

## **EconoFact Chats: Working From Home Post-COVID**

**Nicholas Bloom, Stanford University**

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### **Michael Klein**

I'm Michael Klein, executive editor of EconoFact, a non-partisan, web-based publication of the Fletcher School at Tufts University. At EconoFact, we bring key facts and incisive analysis to the national debate on economic and social policies, publishing work from leading economists across the country. You can learn more about us and see our work at [www.econofact.org](http://www.econofact.org).

### **Michael Klein**

COVID brought many changes. One that affected a wide group of people was the advent of working from home. Working from home was relatively rare before COVID, and then it became a necessity when the pandemic was raging, and it's now more common and, to some extent, a choice. But is it a choice that both workers and employers agree upon? More than three years after the start of the pandemic, what do we know about the preferences for working from home for employees, and for employers? What do we know about the effects of working from home on productivity, and on people's satisfaction with their jobs? Many of us work from home, at least part of the time, but do our personal experiences reflect general trends? To address these questions, I'm very pleased to welcome back to EconoFact Chats Professor Nicholas Bloom of Stanford University. Nick is the Co-Director of the Productivity, Innovation and Entrepreneurship program at the National Bureau of Economic Research, and a Fellow of the American Academy of Arts and Sciences. More to the point for this discussion, Nick is one of the three co-founders of the Survey of Working Arrangements and Attitudes, which began in May 2020 in response to the dramatic impact of COVID-19 on working arrangements. This is a monthly online survey run jointly by the University of Chicago, MIT, Stanford, and ITAM in Mexico. The latest report was published in June of this year. Nick, welcome back to EconoFact Chats.

### **Nicholas Bloom**

Michael, thanks very much for having me on.

### **Michael Klein**

It's always great to have you on, Nick. Where are you now as we're recording this podcast? Are you at your home or in your office?

### **Nicholas Bloom**

Well, both, I guess. I'm at home, but I have a home office and I have to say it doubles up as our spare room. So if you're standing where I'm standing right now, you can easily see a massive bed if I turn behind me. My parents actually came to stay for Thanksgiving. So they were here recently, and I lost my office. But yeah, I work hybrid. So I'd say most days I go into the department, I go in later today, meet someone for lunch, see students, et cetera. But yeah, right now, I'm actually at home.

**Michael Klein**

Well, I'm recording this from home as well. And in fact, on the days that I don't teach, I often work from home. And this was true before COVID as well. It was one of the perks of being a professor. But what, in fact, was the prevalence of people working from home before COVID, Nick? I'm sure it wasn't as prevalent as just 100%, if you look at the sample of you and me.

**Nicholas Bloom**

Yeah, so two numbers. One is for North America, in fact, U.S. in particular, but Canada looks very similar. If you look before COVID, about 7% of days were worked from home. And about 15% of people did this at least once per month. So, the number of people that would ever work from home was very rare. And the number of days was even rarer. So for most people, to be honest, is, you know, once a month, you may do it. And there's a very small share of people that would work from home permanently. They were like 2%, very, very few people pre-pandemic.

**Michael Klein**

And what kind of jobs did people have who were able to work from home pre-COVID? I guess professors is one of them. What else?

**Nicholas Bloom**

You know, professors are, as we all know, we're a weird and unusual group. If you look at who worked from home pre-pandemic, the folks that were doing it fully remotely was a lot of like data entry, call centers, things like that, a few odd, you know, authors. For people that work from home sporadically, it was basically managers that cut some deal, you know, like manufacturing. It used to have pre-pandemic every other Friday. The factory would close and therefore, managers would be working from home.

**Michael Klein**

And as I mentioned during the introduction, during COVID, working from home became a necessity for many people who could do so. What proportion of the workforce were working from home in the first year of COVID?

**Nicholas Bloom**

Oh, that, you know, the number of days which have the best measure, I guess, they all move together, went up about 10 fold. I mean, just an enormous increase. So it was 7% before, it went up to about 60% at peak in April 2020. So you should have in mind what happened is anyone that could work from home, however badly, however problematically, was basically fully remote in April, May 2020 during the height of the lockdown.

**Michael Klein**

And when did people start returning to the office at least part of the time? Did this coincide with the widespread availability of vaccines that were first offered at the end of 2020?

**Nicholas Bloom**

Yes, that's right. Although they actually were returning to the office a bit sooner. It's a good question of how much was linked to the vaccine. It's hard to, you know, to piece vaccine availability. And, you know, there's also, if you remember, a big spike in COVID initially, and

then the lockdown gonna got go under control, and it bounced up and down. The broad picture is between 2020 and the end of 2022. So that's almost two years work from home levels dropped by about a half. So I mentioned they were 60% at peak in April 2020, and they've fallen to about 30% by the end of 2022. And that coincided with the pandemic. It's not clear exactly when the end point is, but by the end of 2022, beginning of 2023, most people, I think the federal government called it, said it's over by this point. So yes, work from home dropped a lot as the pandemic waned and ended.

