

Remote Work, COVID-19, and Downtown Vancouver:
Long-Term Impacts of Remote Working on the City of
Vancouver

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Executive Summary

Public health responses to the COVID-19 pandemic have caused an unprecedented number of people to work remotely. This brief provides a preliminary examination of the long-term impacts of remote work to economic activity in Vancouver's Central Business District (CBD), and analyzes potential impacts on the City of Vancouver's property tax revenue stream.

Key Findings

The amount of time Vancouver office workers spend working remotely post-COVID is likely to increase significantly from pre-pandemic levels. This shift may influence office, commercial, and residential property markets, and significantly decrease spending in Downtown Vancouver; however, further research is needed to confirm and/or understand the magnitude of these trends. In addition, an increase to remote work will impact the City of Vancouver's revenue from property taxes. Key findings of this report include:

- The pandemic is increasing existing economic inequalities across demographics.
- Recent office space and residential real estate data and trends are in line with economic modeling of other regions by Delventhal et al. (2020) and Lennox (2020) that suggest COVID-19 related post-pandemic increases to remote work rates will **decrease overall demand for office floorspace in CBDs** and **increase demand for residential properties in non-urban areas**, possibly decreasing the value of office space and residential properties in Downtown Vancouver over time.
- Office workers' experience during COVID-19 is increasing their desire to work remotely, and many of these workers have the economic power to shift norms to make remote work more acceptable. **On average, Canadian office workers hope to work remotely 2-3 days a week.**
- Employers appear to be more comfortable allowing remote work, but more research is needed to understand their post-COVID return-to-work plans.
- Uneven impacts to women through the pandemic suggest the need for added childcare space.
- Vancouver's livable urban planning principles may help mitigate economic impacts of remote work. However, demographic data shows that many office workers leave Vancouver and its downtown area for Metro Vancouver's suburbs in their 30's; also, **increased acceptability of remote work post-pandemic provides further incentive for workers to emigrate from the City of Vancouver** to regions with more spacious and affordable residences.
- The City of Vancouver's relatively small boundaries within Metro Vancouver make it vulnerable to tax-revenue loss due to shifts in economic activity away from the urban core.
- Increased rates of remote work will have significant downstream impacts on retail businesses in downtown Vancouver since office workers are not spending near their workplaces.
- Calculations made in this report estimate the downstream impacts of increased remote work rates may shift **\$463,899,180 – \$927,798,360 each year that office worker spend away from retail businesses and restaurants in Vancouver's CBD.**
- An alternative method used in this report to calculate the downstream impacts of remote work on Vancouver's CBD suggests **that 1,334,504 – 2,669,009 square feet of retail and office space may lose economic support typically provided by office worker spending.**
- How these economic shifts impact the City of Vancouver's property tax revenue are largely dependent on City Council's adjustment of property tax rates to meet changing conditions, including budget shortfalls; alternative revenue sources may also need to be considered.

Defining the Issue:

The COVID-19 pandemic and public health measures used to minimize its spread have disrupted economic activity and will leave lasting changes to the spatial characteristics of economic activity in urban settings. For the City of Vancouver, understanding and reacting to these changes will be necessary to maintain sustainable revenue streams through property taxes.

Vancouver's downtown core, or central business district (CBD), is particularly at risk of decreased economic activity post-COVID due to accelerating trends shifting the spatial characteristics of work, including shifts to remote work, potential shifts towards satellite offices, shifts to remote learning and increases in online shopping, as well as the downstream effects these changes will have on downtown service industry businesses.

The long-term impacts of COVID-19 on these trends remain uncertain. Correspondingly, this report will outline contemporary research, trends, and data relevant to understanding the long-term impacts of COVID-19 on economic activity in Vancouver's CBD; calculate initial estimates of the downstream impacts of remote-work on the CBDs restaurant and retail sector; and analyze how these changes may impact the City's property tax revenue streams. Focus will be paid to the influence of COVID-19 on remote work and its long-term downstream effects.

City of Vancouver – Property Taxes and Revenue Streams

The City of Vancouver's 2020 budget is \$1.615 billion, of which 55% is funded through the General Purpose Tax Levy, a component of property taxes charged in Vancouver. Before the pandemic, 52% of property taxes collected in the City of Vancouver were anticipated to fund the General Purpose Tax Levy with the rest collected for the Province and other taxing authorities. In response to COVID-19, the Provincial government lowered its school property tax rate for 2020, reducing total commercial property taxes in the province by an average of 25%.

Table 1 – Distribution of Tax Levy Revenue

Residential (Class 1, 3, 8 & 9)		Non-Residential (Class 2, 4, 5 & 6)	
56.8% of City's Tax Levy distribution (30% of budget)	2020 Revenue: \$482,496,698	43.2% of City's Tax Levy distribution (22% of budget)	2020 revenue: \$362,875,297

Each year, Vancouver City Council determines the revenue required from the General Purpose Tax Levy to support the City's operations. Property taxes are collected from eight classes of properties and Council sets the proportion of the General Tax Levy collected from each class. BC Assessment's Assessment Role is then used to determine tax rates based on properties' assessed value. Property tax classes are typically consolidated into Residential and Non-Residential.

Class 1, Residential, and Class 6, Business and Other (inclusive of commercial and office space) account for the majority of taxes collected (56.6% and 40.1% of the Tax Levy, respectively) and are the most important classes considered in this report.

Both Residential and Business and Other Classes in the City of Vancouver are taxed at lower rates (relative to property value) than any other major city in Canada (see [Altus Group, 2019](#)). In December 2019, City Council, as part of its 2020 Capital and Operating Budget, passed a motion to increase overall

property taxes by 7% for 2020 ([City of Vancouver, 2019](#)). In consideration of budget issues related to the Pandemic, the Standing Committee on City Finance and Services proposed a 5% tax increase in 2021 alongside additional measures to cut costs and increase revenues to balance next year's budget ([City of Vancouver, 2020](#)). On December 8, 2020 Council passed its budget with 5% property tax increases for residential and commercial properties (calculated after the 0.5% tax shift).

Commercial-to-Residential Tax Ratio

Commercial-to-residential tax ratios are used to compare the degree to which commercial properties are taxed at a higher rate than residential properties. Vancouver's 2019 commercial-to-residential taxation rate ratio was 3.6, and for years has been cited as one of the highest in the country ([Altus Group, 2019](#)). To address this issue, City Council approved 2% tax shift from non-residential to residential properties in 2019 (1% shift in 2019 and 0.5% shift the following two years).

The influence of Vancouver City Council's tax shift and the Province's temporary cut to the Provincial School Tax have lowered the 2020 commercial-to-residential tax ratio to 2.3, below the 2019 Canadian average.

Table 2 -Tax Rates (Mill Rates) and Commercial-to-Residential Ratio 2020 and 2019

Levy (Per \$1000 taxable value)	Class 6 - Business and Other		Class 1 - Residential		Commercial-to-Residential Ratio	
	2020	2019	2020	2019	2020	2019
General Purpose Tax Levy (City)	\$4.47887	\$4.27116	\$1.58076	\$1.33572	2.83	3.197
Provincial School Tax	\$1.13968	\$3.94555	\$0.99877 ¹	\$0.91773	1.14	4.29
TransLink	\$0.87687	\$0.89467	\$0.25337	\$0.22617	3.46	3.95
BC Assessment	\$0.11313	\$0.11538	\$0.04288	\$0.03970	2.64	2.90
GVRD	\$0.12177	\$0.10202	\$0.04970	\$0.04164	2.45	2.45
Municipal Finance Authority	\$0.00051	\$0.00053	\$0.00020	\$0.00020	2.55	2.65
Total	\$6.73083	\$9.32931	\$2.92568	\$2.56116	2.300604	3.642611

Commercial Tenancy

Commercial tax rates directly impact businesses when they do not own the property they operate on, because triple-net-leases – which stipulate that tenants pay for rent, utilities, taxes, insurance, and maintenance – are the standard form of business property leases ([see Cheung with Nishi-Beckingham, 2019](#)). Correspondingly, the tax shift and Provincial School Tax reduction directly benefit businesses operating under these leases. However, the City of Vancouver's anticipated need to continue to increase property tax rates and reduce expenditures in 2021 to balance its budget in the wake of the pandemic adds costs directly to businesses, especially if property assessments remain high.

¹ The Provincial School Tax Rate is reflective of the Province's reduction of this tax for businesses in 2020 in response to the COVID-19 pandemic. If these cuts do not remain in 2021, the commercial-to-residential tax ratio will increase. In 2019, the commercial rate was \$3.95/\$1,000, its ratio to residential was 4.3, and the total tax ratio was 3.6.

