Will WFH Have a Long-Run Economic Effect?

Executive Summary
The COVID-19 pandemic has had many effects on the U.S. economy including a significant increase in work-from-home (WFH) arrangements. Could WFH have lasting macroeconomic effects? That is, could WFH lead to changes in the labor supply and/or labor productivity in the United States? In our view, WFH could potentially lead to higher labor force participation, especially among females in their 30s and early 40s. Research also indicates that WFH could lead to an improvement in labor productivity, subject to some important caveats. But higher labor force participation and stronger productivity growth, should they be realized, would boost the economy’s potential growth rate, at least on a temporary basis. In the long run, the rate of potential economic growth likely would be little changed relative to the pre-WFH period, although the productive capacity of the economy (i.e., the level of potential GDP) would be raised relative to the pre-WFH period.

The Pandemic Has Led to a Spike in WFH
Measures that have been put in place to mitigate the spread of the COVID-19 pandemic have had many profound effects on the U.S. economy, including the way that some individuals currently work. Researchers have found that up to 50% of workers who currently remain employed are working from home, which is up from 10% to 15% prior to the start of the pandemic. 1 Another study finds that roughly 40% of jobs could be done entirely from home on an ongoing basis. 2 In short, the pandemic could potentially have a long-lasting effect on the way that work is performed in the U.S. economy.

Whether or not WFH becomes a permanent feature of the way many Americans work is yet to be determined. But anecdotal evidence suggests that many workers like their current WFH arrangements. Businesses could also be amenable to WFH on an ongoing basis because it could help reduce their real estate expenses if fewer employees need to come to the workplace. Therefore, WFH could potentially have some long-lasting microeconomic effects if it is adopted on an ongoing basis. For example, commercial real estate (CRE) owners could be detrimentally affected by a loss of revenue while CRE tenants would benefit from reduced expenses on property rentals.

But could WFH also have long-lasting macroeconomic effects? That is, could the level and/or the growth rate of real GDP be permanently changed by WFH? In order for WFH to have significant macroeconomic consequences of a long-term nature, it would need to affect the supply of labor (i.e., the labor force) and/or labor productivity.

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Will WFH Boost Labor Force Participation?
The way in which WFH could affect the labor force, at least in the next few years, is via labor force participation. By altering the size of the labor force, a change in labor force participation could affect the long-term productive capacity of the economy. As shown in Figure 1, the labor force participation rate among males has trended lower since the late 1940s. There are a number of reasons why the male labor force participation rate has receded over the past few decades including a drop in demand for low-skilled workers due to globalization and technological change, as well as stronger social safety nets, such as disability insurance. More recently, the opioid crisis may have helped to depress the labor force participation rate among men.

But the overall labor force participation rate trended higher between the mid-1960s and the turn of the 21st century due to the considerable rise in the female participation rate over that period. However, participation rates among men and women have both receded in recent years due, at least in part, to demographic factors. That is, the average age of the population has increased in recent years, and individuals tend to withdraw from the labor market as they age. But there is a way in which WFH could potentially reverse this trend decline in participation, especially among women, in the next few years.

Figure 1

Labor Force Participation Rate by Gender

Source: U.S. Department of Labor and Wells Fargo Securities

Figure 2

Labor Force Participation Rate by Age

Rates of labor force participation have fallen considerably since February 2020 for all demographic segments. We plot average participation rates for 2019 in Figure 2, and the calculations discussed in the text are based on those rates.
it easier for women to remain in the labor force during these years, then the overall rate of labor force participation could be higher. Consequently, the long-run productive capacity of the economy would also be higher, everything else equal.

How big of an influence would this WFH-effect have on the labor force? We estimate that if the labor force participation rate for females between 30 and 44 years of age were to rise to the rate that currently prevails among 25-29 year-old women, then roughly 700,000 more women would be part of the labor force. But with a pre-COVID labor force of more than 160 million people, this WFH-induced rise in the participation rate would boost the labor force by only 0.4%. In other words, the effect on the long-run productive capacity of the U.S. economy would be more or less negligible.

According to the American Time Use Survey, women spend more time than men caring for others, both children and other adults. Therefore, one could reasonably argue that WFH could potentially boost female labor force participation across all age cohorts. If female rates of labor force participation across all age cohorts were to rise to the rates of their male counterparts, then the labor force would increase by approximately 11 million workers, which would represent a meaningful 7% increase. However, it is questionable how much effect WFH would have on all age cohorts if there are cultural factors that help to depress rates of labor force participation among women relative to their male counterparts.

