

# Will Wage Growth Alone Get Workers Back Into the Labor Market? Not Likely.

**Julie L. Hotchkiss**, Federal Reserve Bank of Atlanta and Georgia State University

## Summary:

This article finds that compared to baby boomers of the same age, millennials' labor force participation decisions are only about three-quarters as responsive to wage changes, and Generation X's participation decisions are only about half as responsive. These differences are not good news for employers trying to coax workers back into the labor market during a robust pandemic recovery. Using the most recent estimates, from 2019 data, the latest 6 percent year-over-year increase in average hourly pay reported by the US Bureau of Labor Statistics (BLS) is expected to only close 16 percent of the gap between current and prepandemic participation rates of prime-age workers. The implication is that employers will likely have to also resort to nonwage incentives to entice workers to fill their open jobs.

## Key findings:

1. Wage growth alone is not likely to return labor force participation to prepandemic levels.
2. Workers are redefining their relationship with the labor market.
3. Labor force participation among Gen Xers and millennials is less responsive to wage changes than it was for baby boomers of the same age.

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JEL Classification: J22, J33, C25

**Key words:** labor force participation, baby boomer, Gen X, millennial, labor supply elasticity, the Big Quit, the Great Resignation

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*Comments to the author are welcome at [Julie.L.Hotchkiss@atl.frb.org](mailto:Julie.L.Hotchkiss@atl.frb.org).*

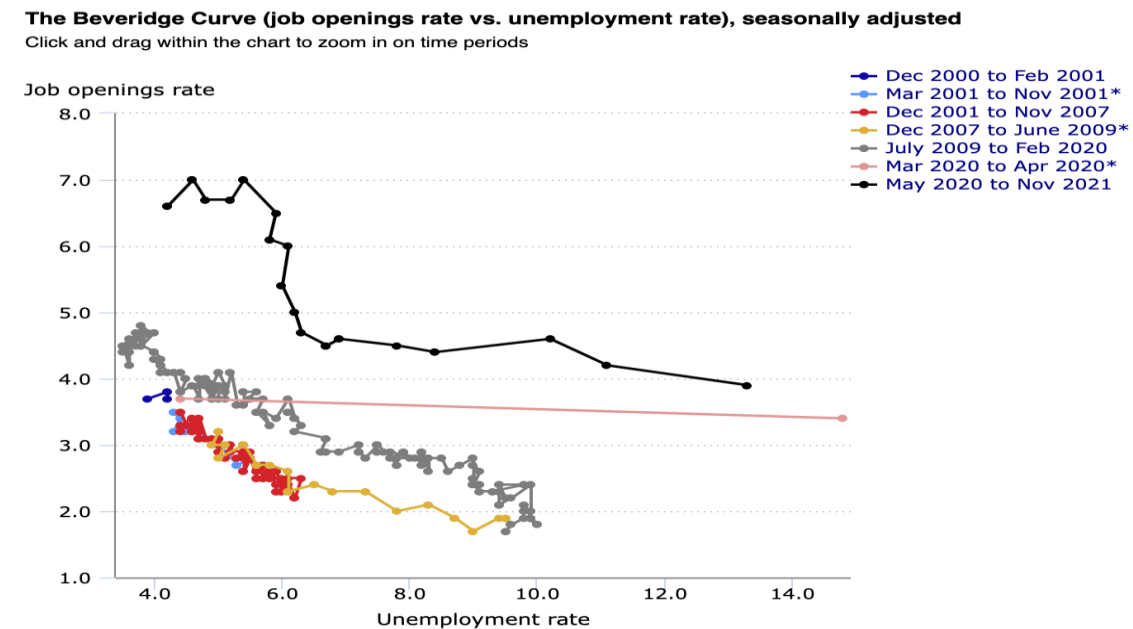
## 1 Introduction

Students learn in Econ 101 that when the labor supply curve shifts to the left, or the labor demand curve shifts to the right—or when both of these events occur—it creates a shortage of workers at the current wage. Then the wage rises, moving both workers and employers up their respective curves to a new equilibrium employment at a higher wage. At least that’s the way it’s supposed to work. The US labor market seems to be in the midst of a difficult labor market adjustment, one in which employers are trying to figure out how to lure workers back into jobs, and not quite hitting the mark as worker shortages abound (for example, see Jackson 2021; Stone 2021).

## Labor Market Frictions

The labor market’s struggles to attain a new equilibrium can be seen in a useful tool called the Beveridge curve, which plots job openings against the unemployment rate, as figure 1 shows.<sup>1</sup>

**Figure 1: The Beveridge Curve, December 2000–November 2021**



Note: The job openings rate is calculated as the total number of job openings divided by the total number of jobs plus job openings (times 100). The unemployment rate is the total number of people unemployed divided by the total number of people in the labor force (employed and unemployed) (see [bls.gov/news.release/pdf/jolts.pdf](https://bls.gov/news.release/pdf/jolts.pdf)).

