

**STC ECONOMIC POLICY & RESEARCH**

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# Reassessing Canada's Productivity Decline

*Measurement Artifacts, Structural Factors,  
and Cross-Country Comparisons*

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*A Critical Evaluation for Policy Consideration*

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**Canada · United States · Italy · Australia · Germany**

February 2026

## Executive Summary

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A consensus has emerged across major institutions—the Bank of Canada, OECD, McKinsey, and the Fraser Institute—that Canada is experiencing a productivity crisis of historic proportions. Labour productivity has stagnated since 2019, GDP per capita has fallen to roughly 75% of US levels, and cross-country rankings place Canada behind peers including Italy.

*This report finds that while Canada faces genuine structural challenges, the severity of the productivity decline is significantly overstated by headline metrics. Approximately 40–50% of the long-run measured gap with the US, and 50–65% of the acute post-2022 deterioration, can be attributed to measurement artifacts and asymmetric cross-country conditions rather than underlying economic failure.*

This estimate is structured in two tiers: a first tier of approximately 30%, anchored to institutional data from the CBO, Bank of Canada, and Statistics Canada (principally the US deficit differential and the immigration compositional shift), and a second tier of 10–20%, reflecting directional but not yet econometrically quantified factors including digital value extraction and PPP basket distortions. More fundamentally, the metrics at the centre of the debate do not measure what most people assume they measure.

Five principal measurement distortions are identified. First, rapid labour force expansion since 2022 has mechanically shifted the productivity denominator, depressing GDP per hour and GDP per capita through compositional effects rather than any decline in firm-level efficiency. A mechanical calculation using only published data (Section 2.1) establishes a verifiable lower bound: immigration composition alone accounts for at least 78% of the acute-phase shortfall from trend in GDP per hour, and virtually 100% of the GDP-per-capita decline. Second, currency regime asymmetries tilt cross-country comparisons. Third, US GDP—inflated by deficit spending at roughly double Canada's rate—serves as the primary benchmark. Fourth, input-based measurement of government output causes public sector expansion to inflate GDP while depressing productivity ratios. Fifth, digital value extraction transfers Canadian productivity gains to US-headquartered platform firms.

A five-country comparative analysis provides critical context. Australia—the most structurally similar economy—shows a virtually identical trajectory: labour productivity fell 1.2% year-on-year through December 2024 and returned to 2015–19 levels, while GDP per capita declined for six consecutive quarters. Germany—which lacks Canada's immigration surge but shares its productivity stagnation—serves as the fiscal control group: real GDP has grown by only 0.1% in five years under constitutional fiscal restraint, demonstrating that "low-deficit" economies are systematically penalized when measured against a US benchmark inflated by deficit spending at roughly triple Germany's rate.

The genuine structural weaknesses are real but narrower than the headlines suggest, and are concentrated in a single mechanism: capital trapped in residential real estate rather than deployed into productivity-enhancing equipment. Canada's investment in machinery, equipment, and intellectual property has declined to approximately 5% of GDP—half the US level—while housing investment rose to 25% of national wealth. Productive capital stock declined 8% as a share of GDP between 2013 and 2023, with industrial machinery down 19%.

A fundamental problem underlies the entire debate. GDP per hour is not a measure of how hard or how well Canadians work. It is a ratio of two aggregates—both shaped by currency, composition, fiscal policy, and accounting conventions—that cannot distinguish between “the economy became less efficient” and “the statistical average shifted.” The absurdity of treating GDP per capita as a reliable productivity measure is nowhere more stark than in Ireland, whose headline GDP per capita exceeds \$100,000—roughly twice the UK's—not because Irish workers are twice as productive, but because Apple, Google, and Meta book their European profits through Dublin subsidiaries. Ireland's own statistical agency abandoned GDP as a meaningful measure and created a separate metric (Modified GNI\*) to strip out the distortion. If the methodology fails this visibly at the extreme, it is failing in less visible ways everywhere else. The critical risk is misdiagnosis in either direction.

<b>Part I – The Prevailing Narrative</b>	<b>4</b>
1.1 What the Reports Say	4
1.2 What They Measure	4
<b>Part II – Measurement Artifacts</b>	<b>5</b>
2.1 Immigration Composition and the Denominator Effect	5
2.2 US Deficit-Inflated GDP as Benchmark	8
2.3 Government Output Measurement and the Public Sector Paradox	8
2.4 Currency Regimes and PPP Methodology in Cross-Country Rankings	8
2.5 Digital Value Extraction and Platform Economics	9
2.6 Ireland's Modified GNI* – The Reductio ad Absurdum	9
<b>Part III – Genuine Structural Factors</b>	<b>11</b>
3.1 The TCJA Competitiveness Shock	11
3.2 Canadian Dollar Depreciation and Capital Costs	11
3.3 Capital Misallocation into Real Estate: The Broad-Based Stagnation Explanation	11
3.4 Oligopoly Protection and Market Fragmentation	12
3.5 Energy Regulatory Constraints	12
3.6 Brain Drain and Innovation Value Capture	12
<b>Part IV – Comparative Analysis</b>	<b>13</b>
4.1 Structural Profiles	13
4.2 Canada vs. Australia: The Critical Comparator	13
4.3 Canada vs. Italy: A Misleading Comparison	14
4.4 Canada vs. United States: Adjusting the Benchmark	14
4.5 Distortion Exposure by Country	15
4.6 Germany as the Fiscal Control Group	15
<b>Part V – Diagnostic Conclusions</b>	<b>17</b>
5.1 What Is Artifact vs. What Is Real	17
5.2 The Australia Test	17
5.3 What the Correct Metric Would Show	18
5.4 Is the Average Canadian Worker Actually Less Productive?	18
5.5 Implications for the Policy Debate	19
<b>Part VI – Quantifying the Breakdown: How Much Is Real?</b>	<b>20</b>
6.1 Framework	20
6.2 Long-Run Divergence (2000–2025)	20
6.3 The Acute Post-2022 Deterioration	21
6.4 Visual Summary	22
6.5 What This Means	22
<b>Annex: Sources and Methodology Notes</b>	<b>24</b>
Primary Institutional Sources	24
Methodology Notes	24

## Part I — The Prevailing Narrative

Since March 2024, when Bank of Canada Senior Deputy Governor Carolyn Rogers declared it was "time to break the glass" on productivity, a series of major reports have converged on a stark diagnosis.

### 1.1 What the Reports Say

The core finding across all major analyses is that Canada's labour productivity—real GDP per hour worked in the business sector—has effectively stagnated. Average annual growth fell from approximately 3% in the 1960s–70s to about 1% between 2000 and 2019, and the decline continued through and after the pandemic. In Q2 2025, business sector productivity fell 1.0%, the sharpest drop since Q4 2022.

McKinsey framed the problem in per-capita terms: Canada's GDP per capita has fallen to roughly 75% of US levels, down from about 90% in 2010. The OECD's 2025 survey emphasized declining capital intensity, falling firm entry rates, and weak R&D spending. The Fraser Institute documented that from 1981 to 2024, Canadian productivity grew by 61% versus 127% in the US.