Independent businesses renting in Vancouver often bear tax burdens from increasing property evaluations and rents. Historically, some independent businesses have been forced to change locations or shut down, which can lead to displacement of independent businesses by chain retailers or franchises (for research and policy proposals for Vancouver, see [Zerbe, 2019](#) and [Regan, 2017](#)). Given many independent businesses' weakened financial state due to the pandemic, special consideration should be given to the types of businesses that are filling openings in Vancouver's commercial property rental market; decreased levels of independent businesses can decrease the overall attractiveness of Vancouver's CBD and Vancouver as livable urban regions, potentially leading to future implications for tax revenue.

Impacts of COVID-19 on Labour Force and Businesses

COVID-19 is causing unprecedented impacts to workers and businesses. These impacts have affected Canadians inequitably across various demographics.

In Metro Vancouver, the employment rates of City of Vancouver residents has been harmed less than employment rates of residents in the suburbs, which is consistent with demographic differences between Vancouver and the suburbs and our current understanding of how different demographics are economically impacted by the pandemic (see [Demographics and Remote Work Feasibility](#) section below). Figure 1 shows the rate of change in total employment from February to August 2020 in the City of Vancouver and Metro Vancouver's suburbs (Metro Vancouver minus the City of Vancouver).

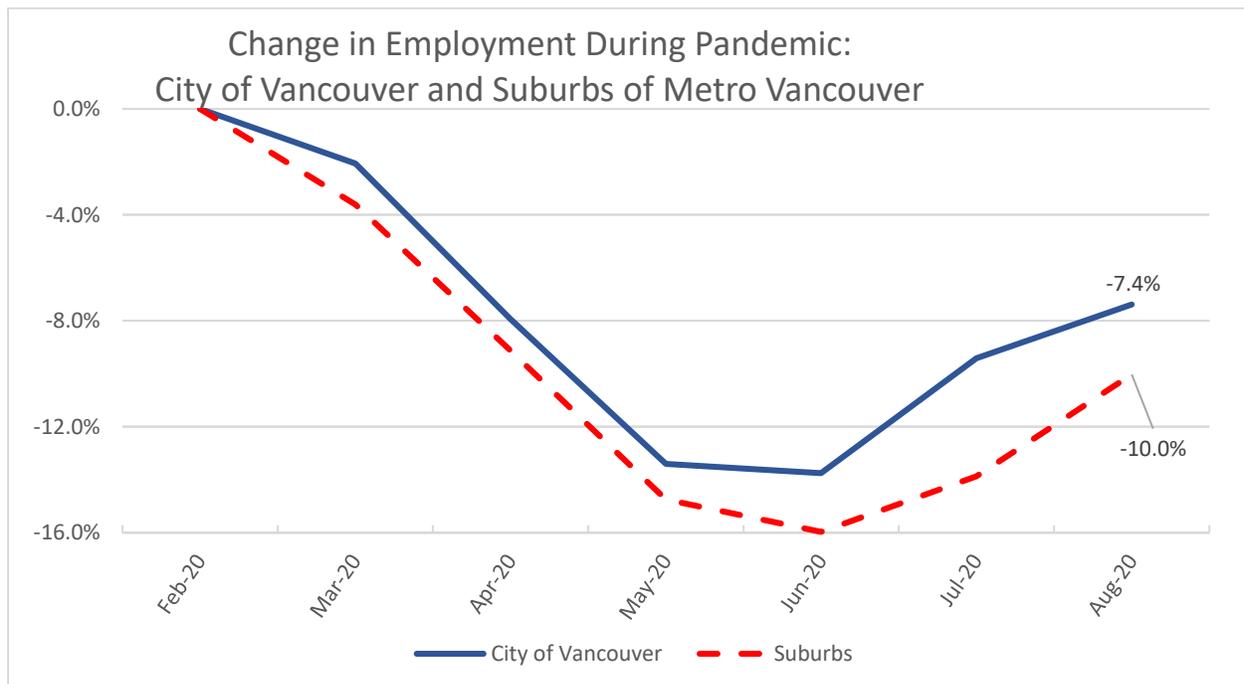


Figure 1 - Proportion of changes in total residents employed relative to Feb 2020 minus equivalent change in 2018 (rate at Metro scale) using seasonally unadjusted data and three-month moving averages. Data: Statistics Canada Table 14-10-0294-02 and Custom LFS Data.

Unemployment remains a serious issue and uncertainty remains about COVID-19's lasting impact on labour markets. Statistics Canada Labour Force Survey (LFS) data indicates that some populations are

bearing disproportionately negative impacts. Low-wage employment in service-producing industries, for example, has not rebounded as well as other sectors. Youth, women, visible minorities, and part-time workers continue to see less employment rate growth, and LFS data indicates that individuals with more than one of these demographic qualities are less likely to gain employment. Figure 2 shows the September and August unemployment rates disaggregated by race.

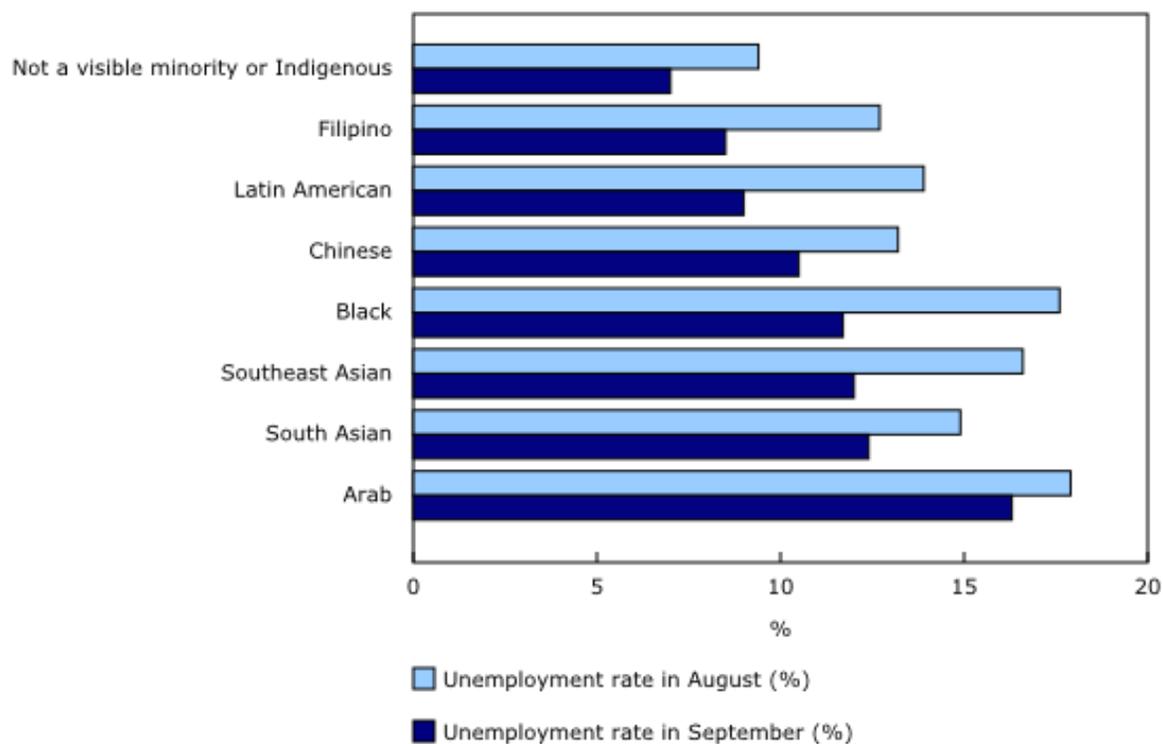


Figure 2 – Source: Statistics Canada, The Daily - [Labour Force Survey, September 2020](#)

Structural inequalities existing prior to the pandemic intersect with uneven economic recovery patterns. Women are more likely to engage in precarious work and are more often required to balance family unpaid work; racialized people and immigrants are more likely to engage in precarious and low-wage work, and are more likely to have pre-existing economic insecurities that leave them more vulnerable to economic downturns; and self-employed workers and small business owners belonging to these demographic groups are experiencing similar difficulties in their economic recovery (Ying Mo et al. 2020). Even individuals from a lower socio-economic background who have jobs that can be done remotely are subject to unequal outcomes from remote work, with insufficient space at home, poor internet connection, or lack of childcare contributing to uneven conditions.

Figures 3 and 4 – created by University of Waterloo economics professor Mikal Skuterud using LFS Public Use Microdata Files (PUMF) – display the uneven gendered and class impacts of Canadians' hours worked during the pandemic.