Source: US Bureau of Labor Statistics ([bls.gov/charts/job-openings-and-labor-turnover/job-openings-unemployment-beveridge-curve.htm](https://bls.gov/charts/job-openings-and-labor-turnover/job-openings-unemployment-beveridge-curve.htm))

<sup>1</sup> An interactive version of the latest release of the Beveridge Curve constructed by the US Bureau of Labor Statistics (BLS) using data from Job Openings and Labor Turnover Survey (JOLTS) can be found at: [bls.gov/charts/job-openings-and-labor-turnover/job-openings-unemployment-beveridge-curve.htm](https://bls.gov/charts/job-openings-and-labor-turnover/job-openings-unemployment-beveridge-curve.htm).

The pink line in figure 1 reflects the rapid, dramatic rise in the unemployment rate during March and April 2020, just as the COVID-19 pandemic was taking hold. Then, jumping to the black line, the Beveridge curve traces the steady march of the unemployment rate back down to pre-COVID territory with job openings rising only slightly until January 2021, when it rose sharply to unprecedented levels as the unemployment rate continued to fall. It's not surprising to see low unemployment in an environment of high rates of job openings, but the distance of the curve from the graph's origin exposes significant frictions in the labor market. (An excellent discussion on interpreting the Beveridge curve's movements can be found in Lubik 2021.)

Some of the frictions impeding the smooth operation of the labor market adjustment machine include pandemic-induced worker fears of coming into contact with the public (Gollom 2022), challenging childcare arrangements for workers (Pitts 2021), newly discovered bargaining power by workers (Stone 2021), and workers learning they like working from home but employed by firms unwilling (or unable) to embrace this reality (Howley 2021).<sup>2</sup> Employers are also potentially facing generational changes in worker priorities that might be reducing the effectiveness of a time-honored solution for attracting workers: higher wages.

### **Wage Growth and Labor Force Participation**

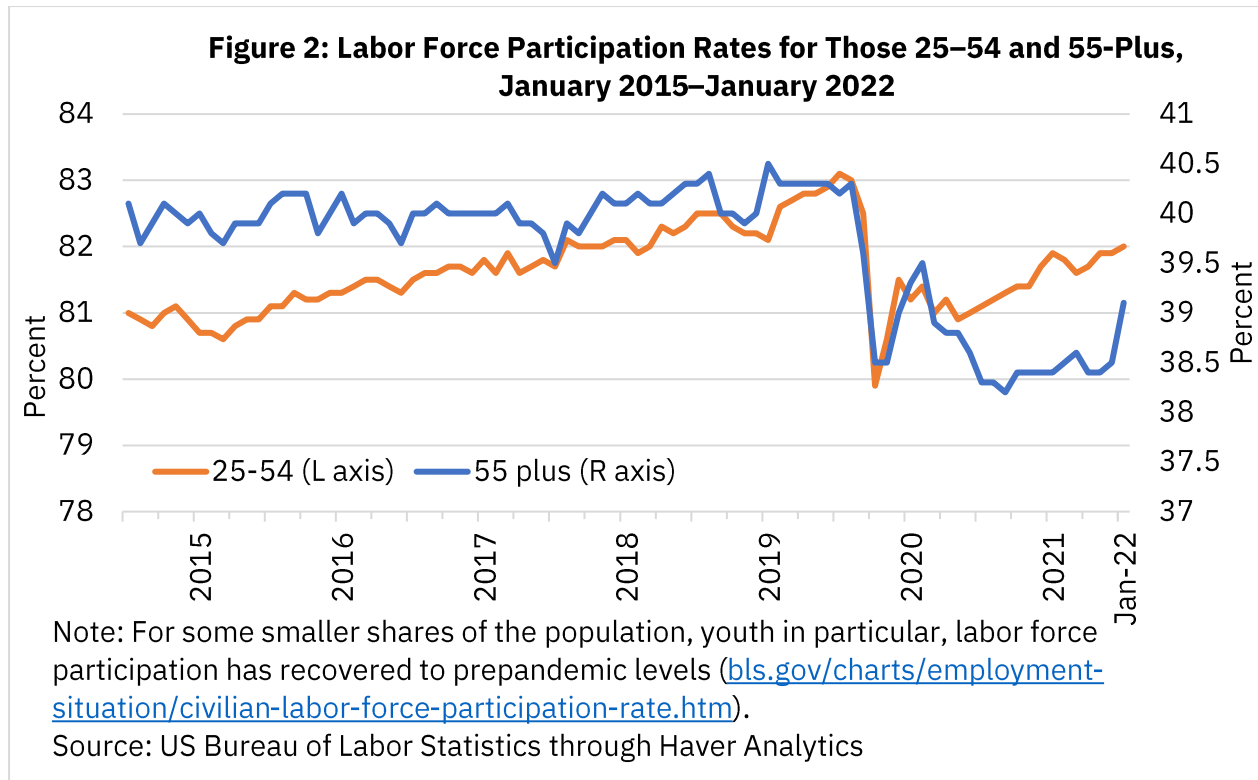
The dramatic drop, and gradual rebound, in labor force participation rates (LFPRs) among two age groups—those 25–54 (often referred to as “prime-age” workers) and those 55 and older—is evident in figure 2 and further illustrates the weakness of labor supply as the pandemic lingers. At their lowest points, published LFPRs were about 2 percentage points (pp) lower (among workers 55-plus in March 2021) and 3pp lower (among workers 25–54 in April 2020) than they were in January 2020, before the pandemic hit. As of January 2022, LFPRs are just over 1pp below the published prepandemic levels for both age groups. This relatively slow recovery has been termed “the big quit” and “the great resignation.”<sup>3</sup> Of course, with the aging of the baby boom generation (those born from 1946 to 1964), downward pressure on overall LFPR is not surprising, but these drops are well below the demographic-induced trend (Robertson 2021).

