

THE PRODUCTIVITY PUZZLE

**Labour, Skills, and the Future of Work:
Investing in People to Power Productivity**

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Introduction

Halifax Partnership's *Productivity Puzzle* initiative has been created to foster greater understanding around the challenges we face regarding productivity and economic growth, to identify key questions for further examination, and to convene conversations in pursuit of solutions.

At the April 3rd launch event, it was noted that no silver bullet solution existed to reverse our poor productivity performance. The point also was made, however, that substantial progress over the long term could be realized through small but steady gains across a range of factors that contribute to productivity improvement and prosperity.

The next event in the series on June 5th focused on competition, trade, and regulation. In addition to an exploration of the potential gains from liberalizing trade among the Atlantic provinces, there was an opportunity to recognize that recent weeks had indeed shown remarkable advances in reducing trade frictions and regulatory irritants among provinces and to celebrate Nova Scotia's leadership in this regard. This included removing interprovincial labour barriers through legislation and mutual recognition agreements. Pieces of the puzzle, perhaps, were beginning to fall into place.

Issues related to factors such as investment, innovation, and taxation will be on the agenda for a *Productivity Puzzle* event in early 2026, but next up in the series will be an October 16th session focused on human capital and labour markets and their linkages to productivity and prosperity.

Human capital is a broad concept, and the connections with productivity and economic growth are myriad.

An initial, basic question is whether an economy has enough people to fulfil its labour needs. This issue has been front of mind in Nova Scotia for some time, with particular emphasis provided by the Ivany report in 2014. Warnings of looming population aging and decline put increasing immigration and reversing youth outmigration at the top of the policy agenda across the political spectrum. More recently, there has been a downturn in enthusiasm for population growth, however, as rapid rises in interprovincial and international migration to Nova Scotia – and to Halifax in particular – contributed to serious pressures on the housing and health care systems.

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Beyond the question of having an adequate number of working-age people in the population, a second consideration is the extent to which these people are indeed participating in the labour force. Potential frictions include health and disability issues that prevent people from working, conflicts between work and child- or elder-care responsibilities, mismatches between where people live and where work opportunities exist, and incentive structures built into programs like Employment Insurance.

A next question is how well the available labour force matches up with the economy's needs: Are there too few plumbers, truck drivers, and radiologists? Too many cooks, architects, and bookkeepers? Drilling down further, how well do workers align with employers' needs and expectations in terms of basic skills like literacy and numeracy, technical proficiency for specific jobs, language and communication capabilities, and "soft" skills like teamwork, initiative, reliability and resilience?

And even if, for the sake of argument, the labour force of today is meeting the economy's needs very well in terms of aggregate numbers, specific professions, credentials, and skills, what about *tomorrow's* economy that may be radically impacted by demographic shifts, restructured trade flows, new policy priorities (e.g., addressing climate change, enhancing the capabilities of the military, etc.), changing approaches to remote work, and technological revolutions like Artificial Intelligence (and the critical thinking skills required to adapt to and prosper from it)?

Labour Needs Persist

From 2016 through 2023, except for a COVID-induced interruption in 2021, Nova Scotia enjoyed rapidly increasing and continuously record-breaking population growth, centred in Halifax. This marked important progress in addressing the dire demographic concerns raised in the Ivany report, although no one was calling the problem solved yet.

In response to the impacts on the housing market and the health care system of the massive (nationwide) upswing in population growth, however, in early 2024 the federal government began to substantially cut back on the number of international students and immigrants allowed into the country. While long-term demographic challenges remain, the trajectory for future population growth in Nova Scotia is uncertain.

As the Baby Boom population bulge continues to age, the death rate will continue to increase, and it seems unlikely that there will be any major shift in the birth rate¹ anytime soon.

Interprovincial population movements (and also intraprovincial movements, in the Halifax context) will continue to be impacted by differentials between jurisdictions in terms of employment opportunities, wage levels, and the cost of living.

International migration, which has been the primary driver of overall population growth for many years, is the most difficult to predict as it is subject to policy decisions which are responsive to not only economic assessments, but also the public sentiment and politics of the day.

