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The Illinois Institute for Rural Affairs (IIRA) works to improve the quality of life for rural residents by partnering with public and private agencies on local development and enhancement efforts.

Western Illinois University

Interpreting the Recent Decline in Illinois' Labor Force: April 2020 – December 2021

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Adee Athiyaman[1]

Abstract

This paper focuses on the effects of extraneous factors such as Covid-19 on Illinoisans' nonparticipation in the labor market. During the early weeks of the pandemic, April 23, 2020 to June 23, 2020, Covid-19 was the main reason for not working for pay or profit. Later, retirement became the main reason for nonparticipation in the labor force, median value = 38.5%. Family & friends were a major source of financial support for persons whose employer has shut down because of Covid-19. Since April 2020, the retirement rate of the Illinois labor force is 1% per 1-2 weeks' time period. Nevertheless, there is good news; the labor market is tight. If an Illinoisan needs a job, there is one available.

Introduction

In an earlier *Research Brief*, I highlighted the size and composition of labor reserve in rural Illinois [2] . The findings include: (i) the supply for educated labor force is tight and (ii) the supply for non-educated labor force is slack.

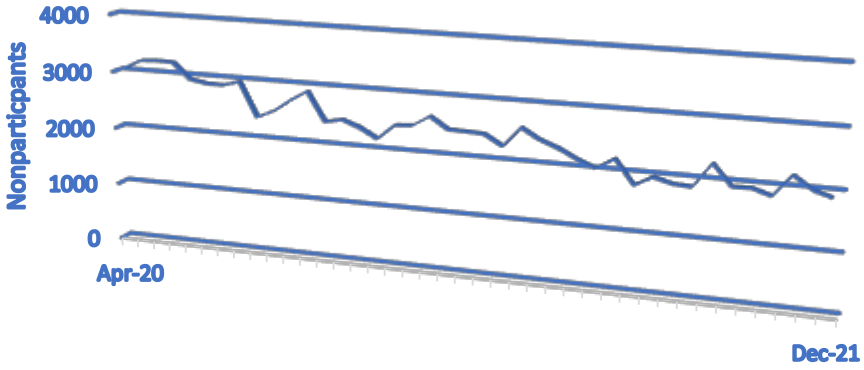
This paper continues with labor research; the focus is on the effects of extraneous factors such as Covid-19 on the population's nonparticipation in the labor market. Conceptually, labor market participants include both the employed and the unemployed, anyone else is a non-participant [3].

Figure 1 is a plot of labor market nonparticipants in Illinois, during April 2020 – December 2021. As at December 2021, the number of

[1] Professor, Illinois Institute for Rural Affairs, Western Illinois University.
[2] Athiyaman, A. (2021). Unused human resources in rural Illinois: A profile of "not in the labor force" population, January – October 2021. *Research Brief*, 3(19), November 28, 1-6. http://www.iira.org/wp-content/uploads/2021/11/Unused-human-resources.pdf.
[3] See footnote 2, above.

nonparticipants in the labor market stood at slightly more than 1.89million[4]. What are the demographic characteristics of the nonparticipants in the labor market? How much or what proportion of this nonparticipation is attributed to Covid-19? How do nonparticipants support themselves financially? This paper addresses these and other similar questions.

Figure 1: Labor Market Nonparticipants, Illinois (units in 000)

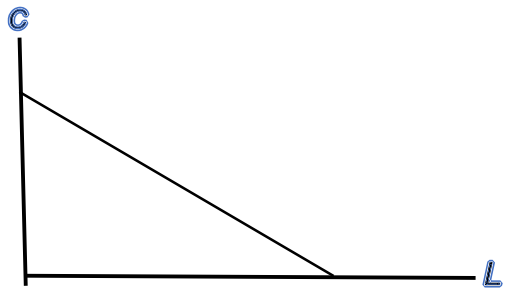


Note: Information extracted from US Census' Household Pulse Surveys; see the Methodology section of the paper. The compound growth rate of the series (nonparticipation) is 1% per week / two weeks; total time periods = 40; for plotting purposes, income was restricted to > $0.

[4] Excludes the retired. For numbers that include the retired, please see Appendix 1.

Theory: labor and nonlabor income, consumption, and wellbeing

Individuals attain well-being by consuming goods and services (*C*) and enjoying leisure time (*L*). The figure below shows the combinations of *C* and *L* that would provide the same level of utility[5].