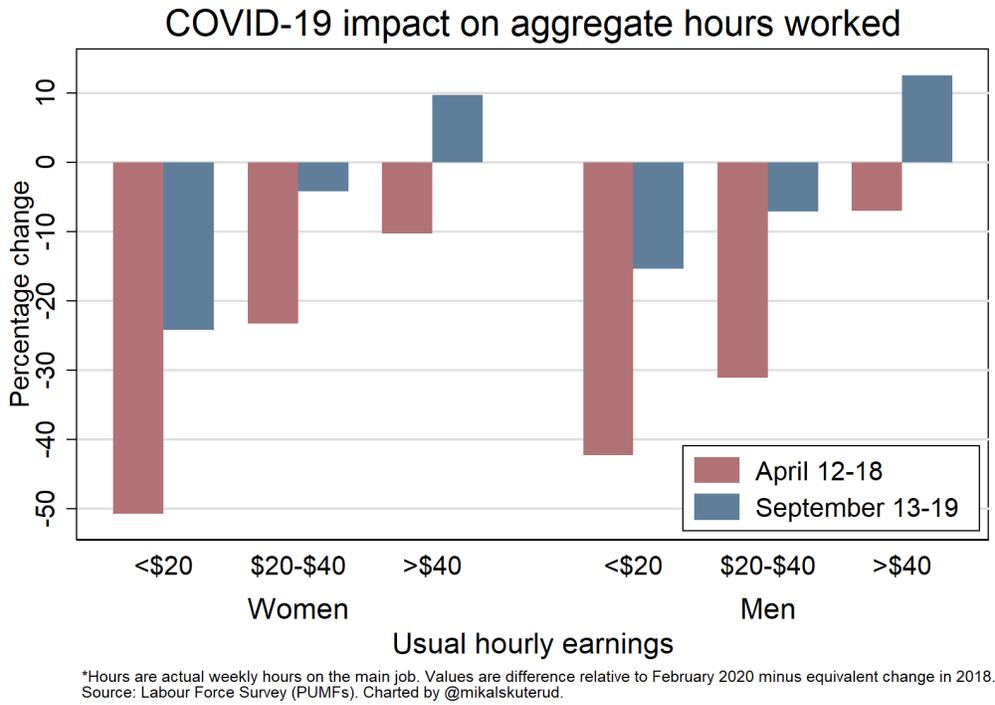


Figure 3 – Source: [Mikal Skuterud – Twitter](#)

The gendered impacts of returning to work are disproportionately borne by mothers who continue to work less than non-parents, despite a return to school in September.

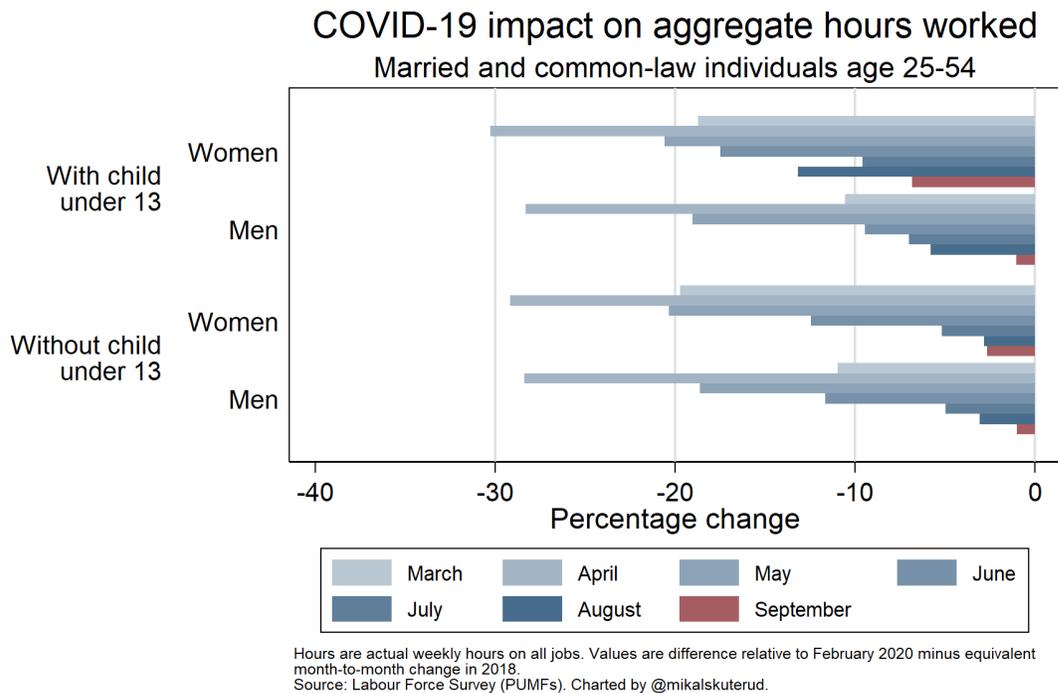


Figure 4 – Source: [Mikal Skuterud – Twitter](#)

The reality that women, parents, and low-wage workers continue to be most negatively impacted by their capacity to work suggests that improving access to childcare spaces should remain a priority for urban planners and policymakers. Many low-wage workers live outside the city but work inside of it, suggesting that childcare should be addressed both at the city and regional scale.

Analysis of LFS PUMF data by Waterloo economist Stéphanie Lhuis shows that workers of lower seniority at their place of work are losing jobs at a greater level than those with higher seniority; however, as the pandemic continues, people with more seniority are also being laid off. In the context of impacts to Vancouver's CBD, this trend could be severe. Those living and working in Vancouver's CBD strongly trend towards a younger professional demographic. If workers with less seniority continue to lose employment, there could be significant impacts to downtown Vancouver's housing market and corresponding property tax revenue.

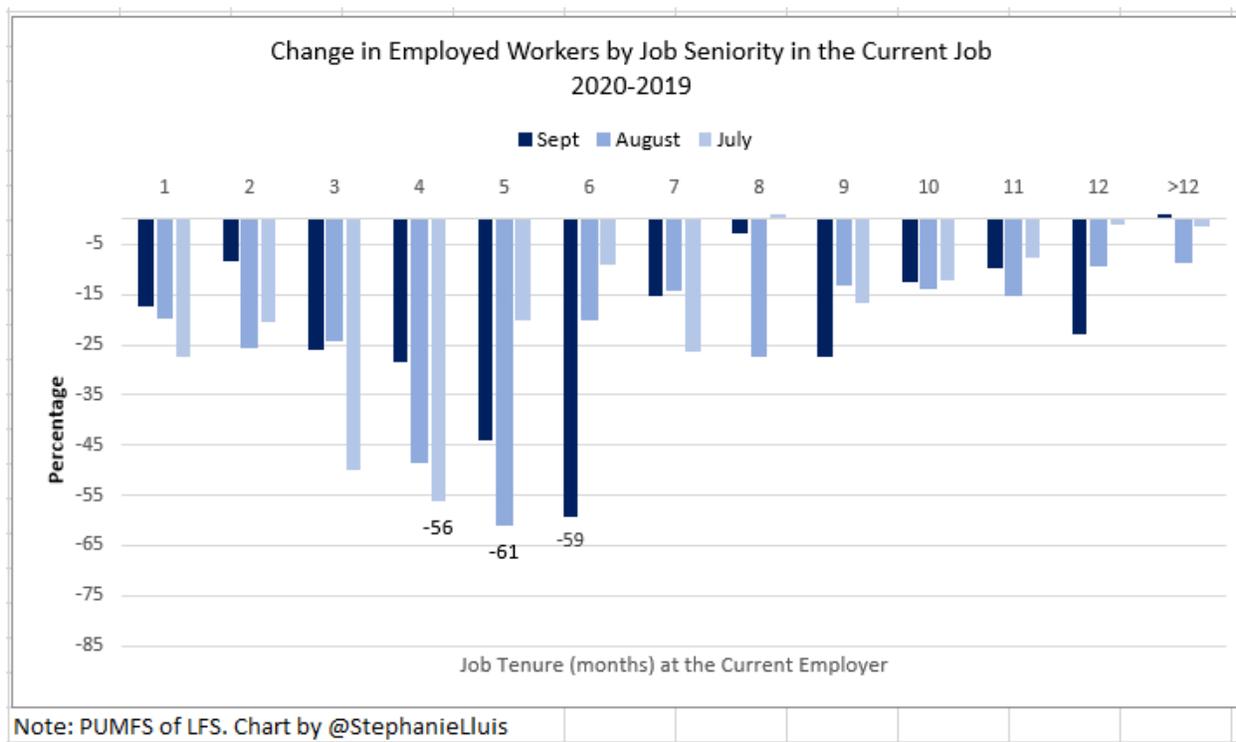


Figure 5 – Source: [Stephanie Lhuis – Twitter](#)

Remote Work – A Review of Research and Data

With public health responses to COVID-19 leading to an unprecedented number of remote workers, researchers and government agencies are collecting and analysing data about this trend and its impacts. This section reviews many of the most relevant findings.

