



Understanding Canada's Labour Shortage

Human talent is Canada's greatest competitive advantage, but it is a finite and precious resource

In recent months, Deloitte has been connecting with business, institution, and government leaders across Canada to discuss the looming economic slowdown and possible recession – reflecting the fallout of high inflation and rapidly rising interest rates. While business cycle risks are acute, leaders have consistently indicated that their primary concern is not the economic outlook, but rather managing labour and skills shortages. Even if labour demand weakens in the near term, there is considerable speculation that labour scarcity will persist or will re-emerge as a dominant issue once the economy strengthens again. As a result, one of the most common questions we hear is: after the pandemic lockdowns, where did all the workers go?

“Canada's long-term trend is likely to be persistent labour scarcity. Forget the race against the machine. The future will be a race with machines.”

Craig Alexander
Chief economist and executive advisor

The wording of this question is notable because it gives the sense that the pandemic caused a change in worker behavior or labour supply. This fits with the narrative about the 'The Great Resignation' – a catch phrase used to capture the notion that vast numbers of workers left jobs or didn't return to jobs during the pandemic. In some cases, workers changed jobs for health and safety reasons. For others, workers had time to rethink career or occupation choices and even had time to do some training or education. Then there were older workers that might have accelerated the timing of their retirement. However, there is another factor at work as well – increased labour demand also contributed to the labour scarcity being experienced.

There have been many attempts to capture where workers have gone, but the majority focus on anecdotal stories of individuals. This paper looks at the shifts in the various components of labour supply and labour demand as tracked by official data sources, like Statistics Canada, to quantify the magnitude of recent labour market trends. The goal of this exercise is to help explain some of the recent labour market dynamics and provide policy insights aimed at alleviating current and future labour shortages.

The analysis that follows leads to a host of conclusions. First, it turns out that in contrast to the United States, aggregate labour demand in Canada did not exceed aggregate labour supply during the pandemic or recovery. This does not mean that there were not labour shortages, but it does mean that the shortages were by geography, by industry, by occupation and reflected skill mismatches. Second, a rough estimate is that labour and skills shortages in 2022 was costing the economy as much as \$54 billion in lost potential economic activity as measured by real GDP. Third, Canada's labour supply declined during the pandemic and recovery due to a drop in labour participation of older workers age 55+. Meanwhile, labour participation of prime working age workers actually increased, a seemingly unnoticed story but one that was not enough to offset the loss of older workers. Fourth, there were dramatic swings in employment by industry and occupation. Job creation since the start of the pandemic was dominated in services-producing sectors and in higher skill occupations. Professional services, finance, government, health, and education all added to payrolls. Certain industries, like accommodation and food services, were hard hit and slow to recover, and certain occupations, like sales, experienced the largest job declines. The job market story can be divided into two very different narratives. There are labour shortages in industries and occupations that have experienced strong growth and have needed more workers to expand. Then there are labour shortages in industries and occupations that experienced large declines during the pandemic but have struggled to replace workers during the recovery, particularly while health risks persist. Fifth, beyond the pandemic volatility, the Canadian labour market is heavily constrained by structural factors of an aging domestic population, barriers to success facing underutilized domestic pools of labour (e.g., Indigenous and First Nations People, visible minorities, women, disabled Canadians etc.), and reliance on immigration for close to 100% of net labour force growth. The implication being that much of the underlying labour scarcity has a structural dimension.

In Deloitte [Canada's Competitiveness Scorecard](#), human talent was assessed as Canada's top competitive advantage; but, that advantage is lost if the supply is inadequate to meet the needs of the economy. It is essential that Canada makes optimal use of its available pool of domestic-born talent while attracting and integrating the best talent from abroad. At the same time, limited labour supply makes a strong case for increased investment in labour saving and productivity enhancing machinery and equipment.

“aggregate labour demand in Canada did not exceed aggregate labour supply but the labour market was exceptionally tight...shortages were by geography, by industry, by occupation and reflected skill mismatches”

“labour supply of prime working age workers actually increased during the pandemic...but this did not offset the loss of older workers age 55+”

“A rough estimate is that labour and skills shortages in 2022 was costing the economy as much as \$54 billion in lost potential economic activity”

The Canadian economy is in the midst of an economic slowdown that could lead to a recession, and this might lead to the development of some labour slack in the near term. Regardless, once the economy strengthens, there is every reason to believe that labour shortages will re-emerge as a dominant business concern and a policy priority.

Canada's labour and skills shortage

There is considerable evidence that labour shortages and an inadequate supply of workers with the skills needed by firms is acting as an impediment to economic growth. The Canadian Federation of Independent Business (CFIB) Business Barometer survey of small and medium enterprises in August 2022 reported that 52% of respondents said that shortages of skilled labour were limiting the ability to increase sales or production, while 37% said that shortages of unskilled or semi-skilled labour were a constraint. These two responses represented the leading two barriers to expansion. The Bank of Canada Business Outlook Survey (BOS) for the second quarter of 2022 reported that 63% of firms surveyed were encountering labour bottlenecks, defined as firms having a fully utilized labour force and an inability to find suitable new labour at the current wage. The same survey also asked respondents if they could not meet demand due to difficulty hiring and 42% of respondents indicated that they were having this experience. Meanwhile, the national unemployment rate in July 2022 stood at 4.9% – the lowest since early 1970. In June, the number of unfilled jobs that employers were actively recruiting for stood at 1,037,900 positions, a number that exceeded the 986,700 unemployed Canadians. Of course, the problem is that the unemployed were not necessarily in the geography where the jobs were located, the workers may not have been willing to relocate, they may not have been aware of the positions, or may not have had the required skills and experience. In other words, Canada has a labour shortage in terms of the number of workers, location of workers and a skills mismatch problem. But how did we get here?

