

HHS Public Access

Author manuscript *Soc Sci Q.* Author manuscript; available in PMC 2018 March 01.

Published in final edited form as:

Soc Sci Q. 2017 March ; 98(1): 16–36. doi:10.1111/ssqu.12284.

Dynamics of Urban Informal Labor Supply in the United States

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Abstract

Objective—This study provides the first panel data estimates of informal work in the US and explores relationships between informal- and regular-sector participation among urban parents of young children.

Methods—I examine determinants of informal-sector participation in five waves of data from the Fragile Families and Child Wellbeing Study using probit, pooled Tobit, and fixed effects OLS models.

Results—Approximately 53 percent of urban fathers and 32 percent of urban mothers with young children pursue informal work over a nine-year period. Informal work most often occurs in conjunction with regular work. Workers who work in both sectors in the same year are more likely to be non-minority race, higher education (mothers only), own credit cards, and work in skilled white- or blue-collar occupations. Workers who ever participate in only the informal sector are more likely to be younger, to have health limitations, and to have never worked in the regular sector. Informal participation spells are shorter than regular-sector participation spells and are associated with changes in regular-sector participation and occupation but not most other life events.

Conclusion—Consistent with past work, informal work among parents of young children is widespread across socioeconomic groups. Transitions in and out of the informal sector are strongly related to changes in regular-sector employment and occupation. The results suggest that regular-sector participation provides access to informal work opportunities.

I. Introduction

The estimated magnitude of the informal economy in the United States was between 7 and 10 percent of official gross national product during the late 1990s and 2000s (Dell'Ano and Solomon 2008; Schneider 2005; Schneider and Enste 2000), but we know relatively little about the dynamics of informal labor supply. This paper uses recent panel data on participation in informal economic activity from the Fragile Families and Child Wellbeing Study to examine factors associated with workers' participation and transitions in and out of the informal sector.

Past studies of informal work in the US have used cross-sectional data and focused on small geographic areas and select populations, such as welfare and working poor mothers in four

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US cities (Edin and Lein 1997a, 1997b), low-income mothers in Boston, Chicago and San Antonio (Lein, Benjamin, McManus, and Roy 2005), Mexican immigrants in California (Marcelli, Pastor, and Joassert 1999 and Marcelli 2004, 2010), workers in rural Pennsylvania (Jensen, Cornwell, and Findeis 1995, Slack and Jensen 2010) and rural Wisconsin (Larrivee and Schaffer 2007), and the self-employed on New York's Lower East Side (Snyder 2004). Although each of these studies provides significant insights into the informal work activities of a particular group at a particular place and time, none provide a nationally representative description of informal economic activity in the United States. Furthermore, by looking only at particular groups, the studies presuppose which groups are most likely to have high informal labor force participation (Joassert 2010).

This study updates and significantly expands our knowledge about informal economy participation by examining a much broader population and by incorporating panel data, which permits examination of transitions in and out of informal work. The paper uses data from the Fragile Families and Child Wellbeing Study, the first large-scale panel survey that includes data on informal work in the US, and results are nationally representative of parents of children born 1998–2000 in cities with population over 200,000.

Results reveal widespread participation in informal work: over the course of the nine-year panel, 53 percent of urban fathers with young children and 32 percent of urban mothers with young children report working informally. Between 16 and 30 percent of urban fathers and 11 to 15 percent of urban mothers report some form of informal work each year. The rates of informal participation in the panel data are much higher than revealed by many previous cross-sectional studies. Furthermore, informal work frequently occurs in conjunction with regular-sector employment. Men generally work in the regular and informal sectors simultaneously, but women are equally likely to work in both sectors or in only the informal sector. Consistent with past work summarized by Williams (2010), probit regressions show that informal work among urban US parents of young children is widespread across socioeconomic groups and is not limited to marginalized populations. Workers who work informally in conjunction with regular work are more likely to be non-minority race, higher education (mothers only), own credit cards, and work in skilled white- or blue-collar occupations. Workers who ever participate in only the informal sector are more likely to be younger, to have health limitations, and to have never worked in the regular sector.

The panel data reveal that informal economy participation spells are short but intense. Conditional on working in the informal sector, individuals work informally for 16–23 hours per week and 18–20 weeks per year on average. Consistent with the short spells, urban parents transitions into and out of the informal sector frequently. Panel fixed effects regressions show that transitions into the informal sector are strongly related to changes in regular-sector employment and occupation. Working in the regular sector is associated with a 2 to 6 percentage point decrease in the probability of informal work. I do not find an association between informal work transitions and other life events, including changes in family structure, incarceration, health, and social program receipt.

Simultaneous participation in the regular and informal sectors and the relationship between regular-sector occupation changes and participation in informal work both suggest that

regular-sector positions provide individuals with access to short-term informal-sector opportunities. Although participation in informal work is driven in part by individuals who face barriers to work in the regular sector or who have exited the formal sector entirely, many informal workers appear to use the skills or relationships they gain through regular employment to take advantage of alternative earning opportunities.

II. Theories of Participation in Informal Economic Activity

Hart (1973) introduced the term "informal sector" in the scholarly literature in a study of Ghanaian rural-to-urban migrants. Subsequent work in both developing- and developed-country contexts used varying definitions of the informal, hidden, underground, or shadow economy. In 2003, the 17th International Conference of Labour Statisticians formally defined the informal sector as consisting of licit but unreported economic activity, i.e., activities that are inherently legal but are unreported to tax, social security, and labor law agencies (ILO 2003). The European Commission (2007) uses a similar definition of undeclared work in official communication and this definition is common in scholarly work (Williams 2010).

Participation in the informal economy has been studied in both developed and developing country contexts and has traditionally been divided between the exclusion/marginality view and the exit view, as summarized by Chen (2012), Perry and Maloney (2007), and Williams (2010). The exclusion lens views informal-sector workers and small firms as engaging in marginal activities because they are prevented from participating in the regular sector by a segmented labor market, strict or costly regulations, or other cost differences associated with informality. In contrast, the exit lens draws on the work of Hirschman (1970) and views participation in informal economic activity as a deliberate choice to avoid regulation and formality. Feige (1997), Gërxhani (2004a, 2004b), and Williams, Horodnik and Windebank (2015) draw on work in transition economies and comparisons across EU countries to advance an alternative view, drawing on institutional theory and public choice, that informal activity rises due to conflict between formal and informal institutions, but empirical tests (Gërxhani 2004b, Williams et al 2015) do not clearly distinguish between this theory and alternatives.

