

# Longitudinal Analysis of Labor Market Performance of the Working Poor: Evidence from the 2004 SIPP Panel

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## Abstract

This study uses ten waves of the 2004 Survey of Income and Program Participation (SIPP) data to analyze the labor market performance of the working poor. Specifically, the study attempts to answer two broad questions: 1) What socio-economic characteristics are associated with vulnerability to becoming working poor? and 2) What differences, if any, exist among the working poor in terms of how long they remain employed at the bottom of the labor market? The findings suggest that the socio-economic characteristics of those who are vulnerable to becoming working poor are different from those of the rest of the labor force. Moreover, the working poor themselves constitute a very diverse group in which some members exhibit greater ability to increase their relative earnings. This implies that a one-size-fits-all approach may be ineffective in designing policies to aide those employed at the bottom of the labor market.

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# 1 Introduction

According to the U.S. Census Bureau, in 2007 the working poor constituted approximately 5.1 percent of the United States labor force[6]. While opinions on what it means to be working and what it means to be poor vary widely across the literature,<sup>1</sup> the above number illustrates that there is a significant number of working individuals who are not able to meet a certain agreed-upon standard of living. In the 1990s, debates over welfare reform generated a lot of interest in who these individuals are, as well as in what happens to them over time. Since then, the public's interest in the economic conditions of the working poor has subsided, with the focus shifting to the issues surrounding inter- and intra- race and gender earnings differentials (McCall[12], Browne and Misra[5], Fernandez-Mateo[10], Tomaskovic-Devey et.al.[13]). The problem with this is that these issues, while clearly important, may or may not be reflective of the challenges faced by the working poor as a group. Therefore, analyses studying these issues may not be very helpful in designing effective policies for aiding those employed at the bottom of the labor market.

The studies that have taken up the analysis of the well-being of the working poor have been few and have primarily focused on low-skill individuals. For example, Borjas[4] examines how the race-ethnic composition of low-skill workers has changed over the 1980-2000 period. Similarly, French et.al.[8], Hall[11], and Blank and Shierholz[3] look at patterns of wage growth among low-skill workers. However, what has been missing from these studies is a discussion of how long these low-skill workers remain at the bottom of the labor market (to put it in other terms, whether these individuals are ever successful in improving their *relative*, as opposed to absolute, earnings). This is largely due to the fact that the primary focus of these studies has been on low skill (as opposed to low income) workers, who tend to remain low skilled over long periods of time.

Similarly, in recent years there has been little research on which segments of the population are most vulnerable to becoming working poor, where these individuals work, and how, once they are employed at the bottom of the labor market, their work effort affects the amount of time that they spend as working poor. A report by the Bureau of Labor Statistics[7] on the working poor, Acs et.al.[9], Acs and Nichols[2], and Acs and Loprest[1] address some

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<sup>1</sup>See Acs et.al.[9] for a discussion of some of the competing definitions.

of these questions, but leave larger issues, namely how economic performance of these individuals changes over long periods of time and what factors affect it, unanswered.

This paper contributes to the literature in three ways. First, in a departure from earlier studies, it defines “working poor” as those individuals who are employed at the bottom of the labor market, i.e., the subjects of investigation here are those who are poor in relative, as opposed to absolute, terms. Secondly, the paper uses ten waves of the 2004 Survey of Income and Program Participation (SIPP) Panel to examine the socio-economic characteristics of those who are most vulnerable to becoming working poor (i.e., those who become working poor at least once over a 3-year period), as well as the socio-economic characteristics of individuals at the time when they are actually employed at the bottom of the labor market. Finally, the paper analyzes patterns of upward mobility that exist among the working poor by examining how their relative earnings change over a 36-month period.

The results suggest that individuals who are more vulnerable to becoming working poor differ greatly from the rest of the population in terms of their gender and age composition, level of educational attainment, occupation, and the number of hours worked. Moreover, those who do become working poor differ greatly amongst themselves in terms of their socio-economic characteristics, as well as in terms of their ability to increase their relative earnings. These results suggest that policies adopting a one-size-fits-all approach may be ineffective in helping those employed at the bottom of the labor market.

This paper is organized as follows: Section 2 discusses the data and measurement issues, Section 3 analyzes the socio-economic characteristics of those vulnerable to becoming working poor, Section 4 adopts a more dynamic approach by analyzing what happens to these individuals over time, and Section 5 offers concluding remarks.

## **2 Data and Measurement Issues**

### **2.1 Measuring Economic Performance**

The first question addressed in this study deals with the identity of those who are most vulnerable to becoming working poor. For the purposes of this paper, “working poor” will be defined as follows:

1. An individual between 25 and 65 years old who is employed for at least 27 weeks within a given year and
2. An individual who has at least six months of positive earnings within a given year and
3. An individual who works at least one week within a given month and earns less than 25% of the median<sup>2</sup> for two consecutive months or longer.<sup>3</sup>

The first part of the definition above is consistent with the definition used by the Bureau of Labor Statistics to determine whether a particular individual should be considered a member of the labor force. The analysis has been further limited to individuals who were between 25 and 65 years old during the entire 36-month period under investigation to exclude those who could be still in school or at the end of their working careers. The requirement that a person have at least six months of positive earnings within a given year has been imposed to exclude individuals with marginal attachment to the labor force.

The last condition, namely that a person should both work at least one week within a given month and earn less than 25% of the median for two consecutive months or longer, differs from those commonly used in the literature to define “poverty” in two important respects. The first is that the focus here is on individual, as opposed to household, earnings. The second is that “poor” is defined in terms of one’s relative, as opposed to absolute, position in the labor market. The reason for this is that the focus here is on people employed at the bottom of the labor market, as opposed to on those who are poor in absolute terms. An additional requirement that a person meet this condition for two consecutive months or longer has been imposed for the purpose of excluding individuals who experience a one-time short-term drop in income and thus cannot be truly considered working poor.

The second question addressed in this study, namely whether differences exist among the working poor in terms of their ability to increase their relative earnings, deals with how long individuals remain employed at the bottom of the labor market. In regard to measuring this amount of time, a number of

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<sup>2</sup>Median weekly earnings from the Current Population Survey were used to calculate the earnings threshold for each year.