Feasibility of Working from Home

Economists Guillermo Gallacher and Iqbal Hossain (2020) from the University of Manitoba have conducted research that estimates the proportion and characteristics of workers who can work from home in Canada. Their methodology applies a Telework Feasibility Indicator (TFI), developed by [Dingel and Neiman](#) (2020), to Statistics Canada's Employment Income Statistics from the 2016 Census and LFS

Data. Gallacher and Hossain adapt the TFI to Canadian data by applying individual TFIs to Canada's [National Occupational Classification](#) (NOC) system at the four-digit level. Their findings suggest:

- 41% of jobs in Canada can be done from home, including:
 - 41% of jobs in BC (48% when weighted by wages)
 - **45% in Vancouver CMA (55% when weighted by wages)**
- Workers with the following characteristics are less likely to be able to work from home (starting with those least likely to be able to work from home): poorer workers, male workers, workers without a college degree, private sector workers, single workers, small firm workers, seasonal or contractual workers, part-time workers, younger workers, and non-immigrant workers.

Statistics Canada ([Deng et al, 2020](#)) has come to a similar conclusion:

- 38.9% of Canadian workers can work from home, including:
 - 38.6% of BC workers
 - 85.3% of finance and insurance workers
 - 84.6% of educational services workers
 - 83.9% of professional, scientific and technical services workers

A dataset provided by Statistics Canada to the City of Vancouver merges 2016 Census Data with Dingel and Neiman's TFI methodology applied to NOCs. This data shows that residents living closer to Vancouver's core are more likely to be employed in occupations where remote work is feasible (for a more detailed discussion and table, see [Demographics section](#) below):

- 43.3% of workers living in Metro Vancouver can work from home
- 48.6% of workers living in the City of Vancouver can work from home
- 62.2% of workers living in Downtown² Vancouver can work from home (53.6% in the West End)

Workers' Interest in Remote Work and Workplace Mobility

Workers have varying degrees of influence over where they work, while their occupations (e.g. NOC) often dictate their ability to work from home or other non-standard locations. Richard Shearmur (2018) classifies two characteristics across job mobility and economic power, with those in positions that are "hyper-mobile" and "high-power" more likely to choose where they work.

Using Census data, Putri and Shearmur (2020) show that workers in Canada have become more mobile in their location of work, but those who are fully mobile (i.e. no fixed workplace) work in traditionally mobile occupational sectors such as construction. However, they also find that "knowledge-intensive occupations" are forming a larger share of the mobile Canadian workforce, and that these workers increasingly use their mobility to work from home. Putri and Shearmur note that using Census data to understand workplace mobility, especially for knowledge workers, has shortcomings, and propose further survey and qualitative studies.

Responding to a lack of data about workplace mobility and the recent experiences of remote work due to COVID-19, Shearmur et al. (2020) have released a pre-print of a qualitative study that aims to provide a nuanced examination of workers' experience of remote work and their opinions about long-term

² Note Statistics Canada's geographic boundaries for Downtown Vancouver are unclear, but analysis suggests it is inclusive of the Downtown Core, Yaletown, and Gastown.

uptake. Office workers interviewed are enjoying the experience of working remotely and demonstrate a strong desire to continue; however, they also miss the collaboration and relationships fostered by an office setting. The study suggests a “quasi consensus” exists where workers prefer to work two or three days from home per week (40% or 60% of their time). As a faculty member of McGill’s School of Urban Planning, Shearmur suggests that even a modest 20% increase in remote work by office workers will have consequences for urban planning decisions and equity.

These qualitative findings are backed by recent survey work. An August 2020 [survey by ADP Canada and Maru/Blue](#) found:

- 45% of Canadians want to work from home at least three days a week³
- 61% of Canadians between the ages of 18 and 34 want to work from home at least three days a week
- British Columbians and Albertans are most likely of all Canadians to believe there will be no drastic changes to the workplace post-pandemic (50% compared to 44% average nationally)
- 55% of workers’ employers have continued to allow them to maintain workplace flexibility

[A June survey by Angus Reid](#) gives some understanding of workers’ experience working from home. Responses from households with at least one person working from home (n=670 of 1,501) suggest:

- Mental health impacts:
 - 16% respond “it’s been really great”
 - 68% respond “it’s been okay”
 - 15% respond “it’s been awful”
- Productivity impacts:
 - 28% respond “it’s been really great”
 - 59% respond “it’s been okay”
 - 13% respond “it’s been awful”
- Anticipated decision to return to place of work or to continue working from home:
 - 36% respond “likely go back to place of work”
 - 44% respond “probably a mix of both”
 - 20% respond “likely to continue from home”

Overall survey results support Shearmur et al.’s (2020) qualitative findings that, on average, workers would prefer working two or three days a week from home. Considering employment in Vancouver’s CBD is dominated by office work in knowledge based sectors, many of these workers could be considered mobile. If employees with high economic power continue to desire working from home, it’s possible new workplace standards will be established that are more accepting of remote work for office workers with less economic power (e.g. administrative support). However, Angus Reid’s findings that a significant proportion of workers are feeling negative mental health and productivity impacts from working from home point to the importance of maintaining office space.

Consequences for Urban Planning Decisions

As Shearmur suggest, urban planners will need to anticipate zoning changes that accommodate services for remote workers to help create a sustainable recovery in the service sector. Prior to the pandemic,

³ Note that this survey does not account for the feasibility of working from home

office workers typically spent money at and supported a significant proportion of the services near their place of work (see [Downstream Impacts section](#) below).

Zoom Fatigue

Another consideration for post-COVID office work is workers' experience using communication technologies. Adapting to working from home has led many to complain of "Zoom fatigue," i.e. the exhaustion that comes from workplace interactions over pre-planned, and often unfulfilling, video conferences. While in the short-term this phenomenon will continue, policymakers and planners should factor in the investments companies such as Zoom or Microsoft Teams are making into dedicated hardware for video conferencing to mitigate Zoom fatigue ([see Estes, 2020](#)). While initial product offerings have been met with criticism, they will likely be improved in the long-term, mitigating some concerns about Zoom fatigue.

Remote Work – Employers' Perspective

In the early stages of the pandemic, Statistics Canada's Survey on Business Conditions asked businesses to respond to questions about their experience with remote work during the COVID-19 pandemic. This data is useful, as it was taken from a wide-reaching survey, but it does have limitations.⁴

Both surveys asked businesses to report what percentage of their workforce was working remotely before the pandemic (Feb 1) and on dates just before the survey period (March 31 and May 29). The first survey asked, "Of this business's workforce on February 1, 2020, what percent is still able to carry out a majority of their duties [remotely]?" The second survey asked, "What percentage of this business's workforce is expected to continue to regularly telework or work remotely once the COVID-19 pandemic is over?" Key findings from analysis of survey responses ([March 31](#) and [May 29](#)) include:

- A weighted average of responses shows 62.8% of employees in businesses polled across Canada were able to carry out the majority of their duties remotely (66.3% in BC)
- Businesses operating in employment sectors typically found in CBDs had a higher proportion of workers who could carry out the majority of their duties remotely (weighted averages):
 - 84.6% in the finance and insurance sector (NAIC 52)
 - 79.7% in the information and cultural industries sector (NAIC 51)
 - 76.3% in the professional, scientific, and technical services industries sector (NAIC 54)
 - 75.2% in the public administration sector (NAIC 91)
- Businesses expected their employees to return to their place of work post-pandemic, with 14% (weighted average) of employees expected to continue working remotely – a 3.8 point increase from the proportion of employees that indicated they worked from home before the pandemic (14.1%, and a 2.5 point increase in BC)

Firms' experiences with remote work is ongoing. Engaging with Statistics Canada or institutions with access to businesses (e.g. Conference Board of Canada) to survey businesses about their long-term

⁴ Note that the survey asks respondents to consider the proportion of their workforce that can work remotely; it does not consider flexible arrangements of working part-time from home. The wording of the questions puts the onus on the respondents to decide whether remote work is a full or part-time arrangement.

remote plans will be key to understanding the long-term impacts to Vancouver's CBD. More surveys, as well as higher quality questions, are needed.

Workspace Considerations

How firms adapt their office space after COVID-19 remains a point of discussion. The increased experience with remote work will likely improve firms' comfort with offering it as an option; however, office-space collaboration remains an important consideration going forward.