In general, people engage in paid employment to pay for goods and services; expressed as an equation:

C = wage rate, *w* × hours worked, *h*. If we add a nonlabor income (*S*) to the equation, then

$C = wh + S$[6].

Express the total time available per period (day, week, month, etc.) as *T*. Since one works for *h* hours and spend *L* in leisure,

$T = h + L$, or

$h = T - L$.

Therefore,

$C = w(T - L) + S$ or

$C = wT + S - wL$.

If $w = 0$, that is, if the person is a nonparticipant in the labor market, then, $C = f(S)$. In words, consumption of goods and services is a function of (or paid for using) nonlabor income.

[5] The figure is the indifference curve; as we move along the indifference curve, the quantity of one commodity rises and the other falls.
[6] In this simple model, there are no savings. Also, a constant wage rate is assumed; in other words, *w* is independent of *h*.

Methodology

Microdata from the US Census Bureau's Household Pulse Survey (HPS) were used to address the research questions[7]. Data collection[8] for the HPS began on April 23, 2020 and included the following content areas: employment, spending and stimulus payments, food sufficiency and food security, physical and mental wellness, health insurance and health access, housing, education disruptions, and demographics[9].

Table 1 presents the variables used in the study; descriptive measures of variables and association and correlational methods were used for statistical inferences. The geographical unit of analysis was Illinois.

[7] See, https://www.census.gov/programs-surveys/household-pulse-survey/data.html.
[8] Internet and telephone were used for data collection.
[9] The survey began as a weekly survey and now is being implemented once in two weeks.

Table 1: Variables and Definitions

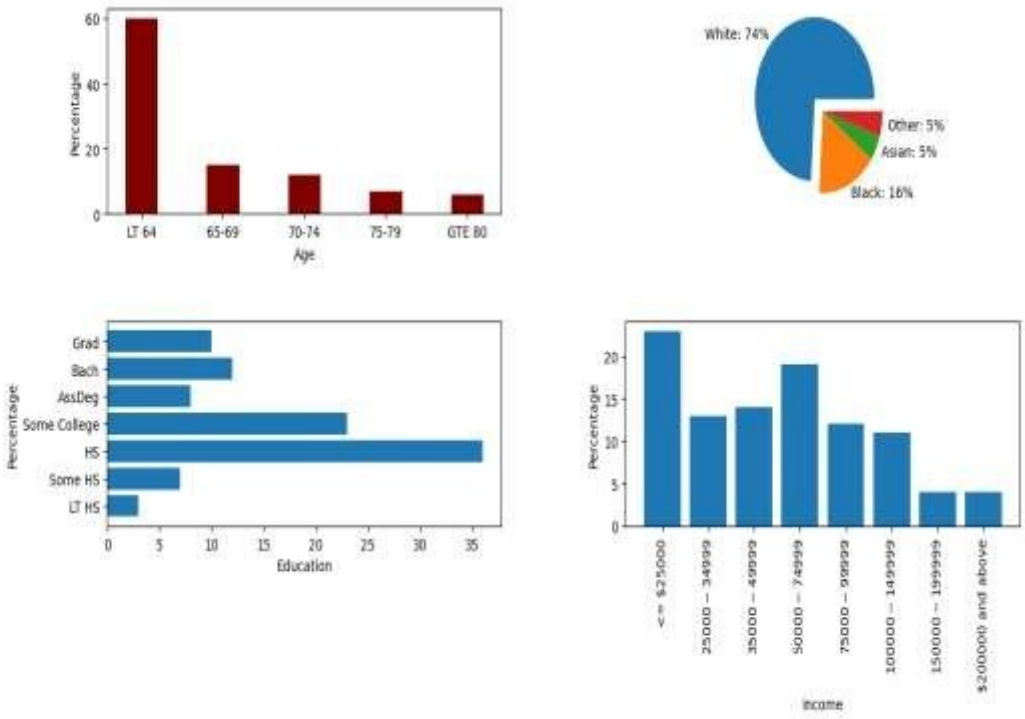
Variable	Definition
Kindwork	Are you employed by government, by a private company, a nonprofit or are you self-employed or working in a family business? Coded, Government = 1, …, family business = 5.
Nowork	Main reason for not working for pay or profit: 1 = I did not want to be employed at this time, … 10 = My employer went out of business due to the coronavirus pandemic.
Week	Week of interview; Week 1, April 14, 2021 – April 26, 2021; Week 40, December 1, 2021 – December 13, 2021. Coded: Week 1 = 1, … Week 40 = 40.
Gender	What sex were you assigned at birth, on your original birth certificate? Coded 1 = Male and 2 = Female.
Age	What year were you born? Coded: 2021 – number.
Race	What is your race? Coded, White, alone = 1; Black, alone = 2; Asian, alone = 3; Other = 4.
Education	What is the highest level of school you have completed? Less than high school = 1; Some high school = 2; High school graduate = 3; Some college = 4; Associate degree = 5; Bachelor's degree = 6; Graduate degree = 8.
Income	In 2020, what was your total household income before taxes? Less than $25,000 = 1; $25,000 - $34,999 = 2; $35,000 - $49,999 = 3; $50,000 - $74,999 = 4; $75,000 - $99,999 = 5; $100,000 - $149,999 = 6; $150,000 - $199,999 = 7, and GTE $200,000 = 8.
Spending needs	Which of the following did you use to meet your spending needs? 1. Credit card; 2. Money from savings; 3. Borrowing from friends & family; 4. Unemployment insurance; 5. Stimulus payment; 6. Supplemental Nutrition Assistance Program (SNAP); 7. Government rental assistance.