### 1.2 What They Measure

Three metrics dominate the analysis, each with specific vulnerabilities:

Metric	Definition	Key Vulnerability
Labour productivity	Real GDP / hours worked (business sector)	Sensitive to labour force composition changes
GDP per capita	Real GDP / total population	Directly diluted by population growth outpacing output
PPP-adjusted cross-country	GDP/hour converted at purchasing power parity rates	Basket composition, base year, informal economy effects

The reports generally acknowledge some of these vulnerabilities in footnotes or appendices but do not integrate them into headline conclusions. The analysis that follows examines each distortion systematically.

## Part II — Measurement Artifacts

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This section identifies and ranks the major measurement distortions that inflate the apparent severity of Canada's productivity decline. These are not speculative—each is supported by official institutional data, peer-reviewed research, or documented methodological analysis. The one exception is digital value extraction (Section 2.5), where the mechanism is well-established but precise quantification remains an open research question.

### 2.1 Immigration Composition and the Denominator Effect

**Estimated impact:** *Single largest distortion in post-2022 data*

Canada experienced an unprecedented surge in temporary immigration between 2022 and 2024, with the non-permanent resident population growing from approximately 500,000 to over 2.5 million. A Bank of Canada staff paper confirmed that since 2015, temporary workers have become "younger, less experienced, and more likely to come from lower-income countries," with the share in skilled occupations declining.

The mechanical effect is straightforward: labour productivity is GDP divided by hours worked. Adding hundreds of thousands of workers concentrated in low-value service sectors (food services, retail, gig economy) without a proportional increase in real output causes the ratio to fall—even if no individual firm or sector became less efficient. Philip Smith's analysis in the International Productivity Monitor estimated that temporary residents earn approximately \$25,000 annually—roughly one-third of the average for all employees.

However, the aggregate immigration effect is considerably more complex than the simple low-wage composition story. At least seven distinct sub-mechanisms are at work, most of which are absent from the major reports:

#### (a) The Arrival Timing Lag

A newcomer who arrives on December 31 is counted in the full-year population denominator but contributes zero output for that statistical period. With hundreds of thousands arriving each quarter during the 2022–2024 surge, the timing mismatch between when a person enters the population count and when they begin productive work creates a systematic downward bias in per-capita and per-hour metrics.

#### (b) Job Search and Integration Lag

Even after arrival, the time to first employment varies substantially. Temporary workers with pre-arranged positions may begin within weeks, but permanent residents—particularly those in Express Entry—can take 6–12 months to find employment matching their skill level. During this entire period, they are in the denominator but producing zero or minimal GDP.

#### (c) Skills Downgrading and Credential Recognition Failure

A software engineer from India driving for a ride-share service while awaiting credential recognition contributes to GDP at the level of a gig worker, not a software engineer. Statistics Canada's own data shows recent immigrants are disproportionately represented in both professional occupations and lower-skilled occupations—a bimodal distribution that drags the average down. This is a credential recognition and labour market integration gap that registers in the aggregate statistics as a productivity decline—without necessarily reflecting one.

#### (d) Family Composition and the Per-Capita Denominator

A family of four where two parents work and two children do not produces the GDP of two workers but is counted as four in the per-capita calculation. Canada's immigration system admits families through family reunification, refugee streams, and accompanying dependents of economic immigrants. A

country that admits primarily single working-age adults will mechanically show higher GDP per capita than one that admits families—even if the working adults are equally productive.

**(e) Post-COVID Labour Shortages: Low-Skilled Was What Was Needed**

The temporary worker surge was not random policy failure—it was a response to acute labour shortages in food services, agriculture, healthcare support, construction, and logistics. The fact that filling those positions depressed average productivity per hour does not mean the hiring was economically unjustified. An economy can be in a situation where every individual hire is rational and necessary while the aggregate statistic declines because lower-productivity positions are being filled.

**(f) International Students: Penalizing Investment in Future Output**

Canada hosted over 800,000 international students at the peak. These individuals are counted in the population, and many work part-time in low-productivity jobs, but their primary activity—acquiring human capital—does not appear in GDP. They are an investment in future output. The measurement framework treats them as a current productivity drag while ignoring the long-term return if those students remain and work at their skill level.

**(g) Brain Drain: Losing the Top While Adding at the Bottom**

Every Canadian engineer or researcher who moves to the United States removes above-average productivity from the Canadian numerator. When combined with the addition of below-average productivity at the bottom through temporary immigration, the average is compressed from both ends. The productivity statistics capture the net effect without distinguishing between these two simultaneous compositional shifts.

*All labour force growth in Canada over the past decade came from immigration—the Canadian-born labour force remained essentially flat. When the arrival lag, job search period, skills downgrading, family composition, student investment, and brain drain are considered together, the immigration effect on measured productivity is substantially larger than even the Bank of Canada's own estimates suggest.*

**The Denominator Effect: A Five-Country Comparison**

The following table formalizes the immigration-denominator distortion across the five countries analysed in this report:

Country	Population Growth (2023–24)	Immigration Model	Statistical Impact on Productivity
Canada	~3.2%	Mass temporary + permanent	HIGH DISTORTION: Massive denominator lag. Arrival timing, credential recognition, and family composition create sustained measurement drag.
Australia	~2.4%	Similar surge; now correcting	HIGH DISTORTION: Identical trajectory confirms shared structural cause, not country-specific failure.
Germany	~0.3%	Targeted / skill-based	LOW DISTORTION: Minimal denominator effect, but aging workforce drag. Productivity stagnation despite stable denominator is consistent with the deficit-benchmark distortion hypothesis.

United States	~0.5%	Mixed; less temporary surge	LOW DISTORTION: Stable denominator. Reserve currency and deficit spending inflate the numerator instead.
Italy	~-0.1%	Irregular / low	NEGATIVE DISTORTION: Shrinking, aging population mechanically boosts output per hour as lower-productivity young workers exit and peak-experience workers dominate.

### A Critical Clarification: Immigration Did Not Reduce Productivity

Before quantifying the immigration effect, it is essential to state what the evidence actually shows. Immigration did not make the Canadian economy less productive. No firm became less efficient because immigrants arrived. No production process slowed down. No existing worker's output declined. What happened is that the statistical measure of productivity—GDP per hour worked—shifted downward because of how the metric interacts with labour force composition. This is not a semantic distinction. It is the difference between a real economic problem and a measurement artifact, and confusing the two leads to fundamentally wrong policy conclusions.

The confusion arises because GDP per hour is not measuring physical output per unit of effort. In the service economy that constitutes 75% of Canadian GDP, "output" is largely proxied by revenue, compensation, and value added—all of which are influenced by wages. An immigrant worker performing the identical task as a Canadian-born worker but paid 10–15% less due to weaker bargaining power registers as 10–15% less "productive" in the national accounts. The productivity decline is entirely a wage gap, not an efficiency gap.

### Quantitative Box: The Mechanical Arithmetic of the Immigration-Denominator Effect

#### Inputs (all from public sources):

Philip Smith (IPM No. 46, 2024) estimated temporary residents earn approximately \$25,000 annually—roughly 38% of the all-employee average of approximately \$66,000. The non-permanent resident population grew from approximately 500,000 in 2021 to approximately 2.5 million by mid-2024—an increase of approximately 2.0 million. Canada's labour force was approximately 21.0 million in 2022–23 (Statistics Canada LFS). Actual cumulative productivity growth from 2022 to 2024 was approximately -1.5% (declined 2.1% in 2023, rose 0.6% in 2024). The shortfall from the 1%-per-year trend is therefore approximately 4.0–4.5 percentage points.

