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

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Abstract

This paper provides the first time-series analysis of labour market concentration in Canada, complementing prior research on the U.S. and other countries. It shows that national concentration gradually declined from 2001 to 2019, while local concentration experienced a temporary 14% increase during the Great Recession. Decomposition analysis reveals that the long-run decline in both measures reflects two offsetting forces: increased within-industry competition, which reduced concentration, and wage-bill shifts toward more concentrated sectors, which partially offset these gains. However, during the Great Recession, this pattern reversed at the local level: 68% of the increase was due to sectoral reallocation. We then develop a calibrated TANK model with employer market power and demonstrate that fiscal expansions compress wage markdowns, increase the labour share, and markedly reduce consumption and income inequality between workers and capitalists.

JEL Codes: E32, J42, L16, R1

Keywords: Labour market concentration, Monopsony power, Macroeconomic shocks, Fiscal Policy.

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1 Introduction

This paper investigates the evolution of employer power in Canadian labour markets and examines how economic downturns reshape the competitive structure of local labour markets.

We measure labour market power through the wage-bill Herfindahl Index (HHI) [2]– which captures how payrolls are distributed among employers – and define local labour markets as 2-digit NAICS industries within provinces.

To motivate our analysis, we begin by examining trends in labour market concentration at both the national and local levels from 2001 to 2019. Figure 1 plots two measures of country-level concentration: national concentration (NC), which measures the average concentration workers face across industries by treating the country as a unified labour market, and aggregate local concentration (ALC), which measures the average concentration workers face in their local industry-province labour markets. Both measures display broadly similar long-run dynamics, with modest declines over the period. Yet they diverged sharply during the Great Recession (2007–2009). While NC showed only a moderate and transitory increase, ALC exhibited a pronounced spike of 14% before resuming its downward trajectory. This contrast highlights that local labour market structures react much more strongly to economic downturns than national patterns suggest.

Turning to our analysis, we demonstrate that the long-run decline in concentration, observed in both NC and ALC, reflects two offsetting forces: intensified competition within industries, which reduced concentration substantially, and compositional shifts in the wage-bill toward more concentrated sectors, which partially offset this decline. However, during the Great Recession, this pattern reverses at the local level: 68% of the increase in ALC resulted from sectoral reallocation rather than changes in within-industry competition.

We next examine the extent to which industries contributed to these local changes through industry-level decomposition. Over the long run (2001–2019), Public Administration accounted for 54% of the overall decline in local concentration [3], followed by Information and Cultural Industries

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[2]The Herfindahl–Hirschman Index (HHI) is the standard measure used by the U.S. Federal Trade Commission for antitrust enforcement. Recent policy debate emphasizes labour market concentration as a key source of employer power — *Labour Market Monopsony: Trends, Consequences, and Policy Responses* (Council of Economic Advisers (CEA) report).

[3]As noted by Minister Clement in 2012, "We are in the process of reducing the size of government". Large federal

(23%) and Utilities (17%). These decreases in concentration were partially counterbalanced by rising concentration in Finance and Insurance. During the Great Recession, Public Administration remained the primary driver of the 68% sectoral reallocation. The private sector contracted sharply while the public sector remained stable. A larger share of wage-bill shifted toward government—a highly concentrated sector with few large employers. This compositional shift raised aggregate local concentration.

One explanation for this finding centers on firm turnover dynamics. Isolating continuing firms (2001–2019) reveals a concentration decline of 14%—nearly double the observed 8% decline—indicating that the net entry of new firms increased concentration. This net entry reduced the decline observed among continuing firms by 46%. During the Great Recession, firm turnover reversed its counterbalancing effect, amplifying concentration and accounting for 20% of the ALC rise.

Finally, our empirical analysis reveals a dual reality: while the Canadian labour market has become increasingly competitive over the long run, economic downturns temporarily amplify labour market power, with 32% of this surge driven by the rising dominance of large employers within industries. This cyclical surge in concentration raises a critical policy question: what levers can the government use to mitigate the distributional consequences of such market power? to answer this, we develop a Two-Agent New Keynesian (TANK) model augmented with monopsony power, calibrated to match the Canadian labour market structure. We use the model to simulate a government spending shock, examining how fiscal interventions interact with employer power and income inequality. Our results reveal that while the aggregate output response is similar to a competitive benchmark, the presence of employer power amplifies the redistribution of income. Specifically, a fiscal expansion temporarily tightens the labour market, compressing the wage markdown and shifting surplus from profits to wages. Consequently, the government spending generates a significantly larger rise in the labour income share and a sharper reduction in consumption inequality when labour markets are concentrated.

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employers accounted for over half of this restructuring.

Related Literature   These findings contribute to three strands of the labour market literature.

First, recent research documents diverging trends in labour market concentration at national versus local levels. Autor et al. (2020) document the rise of "superstar firms" that expanded NC while ALC declined. Rinz (2022) confirms this pattern using employment-based HHI measures, showing U.S. local concentration declined consistently from 1976 to 2015 while national concentration increased after 1990. The Great Recession marked a critical inflection point: Handwerker and Dey (2021) document that layoffs raised labour market concentration both locally and nationally in the U.S. However, the post-recession period reveals mixed patterns—some studies find a marked decline in both local and national concentration (Yeh et al., 2022b), while others observe continued divergence with rising national concentration (Rinz, 2022; Rossi-Hansberg et al., 2021). Hershbein et al. (2020), employing vacancy-based HHI, and Manning and Petrongolo (2024) confirm similar downward trends in local concentration in the U.S. and UK, respectively. All studies find that increased local concentration is associated with lower wages, though none explicitly decompose and quantify the underlying mechanisms. We contribute by documenting similar patterns in Canada while (i) employing the wage-bill HHI, (ii) incorporating all relevant actors, including the public sector, and (iii) decomposing and quantifying the sources driving these trends.

Second, our decomposition approach draws on methodologies developed to understand aggregate productivity changes. (Foster et al., 2001) pioneered the decomposition of productivity growth into within-firm, between-firm, and entry-exit components. We adapt this framework to labour market concentration, isolating the contributions of within-industry competition, sectoral reallocation and firm turnover.

Third, our paper contributes to the literature on fiscal policy transmission in economies with household heterogeneity and employer market power. Recent studies using heterogeneous-agent New Keynesian (HANK and TANK) models show that fiscal expansions affect aggregate demand and inequality through redistribution between high- and low-MPC households (Auclert et al., 2023; Bilbiie, 2020; Cantore and Freund, 2021). However, most analyses abstract from employer market power. We build on Cantore and Freund (2021) by explicitly incorporating cyclical monopsony power into a TANK framework, showing that government spending shocks have a stronger redis-

tributive impact when employer power is relaxed. Our approach captures how fiscal policy compresses wage markdowns, boosts the labour share, and sharply reduces inequality between workers and capitalists. This highlights a novel channel through which countercyclical fiscal interventions can offset the distributional costs of employer concentration, complementing existing evidence on the importance of market structure for macroeconomic policy effectiveness.

The remainder of the paper is structured as follows. Section 2 describes the data and measurement. Section 3 introduces the decomposition framework. Section 4 presents the empirical results, Section 5 provides additional empirical evidence on the mechanisms behind these patterns, Section 6 examines counterfactual fiscal policy interventions, and Section 7 concludes.

2 Data and Measurement

This section provides details on the measurement of labour market power, local labour markets, and the data sources used in the analysis.

Measuring Labour Market Power. We measure labour market power through wage-bill Herfindahl index (HHI) which captures how wage-setting authority is distributed among employers:

$$\text{HHI}_m = \sum_j (share_{jm})^2, \quad \text{where} \quad share_{jm} = \frac{w_{jm}n_{jm}}{\sum_j \sum_m w_{jm}n_{jm}} \tag{1}$$

where w_{jm} denotes the average earning and n_{jm} the employment of firm j in market m.
The wage-bill Herfindahl index captures concentration in firms' total payroll, incorporating how earnings and workforce size jointly determine wage-setting power. A higher wage-bill HHI indicates that a small number of firms account for a large share of total wage payments, revealing greater employer concentration and thus stronger wage-setting power.

Business-Employee Analytical Microdata (BEAM). The Business-Employee Analytical Microdata (BEAM), developed by Statistics Canada, is a comprehensive employer-employee linked dataset. By connecting employer and employee records through Social Insurance Numbers (SIN) and Business Numbers (BN), BEAM enables detailed analysis of labour market dynamics and concentration, at both provincial and industrial levels. The data contains annual information on employment, earning, location, industry, and firm.

A key advantage of BEAM for this analysis lies in the payroll information that it contains, which links employee earning to the physical location of employment. This structure ensures precise measurement of local labour market concentration by capturing actual employment locations and firm-level activity at the local level.

Measuring Local Labour Market. To accurately measure market concentration, we must first define the relevant labour market. A market is defined by two key features: (i) a randomly selected worker will tend to have a stronger attachment to one market over others due to idiosyncratic preferences, although some mobility is possible; and (ii) firms within the same market compete strategically to hire workers. Given the granularity of data available in BEAM and these assumptions, we define a local labour market as a 2-digit NAICS industry within a province.

Sample Restrictions. Our objective is to provide a comprehensive assessment of labour market power across the entire Canadian economy. We apply minimal restrictions to preserve representativeness. Specifically, we include all workers (identified by `CASENUM2021`) with non-missing employer identifiers (`ENTID_SYN`), strictly positive earning (`T4EARN`), as well as complete industry (`NAICS_SCAN`) and employment location (`EMPT_PROV`) data for all Canadian provinces and territories. This inclusive approach is particularly appropriate since we measure market concentration not based on employment counts, but on firms' total payroll. Accordingly, we include all employees, regardless of part-time or full-time status, as each contributes to their employer's wage-paying capacity.

Sample NAICS Codes and Provinces. Table 1 presents the 2-digit NAICS industry codes used in the analysis, along with sector names and key statistics. These include share of the total wage-bill reported for the full sample, as well as for the selected years of the Great Recession (2007 and 2009). Table 2 provides similar summary statistics for each province and territory, showing their respective shares of the national wage-bill.

Table 1: Summary statistics by NAICS 2-digit sector

Code	Sector	Share of Wage-Bill (%)			Firm-year Observations		
		All	2007	2009	All	2007	2009
11	Agriculture, forestry, fishing and hunting	1.00	0.95	0.91	1,110,805	58,185	57,520
21	Mining, quarrying, and oil and gas extraction	2.96	3.34	2.82	197,825	11,335	11,600
22	Utilities	1.39	1.38	1.51	17,660	1,070	925
23	Construction	6.97	6.57	6.93	2,717,405	136,605	141,240
31–33	Manufacturing	13.53	15.05	12.76	1,126,180	62,110	60,815
41	Wholesale trade	5.85	6.15	5.77	1,154,140	64,495	63,590
44–45	Retail trade	7.00	6.97	7.12	2,134,740	114,875	113,430
48–49	Transportation and warehousing	4.52	4.46	4.27	1,206,085	56,295	58,040
51	Information and cultural industries	2.90	3.21	3.00	274,920	14,180	14,060
52	Finance and insurance	6.50	6.63	6.24	675,830	37,725	37,920
53	Real estate and rental and leasing	1.69	1.70	1.61	983,640	48,170	49,175
54	Professional, scientific and technical services	7.27	6.67	7.31	2,859,605	145,425	149,090
55	Management of companies and enterprises	0.94	1.03	1.01	264,910	15,950	16,305
56	Administrative and support, waste management	3.59	3.80	3.61	1,046,680	55,910	55,670
61	Educational services	7.51	7.23	7.64	265,350	13,600	13,755
62	Health care and social assistance	8.17	8.10	8.82	1,843,450	88,335	90,900
71	Arts, entertainment and recreation	0.96	0.95	1.00	368,640	19,570	19,345
72	Accommodation and food services	2.85	2.68	2.75	1,421,475	72,230	71,545
81	Other services (except public administration)	2.97	2.87	3.04	2,440,605	143,485	143,220
91	Public administration	11.41	10.25	11.85	99,780	5,170	5,195
Total		**100.00**	**100.00**	**100.00**	**22,209,725**	**1,164,720**	**1,173,340**

Note: Wage-bill shares sum to 100 across sectors for each column. Observations report the count of firm records for the full sample ("All") and the number of active firms in the indicated years. Counts shown for 2007 and 2008 (closest pre- and mid-recession years in this extraction).

Table 2: Summary Statistics by Province and Territory

Code	Province/Territory	Share of Wage-Bill (%)			Firm-year Observations		
		All	2007	2009	All	2007	2009
10	Newfoundland and Labrador	1.2	1.1	1.2	353,190	19,235	18,900
11	Prince Edward Island	0.3	0.3	0.3	127,825	6,660	6,625
12	Nova Scotia	2.2	2.2	2.3	585,105	31,665	31,160
13	New Brunswick	1.8	1.8	1.9	505,235	27,620	27,120
24	Quebec	20.1	19.7	19.9	4,554,320	240,810	240,315
35	Ontario	40.5	40.7	39.7	7,726,510	393,480	400,455
46	Manitoba	3.1	3.0	3.2	751,650	38,710	38,950
47	Saskatchewan	2.8	2.6	2.9	805,350	40,435	41,495
48	Alberta	14.9	15.5	15.5	3,255,120	173,930	171,185
59	British Columbia	12.4	12.6	12.4	3,497,205	189,640	188,745
60	Yukon	0.1	0.1	0.1	35,695	1,930	1,950
61	Northwest Territories	0.2	0.3	0.2	32,875	1,915	1,845
62	Nunavut	0.1	0.1	0.1	15,685	895	960
	Total	**100.0**	**100.0**	**100.0**	**22,245,765**	**1,165,670**	**1,170,600**

Note: Wage-bill shares sum to 100 for each column. Observations report the number of firm-year in the full sample and for 2007 and 2009.

3 Empirical Framework

This section develops the empirical framework for measuring country-level labour market concentration and quantifying its changes over time.

3.1 Country-Level Concentration: National vs Aggregate Local Concentration

Using the wage-bill Herfindahl Index (HHI), we distinguish between two country-level concentration measures: national and local.

National Concentration (NC) National concentration (NC) measures the average level of employer concentration across industries in the economy.

$$HHI^{NC} = \sum_{k \in \Omega} \text{share}_k \, HHI_k \tag{2}$$

Where HHI_k is the Industry concentration – treating the entire country as a unified labour market for each industry k. NC describes the extent to which large firms control wage-bill across industries at the national level.

Aggregate Local Concentration (ALC) Aggregate Local Concentration (ALC) focuses on competition among employers within a local market. Since workers typically search for jobs locally rather than nationally, this measure reflects the concentration workers actually face [4].

For each local market l and industry k, ALC aggregates the local industry concentration HHI_{k_l} – treating each province as a separate labour market for industry k.

$$HHI^{ALC} = \sum_l \text{share}_l \sum_{k_l} \text{share}_{k_l} HHI_{k_l} \tag{3}$$

ALC describes the extent to which large firms control wage-bill across industries at the local labour market level.

Key Distinction ALC systematically exceeds NC because local markets contain only a subset of firms operating nationally in an industry. Empirically, national labour market HHI ranges from 0.01 to 0.02, while aggregate local markets HHI ranges from 0.11 to 0.13 [5] (Rinz, 2022). This difference arises because the HHI is a non-linear function of wage-bill shares: aggregating local industry HHIs across space does not reproduce the HHI computed from national-level data.

In summary, ALC reflects the average employer concentration workers face in their local industry labour market, while NC captures industry-level concentration at the national level, abstracting from geographic variation.

3.2 Decomposition Framework

This section quantifies the total change in ALC by decomposing [6] it into contributions from shifts across regions (provinces) and shifts within regions (across industries).

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[4]See Marinescu and Rathelot (2018), who show that job seekers are significantly less likely to apply to jobs farther from their residence.

[5]When local markets are defined at the commuting zone level.

[6]The decomposition methodology is based on the framework developed by Foster et al. (2001). Their approach for dissecting aggregate productivity growth components has been adapted here to analyze labour market concentration changes.

Geographical decomposition (Provinces). Equation 4 breaks down the change in HHI^{ALC} into (i) a Within-Province Effect, (ii) a Between-Province Effect, and (iii) a Covariance Effect.

$$\Delta HHI_t^{ALC} = \underbrace{\sum_l s_{lt-1}\Delta HHI_{lt}}_{\text{Within-Province Effect}} + \underbrace{\sum_l HHI_{lt}\Delta s_{lt}}_{\text{Between-Province Effect}} + \underbrace{\sum_l \Delta s_{lt}\Delta HHI_{lt}}_{\text{Covariance Effect}} \tag{4}$$

The *Within-Province Effect* captures changes in concentration that occur within each province. Specifically, how much each province's HHI has increased or decreased, contributing to the aggregate change. The *Between-Province Effect* to its part, reflects shifts in the distribution of wage-bill across provinces. If provinces with initially high (or low) concentration gain (lose) employment wage share, it will raise (lower) the aggregate HHI. Finally, the *Covariance Effect* is an interaction term that accounts for the co-movement between provincial size and concentration changes.

Industry decomposition (within provinces). Equation 5 further dissects each province's concentration change into within-industry effect, between-industry effect, and an industry-level covariance component.

$$\Delta HHI_{lt} = \underbrace{\sum_k s_{k_l t-1}\Delta HHI_{k_l t}}_{\text{Within Local-Industry Effect}} + \underbrace{\sum_{k_l} HHI_{k_l t}\Delta s_{k_l t}}_{\text{Between Local-Industry Effect}} + \underbrace{\sum_{k_l} \Delta s_{k_l t}\Delta HHI_{k_l t}}_{\text{Local-Industry Covariance Effect}} \tag{5}$$

The *Within Local-Industry Effect* measures how concentration evolves within individual industries in a given province. The *Between Local-Industry Effect* captures how the changing composition of wage payment across industries influences the province's HHI. Finally, the *Local-Industry Covariance Effect* captures the interaction between these two dynamics—how simultaneous changes in industry concentration and wage-bill shares reinforce or offset each other.

