# Canada's Productivity Slowdown: A Sectoral Analysis

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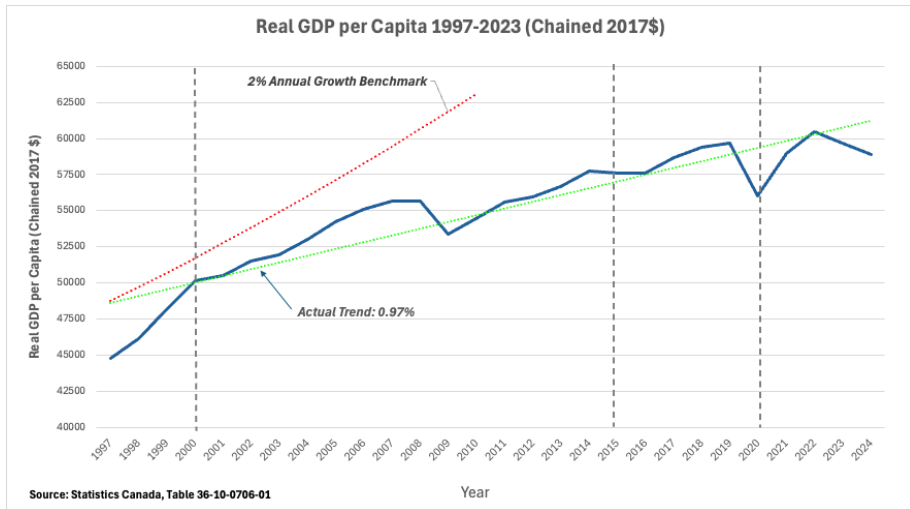
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## Motivation

- Since 2015, Canada's Real GDP per capita growth has slowed noticeably.
- Main Reason: Slowdown in Productivity Growth
- Slowdown Starts in 2000, but exacerbated in recent years

# Real GDP per Capita (1997–2023)

# Methodology

- Data:
- Labour Productivity and Hours Worked by Sectors
- Source: Statistics Canada – 1997-2023
- Shift-Share Decomposition Framework
  - Within-sector: Productivity change within sectors
  - Between-sector: Labour shifts across sectors
- Ref: Huan, CSLS (2023), Duarte & Restuccia (2010)
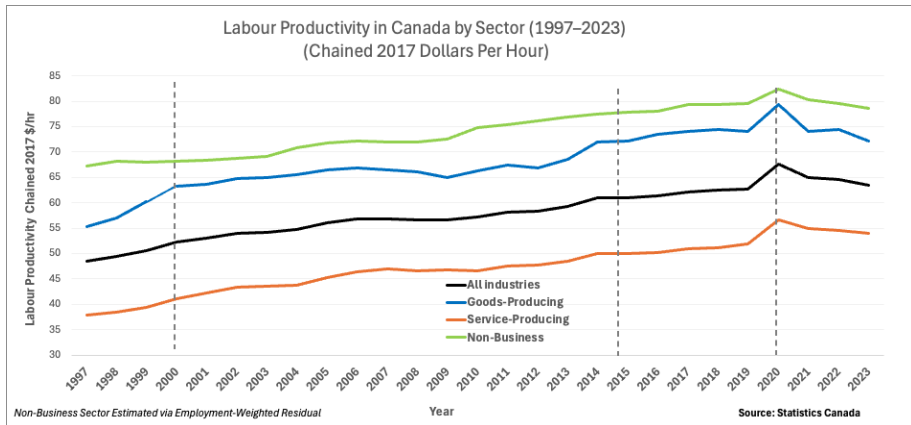
# Model: Decomposing Productivity

- $Y = A \cdot N$
- For Sector $i$
- $Y_i = A_i \cdot N_i$ ; $\frac{\sum_i Y_i}{N} = \frac{Y}{N} = A$
- $A = \sum_i (A_i \times N_i / N)$
- Huan (2023):

$$\Delta A = \underbrace{\sum_i s_i \Delta A_i}_{\text{Within-sector}} + \underbrace{\sum_i A_i \Delta s_i}_{\text{Between-sector}}$$
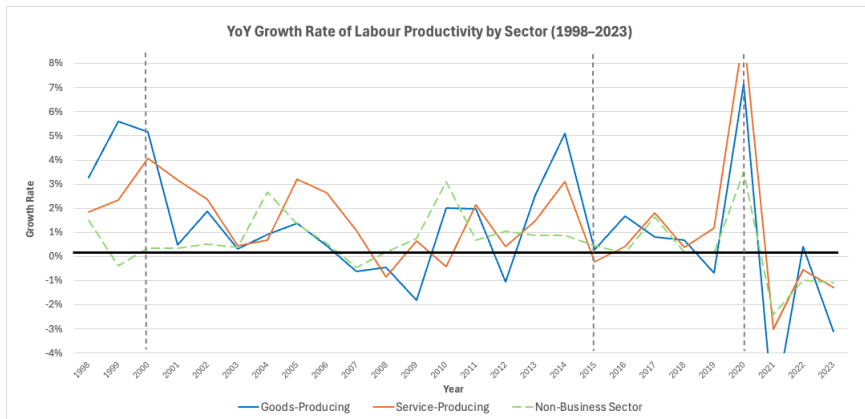
- where $s_i = N_i / N$