Recent work acknowledges the role of both exit and exclusion. Chen (2012) and Perry and Maloney (2007) argue that exclusion is more applicable to off-the-books work for employers while exit more accurately characterizes informal self-employment. Women may be more likely to face exclusion but also may be more likely to exit due to desire for flexibility in balancing work and household responsibilities (Perry et al 2007, Lein et al 2005). Exit may be more relevant in developed economies (Williams et al 2015) but even among developing countries there is wide variation in history, legal systems, and institutions that may affect the relative importance of exit and exclusion (Perry et al 2007).

Public finance economists, in the tradition of Allingham and Sandmo's (1972) seminal paper, have viewed informal work in the US and Canada as a strategic response to differences in returns to work across sectors and have focused on the effects of tax rates and penalties in developed countries: see Slemrod and Yitzhaki (2002) for a review of the

literature. Empirical studies generally find that higher tax and audit rates do increase behaviors associated with the informal sector. While the public finance literature is crucial for understanding the effects of tax and social policy, its focus on single factors does not provide a complete explanation of informal sector participation.

This paper uses panel data on transitions in and out of informal work to examine an alternative possibility: workers may use regular-sector employment to access informal opportunities. Regular-sector experience can provide workers with skills, connections, and other resources that facilitate opportunities for informal work, particularly of a part-time or project-based nature. This is consistent with Williams' (2010: 14) review of the literature finding that "informal work chiefly benefits those already in employment." This contrasts strongly with the exclusion view in which informal work is a second-best alternative. Unlike the exclusion view, the opportunities depend on participation in the regular sector. Below, I examine the relationship between regular and informal sector participation and the key characteristics associated with informal-sector participation across individuals and within individuals over time.

III. Data

The Fragile Families and Child Wellbeing Survey, conducted by Princeton University's Center for Research on Child Wellbeing, was designed to study family situations following welfare reform. A total of 4898 hospital births occurring between 1998 and 2000 in twenty U.S. cities with populations of over 200,000 were sampled and separate mother and father interviews were obtained at birth and at the child's first, third, fifth, and ninth birthdays. The resulting labor force participation data spans years 1997 to 2009. Non-marital births were oversampled relative to marital births. Reichman, Teitler, Garfinkel, and McLanahan (2001) provide detailed information about the sampling scheme.

When sample weights are used, results are nationally representative of parents with babies born in 1998–2000 in cities with population over 200,000. Although this is a restricted sample, the Fragile Families study provides a wider view of the informal economy than we have seen to date and provides the first survey data on transitions in and out of informal economic activity. The data is particularly valuable for studying urban prime-age working fathers. Results for new mothers are not generalizable to other women because the data shows that mothers' work patterns change significantly during the years following the birth of a child.

The Fragile Families survey captures information about both regular work and about illegal activity and legal activities that are not reported to tax or regulatory authorities. Survey professionals distinguished between regular and informal work by instructing respondents to include regular income from self-employment or their own business as regular-sector work. Respondents were then asked, "We are interested in finding out about some ways, other than regular work, in which people make money. This kind of activity may be paid for in cash, or done in exchange for meals, or clothing, or a place to live, or something else. Please tell me if you have done any of the following in the last twelve months: work off the books or under the table? (waves 1–3 only); work in your own business?; sell or deliver drugs, engage in

prostitution, or do other kinds of hustles?; or do anything else to earn money?" Respondents reported their form of compensation, earnings, weeks worked per year, and average hours worked per week for both regular and each type of informal work. Fathers were asked these questions in all five waves and mothers answered these questions for the four waves after the baseline.

I follow the ILO (2003) definition of informal work as licit but unreported work as closely as possible. I define respondents as working informally if they report monetary compensation for working off the books, in their own business, or doing anything else to earn money. I do not include drug sales, prostitution and other hustles. I also exclude informal work for which respondents receive only non-cash compensation. Only 3.4 percent of fathers and less than 0.5 percent of mothers report illicit activity across the entire panel. Excluding informal work done for non-cash compensation has similarly minimal effects: including it increases overall participation in the informal economy by only 1 (fathers) to 1.5 (mothers) percentage points.

IV. Methods

I use probit models to examine the characteristics of individuals who work informally at some point in the Fragile Families panel. I regress an indicator for ever participating in informal work on a vector of control variables, including age at baseline; race indicators; indicators for ever married during the survey, ever cohabiting, and ever having children in the household; education at baseline; ever worked in regular sector; average household income from sources other than respondent's labor; ever incarcerated; social safety net participation; car ownership and use of financial services; times moved; health limitations; and type of regular-sector occupation.

I next take advantage of the panel data to investigate the frequent transitions in and out of the informal sector. I use fixed effects regressions to model within-individual variation in participation in informal work over time. In addition to time variation in the variables described above, I control for time-varying state economic conditions: state unemployment rates, minimum wages, and refundable state earned income tax credits. The individual fixed effects control for all time-invariant observable and unobservable individual characteristics. Last, I use pooled Tobit and panel fixed effects regressions to examine annual hours worked in the informal sector.

V. Descriptive Analysis: Informal Work Patterns

Table 1 shows unweighted and weighted summary statistics for the full Fragile Families sample. The average age of respondents at baseline was 25 in the raw data and 27 after weighting. Three quarters of the respondents were either black or Hispanic. The unweighted sample is disproportionately low-education, with 34 percent respondents reporting less than a high-school education in the first wave. Average educational attainment increased over the survey period.

Although the survey design specified that only one quarter of the births in the sample were to married couples, an additional 44 percent of fathers and 36 percent of mothers surveyed report cohabiting. Respondents averaged 2 biological children in the first wave. At baseline,

fathers' unweighted average household income was \$50,837 (all income in 2011 \$), very close to 1999 median household income for central city households of \$48,030 (US Census 2004). The weighted income is similar to the 1999 median for all US households of \$55,109 but below the median for family households of \$66,820, reflecting fathers who live apart from their children. Mothers' average household income was lower than fathers' at \$43,320, but well above the 1999 median for female householders with no spouse present of \$35,326. Nineteen percent of mothers reported receiving TANF benefits during the past year.

Fathers were most likely to work in occupations relating to precision production, craft, or repair (25 percent at baseline); service (18 percent); or as handlers, equipment cleaners, or laborers (13.5 percent). Mothers were most likely to work in service (33 percent at baseline) or administrative support (24 percent). By the fifth wave, nearly one quarter of fathers in the sample had spent time in jail, in line with high incarceration rates for black and Hispanic men. Nearly one fifth of mothers in the sample received TANF and 45 percent received food stamps.