Nested (combined) decomposition. By substituting the industry-level decomposition into the *Within-Provinces Effect*, we obtain :

$$\Delta HHI^{ALC} = \underbrace{\sum_l s_{lt-1} \Delta HHI_{lt}}_{\text{Within-Province Effect}} + \underbrace{\sum_l HHI_{lt} \Delta s_{lt}}_{\text{Between-Province Effect}} + \underbrace{\sum_l \Delta s_{lt} \Delta HHI_{lt}}_{\text{Covariance Effect}} \tag{6}$$

$$= \underbrace{\sum_l s_{lt-1} \left[\underbrace{\sum_{k_l} s_{k_l t-1} \Delta HHI_{k_l t}}_{\text{Within Local-Industry Effect}} \right]}_{\text{Within Industry Effect (within-Province)}} + \underbrace{\sum_l s_{lt-1} \left[\underbrace{\sum_{k_l} HHI_{k_l t} \Delta s_{k_l t}}_{\text{Between Local-Industry Effect}} \right]}_{\text{Between-Industry Effect (within province)}}$$

$$+ \underbrace{\sum_l s_{lt-1} \left[\underbrace{\sum_{k_l} \Delta s_{k_l t} \Delta HHI_{k_l t}}_{\text{Local-Industry Covariance Effect}} \right]}_{\text{Industry-Covariance Effect (within province)}} + \text{remaining terms}$$

which offers a nested breakdown of the ALC change. This framework decomposes the aggregate change into industry effects [7]. The *Within-Industry Effect* isolates the contribution of changing concentration within specific industries across all provinces. The Between-Industry Effect captures how much of the total change results from shifts in the composition of industries within provinces. The Covariance Effect reflects the interaction between these two forces.

4 Results

This section presents the empirical findings of the paper. First, we analyze the trends in NC and ALC. Second, we qualitatively decompose each trend using a counterfactual analysis. Third, we apply the decomposition framework to quantify the drivers of change in ALC over the long-term period (2001–2019) and during the 2007–2009 Great Recession.

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[7]Note that each term in these formulas is summed over all provinces (l) and industries (k), so by construction, the effects are aggregate: they represent the total impact across the entire economy, rather than at a specific province or industry

4.1 Country-level Labour Market Concentration

4.1.1 Trends in Labour Market Concentration

Figure 1 presents the concentration trends. Panel (a) shows that national concentration (NC) remained relatively stable in the pre-recession period, exhibited a modest increase during the Great Recession, and declined steadily from 2009 onward. Panel (b) shows that aggregate local concentration (ALC) declined gradually from 2001 to 2019, but experienced a sharp interruption during the Great Recession: ALC spiked by 14% between 2007 and 2009 before resuming its downward trajectory, reaching its lowest level in 2019. These trends highlight a key distinction: while national markets experienced only mild fluctuations during the recession, local markets reacted more sharply with a pronounced temporary spike in concentration before converging to lower levels.

4.1.2 Counterfactual Analysis

In order to better understand why NC and ALC have evolved differently, we construct counterfactual trends (Figure 2) based on the components described in Equations 2 and 3. For this analysis, we successively hold every element of the HHI formula—fixed at their 2001 values, except for one, which is allowed to change over time as observed in the data. By repeating this exercise for each component in turn, we can isolate the individual impact of each factor on the evolution of NC and ALC.

Long term Trend 2001-2019

NC Counterfactual Analysis Panel (a) of Figure 2 displays the NC counterfactual trends. When only industry concentration (HHI_k) varies over time, we isolate the "within-industry effect," which shows a clear decline after 2009 continuing steadily through 2019. Notably, this within-industry counterfactual closely tracks the actual national concentration trend.

In contrast, when only industrial composition (share$_k$) changes, the counterfactual displays a mild upward trend beginning around 2012. This comparison indicates that greater competition among firms within industries was the main force reducing concentration, while the growing importance of inherently concentrated industries partially offset this decline.

ALC counterfactual Analysis   In the case of ALC (Panel (b) of Figure 2), we decompose the trend using three key components.

First, when only local-industry concentration HHI_{k_l} varies over time, we isolate the "within-local-industries effect," which shows a pronounced decline indicating that firms became more competitive within local industries.

Second, changes in local-industrial composition (share_{kl}) exhibits a steady upward shift, showing that increases in the relative weight of more concentrated industries tended to raise overall local concentration.

Third, when only local composition (share_l) changes, the trend stays almost flat, indicating that differences between provinces had little effect on concentration trends.

Overall, ALC declined mainly because firms in the same local industries faced more competition, but this effect was partially offset by the growing significance of more concentrated industries, while cross-province payroll distribution changes had minimal impact.

Great Recession 2007-2009

NC Counterfactual Analysis   Panel (a) of Figure 2 reveals that the increase in NC during the Great Recession was not driven by firms becoming more dominant within their industries. When only industry concentration (HHI_k) varies, national HHI remains roughly flat in 2007–2008. In contrast, when only industrial composition (share_k) changes, HHI jumps sharply, closely matching the actual trend.

ALC Counterfactual Analysis   Panel (b) shows that when only local-industry concentration (HHI_{k_l}) varies, ALC actually declines during 2007–2008. Instead, when only local-industrial composition (share_{k_l}) changes, the counterfactual closely matches the sharp increase in actual ALC.

Both concentration spikes during the Great Recession resulted from sectoral reallocation rather than firms gaining market power within their sectors. The recession shifted employment and wages toward inherently concentrated industries, driving the observed increases in NC and ALC.

Table 4 summarizes these patterns. However, how much comes from the economy shifting toward certain industries versus firms within those industries becoming more concentrated?

Figure 1: Trends in Industrial concentration 2001-2019

(a) National Concentration (NC)

(b) Aggregate Local Concentration (ALC)
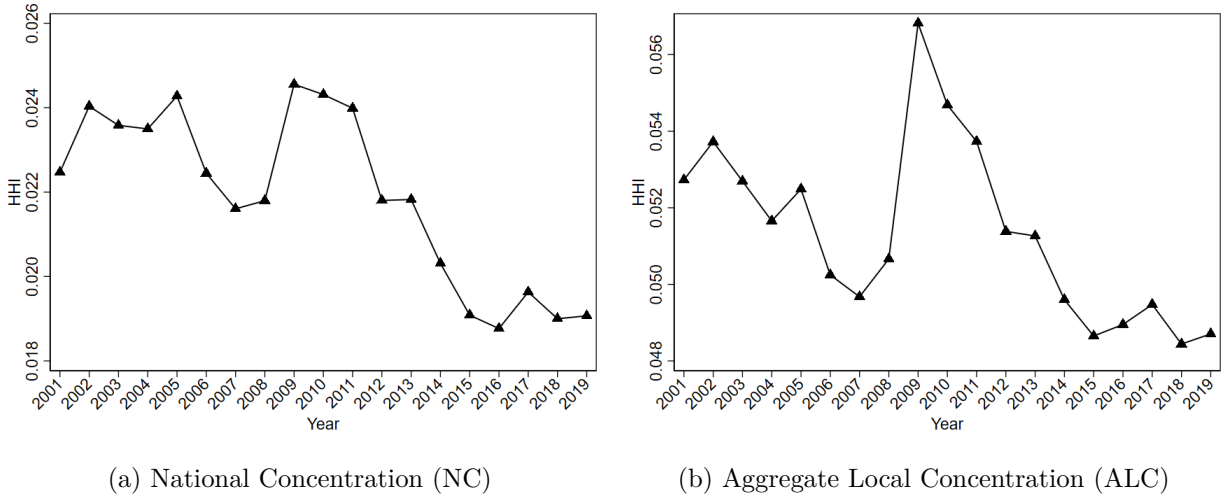
Notes: Panel (a) shows national concentration (NC), which measures the average industry concentration treating the entire country as a unified labour market for each industry. Panel (b) shows aggregate local concentration (ALC), which measures the average local industry concentration, treating each province as a separate labour market for each industry.

Source: Authors' calculations using BEAM microdata, 2001–2019.

Figure 2: Counterfactual trends in Industrial Concentration

(a) National Concentration (NC)

(b) Aggregate Local Concentration (ALC)
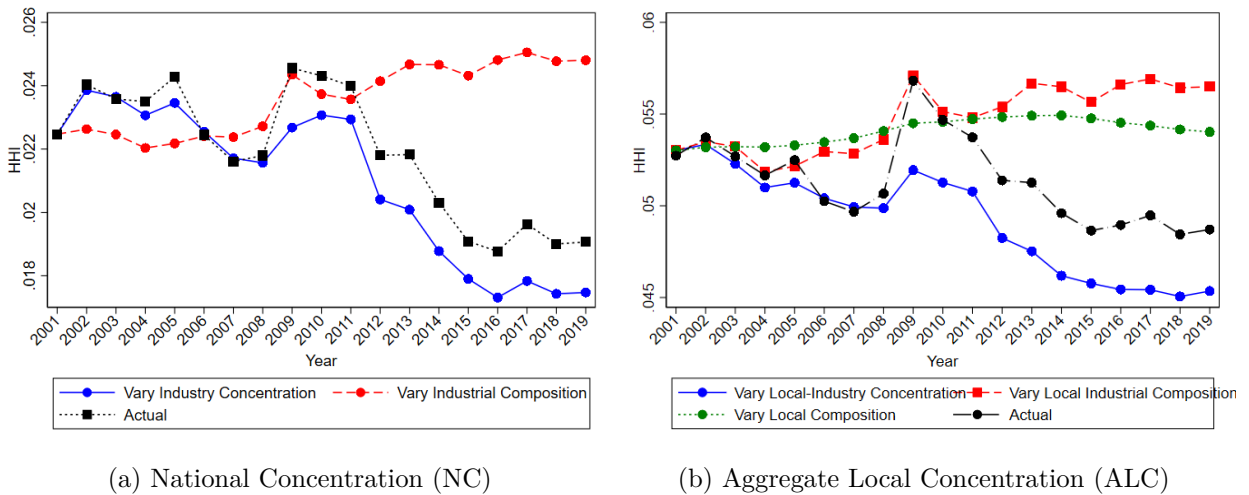
Notes: This figure presents a counterfactual analysis of the wage-bill Herfindahl Index (HHI) from 2001 to 2019, showing scenarios where specific components are held constant at their initial levels in 2001, allowing only one component to vary.

Source: Authors' calculations using BEAM microdata, 2001–2019.

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Table 3: Drivers of Labour Market Concentration Trends During Different Periods

| Component | Long-Term Trend (2001-2019) | | | Great Recession (2007-2009) | | |
| | National | Local | | National | Local | |
	Effect	Effect	Magnitude	Effect	Effect	Magnitude
Within-industry concentration	↓	↓	Strong	↓	→	Negligible
Industry composition (within provinces)	↑	↑	Moderate	↑	↑	Strong
Geographic distribution of payroll	−	→	Negligible	−	↑	Moderate
Aggregate Effect	↓	↓	Moderate	↑	↑	Strong

Notes: This table summarizes the main drivers of labour market concentration over the long-term period (2001–2019) and during the Great Recession (2007–2009). Arrows indicate the direction of each component's contribution to concentration: downward (↓) reduces concentration, upward (↑) increases it, and horizontal (→) means little or no effect. The term "industry composition" refers to changes in the weight of each industry within provinces, while "geographic distribution" captures the relative importance of each province in total national payroll.

4.2 Decomposing Change in Aggregate Local Concentration

This section presents the main empirical findings by quantifying the drivers of ALC using the decomposition framework in Section 3.2.

4.2.1 Long-Term Trend 2001–2019: Decomposition Results

Over the 2001–2019 period, Canada's labour market became less concentrated overall, with the ALC declining by approximately 0.08 HHI points (Table 5, Panel A). This decline was driven predominantly by within-province changes in concentration (-0.09 points), slightly larger in magnitude than the total change, implying that opposing forces outside provinces' internal dynamics partially offset this decline.

The decomposition of the within-province effect (Table 5, Panel A) reveals the underlying forces at play. Declining concentration *within industries* was the biggest factor, contributing roughly -0.15 HHI points. This means many industries became more competitive internally. However, this drop was partially offset by the *between-industry* effect, which added roughly 0.07 points to HHI. From 2001 to 2019, the economy tilted towards industries that are more concentrated, pushing concentration upward. A small industry covariance term (-0.01 points) captures interaction effects but is quantitatively minor.

Thus, the overall trend reflects substantial declines in concentration within industries, partially

offset by changes in the industrial composition of wage payments, resulting in a moderate net decline in labour market concentration.

Table 4: Drivers of Labour Market Concentration Trends (2001–2019)

| Component | Long-Term Trend (2001–2019) | | Interpretation |
	Local Effect	Magnitude	
Within-industry	↓	−0.15	Increasing competition among firms in the same industry, reflecting market dynamism with less dominance by few large employers.
Between Industry (Industry composition)	↑	+0.07	Positive shift toward more concentrated industries, reflecting reallocation of employment and wages toward sectors with fewer dominant employers.
Industry covariance effect	→	−0.01	Wage-bill gains occurred in industries where concentration was falling, while industries with rising concentration tended to lose employment and wage shares—moderating the overall concentration trend.
Within Province Effect	↓	−0.09	Net reduction in overall market concentration, primarily driven by increased within-industry competition, despite offsetting effects from industry reallocation.

Notes: This table summarizes the main drivers of local labour market concentration over the entire period of analysis (2001-2019). Arrows indicate the direction of contribution to concentration for each component: downward (↓) reduces concentration, upward (↑) increases it, and horizontal (→) implies little or no effect. Magnitude values represent the quantitative contribution to the Herfindahl-Hirschman Index (HHI), rounded to two decimal.

Industry-Level Contributions

Breaking down the within-province HHI change by industry (Table 5, Panel B) shows that a few key sectors drove most of the long-run concentration trends.

The public sector (Public Administration, NAICS 91) made by far the largest contribution, with concentration falling markedly (0.117 points within-industry), accounting for roughly 54% of the overall within-province decline. Restricting to continuing firms reveals a similar within-industry decline (Table 9), and the negative net entry (Table 8) indicates that deconcentration was driven by incumbent firms rather than entry dynamics. The negative covariance (Table 5) further confirms that smaller firms gained market share relative to larger incumbents, explaining the decline in concentration in the public sector.
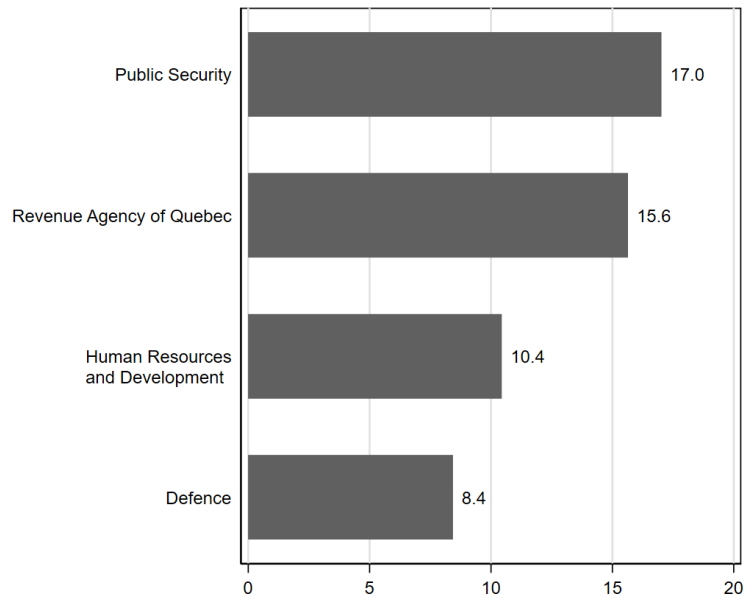
Figure 3: Distribution of Post Reductions under the Harper Government After 2012

Notes: Selected federal departments. Total reductions amount to 19,234 posts across all departments. More than 50% of these reductions were concentrated among the most concentrated employers, illustrating that the largest incumbents deconcentrated in favor of smaller entities.

Source: Authors' calculations based on data provided by Statistics Canada.

https://www.canada.ca/fr/nouvelles/archive/2012/11/gouvernement-harper-annonce-elimination-10-980-postes-sein-secteur-public-cours-derniers-six-mois.html

"We are in the process of reducing the size of government while minimizing the impact on employees," said Minister Clement. The Harper government decided to reduce the size of the federal public service through attrition, negotiated position elimination, and reduced hiring. Given that the federal subsector comprises the largest employers in the public sector, Figure 3 shows that large federal employers account for more than 50 percent of this restructuring. This explains the finding of decreasing concentration among larger incumbents in favor of smaller firms in public administration.

Several private industries also contributed substantially. Information and Cultural Industry saw a notable reduction (approximately -0.022 points, 23% of the decline), meaning the wage-bill in media and telecommunications spread among more firms by 2019. The Utilities sector

experienced a meaningful drop (around 17%), despite being traditionally concentrated[8], suggesting firm dynamics led to a more balanced wage-bill distribution. Health care and social assistance accounted for about 10% of the decrease, reflecting new entry— 35% of net entry during the period (Table 8)— provincial policies have relied on private capacity to alleviate pressure on the public system, leading to growth of private clinics [9]. This additional entry fosters increased competition, providing lower-skilled workers, such as nurses, with more options and thereby contributing to a broader wage-bill distribution among multiple firms in 2019 compared to 2001.

While most industries became less concentrated, Finance and Insurance moved against the trend, with rising concentration erasing approximately 9% of the within-province decline. Canada's financial labour markets became more dominated by a handful of large banks and insurers, concentrating the sector's wage-bill among fewer firms.