To understand the nature of the labour scarcity and the impact of the pandemic, one can look at changes in labour supply and labour demand.

Labour supply

Labour supply is made up of two components. First, there are all the workers who are currently employed and all of the workers who are unemployed but are looking for work – this is referred to as the Canadian labour force. If the labour force is expressed as a percentage of the total Canadian population, it is referred to as the labour participation rate – think of this as the willingness and ability to work. The labour force is the bulk of labour supply, but there is another small category: individuals who are not employed but are not looking for work but want a job. Normally, if unemployed workers don't look for work, they are not counted in the labour force. However, Statistics Canada does report a subset of these individuals who say that they do want to work but cannot because of family obligations (like taking care of sick family members), health reasons, or they have become discouraged finding employment. Since they want a job, we should count them in the potential labour supply. So, having defined our terms, let's examine recent trends.

Labour force: constrained by the loss of older workers

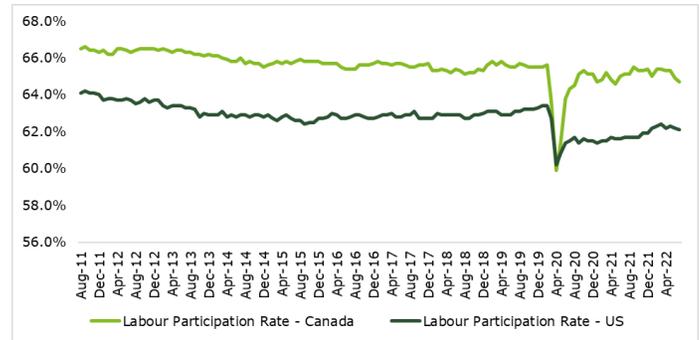
Pre-pandemic, Canada's labour force was growing steadily at roughly 1% per annum. This is not a strong pace of increase, and it reflects the impact of an aging population.

Moreover, as baby boomers began retiring, virtually all net labour force growth in Canada has come from immigration in recent years. When the pandemic hit, Canada's labour force contracted deeply as many workers who lost their jobs stopped looking for work and thus were not counted as being part of the labour force anymore. However, after the first lockdown and once government emergency support programs were in place to support workers in subsequent lockdowns, Canada's labour force recovered. The contraction in Canada's labour force participation rate was worse than that of the United States in the first lockdown, but the recovery in the Canadian labour force and the participation rate during the pandemic was stronger than Stateside, possibly reflecting more generous government support programs and lower infection rates. It also suggests that Canada's version of 'The Great Resignation' was much more subdued than that of America. But it is still true that the Canadian labour participation rate never returned to pre-COVID levels. This implies that labour supply was constrained, so what happened?

The answer appears to lie primarily in demographics. If we look at the prime working age population, age 25 to 54, the Canadian labour force increased, and the labour participation rate climbed to a historic high. This likely reflects the strong demand for labour during the pandemic. In other words, good employment opportunities attracted more individuals into the labour market despite the health risks. The shift to more flexible and remote work may have also contributed to increased labour participation of prime working age individuals. Particularly impressive is the fact that the increase in the participation rate came from a number of sources with gains observed for youths, men and women. The last item is noteworthy. The early stages of the pandemic were dubbed a She-cession, since employment for women was disproportionately negatively impacted by the downturn.

However, female labour participation for prime working age women not only recovered in 2021, it rose to well above trend in 2022. In the summer of 2022, labour participation rates have fallen in all categories, and this likely reflects the early stages of the slowdown in the economy and expectations of weaker labour demand. One other possible contributing factor might be the return to the office that some workers have been resistant to – but this is speculation on the part of the author. Nevertheless, the core story is that for workers aged 25 to 54, labour supply has not been a problem.

Figure 1: Labour participation rate, both sexes, Canada and US

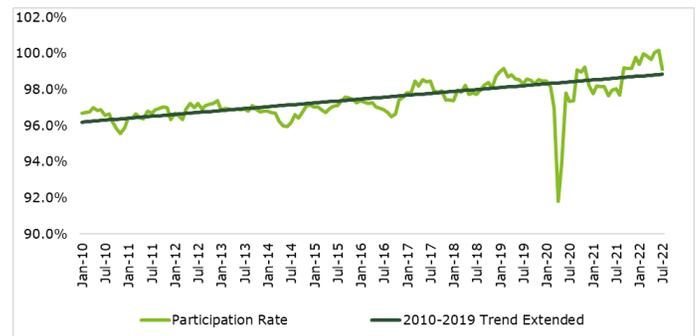


Sources: Statistics Canada, Haver Analytics, Deloitte.

Figure 2: Labour force, both sexes, individuals aged 25-54, x1,000



Figure 3: Participation rate, both sexes, individuals aged 25 to 54, x1,000



Sources: Statistics Canada, Deloitte.