# Productivity Trends by Sector (Levels)

- Goods v.s. Services
- Recent Decline by All Sectors



Labour Productivity in Canada by Sector (1997–2023)
(Chained 2017 Dollars Per Hour)

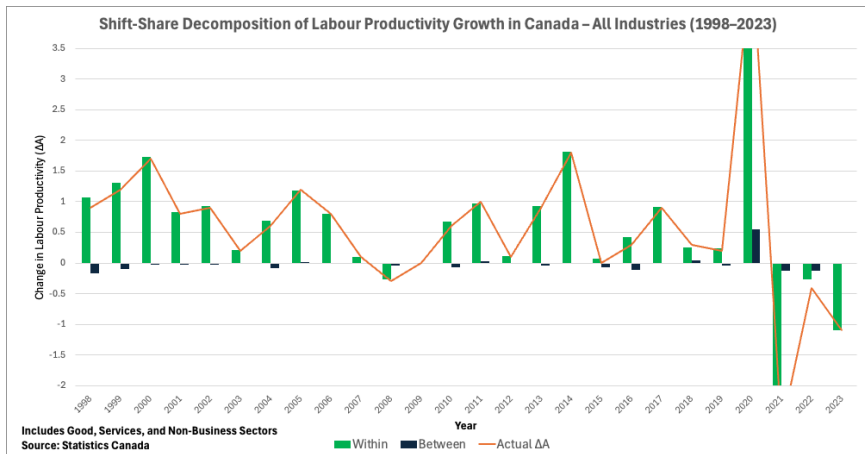# Growth Rates by Sector (YoY % Change)

- No Significant Divergence among Sectors



Sources: Statistics Canada

# Shift-Share Decomposition: All Sectors

- Within-sector growth explains most changes.
- Labour reallocation had modest effects.
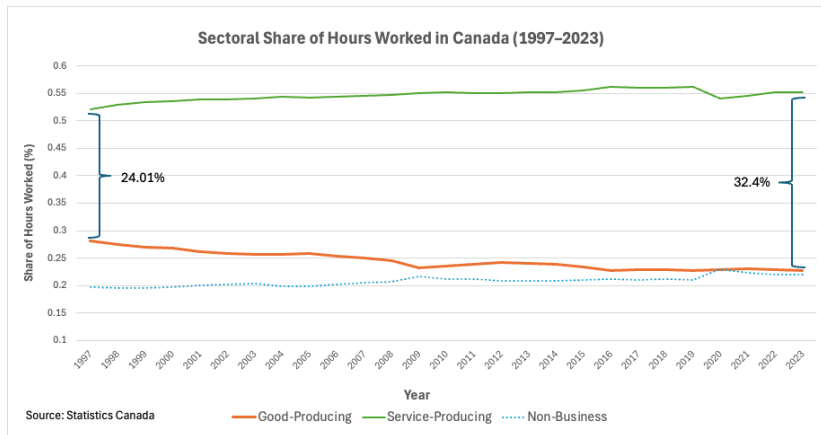


Shift-Share Decomposition of Labour Productivity Growth in Canada – All Industries (1998–2023)

Includes Good, Services, and Non-Business Sectors
Source: Statistics Canada

Within ■ Between — Actual ΔA

ΔA

Unit: Chained 2017 $ per hr

# Labour Reallocation Across Sectors

- Counterfactual A: 63.90 (2023)
- Real A: 63.5 (2023), less than 1% differences.



Sectoral Share of Hours Worked in Canada (1997–2023)

Source: Statistics Canada — Good-Producing — Service-Producing ⋯⋯ Non-Business

# Goods Sector

- Manufacturing shows flat or falling productivity.
- Resource sectors (e.g. mining) had mixed trends.