Figure 4: Trends in Concentration in Canadian Banking: Big Six Bank Assets 2001-2014
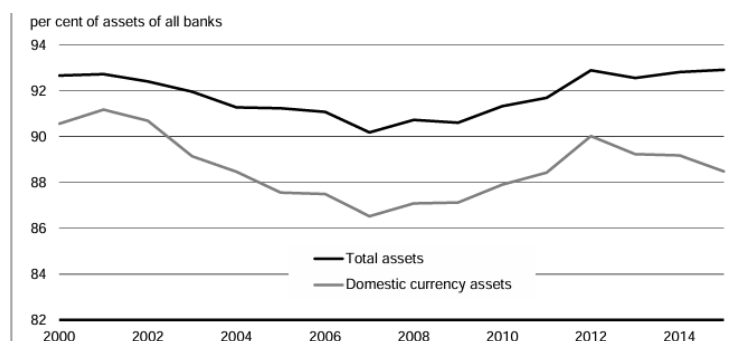
Notes: Canada's banking sector is highly concentrated, with the six largest banks (Bank of Montreal, Bank of Nova Scotia, Canadian Imperial Bank of Commerce (CIBC), National Bank, Royal Bank of Canada(RBC), and Toronto-Dominion Bank (TD)) holding the vast majority of market share. As of 2013, these "Big Six" institutions were recognized as systemically important by the Office of the Superintendent of Financial Institutions, and their combined share of banking assets has grown from about 90% in 2007 to over 93% after the financial crisis.

Source: Department of Finance Canada calculations; Office of the Superintendent of Financial Institutions.

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[8]Utilities are widely recognized as highly concentrated sectors due to natural monopoly features and high entry barriers. IBISWorld Canada, Utilities Sector reports concentration ratios above 50% in major utility segments /www.ibisworld.com/canada/sector-profiles/sectors.

[9]Several provinces now permit dual practice, enabling physicians to bill privately even if they work in the public system. Amendments to provincial legislation have also expanded private-sector capacity; see `https://pmc.ncbi.nlm.nih.gov/articles/PMC3091914/`.

Table 5: Decomposition of Labour Market Concentration Change Over the Long Run (2001–2019)

Panel A: Overall Decomposition

Total HHI Growth	Within-Province Effect Share	Decomposition of Within-Province Effect		
		Within-Industry	Between-Industry	Covariance
-0.076	-0.092 (119.6%)	-0.146 (160.2%)	0.067 (-73.5%)	-0.013 (14.0%)

Panel B: Industry Contributions to Within-Province Effect

Industry (NAICS)	Contribution to Within-Province Effect				Share in Within (%)
	Within-Industry	Between-Industry	Covariance	Total	Share
Agriculture, forestry & fishing (11)	0.001	-0.000	0.000	0.001	-1.3
Mining & oil extraction (21)	-0.003	-0.001	-0.002	0.001	-0.8
Utilities (22)	-0.007	-0.001	0.000	-0.016	17.3
Construction (23)	-0.003	0.001	0.000	-0.002	1.8
Manufacturing (31)	0.005	-0.009	0.000	-0.005	5.3
Wholesale trade (41)	0.002	-0.000	0.000	0.002	-1.6
Retail trade (44)	-0.001	-0.000	0.000	-0.002	1.9
Transportation & warehousing (48)	-0.009	0.000	0.000	-0.008	8.9
Information & cultural (51)	-0.013	-0.014	0.005	-0.022	23.1
Finance & insurance (52)	0.001	0.006	0.000	0.008	-8.7
Real estate (53)	0.000	0.000	-0.000	0.000	-0.4
Professional services (54)	-0.000	0.001	0.000	0.001	-0.9
Management (55)	0.004	-0.002	-0.001	0.001	-1.1
Administrative services (56)	-0.001	0.001	0.000	0.000	0.0
Educational services (61)	0.006	0.001	-0.000	0.007	-7.0
Health care (62)	-0.012	-0.007	0.010	-0.009	10.1
Arts & entertainment (71)	-0.001	0.000	0.000	-0.001	0.8
Accommodation & food (72)	-0.000	-0.000	-0.000	-0.000	-0.2
Other services (81)	0.001	0.000	0.000	0.001	-1.2
Public administration (91)	-0.117	0.093	-0.025	-0.050	54.0
Within-province total	–	–	–	**-0.092**	**100.0**

Notes: Panel A reports the total change in the HHI (0–1 scale, to match the figures) and its decomposition into within-province, between-industry, and covariance components. Panel B details each industry's contribution to the within-province effect. The final row confirms that industry-level totals match the overall within-province effect. All values are rounded to three decimal places.

4.2.2 The Great Recession 2007–2009: Decomposition Results

The Great Recession disrupted the gradual decline in ALC with a sharp but temporary spike. Between 2007 and 2009, aggregate local concentration increased significantly by about 14% (Table 7, Panel A), with 89 % of the 0.14 total HHI growth driven by internal changes at the provincial level.

Decomposing the within-province increase further reveals two main drivers. The between-industry component was the largest contributor, accounting for about 0.09 of the HHI increase (roughly 68% of the within-province effect), indicating that economic activity shifted toward certain industries within provinces. The within-industry component added about 0.04 points to HHI (around 32%), reflecting increased concentration among employers within local industries them-

selves. The covariance term is negligible, suggesting limited interaction between these two forces.

The results show that both compositional changes across industries, and changes in firm dominance within industries, played a role during this period. A detailed exploration of which sectors and firms contributed most to these changes follows in the next section.

Table 6: Drivers of Labour Market Concentration During the Great Recession (2007–2009)

Component	Crisis Period (2007–2009)		Interpretation
	Local Effect	Magnitude	
Within-industry concentration	↑	+0.04	Rising dominance of large firms within industries, either due to firm exit, consolidation, or the expansion of incumbents relative to smaller competitors.
Industry composition (within provinces)	↑	+0.087	Reallocation of employment and wage-bill toward structurally more concentrated sectors (e.g., public administration, utilities), amplifying local concentration.
Industry Covariance effect	→	+0.0007	Minimal correlation between industry growth and changes in concentration; suggests a weak interaction between sectoral expansion and HHI evolution.
Aggregate Within Province Effect	↑	+0.128	Most of the rise in labour market concentration occurred within provinces, driven by both within-industry consolidation and reallocation toward more concentrated sectors.

Notes: This table summarizes the decomposition of labour market concentration during the Great Recession (2007–2009). The arrows indicate each component's contribution: upward (↑) increases concentration, and horizontal (→) implies minimal effect. Magnitudes correspond to the contribution to the Herfindahl-Hirschman Index (HHI).

4.2.3 Industry-Level Contributions

As shown in Panel B of Table 7, the within-province increase in local labour market concentration is driven by reallocation toward inherently high-concentration industries (between-industry effect) and increased concentration within sectors themselves (within-industry effect).

Public Administration remains the largest contributor of the total within-province increase. This primarily reflects a large positive between-industry effect, as a greater share of the wage-bill moved into this already highly concentrated sector. Additionally, within-industry concentration rose, indicating that the largest public-sector employers further solidified their local dominance. This combination of a large between-industry effect, and a notable within-industry increase made

Public Administration the driver of rising concentration in this period.

Information and Cultural Industries, and Finance and Insurance each contributed approximately 1–2% of the within-province rise through within-industry concentration increases, as top firms captured greater market share despite these industries' overall economic shares declining slightly.

Some public-facing service sectors had slight positive contributions. Educational Services showed modest within-industry concentration increases partly offset by a declining wage-bill share. Health Care and Social Assistance exhibited minimal internal consolidation (slightly negative within-industry component), though its labour market share grew as employment and wages in health services held up while other sectors shrank.

A few industries offset the rise, notably Mining and Oil Gas Extraction's, and Administrative and Support Services.

In summary, the sharp increase in ALC from 2007 to 2009 was driven disproportionately by shifts toward highly concentrated sectors—especially Public Administration—reinforced by within-industry concentration gains in Utilities, Transportation, and Finance, where dominant firms grew more dominant. We explain further how the exit of fragile firms in favor of more stable firms drives these findings in the next section.

5   Mechanisms

This section examines the mechanisms underlying changes in labour market concentration. I first identify the sources of concentration change at the firm level: entry, exit, and incumbent growth. I then analyze the public sector's role in shaping the competitive structure of the Canadian labour market.

5.1   The Role of Entry, Exit, and Survivorships

This section examines how firm entry, exit, and the behaviour of surviving firms jointly shaped the evolution of ALC. By comparing changes in concentration among all firms with those observed for survivors alone, we are able to identify the extent to which aggregate trends reflect incumbent dynamics versus the direct effects of firm turnover.

Table 7: Decomposition of Labour Market Concentration Change During the Great Recession (2007–2009)

Panel A: Overall Decomposition				
Total HHI Growth	Within-Province Effect Share	Decomposition of Within-Province Effect		
		Within-Industry	Between-Industry	Covariance
0.144	0.128 (88.9%)	0.040 (31.5%)	0.087 (67.9%)	0.001 (0.6%)

Panel B: Industry Contributions to Within-Province Effect					
Industry (NAICS)	Contribution to Within-Province Effect				Share in Within (%)
	Within-Industry	Between-Industry	Covariance	Total	Share
Agriculture, forestry & fishing (11)	0.000	-0.000	-0.000	0.000	0.1
Mining & oil extraction (21)	-0.001	-0.003	0.001	-0.004	-3.2
Utilities (22)	0.004	0.007	-0.001	0.010	7.7
Construction (23)	0.001	0.000	0.000	0.001	0.7
Manufacturing (31)	0.004	-0.003	0.000	0.002	1.4
Wholesale trade (41)	-0.000	-0.000	0.000	-0.001	-0.5
Retail trade (44)	0.000	0.000	0.000	0.001	0.5
Transportation & warehousing (48)	0.006	-0.001	-0.000	0.004	3.4
Information & cultural (51)	0.007	-0.004	-0.000	0.002	1.9
Finance & insurance (52)	0.005	-0.003	-0.000	0.002	1.6
Real estate (53)	0.000	-0.000	0.000	0.000	0.0
Professional services (54)	0.003	0.000	0.000	0.004	2.8
Management (55)	0.001	-0.000	0.000	0.001	1.1
Administrative services (56)	-0.002	-0.000	0.000	-0.002	-1.5
Educational services (61)	0.004	-0.001	-0.002	0.002	1.3
Health care (62)	-0.001	0.002	0.001	0.002	1.4
Arts & entertainment (71)	0.000	0.000	0.000	0.001	0.6
Accommodation & food (72)	-0.000	0.000	0.000	-0.000	-0.2
Other services (81)	0.001	0.000	0.000	0.001	0.8
Public administration (91)	0.009	0.093	0.001	0.102	79.9
Within-province total	–	–	–	**0.128**	**100.0**

Notes: Panel A reports the total change in the HHI (0–1 scale) and its decomposition into within-province, between-industry, and covariance components for the 2007–2009 period. Panel B details each industry's contribution to the within-province effect. The final row confirms that industry-level totals match the overall within-province effect. All values are rounded to three decimal places.

5.1.1 Long-Term Trends (2001–2019)

Analysis of continuing firms reveals that incumbents alone generated an HHI decline of −0.14, nearly double the observed overall decline of −0.076. The difference–0.06 HHI points–represented 46% of the deconcentration which was offset by firm entry and exit, indicating that turnover worked against the deconcentration driven by survivors.

Table 8 provides insight into how entry and exit affected concentration across sectors. The decline in concentration in Utilities and Information industries reflects intensified competition, supported by positive net entry rates (10.89% and 16.64%, respectively).

In contrast, Manufacturing experienced a negative net entry rate of −16.80%. Despite this

Table 8: Firm Dynamics by Industry Over the Long-Term (2001-2019

Industry (NAICS)	Entry (%)	Exit (%)	Net (%)
Agriculture, forestry & fishing (11)	62.16	75.34	-13.18
Mining & oil extraction (21)	74.37	56.05	18.32
Utilities (22)	66.04	55.15	10.89
Construction (23)	76.82	41.69	35.13
Manufacturing (31)	56.73	73.53	-16.80
Wholesale trade (41)	57.62	68.26	-10.64
Retail trade (44)	69.07	70.87	-1.80
Transportation & warehousing (48)	84.84	35.22	49.62
Information & cultural (51)	72.83	56.19	16.64
Finance & insurance (52)	71.43	55.73	15.70
Real estate (53)	73.54	42.80	30.74
Professional services (54)	81.86	46.11	35.75
Management (55)	44.22	195.98	-151.76
Administrative services (56)	74.69	54.57	20.12
Educational services (61)	70.39	39.24	31.15
Health care (62)	77.00	42.10	34.90
Arts & entertainment (71)	62.56	50.53	12.03
Accommodation & food (72)	80.13	66.76	13.37
Other services (81)	62.01	68.31	-6.30
Public administration (91)	16.73	21.54	-4.81

Notes: This table presents firm entry, exit, and net entry rates (entry minus exit) by industry. All values are percentages of the number of firms within each industry over the period 2001–2019.

contraction, the sector still became more competitive, suggesting that deconcentration resulted from increased competitive balance among surviving firms. Indeed, surviving manufacturing firms contributed approximately -0.014 HHI points to overall deconcentration, reflecting internal competitive gains (Table 9).

Conversely, Finance and Insurance contributed positively to local concentration, slightly offsetting the overall decline. Although this sector exhibited a positive net entry rate of 15.70%, labour market concentration rose, suggesting that incumbents captured most wage-bill gains. Continuing firms accounted for 0.017 HHI points of concentration increase in this sector.

In sum, the decline in concentration from 2001 to 2019 resulted from two balancing forces: a strong push toward lower concentration from incumbent firms becoming more competitive, and an opposing push from firm turnover that partially offset but did not reverse this trend.

Table 9: Decomposition of Labour Market Concentration Change – Survivors (2001–2019)

Panel A: Overall Decomposition

Total HHI Growth	Within-Province Effect Share	Decomposition of Within-Province Effect		
		Within-Industry	Between-Industry	Covariance
-0.140	-0.159	-0.203	0.033	0.011

Panel B: Industry Contributions to Within-Province Effect

Industry (NAICS)	Contribution to Within-Province Effect			Total	Share (%)
	Within-Industry	Between-Industry	Covariance		
Agriculture, forestry & fishing (11)	0.000	-0.000	0.000	0.000	-0.23
Mining & oil extraction (21)	0.002	0.009	0.001	0.011	-7.18
Utilities (22)	-0.004	-0.013	0.000	-0.017	10.59
Construction (23)	-0.007	-0.001	0.000	-0.008	4.87
Manufacturing (31)	-0.006	-0.017	0.009	-0.014	8.57
Wholesale trade (41)	0.003	0.000	0.000	0.004	-2.38
Retail trade (44)	-0.006	-0.003	0.000	-0.009	5.57
Transportation & warehousing (48)	-0.010	-0.001	0.000	-0.010	6.58
Information & cultural (51)	-0.030	-0.027	0.012	-0.045	28.13
Finance & insurance (52)	-0.014	0.029	0.001	0.017	-10.47
Real estate (53)	0.001	-0.000	0.000	0.001	-0.38
Professional services (54)	0.002	0.000	0.001	0.003	-1.74
Management (55)	0.005	-0.002	0.001	0.003	-1.96
Administrative services (56)	-0.001	0.000	0.000	-0.001	0.54
Educational services (61)	0.002	0.000	0.000	0.002	-1.44
Health care (62)	-0.016	-0.007	0.012	-0.011	6.80
Arts & entertainment (71)	0.001	0.001	0.000	0.001	-0.91
Accommodation & food (72)	-0.000	0.000	0.000	-0.000	0.25
Other services (81)	0.003	0.000	0.000	0.004	-2.46
Public administration (91)	-0.125	0.076	0.009	-0.040	25.00
Within-province total	–	–	–	**-0.159**	**100.00**

Notes: This table decomposes the change in labour market concentration (HHI) across industries for the full sample from 2001–2019. The last column reports the percentage contribution of each industry to the within-province total, calculated as the industry's total divided by the within-province total and multiplied by 100. All values are rounded to three decimal places.

5.1.2 The Great Recession (2007–2009)

During the Great Recession, concentration dynamics diverged from long-term patterns. Surviving firms—those present in both 2007 and 2009—experienced a smaller HHI increase of 0.12 points compared to 0.15 points for the full sample. This 0.03-point difference, representing 22% of total concentration change, indicates that firm turnover accounted for approximately one-fifth of the observed increase (Table 7).

Geographic patterns also shifted: within-province contributions comprised 81% of concentration change among survivors versus 89% in the full sample. This suggests that between-province concentration changes were driven by firm entry and exit dynamics (Table 11).

Sector-level analysis reveals substantial heterogeneity. Public Administration exemplifies incumbent-driven concentration: survivors contributed 0.08 points (78% of within-province change) despite

minimal net entry (0.70%), indicating that government employers reinforced their dominance irrespective of firm turnover.

In contrast, industries experiencing substantial positive net entry saw new entrants dilute concentration gains. Professional Services and Transportation and Warehousing recorded net entry rates of 4.24% and 3.66%, respectively, introducing competition that moderated incumbent-driven concentration increases. Conversely, substantial firm exits amplified concentration: Manufacturing (−4.16%), Wholesale Trade (−3.66%), and Retail Trade (−1.64%) experienced net exits that reinforced market concentration by reducing the number of potential competitors.

In sum, the Great Recession's impact on ALC reflects the interplay of incumbent behavior and firm entry-exit dynamics. While Public Administration demonstrates dominant incumbent effects, other sectors highlight the importance of firm turnover in shaping concentration outcomes. The relative importance of these mechanisms varies substantially by industry, with net entries serving as a counterbalancing force to incumbent-driven concentration.

