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When will the labor shortage end?

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The labor shortage has grown significantly in the last year. As of March 2022, there are about 11.3 million open positions and about 6.17 million people are unemployed. There is a labor shortage of more than 5 million workers. Several reasons can explain the labor shortage. Some of those reasons have already been resolved, while others still need to be addressed. In this article, I argue that the increase of retirees over the last ten years is a major component that can explain most of the decrease in the labor market participation rate and the current labor shortage.

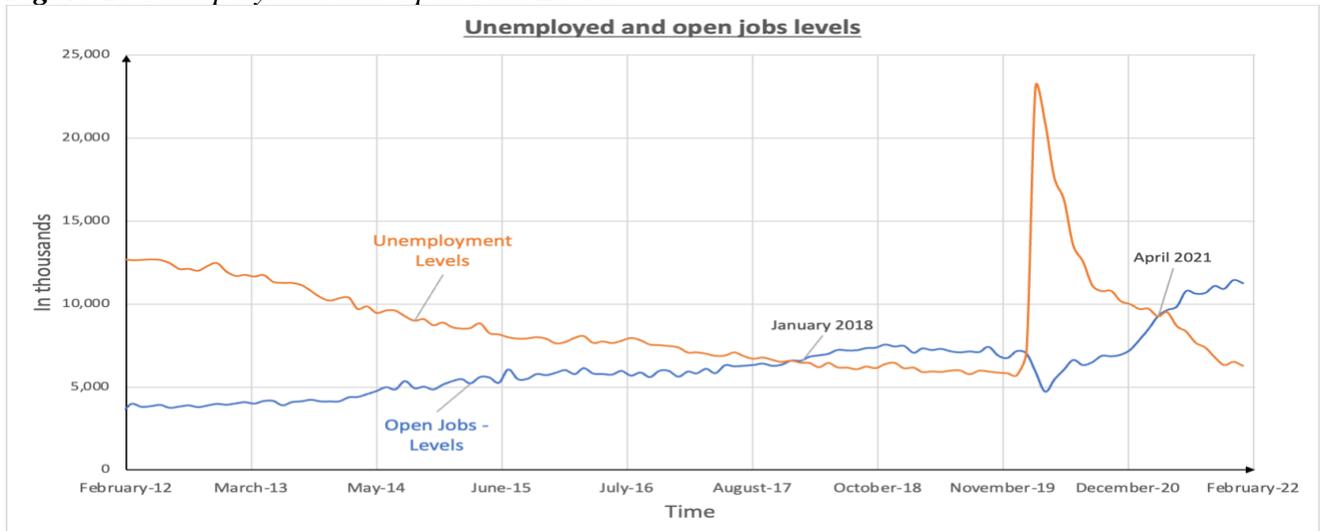
The labor shortage could close if wages become high enough (Horrigan , Heggeness and Strain 2022). According to the Bureau of Labor Statistics, the average hourly rate went up by about 5.5 percent in the last year.¹ This comes at an increase in direct and indirect costs to businesses (Banerjee 2021). When analyzing the sources of the labor shortage, it is important to distinguish between the demand for labor and the supply of labor. In this article, my focus will be on the supply of labor and its impact on the labor shortage.

The labor shortage started approximately two years before the pandemic began. Figure 1 plots the number of unemployed workers and the number of open jobs in the last ten years. The graph demonstrates there has been a negative trend in the number of unemployed workers in the last ten years, while there is a positive trend in the number of open jobs. These two trends diverted significantly for a short period in 2020, when the pandemic started. The unemployment level and open jobs level in 2021-2022. They began following the same trends from before the pandemic.

¹ Link to the publication: <https://www.bls.gov/news.release/empsit.t19.htm>. The average hourly rate went up from \$30.06 in March 2021 to \$31.73 in March 2022.

Four main reasons can explain the current labor shortage. The first reason is the generous unemployment benefits. These generous benefits ended in September of 2021. Therefore, it cannot explain the current labor shortage. Secondly, the number of families relying on one income increased. This is significantly impacted by the women who quit their jobs to watch their children. Thirdly, the increase in the number of retirees increased. Fourthly, overall economic activities increased.

Figure 1: Unemployment and Open Jobs Levels



Source: Fred – St. Louis Fed.

How can the increase in retirees’ rate explain the decrease in the supply of labor?