Labour Productivity by Subsector in the Goods Sector (1997–2023)

Sources: Statistics Canada

# Shift-Share: Goods Sector

- With-in contributed most of the growth/ Slowdown



Includes Manufacturing, Mining, Utilities, etc.
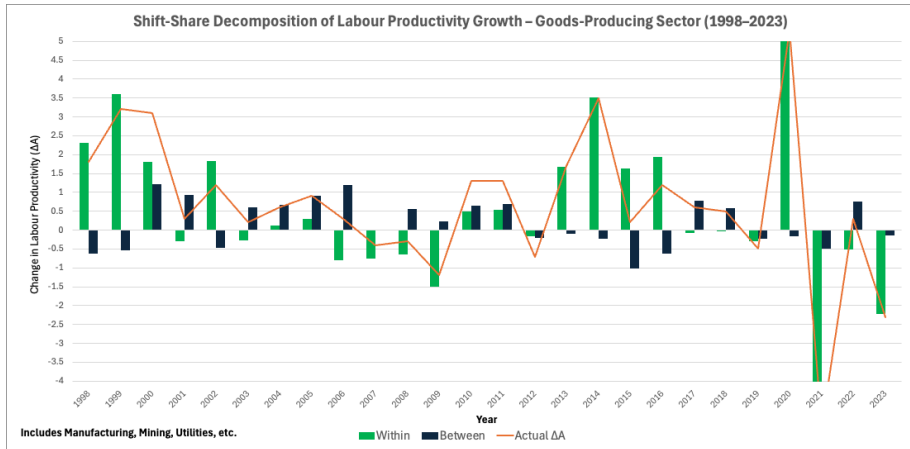
Sources: Statistics Canada
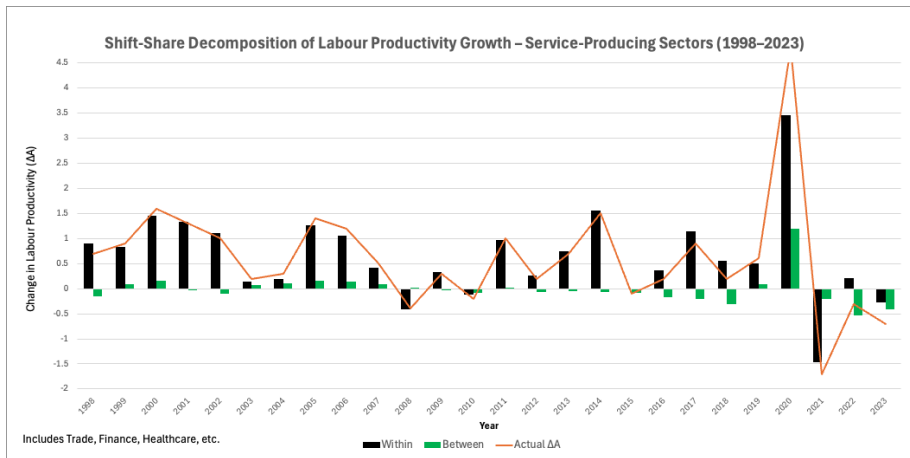ΔA Unit: Chained 2017 $ per hr

# Service Sector Breakdown

- Some subsectors stagnant (e.g. admin, food services).
- Overall service productivity improved slowly.



Labour Productivity by Subsector in the Services Sector (1997–2023)
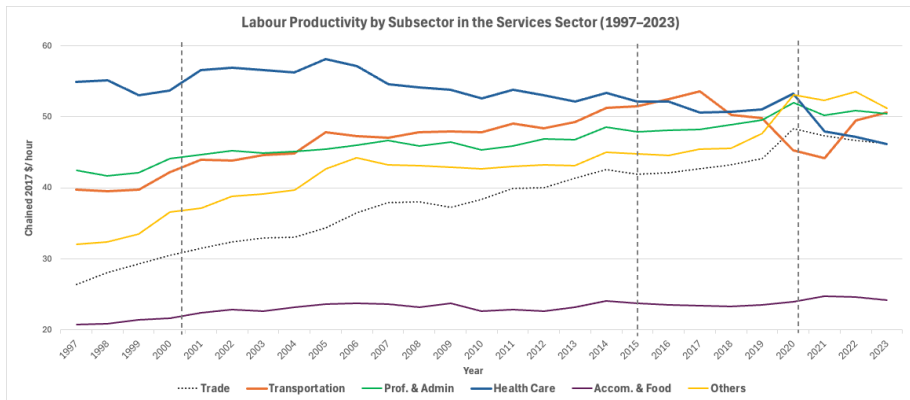
Sources: Statistics Canada
Selected subsectors shown for clarity

# Shift-Share: Services Sector

- Recent reallocation trends reduce overall productivity



Shift-Share Decomposition of Labour Productivity Growth – Service-Producing Sectors (1998–2023)

Includes Trade, Finance, Healthcare, etc.

Sources: Statistics Canada
ΔA Unit: Chained 2017 $ per hr

# Conclusion

- Canada's productivity slowdown is broad-based.
- Sector stagnation matters more than structural shifts.
- Focus on reviving within-sector productivity.
- What causing low within-sector productivity?