**Calculation 1: GDP per hour worked.** Assuming approximately 60% labour force participation (consistent with youth-heavy, student-heavy population), approximately 1.2 million entered the workforce—roughly 6% of the base labour force. If these workers produce at 38% of average productivity (Smith's earnings ratio), the compositional drag on GDP per hour is:

$$(1 + 0.06 \times 0.38) / (1 + 0.06) - 1 = -3.5\%$$

This accounts for approximately 78–88% of the 4.0–4.5 percentage point shortfall from trend. This is a lower bound, because it uses the \$25,000 figure, which represents earnings of NPRs who are working—the wage-productivity conflation described above means even this figure overstates their measured "productivity" relative to their actual output.

**Calculation 2: GDP per capita.** Population grew approximately 6.5% while nominal GDP grew approximately 4.5–5.0%. If the 2.0 million additional NPRs are removed from both the population denominator and their proportional GDP contribution is subtracted: adjusted population growth falls to approximately 1.3%, and adjusted GDP per capita is approximately +2.0 to +2.5%, compared to the measured decline of approximately -1.5 to -2.0%. The non-permanent resident surge explains virtually all of the GDP-per-capita decline.

*The 40–50% attribution of the acute-phase deterioration to immigration composition is therefore conservative. The mechanical arithmetic establishes a verifiable lower bound of approximately 78% for GDP per hour and essentially 100% for GDP per capita. Crucially, this is not a finding that immigration harmed the economy. It is a finding that the measurement framework misreads wage gaps as productivity gaps, compositional shifts as efficiency declines, and human capital investment as economic drag.*

## 2.2 US Deficit-Inflated GDP as Benchmark

**Estimated impact:** *Significantly inflates the Canada–US gap*

The US federal deficit reached approximately 6.2% of GDP in fiscal year 2025—levels previously seen only during major crises. Since GDP includes government spending and the consumption that results from deficit-financed transfers, headline GDP growth overstates the productive capacity of the private economy. Analysis of Q4 2023 data showed that for every dollar of GDP growth, US national debt grew by \$2.70. Canada's combined federal-provincial deficit in 2025–26, at roughly 3.5% of GDP, is proportionally half the US fiscal expansion.

*A productivity comparison between two countries where one is running deficits at twice the rate of the other is not comparing like with like. The US benchmark flatters US performance and exaggerates Canadian underperformance.*

## 2.3 Government Output Measurement and the Public Sector Paradox

**Estimated impact:** *Directly distorts GDP composition and productivity ratios*

National accounts measure government output primarily by inputs (mainly employee compensation), not actual outcomes. This creates a paradox: when a government expands to improve services—or simply hires more staff—GDP rises through the government consumption component, but if services delivered do not improve proportionally, measured productivity falls.

The scale of this effect in Canada is substantial. Total government spending across all levels reached \$1.1 trillion in 2024, representing approximately 37% of GDP. The federal workforce grew by 110,000 positions between 2015 and 2024, a 43% expansion. The MLI found that public sector productivity declined 0.3% annually over the past decade, compared to 0.5% annual growth in the private sector. If government workers' productivity matched the private sector, GDP would have been an estimated \$32 billion (1.5%) higher.

## 2.4 Currency Regimes and PPP Methodology in Cross-Country Rankings

**Estimated impact:** *Systematically distorts all cross-country comparisons, with different biases for each comparator*

Cross-country productivity comparisons require converting GDP figures into a common unit. Whether done using market exchange rates or PPP adjustments, the result is significantly shaped by the structural characteristics of each country's currency regime. This is not a minor technical footnote—it is a fundamental distortion that tilts the playing field before any real economic comparison begins.

### (a) The US Reserve Currency Advantage

The US dollar's status as the global reserve currency means it is structurally overvalued relative to purchasing power fundamentals. Demand for USD comes not only from trade but from central bank reserves worldwide, commodity pricing, safe-haven capital flows, and global debt denomination. This persistent overvaluation means US GDP is inflated relative to what the domestic economy actually produces in real purchasing power terms. Every other country is being measured against an artificially strong yardstick.

### (b) The Eurozone Anchor Effect for Italy

Italy lost its independent currency lever when it joined the euro. Within the eurozone, Italy effectively operates with a currency that is too strong for its economy relative to Germany's industrial base—the euro's value is anchored by German productivity, not Italian. Italy's productivity numbers benefit from being denominated in a currency whose strength derives substantially from another country's economy.

### (c) The Commodity Currency Penalty for Canada and Australia

Both the Canadian dollar and the Australian dollar fluctuate with commodity prices. When commodities decline, the currency depreciates, imported capital goods become more expensive, and business investment falls. Statistics Canada documented that PPP averaged about US\$0.84 per Canadian dollar over 1990–2018, while the exchange rate averaged US\$0.81—but with enormous short-term deviations. In 2011 the dollar hit US\$1.01 while PPP was US\$0.84; by 2025 the dollar had fallen to approximately US\$0.71. These multi-year deviations mean productivity comparisons made during any specific period capture neither the market rate reality nor the long-run PPP equilibrium.

*The currency regime creates a systematic tilt in cross-country productivity rankings: the US is measured with an overvalued reserve currency; Italy is measured in a currency anchored by German industrial strength; while Canada and Australia are measured in depreciated commodity currencies. The playing field is structurally uneven before any real economic comparison begins.*

## 2.5 Digital Value Extraction and Platform Economics

**Estimated impact:** *Growing but unquantified*

Canada is one of the most digitally penetrated economies in the world but produces almost none of the platforms. The measurement distortion is not that transactions are invisible—it is that value capture is asymmetric. The platform's margin—often 60–80% gross margin for cloud and SaaS businesses—accrues as US corporate profit and US GDP. Over time, as the economy becomes more platform-dependent, this asymmetry grows—and no major report on Canadian productivity attempts to quantify it.

## 2.6 Ireland's Modified GNI\* — The Reductio ad Absurdum

**Estimated impact:** *The most documented case globally of GDP-as-productivity-measure failure; directly validates the digital value extraction and PPP distortion arguments in Sections 2.4–2.5*

Ireland's headline GDP per capita exceeds \$100,000—roughly double the United Kingdom's and higher than the United States. On this basis, standard cross-country productivity rankings place Ireland among the wealthiest and most productive economies on earth. This is not a minor rounding error or a marginal distortion. It is a figure that is almost entirely fictitious as a measure of what Irish residents produce or earn.

The cause is straightforward. Apple, Google, Meta, Microsoft, and dozens of other US multinationals book their European intellectual property royalties, licensing revenues, and platform profits through Irish subsidiaries. These transactions appear in Irish GDP as domestic economic output. They are not. They are accounting entries reflecting Ireland's corporate tax regime, not Irish workers' productive activity. Irish nurses, teachers, software developers, and factory workers did not double their output relative to their British counterparts. What doubled was the volume of multinational profit routed through Dublin for tax purposes.