<sup>3</sup>All monetary values used in this section and throughout the paper have been adjusted for inflation using CPI with 2004 as the base year.

challenges arise. The first is that, even after leaving the ranks of the working poor (to put it in the terms commonly used in the literature, “ending a spell”), individuals may once again find themselves at the bottom of the labor market. Most studies have largely disregarded this possibility by conducting analyses at the spell, as opposed to individual, level. The problem with this approach is that what may appear to be a transition out of “working poor” may simply be a short-term improvement followed by a return to low earnings. A related challenge is that using a month as a unit of measurement for these “spells” makes it difficult to compare individuals in terms of how long they remain working poor. The reason for this is that some individuals may be in the middle of a “spell” in Month 1, while others may become working poor later on in the panel.

In order to deal with these challenges, this study measures the amount of time spent as working poor as the *total* number of months within a given year during which an individual was at the bottom of the labor market. The advantage of measuring the amount of time in such a fashion is that it allows one to capture individual experiences by allowing for the possibility that a person becomes working poor again. In addition, by measuring the amount of time as the *total* number of months spent at the bottom of the labor market (as opposed to the number of months within one spell), it becomes possible to at least somewhat mitigate the problems in comparing individuals whose spells may have started prior to the first month of the panel to those who became working poor later on.

The 36-month time span used in this study was divided into three 12-month periods, starting with the first month of the panel. All individuals who met the criteria for working poor at least once in year  $t$  were then labeled working poor in year  $t$ .

## 2.2 Data

This study uses waves 1 through 10 of the 2004 Panel of the Survey of Income and Program Participation (SIPP).

SIPP is a nationally representative longitudinal survey that tracks individuals over a period of two to four years (depending on the length of the panel). Since one of the primary goals of SIPP is to collect data on program participation, it is designed to oversample low-income households, which makes it a particularly useful dataset for analyzing labor market performance of the working poor.

The SIPP sample is randomly divided into four rotation groups, and one rotation group is interviewed every month. The design of SIPP is such that respondents are repeatedly interviewed on a wide range of topics, which include, but are not limited to, income, employment, program participation, and education. This set of questions that is asked every wave is known as the Core SIPP. In addition, there exist a number of topical modules that collect in-depth information in specific subject areas, such as fertility and employment history. Only the Core SIPP is used in this study.

The 2004 SIPP Panel consists of 12 waves (or 48 months). The first set of interviews were conducted in February 2004,<sup>4</sup> and the last interviews were conducted in January 2008. This study uses the first 36 months of the panel, which means that, after realigning respondents by calendar month, it covers the period from January 2004 to December 2006. It has to be noted that, due to budget cuts, the sample size was cut by 53 percent in Wave 9, which decreased the amount of data available for analysis in addition to normal sample attrition. Finally, since calendar year weights are not available for individuals missing waves, only those individuals who were in the panel for the entire 36-month period were included in the final sample.

The descriptive statistics are provided in Table 1. All means and percentages reported in Sections 3 and 4, as well as in the accompanying tables, have been weighted by the corresponding panel weights (since each individual can represent up to several thousand population units, weighting ensures that the resulting estimates are nationally representative). In addition, all variances and standard errors have been calculated with the use of replicate weights, since, due to the complex sample design of SIPP, variances and standard errors calculated in a traditional fashion would *underestimate* the true variability of the population.

## 3 Who are the Working Poor?

### 3.1 Who is likely to become Working Poor?

Approximately 21.45 percent<sup>5</sup> of individuals who were in the labor force between January 2004 and December 2006 could be classified as “vulnerable to

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<sup>4</sup>Respondents who were interviewed in February 2004 provided information on the period covering October 2003 to January 2004.

<sup>5</sup>Standard error is equal to 0.57 percentage points.

Table 1: Descriptive Statistics

Variable name	Time period	Mean	Median	Standard error of the mean
12-month Earnings	2004	13929.97	9206.18	646.59
	2005	14492.23	9643.76	720.46
	2006	14458.31	9732.96	611.33
Average Hours Worked	2004	34.18	37.67	0.42
	2005	33.16	37.33	0.41
	2006	33.39	38.00	0.45
Number of Weeks with a Job	2004	50.00	52.00	0.15
	2005	50.72	52.00	0.11
	2006	50.80	52.00	0.12
12-month Earnings	2004	10521.91	6505.31	903.37
	2005	9673.03	6362.96	395.24
	2006	9728.24	6147.99	424.39
Average Hours Worked	2004	31.37	33.33	0.61
	2005	30.20	32.33	0.65
	2006	30.36	33.00	0.61
Number of Weeks with a Job	2004	49.98	52.00	0.21
	2005	50.82	52.00	0.13
	2006	50.57	52.00	0.18

Table 2: Age and Gender Distribution: Individuals Vulnerable to Becoming Working Poor vs. the Rest of the Labor Force

Vulnerable to Becoming Working Poor	Gender	Age				Total
		25-34	35-44	45-54	55-65	
No	Male	14.00 (0.36)	18.92 (0.38)	16.27 (0.38)	7.59 (0.27)	56.79 (0.46)
	Female	9.86 (0.36)	12.94 (0.35)	14.06 (0.32)	6.35 (0.28)	43.21 (0.46)
No Total		23.87 (0.51)	31.86 (0.43)	30.33 (0.45)	13.94 (0.40)	100
Yes	Male	9.77 (0.85)	11.98 (0.78)	11.90 (0.86)	9.65 (0.77)	43.30 (1.28)
	Female	13.15 (0.87)	18.41 (1.10)	15.44 (0.77)	9.70 (0.74)	56.70 (1.28)
Yes Total		22.93 (1.17)	30.38 (1.06)	27.34 (1.13)	19.35 (1.11)	100

becoming working poor,” in a sense that they met the criteria for working poor outlined on pp. 3-4 at least once during this 3-year period (for example, someone who was working poor only in 2004 would be considered “vulnerable” during the entire period covered by this study, even though she was not working poor in 2005 and 2006). This subsection examines the socio-economic characteristics of these individuals and compares them to those of the rest of the labor force. In other words, the focus of this subsection is on the identity of those who are vulnerable to becoming employed at the bottom of the labor market, as opposed to on those who are working poor at a specific point in time.<sup>6</sup>

Tables 2-5 display some of the demographic characteristics of these individuals. In particular, they show that women are particularly vulnerable to becoming working poor: while 43.21 percent of those in the non-working poor in the labor force between January 2004 and December 2006 were female, females constituted 56.70 percent of those who were working poor at least once within this 3-year period.<sup>7</sup> This vulnerability is especially pro-

<sup>6</sup>This means that the percentage of those who are working poor at a given point in time is different from the percentages cited in this subsection.