Table 10: Firm Dynamics by Industry During Economic Contraction (2007–2009)

Industry (NAICS)	Entry (%)	Exit (%)	Net (%)
Agriculture, forestry & fishing (11)	18.82	20.48	-1.66
Mining & oil extraction (21)	24.09	24.38	-0.29
Utilities (22)	18.07	19.34	-1.27
Construction (23)	23.90	20.31	3.59
Manufacturing (31)	13.70	17.86	-4.16
Wholesale trade (41)	14.54	18.20	-3.66
Retail trade (44)	18.19	21.09	-2.90
Transportation & warehousing (48)	26.04	22.38	3.66
Information & cultural (51)	24.50	23.06	1.44
Finance & insurance (52)	20.31	21.82	-1.51
Real estate (53)	24.24	21.42	2.82
Professional services (54)	24.55	20.21	4.34
Management (55)	22.26	23.97	-1.71
Administrative services (56)	22.74	21.74	1.00
Educational services (61)	20.01	18.67	1.34
Health care (62)	19.33	14.03	5.30
Arts & entertainment (71)	18.31	18.66	-0.35
Accommodation & food (72)	23.70	24.59	-0.89
Other services (81)	22.52	22.83	-0.31
Public administration (91)	6.44	5.74	0.70

Notes: This table presents firm entry, exit, and net entry rates (entry minus exit) by industry for the contraction period 2007–2009. All values are percentages of the number of firms within each industry.

Table 11: Decomposition of Labour Market Concentration Change – Survivors Only (2007–2009)

Panel A: Aggregate Decomposition					
Total HHI Change	Within-Province Component Share	Breakdown of Within-Province Component			
		Within-Industry	Between-Industry	Covariance	
0.118	0.096 (81.1%)	0.022 (18.8%)	0.042 (35.5%)	0.032 (27.1%)	

Panel B: Industry-Level Contributions to Within-Province Component					
Industry (NAICS)	Contribution to Within-Province Component			Total	Share (%)
	Within-Industry	Between-Industry	Covariance		
Agriculture, forestry & fishing (11)	0.000	-0.000	0.000	0.000	0.27
Mining & oil extraction (21)	-0.002	-0.002	0.002	-0.001	-1.38
Utilities (22)	0.005	0.007	-0.001	0.011	11.00
Construction (23)	0.001	0.000	0.000	0.001	1.49
Manufacturing (31)	0.007	-0.006	0.002	0.003	3.47
Wholesale trade (41)	-0.001	-0.000	0.000	-0.001	-0.92
Retail trade (44)	-0.002	-0.000	0.000	-0.002	-2.02
Transportation & warehousing (48)	0.011	-0.000	0.000	0.011	11.55
Information & cultural (51)	-0.004	-0.004	0.001	-0.007	-7.54
Finance & insurance (52)	0.002	-0.001	0.000	0.001	1.22
Real estate (53)	0.000	-0.000	0.000	0.000	0.46
Professional services (54)	0.007	0.002	0.002	0.011	11.54
Management (55)	-0.001	-0.000	0.000	-0.002	-1.69
Administrative services (56)	-0.004	-0.001	0.001	-0.005	-4.93
Educational services (61)	0.005	-0.002	-0.002	0.002	1.66
Health care (62)	-0.007	0.000	0.003	-0.004	-4.27
Arts & entertainment (71)	0.000	0.000	0.000	0.000	0.15
Accommodation & food (72)	-0.001	0.000	-0.000	-0.001	-0.76
Other services (81)	0.002	0.000	0.000	0.003	2.60
Public administration (91)	0.002	0.049	0.024	0.075	78.08
Total (Within-Province)	–	–	–	**0.096**	**100.00**

Notes: This table presents the decomposition of the change in labour market concentration (HHI) during the Great Recession (2007–2009) for surviving firms only. Panel A shows the overall decomposition, and Panel B details each industry's contribution to the within-province component. All values are rounded to three decimal places. The final column reports the percentage share of each industry's contribution relative to the total within-province effect.

5.2 The Canadian Public Sector's Role in Labour Market Competition

This section examines the public sector's distinctive role in labour market competition through three dimensions: (i) exceptional concentration within Public Administration; (ii) its contribution to aggregate concentration trends, especially during downturns; and (iii) whether public-sector employment constrains monopsony power in concentrated private industries by serving as an outside option for workers. Together, these analyses reveal the public sector as a disciplinary force limiting private-sector employer concentration.

5.3 Public Sector Concentration

At the industry level, Public Administration stands out as the most concentrated labour market by a wide margin. Figure 5 compares the average HHI of each industry over the full period.

Panel (a) includes all industries and shows that the typical degree of employer concentration in government exceeds that in any private industry. This finding aligns with intuition: the public sector consists of a small number of very large employers, whereas most private industries are composed of a larger number of firms competing for workers (Figure 6). To facilitate comparison, Panel (b) reproduces the average concentration levels excluding Public Administration. We observe considerable variation: some industries exhibit relatively high HHIs (for example, those with only a few dominant firms nationwide such as Finance and Utilities), while others – typically labour-intensive and decentralized industries like Retail Trade or Accommodation Food Services – show very low values. However, no private industry exhibits a level of concentration comparable to that observed in Public Administration. This exceptional position, indicates that Public Administration constitutes a distinct segment of the labour market in terms of employer characteristics.

Figure 5: Average Market Concentration by Industry (2001–2019)

(a) Including Public Administration   (b) Excluding Public Administration
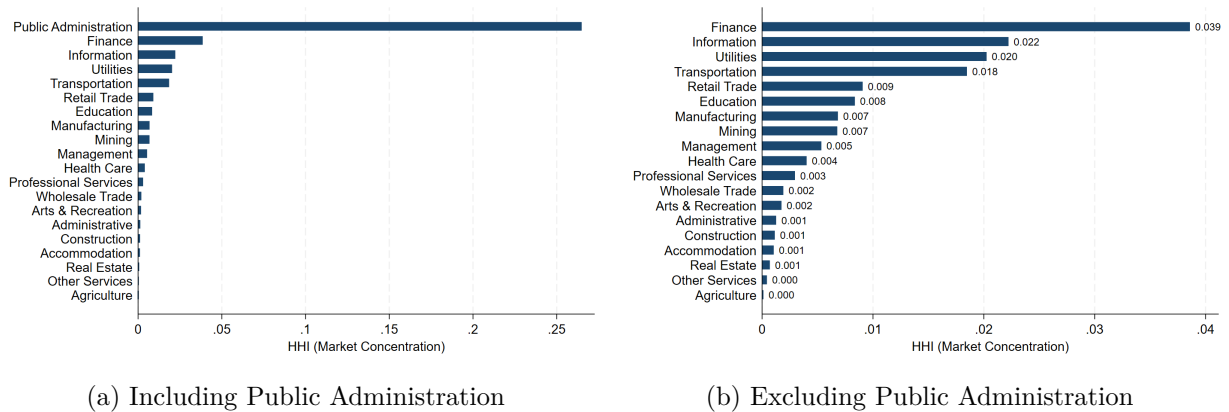
Notes: These figures show average industry-level market concentration over the 2001–2019 period, computed using the Herfindahl-Hirschman Index (HHI). For each industry k, we compute $HHI_k = \sum_t share_{kt} \cdot HHI_{kt}$, where $share_{kt}$ denotes the proportion of total wage-bill attributable to industry k in year t. Panel (a) includes Public Administration, which exhibits the highest average concentration across all industries. Panel (b) excludes NAICS 91 to allow better comparison across private-sector industries. .

Source: Authors' calculations using Business Employee Analytical Microdata (BEAM).

We examine the distinctive characteristics of public-sector employers, focusing on how these features contribute to the high concentration levels documented.

Figure 6 compares the firm size distribution in the public sector to that of the four most concentrated private industries (Finance, Information, Utilities, and Transportation). The difference is pronounced: the public-sector employer size distribution is markedly skewed toward larger firms, reflecting both a higher average firm size and a notably lower frequency of small firms compared to the private sector industries.

In Public Administration, it is common to have very large organizations (Figure 6). By comparison, even capital-intensive private industries such as utilities or finance display a pronounced "tail" of smaller firms coexisting alongside the dominant large employers.

These structural differences help explain two key patterns. First, the much higher HHI observed in public administration: with few employers of substantial size, the index is mechanically elevated. Second, the relatively few tiny firms indicate that firm entry and turnover are minimal. The nature of "competition" within the public sector thus differs fundamentally from that in the private economy. Nevertheless, the public sector can still function as an important outlet for workers in highly concentrated private industries.

5.4 Implications for National Concentration Trend

Figure 7 plots the evolution of national concentration over time, contrasting the scenario including the public sector versus excluding it. When Public Administration is included (Panel (a)), the national concentration index is markedly higher, revealing the pronounced contribution of the public sector to overall labour market concentration. In fact, the government sector's weight in the economy, combined with its internal concentration, pushes up the aggregate HHI substantially.

We also observe that, period (2007-2009) where the share of public employment expanded affect the national HHI trajectory. By contrast, when we consider only the private sector (Panel (b)), the level of concentration is lower and follows a different temporal pattern. This indicates that the public sector not only raises the overall level of measured concentration, but that its stability also moderates fluctuations in the index over the business cycle.

The evidence shows that the public sector has the highest employer concentration of any industry and substantially elevates aggregate concentration. Its employment stability also plays a central role in moderating concentration dynamics over the business cycle.

Figure 6: Firm Size Distribution: Public Administration vs. Selected Private Sectors

(a) Public Administration vs. Finance

(b) Public Administration vs. Information

(c) Public Administration vs. Utilities

(d) Public Administration vs. Transportation
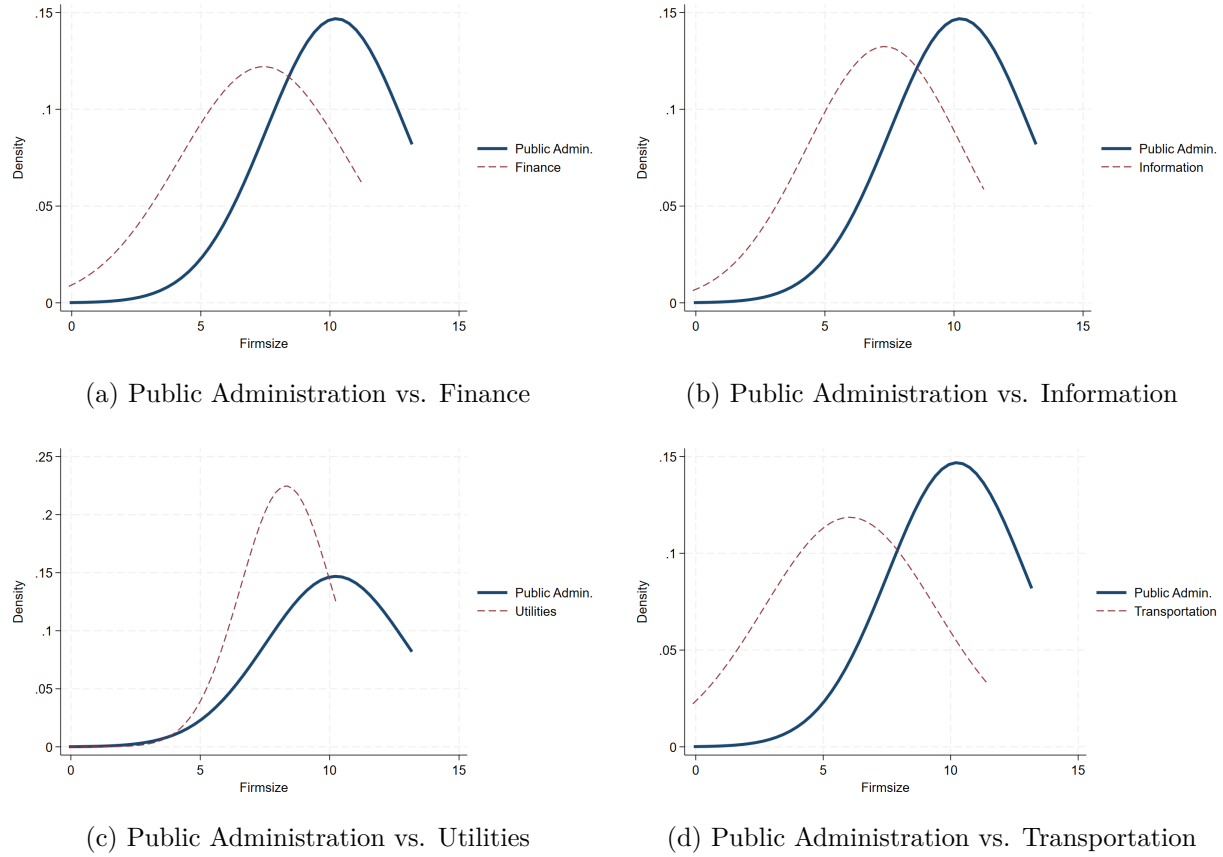
Notes: These density plots compare firm size distributions between Public Administration (solid blue line) and selected private sector industries (dashed red line). The x-axis represents firm size (measured by the number of employees), while the y-axis indicates the density of firms at each size level. Public Administration exhibits a distinct distribution pattern, typically featuring larger average firm sizes and lower density at smaller sizes relative to private sectors. This reflects the structural characteristics of public institutions, which tend to operate at larger scales. These differences underscore the contrasting organizational patterns across sectors and help explain the observed variation in labour market concentration.

Source: Authors' calculations using Business Employee Analytical Microdata (BEAM).

5.5 Labour Market Concentration and the Public Sector's Mobility

We now assess the extent to which industry-level concentration is shaped by the worker mobility flows between the public sector and private-sector industries. Figure 8 directly explores the relationship between labour market concentration and worker mobility, with a focus on the public

Figure 7: Labour Market Concentration Trends

(a) Including Public Sector

(b) Excluding Public Sector

Notes: These figures plot the national Herfindahl-Hirschman Index (HHI_t), computed as $\sum_{k \in \Omega} share_{kt} \cdot HHI_{kt}$ across two-digit NAICS industries over the 2001–2019 period. For each industry k, $share_{kt}$ denotes the proportion of total wage-bill attributable to industry k in year t. Panel (a) includes all sectors, highlighting the pronounced contribution of the public sector to the national labour market concentration. Panel (b) restricts attention to the private sector, where the overall level of concentration is lower and exhibits different temporal patterns.

Source: Authors' calculations using Business Employee Analytical Microdata (BEAM).

sector's influence. Each panel in Figure 8 is a scatter plot of industry–year observations, with measures of concentration on one axis and measures of worker flows on the other.
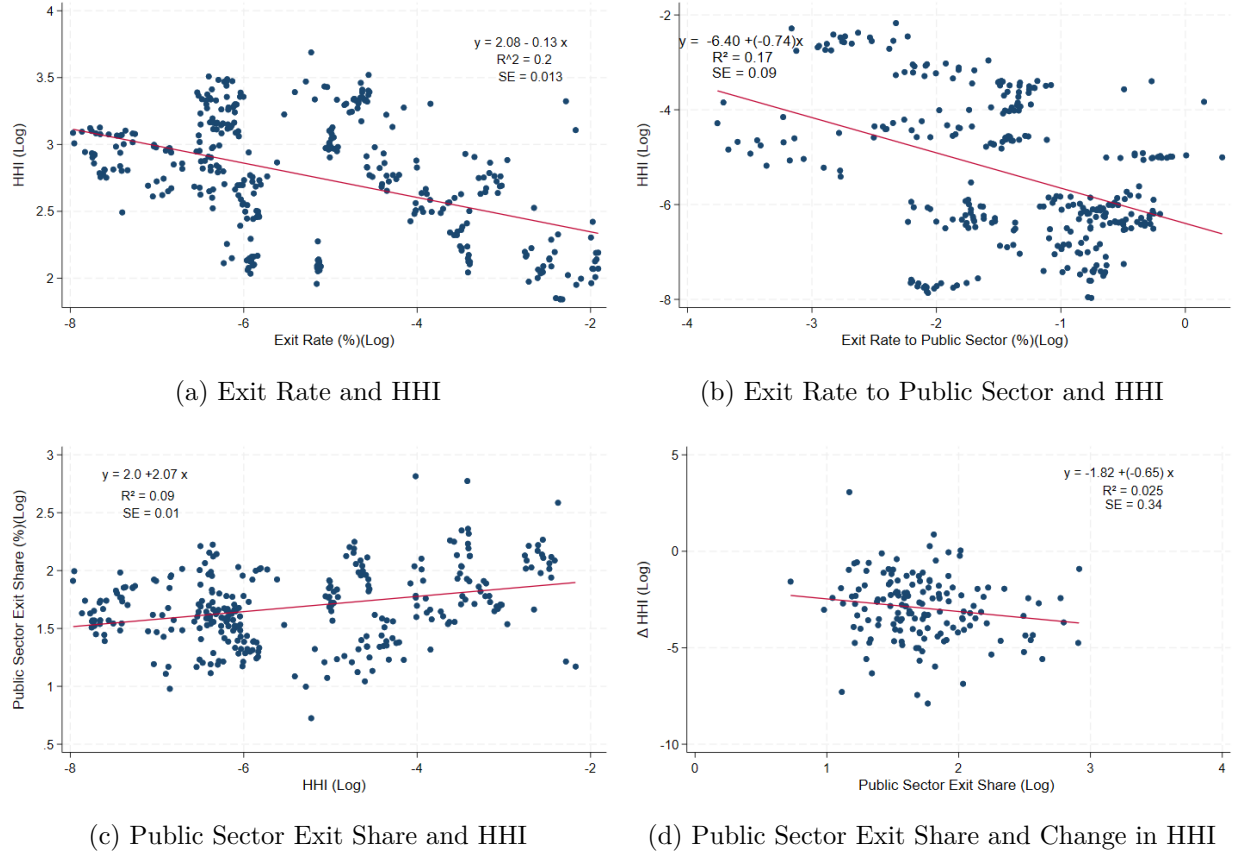
Panel (a) shows a negative slope (-0.13) between the overall worker exit rate (i.e., total separations, all destinations) and the HHI. This pattern indicates that industries with higher exit rates tend to exhibit decreasing concentration. Such a relationship is consistent with the idea that when workers have and exercise outside options (higher turnover), employer dominance is harder to sustain, resulting in more competitive, low-concentration environments.