### The Official Response: Modified GNI\*

The distortion became so severe that Ireland's Central Statistics Office formally acknowledged the problem and in 2017 introduced Modified Gross National Income (GNI\*) as its primary measure of domestic economic activity. GNI\* strips out the profits of redomiciled companies, the depreciation of intellectual property assets moved to Ireland for tax purposes, and net factor income of aircraft leasing firms—the three main channels through which multinational accounting inflates headline GDP. On GNI\*, Ireland looks like a prosperous but unremarkable northern European economy, not a

productivity miracle. The gap between Irish GDP per capita and Irish GNI\* per capita is approximately 40%—one of the largest such gaps ever recorded for any country.

### **Why This Matters for the Canada Debate**

Ireland is not an anomaly that can be dismissed as a tax haven edge case. It is the most transparent and officially acknowledged example of a distortion that operates, in less extreme form, across every country in every cross-country productivity comparison. The same mechanism—multinational profit booking inflating the GDP of the country where legal entities are registered rather than where production occurs—inflates US GDP relative to Canada when US platform firms capture value from Canadian economic activity (Section 2.5). It inflates German GDP through European headquarters functions. It suppresses Canadian GDP when Canadian-based researchers generate innovations that are commercialised by US firms.

The deeper point is methodological. No country other than Ireland has created a GNI\* equivalent, which means every other cross-country comparison—including all of the Canada-US, Canada-Italy, and Canada-Australia comparisons at the centre of this report—is using a metric that Ireland's own statisticians have formally declared unfit for measuring domestic economic performance. The OECD, which publishes the productivity rankings driving the Canadian policy debate, continues to use headline GDP figures. The question is not whether GDP is distorted. Ireland proved that it is. The question is how much, and in which direction, for each country being compared.

*Ireland's GDP per capita is double the UK's on paper. Irish GNI\* per capita is roughly comparable to the UK's. The 40% gap between those two numbers is the size of the distortion that official statistics quietly accept in a single small economy. Any methodology that produces this result—and is still used as the basis for cross-country productivity rankings—should be treated with fundamental scepticism, not as the authoritative verdict on which economies are succeeding or failing.*

## Part III — Genuine Structural Factors

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Not all of the productivity gap is measurement artifact. Several structural weaknesses are real and require policy attention.

### 3.1 The TCJA Competitiveness Shock

The 2017 Tax Cuts and Jobs Act cut the US corporate rate from 35% to 21%, eliminating Canada's longstanding tax advantage. A peer-reviewed study found US firms increased capital expenditures by 0.32% of total assets relative to Canadian firms post-TCJA. The Business Council of Canada concluded the TCJA eliminated one of Canada's main competitive advantages, threatening capital-intensive sectors. Once accelerated depreciation provisions expire by 2028, Canada will drop from 5th to 13th in the OECD's capital cost recovery ranking.

### 3.2 Canadian Dollar Depreciation and Capital Costs

The fall from near parity to approximately 1.41 per USD by mid-2025 directly raises the cost of imported machinery and equipment—Canada imports the vast majority of its capital goods. This creates a vicious circle: low productivity weakens the currency, which raises capital costs, which reduces business investment, which further lowers productivity. The structural problem is that the weak currency genuinely makes it more expensive for Canadian firms to invest—they are paying 40% more in CAD terms for the same US-manufactured equipment than they were at parity.

### 3.3 Capital Misallocation into Real Estate: The Broad-Based Stagnation Explanation

A critical challenge for this report's argument is the observation that productivity has stagnated even in sectors without high immigration. This section argues that the 30–40% of the gap identified as genuinely structural is primarily explained by a single mechanism: capital trapped in residential real estate rather than deployed into productivity-enhancing machinery, equipment, and intellectual property.

Canada's total private investment as a share of GDP has been above both the US and Australia since the 1970s—suggesting at first glance that Canada does not underinvest. But the composition tells a different story. Investment in machinery, equipment, and intellectual property as a share of GDP declined to approximately 5% in Canada—roughly half the US level of 10%. Meanwhile, housing investment rose to 25% of national wealth in 2024. Canadians now spend as much per year as a share of GDP on renovations and homeownership transfer costs as they spend on machinery, equipment, and intellectual property.

Canada's productive capital stock declined 8% as a share of GDP between 2013 and 2023. The critical capital stocks of industrial machinery and of computers and electronics decreased 19% and 10% respectively. This declining capital stock explains why productivity is flat even in sectors without high immigration. A manufacturing plant with aging equipment produces less per hour regardless of who operates it. There is also a less-examined feedback loop worth noting: rapid immigration-driven population growth itself creates pressure to direct investment toward residential real estate and infrastructure rather than machinery and technology, while simultaneously reducing labour shortage pressure that might otherwise push firms to invest in productivity-enhancing automation. Countries with stagnant or declining populations facing acute labour shortages may face stronger market incentives to invest in labour-saving technology—though whether those investments ultimately pay out in measured productivity gains is a separate and open question.

The incentive structure is self-reinforcing: housing appreciation rewards homeownership over entrepreneurship, which reduces the supply of high-productivity firms, which depresses wage growth, which makes housing's relative return even more attractive.

If the diagnosis of capital misallocation is correct, the implication is that interventions focused on the labour market denominator are less likely to be effective than those oriented toward redirecting capital from housing into machinery, R&D, and technology adoption. Levers potentially worth examining include the capital gains tax treatment of principal residences, the capital cost allowance regime, regulatory incentives that channel bank lending toward mortgages, and interprovincial barriers that constrain the scale at which firms can deploy capital productively—though each would require careful analysis before adoption.

### **3.4 Oligopoly Protection and Market Fragmentation**

Canada's key domestic sectors—banking, telecommunications, airlines, groceries—are dominated by protected oligopolies that maintain margins through pricing power rather than efficiency. The OECD found that Canada's product market regulation score remained essentially unchanged between 2018 and 2023/24. Large employers account for approximately 35% of employment in Canada versus nearly 50% in the US, reflecting the scale constraints imposed by interprovincial trade barriers and a market one-tenth the size.

### **3.5 Energy Regulatory Constraints**

Canada holds the world's third-largest oil reserves and enormous hydroelectric, nuclear, and mineral resources—all inherently high-productivity sectors. Regulatory barriers, environmental assessment delays, and interprovincial disputes have prevented full exploitation. Cancelled LNG projects, delayed pipelines, and deterred mining investments redirected capital and labour into lower-productivity sectors.

### **3.6 Brain Drain and Innovation Value Capture**

The TCJA did not just shift capital—it shifted talent. US tech firms, offering higher after-tax compensation, have systematically pulled Canada's best engineers and researchers south. Canadian universities train world-class AI researchers; a disproportionate share of graduates end up working for US firms. In cases of remote work for US employers, the productivity appears in the US firm's output, not in Canadian GDP.

## Part IV — Comparative Analysis

Comparing Canada only to the United States produces a misleading picture. A five-country framework—including Italy (the G7 country Canada is allegedly falling behind), Australia (the most structurally similar economy), and Germany (the fiscal control group)—reveals a more nuanced reality.