The question on many economists' minds is what motivations workers will require to return to the labor market (or to stop leaving it). One mechanism motivating greater labor market participation is higher wages. And although firms have been raising wages, especially at

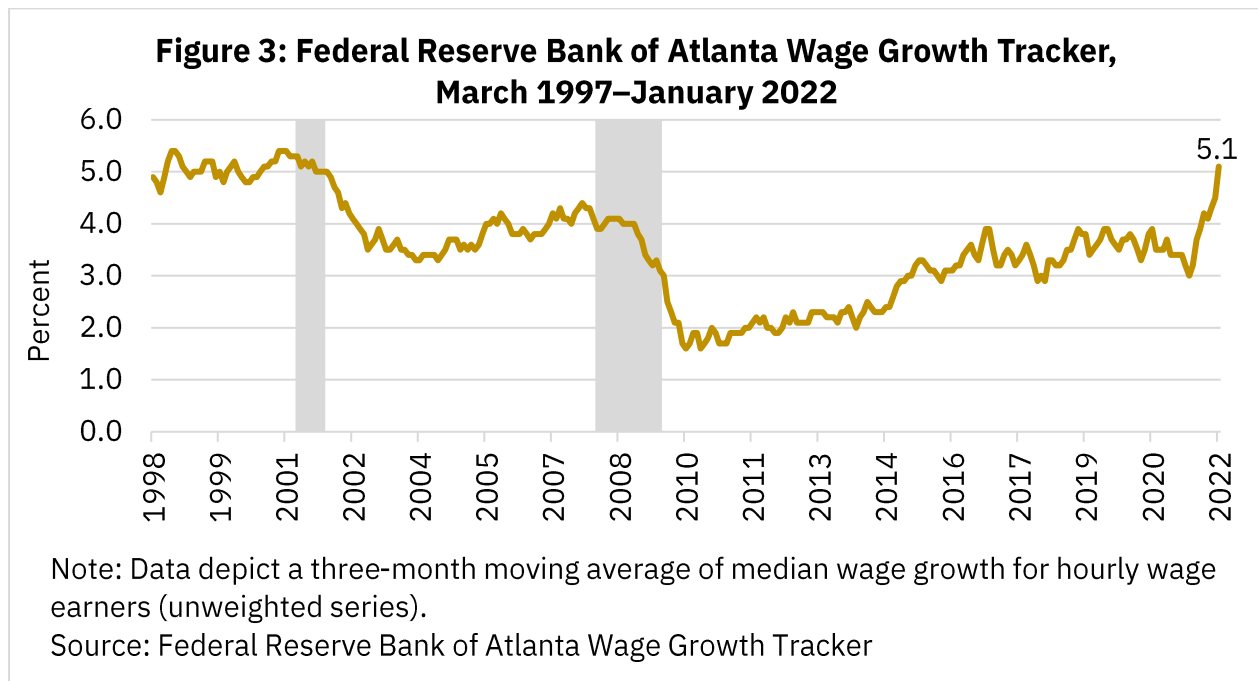
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<sup>2</sup> In a January 2022 interview with *60 Minutes*, Karin Kimbrough, chief economist for LinkedIn, says that workers are two and a half times more likely to apply for a remote job than a nonremote job (Stahl 2022).

<sup>3</sup> The large jump in January 2022 LFPR among workers 55 and older is an artifact of population adjustments based on the 2020 census. Because the BLS does not adjust earlier estimates, the 1pp gap as of January underestimates the actual gap in LFPRs for those 55 and older relative to prepandemic levels (see [bls.gov/news.release/archives/empst\\_02042022.htm](https://www.bls.gov/news.release/archives/empst_02042022.htm)).