**Michael Klein**

And is that where we are now about 30%?

**Nicholas Bloom**

Yeah, I mean, amazingly, yes, we're actually at 28%. So I think this is a play in three parts. So we're in the middle of part two. So here's trimesters. So the first part was the drop from 60% peak pandemic down to about 30%. So that was two years 2020 to 2022. We're now in the second part, which is the flat bit. As a British person would say "flat as a pancake". So 2023 completely flat. It's been hovering around 28% all year. We actually have other data sources, the census collects data aligned very closely with the SWAA data. You can also look at like swipe card data from Castle Security for offices also shows it's flat over 2023. And then the third part is yet to begin. But at some point is like to start slowly climbing back up again as technology improves and work from home slowly grows.

**Michael Klein**

By the return after a flat portion, is that what you meant in an article that you wrote for the Economist magazine, where you described working from home as a "Nike swoosh"?

**Nicholas Bloom**

Yes, so the Nike swoosh is a good analogy. There's three bits to it. There's the drop: 2020 to 2022. There's the flat bit. I think that's 2023, probably 2024, maybe 2025. And then there's the long run steady climb where work from home probably from '26 onwards, will start to slowly increase.

**Michael Klein**

In that swoosh on a Nike sneaker, the end part is higher than the initial part. Do you foresee that happening that eventually working from home might even come to the levels or even exceed what we saw during COVID?

**Nicholas Bloom**

Oh, okay, you're getting very technical now. Depends how you tilt your sneaker, actually. I have actually been using that little symbol on my slides and I've had to distort it a bit. So distinct from the Nike swoosh, right now, just to put numbers on it, the high point during the pandemic was 60%. We're now at about 28% of days. When will we get back to 60%? I mean, that is a long way off. That is honestly, I'm thinking about, I don't know, 2040, the kind of horizons at which economists should never make forecasts because they're almost always wrong. But I think it's a safe bet to say work from home levels will slowly rise. I just don't think they're going to do so rapidly. And I don't think it's likely to pass 60% for a couple of decades.

**Michael Klein**

So maybe to be safe, you want to use a more awkward term, “swoosh-ish”?

**Nicholas Bloom**

“Swoosh-ish”, or I don't know. I don't have to think about it. It's probably a slug trying to break dance or something. I'm sure there's some symbol that I could come up with. I don't know quite what it is, but yeah, Nike's swoosh will do for now.

**Michael Klein**

Well, we'll talk to Phil Knight later and see if Nike's okay with this. So what is the source of this? I guess technology is really important in what's been going on. And in a way, it was almost advantageous that COVID happened when it did as opposed to 10 years before because the technology wasn't in place at that time, right?

**Nicholas Bloom**

Yes. I mean, EconoFact is perfect to go through this, actually. This is where Econ is really useful for thinking about this. So in economics, there's something called market size effects. And the idea of market size effects is when a market's big, there's a lot of money to be made from innovating to serve that market. So think of what happened in 2020. Suddenly, the number of people working from home went up tenfold. It certainly looked like a lot of it was going to be permanent. So every hardware firm, software firm, venture capitalist, tech company suddenly thinks, whoa, there's, you know, a lot of profits to be made from serving this new group of work-from-home employees and firms. So the rate of technological progress picked up a lot. So what happened is, work from home, the pickup in it kind of sowed the seeds of its own growth going ahead. So that's why this, you know, post 2023-2024 take-up is going to happen because tech is going to improve a lot driven by the bigger market.

**Michael Klein**

And in fact, you cited patent data to bolster that point about the take-up and the innovation that occurred in response to what you call market size.

**Nicholas Bloom**

Yeah, I mean, we called it directly technical change, which is the econ slang for it. But yes, we looked at patent data. So what we did is we scraped the roughly 5,000 new patents that are put out each week by the U.S. Patent and Trademark Office. And we looked at the share of them that had words like telecommute, work from home, remote work, etc. And what you see is it was about half a percent before the pandemic. Once the pandemic starts, it starts rising, rising, rising. There's a bit of a lag in patenting, but it's already gone above 1%. And, you know, living in Silicon Valley, when you talk to people, no one's very surprised, they're like, this is a normal thing now. There's millions, tens of millions of people working from home. So there's really a gold rush of new technology to support that. And that is what's going to drive the long run swoosh bit.

**Michael Klein**

Or “swoosh-ish”.

**Nicholas Bloom**

Swoosh-ish, yes. We're getting technical here on our swooshes and swishes.

**Michael Klein**

I guess you would expect to see differences across firms, not necessarily because of what they do or what they make, but just sort of who runs the firms, in terms of how accommodating they are to working from home. Is that correct?