Findings

Demographics of Nonparticipants in the Labor Market

Females constitute 56% of the nonparticipants; majority of the nonparticipants are Caucasians (74%) less than 64 years old (60%) ; 59% have attained a high school diploma and some college credit, but no degree, and one in two report a household income of less than $50,000 (Figure 2). During the early weeks of the survey, that is, during April 23, 2020 to June 23, 2020, Covid-19 issues, for example, caring for someone who was sick with Covid-19, were the main reason for not working for pay or profit. Later, retirement became the main reason for nonparticipation in the labor force, median value for retirement = 38.5%. Appendix 1 lists the reasons for nonparticipation in the labor force, by gender.

Figure 2: Demographics of Nonparticipants



Labor Market Nonparticipation Caused by Covid-19

Table 2 shows the proportion of nonparticipation attributed to Covid-19. The maximum impact was registered during week 2, May 7, 2020 – May 12, 2020, 46%. The median value of 27% was registered during three occasions, weeks 14, 16, and 25. Of late, the proportion of Illinoisans stating Covid-19 as a reason for nonparticipation in the labor force has come down, it was 11% during December 2021 and the growth rate for the “reason” is -1%.

Table 2: Nonparticipation, because of Covid-19

Year	Survey dates	Percentage
2020	April 23 – May 5	43
	May 7 – May 12	46
	May 14 – May 19	39
	May 21 – May 26	44
	May 28 – June 2	34
	June 4 – June 9	40
	June 11 – June 16	38
	June 18 – June 23	35
	June 25 – June 30	26
	July 2 – July 7	29
	July 9 – July 14	33
	July 16 – July 21	42
	August 19 – August 31	24
	September 2 – September 14	27
	September 16 – September 28	26
	September 30 – October 12	27
	October 14 – October 26	29
	October 28 – November 9	35
	November 11 – November 23	36
	November 25 – December 7	35
	December 9 – December 21	31
2021	January 6 – January 18	35
	January 20 – February 1	24
	February 3 – February 15	29
	February 17 – March 1	27
	March 3 – March 15	24
	March 17 – March 29	23
	April 14 – April 26	25
	April 28 – May 10	19
	May 12 – May 24	16
	May 26 – June 7	15
	June 9 – June 21	15
	June 23 – July 5	15
	July 21 – August 2	21
	August 4 – August 16	16
	August 18 – August 30	18
	September 1 - September 13	12
	September 15 - September 27	18
	September 29 - October 11	14
	December 1 – December 13	11

Sources of Income

Sources of income vary by reasons for not working for pay or profit[10]. For persons who report that they "don't want to be employed at this time", 51% rely on credit cards to meet their spending needs and another 25% rely on SNAP. Savings are spent by those who care for the elderly (51%); they also rely on financial support from family & friends (25%). In general, family & friends are a major source of financial support for persons whose employer has shut down because of Covid-19.

As for the retired, three in four rely on savings and credit cards. Stimulus payments, SNAP, and rental assistance are also used to meet the spending needs by 25% of the retired persons. Appendix 2 provides information on sources of income for all segments of labor force nonparticipants.