However, the opposite is true for older workers. Prior to the pandemic, the labour force of workers age 55+ was rising steadily. However, the pandemic caused a sharp drop and then only a partial recovery in the labour force of older workers. As of July 2022, Canada needed to add another 28,700 workers aged 55+ to return this component of the labour force back to its pre-COVID level. But this dramatically understates the lost supply because labour participation of older workers had been trending higher pre-pandemic. If the labour force for individuals aged 55 had grown at a pace similar to the trend observed between 2010 and 2019 over the years of the pandemic, there would have been 357,000 more individuals in Canada's labour force in July of 2022.

From a gender perspective, female labour participation for those age 55+ was more negatively impacted than men during 2020 and the recovery was slower. However, the outperformance of male labour participation started to reverse in 2021, so policymakers thinking about wanting to increase labour engagement of older workers should be thinking in terms of both genders.

Figure 4: Participation rate, women, individuals aged 25 to 54

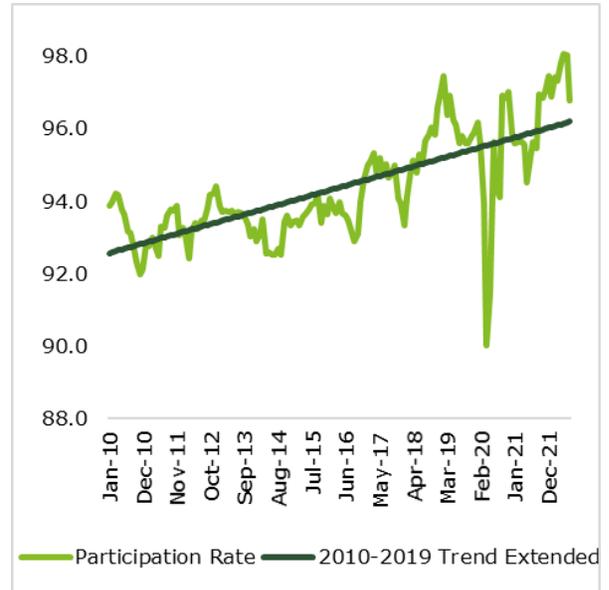
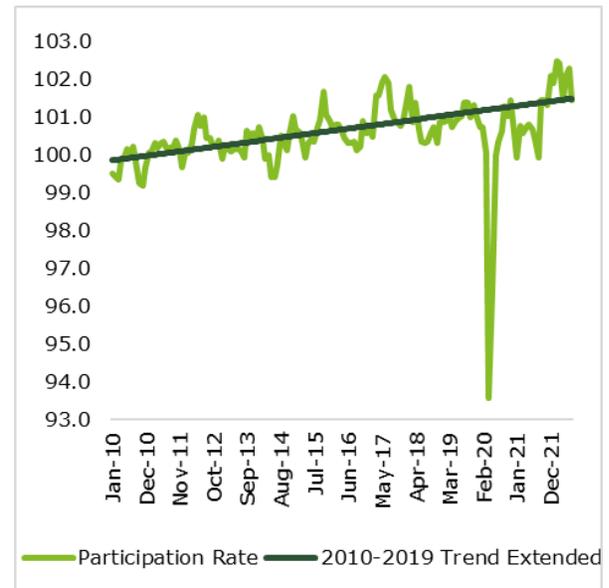


Figure 5: Participation rate, men, individuals aged 25 to 54



Sources: Statistics Canada, Deloitte

Figure 6: Labour force, both sexes, individuals aged 55 and over, x1,000



Figure 7: Labour participation rate, both sexes, individuals aged 55 and over

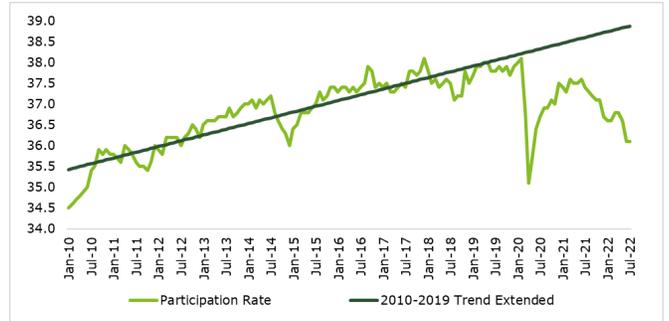


Figure 8: Labour force, men aged 55 and over, x1,000

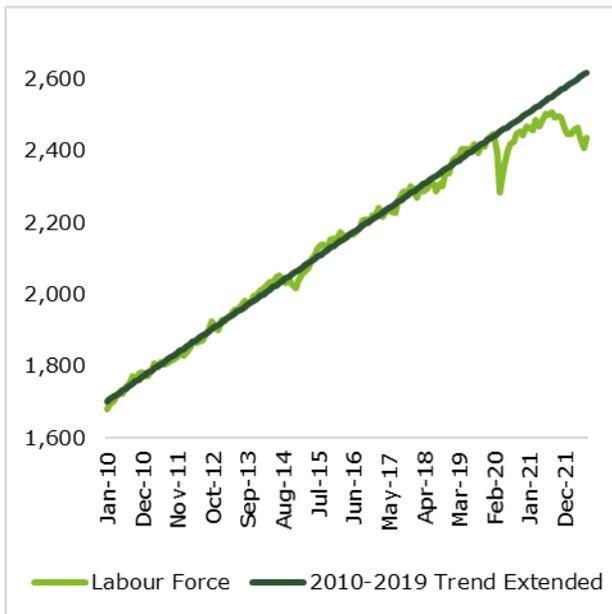
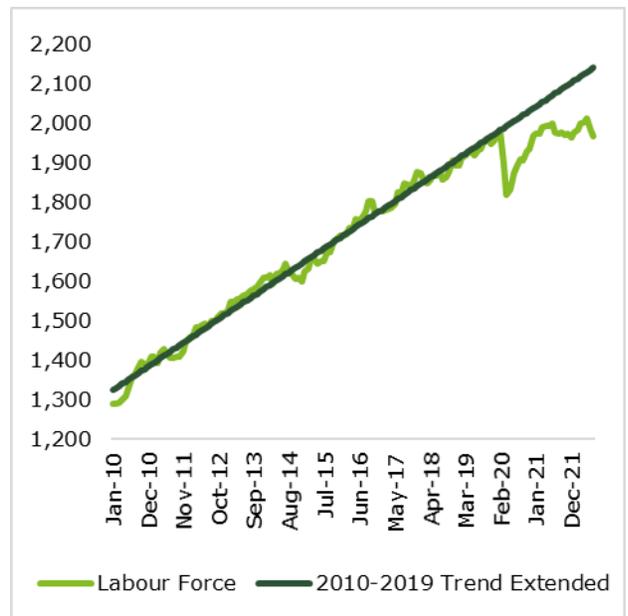