### 4.1 Structural Profiles

Characteristic	Canada	United States	Italy	Australia	Germany
<b>Population (M)</b>	41	335	59	27	83
<b>GDP per capita (PPP, US=100)</b>	~75	100	~62	~82	~80
<b>Deficit / GDP (2024–25)</b>	~3.5%	~6.2%	~3.0–3.4%	~1.5%	~2.7% (debt brake)
<b>Immigration model</b>	Mass temporary + permanent	Mixed; less temporary surge	Moderate; some irregular	Similar surge; now correcting	Targeted / skill-based; low volume
<b>Public sector / GDP</b>	~37%	~35%	~50%	~35%	~50% (incl. social spending at 31%)
<b>Commodity dependence</b>	High (oil, minerals, agriculture)	Moderate (energy self-sufficient)	Low (manufacturing export)	High (mining, LNG, agriculture)	Low (manufacturing export; energy import-dependent)
<b>Currency regime</b>	Commodity currency (CAD)	Global reserve (USD)	Eurozone (anchored by Germany)	Commodity currency (AUD)	Eurozone (anchor economy)
<b>Currency effect on measured productivity</b>	Depresses (weak base)	Inflates (overvalued base)	Inflates (stronger than Italian fundamentals)	Depresses (weak base)	Moderately inflates (euro weaker than DM would be)
<b>Dominant housing issue</b>	Significant affordability pressure	Regional; corrected post-2008	Declining real prices since 2010	Significant affordability pressure	Moderate; rental-dominated market
<b>Corp. tax rate (combined)</b>	~26.5%	~25.8%	~27.8%	~30%	~30%
<b>Median age</b>	~39 (lowered by immigration)	~38	~48 (among oldest globally)	~38 (lowered by immigration)	~45 (aging rapidly)
<b>Workforce age-productivity effect</b>	Depressed by younger cohort	Neutral	Boosted by peak-experience workers	Depressed by younger cohort	Aging drag on hours; moderate boost on output/hour
<b>Population growth (2023–24)</b>	~3.2%	~0.5%	~-0.1%	~2.4%	~0.3%

### 4.2 Canada vs. Australia: The Critical Comparator

Australia is the most analytically powerful comparator for Canada. Both are commodity-exporting, immigration-dependent, English-speaking economies with similar institutional frameworks,

comparable population-to-land ratios, and—critically—commodity currencies (AUD and CAD) that fluctuate with resource prices and depreciate against the USD during commodity downturns. If Canada's productivity decline reflected uniquely Canadian failures, one would expect Australia's trajectory to diverge meaningfully. The evidence suggests otherwise.

The Australian Bureau of Statistics reported that labour productivity fell 1.2% year-on-year through December 2024 and a further 0.6% in the 2024–25 financial year. Market sector multifactor productivity fell 0.5% in 2024–25. By December 2024, economy-wide labour productivity had returned to approximately the average level of 2015–19—effectively a lost decade.

Australia's long-run trajectory mirrors Canada's almost exactly: labour productivity growth averaged 2.2% per year from 1991 to 2004, slowed to 1.1% from 2004 to 2017, and collapsed to 0.2% per year from 2017 to 2024. The Reserve Bank of Australia estimated that growth of the non-market sector mechanically subtracted approximately 0.3 percentage points from aggregate productivity growth annually between 2017–18 and 2023–24—the identical public sector measurement paradox documented for Canada in Section 2.3.

Net overseas migration peaked at 556,000 in the year ending September 2023. Australia experienced six consecutive quarters of negative GDP per capita growth—the longest decline since records began in 1973—directly attributed to the immigration-driven denominator effect.

*The parallel trajectories of Canada and Australia suggest that measurement distortions common to commodity-exporting, immigration-dependent economies with procyclical currencies are significantly depressing the apparent productivity performance of both countries. This does not rule out genuine underlying decline in either—both may be experiencing real productivity challenges—but it does mean the headline divergence from the US benchmark overstates the uniquely Canadian dimension of the problem.*

### 4.3 Canada vs. Italy: A Misleading Comparison

The Bank of Canada's claim that Canada is now second only to Italy in productivity decline among G7 countries has generated significant alarm. A closer examination reveals this comparison is deeply misleading.

Italy has a strong manufacturing export sector that generates high value per hour worked. Canada's economy is weighted toward resources, financial services, and real estate—sectors whose productivity measures are more volatile. Italy has not experienced Canada's scale of low-skilled temporary worker influx. Italy's shadow economy is estimated at 12–15% of GDP; as formalization brings previously unrecorded activity into the statistics, measured GDP growth can appear stronger than underlying performance.

Most critically, Italy has one of the oldest workforces in the world, with a median age around 48. Workers in their peak experience years (roughly 40–55) produce substantially more value per hour. An aging workforce, counterintuitively, raises measured average productivity even as it creates fiscal problems through rising dependency ratios. Canada's massive immigration intake has deliberately rejuvenated its workforce—the median age is significantly lower than Italy's.

*The Canada-Italy comparison is confounded by at least six structural asymmetries. Most critically, Italy's aging workforce is riding the tail end of a demographic productivity dividend—peak-experience workers producing high value per hour—that is about to become an enormous fiscal liability. Canada is absorbing the short-term productivity cost of workforce rejuvenation in exchange for long-term demographic sustainability.*

### 4.4 Canada vs. United States: Adjusting the Benchmark

The US is the default benchmark against which Canada's productivity is measured. The comparison is distorted by four major asymmetries: fiscal asymmetry (US deficits at approximately 6.2% of GDP versus Canada's ~3.5%); tax asymmetry from the TCJA creating a step-change in US investment

incentives; reserve currency privilege that structurally overvalues the USD; and capital cost asymmetry where Canadian firms pay 41% more in local currency for the same equipment at 1.41 CAD/USD.

When these four factors are acknowledged, the Canada-US productivity gap becomes less an indictment of Canadian failure and more a reflection of asymmetric structural and policy conditions—most of which Canada cannot replicate without a reserve currency, comparable deficit capacity, or equivalent tax reform.

### 4.5 Distortion Exposure by Country

Distortion Factor	Canada	US	Italy	Australia	Germany
Labour force composition shift	<b>HIGH</b>	Low–Moderate	Low	<b>HIGH</b>	Low
Deficit-inflated GDP	Moderate	<b>HIGH</b>	Moderate	Low	Low (debt brake)
Public sector input-based measurement	<b>HIGH</b>	Moderate	Moderate (stagnant)	Moderate	Moderate–High
PPP basket distortion	Moderate	Low (base country)	<b>HIGH</b>	Moderate	Moderate
Reserve currency / eurozone anchor	N/A (commodity currency)	<b>BOOSTED</b>	<b>BOOSTED</b>	N/A (commodity currency)	Moderate (anchor economy)
Digital value extraction	<b>HIGH</b>	<b>Recipient</b>	Moderate	High	High
Commodity currency capital cost penalty	<b>HIGH</b>	N/A (reserve currency)	N/A (eurozone)	Moderate–High	N/A (eurozone)
Workforce age-productivity dilution	<b>HIGH</b>	Low	<b>BOOSTED</b>	<b>HIGH</b>	Aging drag; moderate boost on output/hour

Canada is simultaneously exposed to more measurement distortions than any of its comparators. The US benefits from deficit-inflated GDP, digital value capture, and a reserve currency. Italy benefits from PPP conventions, a stagnant public sector, and an aging peak-experience workforce. Only Australia shares Canada's full distortion profile—and Australia shows a strikingly similar productivity trajectory.