<sup>7</sup>Unless otherwise noted, all comparisons made in this paper are statistically significant at the 0.10 level of significance.



Table 3: Household Type: Individuals Vulnerable to Becoming Working Poor vs. the Rest of the Labor Force

Vulnerable to Becoming Working Poor	Household Type				Total
	Both Husband and Wife	Male Householder	Female Householder	Other	
No	67.57 (0.60)	9.16 (0.28)	16.86 (0.48)	6.41 (0.21)	100.00
Yes	63.82 (1.21)	9.62 (0.69)	19.56 (1.00)	7.00 (0.48)	100.00

Table 4: Levels of Educational Attainment: Individuals Vulnerable to Becoming Working Poor vs. the Rest of the Labor Force

Vulnerable to Becoming Working Poor	Level of Educational Attainment				Total
	High School or Less	Some College or Associate's Degree	Bachelor's Degree	Graduate or Professional Degree	
No	28.86 (0.78)	36.10 (0.72)	21.98 (0.65)	13.06 (0.57)	100
Yes	36.62 (1.42)	35.56 (1.27)	17.05 (1.09)	10.76 (0.81)	100

Table 5: Race: Individuals Vulnerable to Becoming Working Poor vs. the Rest of the Labor Force

Vulnerable to Becoming Working Poor	Race				Total
	White	Black	Asian	Other	
No	83.26 (0.41)	10.68 (0.39)	3.28 (0.24)	2.76 (0.25)	100
Yes	84.02 (0.92)	9.88 (0.75)	2.58 (0.46)	3.52 (0.51)	100

Table 6: Number of Weeks with a Job: Individuals Vulnerable to Becoming Working Poor vs. the Rest of the Labor Force

Vulnerable to Becoming Working Poor	Number of Weeks with a Job		Total
	27 up to 40	40 up to 52	
No	2.03 (0.14)	97.97 (0.14)	100
Yes	5.36 (0.43)	94.64 (0.43)	100

Table 7: Average Number of Hours Worked: Individuals Vulnerable to Becoming Working Poor vs. the Rest of the Labor Force

Vulnerable to Becoming Working Poor	Average Number of Hours Worked				Total
	0 up to 20	20 up to 30	30 up to 40	Over 40	
No	3.22 (0.21)	4.47 (0.26)	13.36 (0.38)	78.94 (0.53)	100
Yes	15.64 (0.94)	16.77 (0.87)	21.64 (0.98)	45.95 (1.51)	100

Table 8: Number of Months Spent with a Disability: Individuals Vulnerable to Becoming Working Poor vs. the Rest of the Labor Force

Vulnerable to Becoming Working Poor	Number of Months				Total
	Zero	1 - 4	5 - 8	9 - 12	
No	95.12 (0.31)	1.85 (0.13)	0.95 (0.09)	2.08 (0.19)	100
Yes	86.08 (0.86)	3.40 (0.29)	2.87 (0.30)	7.65 (0.62)	100

Table 9: Occupation: Individuals Vulnerable to Becoming Working Poor vs. the Rest of the Labor Force

Vulnerable to Becoming Working Poor	Occupation					Total
	Administrative	Sales	Service	Other	Self-Employed	
No	14.51 (0.48)	8.33 (0.38)	11.04 (0.48)	61.86 (0.72)	4.26 (0.26)	100
Yes	10.32 (0.71)	8.11 (0.69)	17.72 (1.01)	42.01 (1.34)	21.85 (1.08)	100

nounced among female householders: compared with the rest of the labor force, the percentage of female householders is approximately 2.7 percentage points higher among those vulnerable to becoming working poor.

Individuals in the 55-65 age category and those who are less educated<sup>8</sup> also appear more likely to become working poor. According to Table 2, the percentage of workers in this age category is 5.41 percentage points higher among those who are vulnerable to becoming working poor compared to the rest of the labor force. According to Table 4, the percentage of those with only a high school diploma or less is 7.76 percentage points higher among those vulnerable to becoming working poor.

According to Table 5, race does not appear to be a factor in who is likely to become working poor, since the distribution of individuals by race is not statistically different for the two groups.<sup>9</sup>

Tables 6-9 illustrate some of the key differences in the employment characteristics of the two groups. In particular, they show that those likely to become working poor typically work fewer weeks within a year (94.64 percent work 40-52 weeks compared to 97.97 percent for the rest of the labor force). The percentage of those who work part-time is also higher among these individuals: 15.64 percent work 0 up to 20 hours, compared to 3.22 percent for the rest of the labor force.

Those who are vulnerable to becoming working poor are also more likely to have a disability that inhibits their ability to work, and, when compared with the rest of the labor force, they are more likely to have a disability that

<sup>8</sup>For each calendar year, the “level of educational attainment” is defined as the highest degree held at the beginning of the year.

<sup>9</sup>This is possibly due to the fact that in this study “poverty” is defined as a relative, as opposed to an absolute, measure.

affects them for a long period of time: as Table 8 illustrates, 95.1 percent of individuals who were in the labor force during the 3-year period under investigation had no disabilities that affected their ability to work, while this was true for only 86.06 percent of those likely to become working poor. In a similar fashion, 7.65 percent of those vulnerable to becoming working poor indicated that they were disabled for a long period of time (9 to 12 months within a given year), while only 2.08 percent of the rest of the labor force indicated the same. Finally, those vulnerable to becoming working poor seem to be much more concentrated in the service sector: 17.72 percent were employed in the service sector compared to 11.04 percent for other members of the labor force.