Figure 9: Labour force, women aged 55 and over, x1,000



Sources: Statistics Canada, Deloitte

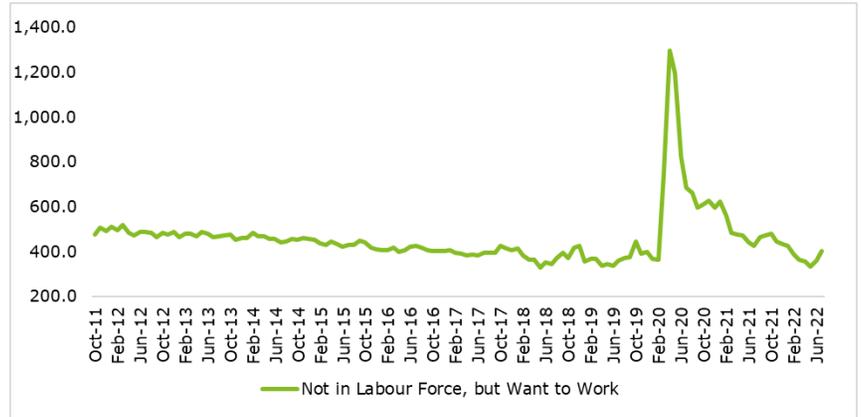
What caused the change in the labour supply of older workers? An obvious answer is that many Canadian baby boomers may have taken the opportunity to retire. The strong equity market returns and dramatic real estate price gains in the prior decade might have played into this decision. It could be that the shift to digital and remote work was not embraced by some older workers. It is also likely that some older workers had health concerns and exited jobs that were customer facing or involved travel (e.g., truck drivers).

Another dimension of labour supply is immigration, and the pandemic did disrupt immigration flows dramatically. Immigration application backlogs grew during the pandemic while health and travel restrictions were in effect. Then, as restrictions were lifted, applications jumped higher. This likely contributed to labour shortages in Canada. Although strong efforts were made to address the issue and Canada met its target

permanent resident level in 2021, the Government of Canada has been working hard to eliminate the immigration backlog.

Finally, there are the workers who are not employed and are not looking for work but want to work. Examples are people who have disabilities, are caring for sick family members, are awaiting recall by a possible employer, or have become discouraged looking for work and have given up. As part of the monthly Labour Force Survey, Statistics Canada identifies these individuals. In the first seven months of 2022, the monthly average was 409,971 such individuals. Pre-pandemic, the average in 2019 was 366,542. So, the pandemic may have increased the number of workers not in the labour force but want to work, but the pandemic effect has been modest. The more important element is the almost one-third of a million Canadians who would like to work cannot for various reasons. As such, they represent an untapped pool of labour supply.

Figure 10: Individuals not in the labour force but wanting to work, x 1,000



Source: Statistics Canada, Haver Analytics, Deloitte

Labour demand

So, labour supply was primarily constrained by slow domestic population growth, a temporary disruption of immigration flows and the drop in participation from older workers. In this section we turn our attention to trends in labour demand to assess its contribution to the labour shortage.

Labour demand can be measured as the workers who are employed plus the number of jobs that businesses are looking to fill. Employment can be examined across industries and across occupations¹.

During the pandemic and recovery, there was a great deal of volatility in employment and unemployment. For example, the unemployment rate in February 2020 (just before the first lockdown) stood at 5.7%, which was a low level from a historical perspective. The initial lockdown caused it to soar to a stunning 13.4% in May 2020, but it then fell fairly steadily to a low of 4.9% in June and July of 2022 – the lowest unemployment rate since February 1970. During the first two months of the pandemic, almost three million jobs

¹ It should be noted that every job is a case of observed labour demand since there is an employer that chooses to hire a worker. However, there is also an implicit dimension of labour supply as well since every job has to be accepted by a worker. When there are changes in employment between industries and occupations, one cannot attribute causation for shift. It could be that the worker wants to change industry or occupation. It could also be that the worker took the job because it was the employer that happened to be recruiting at that moment in time. This is where the individual anecdotal stories are likely useful for illustrating what motivated a particular individual to make the change that they did.

were lost. But since then, 3,420,700 jobs were created by July 2022. On net basis, Canadian employment in July stood 423 thousand positions above the pre-pandemic level, with full-time employment higher by 463 thousand and part-time employment lower by 40 thousand. The main takeaway being that, looking through the volatility, aggregate labour demand increased during the pandemic and the available slack in the labour market decreased.