Table 2 shows that most urban fathers work a regular job. Annual regular-sector participation ranges between 83 and 88 percent across waves and overall fathers are employed in the regular sector in 86 percent of person-year observations (column 1). (Statistics by wave are available from the author.) Ninety-six percent of urban fathers worked in the regular sector at some point during the survey period (column 2). Regular-sector labor force participation is lower for mothers and only 76 percent of urban mothers worked in the regular sector at some point. It is important to remember, however, that all mothers in the survey have at least one child under age 9 in every wave. Mothers' labor force participation does increase as their children age, rising from 51 percent in wave 2 to 61 percent in wave 5.

Informal-sector participation rates are high. Fathers report participated in informal work in 23 percent of person-year observations (Table 2 column 1) with rates varying from 18 to 31 percent across waves. Mothers report informal work in 14 percent of person-year observations. These participation rates are similar to those estimated by O'Neill (1993) and somewhat higher than those found by Lemieux, Fortin, and Frechette (1994). Edin and Lein (1997a) found much higher annual participation rates of 32–52 percent among the subpopulation of welfare mothers and 20–37 percent of low-income wage-reliant mothers in particular cities, but their study concentrates on low-income mothers rather than all urban mothers. Informal participation rates are lowest in waves 4 and 5 when the survey did not ask explicitly about off-the-books work.

The unique longitudinal aspect of the Fragile Families data reveals that an impressive 53 percent of urban fathers and 32 percent of urban mothers of young children work informally during the nine-year survey. Edin and Lein (1997a) warn that it is difficult to get accurate responses to survey questions about informal work because of the incentives to hide income information from welfare caseworkers and other officials. There is no way to know the extent of underreporting in the Fragile Families data, but the possibility of underreporting makes the high rates of informal work participation found in the data particularly noteworthy.

Overall, fathers reported working in both sectors in 18.8 percent of father-year observations, but work exclusively in the informal sector in only 4 percent of observations. It appears that, for urban fathers of young children, informal work is almost always undertaken in conjunction with regular work. This may explain why Rich, Garfinkel, and Gao (2007) do not find evidence that strong child support enforcement increases annual hours of work in the underground: if fathers continue to work in the regular sector, they will still be subject to child support enforcement. These fathers have neither fully exited the regular labor market nor are they excluded from it.

The patterns for mothers of young children are quite different. In contrast to the experience of women in developing countries (International Labour Office 2014), mothers report lower levels of informal-sector participation than men and mothers are equally likely to work in both sectors or in only the informal sector. Because of the differences in informal work by gender, I conduct the rest of the analysis separately for men and women. This contributes further to the literature, as Windebank and Williams (2010: 82) observe that "the work relations and motives underpinning the informal work undertaken by men and women [in developed nations] have not been investigated." Edin and Lein (1997a, 1997b) find that mothers may use the informal sector to shield income from welfare agencies, an exit motivation. Women might also be less likely to work in jobs or occupations that allow substitution between informal and regular work or women could be unable to work as many hours as men due to childcare or home production demands. This is consistent with the findings of Windebank and Williams (2010), who use data from the English Localities Survey and report that men's informal work is generally more similar to regular work, while women's is more like unpaid work and is often a formal way to trade favors among friends, neighbors, and family members. Gender differences should be interpreted cautiously, however, because they may be specific to stage of life and the period following birth of a child.

Off-the-books activities are the most common type of work for urban fathers in each wave, with 29 percent working under the table at some point during the survey and 13–16 percent working under the table in each wave. Over a quarter of urban fathers operate their own business. Individuals may change how they define their work from one wave to another, especially because the survey discontinued the "off the books" option after wave 3.

Columns 3–8 of Table 2 show cumulative participation rates by sector and race across all waves of the survey. White- and blue-collar fathers have similarly high rates of informalsector participation at 57 and 55 percent respectively, while 46 percent of service-worker fathers work informally across the panel. Fathers' informal sector participation is higher for whites (59 percent) than for blacks and Hispanics (53 and 48 percent). The key differences across regular-sector occupation types become visible when examining how fathers combine regular and informal work. White-collar fathers not only have the highest rates of informal work, but they are most likely to combine regular and informal work in the same year. They have the lowest rates of off-the-books work. They are disproportionately likely to work informally in their own business at 32 percent. Fathers in the service industry, on the other hand, are about equally likely to work only in the informal sector but are much less likely to work in both the regular and informal sectors, suggesting that it is much more difficult to

substitute between regular and informal work in service industry jobs. Blue-collar fathers fall somewhere between white-collar and service industry fathers regarding work in both sectors vs. work in the informal sector only, but their informal work is characterized by a high rate of off-the-books work, with 36.5 percent of blue-collar fathers reporting off-the-books work over the three-year period this question was asked.

The divide between white-collar and service work in terms of regular vs. informal participation does not occur for mothers. Mothers in the service industry are slightly more likely to work informally than white-collar mothers (37 vs. 31 percent) and are more likely to work in the informal sector or not work during some point in the panel. Mothers in service are also more likely to work off the books than mothers in white-collar jobs, but have similar rates of working informally in their own business. The sample of mothers in blue-collar jobs is quite small (n=264) but their labor force participation is characterized primarily by low rates of regular-sector work rather than unusual patterns of informal work.

These results suggest that certain types of regular-sector work are more likely to provide specific kinds of informal-sector opportunities, with white-collar work facilitating self-employment and blue-collar work disproportionately providing opportunities off the books. This contrasts with the exclusion view of informal work, in which lack of opportunities in the regular sector drive informal-sector participation, or the exit view in which rejection of regular-sector constraints or restrictions drives informal work.

Table 3 shows that, conditional on working in the regular sector, men work 46–49 hours per week on average while women work between 35 and 41 hours: this holds across subgroups. Informal work represents a serious time commitment on the part of many urban families. Fathers and mothers who work informally average 22 and 16 hours per week respectively, with service workers and Hispanic mothers working more informal hours. Interestingly, these stints of informal work appear comparatively short-lived. While fathers report working in the regular sector for 47 weeks annually on average, they report working off the books for only 12 weeks annually and in their own business 31 weeks annually. Mothers' stints in the informal sector are comparable and also shorter than their spells in the regular sector. White-collar fathers and Hispanic mothers and service industry mothers have comparatively long stints. These short stints might suggest project-based informal opportunities that workers access through their regular-sector participation, but this cannot be determined with the data. Alternately, it could indicate failure of informal enterprises or exhaustion on the part of workers trying to maintain participation in both sectors.

