

April 8, 2022

## **When will the labor shortage end?**

*By Yariv Fadlon, Ph.D.*

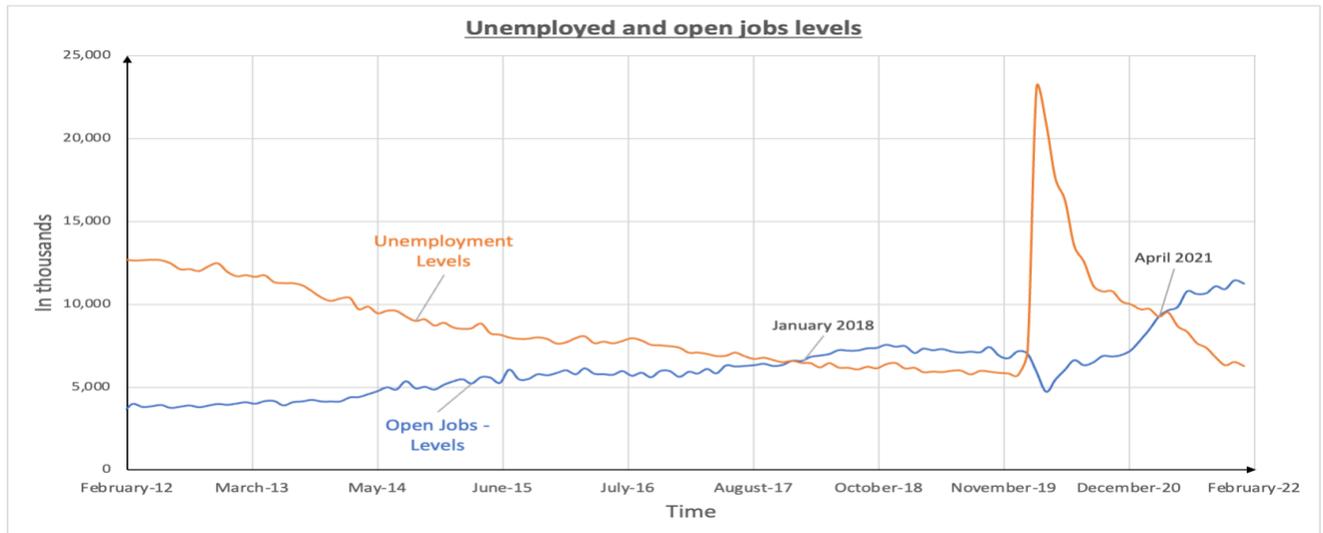
The labor shortage has grown significantly in the last year. As of March 2022, there are about 11.3 million opened positions and about 6.17 million people unemployed. That is, there is a labor shortage of more than 5 million workers. There are several reasons that can explain the labor shortage. Some of those reasons have been resolved. Yet, some other reasons still endure. In this article, I argue that the increase in the number 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.

When analyzing the sources of the labor shortage, it is important to distinguish between the demand 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 could close if wages will go high enough (Horrigan , Heggeness and Strain 2022). The persistent in the labor shortage motivated employers to improve their offers to potential workers. This comes at an increase in direct costs and indirect costs to businesses (Banerjee 2021).

The labor shortage has started about two years before the pandemic started. Figure 1 plots the number of unemployed workers and the number of opened jobs in the last ten years. It is clear from the graph that there is a negative trend in the number of unemployed workers in the last ten years, while there is a positive trend in the number of opened jobs. These two trends were diverted significantly, but for a very short period, in 2020 when the pandemic started. However, the unemployment level and opened jobs level in 2021-2022 follow the trends from before the pandemic.

There are four main reasons that can explain the current labor shortage. First, the generous unemployment benefits. These generous benefits ended in September of 2021. Therefore, it cannot explain the current labor shortage. Second, the increase in the number of families that rely on one income. Especially women that quit their jobs to watch the children. Third, the increase in the number of retirees. Fourth, the increase in economic activities.

**Figure 1: Unemployment and Open Jobs Levels**



Source: Fred – St. Louis Fed.

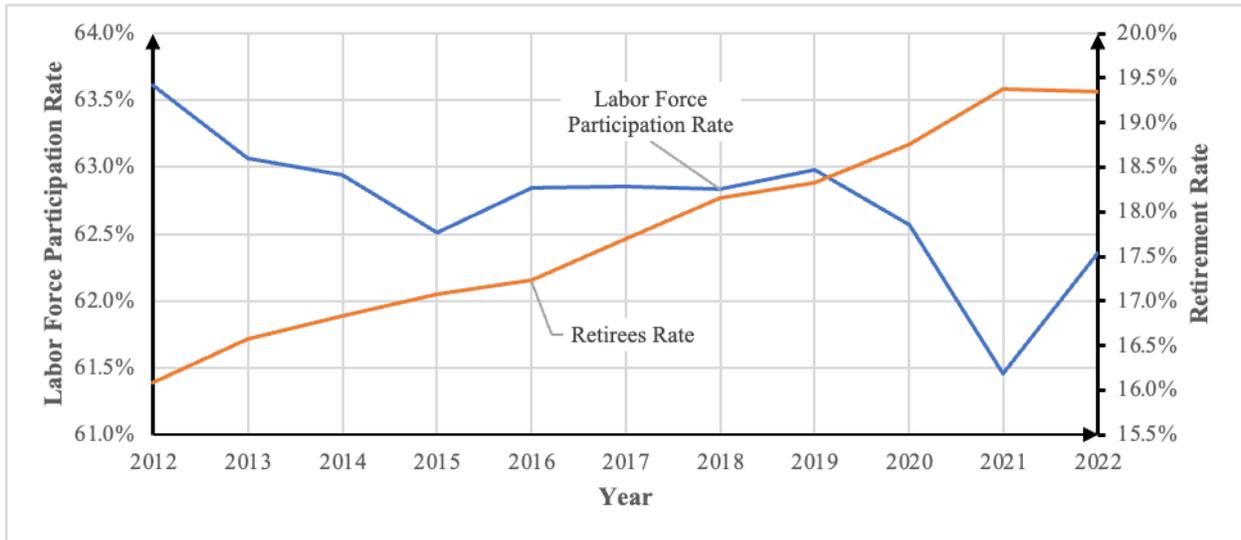
### **How can the increase in retirees' rate explain the decrease in the supply of labor?**