The nature of international migrant flows also can have different impacts on our productivity and growth performance. When foreign professionals and entrepreneurs (and students, post-graduation) come here to work in high-skill professions and trades or to start their own businesses, they contribute greatly to our prosperity. If, however, foreign workers can be brought here to fill low-skill jobs at wage rates too low to attract workers from the local population, average income levels will tend to drop and employers will be incentivized to rely on cheap labour, rather than making productivity-enhancing investments in automation, equipment, and technology.

A very positive aspect of the population boom of the past decade is that growth was concentrated among youth and young adults, exactly the age profile desired to address concerns over impending labour force shrinkage. As these newcomers joined the labour force, they were readily absorbed:

¹ Net natural growth (births minus deaths) dropped to -322 in 2024. Total deaths recorded in Halifax were 4,020, the highest total in almost a decade, while there were 3,698 births. [Halifax Index 2025, Population Growth By Source](#).



employment grew essentially in lockstep with the labour force and, aside from short-term pandemic spikes, the unemployment rate remained at historically low levels. (The first part of 2025, though, has seen the unemployment rate tick up as the economy adjusts to American tariff threats and related issues.)

Halifax, and Nova Scotia more broadly, remain wonderful places to live, but the post-pandemic spike in housing costs was particularly acute here and our cost-of-living position relative to other Canadian locations generally worsened. While local wage growth accelerated after the pandemic in response to those cost-of-living pressures, wage growth performance in relation to other Canadian jurisdictions has been middling.

The summary points, in terms of the labour force writ large, are that population aging impacts remain a concern, and solutions face significant constraints. The prospects for continued strong growth via international migration will be a function of federal immigration policy decisions, which are currently slowing down immigration, and there has been deterioration in the housing availability and cost advantages Halifax has traditionally enjoyed in relation to much of Canada.

Future Labour Demand and Supply

The federal government annually produces *Occupational Outlook* documents. The most recent edition, described as a 2024-2026 outlook, was published in January 2025. The Nova Scotia document contains breakdowns for Halifax and Outside Halifax. The report's opening states:

"Each year, Service Canada develops 3-year occupational employment prospects at the provincial and sub-provincial level. This analysis is based on a forecast model that captures macroeconomic, demographic and industry employment conditions, in addition to occupation-specific factors that influence job opportunities.

This report provides a summary of Nova Scotia's results from the latest occupational scenario (2024-26). It addresses the sources of labour demand,

Snapshot: Today's Labour Force

Education Credentials

Nova Scotia mirrors Canada as a whole in terms of educational credentials. According to the 2021 Census, Nova Scotia's population aged 25-64 held the following credentials:

- 10% had less than high school
- 24% had only a high school diploma
- 36% held a certificate or diploma below bachelor level
- 20% had a bachelor's degree
- 10% had education beyond bachelor level

In each of these categories, the Canada-wide figures were within two percentage points of the Nova Scotia values.

In comparison to the provincial and national figures, Halifax had lower shares with high school education or less and higher shares with university degrees.

Fields of Study

Halifax's distribution of educational credentials across fields of study closely mirrors other major Canadian cities. In both broad categories (e.g., humanities, computer and information sciences, health and related fields, etc.) and specific subjects (e.g., philosophy and religious studies, psychology, engineering, etc.), the shares for Halifax are never more than one percentage point away from the average across other major cities.

This, however, does not tell us how well the credentials and expertise of our population match up with labour market needs.



job growth and attrition, as well as highlights those occupations identified as having Good and Limited employment prospects.”

Job opportunities are calculated as the sum of new jobs plus job openings that occur due to retirement.