The employment rate (employed workers as a per cent of population) fell during the pandemic but recovered to its pre-pandemic level in 2021. Much like labour force participation, the employment rate for prime working age 24-54 rose to well above its pre-pandemic level, but the employment rate for workers age 55+ remained depressed.

Figure 11: Employment rate, both sexes, individuals aged 55 and over and individuals aged 25 to 54



Source: Statistics Canada, Haver Analytics, Deloitte

Employment by industry

The challenge of finding workers is particularly evident looking at employment trends by industry from February 2020 to July 2022. The bulk of the job creation came in service producing industries, accounting for 383 thousand of the 423 thousand positions – or 91% of the job gains. Only 40 thousand (or 9%) were in the goods producing sectors.

Within services, the bulk of the hiring were in good paying, white collar opportunities. Professional, scientific, and technical services added a whopping 255 thousand jobs, public administration staffed an additional 140 thousand, financial services increased 98 thousand, educational services rose 97 thousand, and health care increased 59 thousand. Strong demand and fierce competition for limited supply of available workers likely created difficulty hiring.

But the story was not the same for all service-producing sectors. Accommodation and food services employment in July 2022 was still down by 178 thousand positions, other services down 98 thousand, and business and support services down 52 thousand. These industries were hard hit by the pandemic and their recovery was likely hampered by difficulty hiring but for different reasons than the rapidly growing sectors. The data support the anecdotal stories of workers being less attracted to working in service industries that had higher health risks, less job security because of the possibility of government restrictions or had lower pay and benefits.

Transportation and warehousing is another example of weakness, where employment fell by 17 thousand between February 2020 and July 2022. This sector provides critical logistical support to the economy and demand for shipping goods did not disappear during the pandemic. Indeed, it increased in some respects, such as the increase in home delivery to accommodate e-retail. Accordingly, labour demand for transportation and warehousing likely increased. However, labour scarcity for some segments of this sector were present before the pandemic. For example, there has been a shortage of long-haul

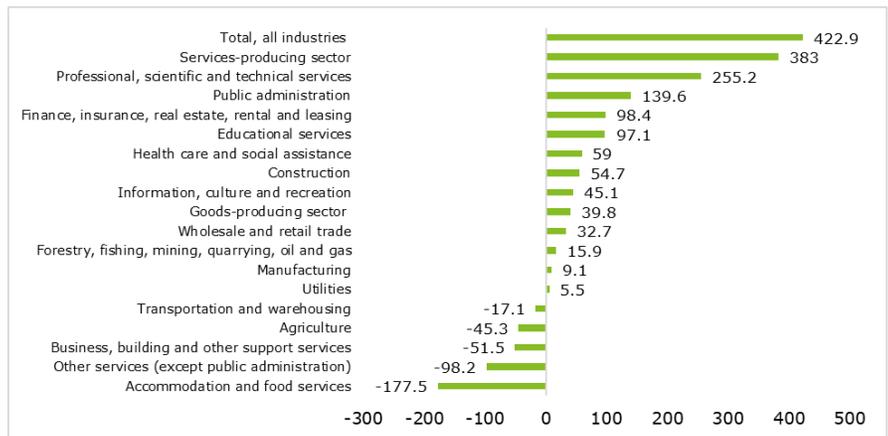
truckers for many years. The common explanation is that workers are not attracted to being on the road and away from family and friends for extended time. Eventually there will be a technology solution (such as driverless vehicles), but in the meantime there will be labour scarcity and the pandemic made it worse.

Retail and wholesale trade is another services sector where there have been a lot of anecdotal stories about difficulty hiring workers. However, the macro data doesn't immediately show a major employment problem. Retail and wholesale trade increased employment by 32,700 thousand between February 2020 and July 2022, an increase of 1.1% while the volume of sales increased 1.9%. So, it does suggest some labour scarcity, but the answer to the retail labour shortage problem becomes really clear when one looks at the change in employment on the basis of occupation. As we will see later in this report, there was a massive decline in sales positions, and this is where the retail labour scarcity likely manifested.

For goods-producing industries, employment in construction increased 55 thousand, commodity industries added 16 thousand, manufacturing edged up 9 thousand and agriculture fell 45 thousand. Clearly the numbers pale in comparison to services. The construction sector reflected the strength in real estate activity and some of the infrastructure projects taking place, and there has been labour scarcity in construction. Some manufacturers increased automation at the start of the pandemic to reduce health risks, and this tempered labour demand, but the bigger story is the fact that pre-pandemic employment in this sector has been relatively flat, so it is not surprising that a similar trend has been present over the past couple of year. Hiring in the commodity industries was likely constrained by limited investment in the energy sector, reflecting Canada's policy shift towards a lower carbon economy and the private sector response. The decline in agricultural jobs is harder to explain, but employment in the sector was on a declining trend before the pandemic but it could also reflect challenges with attracting temporary foreign workers during the pandemic and during the recovery.

The weaker job creation in goods-producing industries does not suggest that they were less affected by labour scarcity. They were impacted by Canada's more than 40-year low unemployment rate and the competition from strong hiring in other sectors. They were also affected by Canada's aging labour force, with many of the skilled workers retiring from these industries. It is also likely that immigration volatility had a significant impact, such as on the agriculture sector that is heavily reliant on temporary foreign workers.