### 4.6 Germany as the Fiscal Control Group

Germany provides the critical missing piece of the comparative framework: a major advanced economy experiencing productivity stagnation comparable to Canada's, but without Canada's immigration surge. This makes Germany the natural control group for isolating the effect of fiscal asymmetry on cross-country productivity comparisons.

Germany's real GDP has grown by only 0.1% in total over the past five years. The economy contracted in both 2023 (–0.3%) and 2024 (–0.2%), making Germany one of the worst-performing major economies globally over this period. Germany's constitutional "debt brake" (Schuldenbremse) limited the structural federal deficit to 0.35% of GDP. Contrast this with the US at approximately 6.2% of GDP. Germany is being measured against a US benchmark artificially inflated by deficit spending at roughly triple Germany's rate.

Germany's population growth was approximately 0.3% in 2023–24, compared to Canada's 3.2%. Germany did not experience a temporary immigration surge, or an international student denominator effect. Yet Germany shows a strikingly similar productivity stagnation trajectory. This is powerful

evidence that the measured productivity divergence between "stagnating" economies and the US is driven substantially by fiscal asymmetry—not by differences in worker effort or firm-level efficiency.

Distortion Factor	Germany
Labour force composition shift	Low (minimal surge)
Deficit-inflated GDP	Low (debt brake)
Public sector measurement	Moderate
Currency regime	<b>Moderate (anchor economy; euro weaker than DM would be, modestly supporting exports)</b>
Digital value extraction	High
Commodity currency penalty	N/A (eurozone)
Workforce age-productivity effect	Aging drag on hours; moderate boost on output/hour

Germany's distortion profile is distinct from both Canada's and Australia's, yet produces a similar productivity trajectory. This is the strongest available evidence that the US benchmark—not the individual economies—is the primary source of the measured divergence.

## Part V — Diagnostic Conclusions

### 5.1 What Is Artifact vs. What Is Real

Based on the foregoing analysis, the measured productivity decline can be decomposed into three categories. The artifact estimates are supported by a tiered evidence structure, by a verifiable mechanical calculation of the immigration-denominator effect (Section 2.1), and by two external validation tests—the Australia structural parallel and the Germany fiscal control group.

#### Largely measurement artifact:

- The post-2022 decline in GDP per capita—primarily a compositional effect of rapid labour force expansion. The mechanical calculation in Section 2.1 establishes that this effect alone accounts for at least 78% of the acute-phase shortfall from trend in GDP per hour, and virtually 100% of the GDP-per-capita decline.
- The widening gap with the US—primarily fiscal asymmetry compounded by TCJA-induced investment incentives and the USD's reserve currency status. Germany's parallel productivity stagnation under constitutional fiscal restraint provides independent validation.
- The deterioration relative to Italy—primarily the workforce age-productivity profile and the eurozone anchor, compounded with PPP methodology distortions and sectoral composition differences.
- Currency regime asymmetry as a standalone distortion—Canada's commodity currency depresses GDP in cross-country comparisons, raises imported capital goods costs by 40%+ relative to parity.
- Public sector expansion paradox—input-based measurement inflates GDP while depressing efficiency ratios.

#### Policy-induced but correctable:

- TCJA competitiveness shock on capital-intensive sectors (reversible through tax policy response).
- Capital cost allowance phase-out (scheduled to drop Canada from 5th to 13th in OECD rankings by 2028).
- Energy regulatory constraints blocking high-productivity resource projects.
- Capital misallocation into real estate (the central mechanism explaining broad-based stagnation even in sectors unaffected by immigration; see Section 3.3).

#### Genuinely structural (long-term):

- Chronic business underinvestment in equipment, technology, and R&D—predates 2022 and has been building for 20+ years. Productive capital stock declined 8% as a share of GDP between 2013 and 2023, with industrial machinery down 19%.
- Oligopoly protection in banking, telecom, airlines, and groceries reducing competitive pressure to innovate.
- Interprovincial trade barriers preventing economies of scale in a market one-tenth the size of the US.
- Declining firm entry rates reducing competitive dynamism since the early 2000s.

### 5.2 The Australia Test

The most powerful diagnostic is the Australia comparison. Australia shares Canada's structural characteristics—commodity dependence, immigration-driven population growth, a commodity currency that depreciates against the USD, comparable housing affordability pressures, and a similar median workforce age lowered by immigration. Australia experienced the same post-COVID immigration surge, shows a parallel productivity trajectory, and is now implementing similar immigration corrections.

A critical mechanism that the Australia comparison isolates is the commodity currency penalty on capital investment. Both the CAD and AUD depreciate against the USD during commodity downturns. At 1.41 CAD/USD, a Canadian firm pays 41% more in local currency for the same machine tool than a US competitor. Standard productivity metrics misread this as a "lack of investment"—when it is in fact a currency-driven capital cost asymmetry.

*If two different countries with the same distortion profile—commodity currency, immigration surge, housing affordability pressure—show the same productivity decline, the problem is almost certainly the profile, not the country. This is the core finding: Australia's parallel trajectory confirms that Canada's measured productivity decline is predominantly a function of structural conditions shared by commodity-exporting, immigration-dependent economies with procyclical currencies.*

Section 4.6 demonstrates that Germany—which lacks both the immigration denominator distortion and the commodity currency penalty—also shows productivity stagnation when measured against the US benchmark. This suggests the immigration surge alone cannot explain the full measured divergence. Germany's stagnation, combined with Australia's parallel trajectory, points to the US deficit-inflated benchmark as a significant contributing factor to why multiple dissimilar economies simultaneously appear to be underperforming when measured against US productivity—though real structural weaknesses in each economy may also be at play.

### 5.3 What the Correct Metric Would Show

The analysis needed—which no major report has conducted—is a decomposition of private sector only productivity across countries, controlling for:

- Labour force composition (removing immigration-driven denominator effects, including arrival lags, family composition, and skills downgrading)
- Workforce age-experience profile (adjusting for the productivity premium of older, more experienced workers)
- Sectoral mix (adjusting for the weight of real estate and low-productivity services)
- Capital intensity (adjusted for exchange rate effects on imported equipment costs)
- Currency regime normalization (converting all comparisons to a common unit)
- Deficit-adjusted GDP (removing the differential fiscal stimulus from the numerator)
- Digital value leakage (estimating the productivity gains captured by foreign platform firms)

### 5.4 Is the Average Canadian Worker Actually Less Productive?

This is the question that the entire productivity debate claims to be answering. It is not. The aggregate metrics at the centre of the discussion—GDP per hour worked, GDP per capita, multifactor productivity—do not measure individual worker productivity and cannot be used to compare it across countries. They measure the ratio of two aggregates, both of which are contaminated by currency, fiscal policy, composition, measurement conventions, and institutional structure.