Firms may be able to downsize much of the large-scale office space they hold in CBDs and distribute their holding across metro regions without significant impacts to collaboration. Large-scale offices are limited in their capacity to facilitate collaboration; for example, workers rarely physically communicate across floors, with most communication occurring between colleagues within six feet of each other. These limitations, alongside the pandemic's remote-work experience, have led to speculation that demand for satellite offices and coworking spaces outside of the CBD will grow. This shift is suggested in part because these spaces allow for similar levels of collaboration as large offices, can make use of improved communication technologies, are closer to many workers (especially those with seniority), and can take advantage of cheaper rents during an economic downturn. For further discussion, see [Bacevich et al. 2020](#).

Some argue that a more distributed workforce will harm innovation in the knowledge sector. Innovative knowledge industries historically cluster in cities; in turn, cities with clusters create positive externalities, or spillover, by acting as a space where knowledge can be transmitted, often through random interactions (see [Benedikt Frey, 2020](#)). To help mitigate the risk of losing tenants to the suburbs, Vancouver's livable urban regions should continue to be used to attract industry clusters in innovative fields. In line with existing regional principles of compact urban regions, considerations for decision processes around zoning and infrastructure should include analysis about facilitating knowledge transmission, and this reasoning should be communicated publicly and explicitly to interested parties.

Remote Work's Impacts on Urban Landscapes

An uptake in remote work is anticipated to impact the distribution of where workers live and where they work, both of which have the potential to significantly alter how the City of Vancouver's revenue is collected to meet its budgetary needs.

Review of Quantitative Modelling of Remote Work's Impact

Since COVID-19, two studies have attempted to model the impact of long-term increases in remote work on urban landscapes. Their findings will be compared in a table below.

[Delventhal et al. \(2020\)](#) model the impacts of a gradual increase in the rate of remote work in Los Angeles-Long Beach Combined Statistical Area from a 3.7% pre-pandemic rate to 33% working from home 89.6% of the time. Their model analyzes workers (as commuters or remote workers), locations of workers' residences, locations of firms' office space, floorspace, real-estate development, positive externalities of business agglomeration, and floorspace and congestion externalities. Key limitations to their model include no differentiation between occupation, industry, and income in relation to workers' ability to work remotely (i.e. all workers are assumed the same probability to work remotely); remote workers are calibrated as less productive (the authors suggest improved telecommuting technology will

likely mitigate this); the model does not differentiate between transportation mode choices; and the ability of workers to move outside of the model area is not accounted for.

[Lennox \(2020\)](#) uses multi-sectoral spatial computable general equilibrium models to assess the impacts of remote work within and between local labour, land, and product markets across Australia. The study only accounts for increases in remote work in occupations that can be easily done with a laptop. Lennox purposefully uses different methodology than Delventhal et al. to add to the literature, incorporating discrete residences and workplace location choices, occupational choice, working households and non-working households, positive externalities of business agglomerations, positive effects of dense residential zones on amenity quality, interactions within and between cities, land allocations, market prices, and productivity of firms and land. Notably, this study is limited by its lack of analysis of residential and commercial floorspace impacts.

Notably while using different methodology and variables, Delventhal et al. and Lennox come to similar conclusions regarding the impact of remote work on urban landscapes.

Delventhal et al. (Los Angeles)	Lennox (Australia)
<ul style="list-style-type: none"> ➤ Workers move from the core for more affordable housing (for larger floorspace). ➤ Increases in remote working and residential space in core areas lowers demand and prices of floorspace in the CBD, creating incentive for firms to relocate to the CBD (smaller footprint). ➤ Firms are further incentivised to relocate to the CBD for their higher exogenous productivity and productivity spillovers. ➤ Both residential and commercial floorspace prices fall as remote working rates increase, falling ~6% when the remote work rate reaches 33%. 	<ul style="list-style-type: none"> ➤ In major cities (Sydney, Melbourne, and Brisbane), population decreases in the core and increases in outer suburbs, peri-urban regions, and nearby costal developments, flattening density gradients. ➤ Businesses agglomerate in the CBDs of major cities as well as secondary business districts as property prices in urban cores fall. ➤ Working households shift away from urban cores and non-working households shift towards them.

Both models assume that firms will still act with undiminished incentives to agglomerate in CBDs; however, increased remote work may weaken the spillover effect that traditionally increases productivity when firms agglomerate, weakening demand for office space in the CBD. Discussions about positive externalities of agglomerated economic sectors as remote work increases, and the technology to facilitate it improves, remain mixed. In the medium-term, a more important question asks whether or not firms will continue to view higher rental prices in CBDs as worthwhile if their finances have been weakened by the pandemic and if their perception of positive agglomeration externalities is diminished by increases to remote working.

In addition, these models do not analyze the impact of the distribution of commercial and residential space across different municipal/city jurisdictions. If these models' findings are accurate, the City of Vancouver's tax revenue will face negative impacts while neighbouring municipalities benefit. While both studies suggest firms will amalgamate in the CBD, they also suggest the prices of workspace will decrease as firms rent less office space. Further, both studies suggest residential vacancies will increase in the urban core, lower-waged workers will move into the city, and higher-wage workers – who typically have greater capacity to work from home – move to locations where residences are larger and

cheaper, reducing residential prices in the city and impacting corresponding tax revenue. Whether these findings are generalizable to Vancouver's rather unique housing situation and geographic surroundings remains questionable.

Downstream Impacts of Increases in Remote Work Rates on Commercial Services

Workers do not only produce when they commute to jobs in Vancouver's CBD – they also spend. But little research exists that quantifies the impact of workers spending on local businesses.

Occupations with the greatest ability to work remotely are concentrated in downtown Vancouver. Further, retail and restaurant services – which are important to the fabric and perceived quality of an urban area – have been impacted financially by COVID-19, particularly those situated in Vancouver's CBD, raising the importance of understanding the long-term impacts of remote work to the CBD's service sector businesses.

No publicly available research exists about the spending of office workers near their workplace in Canadian CBDs; instead, this report focuses on studies with reasonably quality data from Australia and the United States.

[A 2015 survey](#) (n=769) of workers in North Sydney's CBD by Urbis Consulting found:

- Workers spent an average of **\$133/week in the CBD**
 - \$55 on clothing and accessories
 - \$40 on food and beverage takeaway
 - \$39 on food and beverage sit-down

A 2014 survey (n=3,700) of office workers in Australian cities by Urbis Consulting found:

- Workers spent an average of \$11,000 a year while at work
- Workers spent **\$230/week** in retail shops during their work week
 - Of that, \$76/week was spent on food and drinks

[A 2012 survey](#) (n=4,000) by the International Council of Shopping Centers where office workers were asked to track their weekly expenditures in the United States found:

- Urban office workers spent an average of **\$115.60/week** at work (minus transportation and online shopping)
- Urban office workers in areas considered to have ample retail, restaurant, and services spent an average of **\$165.21 a week** at work (minus transportation and online shopping)

Robert Gibbs, urban planner and instructor at Harvard GSD Executive Education, proposes that, on average, each office worker supports seven square feet (sqf) of restaurant space and 23 sqf of retail space. Using an average 200 sqf per office worker, he proposes each 200 sqf of office space supports 30 sqf of retail and restaurant space (2012).⁵

⁵ Note the average space per office worker was estimated at 150 sqf per worker in a [2015 report by Metro Vancouver](#). Two hundred sqf is used at times in this brief for more conservative estimates, and to help mitigate the influence growth in online purchases lowering retail spending per worker.

Pre-COVID (2020 Q1), JLL Commercial Real Estate estimated Downtown Vancouver’s rentable office space at 26,995,242⁶ sqf with 3.1% vacancy. Using Gibbs’ relationship of office space supporting commercial space suggest 3,924,339 sqf of Vancouver’ CBD retail and restaurant space is supported directly by office workers (for reference, Hemson Consulting estimates 43,100,000 sqf of non-tourism related commercial space in the City of Vancouver in 2016; see Appendix C of [City of Vancouver, 2019b](#))

Current State of Downtown Vancouver

Vancouver is well-known for long-standing urban planning principles that promote the creation of a livable urban landscape where residential, commercial, and business space are all promoted within and near its CBD. These planning principles can help mitigate the downstream impacts of increased remote work on businesses within the CBD. Many people still commute to the CBD daily for work, and the CBD’s current housing stock may not be as attractive for its currently highly educated and younger workforce who work in jobs where the feasibility of working remotely is much higher.

Demographics and Remote Work Feasibility⁷

Ages

Workers living in Downtown Vancouver tend to be younger than those in Metro Vancouver and the rest of the City. The following table shows the number of workers by age living in Metro Vancouver, The City of Vancouver, Downtown Vancouver, and the West End as calculated during the 2016 census, as well as each age group’s Telework Feasibility Indicator (TFI)⁸, which shows the rate at which each demographic is employed in positions where they can work from home. Brackets show the proportion of each age group that lives in the jurisdiction.