Table 3 also reports average reported earnings for regular work and informal work, conditional on participation. The summary statistics suggest that average hourly wages in most of the informal sector are similar to, and sometimes higher than, those in the regular sector. Interestingly, when the same data is examined on a wave-by-wave basis rather than pooling the data across waves, informal wages are slightly lower than regular-sector wages. Average informal hourly wages are almost always well above the minimum wage for all gender, race, and occupation categories. These wages are similar to those found among informal day laborers in New York by Melendez, Theodore and Valenzuela (2010), who point out that the hourly rate is high but that the unstable nature of day laboring results in

low monthly wages. The high hourly wages also reflect the predomination of coincident regular-sector and informal-sector work and the prevalence of informal work across occupations, and further suggest that many informal opportunities can best be accessed through regular-sector participation.

Tables 2 and 3 show that participation rates in informal work are high, especially among men, but informal work spells are short relative to spells in the regular sector. This is consistent with the high cumulative participation rate in the informal economy over the five-year survey period, in which half of all fathers and over one fourth of mothers worked informally. The short spells and high cumulative participation suggest frequent transitions in and out of the informal sector.

Figure 1 explores transitions between sectors across waves. Approximately three-quarters of workers who work only in the regular sector in any wave continue to work exclusively in that sector in the next wave. Compared to them, workers who work in both sectors or in the informal sector only are much more likely to work informally in the next period. Working in only the informal sector is associated with much higher rates of subsequent non-work. Interestingly, this is not true in the opposite direction: those who work in neither sector in one wave are less likely to work informally in the subsequent wave than the population at large. For both fathers and mothers, working in both sectors in one wave is associated with lower rates of work in neither sector in subsequent waves, suggesting that those who work in both sectors are strongly positioned to access future opportunities.

The descriptive statistics suggest that exclusion from the formal sector does not fully explain participation in informal economic activity. First, informal work typically occurs simultaneously with regular-sector work. Second, informal work is widespread, with more than half of prime-age urban fathers working informally at some point over the course of a decade. Third, transitions in and out of the informal sector occur frequently, but working in both sectors is associated with the lowest rates of neither-sector work in subsequent waves. Combined, these patterns indicate that regular-sector work provides access to valuable and flexible informal opportunities for some workers but need not result in exit from the regular sector. I next turn to a further examination of participation in informal work and factors driving transitions in and out of the informal sector.

VI. Regression Results

Table 4 shows the average marginal effects from probit regressions of ever working informally on a vector of personal characteristics using data from waves 1–4 (fathers) and 2–4 (mothers). Results using waves 1–5 (and consequently excluding occupation data) are similar. Coefficients from OLS regressions are nearly identical to the probit marginal effects. Results are shown for ever working informally, ever working in both regular and informal sectors in the same year, and ever working only in the informal sector.

Age at baseline is negatively related to informal work overall and only informal work, but not to working in both sectors. Because the sample is based on births, this may be picking up characteristics of parents who are older when they have children rather than the relationship

of age to informal work, although Lemieux, Frechette, and Fortin (2004) do find that age is negatively related to informal work. Ever-married mothers are 4 percentage points more likely to report informal work than their never-married counterparts, and fathers who live with children at some point in the sample period are significantly more likely to report informal work. Not having a high-school degree at baseline is associated with a 5 percentage point increase in the probability of informal work for fathers.

Hispanic fathers are less likely to report working informally than their white counterparts. This effect is mitigated by controlling for citizenship: citizen fathers are 12–15 percentage points more likely to report informal work. If this indicates reporting differences across citizen and non-citizen Hispanics, then the true rate of informal work is even higher than reported. Hispanic mothers are 7 to 8 percentage points less likely to report working informally, all else equal. Black mothers are also 4 to 5 percentage points less likely to report working informally than their white counterparts, with no effect for mothers who work in both sectors.

Ever working in the regular sector has no significant effect on informal work for fathers overall, which is expected due to the very high rates of mens' participation in regular work and consequent lack of identifying variation. No effect is found for women either. Ever working in the regular sector reduces the probability of working only in the informal sector by 14 percentage points for men and 9 percentage points for women. Fathers who work in either white- or blue-collar jobs are 3 percentage points more likely to work informally than service workers, and these effects are driven by fathers who work in precision production/ craft/repair, as handlers/equipment cleaners/laborers, and in professional/technical fields. Mothers who work additional waves in white-collar jobs are 1 percentage point less likely to work informally.

Other indicators of stability and financial sophistication are strongly related to ever participating in informal work. Having a credit card is associated with informal work participation for both men and women, although there is no relationship between having a bank account and informal work. Number of times moved during the panel is also strongly associated with informal participation, with each additional move corresponding to a 1 to 2 percentage-point increase in the probability of informal work. Bruinsma (2005) observes that moving restricts families' access to networks of friends and family who can assist with childcare and that it takes considerable time to establish new networks, which may explain the increased reliance on informal work associated with moving.

Fathers who spend time in jail or prison are 8–11 percentage points more likely to report informal work but the effect for mothers is not significant. Mothers who ever report that their health limits their work are significantly more likely to report informal work, but health limitations affect informal work only for fathers' participation in only informal work. I also find a relationship between reliance on the social safety net and informal work for fathers who ever received food stamps and mothers who ever received food stamps or TANF.

Overall, the results show that different characteristics are associated with informal work done in conjunction with regular-sector work vs. working only in the informal sector. Being

a citizen, having spent time in jail or prison, receiving food stamps, and moving are positively associated with both types of informal work and are consistent with traditional portrayals of informal workers as those excluded from regular-sector work. But other characteristics suggest that many of those who work in both sectors simultaneously are comparatively economically advantaged. Respondents who ever report participating in both regular and informal work in the same year are less likely to be black (fathers only) and Hispanic, more likely to own credit cards, more likely to have some college (mothers only), and fathers are more likely to work in skilled white- or blue-collar occupations such as professional/technical fields or precision production/craft/repair. This is consistent with regular-sector work providing access to additional informal opportunities. In contrast, respondents who ever report participating only in the informal sector are relatively economically disadvantaged. They are more likely to be younger, to have health limitations, and to have never worked in the regular sector. Mothers are more likely to have received TANF.

Next I take advantage of the panel data to investigate individuals' changes in informal work participation over time. Table 5 shows results from panel fixed effects regressions. (Conditional logit models did not converge. Probit marginal effects and OLS coefficients are nearly identical in the ever participate regressions, suggesting that the linearity constraint is not problematic in this context.) Not all variables are available in all waves: column 1 uses data from all waves while other columns introduce variables available only in some waves. These models use only the variation in an individual's informal work activity over time, rather than variations across individuals. A key advantage of this method is that it controls for time-invariant components of individuals' taste for informal work and identifies changes in circumstances that drive informal participation.