Panel (b) refines this analysis by looking specifically at the exit rate to the public sector. Interestingly, the negative relationship with concentration becomes even stronger: industries with higher rates of workers leaving for public-sector jobs tend to exhibit markedly lower HHI. This suggests that public-sector opportunities may serve as a particularly important outside option for workers, and their availability can limit employers' monopsony power in concentrated industries.

Panels (c) and (d) provide further insight into how public-sector mobility interacts with concentration. Panel (c) plots the share of each industry's exiting workers who go to the public sector against the industry's HHI. There is a clear positive correlation: workers in more concentrated industries are more likely to transition into public-sector employment. One interpretation is that in industries where employers have significant market power (high HHI), job opportunities in the public sector become a more attractive for employees. In industries with high employer concentration, monopsony models incorporating non-wage amenities (Felix (2021)) predict that firms may offer both wages and non-wage attributes below competitive levels. Public-sector jobs, offering greater job stability and more generous benefits, attract a large share of workers from such industries, thereby shifting a greater fraction of separations toward public employment. Finally, Panel (d) in Figure 8 examines whether these public-sector exits actually impact concentration dynamics. It plots the share of exits to the public sector against the subsequent change in the industry's HHI (e.g., how concentration evolves after those exits). Industries that send a greater fraction of workers to the public sector tend to experience larger subsequent declines in concentration (lower HHI in following years). This temporal relationship suggests a causal story: when more workers leave a concentrated industry for public jobs, it can erode the dominance of incumbent employers, either by shrinking those firms' workforce or by pressuring firms to improve conditions to retain talent. In effect, public-sector mobility can mitigate employer concentration over time.

Taken together, access to public-sector employment opportunities can mitigate monopsony power in highly concentrated industries by enabling workers to "vote with their feet" and reallocate to alternative employers.

Figure 8: Labour Market Concentration and Exit to Public Sector

(a) Exit Rate and HHI

(b) Exit Rate to Public Sector and HHI

(c) Public Sector Exit Share and HHI

(d) Public Sector Exit Share and Change in HHI

Notes: This figure presents scatter plots analyzing the association between labour market concentration and worker exit dynamics, with a focus on public sector mobility. All associations are based on annual industry-level data for 2001–2019.

Source: Authors' calculations using Business Employee Analytical Microdata (BEAM).

6   Counterfactual Fiscal Policy

This section develops a quantitative macroeconomic framework to study how government spending can reduce wage markdowns and their implications for income distribution.

6.1   Model

We build on the Two-Agent New Keynesian (TANK) model of Cantore and Freund (2021), featuring two representative household types: workers, who rely exclusively on labour income, and capital-

ists, who receive profits. We extend their setup by introducing monopsony power in the labour market, allowing firms' wage markdowns to vary endogenously over the business cycle. Government spending shocks are modelled as exogenous disturbances to public demand, financed through lump-sum taxes, and are used to evaluate how fiscal policy interacts with employer market power to shape wages, profits, and consumption inequality.

6.1.1 Households

The economy is populated by a unit mass of households, consisting of a share λ of workers and a share $1 - \lambda$ of capitalists. Workers consume C_t^W, supply N_t^W units of labor, and hold real bonds B_t^W. Capitalists consume C_t^C, hold B_t^C, and receive aggregate profits D_t. Workers' preferences are given by

$$E_0 \sum_{t=0}^{\infty} \beta^t \left[\log C_t^W - \frac{(N_t^W)^{1+\varphi}}{1 + \varphi} \right], \tag{7}$$

while capitalists have preferences $E_0 \sum_{t=0}^{\infty} \beta^t \log C_t^C$. The real wage is W_t, the gross nominal rate is R_t, the inflation rate is Π_t, and the ex ante real rate satisfies $(1 + r_t) = R_t / E_t \Pi_{t+1}$.

The budget constraints (in real terms) are given by

$$C_t^C + B_t^C = \frac{D_t}{1 - \lambda} - T_t + \frac{1 + r_t}{\beta} B_{t-1}^C, \tag{8}$$

$$C_t^W + B_t^W = W_t N_t^W + \frac{1 + r_t}{\beta} B_{t-1}^W - T_t, \tag{9}$$

where T_t denotes real lump-sum taxes. The first-order conditions yield the following:

$$\frac{1}{C_t^C} = \beta(1 + r_t) E_t \left[\frac{1}{C_{t+1}^C} \right], \tag{10}$$

$$\frac{1}{C_t^W} = \beta(1 + r_t) E_t \left[\frac{1}{C_{t+1}^W} \right] - \psi^W B_t^W, \tag{11}$$

$$\varphi(N_t^W)^\varphi = \frac{W_t}{C_t^W}, \tag{12}$$

where $\psi^W \geq 0$ captures a portfolio adjustment cost for workers. Aggregate consumption and hours are $C_t = \lambda C_t^W + (1 - \lambda)C_t^C$ and $N_t = N_t^W$.

6.1.2 Firms and Monopsony Power

Following Cantore et al. (2024), we extend the standard New Keynesian framework to incorporate monopsony power in the labor market. Intermediate firms produce according to $Y_t = N_t$ and operate under monopolistic competition in the goods market, with elasticity of substitution $\eta_{\text{goods}} > 1$. Price setting is subject to Rotemberg adjustment costs with parameter $\xi > 0$.

On the labor side, firms have monopsony power. The real wage paid W_t is a fraction of the marginal product of labor MPL_t. We define the *wage markdown* $\mu_t \in (0, 1]$ by $W_t = \mu_t \text{MPL}_t$. [10]

In the neighborhood of the steady state, we denote μ_{ss} the long-run markdown and η_{ss} the elasticity of labor supply to the firm, imposing the monopsony relationship

$$\mu_{ss} = \frac{\eta_{ss}}{1 + \eta_{ss}}. \tag{13}$$

The elasticity of labor supply to the firm η_t^{lab} is endogenous and varies with wages, hours, and the marginal utility of consumption for workers. We specify linearly $\eta_t^{\text{lab}} = \eta_{ss} + \Gamma(w_t - c_t^W + n_t^W)$, where w_t, c_t^W, n_t^W are log-linear deviations and $\Gamma > 0$ measures the sensitivity. The log-linearized markdown obeys $\mu_t^{\text{mark}} = (1 - \mu_{ss})(\eta_t^{\text{lab}} - \eta_{ss})$, so that an increase in the elasticity makes the markdown less pronounced.

The real marginal cost in log-linear deviation is $mc_t = w_t - \mu_t^{\text{mark}}$. The New Keynesian Phillips curve becomes

$$\pi_t = \beta E_t \pi_{t+1} + \kappa \, mc_t, \qquad \kappa = \frac{\eta_{\text{goods}} - 1}{\xi}. \tag{14}$$

Aggregate profits (in deviation) can be approximated by $d_t = -w_t$, so that an increase in the real wage reduces the profit share.

6.1.3 Government and Monetary Authorities

The government consumes G_t, finances its expenditures through public debt B_t and lump-sum taxes T_t. The budget constraint (linearized) is $b_t = \frac{1}{\beta} b_{t-1} + g_t - t_t$, where b_t, g_t, t_t are log-linear

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[10]See Berger et al. (2022); Bredemeier et al. (2023) for a detailed discussion of the relationship between the markdown and the wage-bill HHI, given by $\mu_t = 1 + \frac{1}{\upsilon} + \left(\frac{1}{\varkappa} - \frac{1}{\upsilon}\right) HHI_t$ with υ is the elasticity of substitution between firms within the sector while $\varkappa$ the elasticity of substitution across sectors.

deviations. Government spending follows an AR(1) process:

$$g_t = \rho g_{t-1} + \varepsilon_t, \tag{15}$$

with $|\rho| < 1$ and ε_t a fiscal shock. The fiscal rule is $t_t = \phi_t t_{t-1} + \phi_b b_{t-1} + \phi_g g_t$. Aggregate bonds are held by workers and capitalists: $b_t = \lambda b_t^W + (1 - \lambda) b_t^C$.

The central bank follows a Taylor rule in nominal terms:

$$R_t = \phi_\pi \pi_t + \varepsilon_t^m, \tag{16}$$

where ε_t^m is a monetary policy shock, possibly zero if one focuses on fiscal shocks. The linearized Fisher relation is $r_t = R_t - E_t \pi_{t+1}$.

6.2 Quantitative Analysis

6.2.1 Calibration

Our calibration draws on Canadian data and sources. Household preferences are set using Bank of Canada's `ToTEM III` model: $\beta = 0.99$ (discount factor) and $\varphi = 1.5$ (labor supply elasticity based on Chetty (2013); Chetty et al. (2011)). Worker share $\lambda = 0.75$ follows the Canadian Labour Force Survey. Production parameters reflect Canadian price dynamics: $\varepsilon_{\text{goods}} = 6.0$ (20% markup) and $\theta = 0.71$ from `ToTEM III`'s estimated average price duration of 3.5 quarters. Monetary policy parameters ($\varphi_\pi = 1.5$, $\varphi_R = 0.85$) are taken directly from `ToTEM III` and Dib (2003, 2006) for Canada. Fiscal policy relies on Bouakez and Rebei (2007) from the *Canadian Journal of Economics*: $\rho_g = 0.85$ (government spending persistence) and $\varphi_b = 0.33$ (debt response). Monopsony parameters—wage markdown $\mu_{\text{ss}} = 0.75$ and firm labor supply elasticity $\eta_{\text{ss}} = 3.0$—are calibrated to match Canadian labor market concentration indices documented in Section 5 and recent empirical estimates (Webber, 2015; Yeh et al., 2022a).

Table 12: Calibration Parameters: Canadian Sources

Parameter	Value	Description	Source
Preferences			
β	0.99	Quarterly discount factor	ToTEM III (BoC 2021): $\beta^l = 0.9940$ savers
φ	1.5	Frisch elasticity inverse	Chetty et al. (2011, 2013): $\varepsilon_F \approx 0.5$–0.7
λ	0.75	Worker share	Canadian LFS: labor income share ≈ 0.65–0.75
Production & Competition			
$\varepsilon_{\mathrm{goods}}$	6.0	Goods elasticity of substitution	Price markup $\sim 20\%$ (Galí 2015)
θ	0.71	Calvo probability (price rigidity)	ToTEM III: avg. price duration ~ 3.5 quarters
Monetary Policy			
φ_π	1.5	Taylor response to inflation	ToTEM III; Dib (2003, 2006) Canada: 1.5–2.0
φ_R	0.85	Policy rate smoothing	ToTEM III: $\Theta_R \approx 0.85$
Fiscal Policy			
ρ_g	0.85	Gov. spending persistence	Bouakez & Rebei (2007),
φ_t	0.0	Tax rule persistence	Taxes adjust immediately
φ_b	0.33	Fiscal response to debt	ToTEM III: debt stabilization ≈ 0.3–0.4
φ_g	0.10	Gov. spending response to cycle	ToTEM III: moderate sensitivity
Monopsony			
μ_{ss}	0.75	Wage markdown (steady state)	Webber (2015): $\eta \approx 1.08 \to \mu \approx 0.52$; consistent with Canadian HHI
η_{ss}	3.0	Firm labor supply elasticity	Derived: $\eta = \frac{\mu}{1-\mu} = \frac{0.75}{0.25} = 3.0$
Γ	0.78	Elasticity sensitivity	Bredemeier & al (2023)
Heterogeneity (TANK)			
ψ^W	0.0742	Portfolio adjustment cost	Cantore & Freund (2021)

6.3 Baseline Results

Figure 9 compares the aggregate response of the economy to a positive government spending shock in the baseline Canadian TANK model (black line) and in the model augmented with monopsony power (red dashed line). In both specifications, the shock raises government spending by 1 percent on impact, which then decays gradually according to the estimated persistence. The macroeconomic transmission is standard: higher public demand stimulates aggregate consumption and hours worked, while inflation rises on impact before returning to its steady state.

Quantitatively, the aggregate responses of output and consumption are very similar across the two models, suggesting that monopsony power does not substantially alter the size of the fiscal multiplier on impact. However, inflation is notably more persistent in the monopsony specification. This reflects the cost-push channel emphasized in the literature: as labour demand expands, the

endogenous wage markdown falls, putting additional upward pressure on marginal costs beyond the standard wage increase.
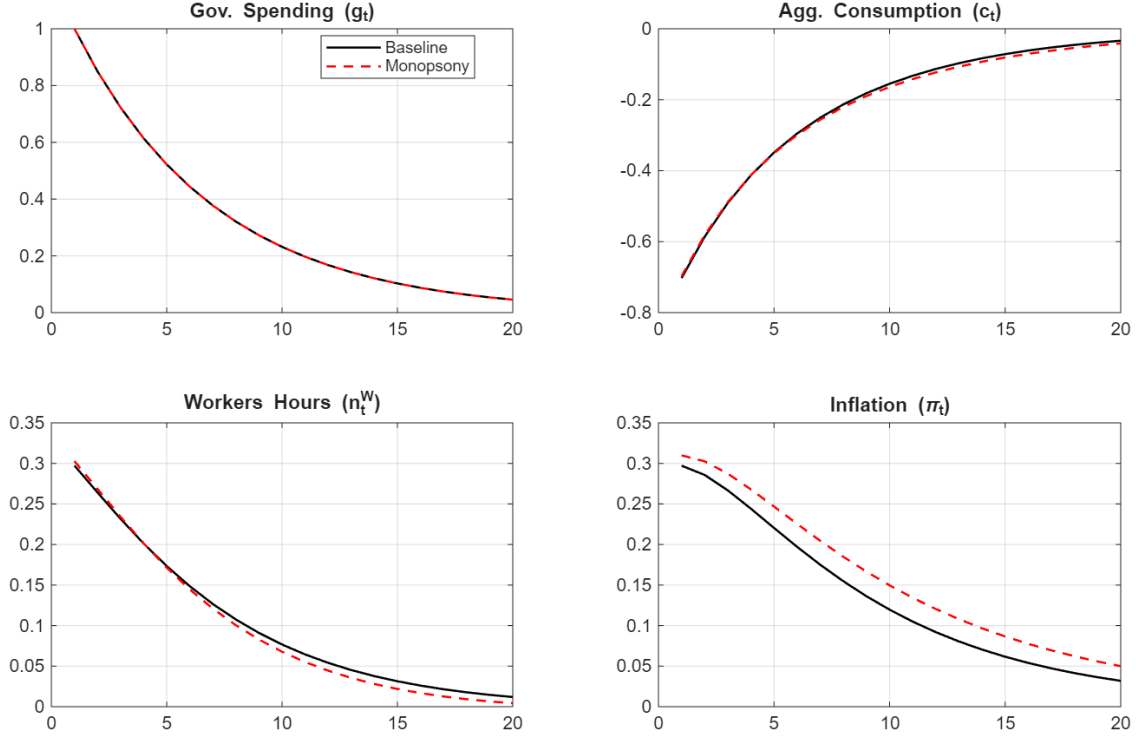

Figure 9: Aggregate responses to a government spending shock. *Note: Black solid lines denote the baseline TANK model; red dashed lines denote the model with monopsony power.*

The key mechanism driving these results is displayed in Figure 10. In the presence of monopsony power, the real wage rises more strongly and remains elevated for longer than in the competitive baseline. Conversely, aggregate profits fall more deeply and recover more slowly. This reallocation is driven by the cyclical behavior of monopsony power: as shown in the bottom panels, the firm-level labour supply elasticity rises on impact, causing the wage markdown μ_t to fall and the real marginal cost to surge. In line with Bredemeier et al. (2023), fiscal expansions thus temporarily weaken firms' market power in the labour market, shifting the distribution of surplus from profits to wages.
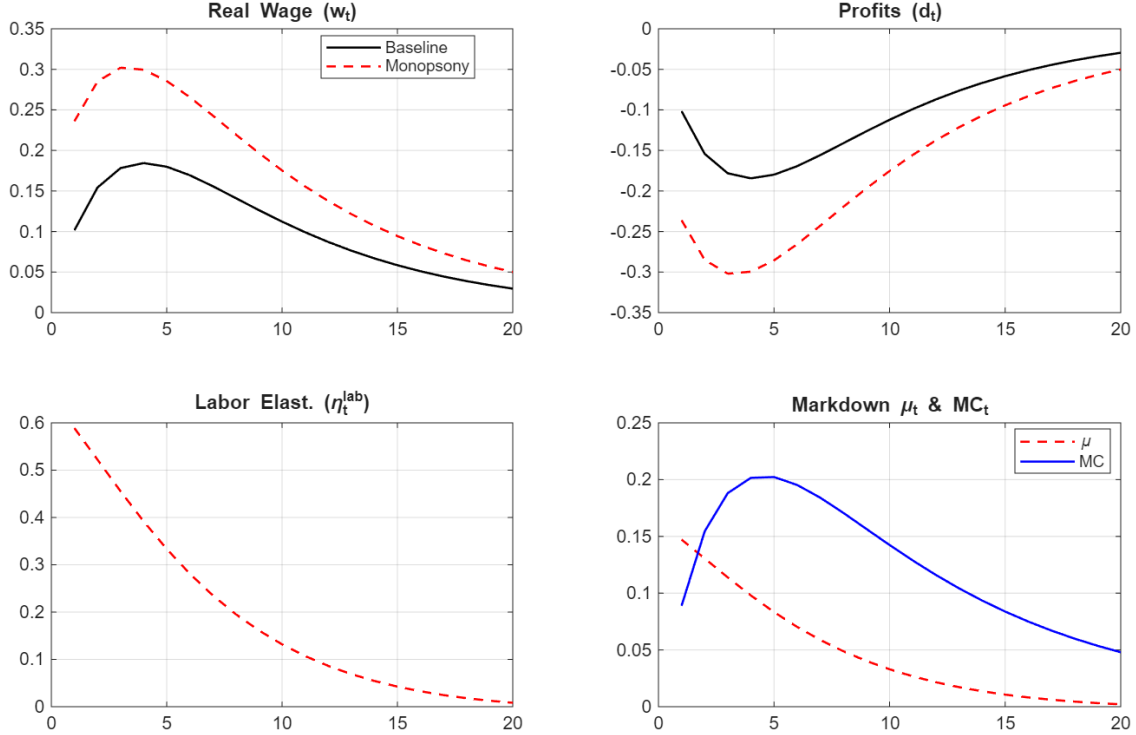
Figure 10: Labour market and monopsony dynamics. *Note: The figure shows the response of real wages, profits, the endogenous labour supply elasticity, and the wage markdown.*

Figure 11a highlights the distributional consequences of this mechanism. While workers' consumption rises in both models, the increase is larger and more persistent under monopsony. Capitalists, whose income depends on profits, see their consumption fall more sharply. As a result, the consumption gap between workers and capitalists—already positive after a spending shock in standard TANK models—widens significantly more when monopsony power is present.