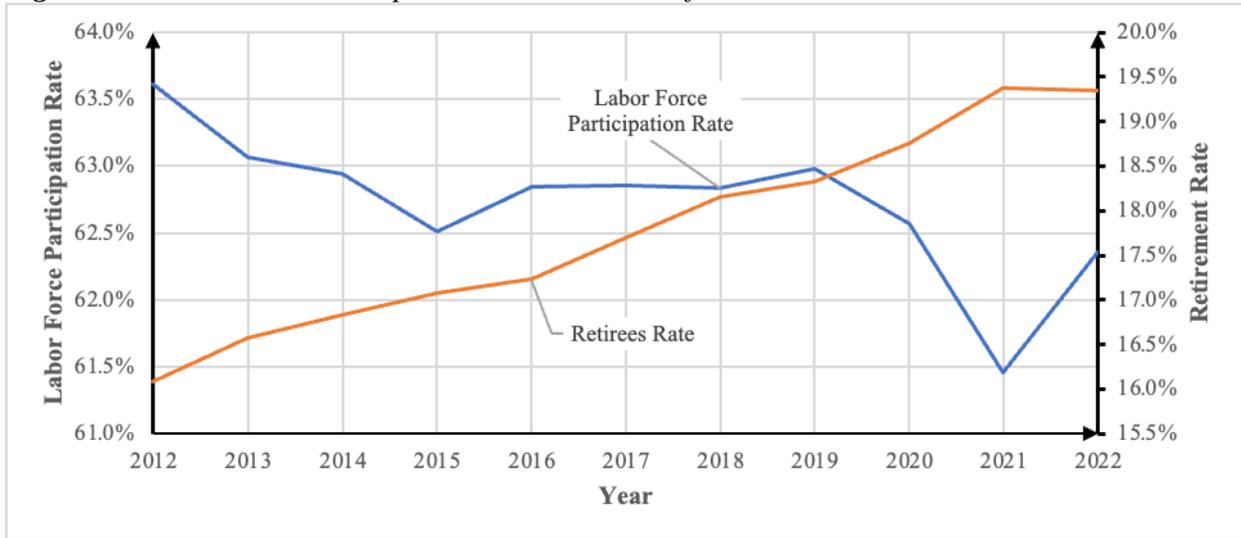
Figure 2 plots the labor force participation rate (LFPR) and the fraction of retirees from the population. The LFPR declines from 2012 to 2022. During the pandemic the decline accelerated. The rate of retirees from the entire population is moving in the opposite direction. The increase in the rate of retirees accelerated during the pandemic.

The linear correlation between the LFPR and the rate of retirees is -0.83. That is a strong negative correlation. It is expected that there is a causation relationship from the rate of retirees to

the LFPR and not vis-a-vis. The LFPR was about 63 percent in March 2019 and about 62.4 percent in March 2022. That is a decrease of about 0.6 percentage points. The increase in the proportion of retirees from the population in these two months was from 18.3% to 19.3%. That is an increase of 1 percentage point. Since the LFPR and the retirees' rate are proportions of the same population size, the decrease in the labor force workers is smaller than the increase in the number of retirees.

In March 2021, the decrease in the labor force participation rate was about 1.5 percentage points from March 2019. The increase in the proportion of retirees from the population from March 2019 to March 2021 was about 1 percentage point. Therefore, about two-thirds of the decrease in the LFPR in 2021 can be explained by the increase in the number of retirees.

Figure 2: Labor Force Participation Rate and Rate of Retirees



Source: Current Population Survey, March Survey

Note: The retirement rate is the portion of retired individuals from the total population (16+ years of age). The data is unseasonal.

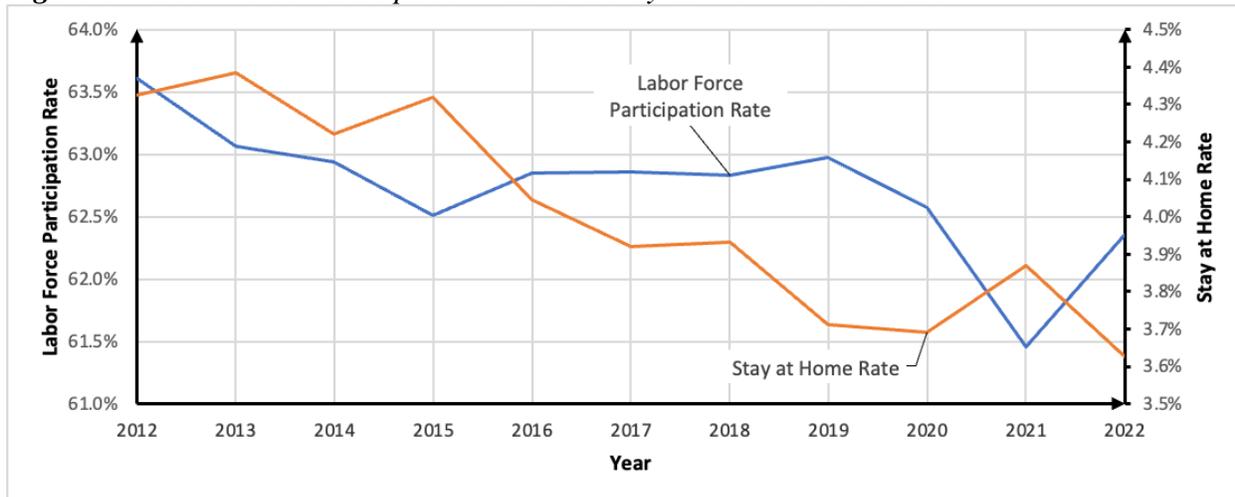
Can the increase in stay-at-home parents explain the decrease in the supply of labor?