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

The linear correlation between the LFPR and the rate of retirees is  $-0.83$ . That is, a very 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 is about 63 percent in March 2019, and about 62.4 percent in March of 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 points. 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 of 2019. The increase in the proportion of retirees from the population from March 2019 to March 2021 was about 1 percentage points. 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?**

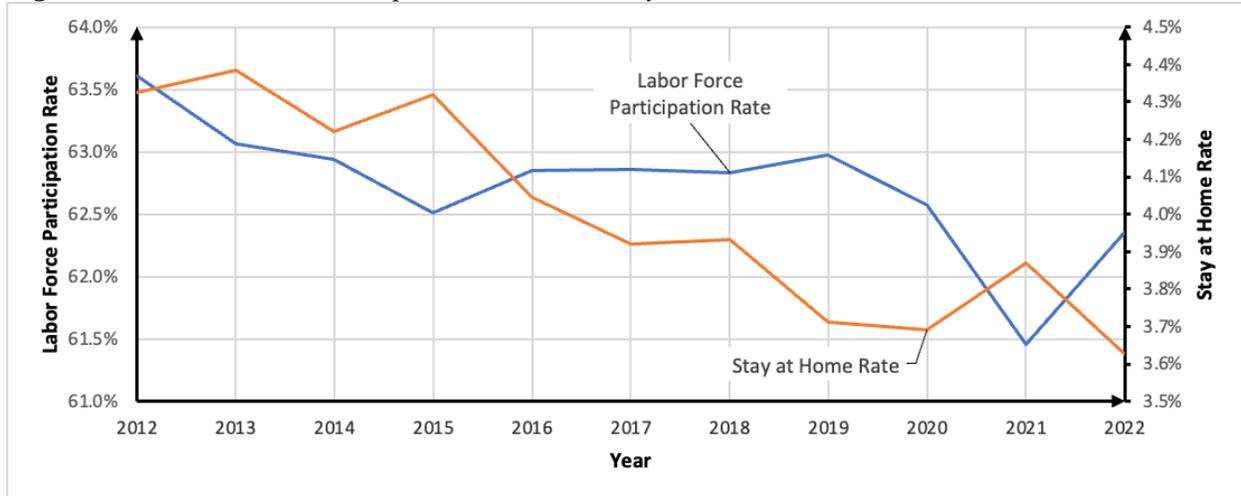
Figure 3 plots the labor force participation rate (LFPR) and the rate of stay-at-home parents from the population in the last ten years. Stay at home parents are defined as parents with at least one child under the age of 18, and that are not in the labor force for “other reasons”.<sup>1</sup> The trend 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 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 is decreasing until 2019, and then increasing 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 in the last two years. But these opposite trends cannot be an economically significant explanation to the decrease in the labor force participation rate because the change in the fraction of stay-at-home parents with children from the population is very small. Specifically, the increase in the fraction of stay-at-home parents from the population grew by less than 0.1 percentage points from March 2019 until

<sup>1</sup> The CPS classified three different reasons for not being in the labor force: retirement, disability, or “other reasons”.

February 2022, while the decline in the LFPR in these two months declined by about 1.1 percentage points.

**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, and 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 that is affecting the demand for labor. The economic growth is still going and can explain some of the labor shortage. The increase in economic activity caused the demand for labor to increase. This can explain some of the labor shortage, but cannot explain the decrease in the LFPR as shown in Figure 2. That is because the LFPR captures the supply of labor only.

**What about undocumented workers, or temporary workers from Mexico?**

In the last two years, it was 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. Clearly this is a reason that can explain some of the labor shortage, but it cannot explain the reduction in the labor force participation rate because 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, 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 about two years before the pandemic started. The pandemic that started at the beginning of 2020 caused a major short-run decrease in the demand for labor, as many businesses closed their doors temporarily. The demand for labor grew significantly in 2021 and 2022 as the economic activity increased in those years. The supply of labor, however, has decreased during the pandemic. One of the major reasons for the decrease in the supply of labor 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. The labor shortage would be eliminated if the demand for labor would decrease (probably because of a recession) or/and an increase in the supply of labor (Americans and non-Americans). The increase in the supply of American labor can come mostly from the proportion of retirees.

*Table 1: Proportions of 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%

## References

- Banerjee, Lopamudra. 2021. "Natural Hazard, Employment Uncertainty, and the Choice of Labor Contracts." *Eastern Economic Journal* 47 (no. 2 ): 227-252.
- Charlton, Diane, and Kostandini Genti. 2021 . "Can Technology Compensate for a Labor Shortage? Effects of 287(g) Immigration Policies on the U.S. Dairy Industry." . "*American Journal of Agricultural Economics* 103 (no. 1 ): 70-89.
- Horrigan , Michael Misty, Kate Bahn Heggeness, and Michael R. Strain. 2022. "Is there a Labor Shortage?" *Business Economics* ("Is there a Labor Shortage?") 57 (no. 1): 6-22.