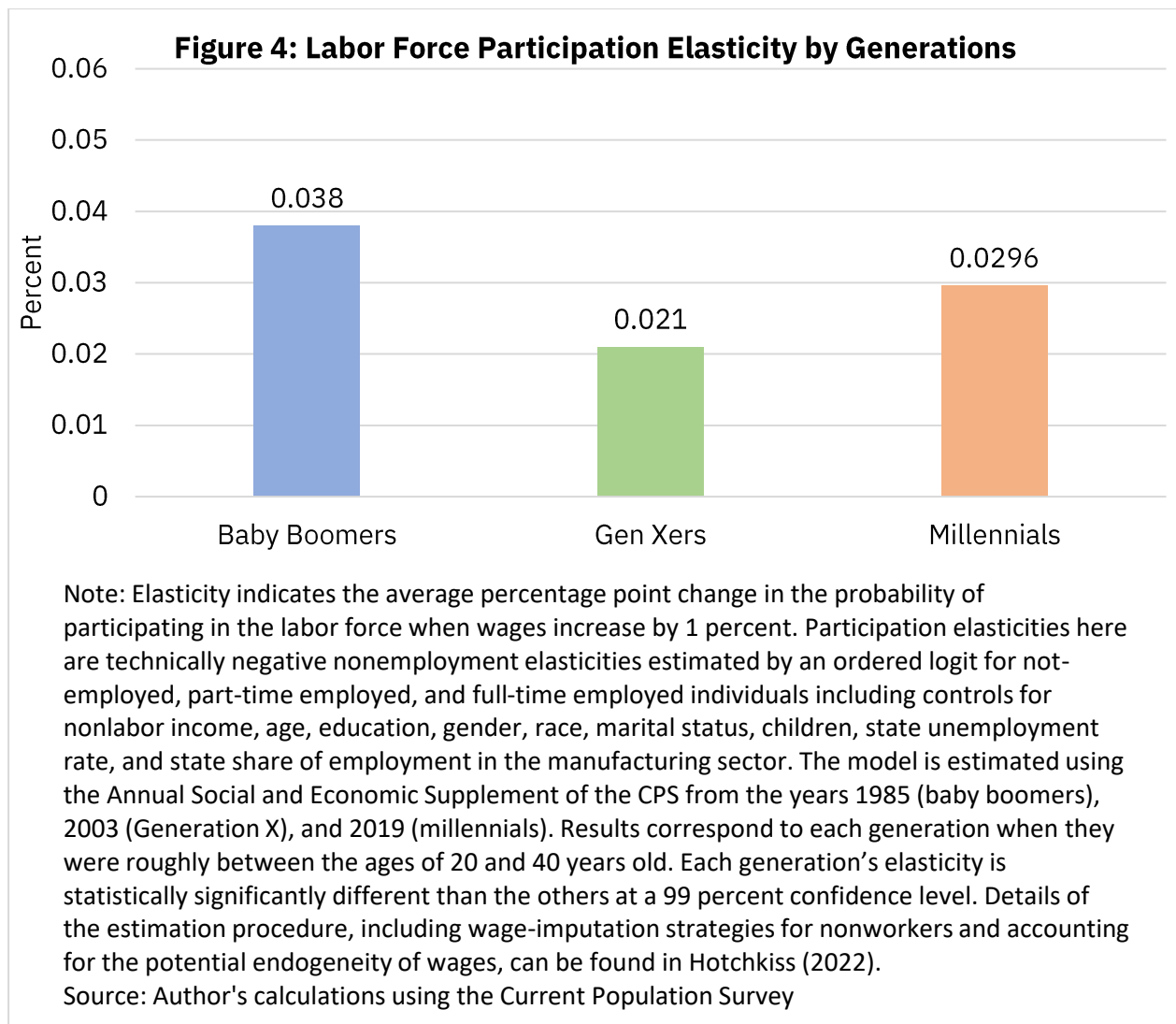


the lower end of the wage distribution (Hotchkiss 2021; Beilfuss 2022), it doesn't yet appear sufficient to fill those open jobs. The Federal Reserve Bank of Atlanta's Wage Growth Tracker shows that the three-month average median annual wage growth in the overall economy was 5.1 percent in January 2022 (see figure 3). Given that this wage growth is the highest seen in 20 years, why can't employers fill their open jobs?



## 2 Generational Labor Force Participation Elasticities

In addition to the pandemic-related reasons mentioned above, employers might also have outdated expectations of how much higher wages need to be to motivate greater participation. Research in a [forthcoming publication](#) (Hotchkiss 2022) finds that labor supply decisions of both Generation X (those born from 1965 to 1980) and the millennial generation (born from 1981 to 1996) are less responsive to wage increases than decisions made by baby boomers at the same age. Figure 4 compares the responsiveness of baby boomers, members of Generation X, and millennials to wage changes when each generation was roughly between the ages of 20 and 40 years old.<sup>4</sup>



<sup>4</sup> As of 2019, millennials make up the largest share of the US population. Elasticities shown in figure 4 are typical of those found in the literature (see Hotchkiss, Moore, and Rios-Avila 2021, figure 1). Although each analysis uses inflation-adjusted wages, it's immaterial since each cohort's elasticity is estimated using cross-sectional variation within only one year of data.