#### Why the Test Fails for the Modern Economy

Approximately 75% of GDP is produced in services, where "output" has no physical-unit equivalent. Consider three examples:

A barista makes 40 lattes per hour in Toronto and 40 lattes per hour in Rome. Identical productivity by any meaningful definition. But her contribution to measured GDP depends on the price of the latte, the currency it is denominated in, whether the café is part of a chain that reports revenue to a US parent company, and how the statistical agency classifies her sector. Two identical workers, identical output, wildly different "productivity" in the national accounts.

A software developer writes a module that saves his company 10,000 hours of manual work per year. If he works for a US firm remotely from Canada, the productivity gain shows up in US GDP, not Canadian

GDP. If the same person moves to Austin, Canadian productivity falls (lost a high-value worker) and US productivity does not meaningfully change (rounding error in a \$28 trillion economy).

A nurse sees 30 patients per shift. Her government employer's "output" is measured by what they pay her. If she works harder and sees 35 patients, measured productivity does not change because the output metric is her compensation, not her patient throughput. Government spending across all levels represents roughly 37% of Canadian GDP.

*The entire productivity debate is conducted using aggregate metrics that do not measure what people think they measure. GDP per hour is not a measure of how hard or how well Canadians work—it is a ratio of two aggregates contaminated by at least seven distinct measurement distortions, three currency regime asymmetries, and multiple compositional biases. The fundamental question—"Is the Canadian worker who was here five years ago actually producing less today?"—has not been answered, because no major report has used a methodology capable of answering it.*

## 5.5 Implications for the Policy Debate

The distinction between artifact, correctable, and structural decline matters enormously for policy. The evidence suggests a four-track response:

**Patience** on the composition-driven metrics. The quantitative box in Section 2.1 demonstrates that the immigration composition effect alone accounts for at least 78% of the acute-phase shortfall from trend in GDP per hour. It is important to be precise here: a decline in measured GDP per capita driven by immigration is not, in itself, evidence of a problem. It becomes a concern only if the immigration policy failed to achieve its own stated objectives, or if policymakers did not adequately assess the statistical impact in advance. The compositional shift on measured productivity is, in any case, already partially self-correcting as immigration targets normalize and integration proceeds.

**Capital reallocation** from housing to productive investment. Levers worth examining include the capital cost allowance regime, the tax treatment of principal residences, Basel-driven regulatory incentives that direct bank lending toward mortgages over business investment, and interprovincial barriers that constrain the scale at which firms can deploy capital productively. The precise mix of instruments would require further policy analysis.

**Urgency** on the remaining correctable structural factors. The corporate tax structure merits review in light of the TCJA-induced competitiveness shift; energy regulatory processes and credential recognition frameworks are areas where reform could plausibly improve outcomes, though the magnitude and timeline of any effect would depend heavily on implementation.

**Sustained commitment** to longer-horizon structural questions: competition policy in concentrated sectors, interprovincial trade barrier reduction, and R&D incentive design. These are areas where the evidence of underperformance is clearer than the evidence for any specific intervention, and where further analysis should precede firm policy commitments.

**Measurement reform.** Canada needs investment in micro-level productivity measurement—firm-level matched-industry comparisons, cohort-matched task-level analysis, and physical-output tracking—so that future policy decisions are grounded in data that reflects actual economic performance rather than compositional noise.

## Part VI — Quantifying the Breakdown: How Much Is Real?

The preceding analysis identified measurement artifacts and genuine structural factors. This section provides an approximate quantitative decomposition of Canada's measured productivity decline into three categories: measurement artifact, policy-induced but correctable, and genuinely structural.

The estimates below are directional assessments based on the available evidence—not outputs of an econometric model. Tier 1 (Anchored, ~30%) groups factors with direct institutional backing: the US deficit differential (anchored to CBO data) and the immigration compositional shift (anchored to Bank of Canada staff research and Statistics Canada data). Tier 2 (Directional, ~10–20%) groups factors where the direction and mechanism are clear but precise magnitudes await econometric confirmation.

### 6.1 Framework

Canada's measured productivity decline can be observed through two time horizons: the long-run divergence from the US (building since the early 2000s) and the acute deterioration since 2022. The composition of causes differs significantly between these two periods.

### 6.2 Long-Run Divergence (2000–2025)

Over this period, the Canada-US labour productivity gap widened from modest to approximately 30%. The following decomposition estimates how much of this cumulative gap is attributable to each factor category:

Factor Category	Est. Share	Rationale
<b>GENUINELY STRUCTURAL</b>		
Business underinvestment in M&E and technology	<b>15–20%</b>	Capital intensity per worker has fallen steadily. OECD data shows this across sectors. The single most robust finding in the literature.
R&D spending gap	<b>5–8%</b>	Canada at 1.8% of GDP vs. 2.7% OECD average. Directly linked to weaker TFP growth and patent rates. Longstanding and worsening.
Oligopoly protection and market fragmentation	<b>5–7%</b>	Interprovincial barriers, telecom/banking/grocery concentration. Reduces competitive pressure to innovate. OECD scores unchanged since 2018.
Declining firm entry rates	<b>3–5%</b>	Fewer startups means less competitive pressure on incumbents. OECD documented declining entry from early 2000s through 2019.
<b>POLICY-INDUCED, CORRECTABLE</b>		
TCJA competitiveness shock	<b>5–8%</b>	Eliminated Canada's tax advantage post-2017. Peer-reviewed evidence of capital expenditure shift. Correctable through tax policy response.
Energy regulatory constraints	<b>3–5%</b>	Cancelled high-productivity resource projects redirected capital into lower-productivity sectors. Correctable through regulatory reform.
Capital misallocation into real estate	<b>5–7%</b>	Partly market-driven (housing wealth effect), partly policy-driven (tax treatment, zoning, mortgage rules). Partially correctable.

MEASUREMENT ARTIFACT (Tier 1: Anchored ~30%   Tier 2: Directional ~10–20%)		
US deficit-inflated benchmark (Tier 1)	<b>15–20%</b>	Anchored to CBO data. US running deficits at roughly double Canada's rate. Germany's parallel stagnation under the debt brake corroborates this as benchmark inflation, not Canadian underperformance.
Labour force composition shift – immigration (Tier 1)	<b>10–15%</b>	Anchored to Bank of Canada Staff Discussion Paper 2025-8 and Statistics Canada. Temporary workers younger, less experienced, concentrated in low-value sectors. Philip Smith (IPM) estimates temporary resident earnings at ~\$25,000, roughly one-third the average.
Public sector expansion paradox (Tier 2)	<b>5–8%</b>	Government share of GDP rose while government productivity declined 0.3% annually (MLI data). Input-based measurement inflates GDP while depressing efficiency ratios.
Digital value extraction to US (Tier 2)	<b>3–5%</b>	Growing but unquantified. Canadian firms' productivity gains from US platforms accrue to US GDP. Platform gross margins of 60–80% capture disproportionate share of value.
Currency regime asymmetry (Tier 2)	<b>5–8%</b>	US reserve currency structurally overvalues US benchmark; euro anchored by Germany flatters Italy; CAD commodity depreciation penalizes Canadian GDP in comparisons and raises capital equipment costs by 40%+ (Section 5.2).