### 3.2 Who are the Working Poor?

This subsection addresses the question of whether some individuals, once they become working poor, are better positioned to improve their relative standing in the labor market compared to other individuals.<sup>10</sup> In order to answer this question, the working poor have been divided into two groups: those whose incomes were above the median<sup>11</sup> in 2004 ( $T = 1$ ) and those whose incomes were below the median in 2004. Even though all of these individuals have low incomes relative to the rest of the population, for ease of reference below these groups are referred to as the “high-income group” and the “low-income group” respectively.

Tables 10-13 display some of the differences in demographic characteristics that exist between these two groups. In particular, Table 10 shows that women are disproportionately concentrated in the low-income group: 68.99 percent of individuals in the low-income group were female (compared to 45.87 percent for the high-income group). Table 11 also illustrates that female householders are more likely to be found in the low-income group and more likely to remain working poor longer within a given year.

Table 12 shows that the less educated among the working poor also tend to be concentrated in the low-income group, while the high-income group has a larger percentage of college graduates.

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<sup>10</sup>Thus, unlike the previous subsection, the analysis here focuses strictly on the socio-economic characteristics of individuals at the time when they are actually employed at the bottom of the labor market.

<sup>11</sup>The median was calculated using 2004 incomes of all individuals who became working poor at least once between January 2004 and December 2006.

Table 10: Age and Gender Distribution among the Working Poor

Lower half of low income distribution	Gender	Age				Total
		25-34	35-44	45-54	55-65	
No	Male	11.35 (1.35)	15.12 (1.37)	15.57 (1.41)	12.09 (1.39)	54.13 (2.03)
	Female	10.51 (1.16)	14.20 (1.51)	13.24 (1.44)	7.93 (1.17)	45.87 (2.03)
No Total		21.85 (1.77)	29.32 (1.87)	28.81 (1.84)	20.02 (1.71)	100
Yes	Male	5.62 (0.84)	8.35 (1.17)	9.38 (1.27)	7.66 (1.00)	31.00 (1.85)
	Female	15.45 (1.51)	22.87 (1.78)	17.66 (1.25)	13.01 (1.31)	68.99 (1.85)
Yes Total		21.07 (1.70)	31.22 (1.92)	27.04 (1.84)	20.67 (1.65)	100

Table 11: Household Types among the Working Poor

Lower half of low income distribution	Total Number of Months Spent as Working Poor	Type of Household				Total
		Both Husband and Wife	Male Householder	Female Householder	Other	
No	Less than 6 Months	56.62 (1.80)	8.42 (1.21)	12.97 (1.25)	6.03 (0.96)	84.05 (1.37)
	More than 6 Months	11.48 (1.30)	1.20 (0.36)	1.68 (0.41)	1.59 (0.44)	15.95 (1.37)
No Total		68.10 (1.89)	9.62 (1.22)	14.65 (1.33)	7.63 (1.18)	100
Yes	Less than 6 Months	28.04 (1.57)	4.90 (0.73)	11.41 (1.06)	2.55 (0.47)	46.91 (1.83)
	More than 6 Months	33.31 (1.84)	4.37 (0.85)	12.65 (1.28)	2.76 (0.50)	53.09 (1.83)
Yes Total		61.35 (1.88)	9.27 (1.10)	24.06 (1.71)	5.31 (0.70)	100

Table 12: Level of Educational Attainment by the Working Poor

Lower half of low income distribution	Total Number of Months Spent as Working Poor	Level of Educational Attainment				Total
		High School or Less	Some College or Associate's Degree	Bachelor's Degree	Graduate or Professional Degree	
No	Less than 6 Months	22.47 (1.74)	28.98 (1.85)	18.52 (1.51)	14.08 (1.43)	84.05 (1.37)
	More than 6 Months	4.36 (0.84)	6.42 (1.19)	3.26 (0.73)	1.91 (0.51)	15.95 (1.37)
No Total		26.83 (2.14)	35.40 (2.44)	21.79 (1.73)	15.99 (1.55)	100
Yes	Less than 6 Months	19.90 (1.21)	18.18 (1.41)	5.80 (0.83)	3.02 (0.70)	46.91 (1.83)
	More than 6 Months	26.36 (1.83)	16.88 (1.56)	7.33 (1.02)	2.52 (0.51)	53.09 (1.83)
Yes Total		46.26 (2.00)	35.06 (2.01)	13.13 (1.43)	5.54 (0.95)	100

Table 13: Race Distribution among the Working Poor

Lower half of low income distribution	Total Number of Months Spent as Working Poor	Race			Total
		White	Black	Other	
No	Less than 6 Months	72.99 (1.77)	5.95 (0.95)	5.10 (0.83)	84.05 (1.37)
	More than 6 Months	13.67 (1.30)	1.57 (0.50)	0.72 (0.35)	15.95 (1.37)
No Total		86.66 (1.43)	7.52 (1.10)	5.82 (0.95)	100
Yes	Less than 6 Months	37.96 (1.85)	6.30 (0.86)	2.65 (0.55)	46.91 (1.83)
	More than 6 Months	43.89 (2.03)	6.18 (1.09)	3.02 (0.56)	53.09 (1.83)
Yes Total		81.85 (1.69)	12.48 (1.46)	5.67 (0.92)	100

Only three race categories are used here to avoid disclosure of personally identifiable information.

Table 14: Number of Weeks with a Job among the Working Poor

Lower half of low income distribution	Total Number of Months Spent as Working Poor	Number of Weeks with a Job		
		27 up to 40	40 up to 52	Total
No	Less than 6 Months	2.55 (0.56)	81.50 (1.46)	84.05 (1.37)
	More than 6 Months	0.77 (0.38)	15.18 (1.35)	15.95 (1.37)
No Total		3.32 (0.71)	96.68 (0.71)	100
Yes	Less than 6 Months	4.08 (0.60)	42.83 (1.77)	46.91 (1.83)
	More than 6 Months	3.15 (0.53)	49.94 (1.80)	53.09 (1.83)
Yes Total		7.23 (0.82)	92.77 (0.82)	100