Summary and Conclusion

This paper explored three questions that could be of interest to economic developers: What are the demographic characteristics of the nonparticipants in the labor market? How much or what proportion of this nonparticipation is attributed to Covid-19? How do nonparticipants support themselves financially? Data from the US Census' Household Pulse Surveys were used to gain insights into these questions.

Results suggest that:

1. The number of nonparticipants in the labor force, including the retired, reduced from 4.28mil in April 2020, to 3.41mil in December 2021; it represents a -1% growth rate per week for the 40-week time period. The nonparticipants were predominantly Caucasians, Female, and less than 64 years of age.
2. On average, slightly more than one-in-four of the nonparticipants stated Covid-19 as the main reason for nonparticipation in the labor market, and
3. Family & friends were a major source of financial support for people whose employer has shut down because of Covid-19.

I have been told that employers despair at not being able to keep their labor force[11]; this is not surprising, since April 2020 the retirement growth rate for Illinois labor force stood at 1% per 1-2 weeks' time period. Nevertheless, there is good news; the labor market is tight[12]. Put simply, if an Illinoisan needs a job, there should be one available.

[10] Data shown in Appendix 2 are for the week December 1, 2021 to December 13, 2021, see Table 2.

[11] Author's belief: acquired based on personal communications with economic developers in rural Illinois.

[12] See Footnote 2.

Appendix 1: Impact of Gender on Reasons for Nonparticipation in Labor Force (%)

	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Don't Want to Work	**Male**	4	2	3	2	1	3	1	1	2	3	3	0	2	3	2	4	3	1	4	2
	Female	2	0	4	2	3	1	1	1	1	2	2	1	2	2	3	3	3	1	2	2
Sick, Covid-19	**Male**	0	2	1	0	1	1	0	0	0	1	1	1	1	0	2	1	2	2	7	1
	Female	1	1	0	1	1	2	1	0	1	1	2	1	1	1	1	2	1	4	4	5
Childcare	**Male**	0	2	1	0	1	1	2	1	0	1	1	2	1	1	1	0	1	1	1	1
	Female	4	2	3	3	4	3	5	6	7	5	6	4	8	5	6	7	6	5	5	6
Elderly care	**Male**	0	1	4	1	1	1	0	0	0	0	0	1	0	1	1	0	1	1	0	1
	Female	1	1	0	1	0	0	0	1	2	1	1	0	1	1	1	0	1	1	1	2
Covid-19 Concerns	**Male**	0	0	0	0	0	3	1	2	3	2	2	5	1	3	1	1	2	4	1	2
	Female	0	0	0	0	0	3	2	3	2	2	1	1	3	2	1	2	2	3	2	3
Disabled	**Male**	1	4	2	3	4	2	1	1	3	2	2	3	3	1	3	2	2	1	3	1
	Female	4	1	1	3	5	6	5	8	3	3	5	4	2	5	5	2	4	2	3	2
Retired	**Male**	12	15	16	13	13	13	15	14	19	19	17	15	18	17	17	21	17	17	14	17
	Female	16	17	17	16	19	18	18	16	22	19	17	18	22	20	20	22	19	23	22	20
Laid-off, Covid-19	**Male**	14	16	10	16	12	13	9	13	7	7	6	10	9	7	8	9	9	8	7	9
	Female	9	9	12	11	12	12	13	11	7	10	12	12	6	8	9	7	8	8	9	7
Employer Closed, Temp	**Male**	8	3	6	7	5	3	3	2	3	2	5	4	1	3	2	0	1	2	2	1
	Female	10	15	7	9	4	3	8	2	3	4	3	7	1	3	1	2	2	1	3	3
Employer Closed, Perm	**Male**	1	0	0	0	0	1	0	2	1	0	0	0	1	0	0	3	1	2	0	1
	Female	0	1	1	0	1	0	0	1	0	0	1	1	1	0	1	1	1	1	0	1
No transport	**Male**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	**Male**	3	2	2	5	5	3	8	6	8	8	7	4	10	8	8	5	5	5	4	4
	Female	10	7	7	8	9	7	7	9	7	9	6	6	8	7	9	7	9	7	6	8
All		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N (000s)		**4218**	**4662**	**4815**	**4482**	**4364**	**4214**	**4296**	**4228**	**4038**	**4061**	**4120**	**4349**	**3963**	**3925**	**3714**	**3827**	**3832**	**4090**	**4109**	**3907**

