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by Tahsin Mehdi and René Morissette

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The long-term wage growth of teleworkers before the COVID-19 pandemic

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Before the COVID-19 pandemic, working from home was unlikely to be viewed as compatible with the supervision of employees, most of whom generally worked on-site. Some firms might have perceived—rightly or wrongly—that some teleworkers were less committed to the organization than other employees. For these reasons, individuals working from home may have received fewer promotions than other employees, if any.¹ Some teleworkers might not have pursued offers for highly paid jobs that provided no opportunity to work from home. In all of these scenarios, employees working from home would have experienced lower wage growth in the long term than other employees.

Alternatively, firms may have allowed some of their highly skilled employees—who would have experienced strong wage growth regardless of their work arrangements—to work from home to retain them within the organization. These teleworkers might have experienced stronger wage growth than their colleagues working on-site, not because of telework per se, but because of their higher-than-average abilities and growing contribution to the performance of the company. Other highly skilled teleworkers might have experienced strong wage growth by moving to high-paying firms.

Did employees who worked from home before the COVID-19 pandemic experience weaker or stronger wage growth than other employees in the long term? This question is currently unanswered. While several studies have assessed whether teleworkers earned more or less than other employees at a given point in time (Oettinger, 2011; White, 2019; Pignini & Staffolani, 2019; Pabilonia & Vernon, 2022), no study has—to the authors' knowledge—compared the long-term wage growth of teleworkers with that of other employees to date.

This study fills this information gap and compares, for the commercial sector,² the wage growth experienced from 2005 to 2015 by employees who worked from home in **both of these years** with that experienced by employees who worked outside the home in both of these years.³ To do so, the study integrates data from Statistics Canada's Longitudinal Worker File and the 2006 and 2016 Census of Population.

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1. Baert et al. (2020) provide recent evidence that some teleworkers fear that work from home may diminish their promotion opportunities and weaken ties with their colleagues and employer.
 2. The commercial sector excludes public administration, educational services, and health care and social assistance.
 3. While it would be ideal to compare the wage growth of employees working from home in each year of the 2005-to-2015 period with that of employees working outside the home in each year of this period, no Canadian dataset currently allows such comparison.

If part of the increase in work from home triggered by the COVID-19 pandemic persists in the years to come, employees working from home will likely be a less selective subset of the Canadian workforce than they were before the pandemic. Firms' attitudes towards telework and their ability to monitor teleworkers' performance will likely change as well. For these reasons, the long-term wage growth of teleworkers before the COVID-19 pandemic is unlikely to predict precisely the long-term wage growth of teleworkers in the years to come. Nevertheless, comparisons of the long-term wage growth of teleworkers with that of other employees before the COVID-19 pandemic are important for a variety of reasons. First, they sharpen the understanding of labour markets before 2020. Second, they provide a benchmark against which to gauge the future earnings trajectories of teleworkers. Finally, they help inform discussions about the potential benefits and disadvantages of work from home.

Employees who worked from home before the COVID-19 pandemic earned more than other employees

Men and women who worked from home before the COVID-19 pandemic received higher wages than other employees.

In the commercial sector, average log weekly wages of male employees working from home **in 2015** were 0.207 points higher than those of other male employees (Table 1, column 1, second panel). This represents a pay difference of 23%.⁴

4. This pay difference is obtained by taking the antilog of 0.207 minus 1. In 2015, male employees working from home averaged \$2,298 per week (in 2015 dollars), compared with \$1,924 for other male employees. For women, the corresponding averages were \$1,497 and \$1,336, respectively.

Table 1
Wage differences between teleworkers and other employees in the commercial sector, 2005 and 2015