Table 3 – Vancouver Workers by Age and TFI

Age	Metro Vancouver		City of Vancouver		Downtown Vancouver		West End	
	Workers	TFI	Workers	TFI	Workers	TFI	Workers	TFI
18-25	152,630 (12%)	0.224	35,530 (10%)	0.277	2,690 (7%)	0.433	2,345 (7%)	0.338
25-34	289,980 (23%)	0.459	103,560 (30%)	0.524	15,175 (40%)	0.632	12,595 (40%)	0.542
35-44	272,690 (21%)	0.486	75,715 (22%)	0.54	8,985 (24%)	0.661	6,910 (22%)	0.572
45-54	297,050 (23%)	0.458	71,730 (20%)	0.491	5,900 (16%)	0.621	5,155 (16%)	0.542
55-65	207,845 (16%)	0.436	48,990 (14%)	0.448	3,740 (10%)	0.607	3,595 (11%)	0.555
65 (+)	55,950 (4%)	0.481	14,435 (4%)	0.536	1,270 (3%)	0.669	1,140 (4%)	0.559
Total	1,276,145	0.434	349,955	0.486	37,760	0.622	31,745	0.536

Data: Custom Census Table – Reference # CRO0179423

⁶ Inclusive of Downtown Core, Yaletown, and Gastown

⁷ Tables in this section use worker population data based on 2016 data. Worker populations today are larger.

⁸ TFI is a proportion of workers, estimated using the TFI of their 4-digit NOCs code, that can work from home, e.g. a TFI of 0.342 estimates that 342 workers out of 100 can work from home.

The 2016 Census Age Cohort of 25-34 forms a higher proportion of the working population in the City of Vancouver than the Metro area, and is even more concentrated in the urban core, making up 40% of the resident workforce in Downtown Vancouver and the West End. This age group is part of the Millennial generation, which domestically is the largest population outside of the Baby Boomer Generation. Currently, age cohorts younger than Millennials make up significantly less of the population in Vancouver and Canada (see [Comparison Age Pyramid](#)) and may not fill demand for housing downtown. The Canadian Census tracks non-residents with work and study permits, suggesting the younger age brackets may be slightly bolstered by those working or studying in Vancouver on a temporary basis.

The 35-44 age group lives in Downtown Vancouver at a slightly higher rate than other regions of the City, but comprises a significantly lower portion of the population. Overall, this data suggests that, while downtown Vancouver may be a livable area, residents are still leaving the downtown core in their 30s. Given that workers downtown are significantly more likely to be employed in positions where remote work is feasible, acceptability in working from home post-pandemic will likely act as a factor that draws this age cohort away from the urban core at a faster rate than they have previously.

Education Levels

Workers with higher levels of education tend to live in greater proportions closer to Vancouver's urban core. With that greater level of education, comes a corresponding increase in their capacity to work remotely, and – as discussed by Shearmur (2018) – the power to choose to work remotely. Furthermore, workers of all education levels living downtown, and to a lesser extent the West End, work in positions where remote work is more feasible than in Metro and the City of Vancouver.

Table 4 – Vancouver Workers by Education Level and TFI

Education Level	Metro Vancouver		City of Vancouver		Downtown Vancouver		West End	
	Workers	TFI	Workers	TFI	Workers	TFI	Workers	TFI
No certificate, diploma, or degree	92,400 (7%)	0.156	21,050 (6%)	0.156	670 (2%)	0.328	905 (3%)	0.276
Secondary (high) school or equivalent	340,210 (27%)	0.309	74,555 (21%)	0.314	5,630 (15%)	0.467	5,710 (18%)	0.393
Trades certificate or diploma	87,885 (7%)	0.174	17,315 (5%)	0.200	1,360 (4%)	0.268	1,620 (5%)	0.201
College, CEGEP or other non-university certificate or diploma	239,300 (19%)	0.462	57,720 (16%)	0.473	5,975 (16%)	0.559	6,195 (20%)	0.487
Certificate or diploma below bachelor	52,375 (4%)	0.457	13,065 (4%)	0.473	1,535 (4%)	0.603	1,385 (4%)	0.507
Bachelor or above	463,975 (36%)	0.613	166,245 (48%)	0.639	22,590 (60%)	0.708	15,940 (50%)	0.657
Total	1,276,145	0.434	349,955	0.486	37,765	0.622	31,745	0.536

Data: Custom Census Table – Reference # CRO0179423

Sectors of Work

The following table combines employment from 20 different two-digit NAICs (employment by economic sectors) into six groupings in line with a methodology used by the City of Vancouver ([see methodology](#)). Unsurprisingly, residents living closer to the urban core work in economic sectors where remote work is more feasible.

Table 5 – Vancouver Workers by Economic Sector and TFI

Sectoral Groupings	Metro Vancouver		City of Vancouver		Downtown Vancouver		West-End	
	Workers	TFI	Workers	TFI	Workers	TFI	Workers	TFI
Forestry, mining, utilities, construction, manufacturing	196,275 (15%)	0.220	37,405 (11%)	0.250	3,000 (8%)	0.453	2,435 (8%)	0.291
Transport, warehousing, wholesaling	126,155 (10%)	0.382	24,165 (7%)	0.437	2,420 (6%)	0.625	1,705 (5%)	0.536
Healthcare, education, and government	282,390 (22%)	0.507	80,345 (23%)	0.527	6,835 (18%)	0.527	6,280 (20%)	0.593
Retail	143,135 (11%)	0.317	35,270 (10%)	0.356	3,210 (9%)	0.525	3,020 (10%)	0.464
Personal services, arts, hotel, food	193,870 (25%)	0.204	62,640 (18%)	0.221867	5,540 (15%)	0.256	6,760 (21%)	0.210
Personal and commercial services	334,315 (26%)	0.701	110,135 (31%)	0.7340	16,755 (44%)	0.831	11,555 (36%)	0.768
Total	1,276,145	0.434	349,955	0.486	37,765	0.622	31,745	0.536

Data: Custom Census Table – Reference # CRO0179423

Economic Sectors Commuting into the City

Using data provided through the City of Vancouver's [Employment Lands and Economy Review](#) (2016 Census Data), alongside TFI data provided by Statistics Canada, Table 6 provides indication of how many people in these economic sectors are working in the City of Vancouver, how many live outside the City, and their capacity to work remotely.

Notably, over half of finance and insurance sector jobs in the City, and nearly 21,900 professional, scientific, and technical service workers working in the City, live outside of the City of Vancouver. Over 84% of workers in each sector are estimated to be able to work remotely. While data to cross-tabulate age with economic sectors at this scale is unavailable to the author, other age demographic data presented in this report suggests that workers in these sectors tend to move out of Vancouver's CBD and the City of Vancouver as they age. Assuming these older workers living outside the City hold senior positions, they will have added incentive and power to promote alternatives to using downtown office space, including remote work and satellite offices outside the CBD, potentially setting new norms.

Careful consideration should be given to these sectors to understand their post-pandemic plans and promote their continued work within the City.

Table 6 – Workers Working in and Commuting to the City of Vancouver (2016), Sorted by TFI

Economic Sector (NAIC)	Workers Working in Vancouver	Proportion Living Outside the City	TFI ⁹
Finance and insurance	27,655	52.30%	0.855
Professional, scientific, and technical services	58,740	37.20%	0.841
Educational services	22,535	36.30%	0.812
Information and cultural industries	20,640	38.50%	0.723
Real estate and rental and leasing	12,975	35%	0.678
Public administration	18,395	58.30%	0.579
Arts, entertainment, and recreation	9,680	30.60%	0.43
Other services (except public administration)	18,405	37.20%	0.405
Retail trade	39,525	35%	0.356
Administrative support, waste management, and remediation services	13,295	46.80%	0.329
Transportation and warehousing	10,215	44.10%	0.302
Healthcare and social assistance	47,080	42.10%	0.281
Accommodation and food services	40,355	32.50%	0.075

Data: [Employment Lands and Economy Review](#) and Custom Census Table – Reference # CRO0179423

Office Space

Vancouver's CBD's office space market remains one of the most competitive in North America, despite the pandemic. Rental prices in the CBD remain stable as large institutional landlords have not lowered prices, relying on their quality tenants and continued low vacancy rates. Table 7 (below) displays select data from JLL's Metro Vancouver Office Insights, from Q4 2019 – Q3 2020.

Despite continued low vacancy rates and stable prices, early signs suggest the economic impacts of COVID-19 and continued remote work are shifting the spatial patterns of office space demand in ways similar to the outcomes of modeling by Delventhal et al. (2020) and Lennox (2020).