Appendix 1, Cont'd (Unit: %)

	Week	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Don't Want to Work	**Male**	1	2	2	1	0	3	1	2	2	2	3	1	3	3	3	3	6	2	2	2
	Female	3	3	2	2	2	3	4	2	5	3	3	3	1	4	4	3	5	2	3	5
Sick, Covid-19	**Male**	3	5	3	3	1	1	1	0	1	1	1	1	0	1	0	1	2	1	1	2
	Female	2	2	1	2	2	1	1	1	1	0	2	0	1	4	2	1	1	2	4	2
Childcare	**Male**	0	0	0	2	1	2	1	0	2	1	0	1	0	0	0	1	1	2	0	0
	Female	6	3	6	5	6	5	5	5	6	6	8	5	9	6	4	8	5	8	5	4
Elderly care	**Male**	1	0	1	1	4	1	1	0	1	1	0	2	1	0	1	0	0	1	0	0
	Female	1	1	1	1	2	1	1	1	1	1	2	0	1	0	1	1	2	1	1	2
Covid-19 Concerns	**Male**	1	3	2	3	1	2	1	4	3	2	0	0	1	0	2	2	0	4	1	0
	Female	2	1	1	2	2	3	1	3	2	1	2	1	2	0	2	3	2	1	3	1
Disabled	**Male**	2	2	1	4	4	2	2	5	4	2	3	1	4	1	1	5	3	2	1	2
	Female	2	4	3	2	2	2	4	4	3	3	2	6	3	4	2	2	3	3	5	4
Retired	**Male**	15	15	18	16	18	17	20	20	16	19	21	19	23	17	21	21	20	19	25	22
	Female	23	22	21	21	20	23	23	24	25	27	26	26	25	24	26	23	25	21	23	22
Laid-off, Covid-19	**Male**	7	9	5	9	10	7	9	5	3	2	3	2	6	4	3	2	3	3	2	1
	Female	9	9	6	5	6	5	6	5	3	5	2	4	2	3	3	1	2	3	1	2
Employer Closed, Temp	**Male**	3	3	1	1	1	1	2	3	2	2	3	1	1	2	2	2	0	2	1	0
	Female	1	1	3	2	2	3	1	1	1	1	2	1	2	2	1	1	1	1	1	0
Employer Closed, Perm	**Male**	1	1	0	0	0	0	0	1	1	1	0	3	0	2	1	4	0	0	0	0
	Female	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	2
No transport	**Male**	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	2	0	1
	Female	0	0	0	0	0	0	0	1	0	0	1	1	1	0	1	1	0	0	1	2
Other	**Male**	7	7	10	5	6	7	6	6	7	12	7	7	4	10	9	4	9	11	8	10
	Female	7	7	10	9	8	8	10	6	9	7	9	12	9	10	13	8	9	9	12	13
All		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
N (000s)		**3964**	**3878**	**3713**	**4152**	**3884**	**3833**	**3719**	**3599**	**3732**	**3357**	**3676**	**3423**	**3591**	**3837**	**3597**	**3450**	**3337**	**3685**	**3805**	**3411**

Appendix 2: Income Sources

Source of Spending Needs	Reasons for Not Working for Pay or Profit										
	Don't Want to Work	Sick, Covid-19	Childcare	Elderly Care	Covid-19 Concerns	Disabled	Retired	Laid-off, Covid-19	Employer Closed, Perm	No Transport	Other
Credit Card	51%	18%	34%	25%	11%	19%	41%	26%	21%	0%	27%
Savings	12%	32%	17%	51%	34%	10%	34%	35%	2%	0%	13%
Fam. & Friends	3%	33%	29%	25%	10%	21%	4%	0%	50%	32%	6%
Unemployment Insurance	0%	0%	0%	0%	11%	0%	0%	5%	2%	0%	24%
Stimulus Payments	10%	3%	0%	0%	11%	25%	11%	11%	0%	58%	8%
SNAP	25%	13%	21%	0%	23%	25%	9%	24%	12%	10%	17%
Rental Assistance	0%	0%	0%	0%	0%	1%	2%	0%	12%	0%	5%
N (000's)	131	197	214	25	67	253	1099	184	91	123	587

Note: chi-square = 820: critical = 90.5; $p < 0.05$.