One means of categorizing these openings is by Training, Education, Experience and Responsibility (TEER) categories.² Between 2024 and 2026, Nova Scotia is expected to have roughly **62,000 total job openings**, including:

- 5,000 management occupations (TEER 0)
- 15,000 needing a university degree (TEER 1)
- 15,000 needing a college diploma or 2+ years of apprenticeship (TEER 2)
- 10,000 needing less than a 2-year college diploma, apprenticeship training, or 6+ months on-the-job training with some post-secondary (TEER 3)

- 8,000 needing a high school diploma, several weeks of on-the-job training, or experience in a related occupation (TEER 4)
- 8,000 needing no formal education, only short-term work experience (TEER 5)

Across occupation groups, at more than one-quarter of the total, Sales and service occupations have the most projected openings at over 16,000, followed by Trades, transport and equipment operators and related occupations, and Business, finance and administration occupations at approximately 10,000 each. Over 5,000 openings also are projected for Occupations in education, law and social, community and government services, Health occupations, and Natural and applied sciences and related occupations.

In terms of specific (5-Digit NOC) positions, the top-ten list for projected job openings is dominated – eight out ten – by the health, retail, and food sectors.

Top Job Opportunities, Nova Scotia, 2024-26	
Occupation Groups, 1-Digit NOC1	Openings
0-Legislative and senior management occupations	155
1-Business, finance and administration occupations	9,285
2-Natural and applied sciences and related occupations	6,155
3-Health occupations	6,650
4-Occupations in education, law and social, community and government services	7,505
5-Occupations in art, culture, recreation and sport	1,955
6-Sales and service occupations	16,520
7-Trades, transport and equipment operators and related occupations	10,185
8-Natural resources, agriculture and related production occupations	1,240
9-Occupations in manufacturing and utilities	2,575
Total	62,225

Top Ten Job Opportunities, Nova Scotia, 2024-26	
Occupation Groups, 5-Digit NOC	Openings
64100 Retail salespersons and visual merchandisers	1,955
33102 Nurse aides, orderlies and patient service associates	1,845
31301 Registered nurses and registered psychiatric nurses	1,375
62010 Retail sales supervisors	1,365
65100 Cashiers	1,220
65201 Food counter attendants, kitchen helpers and related support occupations	1,065
65102 Store shelf stockers, clerks and order fillers	990
41221 Elementary school and kindergarten teachers	940
60020 Retail and wholesale trade managers	920
21222 Information systems specialists	910

² Training, Education, Experience and Responsibility (TEER) Categories

Job Market Data: Users and Uses

Information of this type is very important for different reasons to different audiences.

Employers need to understand how easy or difficult it will be to staff the various positions in their operations. Will a restaurant be able to find the workers it needs to operate at full capacity? Will an IT-tech firm have access to the programming and engineering staff it requires to thrive and expand? How should a firm think about its future salary offerings and the impact on its overall business plan in light of information on the future demand and supply for key positions in its operations? Should AI and automation investments be considered where labour may be difficult to source?

While the role of post-secondary institutions is not solely to churn out future employees in response to industry demands, labour market realities should inform their choices in terms of program offerings (e.g., more computer science courses on AI and fewer on ALGOL³) and resource deployment (e.g., more seats in, say, plumbing programs and fewer in bricklaying – or maybe the other way around).

It also is important to recognize that while the pathway from classroom to employment is reasonably direct in the college context – students generally enrol in carpentry to become carpenters and in funeral directing to become funeral directors – it is less so in universities. Students may choose courses and degree programs to develop skills in research, analysis, critical thinking, communication, etc., to prepare for future graduate or professional training (say, law school), and to generally become well-rounded workers and citizens. A sociology graduate can go on to great things without necessarily becoming a sociologist.

Other characteristics of universities that impact their abilities to pivot in response to new labour market realities include often lengthy formalized approval processes to develop and implement new programs, and the willingness and ability of tenured

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faculty to shift from the topics and issues on which they have centred their teaching and research over the course of their careers to new areas in demand from employers. Adequate and stable revenue is also a key issue in any discussion of the role and mission of post-secondary institutions.

Labour market forecasts, including information on likely wage and salary rates, are also important for students as they choose colleges and universities, choose degree and certificate programs at those institutions, and choose specific courses within those programs. Every parent of a teenager understands the stress of trying to help their children set out on a path to a rewarding and fulfilling career.