The vacancy rate in Vancouver's CBD grew by two points from Q4 2019 to Q3 2020 (note that vacancy rates remain lower than periods as recent as 2017). In Q2 of 2020, total vacancy rates increased significantly due to growing availability of subleases offered by exiting tenants; in Q3, direct vacancies likewise grew significantly. The long- and medium-term impacts of remote work on vacancy rates will become clearer as long-term leases continue to expire and a defined end-date for social distancing measures becomes available.

⁹ The TFI used in this table is calculated based on workers living in the City of Vancouver, not working in the City. These indicators are provided as an estimate.

Table 7 – Vancouver’s Office Space Trends During COVID-19

Region	Inventory (sf)	Total Net Absorption (sf)	Direct Vacancy (%)	Sublet Vacancy (%)	Total Vacancy (%)	Average direct asking net rent (\$/sf)	Average additional rent (\$/sf)
2019 Q4							
Downtown¹⁰	26,995,242	-186,294	3.1	0.6	3.7	\$36.01	\$19.84
Broadway Corridor	7,843,353	-558	2.9	0.3	3.2	\$30.00	\$17.91
Vancouver Outlying ¹¹	3,614,845	0	2.5	2.4	4.9	\$20.29	\$14.62
Vancouver Periphery ¹²	11,458,198	-558	2.8	0.9	3.7	\$27.45	\$17.04
Suburbs	24,119,871	30,877	6.2	1.1	7.3	\$21.28	\$13.26
2020 Q1							
Downtown	27,115,808	18,346	3.5	0.5	4.0	\$36.75	\$19.99
Broadway Corridor	7,870,651	47,593	2.6	0.3	2.9	\$29.44	\$18.00
Vancouver Outlying	3,614,845	25,826	2.0	2.2	4.2	\$23.22	\$16.98
Vancouver Periphery	11,485,496	73,419	2.4	0.9	3.3	\$28.37	\$17.82
Suburbs	24,224,871	143,442	6.1	1.0	7.1	\$21.56	\$12.99
2020 Q2							
Downtown	27,251,808	-78,225	3.1	1.8	4.9	\$37.53	\$20.35
Broadway Corridor	7,821,054	-12,670	2.5	0.6	3.1	\$28.01	\$18.00
Vancouver Outlying	3,659,474	-26,513	2.1	2.7	4.8	\$22.23	\$17.67
Vancouver Periphery	11,480,528	-39,183	2.4	1.3	3.7	\$26.35	\$17.91
Suburbs	24,111,557	86,558	6.1	0.9	7.0	\$22.86	\$13.49
2020 Q3							
Downtown	27,326,266	-166,415	4.2	1.5	5.7	\$36.18	\$19.82
Broadway Corridor	7,854,734	-62,782	3.5	0.4	3.9	\$30.20	\$17.84
Vancouver Outlying	3,687,193	7,527	2.3	3.0	5.3	\$27.41	\$16.73
Vancouver Periphery	11,541,927	-55,255	3.1	1.3	4.4	\$29.54	\$17.58
Suburbs	24,268,168	-19,499	6.1	1.0	7.1	\$22.08	\$13.28
Δ 2019 Q4-2020 Q3		Note¹³					
Downtown	331,024	-412,588	1.1	0.9	2.0	\$0.17	\$0.02
Broadway Corridor	11,381	-28,417	0.6	0.1	0.7	\$0.20	-\$0.07
Vancouver Outlying	72,348	6,840	-0.2	0.6	0.4	\$7.12	\$2.11
Vancouver Periphery	83,729	-21,577	0.3	0.4	0.7	\$2.09	\$0.54
Suburbs	148,297	241,378	-0.1	-0.1	-0.2	\$0.80	\$0.02

Data: JLL

¹⁰ Inclusive of Downtown Core, Yaletown, and Gastown

¹¹ Vancouver Outlying office space in City limits that is not Downtown or along the Broadway Corridor

¹² Vancouver Periphery is all office space in City limits that is not Downtown, i.e. Broadway and Outlying

¹³ The total net absorption over the time period is shown instead of the Δ between 2019 Q1 and 2020 Q3

Table 8 – Vacancy Rates by Regions of Vancouver

Region	Total Vacancy Q4 19	Total Vacancy Q3 20	Change (Δ)
Downtown	3.7	5.7	2.0
Broadway Corridor	3.2	3.9	0.7
Vancouver Outlying	4.9	5.3	0.4
Burnaby	9.7	8.6	-1.1
Langley	4.4	9.5	5.1
New West	7.7	4.7	-3.0
North Shore	3.8	3.0	-0.8
Richmond	7.2	8.5	1.3
Surrey	5.9	5.0	-0.9
Tri-Cities	1.5	1.9	0.4

Regions peripheral to the CBD show stronger market resilience. The Broadway Corridor and the outlying region of the City of Vancouver both have lower vacancy rates than the CBD and have also seen less significant increases to their rates. The suburbs of Metro Vancouver's office vacancy rate remain higher than the City and CBD, but over the course of the pandemic they have seen 0.2 point reduction (Table 7) in vacancy rates, suggesting a shift (increase) in demand for office space outside of the City relative to the conditions of the pandemic.

One consideration for the City of Vancouver, if these trends continue, is to increase office space in the City's peripheral regions closer to the suburbs where many senior workers live. Office space in the outlying regions of the City of Vancouver is the only area in Metro Vancouver where the price for office space has increased significantly over the course of the pandemic, suggesting that remote work may increase demand in these regions. Further research is needed on this subject and this trend should continue to be monitored.

Downtown Residents and their Place of Work

Rates of Downtown Vancouver residents working from home prior to the pandemic have some inconsistencies with the quantitative models of Delventhal et al. (2020) and Lennox (2020) that analyze the changes in residence for workers shifting to remote work. Workers living downtown where smaller housing is common have worked from home at a higher rate than the rest of the City.

2016 Census Data published by the City of Vancouver shows that Downtown Vancouver residents work from home at a higher rate than those from the periphery of the City of Vancouver.

- [11.2% of Downtown residents in the labour force work from home](#)
- [8.7% of West End residents in the labour force work from home](#)
- 8.9% of City of Vancouver residents in the labour work from home¹⁴

A sizable number of residents also work outside the City of Vancouver:

- 24% of Downtown residents in the labour force work outside the City
- 23% of West End residents in the labour force work outside the City
- 32% of City of Vancouver residents in the labour force work outside the City

¹⁴ Note that the 2016 Long Form Census did not define what constitutes working from home, e.g. proportion of time working from home; their estimates both at federal and local levels are often higher than other sources.

Impacts to Downtown Vancouver

The Downtown Vancouver Business Improvement Association (DVBIA) has tracked and compiled data about the economic impacts and recovery from the pandemic. Key insights from their October 2020, Economic Impact and Recovery Snapshot show:

- Offices in Downtown Vancouver are 10-30% occupied¹⁵
 - Tech companies and multi-level firms have lower occupancy rates
 - Mid-size and smaller tenants have higher occupancy rates
 - Rates range from 9-70%
- 53 street-level businesses closed permanently since mid-March in the DVBIA Catchment area
 - A little more than half are independent businesses
- August downtown hotel occupancy was 27.5% (compared to 92.6% in 2019)
- Foot traffic along retail corridors is less than half of 2019 traffic, but increased 12% from August-September
- Vehicle traffic is reduced downtown, but less so than active transportation and public transit

Long-term Impacts – Calculations and Analysis

The following section makes basic estimates about the long-term impacts of spatial shifts of economic activity related to uptake of remote work and its downstream effects post-pandemic. This section does not take into account the impact of an economic downturn, or other spatial factors, e.g. long-term changes to trends in tourism or remote education. These figures are provided for context, and to begin to understand the magnitude of the issue of remote work to the City of Vancouver's property tax revenue and economy. Higher quality, more granular data is still needed to understand this issue.

Shifts in Retail Spending Due to Remote Work

Table 9 estimates how much annual spending by office workers in Vancouver's CBD may shift away from downtown's retail businesses and restaurants near offices with an increased uptake in remote work; it does not account for firms relocating or an economic downturn. These estimates are based on factors and assumptions determined through this report's research:

- The number of office workers in Vancouver's CBD¹⁶ are estimated using occupied office square footage at one worker per 150 sqf and 200 sqf based on office space data from Q1, 2020¹⁷.
- Office worker spending is estimated from \$140/week and \$200/week average spending¹⁸.
- Estimates assume 85% of downtown office workers working remotely. One estimate assumes an average of 40% of time working remotely, the other 60%.
- Assumes spending near offices changes proportionally to workers' time working remotely.