Figure 12: Employment by industry, July 2022 vs February 2020, x1,000

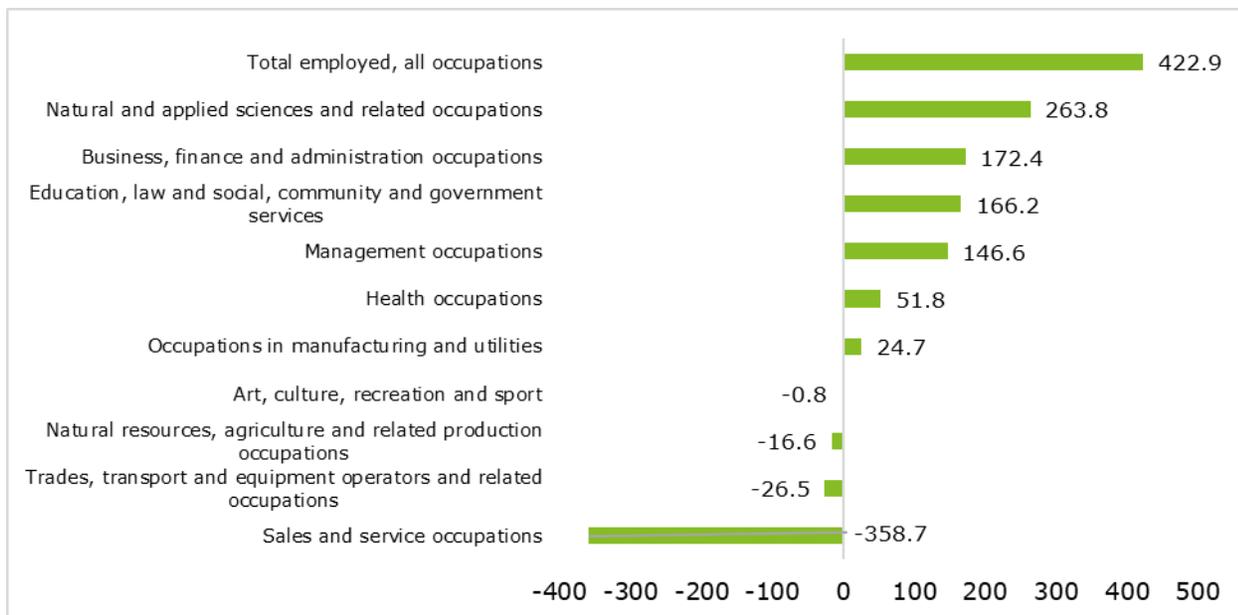


Source: Statistics Canada, Haver Analytics, Deloitte

Employment by occupation

Another way of looking at changes in employment is by occupation. The data show the same story as that of the industry numbers, but in some cases the story becomes even more stark. Of the net 423 thousand jobs created between February 2020 and July 2022, there was the additional of 264 thousand in natural and applied sciences occupations; 172 thousand in business and finance; 166 thousand in education, social and government service occupations; 147 thousand in management; 52 thousand in health occupations. On the negative side of the slate, there were 359 thousand jobs lost in sales and service occupations; 27 thousand in trades, transport, and equipment occupations; and 17 thousand in agriculture and natural resources occupations. [See Appendix I for a detailed summary table of changes by occupation]

Figure 13: Employment by occupation (1-digit NOC), July 2022 vs February 2020, x1,000



Source: Statistics Canada, Haver Analytics, Deloitte

So, is it any wonder that retail and accommodation and food services have struggled given the plunge in sales and service workers? Conversely, finding workers in applied science, finance and public administration has become more difficult.

Another way of looking at employment is to divide jobs between the public sector, the private sector and self-employment. With the aforementioned gains in public administration, health and education, the public sector created 336,800 net new jobs during the pandemic and recovery. The private sector created a net 270,500 positions, but this masked the dramatic shifts across the industries mentioned. The offset that constrained aggregate economy-wide employment growth to a net 422,900 position was the loss of 214,400 self-employed positions. There are a variety of possible reasons for the

drop in self-employment. On the positive side of the slate, the labour shortages may have created permanent job opportunities that attracted self-employed workers away. The increase in workplace flexibility and remote work for employed positions may have also made them more attractive, as these characteristics are often an attraction for self-employment. However, on the negative side, the decline in self-employment likely reflects some older workers that were semi-retired leaving the labour market. It may also be the case that some self-employed workers found times too tough and had to look for more secure employed positions. Self-employment was also likely constrained by fewer new entrants, as individuals might have been less attracted to such employment during volatile economic times and during a pandemic.

Aggregate labour supply and demand

One can take the components and look at what has happened to aggregate labour supply and labour demand. Labour supply is labour force plus workers without jobs and not looking for work but want a job. Labour demand is employed workers plus unfilled positions. Doing this for US labour statistics shows that the Great Resignation combined with the US recovery did lead to labour demand exceeding labour supply. However, the story is different in Canada. The Canadian data shows that labour demand did not exceed labour supply at any point since the pandemic started. So, in aggregate Canada had enough workers. This doesn't mean that the labour shortages didn't occur. It means that the problem was that the available workers weren't where the jobs were (shortages by geography), weren't in the occupations or industries that needed to hire, or the workers lacked the required skills. One can see that the difference between labour supply and labour demand became much reduced, so the labour market tightened, and the pressure manifested in labour market challenges.