Table 15: Average Hours Worked by the Working Poor

Lower half of low income distribution	Total Number of Months Spent as Working Poor	Average Hours Worked per Week				Total
		0 up to 20	20 up to 30	30 up to 40	40 or more	
No	Less than 6 Months	5.79 (0.91)	10.09 (1.29)	17.09 (1.92)	54.36 (2.28)	87.33 (1.44)
	More than 6 Months	3.37 (0.85)	3.02 (0.79)	1.95 (0.57)	4.33 (0.94)	12.67 (1.44)
No Total		9.16 (1.29)	13.11 (1.41)	19.03 (1.99)	58.69 (2.42)	100
Yes	Less than 6 Months	8.44 (1.06)	10.89 (1.11)	14.56 (1.31)	14.57 (1.35)	48.46 (2.21)
	More than 6 Months	24.79 (1.94)	12.89 (1.28)	6.82 (0.98)	7.04 (1.21)	51.54 (2.21)
Yes Total		33.23 (2.10)	23.78 (1.55)	21.38 (1.59)	21.61 (1.90)	100

Table 16: Number of Months with a Disability by the Working Poor

Lower half of low income distribution	Total Number of Months Spent as Working Poor	Number of Months with a Disability			Total
		Zero	1 - 8	9 - 12	
No	Less than 6 Months	74.10 (1.59)	6.31 (0.93)	3.63 (0.77)	84.05 (1.37)
	More than 6 Months	13.59 (1.19)	1.32 (0.36)	1.04 (0.33)	15.95 (1.37)
No Total		87.69 (1.27)	7.63 (0.95)	4.68 (0.79)	100
Yes	Less than 6 Months	40.11 (1.78)	3.79 (0.56)	3.01 (0.49)	46.91 (1.83)
	More than 6 Months	39.26 (1.87)	3.71 (0.58)	10.12 (1.60)	53.09 (1.83)
Yes Total		79.37 (1.78)	7.50 (0.78)	13.13 (1.61)	100

Only three race categories are used here to avoid disclosure of personally identifiable information.

Table 17: Occupations of the Working Poor

Lower half of low income distribution	Total Number of Months Spent as Working Poor	Occupation					Total
		Administrative	Sales	Service	Other	Self-Employed	
No	Less than 6 Months	6.31 (0.80)	6.25 (1.03)	6.75 (0.96)	40.10 (2.07)	24.64 (1.87)	84.05 (1.37)
	More than 6 Months	1.80 (0.71)	1.32 (0.45)	2.00 (0.51)	4.08 (0.66)	6.74 (0.88)	15.95 (1.37)
No Total		8.12 (1.11)	7.58 (1.20)	8.75 (1.20)	44.18 (2.13)	31.37 (2.14)	100
Yes	Less than 6 Months	4.47 (0.60)	3.65 (0.56)	11.48 (1.10)	17.75 (1.44)	9.56 (1.11)	46.91 (1.83)
	More than 6 Months	6.42 (1.11)	4.75 (0.96)	14.75 (1.47)	15.53 (1.33)	11.64 (1.29)	53.09 (1.83)
Yes Total		10.90 (1.20)	8.40 (1.11)	26.23 (1.81)	33.28 (1.99)	21.20 (1.78)	100



Finally, there exist substantial differences in terms of how long members of each group (high income and low income) remain working poor: according to Table 11, only 15.95 percent of those who were starting out with higher incomes were working poor for 6 months or longer, while the percentage of those who were working poor for 6 months or longer in the low income group was 53.09 percent. However, these differences do not seem to be driven by race<sup>12</sup>: previous subsection showed that blacks were no more vulnerable to becoming working poor than whites. Table 13 shows that there also does not exist sufficient evidence to believe that blacks tend to remain at the bottom of the labor market longer once they actually become working poor.<sup>13</sup>

Tables 14-17 illustrate some of the differences that exist among the working poor in terms of their general employment characteristics. Table 14 shows that those with higher incomes are more likely to work 40-52 weeks within a given year: 96.68 percent of those in the high-income group worked 40-52 weeks, compared to 92.77 percent for the low-income group (even though the percentage of those holding jobs for most of the year is very large for both groups). However, the difference between the average number of hours worked throughout the year is substantially more pronounced for the two groups: 58.69 percent of individuals in the high-income group worked 40 hours per week or more, compared to 21.61 percent for the low-income group.

Table 16 suggests that some of the differences in the number of hours worked may be partially explained by the fact that those in the low-income group are much more likely to have a disability; they are also more likely to have a disability that inhibits their ability to work for a long period of time. Thus, while those vulnerable to becoming working poor are, as a group, more likely to be disabled (Table 8), Table 16 shows that these individuals are disproportionately concentrated in the low-income group and are likely to remain working poor for longer periods of time.

In the previous subsection it was noted that those vulnerable to becoming working poor are much more likely to be employed in the service sector (Table 9). Table 17 shows that these individuals are disproportionately concentrated in the low-income group, while those in the higher-income group are more likely to be employed in “Other” sectors.

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<sup>12</sup>As has been mentioned before, this may be due to the fact that this study looks at those who are employed at the bottom of the labor market, as opposed to on those who are poor in absolute terms.

<sup>13</sup>Once again, this is only true within a given year. Estimates presented in this subsection do not necessarily reflect individual performance over longer periods of time.

Table 18: Trajectories of Labor Market Performance

Trajectory Type	Approach 1			Approach 2		
	Time 1	Time2	Time3	Time 1	Time2	Time3
Occasional	1*	0	0	0	0	<6
Occasional	0	1	0	0	0	≥6
Occasional	0	0	1	0	<6	0
Occasional				0	≥6	0
Occasional				0	<6	<6
Occasional				<6	0	0
Occasional				≥6	0	0
Occasional				<6	<6	0
Occasional				<6	0	<6
Downward	1	1	0	0	<6	≥6
Downward	0	1	1	0	≥6	<6
Downward	1	0	1	<6	0	≥6
Downward				<6	≥6	0
Downward				<6	≥6	<6
Downward				<6	<6	≥6
Downward				<6	<6	<6
Downward				≥6	0	<6
Downward				≥6	<6	0
Downward				≥6	<6	<6
Persistent	1	1	1	≥6	≥6	≥6
Persistent				≥6	≥6	0
Persistent				≥6	0	≥6
Persistent				≥6	≥6	<6
Persistent				≥6	<6	≥6
Persistent				<6	>6	≥6
Persistent				0	≥6	≥6

\*1 means that the individual was working poor in time period  $t$ .