¹⁵ The DVBIA has surveyed office building owners and managers to collect data about office usage. Their estimate blends various methodologies of building owners and managers, but is consistent to findings in other cities. Their sample includes 26 buildings representing 6,000,000 sq of office space. This rate has remained consistent for months.

¹⁶ Downtown is based on JLL office space data and is inclusive of the downtown core, Yaletown, and Gastown.

¹⁷ Workers per occupied office sqf is used to help mitigate the influence of workers who worked remotely pre-pandemic, but a more accurate analysis of prior remote work levels may lead to more accurate calculations.

¹⁸ This estimate is based on the survey data provided above, and accounts for inflation but not currency rates. Using the International Council of Shopping Centers survey, \$140/week is roughly the average brick-and-mortar retail spending (minus restaurants) for office workers in urban regions with high-quality retail; and \$200 is retail and restaurant spending combined.

Table 9 - Downtown Office Worker Annual Shifts in Spending

Estimated spending shift per year, 40% remote work by 85% of CBD office workers				
Worker estimate	@200sqf per worker		@150 sqf per worker	
Weekly spending	\$140	\$200	\$140	\$200
Shift (\$)	\$ 324,729,426	\$ 463,899,180	\$ 432,972,568	\$ 618,532,240
Estimated spending shift per year, 60% remote work by 85% of CBD office workers				
Worker estimate	@200sqf per worker		@150 sqf per worker	
Weekly spending	\$140	\$200	\$140	\$200
Shift (\$)	\$ 487,094,139	\$ 695,848,770	\$ 649,458,852	\$ 927,798,360

This model suggests long-term increases in remote work rates by office workers in Vancouver's CBD could shift spending significantly away from the downtown core. Estimates range from \$324 million – \$928 million per year (for reference, [Metro Vancouver's 2017 GDP](#) was estimated at \$135.6 billion). Some of this spending will shift to places still within City limits, but businesses closest to dense office space will be impacted most.

Retail Space Impacted Per Square Foot

Table 10 uses Gibbs' (2012) rule – which states that, on average, each office worker supports seven sqf of restaurant space and 23 sqf of retail space – to estimate how much retail and restaurant space may no longer be supported by office workers in Vancouver's CBD due to shifts to remote work. It uses identical methodology to Table 9 to determine remote work uptake.

Table 10 - Impacts to Retail Space Supported by Office Worker Spending by Square Footage

Retail support from office workers lost in CBD by sqf, 40% remote work rate 85% uptake						
	Restaurant		Retail		Retail + Restaurant	
Worker estimate	@200 sqf per worker	@150 sqf per worker	@200sqf per worker	@150 sqf per worker	@200 sqf per worker	@150 sqf per worker
Square feet	311,384	415,179	1,023,120	1,364,160	1,334,504	1,779,339
Retail support from office workers lost in CBD by sqf, 60% remote work rate 85% uptake						
	Restaurant		Retail		Retail + Restaurant	
Worker estimate	@200 sqf per worker	@150 sqf per worker	@200 sqf per worker	@150 sqf per worker	@200 sqf per worker	@150 sqf per worker
Square feet	467,076	622,768	1,534,680	2,046,240	2,001,757	2,669,009

Using Gibbs' rule demonstrates a significant impact to retail and restaurant space in the CBD, with retail and restaurants losing 1.3 million – 2.7 million sqf worth of support from downtown office workers due to uptakes in remote work. For reference, in 2016 Hemson Consulting estimated 43 million sqf of non-tourism related commercial space in the City of Vancouver (see [Appendix C of City of Vancouver, 2019](#)). Again, this loss of support from office workers should be understood as a displacement of spending, some of which will remain within the City of Vancouver.

Property Tax Consideration

How the spatial shifts of economic activity related to increases in remote work will impact property tax revenue remain difficult to estimate. The City of Vancouver's tax rates are low relative to other Canadian cities, but property prices continue to remain high, making it difficult for City Council to raise rates during an economic downturn. The reality that restaurants and many retail sectors have already been

harmled significantly by COVID-19, and that office tenants have increased incentive to leave, or downsize, their space in the CBD, poses challenges to increasing commercial property tax rates further to cover potential losses in tax revenue from property devaluation or defaults on taxes related to vacancies. However, it remains to be seen how future conditions may offset this trend. For instance, large tech companies such as Amazon, Apple, and Shopify have plans to significantly increase their presence in Vancouver's CBD, but there is also 3,764,420 sqf of office space in the CBD currently under construction. Given that the City of Vancouver is already implementing a 5% increase to business and residential property taxes in 2021, alongside cost cutting measures to balance their budget, the City will have to examine alternative avenues to mitigate the impacts of remote work as well alternative income sources.

Evidence suggests that firms will maintain their presence in the CBD but downsize their office sizes with increased remote work uptake, and may shift some of their office tenancy outside of the CBD to satellite offices in the suburbs or peripheral urban regions – a shift that has been proposed by industry experts (see [Bacevice et al. 2020](#)) and is supported by shifts in office space demand. Whether downsizing may be proportional to remote work rates remains questionable. If downsizing occurs, firms will look to make their workspaces more collaborative to make up for lost collaboration but may need to accommodate those working in the office with more space due to changing norms and concerns about disease transmission.

Non-residential property taxes only account for 22% of the City's budget but, as demonstrated, changes to office working norms are highly interrelated with residential space. Currently, housing prices are increasing (see [Tencer 2020](#)), but the condominium market that dominates Vancouver's CBD shows signs of a potential slowdown. Condominiums are increasingly being put to market, suggesting consumer preferences for residential space is shifting towards a desire for more space, in part to facilitate remote work. Vancouver's detached housing market inventory hit a six-year low in September, leading to bidding wars, while Vancouver's condo market reached a six-year inventory high in September as people looked for more space (see [Saretsky 2020](#)). Further, as suggested by Lennox (2020), nearby coastal regions such as the Sunshine Coast are seeing a surge in demand for residential property, especially from technology workers ([Shore, 2020](#)). Urban peripheral regions are also seeing significant increases in demand. Mission, whose access to the urban core through the West Coast Express facilitates part-time remote work, had a record 166.7% increase in detached home sales in December (see [O'Brien 2021](#)).

The long-term impacts to property tax revenue outlined in this report will undoubtedly relate to how long the pandemic continues and to what degree firms allow remote work in the future. This report has shown that the magnitude of impacts has the potential to be substantial, but how City Council adapts property tax rates alongside conditions and whether businesses and residents can pay taxes will be the ultimate determiner of impacts to revenue for the City.

Further Research Needed

The evidence provided in this brief suggests that increases to remote work rates are likely in the near future and that this trend has the potential to significantly shift economic activity away from Vancouver's CBD. While calculations have been made to understand the magnitude of this shift, more

data and research is necessary for decision makers, urban planners, and policymakers to properly plan for the long-term implications of this trend. Future research needed includes:

- Continuous and quality survey of businesses to understand firms' ongoing plans for allowing remote work post-pandemic. Statistic's Canada's Survey on Business Conditions has surveyed businesses about their remote work plans, but findings have not been released since May 2020. Further, the survey's questions need to be improved. While prior surveys have asked about the proportion of workers anticipated to work from home, future questions should seek clarification on work flexibility from at-home arrangements, e.g. what proportion of employees will be allowed to work 40% of their time from home? Engaging with Statistics Canada to provide new, and improve existing, survey questions is essential to understanding long-term impacts in Vancouver's CBD.
- While not explicitly discussed in this report, many have speculated that Canada and Vancouver may become a more popular destination for highly skilled immigrants due to current politics in the United States, making the City a more attractive location for technology companies. However, given changes in norms around remote work, more research is needed to understand the degree to which skilled immigrants will continue to immigrate if remote work in their home countries or elsewhere is a possibility; and the degree to which firms are willing to aid in facilitating immigration (paying moving costs, helping with legal process etc.) if remote work is a realistic alternative to immigration or migration.
- The housing stock in Vancouver's CBD may need to be adapted to meet changing living conditions if remote work becomes normalized. Better data about the stock is needed, as well as an understanding of its adaptability.
- Increased office space may become available, or more affordable, in Vancouver's CBD. This trend may provide opportunities for the City of Vancouver and other levels of government (whose tenancy could help mitigate property tax impacts) to use these spaces to help create an equitable economic recovery post-COVID, e.g. spaces for skills training for impacted parties. The possibility to repurpose these spaces should be studied and other levels of government should be consulted.
- Demand for office space in outlying areas of the City of Vancouver has been strong though the pandemic. Urban planners should investigate the potential to increase office space in regions outside the CBD. Special attention should be paid to the density of office workers in outlying regions of the City, as well as commuting routes into the City from the suburbs, to mitigate the potential shift in office space demand towards the suburbs.

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