Whereas a 1 percent increase in wages, all else equal, would have, on average, increased the probability of baby boomers' labor force participation by nearly 0.04 percentage points, the same growth in wages would increase participation among millennials by 0.03 percentage points and among members of Generation X by only 0.02 percentage points.<sup>5</sup> In other words, compared to baby boomers, millennials' LFP decisions are only about three-quarters as responsive to wage changes, and participation decisions by members of Generation X are only about half as responsive. So whatever wage growth would have induced the baby boomers to be in the labor market when they were younger, that wage growth today needs to be considerably larger to get Gen Xers and millennials to make the same decision. (See Gayle, Odio-Zuniga, and Ramakrishnan 2021 for additional details of how Generation X and millennial behavior has deviated from that of the baby boomers; millennials likely receive the lion's share of attention for these behavioral deviations because by 2019 they made up the largest single share of the US population.)

Figure 5 illustrates the nuanced differences in labor force decisions across generations, with the pattern of differences varying by gender (panel A) and by education (panel B). Consistent with what others have found (for example, see Hotchkiss, Moore, and Rios-Avila 2020; Chetty 2012), the labor supply of women is more sensitive to wage changes within all three generations. Figure 5 also illustrates that, for the most part, the behavioral change among men across generations is driving the overall decline in responsiveness seen in figure 4.<sup>6</sup> Additionally, as women (who, all else equal, are more responsive to wage changes) have come to dominate the ranks of the college educated, responsiveness of this educational group has increased across generations.<sup>7</sup>

### 3 Is 5.1 Percent Wage Growth Enough?

Considerations other than wages are clearly weighing heavily on workers during this long-lived pandemic as they decide whether or when (or both) to enter the labor market. Another factor complicating the potential effectiveness of current wage growth is that the US economy is experiencing elevated inflation (Iacurci 2022). In January 2022, the BLS reported year-over-year price increases of 7.5 percent, which means that wage growth of 5.1 percent isn't even keeping up with inflation.<sup>8</sup> So in addition to having to overcome generational changes in how

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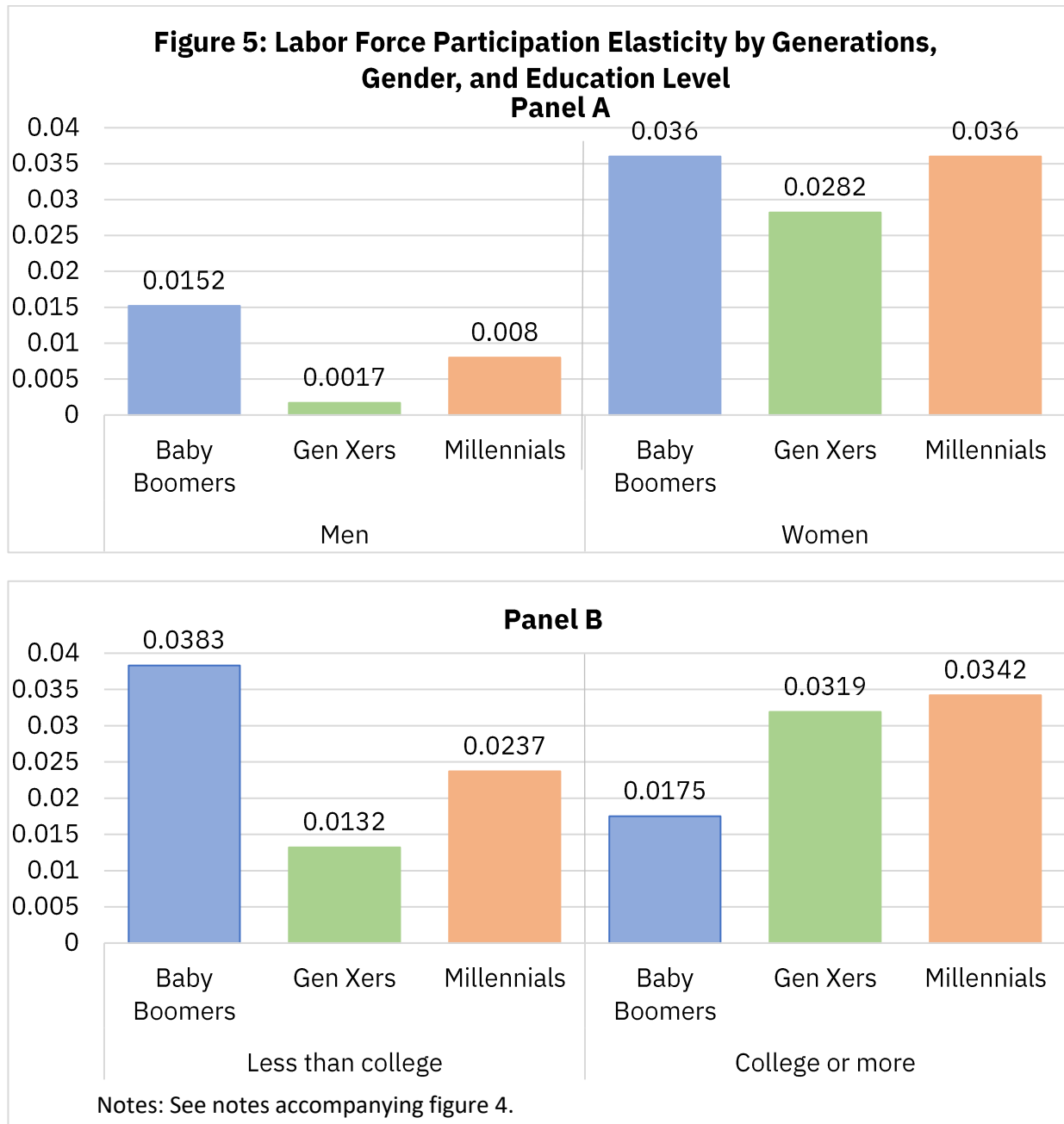
<sup>5</sup> Basic economics holds that the lower participation elasticities would be reflected by Gen Xers and millennials having labor supply curves that are steeper (that is, more vertical) than the supply curve of baby boomers.

