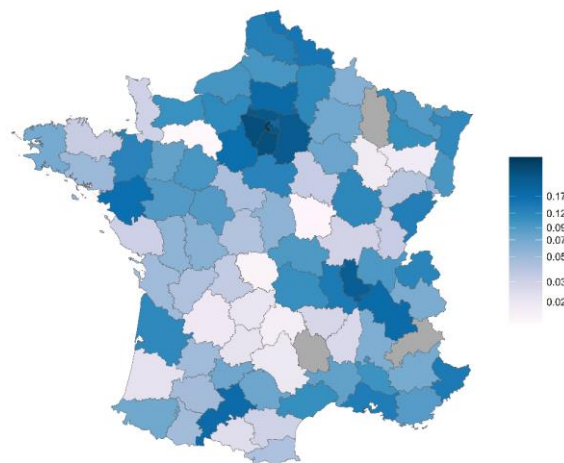


# Working from home and corporate real estate

By [Antonin Bergeaud](#), Jean-Benoît Eymeoud, Thomas Garcia and Damien Henricot

*Corporate real estate market participants are starting to adjust to the take-off of teleworking in France. We show that teleworking already has an impact on the office real estate market. In French départements more exposed to teleworking, the Covid-19 crisis has led to higher vacancy rates, less construction, and lower prices. Forward-looking indicators suggest that market participants are expecting a lasting shift towards teleworking.*

**Chart 1a: Teleworking index by département**



*Interpretation: The map shows the teleworking index by département. The départements with the darkest shade are those with the highest teleworking capacity.*

*Source: Bergeaud et al., 2021*

One of the main hysteresis effects of the Covid-19 pandemic on the organisation of work is probably the dramatic take-off of teleworking. Forced by circumstances, employers and employees have had to implement new ways of working remotely to limit physical interactions during the acute stages of the outbreak. This experience has prompted companies to invest more in computer equipment and to adapt their management practices. Teleworking has thus already become a standard practice for many workers and is likely to stick in the future ([Barrero et al., 2021](#)).

The polarisation of economic activity has led to a significant increase in real estate prices in dynamic areas. Office real estate is no exception and the cost of corporate real estate is increasingly weighing on companies' bottom line ([Bergeaud and Ray, 2020](#)). Companies could thus consider taking advantage of teleworking to reduce their demand for office

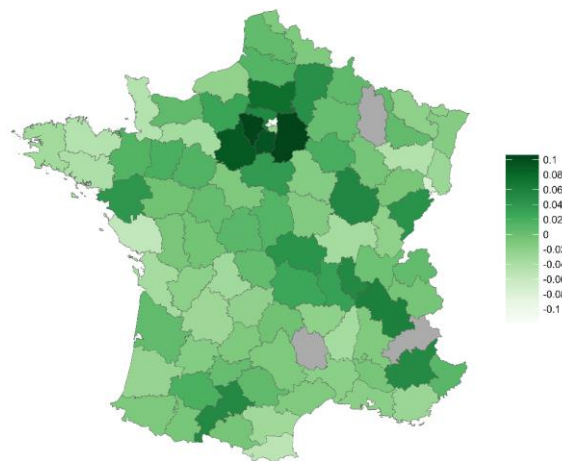
space. This could result in a structural downturn in the corporate real estate market. In the United States, [Bloom and Ramani \(2021\)](#) show that the pandemic and the rise in teleworking is already having a substantial impact on the spatial dynamics of city real estate (a “doughnut effect” for example). In a recent article ([Bergeaud et al., 2021](#)), we look at the first signs of such an adjustment in France.

### Local heterogeneity of the propensity to telework

We first define an index that measures exposures to the deployment of teleworking at the *département* level. The index is the product of two components. First, we use the indicator constructed by [Dingel and Neiman \(2020\)](#) at the occupation level and apply it to the local composition of labour in France. We interpret it as a maximum potential for teleworking. However, this upper bound is unlikely to be reached in practice ([Bartik et al., 2020](#)). We then introduce frictions (quality of the internet infrastructure, average commuting time, number of families with children) that prevent the teleworking potential from being fully reached. We extract a principal component from these frictions and combine it with the maximum potential to construct a single index that measures the actual propensity to telework by *département*.

This indicator is presented in Chart 1. While it naturally shows some strong correlation with population density, it remains positively correlated with actual teleworking intensity after residualisation. The chart on the right plots this residualised geographical distribution.

*Chart 1b: Teleworking index by département*



*Interpretation: The map shows the teleworking index purged of any density effects. For both maps, the départements with the darkest shade are those with the highest teleworking capacity.*

*Source: Bergeaud et al., 2021*

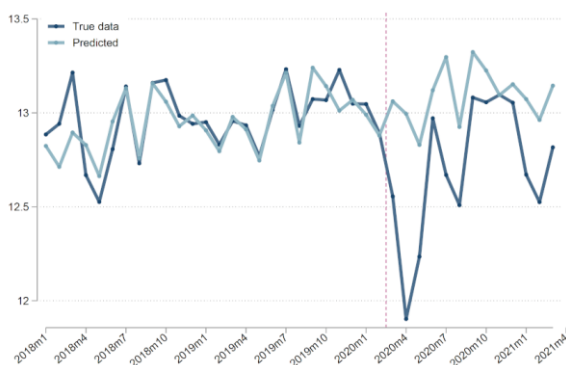
## Adjustments in the corporate real estate market

We analyse the differential evolution of corporate real estate in *départements* with different propensities to telework. We show that stronger corporate real estate market adjustments are occurring in areas with higher propensities to telework.