The dominant finding of Table 5 is that fathers' informal participation is strongly related to regular-sector job in that wave. Working in the regular sector decreases mothers' informal-sector participation by 2 percentage points, but the results are not significant across all specifications. For fathers, working in a regular job during the past year is associated with a 4 to 6 percentage point reduction in the probability of informal work, consistent with the view that workers turn to the informal sector when regular work is unavailable. But the high rates of employment for fathers mean that the variation in regular work can only explain part of the variation in informal work. Transitions in regular employment *type* also have strong explanatory power: switching to a blue-collar job increases the rate of informal work by 7 percentage points. Results using more detailed occupation indicators (not shown) find large effects for certain blue- and white-collar professions: a 6-percentage point increase in probability for handlers/equipment cleaners/laborers and 10 to 11 percentage point increases for professional/technical workers, salesmen, and workers in precision production/craft/ repair fields. Again, this is consistent with certain regular-sector positions providing access to additional informal earning opportunities.

Although the results for ever working informally in Table 4 show a relationship between informal work and stability variables, including incarceration, social safety net receipt, and credit card access, the panel fixed effects regressions do not show a connection between the timing of these events and informal work. The lack of incarceration effect is particularly

interesting because changes in incarceration status capture changes in barriers to regularsector participation due to employer screening for criminal history. Mothers work less in the informal sector when state minimum wages are higher. I do not find effects for state EITCs or state unemployment rates. Number of moves since the last wave is significantly related to the probability of informal work for fathers, suggesting that informal workers' situations are less stable. The results also do not show effects on informal participation from life events such as marriage or divorce, children living in the household, or changes in health that limit work. Robustness checks (not shown) that included other life events including the death of a parent and transformative religious experience also did not reveal relationships with informal work. The variables most closely related to changes in informal work are measures of regular work participation.

I also examine the intensiveness of informal activity using annual hours of informal work as the dependent variable. (Results are available from the author.) Black mothers report more hours of work conditional on working informally. Working in the regular sector is negatively related to informal hours worked in both the pooled cross-section and panel regressions for fathers, but the results disappear when controls for occupation are added (and, consequently, wave 5 data is excluded). Increases in other household income are associated with fewer hours of informal work. The regressions reveal several relationships between financial assets and service use and informal work intensity. Fathers' access to credit cards is positively associated with informal hours worked across specifications. The reasons are not clear: this may be because informal work and credit spending are both used to smooth income, or credit spending might be used to finance costs associated with setting up small businesses. Mothers with bank accounts work significantly fewer hours in the informal sector, while mothers who own vehicles work significantly more hours.

The strong relationship between fathers' occupation and participation in informal work is less apparent when we examine intensity in the informal sector. The pooled Tobit regressions do not reveal any relationships between occupation and hours. The fixed effects regressions find higher hours for sales and transportation/material moving. However, conditioning on informal participation and controlling for individual fixed effects results in estimates based on the small number of individuals who transition between sectors across waves, which is particularly limiting for mothers due to lower rates of informal work.

VII. Discussion

Data from the largest, most widely representative survey of informal work in the US reaffirms several results from prior studies focusing on subpopulations. Informal work is widespread across socioeconomic groups and is not limited to marginalized populations: although participants in the informal economy are more likely to be young, less-educated, reliant on social safety net programs, and formerly incarcerated, they are also more likely to be white, US citizens, married, work in the regular sector, have a credit card, and (for men) work in professional or technical fields. Men's and women's informal work patterns differ greatly, and while men generally work in the regular and informal sectors simultaneously, women are equally likely to work in both sectors or only the informal sector. The longitudinal data reveal that the population of informal workers is even broader than

previously documented: over half of all urban fathers of young children and more than a quarter of urban mothers work informally at some point during a nine-year period. The data also show the frequent transitions in and out of the informal sector. Only 3 percent of fathers and 2 percent of mothers work informally in all waves. Workers transition in and out of short but intense informal work spells and transitions into the informal sector are correlated with exiting the regular sector and, for fathers, changes in regular-sector occupation.

The attributes associated with informal work include both characteristics associated with marginalized populations and traits associated with strong financial resources and labor market attachment. The apparent tension between these attributes can be largely resolved by separately considering informal work that is undertaken simultaneously with regular work, and complements it, vs. informal work that substitutes for regular-sector work during periods of unemployment. Experience in skilled white- or blue-collar occupations increases the probability of working in both sectors simultaneously, and changes in occupation are one of the few observable individual characteristics correlated with changes in informal work. Different occupations also display different patterns of informal work behavior. This suggests that regular work opens doors to informal work opportunities.

Future work should examine this process in greater detail: to what extent do workers exit the regular sector to pursue new informal opportunities versus using the informal sector to cushion the loss of regular-sector employment? Do workers choose their regular-sector occupation in order to work in both sectors? How does informal work affect wellbeing? If informal work spells end because workers have earned enough to cushion themselves from shocks in regular-sector income, then informal work can effectively supplement family welfare. On the other hand, informal work may decrease wellbeing if the spells end because of failed businesses or exhaustion on the part of workers engaged in both formal and informal work.

The Fragile Families data indicates that urban parents of children born between 1998–2000 earned \$2.2 billion (2011 \$) annually in informal work during the survey period. If other adults are equally likely to work informally, this yields a back-of-the-envelope calculation that indicates that total informal earnings in the US among working-age adults were approximately \$50 billion annually between 1997–2005. This is less than half a percent of GDP, far below the estimated 7–10 percent of GDP that indirect techniques suggest as the size of the informal economy (see, for example, Schneider 2005), although international statistical agencies generally view these estimates as overstated (European Commission 2007). Despite the difference, the magnitude of unreported earnings in the Fragile Families data is still large enough to have serious policy implications. The foregone payroll taxes on these earnings were \$7.6 billion each year, about 1% of payroll tax receipts. Total informal earnings exceeded annual federal spending on each of the Earned Income Tax Credit, Temporary Assistance for Needy Families, and the Supplemental Nutrition Assistance Program during the survey period. Better understanding the effect of informal work on household wellbeing is important for guiding policy and determining whether efforts should concentrate on formalizing informal work or strengthening regular-sector opportunities.

Acknowledgments

The author thanks the editors and reviewers for helpful comments. The author will share all publicly available data and programs for replication purposes. Persons interested in obtaining Fragile Families contract data should see http://www.fragilefamilies.princeton.edu for further information. The Fragile Families Study was funded by a grant from the Eunice Kennedy Shriver NICHD (#R01HD36916) and a consortium of private foundations.

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Figure 1.