<sup>6</sup> As a potential contributing factor, Aguiar et al. (2021) estimate that innovations in leisure technology have reduced the labor supply of men age 21–30 by as much as 2 percent since 2004.

<sup>7</sup> By 2007, women made up the greatest share of the college-educated US population 25 years and older ([census.gov/data/tables/time-series/demo/educational-attainment/cps-historical-time-series.html](https://census.gov/data/tables/time-series/demo/educational-attainment/cps-historical-time-series.html)).

<sup>8</sup> See the US Bureau of Labor Statistics's latest report on the consumer price index at <https://www.bls.gov/cpi/>.

responsive the labor supply is to higher wages, employers face the additional challenge of having to account for the rise in the cost of living.

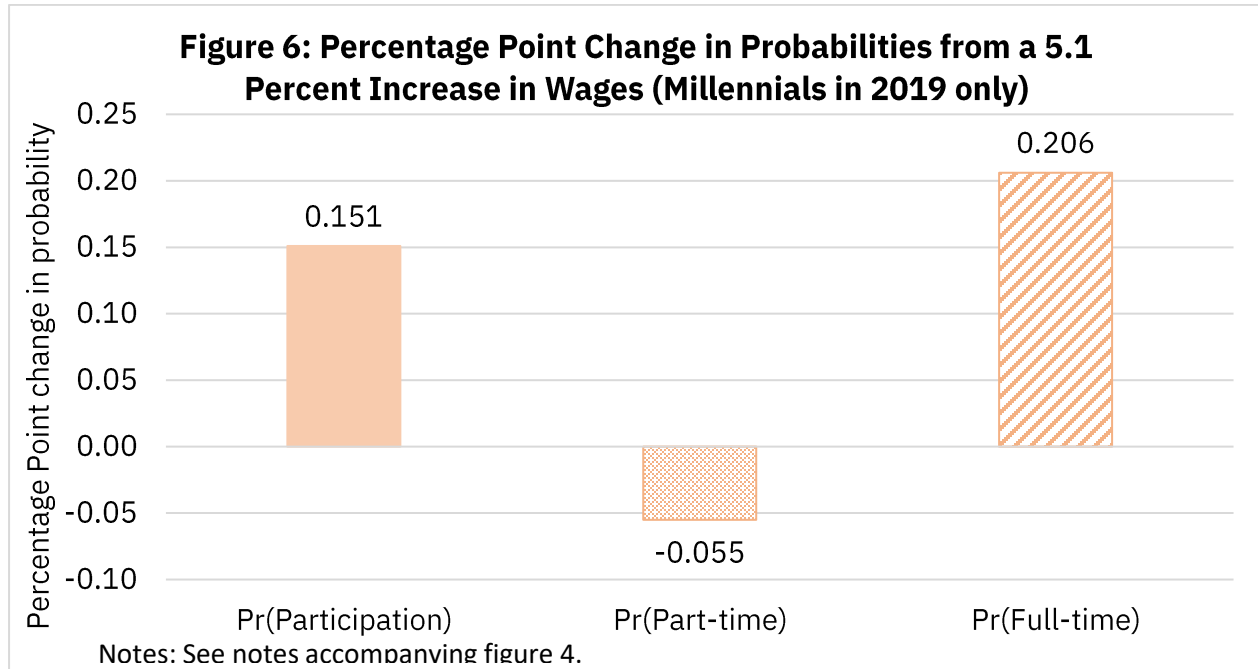


Putting aside the potential complication of inflation, what impact would 5.1 percent wage growth have on aggregate labor force participation rates? To answer this question, we will focus only on millennials since their elasticities were estimated using 2019 data and they made up the larger portion of prime-age workers in 2019.<sup>9</sup> Figure 6 shows that wage growth of

<sup>9</sup> Baby-boomer elasticities were estimated when they were roughly between 20 and 40 years old in 1985. Similarly, Gen Xers were in that age range in 2013. Therefore, applying the estimated elasticities