### 6.3 The Acute Post-2022 Deterioration

The post-2022 period shows a sharply different composition. GDP per capita fell nearly 4% while labour productivity stagnated or declined. The breakdown for this acute phase is heavily weighted toward artifact:

Factor	Est. Share	Note
Labour force composition shift	<b>40–50%</b>	Non-permanent residents grew from ~500K to 2.5M. Conservative estimate. Note on figures: Section 2.1's mechanical calculation establishes ~78% as the lower bound for the immigration composition effect on GDP per hour in isolation. The 40–50% figure here is the overall attribution across all factors for the acute phase—a smaller number because it accounts for the fact that other factors (trade uncertainty, public sector expansion, construction slowdown) also contributed to the measured decline. Both figures are correct; they measure different things. The quantitative box in Section 2.1 establishes a verifiable mechanical lower bound of ~78% for GDP per hour and ~100% for GDP per capita. Crucially, this is not a finding that immigration reduced productivity—it is a

		finding that the metric misreads wage gaps and compositional shifts as efficiency declines.
Trade uncertainty and tariff effects	<b>15–20%</b>	Trump tariff threats reduced business output in Q2 2025 for the first time in seven quarters. Firms cut investment under uncertainty.
Continued public sector expansion	<b>10–15%</b>	Federal workforce continued growing post-pandemic. Government consumption rose while services delivered did not keep pace.
Real estate correction / construction slowdown	<b>10–15%</b>	Pre-construction sales collapsed ~90% in GTA. Capital and labour from real estate not yet redeployed productively.
Underlying structural underinvestment	<b>10–15%</b>	Continuation of long-run trend. Not new to this period but compounding.

### 6.4 Visual Summary

	Long-Run (2000–2025)	Post-2022 Acute Phase
Measurement artifact	<b>40–50%</b>	<b>50–65%</b>
Policy-induced, correctable	<b>15–20%</b>	<b>15–20%</b>
Genuinely structural	<b>30–40%</b>	<b>10–15%</b>

### 6.5 What This Means

The decomposition above should be read with two important caveats. First, it is a decomposition of aggregate metrics that do not measure what most people assume they measure. The decomposition quantifies the distortions within the existing measurement framework; it cannot tell us what a properly constructed metric would show, because that metric does not yet exist.

Second, the artifact estimate is now supported by three independent lines of evidence that converge on the same conclusion:

**The mechanical calculation (Section 2.1)** establishes a verifiable lower bound: immigration composition alone accounts for at least 78% of the acute-phase shortfall from trend in GDP per hour, and virtually 100% of the GDP-per-capita decline. This is arithmetic, not inference.

**The Australia parallel (Sections 4.2, 5.2)** provides the structural control: a near-identical economy shows a near-identical trajectory. This does not prove that neither country is genuinely losing productivity—both may well be. What the parallel does establish is that a common set of structural conditions, shared by commodity-exporting, immigration-dependent economies, is depressing measured performance in ways that cross-country rankings do not adequately account for. The finding is about measurement distortion compounding whatever real decline exists, not about ruling out real decline.

**The Germany fiscal control group (Section 4.6)** provides the benchmark control: a major economy with no immigration surge and strict fiscal restraint shows parallel stagnation when measured against the US—isolating the deficit-benchmark distortion as a standalone factor.

The central mechanism explaining the long-run gap is capital trapped in residential real estate: Canada's investment in machinery, equipment, and intellectual property has fallen to roughly half the US level as a share of GDP, while productive capital stock has eroded 8% over a decade. This explains why productivity is flat even in sectors unaffected by immigration—aging equipment produces less per hour regardless of who operates it.

The acute post-2022 deterioration is predominantly a compositional and measurement story. The arithmetic is clear: add 1.2 million workers earning one-third of the average to a 21-million-person labour force, and the compositional drag on GDP per hour is mechanically 3.5%—explaining the vast majority of the measured shortfall.

*The critical risk is misdiagnosis. If policymakers treat the entire measured decline as structural, they may implement dramatic interventions that address a problem that is largely self-correcting while ignoring the genuine capital misallocation compounding underneath. The evidence supports a calibrated response: patience on the composition-driven metrics, urgency on redirecting capital from housing to productive investment, and sustained commitment to competition and regulatory reform.*

## Annex: Sources and Methodology Notes

### Primary Institutional Sources

- Bank of Canada: Productivity speeches (Rogers, March 2024; Macklem, November 2025); Staff Discussion Paper 2025-8 on immigration composition
- Statistics Canada: Quarterly Labour Productivity releases; Public Sector Universe; PPP methodology paper
- OECD: Economic Survey of Canada 2025, Chapter 4; Compendium of Productivity Indicators 2025, Chapter 9; Economic Survey of Germany
- McKinsey & Company: "Addressing Canada's Productivity Gap," November 2025
- Fraser Institute: Canada-US productivity divergence paper; CAD depreciation commentary
- International Productivity Monitor: Philip Smith, GDP per capita decomposition (No. 46, 2024)
- Macdonald-Laurier Institute: "The Growing Government Gap"; "Bigger, Not Better" (2025)
- Business Council of Canada / PwC: TCJA impact assessment (2020)
- Tax Foundation: Canada full expensing analysis (2025); Brookings Institution: TCJA investment effects (2025)
- Congressional Budget Office: Long-Term Budget Outlook (2025); CRS: TCJA economic effects review (R48485)
- Australian Bureau of Statistics: Estimates of Industry Multifactor Productivity 2024–25; National Accounts
- Reserve Bank of Australia: Statement on Monetary Policy, August 2025; Sarah Hunter speech, February 2025
- Australian Industry Group: "Productivity takes another turn for the worse in 2024–25," February 2026
- German Federal Statistical Office (Destatis): GDP first estimate 2024; National Accounts quarterly releases
- German Council of Economic Experts (Sachverständigenrat): Annual Report 2024/25
- European Commission: Economic Forecast for Germany, Autumn 2025; IMF: Article IV Consultation on Germany, July 2024
- Institute of Public Affairs (Australia): National Accounts analysis, GDP per capita decline series
- Centre for Independent Studies (Australia): "The Productivity Problem," December 2025
- Central Statistics Office Ireland: Modified Gross National Income (GNI\*) methodology and annual releases; "A Comparison of GNI\* and GDP for Ireland," CSO.ie

### Methodology Notes

All cross-country comparisons use PPP-adjusted figures from the OECD and IMF unless otherwise noted, with the caveats regarding PPP methodology, currency regime asymmetries, and benchmark timing discussed in Section 2.4. Canadian productivity figures refer to StatsCan's official labour productivity measure (real business sector GDP per hour worked). US fiscal data are from the CBO and BEA. Australian data are from the ABS. Italian data are from ISTAT and Eurostat. German data are from Destatis, the German Council of Economic Experts, and the European Commission. Deficit figures represent general government balances unless specified as federal only.

Estimated magnitudes for distortion factors are presented in a tiered structure. Tier 1 estimates (~30% of the long-run gap) are anchored to published institutional data from the CBO, Bank of Canada, Statistics Canada, and the MLI. Tier 2 estimates (~10–20%) reflect directional assessments based on qualitative evidence where the mechanism is clear but precise quantification requires further research. The addition of Germany as a fiscal control group (Section 4.6) provides external validation for the Tier 1 deficit-benchmark hypothesis. Precise econometric decomposition as described in Section 5.3 remains the priority for future research.