Transitions in and Out of Regular and Informal Work Between Waves

Table 1

Summary Statistics: Fragile Families Data

		Fatl	iers				Mot	hers		
	Unwei	ighted	Weig	chted		Unweighted	_		Weighted	
	Wave 1	Wave 5	Wave 1	Wave 5	Wave 1	Wave 4	Wave 5	Wave 1	Wave 4	Wave 5
Age	25.3	35.1	27.0	36.8	25.3	30.3	34.4	27.1	32.2	36.3
Black	47.4%	48.9%	25.5%	25.1%	47.6%	49.0%	50.0%	22.6%	22.2%	22.5%
Hispanic	27.9%	25.1%	31.6%	31.8%	27.3%	26.4%	25.1%	31.3%	31.5%	31.5%
Education: Less than high school	33.5%	25.7%	26.7%	21.1%	34.7%	26.2%	24.6%	28.6%	24.0%	23.2%
Education: High school or GED	32.4%	30.0%	28.2%	25.7%	30.3%	26.8%	28.2%	30.0%	25.4%	26.2%
Education: Some college	23.0%	30.0%	26.0%	30.6%	24.3%	31.3%	31.8%	19.0%	24.4%	24.6%
Education: 4-year college degree	11.1%	14.3%	19.1%	22.6%	10.7%	15.6%	15.5%	22.4%	26.2%	25.9%
Married	28.1%	39.4%	60.6%	56.6%	24.2%	35.3%	37.8%	60.2%	57.5%	56.2%
Cohabiting	43.8%	13.9%	25.0%	9.3%	36.4%	26.3%	21.4%	19.8%	16.1%	15.9%
Number of biological children	2.1	3.0	2.1	2.9	2.2	2.7	3.8	2.1	2.6	3.7
Household income (2011 \$)	\$50,837	\$59,645	\$59,535	\$73,457	\$43,320	\$44,566	\$47,406	\$56,503	\$57,198	\$60,839
Ever in jail	13.1%	23.9%	7.6%	12.9%		3.3%	8.8%		1.5%	4.3%
Health limits work		13.2%		7.0%		10.2%	12.5%		8.1%	10.8%
Received TANF		4.6%		2.8%		18.9%	13.3%		11.9%	8.0%
Received food stamps		8.6%		5.5%		41.5%	45.7%		28.6%	34.2%
Has bank account		67.8%		80.7%		62.4%	71.5%		73.2%	77.6%
Has credit card		47.5%		60.2%		39.1%	43.7%		53.6%	54.1%
Owns vehicle	64.7%	73.8%	71.1%	82.6%		65.5%	74.4%		73.0%	80.7%
Occupation: Professional/technical	9.1%		11.7%			12.6%			20.2%	
Occupation: Executive/admin/managerial	4.7%		7.4%			6.4%			6.3%	
Occupation: Sales	7.6%		8.0%			15.2%			14.6%	
Occupation: Administrative support	7.3%		6.7%			24.3%			23.8%	
Occupation: Precision production/craft/repair	25.2%		21.9%			1.2%			0.9%	
Occupation: Machine operator/assembly/inspection	4.4%		2.9%			2.8%			2.1%	
Occupation: Transportation/material moving	6.6%		5.8%			0.9%			0.3%	

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	Unwei	ghted	Weig	hted	r	Inweighted			Weighted	
	Wave 1	Wave 5	Wave 1	Wave 5	Wave 1	Wave 4	Wave 5	Wave 1	Wave 4	Wave 5
Occupation: Handler/equipment cleaner/laborer	13.5%		10.3%			3.3%			2.9%	
Occupation: Service	18.1%		17.0%			33.4%			28.8%	
Ν	3830	2652	2726	1900	4897	4139	3515	3442	2927	2569

Author's calculations using the Fragile Families sample weighted to be nationally representative of parents of babies born in 1998–2000 in cities with populations over 200,000.

Participation Rates in Regular and Informal Work

			Ever Regular	Participate Sector Occ	d, by cupation	Ev	er Particip by Race	ated,
	Full Sample, Annual Participation	Full Sample, Ever Participated	White Collar	Service	Blue Collar	White	Black	Hispanic
Fathers	n=11,403	n=2,726	n=1,059	n=514	n=1,519	n=648	n=1,149	n=804
Any Regular	86.2%	96.3%	98.3%	94.3%	95.8%	98.3%	92.2%	97.7%
Any Informal	22.8%	53.2%	56.4%	46.4%	55.3%	58.8%	53.2%	48.4%
Combinations								
Regular Only	67.3%	90.8%	94.1%	89.7%	89.0%	94.4%	84.3%	92.7%
Regular and Informal	18.8%	47.3%	52.2%	37.8%	47.8%	58.1%	37.6%	44.7%
Informal Only	4.0%	12.3%	11.2%	13.0%	14.2%	7.2%	23.7%	7.8%
Neither	9.8%	23.4%	16.9%	32.9%	27.0%	13.2%	36.9%	24.0%
Types of Informal Work								
Off the Books	14.5%	28.6%	22.5%	25%	36.5%	22.3%	33.7%	31.5%
Own Business	9.2%	26.1%	32.0%	17.5%	25.5%	31.5%	27.7%	20.2%
Anything Else to Earn Money	7.4%	23.0%	26.3%	22.0%	19.6%	27.0%	20.9%	21.2%
Mothers	n=11,477	n =3,442	n=2,070	n=1,068	n=264	n=845	n=1,430	n=1,020
Any Regular	56.4%	76.4%	84.2%	80.0%	59.7%	83.7%	77.0%	68.4%
Any Informal	13.5%	31.5%	31.4%	37.4%	29.9%	38.8%	30.4%	26.9%
Combinations								
Regular Only	49.6%	72.0%	79.9%	74.2%	56.0%	77.6%	71.9%	65.8%
Regular and Informal	6.8%	18.2%	19.0%	21.9%	9.6%	22.8%	18.6%	13.6%
Informal Only	6.7%	18.0%	16.4%	23.9%	21.8%	20.7%	18.1%	17.9%
Neither	36.9%	61.9%	57.4%	70.3%	90.7%	58.0%	61.2%	66.3%
Types of Informal Work								
Off the Books	7.3%	11.0%	10.0%	17.6%	6.1%	11.9%	11.4%	10.7%
Own Business	6.3%	16.4%	16.5%	18.6%	18.7%	20.7%	14.7%	14.2%
Anything Else to Earn Money	4.7%	12.9%	14.0%	12.7%	10.8%	17.8%	14.4%	8.6%