**Nicholas Bloom**

Yes. I think the biggest difference, you know, it's funny, it's a lot like if you look at, you know, data on R&D or growth rates or productivity. The biggest driver often in this stuff is industry. And I think so it is with work from home. So just to take two extremes, tech and finance have, on average, about two and a half days work from home for their industries. The other extreme food service and accommodations, about half a day. So that is a five-fold difference. That is massive. And you can guess why. Look, if you're in food service, almost all the employees are in store, you know, selling burgers or tacos. And as a result, it is hard to have any of them working from home. Having said that, yes, within industries, CEOs do play a role. I mean, everyone knows Elon Musk, for example, is, you know, trying to force everyone back to the office full time, and other tech folks, you know, have been much more in favor of fully remote. But the biggest thing, honestly, is industry. And the big reason for that is you think about it, tech and finance, there's a lot of people that are graduates working on computers. And the kind of things they do can be easily done from home. It's probably most of your listeners fall in that kind of graduate computer-based jobs. On the other hand, if you look at food services, people dealing with customers, dealing with equipment, dealing with materials, that has to be done in person.

**Michael Klein**

So on that point, it's telling that we often say work from home or from the office, not work from home or from the restaurant. And as you're mentioning, there are jobs that lend themselves to remote work, and many do not. Factory work, medical services, retail, construction, to name a few. Do you see any possible changes here as technology advances, where there are some jobs where people cannot work from home now, but there'll be changes in technology that will, in fact, enable people in certain jobs who can't work from home now, but possibly could in the future?

**Nicholas Bloom**

Absolutely. I completely agree. In fact, there is a great article, I believe, in the Wall Street Journal, actually about the restaurant industry. So if you ever get drive-through food in America, you know the setup, you drive in your car, you wind your window down, you know, normally electronically now, and you speak into this little microphone, take your order, you drive on a bit and you pick up, you know, your burger or whatever it is. Turns out, even I didn't realize that when you speak into that microphone, they used to have the person taking your order sat in the restaurant and they'd be, you know, passing your orders over to the cooks making the food. Now, it's very standard for them to be hundreds of miles away in a central, inbound, call place. So McDonald's say, will have hundreds of restaurants. And whenever you speak into the microphone, the folks taking your orders are miles away, you know, hundreds of miles away, they type it into a computer and send it back to the restaurant. So that is a job that actually could

be completely remote. I don't know how many of them are remote, they're in their homes versus in some central call center, but a lot of stuff's changing. Another example I was given was street cleaning. Somebody said it used to be, you know, what I have in mind as street cleaners is somebody with a brush going around cleaning the street. Apparently now there's a bunch of robots that are starting to be able to do this, but the robots sometimes encounter problems. You know, there's an issue and the best person to help the robot out often is former street cleaners. And so apparently now there are control centers where one cleaner can control five robots. Again, that's a job that can be done from home. So yes, as technology improves, more jobs are going to be able to be done from home, either hybrid or fully remote.

### **Michael Klein**

So how have attitudes about working from home by both employees and employers changed over the past few years? A lot of people now, I guess, expect the ability to work from home is kind of a perk of the job. And what have employers found about the productivity effects of it? And are they okay with people wanting to work from home?

### **Nicholas Bloom**

What we've seen is employees have always been keen on working from home. So we've been surveying, at least back to 2020, the beginning of the pandemic, employees have pretty consistently said, on average, they would like to work from home between two and a half, and three days a week. So the average is 2.75 days a week. So just over half. If you look at employers, firms, what have they said...initially, they were not very keen. So if you go back to the beginning of the pandemic, we're looking at numbers like they're saying, well, we'll maybe give employees one day a week, but you know, don't get comfortable with any more than that. As time has gone on, firms have become more and more comfortable. They've seen that hybrid, in particular, has worked well. They've seen that fully remote enabled them to save money. Now there's a much smaller gap. There is still a gap. So, you know, and firms, basically want to give employees about two to two and a half. Employees want two and a half to three, but that gap has closed a lot. I would say it's, you know, they're kind of aligned. Both firms and employees have aligned on saying roughly half the time in the office, and roughly half the time at home.

### **Michael Klein**

Nick, it's pretty clear why employees would want to work from home. You save on commuting time. You have more latitude during the day to do chores, pick up your kids, things like that. But what about the benefits and costs for their employers, for the companies, and the institutions for which they work?

