0214)	-0.0196 (0.0184)	-0.0278** (0.0096)
Year FE	Yes	No	No	Yes	Yes	No	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	No
Province FE	No	No	Yes	No	Yes	Yes	No	No
Market FE	No	No	No	No	No	No	Yes	Yes
First-stage coefficient	1.042	-1.017	1.004	-1.046	1.003	0.408	0.080	0.080
First-stage F (robust)	193	23	1,491	24	1,488	28	4.4	4.2

Dependent variable: market wage premium $\bar{\psi}_{m,t}$. $N = 3,610$. 2007 employment weights; SEs clustered by market. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Appendix: calibration

Parameter	Value	Description	Source or target
β	0.99	Discount factor	Standard quarterly value
φ	1.5	Inverse Frisch elasticity	Chetty et al. (2011, 2013)
λ	0.75	Share of worker households	Households without profit income
ψ^W	0.0742	Portfolio adjustment cost	Cantore and Freund (2021)
ε	6	Goods elasticity of substitution	20% markup (Galí 2015)
θ	0.71	Calvo probability	Price duration ≈ 3.5 quarters (ToTEM III)
μ_{ss}	0.75	Wage-to-MRPL ratio	Moderate markdown (Yeh et al. 2022)
η_{ss}	3.0	Firm labour supply elasticity	$\mu_{ss}/(1 - \mu_{ss})$
Γ	0.78	Sensitivity of the elasticity	Bredemeier et al. (2026)
ϕ_π, ϕ_R	1.5, 0.85	Taylor rule	Dib (2003); ToTEM III
ρ_g	0.85	Spending persistence	Bouakez and Rebei (2007)
ϕ_t, ϕ_b, ϕ_g	0, 0.33, 0.10	Tax rule	Debt stabilization