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Working from home and total commuting time before and during the pandemic: Longitudinal evidence from the Australian HILDA Survey

Heiko Rüger^{1,§}, Inga Laß¹, Nico Stawarz¹, Alexandra Mergener²

¹ Federal Institute for Population Research (BiB), Wiesbaden, Germany

Emails: heiko.rueger@bib.bund.de; inga.lass@bib.bund.de; nico.stawarz@bib.bund.de

² Federal Institute for Vocational Education and Training (BIBB), Bonn, Germany

Email: mergener@bibb.de

[§] Presenting author

Abstract

Commuting to work is a major source of congestion, pollution and energy consumption. With the onset of the COVID-19 pandemic, the question to what extent working from home (WFH) could contribute to reduce commuting has received heightened attention. However, existing research has a number of limitations. First, it relies mainly on cross-sectional data, which means that conclusions about causality are uncertain due to bias from unobserved heterogeneity. Secondly, commuting is often measured in terms of one-way commuting time/distance, which does not allow predicting the effect on total commuting (e.g. per week). Thirdly, few studies examine whether the effect varies by the extent of WFH and gender. Fourth, there are few robust studies covering the period during the COVID-19 pandemic, although both the users of WFH and the way in which WFH is used are likely to have changed since the start of the pandemic.

We apply fixed effects regression to data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, comparing the effects of WFH on commuting between the period 2020-2021 and 2015-2019. We consider WFH as the share of working time spent WFH per week and commuting as total weekly commuting time. We run our analyses separately by gender and control for a rich set of worker and job characteristics. Overall, we find that WFH is associated with a significant reduction in weekly commuting time, and that the reduction is greater for women than for men. However, these reductions are only sizable if workers work high shares of their time from home. For the pandemic period, the results first show that commuting times decreased for those not WFH, presumably because there was less traffic congestion overall. In addition, the savings in commuting time for hybrid forms of work (share of WFH of 40-59%) were greater during the pandemic than before, especially for men. One explanation for this could be that during the pandemic less overtime was worked at home in the evenings or on weekends and instead full office days were replaced with WFH. For those with very high WFH intensities (60% or more), commuting times show only small changes between pre-pandemic and pandemic times, suggesting little change in the WFH and commuting behaviours for this group, although this group has grown substantially in numbers and changed in composition.

For the post-pandemic period, it can be assumed that time pressures and the related practice of using WFH to work overtime will increase again. However, it is also likely that people will work full days from home more often than before the pandemic. Overall, therefore, it can be expected that future commuting savings will be somewhere between those of the pre-pandemic period and those of the pandemic period.