Even if the labor force were to rise by the full 7%, it would be a one-time level shift in the workforce, although one that could potentially take a few years to play out. The growth rate of the labor force would rise while the shift was occurring, but it would not increase on a permanent basis. In the long run, the growth rate of the labor force as well as the potential GDP growth rate would remain unchanged relative to the pre-WFH period, everything else equal.

**Are Workers More Productive at Home?**

Labor productivity represents the second channel through which WFH could have long-term macroeconomic consequences for the U.S. economy. For reasons that are not completely understood, labor productivity has generally been anemic during this cycle (Figure 3). Indeed, productivity growth in the non-farm business sector averaged only 1.2% per annum between 2010 and 2019, a full percentage point slower than the rate that was achieved during the long economic expansion of the 1990s. A material rise in productivity growth would lead to a stronger rate of potential economic growth, everything else equal.

**Figure 3**

![Nonfarm Productivity](image)

Source: U.S. Department of Labor and Wells Fargo Securities

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An increase in female labor force participation would have a modest and temporary effect on the economy’s long-run growth rate.

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As noted previously, there has been a significant increase in WFH due to the pandemic, and the elimination of commuting to and from work has allowed some individuals to work more hours. But working more hours does not necessarily make that individual more productive. Productivity is defined as output per hour worked. So to raise labor productivity, WFH would need to lead to an increase in output per hour worked at home relative to the office.

To the best of our knowledge, there is not much research on the effects of WFH on labor productivity. But an interesting study from 2015 finds some positive results. Ctrip, which is a Shanghai-based travel agency, allowed some of its call center workers to work from home four days each week. Relative to their office-bound counterparts, the productivity of the WFH workers rose 13%. Roughly nine percentage points of this increase was attributable to the employees working more minutes per shift due to fewer breaks and sick days. The other four percentage points stemmed from more calls per minute due to a quieter and more convenient working environment.

But one of the authors of the study has pointed out some caveats. The Shanghai travel agency workers were allowed to work from home only if they had a home office that afforded privacy. Productivity could be sapped if a WFH worker needs to deal with frequent interruptions by family members. Thus, individuals who live in small apartments with little privacy may not experience an increase in productivity if they lack privacy. In addition, choice plays a role. Ctrip offered the WFH arrangement only to employees who volunteered for it. An individual who was forced into a WFH arrangement probably would not realize the same increase in productivity as an individual who gladly wants to work from home. In addition, the WFH employees still needed to come into the office one day per week for in-person training. Furthermore, idea generation is more easily facilitated in an in-person setting than it is remotely.

As noted previously, recent studies found that 10% to 15% of workers engaged in WFH prior to the pandemic, but that roughly 40% of jobs could be done entirely from home on an ongoing basis. So if an additional 30% of the workforce can raise its productivity by 13% via WFH, then the level of labor productivity in the U.S. economy would rise by 4% from its current level. Everything else equal, the productive capacity of the economy would rise by 4% which, in our view, is meaningful.

But the caveats noted previously apply here as well. First, not everybody who could potentially work from home would have access to a separate home office, and not all individuals would necessarily want to work from home. Idea generation could also suffer under an extensive WFH environment. Moreover, the productivity-boosting effects of WFH may be lower outside of the travel agency industry. And as in the case of labor force participation, the boost to productivity would only play out as long as workers were transitioning to WFH arrangements, which admittedly could take a few years. But in the long run, the potential GDP growth rate would remain unchanged relative to the pre-WFH period, everything else equal, although the level of potential GDP would be higher.

Conclusion
WFH, if adopted on a lasting basis, could have significant microeconomic implications in the United States. For example, the demand for commercial office space likely would fall, which would have negative consequences for owners of CRE via lower rents, although tenants would benefit from lower rents. But there also could be some macroeconomic consequences. WFH could potentially boost labor force participation, especially among females in their 30s and early 40s, and it could also lead to an increase in labor productivity, subject to some important caveats. Any boost to the potential growth rate of the U.S. economy likely would be temporary, although the productive capacity of the economy (i.e., the level of potential GDP) would be raised relative to the pre-WFH period.

* https://news.stanford.edu/2020/03/30/productivity-pitfalls-working-home-age-covid-19/