## 4 Labor Market Performance of the Working Poor over Time

By focusing on the labor market performance of the working poor within a given time period (i.e., within one year), the previous section demonstrated that substantial differences exist among individuals who are employed (as opposed to vulnerable to being employed) at the bottom of the labor market. But the fact that the socio-economic characteristics of these individuals in time  $t$  tend to differ based on whether earnings were “high” or “low” in  $t=1$  also suggests that significant differences may exist in terms of how well those vulnerable to becoming working poor perform over longer periods of time. Being working poor may be a one-time experience for some individuals, while others may remain working poor longer or constantly move in and out of employment at the bottom of the labor market.

The purpose of this section is to utilize the panel structure of SIPP to analyze patterns of upward mobility among the working poor by studying their relative earnings over a 36-month period. This will be accomplished in two ways: Subsection 4.1 will offer an analysis of “labor market performance trajectories” followed by the working poor, while Section 4.2 will utilize transition matrices to study how exit probabilities change for the working poor over time.

### 4.1 Labor Market Performance Trajectories Followed by the Working Poor

This subsection defines “labor market performance trajectories” as the sequence of individual’s labor market outcomes over 3 time periods. In particular, the focus here is on three types of trajectories. The first is followed by those who are only occasionally employed at the bottom of the labor market. The second trajectory is followed by those who may not be persistently working poor but nevertheless experience strong pressures to become employed at the bottom of the labor market. Finally, the third trajectory is followed by those who remain working poor for prolonged periods of time.

Table 18 offers two alternative approaches to defining these three trajectories. In the first approach the 36-month time span is divided into three 12-month time periods. Each individual who met the criteria for working

Table 19: Trajectory Type

Trajectory Type	Approach 1	Approach 2
Occasional	58.36 (1.60)	66.68 (1.58)
Downward	22.76 (1.26)	17.20 (1.09)
Persistent	18.88 (1.23)	16.12 (1.18)
Total	100.00%	100.00%

poor at least once in time  $t$  was assigned “1” in time  $t$ .<sup>14</sup> The three trajectories are defined as follows: individuals who are assigned “1” in each time period are classified as persistently poor, individuals who are assigned “1” in one time period only are classified as occasionally poor, while individuals who are assigned “1” in two (though not necessarily consecutive) time periods are said to experience pressures to become employed at the bottom of the labor market. For example, a sequence of (0,0,1) would indicate that an individual was working poor some time during  $t=3$ , and this person would be classified as someone who is only occasionally employed at the bottom of the labor market.

One limitation of this approach is that it does not allow one to distinguish individuals who were working poor for most of the year from those who only spent two or three months at the bottom of the labor market. The second approach, also described in Table 18, counters this limitation by defining the three trajectories based on the actual *length* of time that the person was working poor: in each time period a person can be classified as either not working poor, working poor for less than 6 months, or working poor for 6 months or more. For example, a sequence of ( $\geq 6$ ,  $\geq 6$ ,  $\geq 6$ ) would indicate that the individual in question spent 6 months or more at the bottom of the labor market in each  $t$ , and such a person would be classified as someone who is persistently working poor.

Tables 19 - 24 illustrate some of the socio-economic characteristics of individuals who follow each trajectory type. One general observation that can be made is that the figures associated with the second approach typically provide more conservative estimates of the percentage of persistently poor

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<sup>14</sup>This need not mean that this individual was employed at the bottom of the labor market during the *entire* 12-month period under investigation. In a similar fashion, this need not mean that the individual experienced only a single “spell” during this time period.

Table 20: Trajectory Type, by Race

Race	Trajectory Type	Approach 1	Approach 2
White	Occasional	58.41 (1.67)	66.87 (1.60)
	Downward	22.89 (1.40)	16.96 (1.18)
	Persistent	18.70 (1.34)	16.17 (1.32)
	Total	100.00%	100.00%
Black	Occasional	54.39 (4.57)	61.94 (4.58)
	Downward	22.61 (3.86)	20.10 (3.83)
	Persistent	23.01 (3.83)	17.96 (3.54)
	Total	100.00%	100.00%
Asian	Occasional	68.48 (6.62)	71.59 (6.98)
	Downward	13.12 (5.61)	14.12 (5.53)
	Persistent	18.40 (6.14)	14.28 (5.43)
	Total	100.00%	100.00%
Other	Occasional	60.90 (7.37)	71.62 (5.71)
	Downward	27.02 (6.78)	17.20 (4.67)
	Persistent	12.09 (3.56)	11.18 (3.85)
	Total	100.00%	100.00%

compared to the first approach. Also, differences among groups tend to be smaller for estimates associated with the second approach.

In general, those who are working poor only occasionally constitute the largest group - this is true for both approaches. Table 20 indicates that differences between whites and blacks are statistically insignificant. Estimates for “Asian” and “Other” should be interpreted with caution due to the small number of observations in some of the cells.

Table 21 shows males are much more likely to become working poor only occasionally, while females are more likely to remain employed at the bottom of the labor market longer.<sup>15</sup>

Table 22 shows that those with more education are significantly less likely to remain working poor for prolonged periods of time. Also, those who are older are much more likely to be persistently working poor, although this trend is much more pronounced for estimates associated with the first approach (which makes it easier for individuals to be considered “persistently working poor”). Finally, Table 24 shows that those with disabilities are not only more likely to be found among the working poor within a given time period (as discussed in the previous section), but they are also more likely to remain working poor for prolonged periods of time: the percentage of persistently working poor among those who spent 9 to 12 months with a disability in  $t=1$  is equal to 41.11 percent according to the first approach and 43.60 percent according to the second approach. These estimates are significantly higher than estimates for individuals who spent little or no time with a disability in  $t=1$ .

## 4.2 Transition Matrices

This subsection utilizes transition matrices to analyze how probabilities of remaining working poor change over time. In order to do this, the 36-month period under investigation was divided into 6 six-month periods. Then, in order to calculate these simple conditional probabilities, the following question was answered: given that a person was working poor in  $t=1$ , what is the probability that they were also working poor in  $t_i$  (such as  $i=3$ ). In other words, a series of conditional probabilities,  $P(\text{Working poor in } t = i \mid \text{Working poor in } t=1)$ , have been calculated. For example, given that a person

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<sup>15</sup>This does not necessarily mean that these individuals are living in poverty, since only *individual*, as opposed to family, earnings are being considered.