### **Nicholas Bloom**

So, firms are in favor of work from home because it makes them money. We're in a capitalist economy and anything that's profitable sticks. Why does it make them money? So, let's go through first, hybrid. So, hybrid, the studies and evidence look like it's about flat on productivity. So, you have slightly less days a week in the office, let's say Monday and Friday, you're at home, but then people look like they work a little bit longer on their home days because they don't have to commute and it's also [inaudible]. The benefit to firms of hybrid is it's much cheaper because it reduces turnover costs. It's easier for retention. It's easier to hire people. So, to put a figure on it, when you survey employees, they say hybrid is worth to them about the same as an 8% pay

increase. So, if a firm is thinking about it, they're saying, look, we have this thing called hybrid that has no effect on performance, but it keeps employees happy. To them, it's equivalent to like an 8% pay increase. So, why wouldn't we do it? It makes life easier for us. There's less quit rates. There's less hiring. The other thing, then, is fully remote. Why would a firm do fully remote? Fully remote is quite different. So, fully remote, there's a lot of studies on it, but the average maybe is it's somewhat negative for productivity. Let's say minus 10%. Why would a firm then do fully remote? Well, the reason is, while it might be say minus 10% on productivity, it's a lot bigger in terms of reduction on costs. And the reason is, A, you don't need an office. That's typically about 10% of costs. And B, you can hire people nationally or internationally. So, I'm living in San Francisco and if you want to hire somebody fully remotely, we can go hire them in, let's say, Mississippi, it's 20% lower wages, or in Brazil or, you know, Poland or India. And so, fully remote for firms is really a trade-off between saying maybe productivity is down 10%, but if costs are down 50%, that's a great deal.

### **Michael Klein**

Do we have enough data yet to say anything about employee attraction or employee retention when firms offer hybrid or even fully remote?

### **Nicholas Bloom**

Yes. Okay. So, I have been running a randomized control trial. I've done two. I'll tell you the more recent one. So, with a company called trip.com, they're one of the world's big three travel agents. They're listed on NASDAQ. They have what, 40,000 employees. They took two divisions, 1,600 people. They're all graduates, a third are post grads. They do IT, accounting, finance, marketing, and they randomize them by even and odd birthday. So, if you have an even birthday, you're born on the second, fourth, sixth, eighth of the month, you had to work in the office five days a week. If you had an odd birthday, so you're born on the first, third, fifth of the month, et cetera, you got to work from home on Wednesday, Friday. What did they find? Well, first things they looked at performance, as you can imagine. And on that, they found absolutely nothing. They had lines of code written, promotion rates, performance reviews, texts of performance reviews, we scraped it, but all of this stuff, just no difference at all. The other thing they then looked at was attrition. And they saw people that are allowed to work hybrid saw a 35% reduction in quit rates. And in fact, on the employee surveys, they have dramatically higher scores of happiness. So, the firm was like, what's not to like? Every person that quits the firm, they reckon costs them \$20,000 because you have to re-recruit, retrain somebody, and there's no downside. So, they rolled it out to the full company. So, this is why hybrid is so popular. It basically doesn't cost you anything, but has these big benefits because it saves you labor costs.

### **Michael Klein**

Nick, we had a conversation about working from home for EconoFact Chats about a year and a half ago. How have your views on working from home changed since then, if at all?

### **Nicholas Bloom**

I think the big change for me has been how permanent this is. So, a year and a half ago, early 2022, work from home levels were still falling from the early pandemic peak. And nobody quite knew where they were going to drop to. And I thought, look, they could easily drop to 15, 20% of days. Instead, in late 2022, they stabilized at just under 30%, and have remained ever since for the last year. So, the big surprise is just how high and durable this is.

**Michael Klein**

So, you're expecting a hockey stick instead of a swoosh?

**Nicholas Bloom**

Yeah, a hockey stick would not be a bad analogy. A drop, and then a gradual recovery. You know, eventually, we may get back to 60%, but I may have retired by then.

**Michael Klein**

And then you can be retired from home.

**Nicholas Bloom**

Yes, exactly. You know, I was about to end and say, my favorite analogy and acronym is, my friend the other day said he was “working from work”. And you know that work from home has become dominant when people actually have to add work to the working from first part of it.

**Michael Klein**

Well, I'm glad that you were working for EconoFact Chats today, whether it be in your office or your home office, as you said. And I appreciate you joining me once again for this really important topic, which has changed a lot of people's lives. And it's great to get the insight of somebody who studied it deeply and has a lot of data, as opposed to just personal stories, which most of us rely on. So Nick, thank you again for joining me once more on EconoFact Chats.

**Nicholas Bloom**

Thanks again, as you know, a massive listener. So I've listened to pretty much all of them since the beginning.

**Michael Klein**

Even though you're not commuting to work?

**Nicholas Bloom**

I listened to them. To be honest, when I'm out walking, running or driving, actually, those three are my big podcast listening time.

**Michael Klein**

Okay, we'll let that be to our other listeners, good ways to access our content. Thanks a lot, Nick.

**Nicholas Bloom**

Okay, thanks, Michael.

**Michael Klein**

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