Control variables	Men				Women			
	None	Worker, job and firm characteristics	None (firms with at least one teleworker and on-site employee)	Worker and job characteristics + firm fixed effects (firms with at least one teleworker and on-site employee)	None	Worker, job and firm characteristics	None (firms with at least one teleworker and on-site employee)	Worker and job characteristics + firm fixed effects (firms with at least one teleworker and on-site employee)
logarithmic values								
Cross-sectional sample								
Wage differences in 2005	0.179 ***	0.108 ***	0.197 ***	0.096 ***	0.116 ***	0.206 ***	0.198 ***	0.183 ***
Wage differences in 2015	0.207 ***	0.122 ***	0.182 ***	0.093 ***	0.167 ***	0.15 ***	0.163 ***	0.108 ***
Longitudinal sample								
Wage differences in 2005	0.366 ***	0.234 ***	0.328 ***	0.176 ***	0.191 **	0.233 ***	0.396 ***	0.274 **
Wage differences in 2015	0.252 ***	0.11 **	0.222 ***	0.062	0.135 **	0.194 ***	0.225 ***	0.052
numbers								
Sample sizes in 2005—cross-sectional sample								
Commercial sector	305,076	305,076	129,468	129,468	202,772	202,772	90,307	90,307
Employees working from home	5,701	5,701	3,781	3,781	5,897	5,897	3,136	3,136
Sample sizes in 2015—cross-sectional sample								
Commercial sector	494,201	494,201	225,332	225,332	317,665	317,665	154,047	154,047
Employees working from home	14,516	14,516	10,527	10,527	12,932	12,932	8,735	8,735
Sample sizes in 2005 and 2015—longitudinal sample								
Commercial sector	38,837	38,837	3,587	3,587	24,877	24,877	3,378	3,378
Employees working from home	257	257	149	149	229	229	92	92

* significantly different from reference category (p < 0.05)

** significantly different from reference category (p < 0.01)

*** significantly different from reference category (p < 0.001)

† significantly different from reference category (p < 0.10)

Notes: The natural logarithm of weekly wages is the dependent variable. Worker characteristics include age, age squared, education, marital status interacted with the presence of children, indicators of population groups and language proficiency, an indicator of activity limitations, immigration status, indicators of years since arrival in Canada, province of residence, and a census metropolitan area indicator. Job characteristics include full-time status, union status and an indicator of pension coverage. Firm characteristics include industry (two-digit level) and firm size indicators. The commercial sector excludes public administration, educational services, and health care and social assistance. Wage differences between teleworkers and other employees are in logarithmic values. Robust standard errors are used.

Sources: Statistics Canada, Census of Population of 2006 and 2016, and Longitudinal Worker File.

This pay difference drops to 13% (0.122 points) after controlling for worker characteristics such as age, education, immigrant status, language proficiency and activity limitations; job characteristics such as full-time status, union status and pension coverage; and firm characteristics such as industry of employment and firm size (Table 1, column 2, second panel).⁵ The pay difference drops to 10% (0.093 points), but remains statistically significant, when the focus is on wage differences between teleworkers and other employees **within firms**, i.e., when controls are added for **firm fixed effects** (Table 1, column 4, second panel).

For women, the 2015 wage differences between teleworkers and other employees obtained in multivariate analyses vary between 12% (0.108 points) and 16% (0.150 points).

The higher pay rates of teleworkers—relative to other employees—are also observed in 2005.

Pay differences observed in 2005 between employees who worked from home **both in 2005 and 2015** and employees who worked outside the home in both years are more substantial. For men, these pay differences amount to 19% (0.176 points) when controlling for worker characteristics, job characteristics and **firm fixed effects** (Table 1, column 4, third panel). The corresponding estimate for male employees who worked from home (or not) in 2005 equals 10% (0.096 points) (Table 1, column 4, first panel).

Employees who worked from home both in 2005 and 2015 saw their wages increase less than other employees from 2005 to 2015

Employees who worked from home **both in 2005 and 2015** experienced slower wage growth than employees who worked outside the home in both years.⁶ From 2005 to 2015, average log weekly wages of male teleworkers in this sample grew by 0.083 points (9%), compared with 0.166 points (18%) for other male employees. Average log weekly wages of female teleworkers increased by 0.107 points (11%), compared with 0.200 points (22%) for other female employees.

Most of these differences in wage growth remain in multivariate analyses that control not only for worker, job and firm characteristics, but also for the average wages received from 2002 to 2004 and for transitions (parental leave, job loss, injury or illness) experienced by workers between 2005 and 2015 (Table 2). The mechanisms underlying this slower wage growth for teleworkers remain to be identified. Despite this weaker wage growth, employees who worked from home **both in 2005 and 2015** did not have lower wages than other employees in 2015 (Table 1, fourth panel).

5. Table 1 provides the full list of control variables.

6. The former group is more likely than the latter to (a) be aged 35 to 54; (b) have at least a bachelor's degree; (c) live in Ontario or in a census metropolitan area; (d) be employed in professional, scientific and technical services or in managerial and administrative positions; (e) be employed in small firms; (f) be non-unionized; (g) have no workplace pension plan; (h) be White or born in Canada; and (i) be bilingual. These differences are taken into account in multivariate analyses.