Figure 14: US labour supply (labour force plus individuals who want to work) and labour demand (employment plus job openings), x 1,000

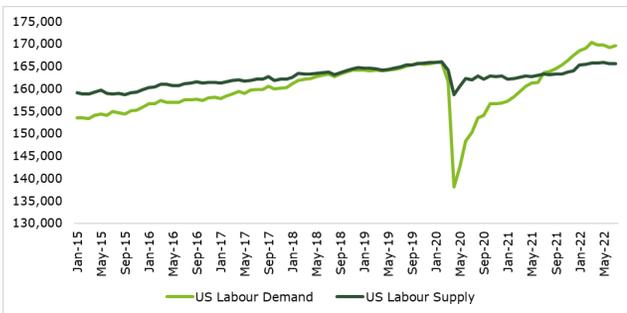
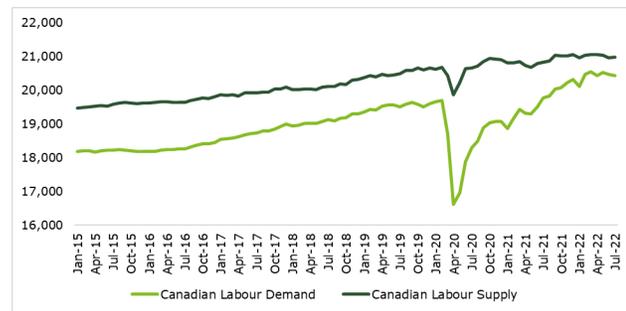


Figure 15: Canada labour supply (labour force plus workers wanting jobs) and labour demand (employment plus unfilled jobs), x 1,000



Source: Statistics Canada, Haver Analytics, Deloitte

What is the economic cost of labour shortages?

A common question is what the economic cost is of the current labour shortages. The answer is really that it is impossible to say. How can you know how much the economy would have grown if labour supply had been larger? Firms will often find innovative ways to produce more with their existing workforce, and that is beneficial – we call it productivity. After all scarcity is the mother of invention. Despite not having an exact estimate, we can provide an illustration. In 2018 and 2019, the unemployment rate hovered around 6%, a level that can get economists talking about full employment. During this time period and before the pandemic hit in 2020, unfilled jobs averaged 530,962. They soared during the pandemic and in the second quarter of 2022 stood at 1,014,896. If one assumes that the pre-pandemic average represented already tight labour markets and all the workers above that average represent positions that firms needed to fill for additional production of goods and services, applying the ratio of output per worker, the shortage of 484,000 workers translates to 2.6% of real GDP or a cost of roughly \$54 billion in forgone economic activity. This is purely illustrative and likely represents the maximum potential cost to the economy, but it does drive home the point that labour scarcity and skills shortages could cost the economy tens of billions of dollars if left unaddressed.

Conclusions

So, where did the workers go? The answer is multifaceted. First, labour supply was already constrained by an aging population that was dependent on immigration, which was disrupted by the pandemic. Second, the pandemic triggered a decline in labour participation of older workers that constrained labour supply. If the pandemic had not occurred, there might have been as much as 360,000 more people age 55+ available to support the economy. Third, in contrast to older workers, prime work age individuals (age 25-54) increased their labour participation, but their employment shifted dramatically towards services. And there was dramatic shifts in employment across industries and occupations. Thus, labour shortages occurred because of both an inadequate numbers of workers and because of inadequate skills and experience in the workforce. The shift of workers across industries and occupations and demographic impacts resulted in notable sectoral differences in labour market challenges. For some industries, the challenge was finding the labour necessary to grow and meet demand for their goods and services. For others that were hard hit by the pandemic, the challenge was finding labour to allow a recovery.

Some of the pandemic effects might be temporary. For example, if the health risks eventually diminish or as elevated health risks become the norm, older workers may participate more in the labour market once again. Difficulty attracting sales staff might improve. However, a strong case can be made that the bulk of the tightness in the labour market is structural.

Pre-pandemic, Canada already had tight labour markets and many industries were complaining about labour scarcity. In many respects, the pandemic employment shifts accelerated trends that were already in place. For example, Canada was already moving towards a more services-based economy. Digital and health care were rising shares of the economy. What the pandemic did was dramatically accelerate the trend. Moreover, the aging of the Canadian labour force will continue, and experienced baby boomers will

retire. Yes, a recession would lead to higher unemployment, but that would be temporary. Once a recovery takes hold, labour market demand can be expected to quickly absorb the human talent that is available and labour scarcity will once again be a pressing issue.

This leads to some key conclusions. Businesses and governments need to find incentives to keep older workers engaged in the labour market longer. Given the size of the baby boomer cohort, no realistic amount of immigration can fully offset the impact of their eventual retirement, but immigration is critical to address the future labour shortages that are bound to occur. Recent experience showed us that Canadian labour demand isn't just about upskilling, but that upskilling is nevertheless important. Yes, Canada will need more sophisticated workers as the economy becomes more digital, more dominated by advanced services-producing and advanced manufacturing industries. However, many of the baby boomers leaving the labour market have trade skills that must be replaced, either by Canadian-born individuals or by newcomers.