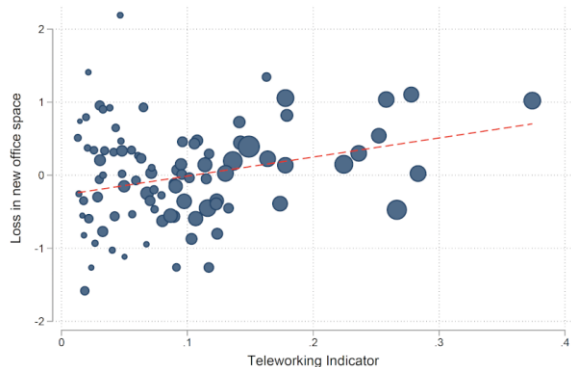
As regards office space, the left panel of Chart 2 shows the evolution of actual office space built since 2018 (dark blue line), and its trend before Covid-19 extrapolation (light blue line). The right panel shows the *département*-level loss as a function of the teleworking index. While the whole country experienced a significant slowdown in terms of new construction, the losses are unevenly distributed over the territory and are positively correlated with the teleworking index. More importantly, these effects hold when controlling for economic activity - measured as local unemployment variations.

**Chart 2: correlation between office space construction loss and teleworking**

a) Dynamics of office space construction



b) Loss in office building and telework index



*Interpretation: This chart shows (a) the time series of losses in office space building (seasonally adjusted and relative to trend as detailed in the text) between February 2018 and March 2021, and (b) the correlation between the loss of office space construction after the outbreak of the pandemic and the teleworking index at the *département* level.*

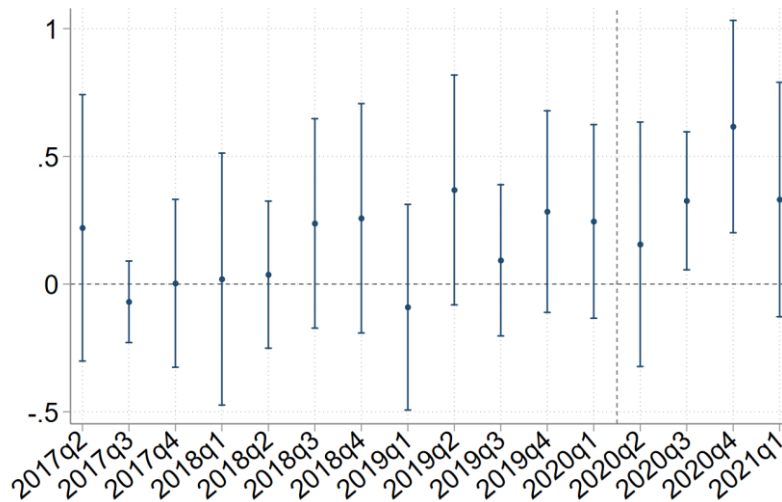
*Source: Bergeaud et al., 2021*

In order to look at price reactions, we use building-level information from regulatory reports of French real estate investment funds (REIFs). REIFs report quarterly valuations of their assets at the building level. We estimate the marginal effect of a one percentage point change in the teleworking index on the probability of a downward revision of building prices in the office segment compared to other segments every quarter. These effects are plotted below along with the 95% confidence interval. While before the Covid-19 pandemic (red line) there was no significant difference in price adjustment dynamics, office prices in highly teleworkable *départements* were revised downwards more frequently than others after the outbreak of the pandemic.

The magnitude of the effect (the sum of the coefficients from Q2 2020 to Q1 2021) suggests that a one standard deviation increase in the value of the teleworking index (0.072) raises the probability of a downward price revision by about seven percentage points. Such an increase would be equivalent to moving from the average *département* to the region of Lille

or Lyon. This corresponds to a very large effect considering that the unconditional observed probability of a downward price revision was 5.8% prior to 2020.

**Chart 3: Marginal effect of teleworking on the probability to revise price downwards**



*Interpretation: Effect of a one percentage point change of the teleworking indicator on the marginal probability of a downward revision of building prices in the office segment compared to other real estate segments, every quarter.*

*Source: Bergeaud et al., 2021*

Are these effects consistent with a permanent deployment of teleworking, or are investors expecting the shift to be temporary? We run a rule-of-thumb exercise based on a simple asset pricing formula to measure the elasticity of vacancy rates to teleworking implied by the elasticity of prices to teleworking. It appears that *département*-level price declines are consistent with a permanent increase in *département*-level vacancy rates.

## Implications

These developments could have different consequences on the economy. In the short run, the drop in corporate real estate prices and associated uncertainty may constrain companies' financing capacity through the collateral channel (Chaney et al., 2012). A fall in demand for office space also creates imbalances on the supply-side, which the market will need to absorb. Increased vacancy rates in the commercial segment may eventually spill over to the residential real estate market as both markets are historically correlated. Future developments now depend on whether market participants overreacted, in a context of heightened uncertainty, or downplayed the future organisation of labour.

Post published on January, 18<sup>th</sup> 2022 [Working from home and corporate real estate / VOX, CEPR Policy Portal \(voxeu.org\)](#)