Figure 3 plots the labor force participation rate (LFPR) and the rate of stay-at-home parents in the population in the last ten years. Stay-at-home parents are defined as 1) parents with at least one child under the age of 18 and 2) who are not in the labor force for “other reasons.”² The trend of the LFPR is negative in the years before the pandemic. The LFPR dropped from 63.6 percent in 2012 to 61.9 percent in 2022. This is an absolute decrease of 1.7 percent and a relative decrease of about 2.7 percent. The decline in the LFPR was much sharper during the pandemic. In March 2021, the LFPR was at 61.5 percent.

The fraction of stay-at-home parents with children from the adult population decreased until 2019, and then increased slightly hereafter. The positive trend of the stay-at-home parents in the last two years is opposite to the trend in the labor force participation rate over the previous two years. These opposite trends cannot be an economically significant explanation for the decrease in the labor force participation rate. The change in the number of stay-at-home parents is quite small. Specifically, the increase in the fraction of stay-at-home parents in the population grew by less than 0.1 percentage points from March 2019 until February 2022, while the decline in the LFPR in these two months declined by about 1.1 percentage points.

² The CPS classified three different reasons for not being in the labor force: retirement, disability, or “other reasons”.

Figure 3: Labor Force Participation Rate and Stay-at-Home Parent Rate



Source: Current Population Survey, March Survey.

Note: The stay-at-home rate is the portion of parents with children younger than 18 years of age who are not in the labor force for “other reasons” from the total adult (16+ years of age) population. The data is unseasonal.

The fourth reason is the only one affecting the current demand for labor. Economic growth is ongoing and can explain some aspects of the labor shortage. The increase in economic activity caused the labor demand to increase. This can explain some of the labor shortage but cannot explain the decrease in the LFPR, as shown in Figure 2, because the LFPR captures the supply of labor only.

What about undocumented workers or temporary workers from Mexico?

In the last two years, it has been much more difficult for temporary workers, mainly from Mexico, to cross the border for work. As a result, many businesses that rely on these low-skilled workers had to search for American workers. This can explain some of the labor shortage, but cannot explain the reduction in the labor force participation rate. The undocumented workers and the temporary workers from other countries are not counted in the labor force participation rate.

How could automation ease the labor shortage?

Automation could reduce the demand for unskilled labor in repetitive jobs. For example, this can impact assembly line workers, drivers, and bank tellers. It is expected that the increase in automation would decrease the demand for labor and alleviate, or even eliminate, the labor shortage (Charlton and Genti 2021). However, as was discussed earlier, the decline in the LFPR indicates a sharp decline in the supply of labor over the last two years.

Conclusions

The labor shortage started approximately two years before the pandemic began. The pandemic started during the beginning of 2020 and caused a major short-run decrease in the demand for labor, as many businesses closed their doors temporarily. The labor demand grew significantly in 2021 and 2022 as the economic activity once again increased. The supply of labor, however, decreased during the pandemic. One major reason for the decrease in labor supply is the increase in the proportion of retirees from the population.

If the existing trends continue, the labor shortage is expected to widen even more. However, the labor shortage would be eliminated if the demand for labor would decrease (likely due to a recession) or/and an increase in the supply of labor (Americans and non-Americans). The increase in the American labor supply could come mainly from the proportion of retirees.

Table 1: Proportions of the labor force, retirees, and stay-at-home parents from the population

Year	Labor Force Participation Rate	Retirement Rate	Stay at home Rate
2012	63.61%	16.08%	4.32%
2013	63.07%	16.57%	4.38%
2014	62.94%	16.82%	4.22%
2015	62.51%	17.08%	4.32%
2016	62.85%	17.23%	4.05%
2017	62.86%	17.69%	3.92%
2018	62.84%	18.15%	3.93%
2019	62.98%	18.32%	3.71%
2020	62.57%	18.75%	3.69%
2021	61.45%	19.38%	3.87%
2022	62.4%	19.34%	3.63%

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