Table 21: Trajectory Type, by Gender

Gender	Trajectory Type	Approach 1	Approach 2
Male	Occasional	63.12 (2.22)	72.41 (2.05)
	Downward	22.41 (1.85)	16.44 (1.58)
	Persistent	14.47 (1.60)	11.15 (1.19)
	Total	100.00%	100.00%
Female	Occasional	54.72 (1.98)	62.30 (2.00)
	Downward	23.02 (1.60)	17.79 (1.42)
	Persistent	22.26 (1.86)	19.92 (1.73)
	Total	100.00%	100.00%

was working poor in  $t=1$ , the probability of that person being working poor in  $t=5$  is equal to 0.42 (Table 25)

It has to be noted that this approach suffers from a number of limitations. In particular, these conditional probabilities do not imply that a person was continuously employed at the bottom of the labor market. For example, even though the conditional probability that someone is working poor in  $t=5$  may be equal to 0.42, the individual in question could stop being working poor in periods 2 through 4 and/or spend only a few months as working poor in  $t=5$ . At the same time, even though the use of six 6-month periods provides more insight into dynamics of well-being of the working poor, it also results in fewer individuals in each category, which may produce inconsistent results. Nevertheless, transition probabilities provide an alternative way of defining long term labor market performance and therefore are important in assessing the robustness of results discussed in the previous subsection.

Tables 25 - 30 illustrate probabilities of remaining working poor for different socio-economic groups. The general trend that emerges from these tables is that the probability of being working poor in time  $t$  (given that a person was working poor in  $t=1$ ) decreases as  $t$  becomes larger. However, as Tables 26 - 30 illustrate, this decrease is much more pronounced for groups with certain socio-economic characteristics. Even by time period 6 women

Table 22: Trajectory Type, by Education

Education	Trajectory Type	Approach 1	Approach 2
High School Degree or Less	Occasional	55.72 (2.51)	62.65 (2.46)
	Downward	22.17 (2.00)	16.77 (1.86)
	Persistent	22.11 (2.24)	20.58 (2.07)
	Total	100.00%	100.00%
Some College	Occasional	59.67 (2.40)	67.92 (2.33)
	Downward	22.21 (2.00)	17.23 (1.76)
	Persistent	18.12 (1.82)	14.84 (1.79)
	Total	100.00%	100.00%
College Degree	Occasional	56.41 (3.45)	67.05 (3.25)
	Downward	27.67 (3.06)	18.14 (2.57)
	Persistent	15.92 (2.47)	14.81 (2.19)
	Total	100.00%	100.00%
Graduate or Professional Degree	Occasional	66.27 (4.08)	75.82 (3.47)
	Downward	18.64 (3.19)	17.10 (3.06)
	Persistent	15.09 (2.55)	7.09 (2.03)
	Total	100.00%	100.00%



Table 23: Trajectory Type, by Age

Age Group	Trajectory Type	Approach 1	Approach 2
25 - 34	Occasional	65.28 (2.80)	73.10 (2.57)
	Downward	19.81 (2.21)	12.91 (1.87)
	Persistent	14.92 (2.22)	13.99 (2.13)
	Total	100.00%	100.00%
35 - 44	Occasional	57.58 (2.69)	65.41 (2.61)
	Downward	23.76 (2.11)	20.58 (1.84)
	Persistent	18.66 (1.93)	14.01 (1.64)
	Total	100.00%	100.00%
45 - 54	Occasional	55.66 (2.99)	63.77 (2.72)
	Downward	22.96 (2.64)	17.63 (2.30)
	Persistent	21.38 (2.18)	18.59 (2.17)
	Total	100.00%	100.00%
55 - 65	Occasional	53.61 (2.93)	63.86 (2.90)
	Downward	25.10 (2.69)	16.93 (2.41)
	Persistent	21.30 (2.55)	19.22 (2.59)
	Total	100.00%	100.00%

Table 24: Trajectory Type, by the Amount of Time with a Disability in  $t=1$

Number of Months	Trajectory Type	Approach 1	Approach 2
Zero	Occasional	60.19 (1.75)	68.68 (1.63)
	Downward	22.79 (1.42)	17.36 (1.18)
	Persistent	17.02 (1.24)	13.96 (1.17)
	Total	100.00%	100.00%
1 - 4 Months	Occasional	51.27 (6.78)	61.92 (7.32)
	Downward	29.14 (5.79)	23.14 (6.50)
	Persistent	19.59 (5.33)	14.94 (4.71)
	Total	100.00%	100.00%
5 - 8 Months	Occasional	53.73 (7.60)	60.37 (7.58)
	Downward	22.25 (6.16)	18.27 (5.57)
	Persistent	24.02 (6.22)	21.35 (6.21)
	Total	100.00%	100.00%
9 - 12 Months	Occasional	40.63 (5.50)	45.93 (6.15)
	Downward	18.26 (4.80)	10.47 (3.15)
	Persistent	41.11 (6.21)	43.60 (6.14)
	Total	100.00%	100.00%

Table 25: Probability of Remaining Working Poor

	Time Periods Compared				
	P1 and P2	P1 and P3	P1 and P4	P1 and P5	P1 and P6
Working Poor, All	0.6441 (0.0192)	0.4945 (0.0199)	0.4379 (0.0195)	0.4236 (0.0197)	0.4143 (0.0198)

still exhibit higher conditional probabilities (0.45 for females, as opposed to 0.37 for males). At the same time, differences in exit probabilities by race are statistically insignificant.

According to Table 28, the conditional probability of remaining working poor is higher for those who only have a high school diploma or less (when compared to those who have completed some college work), although differences become statistically insignificant by  $t=6$ . Comparisons for other groups produce mixed results, in a sense that while those with more education tend to have higher exit probabilities, in most cases the differences are statistically insignificant. The same is true for age: According to Table 29, those who are younger have lower probabilities of remaining working poor, although in most cases these differences are, once again, statistically insignificant.