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Author's calculations using the Fragile Families sample weighted to be nationally representative of parents of babies born in 1998–2000 in cities with populations over 200,000. Types of informal work do not sum to total of Any Informal because some individuals engage in multiple types of informal work. Respondents are assigned to a regular-sector occupation category if they work in that occupation category during more than half of observed waves. Author Manuscript

Table 3

Average Hours and Weeks Worked and Annual Earnings in the Regular and Informal Sectors, Conditional on Working in Sector (All Waves Pooled)

Fathers	Overall	White Collar	Service	Blue Collar	White	Black	Hispanic
Usual Hours Per Week							
Regular Sector	47.4	47.7	48.9	47.1	48.9	46.9	45.7
Informal Sector	22.5	18.6	26.4	24.0	23.4	21.9	22.0
Off the Books	21.7	16.1	24.2	24.1	21.9	20.9	23.3
Own Business	23.5	18.6	22.9	29.0	23.4	23.5	24.2
Any Other Way to Earn Money	23.2	20.3	28.8	17.6	22.7	19.1	23.9
Weeks Worked Last Year							
Regular Sector	48.3	49.0	47.1	47.8	49.3	46.2	48.2
Informal Sector	20.4	21.0	15.5	17.4	23.2	18.4	18.5
Off the Books	12.2	12.6	15.9	11.4	8.6	16.0	11.7
Own Business	30.5	25.8	36.8	34.6	33.6	25.7	28.8
Any Other Way to Earn Money	13.5	17.9	9.2	7.3	14.9	11.8	13.3
Annual Earnings (2011 \$)							
Regular Sector	\$60,901	\$84,108	\$41,680	\$40,891	\$84,811	\$39,363	\$39,403
Informal Sector	\$11,914	\$15,616	\$4,862	\$10,503	\$16,567	\$9,398	\$7,664
Estimated Hourly Wage (2011 \$)							
Regular Sector	\$27	\$36	\$18	\$18	\$35	\$18	\$18
Informal Sector	\$26	\$40	\$12	\$25	\$31	\$23	\$19
Mothers	Overall	White Collar	Service	Blue Collar	White	Black	Hispanic
Usual Hours Per Week							
Regular Sector	37.5	38.0	36.2	40.3	35.4	40.8	38.6
Informal Sector	16.2	12.7	23.5	12.2	13.5	15.5	18.8
Off the Books	17.5	12.8	22.4	14.1	17.3	18.8	18.2
Own Business	18.6	11.2	32.8	<i>T.T</i>	14.7	15.9	19.6
Any Other Way to Earn Money	12.5	13.6	9.7	17.5	10.6	13.8	16.4
Weeks Worked Last Year							

Regular Sector	43.6	43.9	40.2	39.8	43.8	44.3	43.3
Informal Sector	17.7	14.8	21.3	10.1	16.1	17.1	20.9
Off the Books	12.0	13.6	9.8	12.4	10.8	13.3	13.7
Own Business	25.6	18.0	33.2	13.4	22.2	25.8	29.4
Any Other Way to Earn Money	11.0	12.1	11.1	0.6	10.5	13.7	8.6
Annual Earnings (2011 \$)							
Regular Sector	\$35,964	\$42,913	\$20,456	\$16,281	\$41,328	\$29,696	\$30,024
Informal Sector	\$4,265	\$3,352	\$5,505	\$2,084	\$5,006	\$2,715	\$4,616
Estimated Hourly Wage (2011 \$)							
Regular Sector	\$22	\$26	\$14	\$10	\$27	\$16	\$18
Informal Sector	\$15	\$18	\$11	\$17	\$23	\$10	\$12

200,000. White-collar jobs are in Author's calculations using the Fragile Framilies sample weighted to be nationally representative of parents of babies born in 1998–2000 in cities with populations over 200,000. White-collar jobs excutive/administrative/managerial, professional/techinical, sales, or administrative support fields. Blue-collar jobs are in precision production/craft/repair, machine operator/assembly/inspection, transportation/material moving, or handler/equipment cleaner/laborer fields.

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	Fathers:	Ever Particip	ated in	Mothers:	Ever Particip	ated in
	Any Informal	Informal & Regular	Informal Only	Any Informal	Informal & Regular	Informal Only
Age (baseline)	-0.05 ** (0.02)	-0.02 (0.02)	-0.04 ** (0.01)	-0.03 * (0.01)	0.01 (0.01)	-0.03 ** (0.01)
Black	-0.01 (0.02)	-0.06 * (0.03)	0.04 (0.02)	-0.04 * (0.02)	-0.01 (0.02)	-0.05^{**} (0.02)
Latino	-0.07 * (0.03)	-0.07* (0.03)	-0.01 (0.03)	-0.08^{**} (0.02)	-0.07 ** (0.02)	-0.07 ** (0.02)
Citizen	0.15^{**} (0.03)	0.12^{**} (0.03)	0.12^{**} (0.03)	0.05 (0.03)	0.03 (0.03)	0.01 (0.02)
Less than HS education (baseline)	0.05^{*} (0.02)	0.03 (0.02)	0.05 ** (0.02)	0.02 (0.02)	-0.00 (0.02)	0.02 (0.01)
Some college (baseline)	0.00 (0.02)	0.02 (0.02)	-0.02 (0.02)	$0.04 \\ (0.02)$	0.05^{**} (0.02)	0.00 (0.02)
College (baseline)	-0.01 (0.03)	-0.02 (0.04)	-0.03 (0.03)	0.03 (0.03)	0.04 (0.03)	-0.03 (0.02)
Ever married	0.01 (0.02)	0.04 (0.02)	-0.05^{**} (0.02)	$0.04 \\ (0.02)$	0.03 (0.02)	0.02 (0.01)
Ever cohabited	0.02 (0.02)	0.05 * (0.02)	0.01 (0.02)	0.00 (0.02)	0.00 (0.02)	-0.01 (0.01)
Ever any children in household	0.07^{*} (0.03)	0.04 (0.03)	0.03 (0.02)	-0.06 (0.12)		-0.07 (0.09)
Ever spent time in jail/prison	0.11^{**} (0.02)	0.08 ** (0.02)	0.09^{**} (0.02)	0.04 (0.03)	-0.03 (0.03)	0.03 (0.02)
Ever had credit card	0.07^{**} (0.02)	0.09 ** (0.02)	-0.02 (0.02)	0.05^{**} (0.02)	0.04 * (0.02)	0.02 (0.01)
Ever had bank account	-0.00 (0.03)	0.04 (0.03)	-0.03 (0.02)	0.01 (0.02)	0.03 (0.02)	-0.00 (0.02)
Ever owned vehicle	-0.02 (0.03)	0.02 (0.03)	-0.01 (0.02)	0.01 (0.02)	0.02 (0.03)	-0.01 (0.02)
Ever received TANF	0.02 (0.03)	-0.00 (0.04)	0.03 (0.02)	0.05^{**}	0.02 (0.02)	0.06**