Finally, Figure 11b summarizes the shift in functional income distribution. Our proxy for the labour income share rises in both economies, but the increase is substantially larger and more persistent in the monopsony case. This confirms that fiscal policy, by compressing markdowns during booms, acts as a stronger redistributive tool in economies characterized by labour market power.

Figure 11: Consumption and Income Inequality Dynamics
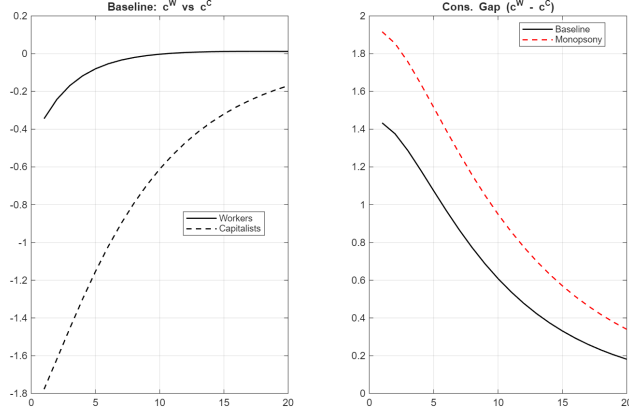
(a) Consumption Inequality (Consumption Gap $c_t^W - c_t^C$)
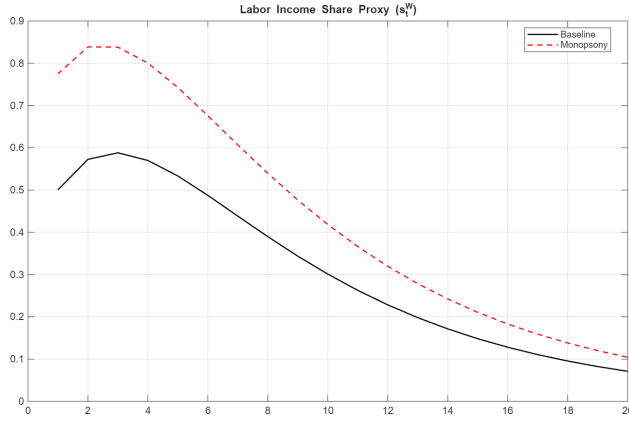
(b) Income Distribution (Labor Income Share Proxy s_t^W)

Notes: The figure displays the distributional effects of a government spending shock in the baseline TANK model (solid black line) versus the monopsony-augmented model (dashed red line). Panel (a) shows the consumption gap between workers and capitalists, defined as $\Delta c_t = c_t^W - c_t^C$. Panel (b) plots the labor income share proxy, defined as $s_t^W = w_t + n_t^W - d_t$ in log-linear deviations. In both cases, the presence of monopsony power amplifies the redistribution from capitalists to workers during the fiscal expansion.

7 Conclusion

Using linked employer–employee administrative data (BEAM) and payroll-based HHI measures, this paper documents the evolution of labour market concentration in Canada from 2001 to 2019. Over the long run, both national and local concentration declined modestly, driven primarily by intensified within-industry competition. However, this decline was partially offset by employment reallocation toward more concentrated sectors, with Public Administration accounting for 54% of the decrease in local concentration.

The Great Recession exposed critical structural vulnerabilities in Canada's local labour market. Despite stable national concentration, local concentration spiked by 14%, with 68% of the increase attributable to sectoral reallocation rather than within-industry changes. As private sector employment contracted sharply, the public sector's wage-bill share expanded. Firm dynamics provide a key explanation: net firm entry increased concentration by 46% over the full period and accounted for 20% of the recession-driven increase relative to incumbent firms.

Our counterfactual fiscal policy analysis, using a macroeconomic model with employer market power, demonstrates that government spending shocks play a crucial role in shaping the distributional effects of recessions. We find that fiscal expansions in the presence of monopsony power amplify the redistribution of income from profits to wages, boosting the labor share and significantly reducing consumption inequality between workers and capitalists.

Appendix

A Sources of Change in Labour Market Concentration

Changes in labour market concentration, measured by the wage-bill HHI, result from three mechanisms[11]: firm exit, firm entry, and incumbent firm growth. These factors influence how wage and employment are distributed across firms within a local market, thereby shaping employer concentration.

A.1 Firm Exit

Firm exit increases labour market concentration when smaller, less dominant firms leave the market. Their exit redistributes their wage share toward larger, remaining incumbents, thereby increasing these incumbents' relative market concentration.

The firm exit rate ($ExitRate_{mt}$) in market m from period $t-1$ to t is calculated as:

$$ExitRate_{mt} = \frac{X_{mt}}{F_{m,t-1}}$$

where X_{mt} is the number of firms exiting between periods $t-1$ and t, and $F_{m,t-1}$ is the total number of firms at the start of the period.

A.1.1 Firm Entry

Firm entry generally reduces labour market concentration by introducing new competitors, diminishing wage-bill shares across existing firms. However, the extent of this reduction depends on the size and wage-bill impact of the firms that are entering the market. The process of entry thus acts as a counterbalance to higher concentration driven by incumbents.

The firm entry rate ($EntryRate_{mt}$) in market m from period $t-1$ to t is:

$$EntryRate_{mt} = \frac{N_{mt}}{F_{mt}}$$

where N_{mt} represents the number of new firms entering during period t, and F_{mt} is the total

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[11]This decomposition follows the tradition of reallocation studies such as Baily, Hulten, and Campbell (1992) and Foster, Haltiwanger, and Krizan (2001).

number of firms at the end of the period.

A.1.2 Incumbent Firm Growth

Growth among incumbent firms affects concentration by altering the distribution of wage-bill shares. If larger incumbents grow faster, their increased market share raises concentration. Conversely, balanced growth among smaller incumbents tends to reduce concentration by equalizing wage-bill shares.

The effect of incumbent growth on the change in market concentration is calculated as:

$$\Delta HHI_{mt}^{incumbent} = \sum_{i \in C}(share_{imt}^2 - share_{im,t-1}^2)$$

where C is the set of continuing incumbent firms.

A.1.3 Aggregate Implications

Firm entry, exit, and incumbent growth initially influence concentration within each local industry. However, these changes also have broader implications at the aggregate level, as captured by Equation 3.

Within local industries, the entry of new firms and the exit of existing ones alter the distribution of wage-bill shares among the remaining firms, thereby changing the industry's concentration level. Significant shifts within these industries can, in turn, change the overall distribution of industries within the local market, leading to reallocation between industries.

At the macro level, substantial differences across local industries affect the distribution of economic activity between provinces. Therefore, significant changes at the local industry level can cascade upwards, reshaping aggregate labour market concentration, by altering both within-industry and between-industry, and ultimately, inter-provincial economic distributions.

B Public-Private Sector Worker Mobility

This subsection analyzes worker mobility patterns between the public and private sectors. We first examine overall worker flow patterns across all industries to establish the broader context of labour market transitions. We then focus specifically on the dynamics of worker movements between

Public Administration and private sector industries, documenting the scale and direction of these flows. Comparing aggregate flow patterns between the public and private sectors provides further insight. Panel (a) of Figure 15 summarizes the average composition of worker flows for the public sector (NAICS 91) versus all other sectors combined. In the public sector, the vast majority of workers either retain their current job or, if they do leave their job, often transition to a different sector (i.e. exit the public sector). There is relatively little employer switching that remains within the public sector itself. In contrast, within the private sector, most job changes occur within the private sector. Private-sector workers who separate from their employer usually find another job that keeps them within the private sector rather than moving to the public sector. As a result, inter-sectoral moves account for only a very small share of private-sector mobility in aggregate. Quantitatively, only about 1% of private-sector workers change to a job in a different sector in the average year, whereas in the public sector around 7% of workers transition to a job outside of public administration annually.

It should be noted, however, that the low average inter-sectoral mobility in the private sector masks considerable heterogeneity across industries. Building on the aggregate evidence of low average cross-sector mobility alongside pronounced heterogeneity across private industries, we now shift to an industry-specific perspective. Specifically, we quantify origin–destination flows between Public Administration (NAICS 91) and each two-digit private-sector industry by computing : (i) industry-specific exit rates from private industries into the public sector and (ii) entry rates from the public sector into private industries.

Figure 17 plots the average annual entry and exit rates [12] for each industry. Overall, the Public Administration workforce is characterized by low turnover. It exhibits one of the lowest entry and exit rates among all industries, indicating a high degree of employment stability (low frequency of hiring and separations). Despite this stability, there is meaningful two-way mobility between Public Administration and certain private-sector industries.

Figures 20 and 21 present matrices of intersectoral job transitions, revealing that public-sector workers do move into a range of private industries, and vice versa. For example, Public Adminis-

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[12]The entry rate is defined as the number of new workers entering an industry in a given year divided by its total workforce, while the exit rate is the number of workers leaving in a given year divided by its total workforce.

tration is a notable origin for entrants into Education, Finance, and Arts & Recreation (Figure 20). Conversely, a significant fraction of workers leaving government employment end up in industries such as Finance, Health Care, and Arts & Recreation (Figure 21).

The interdependence between these specific industries and the public sector is further illustrated. Figures 18 and 19 document the mutual importance between the public sector and six key industries (Health Care, Educational Services, Arts Recreation, Finance, Utilities, Professional Services). Public Administration ranks among the top origins for new hires in these industries and simultaneously ranks among their top destinations for departing workers.

These patterns underscore that, while the public sector is not a large source of labour turnover overall, the mobility between the public sector and certain private industries is non-negligible and reciprocal.

C The Great Recession Divergence : National vs. Aggregate Local Concentration

Figure 7 reveals a striking divergence between national (NC) and aggregate local (ALC) concentration indices during the Great Recession: while NC shows only a moderate, transitory increase, ALC exhibits a sharp spike between 2007 and 2009. This divergence reflects geographic diversification patterns. Figure 12 documents concentration increases across all Canadian provinces, with pronounced spikes in Ontario, Alberta, Nova Scotia, and Prince Edward Island. The sectoral decomposition (Figure 13) shows that Public Administration, Construction, Manufacturing, and Transportation drove local concentration increases through firm exits and consolidation. However, Figure 14 reveals these same industries remain stable nationally, indicating disproportionate provincial weight—particularly Public Administration in smaller regions and provincial capitals. While these industries generate substantial local concentration increases, national aggregation disperses them across geographically distributed federal, provincial employers. Thus, ALC captures overlapping provincial shocks weighted by local importance, producing a sharp spike. This divergence demonstrates that local labour markets responded far more sharply to the Great Recession than national aggregates suggest.

Figure 12: Trends in Local Labour Market Concentration by Province, 2001–2019

Notes: The figure reports the evolution of the Herfindahl–Hirschman Index (HHI) at the provincial level. Provinces such as Ontario, Alberta, and British Columbia experienced sharp increases in concentration during the Great Recession (2008–2009), reflecting localized contractions in employment and firm exits that raised the relative market share of surviving firms. Other provinces, such as Manitoba and Saskatchewan, show more muted dynamics. These heterogeneous shocks explain why the aggregate local concentration (ALC) measure rises more steeply than the national concentration (NC).

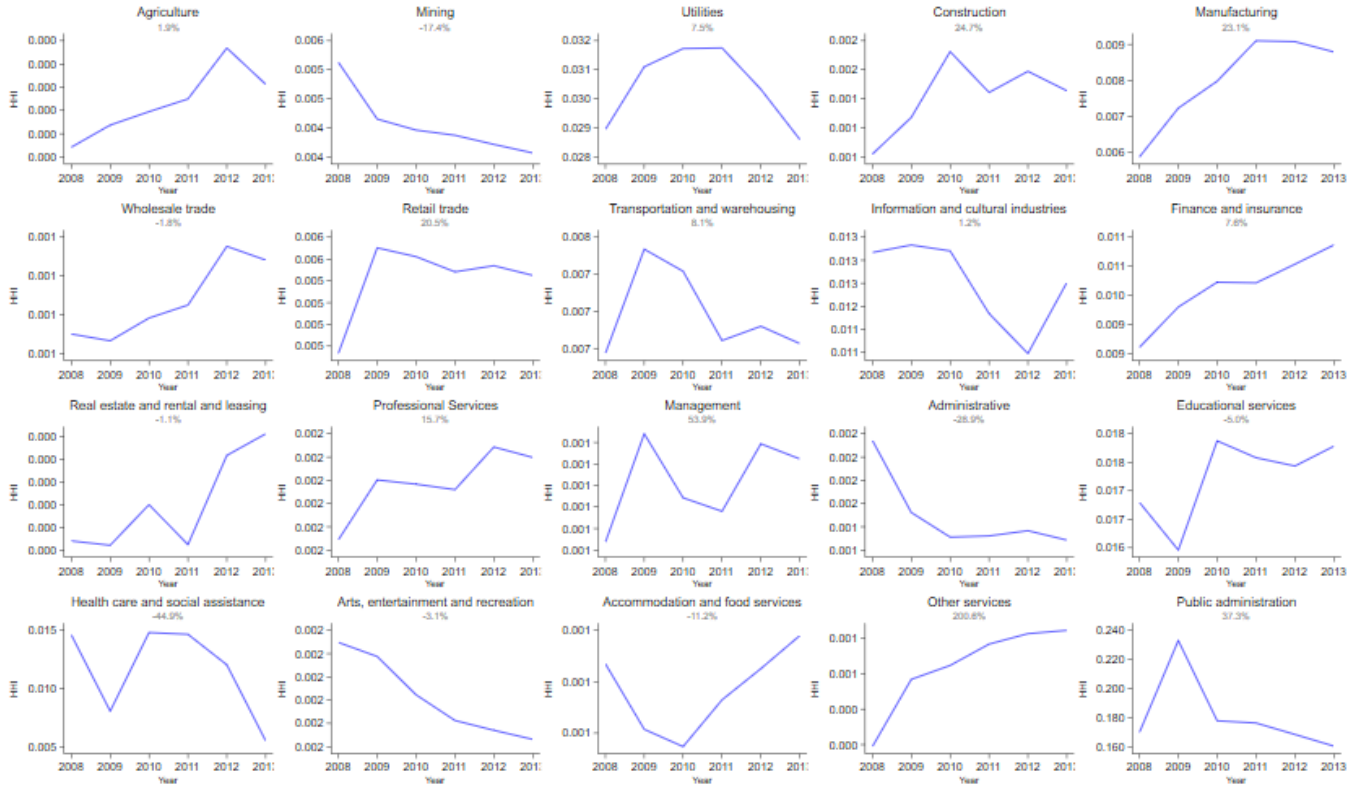**Source:** Authors' calculations using BEAM microdata, 2001–2019.

Figure 13: Industrial Dynamics within ALC by Industry, 2008–2013

Notes: The figure plots Industrial Dynamics within ALC trends across industries during the period surrounding the Great Recession, where $HHI_k^{ALC} = \sum_l share_l \cdot share_{k_l} \cdot HHI_{k_l}$ represents the industry-specific contribution to aggregate local concentration. Cyclically sensitive industries—such as Construction, Manufacturing, and Transportation—display sharp increases in local concentration between 2008 and 2009, reflecting widespread firm exits and employment losses. By contrast, sectors such as Public Administration, Health, and Education remain relatively stable, confirming that the observed ALC spike is not mechanically driven by the public sector but reflects genuine cyclical dynamics in private industries.