5.1 percent would only close about 14 percent of the 1.1pp gap in prime-age LFPR that existed as of January 2022.<sup>10</sup> Even the 6 percent year-over-year increase in average hourly pay, reported by the BLS in January, would only close the gap by 16 percent. It seems unlikely that wage growth alone will return us to the neighborhood of prepandemic LFPR among prime-aged workers. Figure 6 also suggests that rising wages would be expected to also increase workers' probability of working full-time versus part-time, which is consistent with the drop in part-time employment for economic reasons (both in the level and share of workers) to below prepandemic levels (see [fred.stlouisfed.org/series/LNS12032197](https://fred.stlouisfed.org/series/LNS12032197)).



Millennials' labor supply behavior—and in particular why it appears less responsive to wage growth than their baby boomer parents' behavior at the same age—has given rise to much speculation.<sup>11</sup> A primary theme is that many millennials place more value on other workplace qualities than on pay alone. For example, Meister and Willyerd (2020) find that 35 percent of

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to today's behavior is likely most relevant for millennials for whom elasticities were estimated using 2019 data.

<sup>10</sup> Given the 1.1 pp gap in LFPR for the prime-age population (mentioned earlier), the expected 0.151pp increase in participation probability seen in figure 6 translates into closing the gap by 13.7 percent ( $0.151/1.1$ ). The aggregate LFPR can be viewed as the probability of someone randomly drawn from the population being in the labor force, which would be the same if each person in the population had that probability of being in the labor force. Again, technically this calculation corresponds to what economists call the employment-to-population ratio. In a low-unemployment environment, this can approximate the LFPR.

<sup>11</sup> Again, in some ways millennials are closer in behavior to baby boomers than they are to Gen Xers, but the size of the millennial cohort—and being the most recent cohort to enter the prime-age worker group—has garnered much more speculation about their behavior than that of Gen X members.

millennials say they would take a pay cut to be able to work for a socially responsible firm, 45 percent would take a pay cut to work for a firm making a social or environmental impact, and 80 percent say they want to work for a firm with a conscience (also see McGlone, Spain, and McGlone 2011; Flammer and Luo 2017). And these considerations are separate from the usual nonmarket competition for workers' time, such as raising children and enjoying leisure activities (what people generally call attaining a work-life balance), not to mention a new taste for hybrid working arrangements amid fears and complications wrought by the COVID-19 pandemic.

## **4 Conclusion**

Employers might need to dig deeper into their list of incentives (and not just their wallets) to entice workers back into the labor market, especially employers trying to fill jobs requiring less education (as suggested by figure 5). Perhaps because they have fewer resources to support large pay increases, smaller firms appear to be figuring out wage-alternative solutions faster than larger firms. For example, nearly 60 percent of smaller firms are allowing employees to make decisions on what hybrid work arrangements look like, compared to only about 1 percent of the largest firms (Altig et al. 2022). Rather than coax workers up their supply curve with higher wages, employers might be better served by focusing more on nonwage incentives, such as letting workers decide where and when to work, offering hiring and “boomerang” bonuses (incentives to return to a previous employer), or providing creative benefits, to shift the labor supply curve outward to clear the market (see Yang 2021; Ben-Achour 2022). As it becomes increasingly evident that the “social contract of work is being rewritten” (Stahl 2022), Karin Kimbrough, chief economist of LinkedIn, said in a January 2022 interview with *60 Minutes* that before the pandemic, one in 67 jobs were advertised as remote; today, it's one in seven. If the social contract of work is indeed being rewritten, it appears, at least at this point, that workers are holding the pen.