Policymakers also must be attuned to the current and future status of labour markets. At a time when all signs point to increasingly tight labour markets for years to come, many government programs and actions carry on traditions borne of the high unemployment eras of the past by using “job creation” as a key criterion.

Excess demand or supply for labour in different industries and occupations inform decisions on quotas for and rules around international migration, highlight the friction caused by interprovincial trade and labour mobility barriers, and heighten the importance of addressing unintended policy consequences that, for example, dampen incentives for people to move from areas or industries with limited employment opportunities to others where jobs go unfilled.

³ Yes, AI was used here to answer the question: “What is an example of a computer language that is now outdated, unused, and irrelevant?”



The Great Unknowns

These labour market forecasts involve both sophisticated macroeconomic modelling and extensive consultation with industry experts, but they are understandably limited in their ability to incorporate the effects of potential future shocks, both positive and negative.

For example, the details of the federal government's plans to significantly bolster the military are as yet unknown, there are visions of major energy developments ... but they may be years away from realization, and the American administration's approach to tariff and trade policy is perhaps best described as chaotic. Predictions about the rate and breadth of AI adoption and its impacts on the labour market vary wildly, but anecdotes abound that young people, who only a few years ago were told that a career in computer programming or software engineering was a sure bet, are now finding that the junior positions they would aspire to upon graduation are being made redundant by AI. Multi-year forecasting is difficult in the most stable of times; now we face a level of uncertainty unseen in many years.

We also know less about labour quantity than we do about labour "quality". Forecasting models may tell us about future shortages in various occupations, but they are less able to tell us about shortfalls in skills. Beyond technical capabilities and subject knowledge, what other sorts of characteristics – e.g., initiative, reliability, creativity, ability to work in a team setting, etc. – are in demand by today's employers, and are our schools aware of and responding to these needs?

Finally, any discussion of the quality of the future labour force in Nova Scotia should acknowledge that assessments of our P-12 students across all grade levels for many years have shown disturbingly high numbers of students scored as performing below expectation⁴.

⁴ In 2024, almost a quarter of P-12 students in Nova Scotia were assessed as being below expectation: [Halifax Index 2025, P-12 Education](#).

What do we do?

Currently, we have more questions than answers regarding this complex and critical driver of productivity, which is why an open and rich discussion among our government, post-secondary, and business leaders is required.

Our next Productivity Puzzle series provides an opportunity for this collective discussion and will drill into the many factors at play, including addressing the following questions:

- How do we ensure that Nova Scotia will have enough workers with the right skills and capabilities to meet its future labour needs and drive productivity growth and prosperity for themselves and for our economy broadly?
- How do we maintain population growth and improve labour force participation across our population?
- How do we better manage immigration to attract, welcome, and integrate the newcomers we need at a pace that avoids undue pressures on our housing and healthcare systems?
- How can we improve upon both the collection and the dissemination of labour market forecast information, especially during a time of whirlwind change?
- In the face of such uncertainty and flux, how do we best equip the next generation of workers with knowledge about opportunities, as well as the flexibility and adaptability that will allow them to thrive?
- Beyond simply adding a new program here, or increasing enrolment in a department there, are there bigger changes that our post-secondary institutions should be considering to ensure their own continued success and that of their graduates?



- Are changes needed in how workers receive ongoing training and development, and in how workers who lose their jobs are re-skilled for new opportunities?
- How do we help workers become more productive in their jobs by using AI, and how do we support other workers who lose their jobs to AI?
- How do we address policy and regulatory barriers that hinder our productivity, such as frictions to interprovincial labour mobility, counterproductive incentives in programs like Employment Insurance, and programs that reward “job creation” as labour shortages loom? How do we overcome the related politics?
- And to finish at the very beginning, notwithstanding the fact that it is a very good place to start, how much do any of these questions matter to students who are not developing competency in basics like reading, writing, and mathematics? Are we paying enough attention to our early childhood and P-12 educational systems?

Please join us on October 16th for a rich discussion of these important issues.

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Keynote Speaker:
Linda Nazareth
Economist & Futurist

Scan for Details