Table 2
Differences in the wage growth of teleworkers and other employees in the commercial sector from 2005 to 2015

Control variables	Men				Women			
	None	Worker, job and firm characteristics + transition variables	None (firms with at least one teleworker and on-site employee, and employees are in the same firm in 2005 and 2015)	Worker and job characteristics + transition variables + firm fixed effects (firms with at least one teleworker and on-site employee, and employees are in the same firm in 2005 and 2015)	None	Worker, job and firm characteristics + transition variables	None (firms with at least one teleworker and on-site employee, and employees are in the same firm in 2005 and 2015)	Worker and job characteristics + transition variables + firm fixed effects (firms with at least one teleworker and on-site employee, and employees are in the same firm in 2005 and 2015)
Differences in long-term wage growth	-0.083 ***	-0.130 ***	-0.111 ***	-0.076 *	-0.093 *	-0.087 †	-0.223 **	-0.270 **
Sample sizes								
Commercial sector	38,837	38,837	2,627	2,627	24,877	24,877	2,605	2,605
Employees working from home	257	257	107	107	229	229	70	70

* significantly different from reference category (p < 0.05)

** significantly different from reference category (p < 0.01)

*** significantly different from reference category (p < 0.001)

† significantly different from reference category (p < 0.10)

Notes: The dependent variable equals changes in the natural logarithm of weekly wages from 2005 to 2015. Worker characteristics are measured in 2006 and include age, age squared, education, marital status interacted with the presence of children, indicators of population groups and language proficiency, an indicator of activity limitations, immigration status, indicators of years since arrival in Canada, province of residence, and a census metropolitan area indicator. Average wages and salaries earned from 2002 to 2004 are also included. Job characteristics include full-time status in 2005, union status in 2005 and an indicator of pension coverage in 2005. Firm characteristics include industry (two-digit level) and firm size indicators in 2005. Transition variables include indicators of whether workers (a) lost their job between 2005 and 2015, (b) had a permanent separation because of injury or illness during that period, (c) took a maternity or parental leave during that period, or (d) had a different full-time status in 2015 (compared with 2005). The commercial sector excludes public administration, educational services, and health care and social assistance. Robust standard errors are used.

Sources: Statistics Canada, Census of Population of 2006 and 2016; Longitudinal Worker File.

Conclusion

This study shows that Canadian employees who worked from home both in 2005 and 2015 initially had higher wages, but experienced slower long-term wage growth than their counterparts who worked outside the home in both years.

Several limitations must be noted. Even though a rich set of control variables has been used, none of the differences (in wages or long-term wage growth) documented in this study can be given a causal interpretation. Moreover, such differences may vary across occupations or population groups. Sample size limitations precluded separate multivariate analyses of wage growth differences along these dimensions. Lastly, for reasons mentioned above, it is unclear whether the patterns found during the 2005-to-2015 period will hold in the years to come.

Appendix 1: Sample selection

The cross-sectional samples used in the first two panels of Table 1 include individuals who (a) were aged 25 to 54 in 2005 (2015); (b) did not attend school around 2005/2006 (2015/2016); (c) had only one paid job in 2005 and 2006 (2015 and 2016) and were with the same employer in both years; (d) had no self-employment income in 2005 (2015); (e) had positive weeks worked in 2005 (2015); (f) had annual wages and salaries that were at least as high as those obtained when working full year, full time at provincial minimum wages; and (g) were not in the top 0.1% of the annual wage distribution in 2005 (2015).

The longitudinal samples used in Table 2 and the third panel of Table 1 include individuals who (a) were aged 25 to 54 in 2005 (35 to 64 in 2015); (b) attended school neither around 2005/2006 nor around 2015/2016; (c) had only one paid job in 2005 and 2006 and were with the same employer in both years; (d) had only one paid job in 2015 and 2016 and were with the same employer in both years; (e) had no self-employment income in 2005 and 2015; (f) had positive weeks worked in 2005 and 2015; (g) had, in 2005 and 2015, annual wages and salaries that were at least as high as those obtained when working full year, full time at provincial minimum wages; and (h) were not in the top 0.1% of the annual wage distribution in 2005 or 2015.

Authors

Tahsin Mehdi and René Morissette are with the Social Analysis and Modelling Division, Analytical Studies and Modelling Branch, at Statistics Canada.

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