During the pandemic, businesses have experienced labour shortages in a way like never before, and this has forced many to reconsider their business models and think about capital substitution for labour. This is a positive development. A great example is self-check-out counters. This frees up workers to do other, more productive, and hopefully higher paying jobs. Canada invests significantly less in machinery and equipment per worker than our international peers (particularly the United States). Economists believe that this contributes to Canada's weak productivity performance. Accordingly, Canada's labour shortages can be a catalyst for innovation and investment that could be productivity enhancing – and productivity growth is the primary determinant of a rising standard of living. At the same time, there are pools of underutilized labour in Canada. There is the example of the more than a third of a million workers without jobs who report to StatsCan that they want to work. Canada might be about to increase labour supply by investing more effectively in the care economy, supporting disabled individuals, expanding labour market information, and improving immigrant outcomes.

The bottom line is that human talent is Canada's greatest competitive advantage, but it is a finite and precious resource. It was scarce before the pandemic, and it became even more scarce during the economic recovery. The tough love message is that employers are likely to find the hunt for talent will remain challenging. This means we need to ensure that we employ our workers the most effective and efficient ways possible. It also means breaking down any barriers that prevent them from unlocking their full potential, while also thinking about what can be accomplished without using labour.

Appendix I: Employment Changes During the First Lockdown and Over the Pandemic, x1,000

Changes in employment by industry	April 2020 vs February 2020	July 2022 vs February 2020
Total, all industries	(2,998)	423
Services-producing sector	(2,336)	383
Goods-producing sector	(662)	40
Accommodation and food services	(615)	(178)
Wholesale and retail trade	(594)	33
Construction	(307)	55
Manufacturing	(305)	9
Health care and social assistance	(238)	59
Other services (except public administration)	(185)	(98)
Information, culture and recreation	(180)	45
Educational services	(152)	97
Transportation and warehousing	(142)	(17)
Business, building and other support services	(96)	(52)
Professional, scientific and technical services	(67)	255
Finance, insurance, real estate, rental and leasing	(46)	98
Forestry, fishing, mining, quarrying, oil and gas	(24)	16
Public administration	(23)	140
Agriculture	(22)	(45)
Utilities	(4)	6
Changes in employment by occupation (1-digit NOC)	April 2020 vs February 2020	July 2022 vs February 2020
Total employed, all occupations	(2,998)	423
Sales and service occupations	(1,378)	(359)
Trades, transport and equipment operators and related occupations	(563)	(27)
Business, finance and administration occupations	(266)	172
Education, law and social, community and government services	(219)	166
Occupations in manufacturing and utilities	(172)	25
Art, culture, recreation and sport	(122)	(1)
Health occupations	(91)	52
Management occupations	(77)	147
Natural and applied sciences and related occupations	(65)	264
Natural resources, agriculture and related production occupations	(47)	(17)
Changes in employment by occupation (2-digit NOC)	April 2020 vs February 2020	July 2022 vs February 2020
Total, all occupations	(2,881)	992
Sales and service occupations	(1,337)	(193)

Trades, transport and equipment operators and related occupations	(513)	180
Service support and other service occupations, n.e.c.	(301)	18
Service representatives and other customer and personal services occupations	(294)	(78)
Sales representatives and salespersons - wholesale and retail trade	(273)	2
Business, finance and administration occupations	(266)	212
Occupations in education, law and social, community and government services	(213)	(86)
Service supervisors and specialized service occupations	(200)	(82)
Industrial, electrical and construction trades	(186)	62
Occupations in manufacturing and utilities	(176)	57
Sales support occupations	(147)	(35)
Maintenance and equipment operation trades	(128)	(8)
Transport and heavy equipment operation and related maintenance occupations	(127)	13
Occupations in art, culture, recreation and sport	(126)	92
Retail sales supervisors and specialized sales occupations	(122)	(17)
Technical occupations in art, culture, recreation and sport	(120)	69
Administrative and financial supervisors and administrative occupations	(119)	114
Processing and manufacturing machine operators and related production workers	(99)	(5)
Paraprofessional occupations in legal, social, community and education services	(93)	(3)
Office support occupations	(92)	(17)
Health occupations	(85)	101
Management occupations	(79)	176
Natural and applied sciences and related occupations	(67)	315
Professional occupations in education services	(61)	(114)
Technical occupations in health	(59)	(5)
Middle management occupations in retail and wholesale trade and customer services	(51)	(6)
Care providers and educational, legal and public protection support occupations	(50)	(85)
Other installers, repairers and servicers and material handlers	(46)	47
Assemblers in manufacturing	(43)	46
Assisting occupations in support of health services	(36)	46
Professional occupations in natural and applied sciences	(34)	249
Technical occupations related to natural and applied sciences	(33)	66
Labourers in processing, manufacturing and utilities	(28)	13
Supervisors and technical occupations in natural resources, agriculture and related production	(26)	12
Trades helpers, construction labourers and related occupations	(25)	66

Professional occupations in business and finance	(24)	147
Natural resources, agriculture and related production occupations	(20)	138
Finance, insurance and related business administrative occupations	(20)	(19)
Middle management occupations in trades, transportation, production and utilities	(13)	56
Distribution, tracking and scheduling co-ordination occupations	(12)	(13)
Professional occupations in law and social, community and government services	(11)	106
Senior management occupations	(10)	(6)
Processing, manufacturing and utilities supervisors and central control operators	(7)	2
Professional occupations in art and culture	(6)	23
Professional occupations in nursing	(6)	47
Specialized middle management occupations	(5)	132
Workers in natural resources, agriculture and related production	1	28
Occupations in front-line public protection services	3	11
Harvesting, landscaping and natural resources labourers	5	97
Professional occupations in health (except nursing)	16	13



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