Source: Authors' calculations using BEAM microdata, 2008–2013.
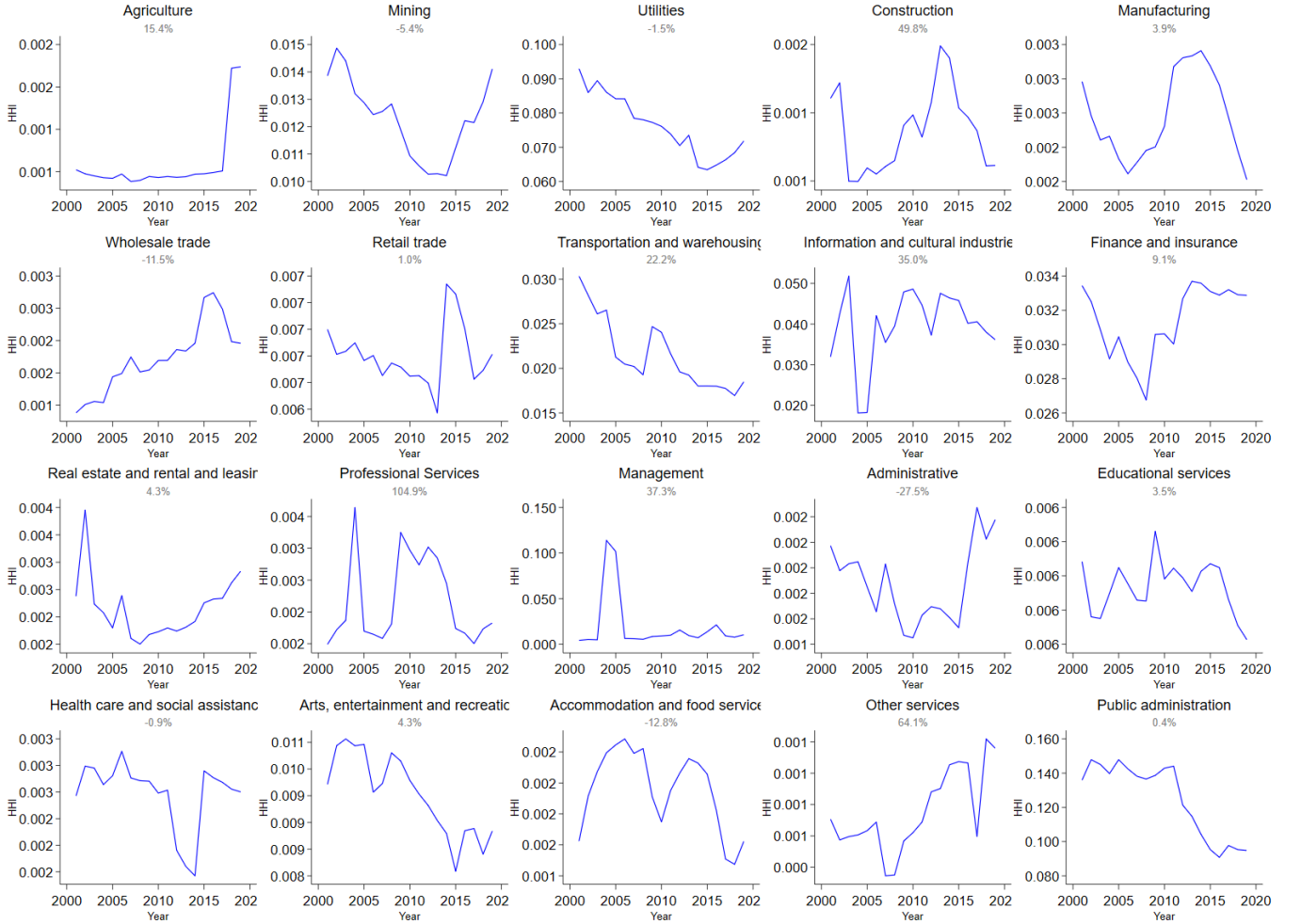
Figure 14: Industrial Dynamics within National Concentration by Industry, 2001–2019

Notes: The figure reports Industrial Dynamics within National Concentration trends for major industries, where each industry's contribution is represented by its sector-specific concentration HHI_k within the aggregate measure $HHI^{NC} = \sum_{k \in \Omega} share_k \cdot HHI_k$ (Equation 2). Several sectors, notably Finance and Insurance and Professional Services, follow the aggregate NC trend closely. Others, such as Construction and Manufacturing, display sharper increases during the Great Recession, while relatively stable industries like Public Administration and Health dampen the aggregate. This highlights how the NC measure reflects a weighted balance of heterogeneous industry-specific trajectories.

Source: Authors' calculations using BEAM microdata, 2001–2019.

D   Tables and Figures

Figure 15: Worker Flow Outcomes: Public and Private Sectors

(a) Worker Flow

(b) Exit Rate (%)
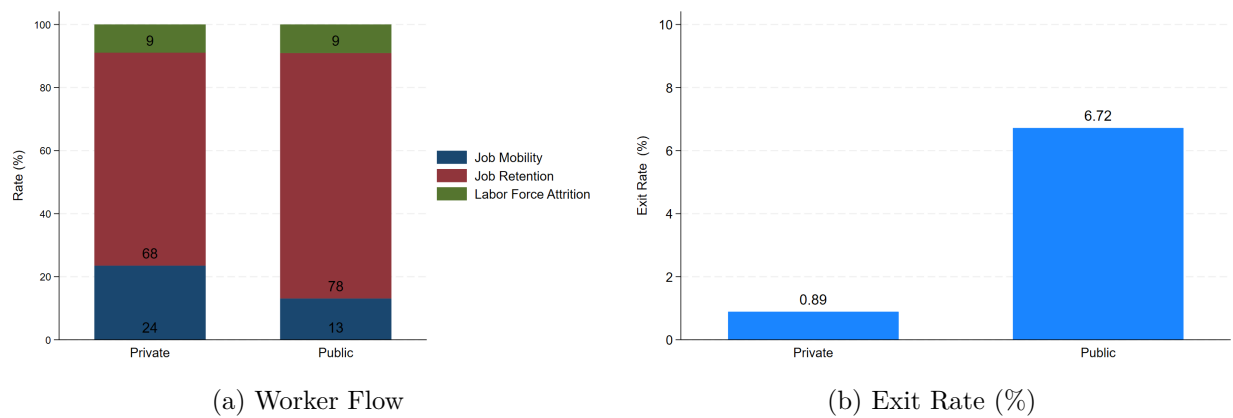
Notes: Panel (a) reports the average composition of worker flow in the public and private sectors, disaggregated by job retention, Job (intra- and inter-sectoral) mobility, and labour force attrition. Panel (b) displays the share of job mobility attributable to inter-sectoral (Exit) transitions. While the inter-sectoral rate is higher in the public sector (6.72%) than in the private sector (0.89%), this masks substantial heterogeneity across private-sector industries. In particular, a two-digit NAICS breakdown reveals notable inter-sectoral flows from certain private subsectors, All values are expressed as annual percentages over the 2001–2019 period.

Source: Authors' calculations using Business Employee Analytical Microdata (BEAM), 2001–2019.
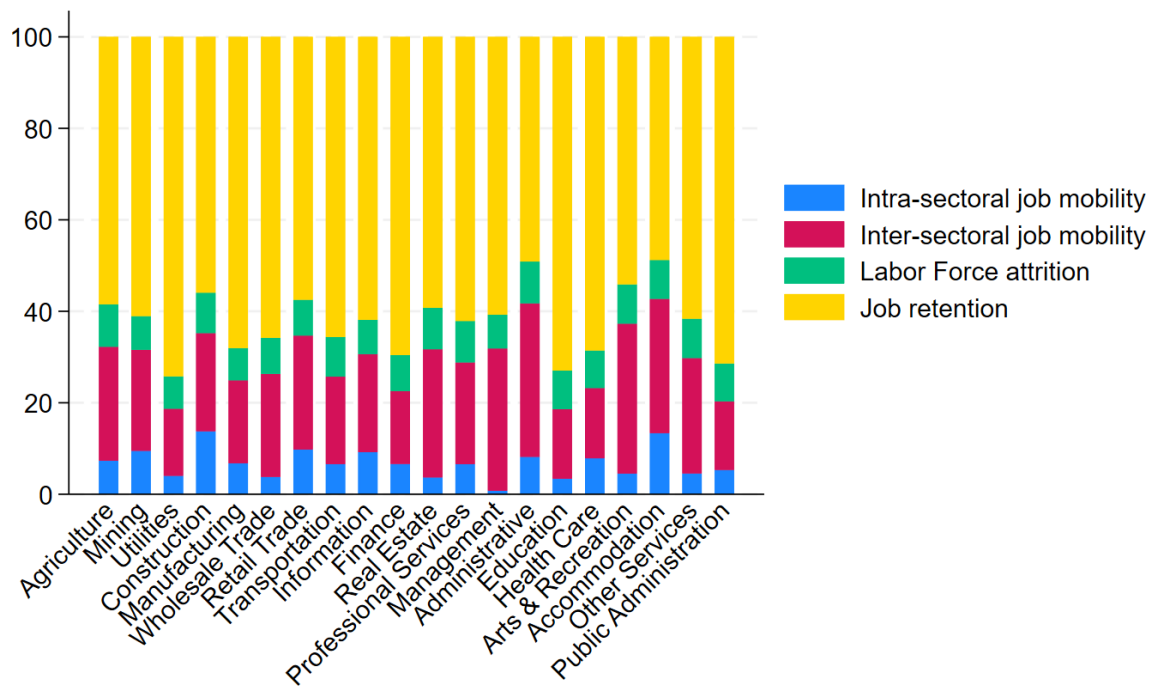
Figure 16: Worker Flows by Industry: Intra-sectoral mobility, Inter-sectoral mobility, labour Force

attrition, and Job retention

Notes: This stacked bar chart displays the average annual distribution of worker flows across four categories: Intra-sectoral mobility (blue), Inter-sectoral mobility (red), labour Force attrition (green), and Job retention (yellow), computed over the period 2001–2019. Each bar corresponds to a two-digit NAICS sector. Employment continuity represents the share of workers remaining in the same job; cross-sector mobility includes transitions to a different industry; within-sector mobility captures job changes within the same sector; and workforce exit refers to workers not observed in the following year.

Source: Authors' calculations using BEAM microdata, 2001–2019.

Figure 17: Average Transition Rate by Sector (2001-2019)
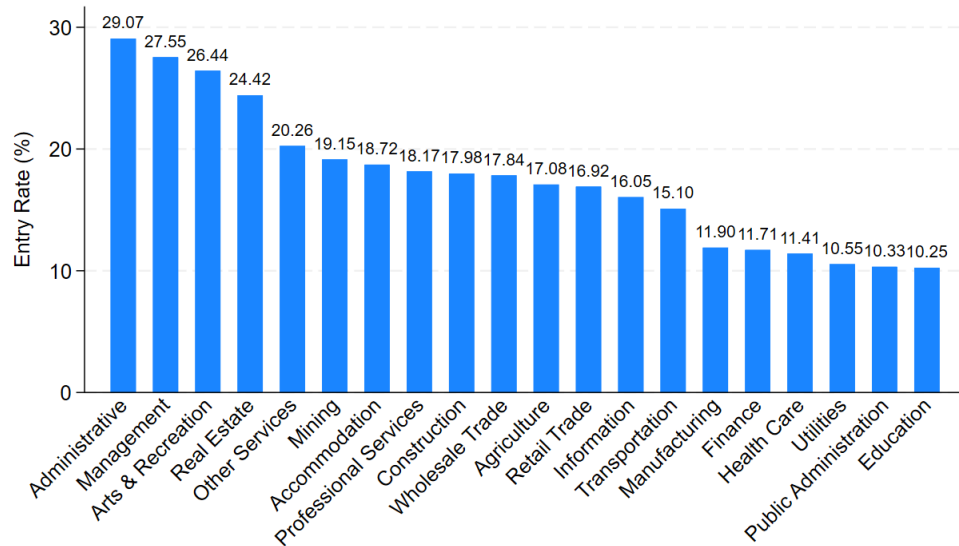
(a) Entry Rate by Industry (2001-2019)
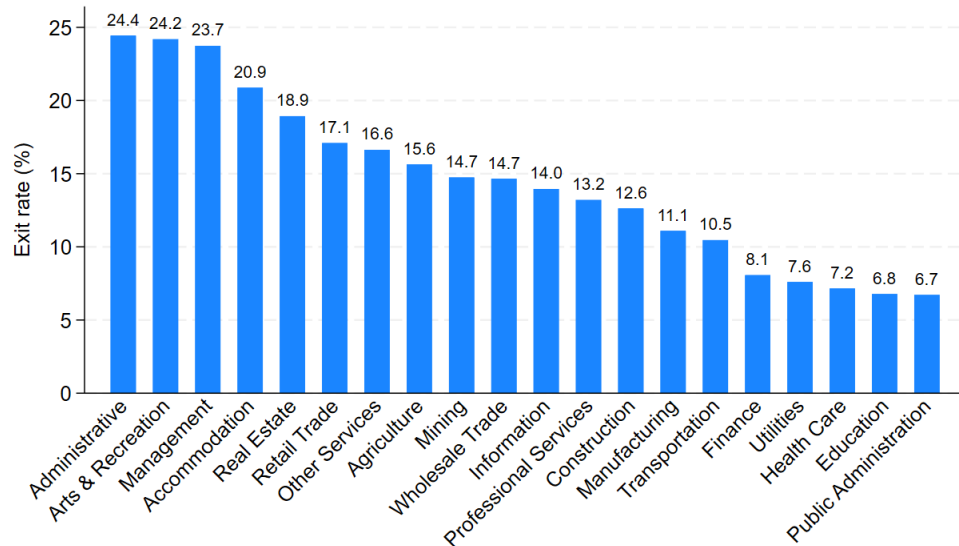
(b) Exit Rate by Industry (2001-2019)

Notes: Panel (a) displays the average annual entry rate by industry, calculated as the number of new workers entering each sector in a given year divided by the total number of workers in that sector. Panel (b) shows the average annual exit rate by industry, calculated as the number of workers exiting each sector in a given year divided by the total number of workers in that sector. Public Administration displays among the lowest entry and exit rates, primarily reflecting the sector's employment stability, lower turnover, and limited separation activity. In contrast, Administrative and Arts & Recreation show the highest rates in both panels, consistent with more fluid employment dynamics in these sectors.

Source: Authors' calculations using BEAM microdata, 2001–2019.

Figure 18: Sectoral Entry Rates Among the Six Industries with the Highest Dependence on Public Sector
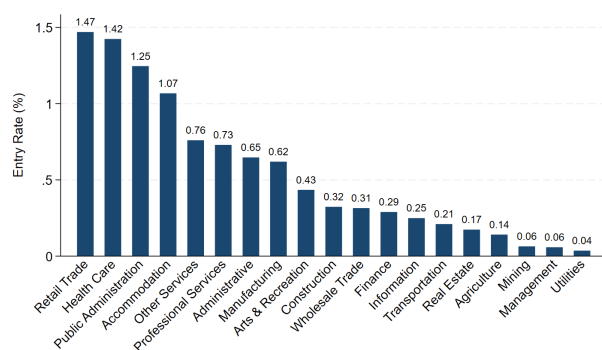
(a) Health Care
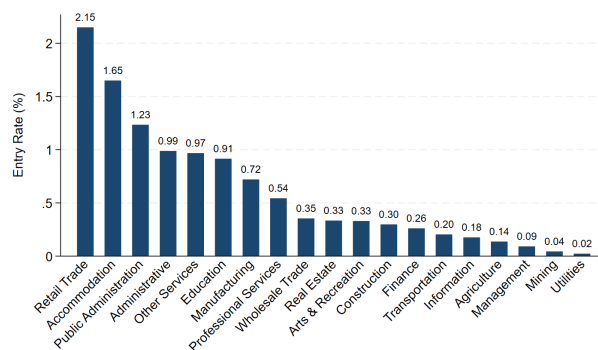
(b) Education
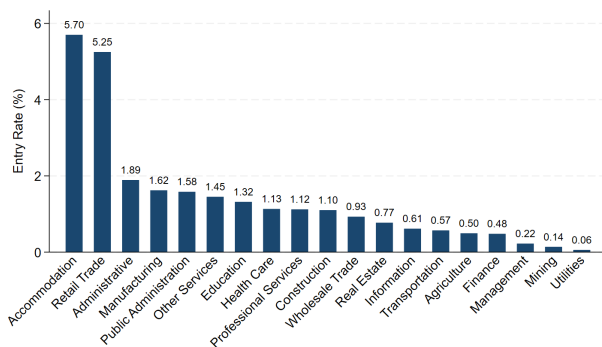
(c) Arts & Recreation
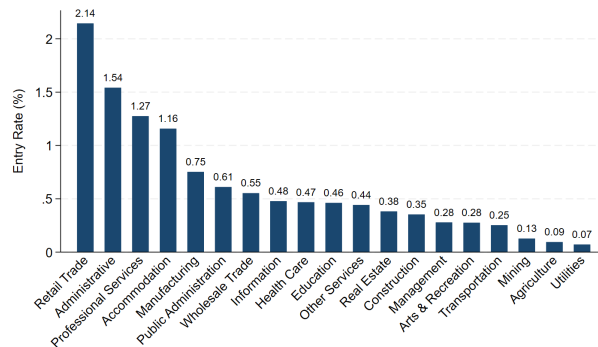
(d) Finance
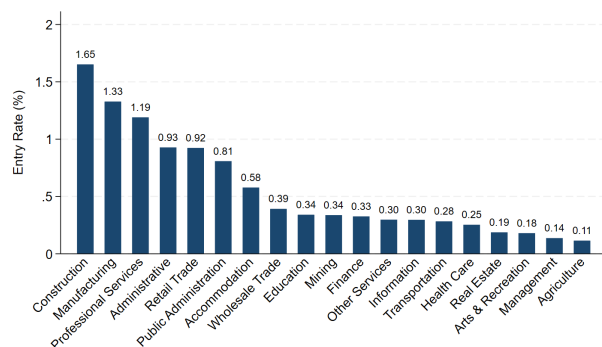
(e) Utilities
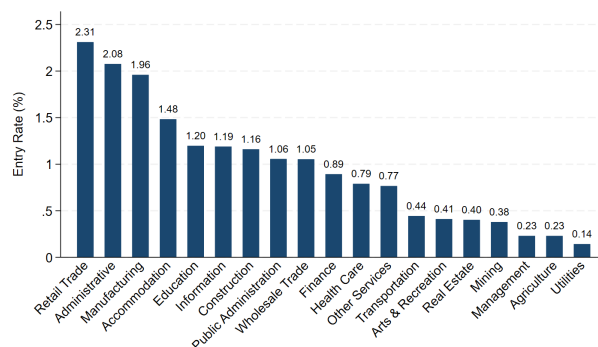
(f) Professional

Notes: These charts display the breakdown of average annual entry rates into six selected destination industries, disaggregated by sector of origin, the Public Administration sector consistently ranks among the top sources of entrants into these industries. This visualization underscores the role of the public sector as a key contributor to intersectoral labour mobility.