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	Fathers:]	Ever Particip	ated in	Mothers:	Ever Particip	ated in
	Any Informal	Informal & Regular	Informal Only	Any Informal	Informal & Regular	Informal Only
Ever received food stamps	0.09 ** (0.02)	0.08^{**} (0.03)	0.06 ^{**} (0.02)	0.03 (0.02)	0.00 (0.02)	0.05^{**} (0.02)
Number of times moved during panel	0.01^{**} (0.00)	0.01^{*} (0.00)	$0.01 \\ (0.00)$	0.02^{**} (0.00)	0.02^{**} (0.00)	0.01^{**} (0.00)
Health ever limited work	0.04 (0.02)	0.02 (0.02)	0.06 ^{**} (0.02)	0.06 ^{**} (0.02)	0.04 * (0.02)	0.07^{**} (0.01)
Other household income (2011 \$10,000s)	-0.01^{**} (0.00)	-0.01 ^{**} (0.00)	0.00 (0.00)	-0.00 (00.0)	-0.00 (0.00)	(0.00)
Ever worked in regular sector	0.04 (0.04)		-0.14^{**} (0.03)	0.04 (0.02)		-0.09^{**} (0.02)
Occupation: white-collar job (n waves)	$0.03 ^{**}$ (0.01)	0.03 ** (0.01)	0.01 (0.01)	-0.01 ^{**} (0.01)	-0.01^{*} (0.01)	-0.01 (0.00)

All columns include state fixed effects in which state is determined by residence at baseline. Robust standard errors estimated by the delta method are in parentheses.

0.01 (0.01) 0.078 4301

-0.01 (0.01) 0.029

0.01 (0.01) 0.036 4312

0.01 (0.01) 0.153 3166

 $\begin{array}{c} 0.03^{**}\\ (0.01)\\ 0.044 \end{array}$

 $\begin{array}{c} 0.03^{**} \\ (0.01) \\ 0.058 \end{array}$

Occupation: blue-collar job (n waves)

Pseudo R-squared

z

3553

2993

3174

* significant at 5%; ** significant at 1%. Author Manuscript

Panel Fixed Effects Regressions: Dynamics of Participation in Informal Work

		Fathers			Mothers	
	Waves 1–5	Waves 2-5	Waves 2-4	Waves 2–5	Waves 2-5	Waves 2-4
Age	-0.03 (0.04)	-0.02 (0.05)	0.01 (0.08)	0.05 (0.10)	0.08 (0.10)	0.28 (0.14)
Less than high-school education	0.02 (0.03)	0.01 (0.06)	0.19^{**} (0.07)	0.02 (0.03)	0.03 (0.04)	0.08 (0.05)
Some post-high-school education	0.02 (0.03)	0.03 (0.05)	0.16^{**} (0.06)	-0.01 (0.03)	-0.01 (0.03)	0.02 (0.04)
4-year college degree	0.04 (0.07)	0.04 (0.11)	0.28 (0.15)	-0.03 (0.04)	-0.04 (0.04)	0.02 (0.06)
Currently married	0.01 (0.02)	0.03 (0.02)	0.04 (0.04)	-0.01 (0.01)	-0.01 (0.01)	-0.03 (0.02)
Currently cohabiting with partner	$0.03 \\ (0.01)$	0.03 (0.02)	0.03 (0.03)	0.01 (0.01)	0.01 (0.01)	-0.00 (0.01)
Child living in household	0.01 (0.01)	-0.00 (0.01)	-0.04 (0.03)	0.02 (0.03)	0.02 (0.03)	0.03 (0.04)
Ever spent time in jail	-0.00 (0.03)	0.03 (0.04)	-0.04 (0.07)	0.03 (0.02)	0.02 (0.03)	0.10 (0.06)
State annual unemployment rate	-0.01 (0.00)	0.00 (0.01)	0.02 (0.02)	-0.00 (00.0)	-0.00	0.00 (0.01)
State minimum wage	0.01 (0.02)	-0.02 (0.02)	-0.01 (0.04)	-0.03^{*} (0.01)	-0.04 * (0.01)	-0.06^{*} (0.02)
Refundable state percent of federal EITC	-0.00 (00.0)	0.00(0.00)	(0.00)	0.00 (0.00)	0.00	(0.00)
Worked in regular job in past 12 months	-0.06^{**} (0.01)	-0.04 * (0.02)	-0.06^{*} (0.03)	-0.02^{**} (0.01)	-0.02 (0.01)	-0.02 (0.01)
Respondent or spouse has credit card		-0.00 (0.01)	0.02 (0.02)		0.01 (0.01)	0.01 (0.01)
Respondent or spouse has bank account		0.00 (0.02)	0.01 (0.02)		-0.01 (0.01)	-0.00 (0.01)
Respondent or spouse owns vehicle		-0.01 (0.02)	-0.00 (0.03)		0.02 (0.01)	0.01 (0.01)
Received TANF in last year		0.02 (0.04)	0.09 (0.06)		0.01 (0.01)	-0.01 (0.02)

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		Fathers			Mothers	
	Waves 1-5	Waves 2–5	Waves 2-4	Waves 2–5	Waves 2–5	Waves 2-4
Received food stamps in past year		0.01 (0.02)	0.00 (0.04)		-0.00 (0.01)	-0.01 (0.01)
Number of moves since last wave		0.02^{**} (0.01)	0.02^{*} (0.01)		0.00(0.00)	-0.01 (0.01)
Health limits amount or type of work		-0.01 (0.02)	-0.06 (0.04)		0.00 (0.02)	0.01 (0.02)
Other household income (2011 \$10,000s)			-0.01 ^{**} (0.00)			-0.00
Occupation: white-collar			0.06 (0.03)			-0.00 (0.01)
Occupation: blue-collar			0.07^{*} (0.03)			-0.03 (0.03)
Constant	0.46	0.02	0.65	-0.03	0.10	-0.62
	(0.26)	(0.27)	(0.37)	(0.35)	(0.37)	(0.41)
R-squared	0.031	0.032	0.052	0.00	0.010	0.019
N (individuals)	4095	3674	2849	4531	4416	4130
N (individual-years)	15277	10045	5340	15205	13574	8506
Standard errors clustered at the individual lev	el in parenthes	es.				

Soc Sci Q. Author manuscript; available in PMC 2018 March 01.

* significant at 5%; ** significant at 1%.

Gunter