Finally, it appears that exit from the “working poor state” is made particularly difficult for those with disabilities that inhibit their ability to work for a long period of time: Among those who were disabled for 9 to 12 months in  $t=1$ , probabilities of remaining working poor do not decrease nearly as much as they do for all the other groups: in time period 2, conditional probability is equal to 0.8102, and by time period 6, it only decreases to 0.6976.

In general, the results presented in this subsection seem to be in line with conclusions reached in Section 4.1, in a sense that there appears to be a lot of variability in terms of how well the working poor perform over longer periods of time. In addition, the finding that women tend to remain employed at the bottom of the labor market longer compared to men is consistent across methods. The same is true for those with disabilities. At the same time, there does not exist evidence to believe that race is a factor in determining whether someone remains employed at the bottom of the labor market, which seems to hold independently of which method is used. The results for other socio-economic groups tend to be more mixed: While according to the first method there is general indication that those who are older, as well as those who are less educated, tend to remain working poor longer, the differences are not statistically significant when the second method is used.

## 5 Conclusions

This paper set out to answer two key questions. The first concerned the identity of those who are vulnerable to becoming working poor, as well as the identity of those who become working poor. The second concerned long

Table 26: Probability of Remaining Working Poor, by Race

	Time Periods Compared				
	P1 and P2	P1 and P3	P1 and P4	P1 and P5	P1 and P6
White	0.6422 (0.0209)	0.4925 (0.0219)	0.4408 (0.0216)	0.4181 (0.0233)	0.4143 (0.0213)
Black	0.6671 (0.0542)	0.5552 (0.0664)	0.4748 (0.0542)	0.4528 (0.0576)	0.4154 (0.0611)

Table 27: Probability of Remaining Working Poor, by Gender

	Time Periods Compared				
	P1 and P2	P1 and P3	P1 and P4	P1 and P5	P1 and P6
Male	0.5766 (0.0314)	0.4320 (0.0278)	0.3589 (0.0253)	0.3989 (0.0294)	0.3670 (0.0298)
Female	0.6920 (0.0237)	0.5389 (0.0261)	0.4940 (0.0276)	0.4411 (0.0277)	0.4478 (0.0280)

Table 28: Probability of Remaining Working Poor, by Education

Education	Time Periods Compared				
	P1 and P2	P1 and P3	P1 and P4	P1 and P5	P1 and P6
High School Diploma or Less	0.6680 (0.0286)	0.5350 (0.0317)	0.4702 (0.0309)	0.4773 (0.0306)	0.4473 (0.0317)
Some College	0.6045 (0.0364)	0.4555 (0.0333)	0.4076 (0.0311)	0.3739 (0.0314)	0.3957 (0.0359)
College Degree	0.7153 (0.0448)	0.4943 (0.0511)	0.4525 (0.0454)	0.4030 (0.0480)	0.3841 (0.0463)
Graduate or Professional Degree	0.5526 (0.0659)	0.4617 (0.0595)	0.3785 (0.0592)	0.4119 (0.0660)	0.3900 (0.0625)

Table 29: Probability of Remaining Working Poor, by Age

Age	Time Periods Compared				
	P1 and P2	P1 and P3	P1 and P4	P1 and P5	P1 and P6
25 to 34	0.5966 (0.0416)	0.4694 (0.0425)	0.3910 (0.0412)	0.3914 (0.0409)	0.3867 (0.0396)
35 to 44	0.6291 (0.0366)	0.4995 (0.0308)	0.4181 (0.0329)	0.4062 (0.0340)	0.4079 (0.0333)
45 to 54	0.7010 (0.0349)	0.5390 (0.0401)	0.4722 (0.0374)	0.4339 (0.0371)	0.4297 (0.0390)
55 to 65	0.6492 (0.0457)	0.4556 (0.0435)	0.4820 (0.0393)	0.4787 (0.0417)	0.4381 (0.0431)

Table 30: Probability of Remaining Working Poor, by Months with a Disability in  $t=1$

Months	Time Periods Compared				
	P1 and P2	P1 and P3	P1 and P4	P1 and P5	P1 and P6
Zero	0.6222 (0.0220)	0.4703 (0.0241)	0.4080 (0.0223)	0.3947 (0.0229)	0.3824 (0.0218)
1 to 4	0.6753 (0.0829)	0.4856 (0.0973)	0.4861 (0.0949)	0.3471 (0.0911)	0.4540 (0.1011)
5 to 8	0.7124 (0.0844)	0.5081 (0.0875)	0.4363 (0.0912)	0.4630 (0.0907)	0.4453 (0.0836)
9 to 12	0.8102 (0.0520)	0.7380 (0.0558)	0.7152 (0.0600)	0.7391 (0.0551)	0.6976 (0.0716)

term performance of those who are vulnerable to becoming working poor.

In regard to answering the first question, the major finding is that those vulnerable to becoming working poor differ substantially from the rest of the population and amongst themselves, both in terms of their employment and socio-demographic characteristics. In regard to answering the second question, the major finding is that employment at the bottom of the labor market tends to be temporary for some, while others, such as women and disabled, remain working poor longer.

Further research needs to be conducted to test the extent to which the findings of this paper are sensitive to alternative definitions of the “working poor” and/or alternative definitions of “long-term economic performance.” For example, this paper used monthly incomes to classify individuals as working poor. However, it is possible for an individual to experience a temporary cutback in hours or be on an alternative pay schedule, which would not necessarily make that person working poor. Thus, sensitivity analysis needs to be conducted using yearly incomes as thresholds. Seasonality analysis also need to be conducted to see if there exists a seasonal pattern to when different types of individuals become working poor.

Furthermore, since the focus of this paper is on those employed at the bottom of the labor market, the individuals studied here may not necessarily be “poor” in the traditional understanding of the term. Some may, in fact, be poor, while others may work fewer hours due to the presence of a high earner in the household. More work needs to be conducted to see how many of those employed at the bottom of the labor market are actually poor. Similarly, sensitivity analysis needs to be conducted by imposing stricter re-

quirements on how “working” is defined. The challenge here is that using higher thresholds to define “working” may eliminate those who are disabled, move in and out of employment, and/or are unable to obtain full-time work - i.e., higher thresholds may eliminate the very individuals whose short-term and long-term labor market performance needs to be more carefully understood.

Finally, additional techniques, such as life tables, need to be applied to better understand economic performance of the working poor over time.

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