## References

- Aguiar, Mark, Mark Bilal, Kerwin Kofi Charles, and Erik Hurst. 2021. Leisure luxuries and the labor supply of young men. *Journal of Political Economy* 129 (2): 337–82. <https://doi.org/10.1086/711916>.
- Altig, David E., Jose Maria Barrero, Nick Bloom, Steven J. Davis, Kevin Foster, Brent Meyer, Emil Mihaylov, and Nick Parker. 2022. Federal Reserve Bank of Atlanta *Policy Hub: Macroblog*, January 12. <https://www.atlantafed.org/blogs/macroblog/2022/01/12/hybrid-working-arrangements--who-decides>.
- Beilfuss, Lisa. 2022. Need evidence of wage inflation? Check out Wall Street’s rising paychecks. *Barron’s*, January 20. <https://www.barrons.com/articles/wage-inflation-banker-pay-51642633650>.
- Ben-Achour, Sabri. 2022. Hiring is hard. So is keeping the workers you have. *Marketplace* blog post, February 4. <https://www.marketplace.org/shows/>.
- Chetty, Raj. 2012. Bounds on elasticities with optimization frictions: A synthesis of micro and macro evidence on labor supply.” *Econometrica* 80 (3): 969–1018. <https://doi.org/10.3982/ECTA9043>.
- Flammer, Caroline, and Jiao Luo. 2017. Corporate social responsibility as an employee governance tool: Evidence from a quasi-experiment. *Strategic Management Journal* 38 (2): 163–83. <https://doi.org/10.1002/smj.2492>.
- Gayle, George-Levi, Mariana Odio-Zuniga, and Prasanthi Ramakrishnan. 2021. Work, leisure, and family: From the silent generation to millennials. *Federal Reserve Bank of St. Louis Review* 103 (4). <https://doi.org/10.20955/r.103.385-424>.
- Gollom, Mark. 2022. For those who can’t work from home, the dangers of COVID-19 are ever present. CBCNEWS and MSN, January 10. <https://www.msn.com/en-ca/news/canada/for-those-who-can-t-work-from-home-the-dangers-of-covid-19-are-ever-present/ar-AASCe4t>.
- Hotchkiss, Julie L. 2021. Wage pressures in the labor market: What do they say? Federal Reserve Bank of Atlanta working paper no. 2021-5. <https://www.atlantafed.org/research/publications/policy-hub/2021/06/03/05-wage-pressures-in-labor-market--what-do-they-say>.
- . 2022. Millennials: Maligned or miscreants? *Southern Economic Journal*, forthcoming (April). <https://drive.google.com/file/d/10VxnYl-xF9xDrJELZIMJdktCu4l49vS/view?usp=sharing>.
- Hotchkiss, Julie L., Robert E. Moore, and Fernando Rios-Avila. 2020. Cost of policy choices: A microsimulation analysis of the impact on family welfare of unemployment and price changes. *Journal of Macroeconomics* 63 (March): 103167. <https://doi.org/10.1016/j.jmacro.2019.103167>.
- . 2021. Impact of the 2017 Tax Cuts and Jobs Act on Labor Supply and Welfare of Married Households. Federal Reserve Bank of Atlanta working paper no. 2021–18.

- <https://www.atlantafed.org/research/publications/wp/2021/06/24/18-impact-of-2017-tax-cuts-and-jobs-act-on-labor-supply-and-welfare-of-married-households>.
- Howley, Daniel. 2021. Microsoft survey: 73% of workers want to be able to work from home after the pandemic. Yahoo!Finance, March 22.  
<https://finance.yahoo.com/news/microsoft-survey-73-percent-of-workers-want-to-work-from-home-after-pandemic-130029295.html>.
- Iacurci, Greg. 2022. Despite higher wages, inflation gave the average worker a 2.4% pay cut last year. MSN, January 12. <https://www.msn.com/en-us/money/markets/despite-higher-wages-inflation-gave-the-average-worker-a-24-25-pay-cut-last-year/ar-AASI9TT>.
- Jackson, Philip. 2021. The existential threat to ecommerce. Retail TouchPoints, December 22. <https://www.retailtouchpoints.com/topics/store-operations/workforce-scheduling/the-existential-threat-to-ecommerce>.
- Lubik, Thomas A. 2021. Revisiting the Beveridge curve: Why has it shifted so dramatically? Federal Reserve Bank of Richmond *Economic Brief* no. 21-36.  
[https://www.richmondfed.org/publications/research/economic\\_brief/2021/eb\\_21-36](https://www.richmondfed.org/publications/research/economic_brief/2021/eb_21-36).
- McGlone, Teresa, Judith Winters Spain, and Vernon McGlone. 2011. Corporate social responsibility and the millennials. *Journal of Education for Business* 86 (4): 195–200.  
<https://doi.org/10.1080/08832323.2010.502912>.
- Meister, Jeanne C., and Karie Willyerd. 2020. *The 2020 Workplace: How Innovative Companies Attract, Develop, and Keep Tomorrow's Employees Today*. New York, NY: Harper Business.
- Pitts, M. Melinda. 2021. Where are they now? Workers with young children during COVID-19. Federal Research Bank of Atlanta working paper no. 2021-10.  
<https://www.atlantafed.org/research/publications/policy-hub/2021/09/01/10--where-are-they-now--workers-with-young-children-during-covid-19>.
- Robertson, John. 2021. Do rising retirements during COVID reflect demographic trends? *Policy Hub: Macroblog*, August 10.  
<https://www.atlantafed.org/blogs/macroblog/2021/08/10/do-rising-retirements-during-covid-reflect-demographic-trends>.
- Stahl, Lesley. 2022. The big quit. *60 Minutes*, January 9. CBS.  
<https://www.youtube.com/watch?app=desktop&v=brw-jN9b-Sg>.
- Stone, Junius. 2021. Job openings abound in Texarkana, job seekers don't. *Texarkana Gazette*, December 29. <https://www.texarkanagazette.com/news/2021/dec/29/job-openings-abound-in-texarkana-job-seekers-dont/>.
- Yang, Mary. 2021. How companies are using creative incentives to attract and keep new talent now. *Inc.Com*, April 16. <https://www.inc.com/mary-yang/hiring-recruiting-incentives-attract-employees.html>.