Long-Version Abstract of the Paper "The Impact of Telework on Local Consumption: Evidence from Mobile Phone and Transaction Data"

This paper studies how hybrid telework reshapes in-store consumption patterns, particularly for brick-and-mortar retail, cafés, and restaurants. Since the COVID-19 pandemic, telework has become a permanent feature of labor markets, rising from about 3% of workers before the pandemic to around 20% today in advanced economies. In France, hybrid work is dominant, with workers spending 2 to 3 days per week at home. This shift generates daily variations in worker presence—at home versus at the workplace—which translates into daily shocks to local demand.

While prior studies have examined the effect of telework on spending around places of residence or workplaces, its overall economic impact remains unclear: does remote work merely reallocate consumption spatially, or does it generate a net effect on aggregate economic activity? The existing literature cannot resolve this question, as it typically focuses either on the effect of increased presence at home or on the effect of reduced attendance at the workplace. Although these approaches are informative about the geographic redistribution of consumption, omitting one of these two correlated dimensions introduces bias into the estimates. This limitation ultimately prevents the identification of the net effect of remote work on aggregate consumption.

For the first time in the literature, we measure daily and local telework practices using mobile phone location data, which track individuals across space and time. After isolating teleworkers mobility, these data reveal substantial within-week variation, with peaks on Mondays, Wednesdays, and Fridays (78% of teleworkers remain at home on Friday compared to 24% on Thursday). This daily and spatial granularity is unprecedented, as even traditional surveys fail to capture such fine-scale temporal and spatial variation in telework practice, given their low frequency (rollout every 5 to 10 years).

We combine this information with bank card transaction data to measure actual consumption in physical stores. Our regression model estimates the semi-elasticity of transactions to teleworkers' presence at home and their absence from the workplace. Identification relies on within-municipality daily variation and exploits the bilateral shocks of presence at home and absence from the workplace to infer the causal effect of telework. We control for potential confounders (weather, transport disruptions, part-time worker behavior) and use an instrumental variable approach to correct for potential measurement error in the presence shocks derived from mobile phone data.

Results show that telework shifts consumption from urban cores to residential areas and reduces overall consumption. In the Lyon metropolitan area, a 1 percentage point increase in residents' presence at home leads to approximately a 1% increase in local transactions, while a comparable increase in absence from the workplace reduces transactions by 1.3–1.6%, resulting in a net daily decline of 6% in transaction counts and 3% in transaction value (about €700,000 per day). Effects are spatially heterogeneous: urban centers lose most transactions, while some residential municipalities in the suburbs gain.

Sectoral effects are also heterogeneous. Restaurants experience significant losses, while food retail sees higher average basket sizes, reflecting household adaptation to new consumption practices, including potentially more home cooking due to time saved from commuting. Bars and cafés benefit from market expansion, likely due to their role as alternative workspaces or social gathering points. Other sectors, such as durable goods, leisure, and health, show no significant effects.

This study demonstrates that hybrid telework reshapes the geography and timing of consumption in metropolitan areas, with lasting implications for urban planning, local retail policies, and city economic dynamics. It also highlights the importance of simultaneously analyzing both presence at home and

absence from the workplace to capture the net economic impact. Finally, the results illustrate how digital practices and worker mobility interact to create winners and losers across territories and economic sectors, emphasizing the need for targeted policies to accompany these structural transformations.