Source: Authors' calculations using BEAM microdata, 2001–2019.

Figure 19: Sectoral Exit Rates Among the Six Industries with the Highest Dependence on Public Sector

(a) Education

(b) Health Care

(c) Arts & Recreation

(d) Finance

(e) Utilities

(f) Professional
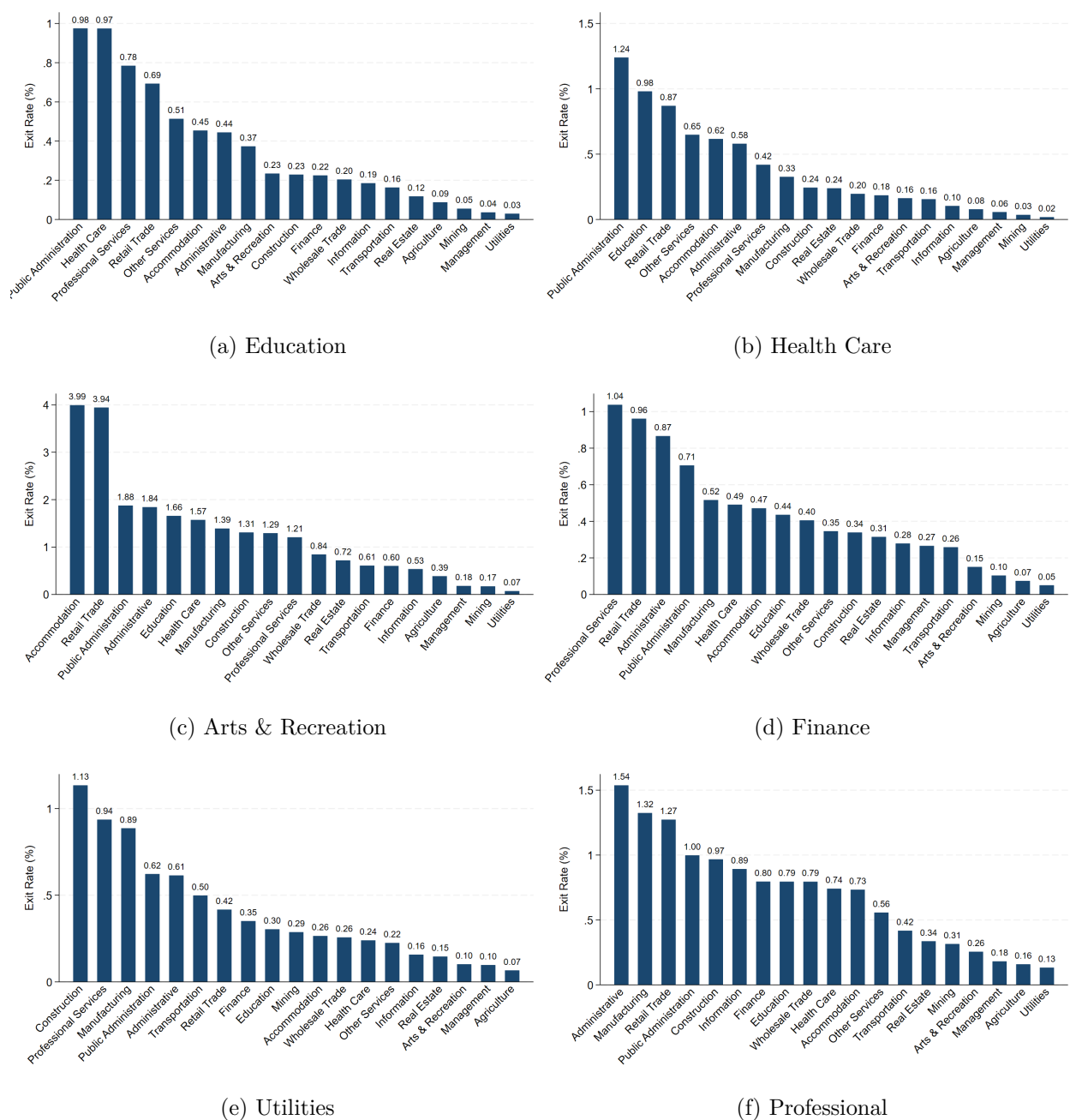
Notes: These charts display the breakdown of average annual exit rates from six selected origin industries, disaggregated by sector of destination. The Public Administration sector consistently ranks among the top destinations for workers exiting these industries. This visualization underscores the role of the public sector as a key recipient in intersectoral labour mobility.

Source: Business Employee Analytical Microdata (BEAM).
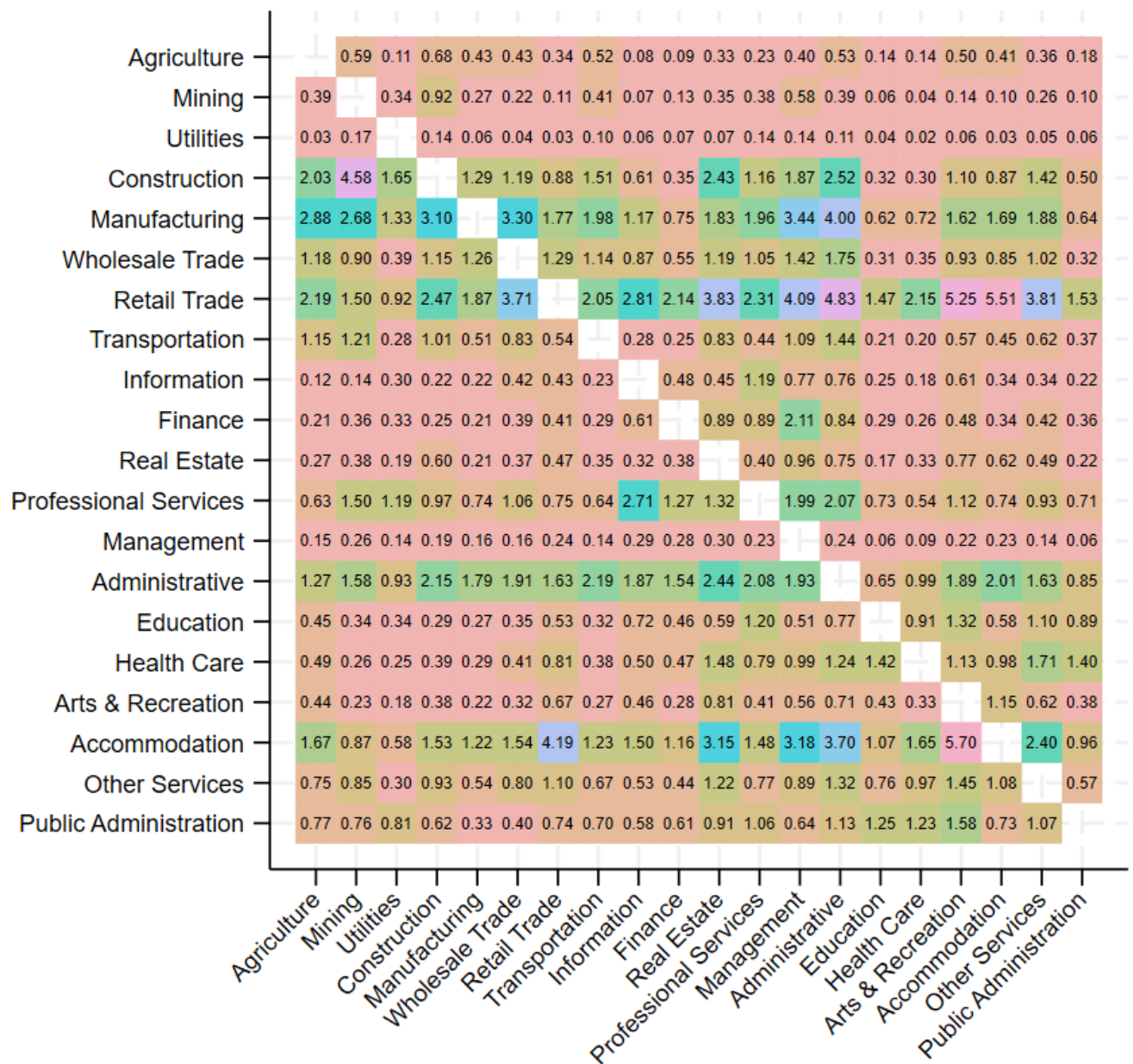
Figure 20: Matrix of Intersectoral Job Transitions: Entrants by Sector of Origin

Notes: Each column represents a destination sector, and each row corresponds to a sector of origin. Cell values indicate the entry rate from the origin sector (row) into the destination sector (column), expressed as a percentage of the workforce in the origin sector. Interpretation is column-wise. As such, column totals correspond to the sectoral entry rates displayed in the figure 5. Notably, Public Administration contributes to a non-trivial share of entries into sectors such as Education, Finance, and Arts & Recreation, highlighting its relevance in cross-sector labour flows.

Source: Authors' calculations using BEAM microdata, 2001–2019.

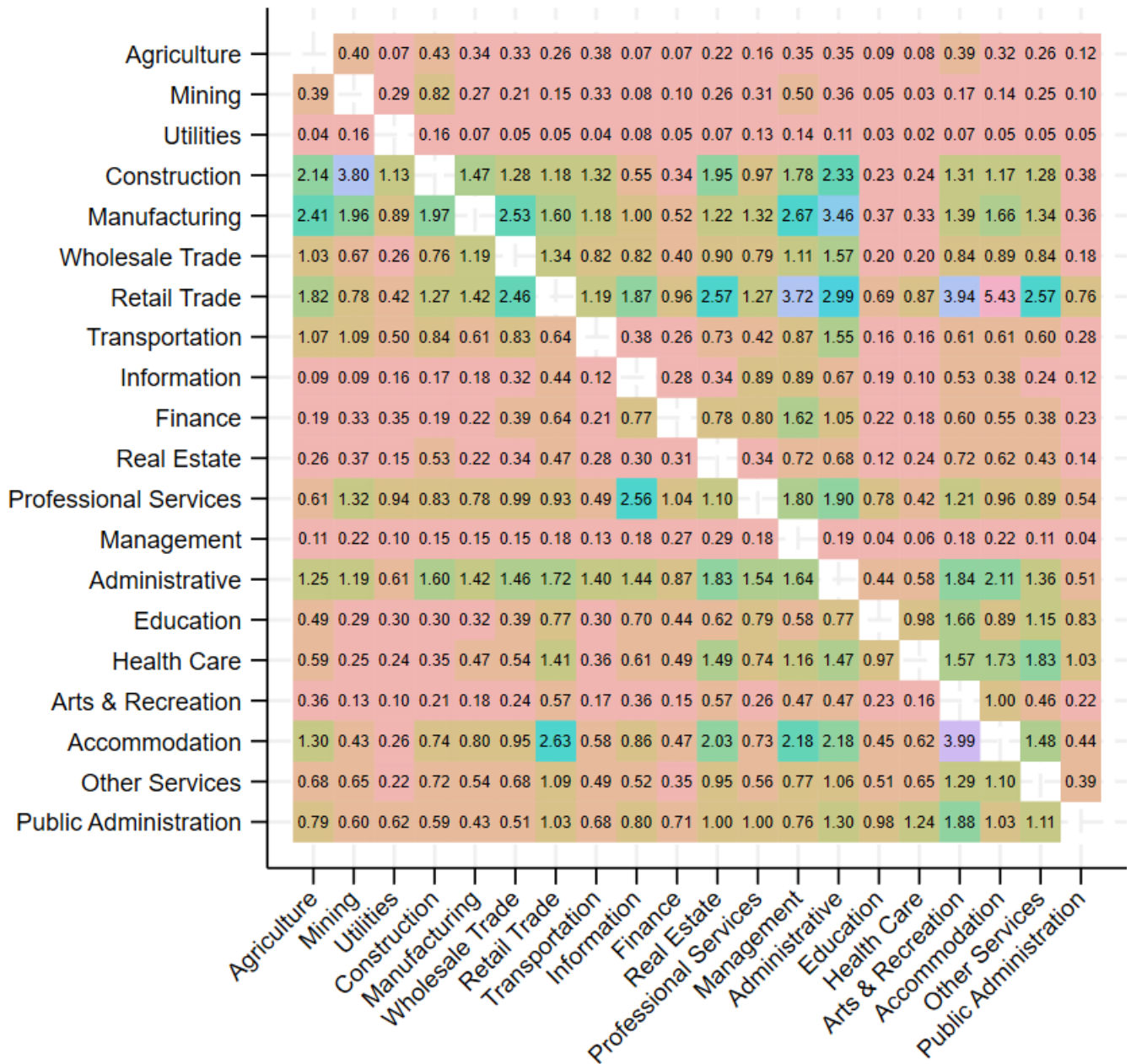| Destination \ Origin	Agriculture	Mining	Utilities	Construction	Manufacturing	Wholesale Trade	Retail Trade	Transportation	Information	Finance	Real Estate	Professional Services	Management	Administrative	Education	Health Care	Arts & Recreation	Accommodation	Other Services	Public Administration
Agriculture		0.40	0.07	0.43	0.34	0.33	0.26	0.38	0.07	0.07	0.22	0.16	0.35	0.35	0.09	0.08	0.39	0.32	0.26	0.12
Mining	0.39		0.29	0.82	0.27	0.21	0.15	0.33	0.08	0.10	0.26	0.31	0.50	0.36	0.05	0.03	0.17	0.14	0.25	0.10
Utilities	0.04	0.16		0.16	0.07	0.05	0.05	0.04	0.08	0.05	0.07	0.13	0.14	0.11	0.03	0.02	0.07	0.05	0.05	0.05
Construction	2.14	3.80	1.13		1.47	1.28	1.18	1.32	0.55	0.34	1.95	0.97	1.78	2.33	0.23	0.24	1.31	1.17	1.28	0.38
Manufacturing	2.41	1.96	0.89	1.97		2.53	1.60	1.18	1.00	0.52	1.22	1.32	2.67	3.46	0.37	0.33	1.39	1.66	1.34	0.36
Wholesale Trade	1.03	0.67	0.26	0.76	1.19		1.34	0.82	0.82	0.40	0.90	0.79	1.11	1.57	0.20	0.20	0.84	0.89	0.84	0.18
Retail Trade	1.82	0.78	0.42	1.27	1.42	2.46		1.19	1.87	0.96	2.57	1.27	3.72	2.99	0.69	0.87	3.94	5.43	2.57	0.76
Transportation	1.07	1.09	0.50	0.84	0.61	0.83	0.64		0.38	0.26	0.73	0.42	0.87	1.55	0.16	0.16	0.61	0.61	0.60	0.28
Information	0.09	0.09	0.16	0.17	0.18	0.32	0.44	0.12		0.28	0.34	0.89	0.89	0.67	0.19	0.10	0.53	0.38	0.24	0.12
Finance	0.19	0.33	0.35	0.19	0.22	0.39	0.64	0.21	0.77		0.78	0.80	1.62	1.05	0.22	0.18	0.60	0.55	0.38	0.23
Real Estate	0.26	0.37	0.15	0.53	0.22	0.34	0.47	0.28	0.30	0.31		0.34	0.72	0.68	0.12	0.24	0.72	0.62	0.43	0.14
Professional Services	0.61	1.32	0.94	0.83	0.78	0.99	0.93	0.49	2.56	1.04	1.10		1.80	1.90	0.78	0.42	1.21	0.96	0.89	0.54
Management	0.11	0.22	0.10	0.15	0.15	0.15	0.18	0.13	0.18	0.27	0.29	0.18		0.19	0.04	0.06	0.18	0.22	0.11	0.04
Administrative	1.25	1.19	0.61	1.60	1.42	1.46	1.72	1.40	1.44	0.87	1.83	1.54	1.64		0.44	0.58	1.84	2.11	1.36	0.51
Education	0.49	0.29	0.30	0.30	0.32	0.39	0.77	0.30	0.70	0.44	0.62	0.79	0.58	0.77		0.98	1.66	0.89	1.15	0.83
Health Care	0.59	0.25	0.24	0.35	0.47	0.54	1.41	0.36	0.61	0.49	1.49	0.74	1.16	1.47	0.97		1.57	1.73	1.83	1.03
Arts & Recreation	0.36	0.13	0.10	0.21	0.18	0.24	0.57	0.17	0.36	0.15	0.57	0.26	0.47	0.47	0.23	0.16		1.00	0.46	0.22
Accommodation	1.30	0.43	0.26	0.74	0.80	0.95	2.63	0.58	0.86	0.47	2.03	0.73	2.18	2.18	0.45	0.62	3.99		1.48	0.44
Other Services	0.68	0.65	0.22	0.72	0.54	0.68	1.09	0.49	0.52	0.35	0.95	0.56	0.77	1.06	0.51	0.65	1.29	1.10		0.39
Public Administration	0.79	0.60	0.62	0.59	0.43	0.51	1.03	0.68	0.80	0.71	1.00	1.00	0.76	1.30	0.98	1.24	1.88	1.03	1.11	

Figure 21: Matrix of Intersectoral Job Transitions: Exits by Sector of Origin

Notes: Each column represents a origin sector, and each row corresponds to a sector of destination. Cell values indicate the exit rate from the origin sector (column) into the destination sector (row), expressed as a percentage of the workforce in the origin sector. Interpretation is column-wise. Notably, the Public Administration sector (last row) accounts for a non-negligible share of exits into several private industries, such as Finance, Health Care, and Arts Recreation.

Source: Authors' calculations using BEAM microdata, 2001–2019.

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