

Private Financial Transfers, the Great Recession, and Family Context

Aaron Gottlieb
Princeton University

Natasha V. Pilkauskas
Columbia University

Irwin Garfinkel
Columbia University

Aaron Gottlieb (ajgottli@princeton.edu) is a doctoral student in Sociology at Princeton University. Natasha V. Pilkauskas (np2247@columbia.edu) is a Postdoctoral Research Scientist at the Columbia Population Research Center and Columbia University's School of Social Work. Irwin Garfinkel (ig3@columbia.edu) is the Mitchell I. Ginsberg Professor of Contemporary Urban Problems and co-director of the Columbia Population Research Center, at Columbia University's School of Social Work. The authors thank the Eunice Kennedy Shriver National Institute of Child Health and Human Development for supporting this research through Grants R01HD36916-09, R24HD058486, and 5R24HD047879. We also thank the Fragile Families Working Group, Sara McLanahan, Brian Kovak, and Chris Wimer for thoughtful feedback on earlier drafts of this paper and Germán Rodríguez and Dawn Koffman for statistical and software advice.

Abstract

Using longitudinal data from the Fragile Families and Child Wellbeing Study (N=4,701), we studied private financial transfers (PFTs) among mothers with young children during the Great Recession. We explored whether the unemployment rate was associated with PFTs received and whether family income and family structure moderated this association. We found that an increase in the unemployment rate was associated with higher odds of PFT receipt and an increase in PFT dollars received, suggesting that increased financial need, rather than decreased network resources, was the primary determinant of PFT receipt in the Recession. We also found that family income moderated the association between the unemployment rate and PFTs, whereas family structure did not. Specifically, poor and near poor mothers experienced higher odds of PFT receipt in response to high unemployment, whereas mothers with household incomes between two and three times the poverty threshold experienced lower odds of PFT receipt.

From December 2007 until June 2009, the United States experienced the Great Recession, its worst financial crisis since the Great Depression (Grusky, Western, & Wimer, 2011; National Bureau of Economic Research, 2010). Low-income families were especially vulnerable to the poor economic conditions; estimates from the Current Population Survey indicate that unemployment rates in the lowest income decile were as high as 31 percent from October to December 2009 and were nearly 20 percent in the second lowest income decile (Sum & Khatiwada, 2010). Because the Great Recession had such a profound negative impact on U.S. economic conditions, it is critical to understand how American families, in general, and economically disadvantaged families, in particular, have responded to the crisis.

Prior research has found that private financial transfers (PFTs) are a relatively common and potentially important source of income, with the great majority of money transferred within families from parents to adult children (Altonji, Hayashi, & Kotlikoff, 1997; Macdonald, 1990; McGarry & Schoeni, 1995; Schoeni, 1997). Research has suggested that families with young children may particularly benefit from PFTs. Studies have shown that PFTs are wealth-enhancing for families with children (Hao, 1996) and are an important strategy that low-income mothers use to make ends meet (Edin & Lein, 1997). As a result, one way that families with children may deal with economic hardships or financial shocks (and the increased need that they produce), like the Great Recession, is to increase PFTs received from family members and nonrelatives. If, however, members of their network were also negatively impacted by the Great Recession, network members may not have the means to provide families with children with PFTs. Therefore, it is also possible that PFTs received decreased during the Great Recession. Determining whether families with young children were able to rely on an increase in PFT

receipt during the Recession is critical because a long line of research has demonstrated that family income, and particularly family income in early childhood, is an important predictor for a wide range of outcomes for children (Brooks-Gunn & Duncan, 1997).

In this paper, we investigate two research questions: 1) What is the association between the unemployment rate and PFT receipt? And 2) Do family income and nuclear family structure moderate the association between the unemployment rate and PFTs received? Although prior research has studied whether aggregate unemployment is associated with the percent of household income made up by PFTs (Haider & McGarry, 2006), no research has studied the Great Recession in particular or used longitudinal data. In addition, no research has investigated differences in the association between the unemployment rate and PFTs by income or family structure. This is an important oversight because evidence suggests that low-income and single-mother families may have been particularly vulnerable to the Great Recession (Eamon & Wu, 2013; Mattingly, Smith, & Bean, 2011), but may also have had network members who experienced particularly severe economic restraints during this period.

To address these questions, we used data from the first 5 waves of the Fragile Families and Child Wellbeing Study (Fragile Families). These data were particularly well suited to this research as the latest wave of data collection occurred during the Great Recession. Thus, we were able to take advantage of the longitudinal data to study the associations between aggregate unemployment and PFTs over time. These data also include an oversample of unmarried births, resulting in a relatively economically disadvantaged sample. This made it possible to not only study differences by nuclear family structure, but to also study heterogeneity by family income levels.

BACKGROUND

Aggregate Economic Conditions and PFTs

Studies have documented sharp decreases in assets (Wolff, Owens, & Burak, 2011), income, and employment (Smeeding, Thompson, Levanon, & Burak, 2011), as a result of the Great Recession but to date, no studies have looked at PFTs. We are aware of only one previous study that has explored the relationship between the unemployment rate and PFT receipt (Haider & McGarry, 2006). The authors found that a 1 percentage point increase in the unemployment rate increased the percent of household income made up by PFTs by 5.7 percent. In related research, two studies have found that unemployment at the individual level was associated with a greater likelihood of receiving a PFT (Mazelis & Mykyta, 2011; Swartz et al., 2011). Studies of individual unemployment and PFTs are limited in that they are affected by individual choice. A mother may choose to exit the labor force or she may be forced to leave as a result of the economy. The aggregate unemployment rate on the other hand has the advantage of being exogenous to mother's decision making, nonetheless being highly correlated with individual unemployment. In addition, the aggregate unemployment rate captures not only the increased likelihood that a mother is unemployed but the increased likelihood that other members of her household and network (potential sources of PFTs) are unemployed (Pilkauskas, Currie, & Garfinkel, 2012). By using the aggregate unemployment rate we, therefore, can study how an economic shock is associated with PFTs at the household level.

In addition to the limited empirical evidence, theory does not provide a clear indication as to the likely direction of the association between PFTs and the unemployment rate. Because the Great Recession likely reduced the incomes of both potential donors and recipients, it is likely to have influenced PFTs. On the one hand, research has found that the income of donor and recipient matter in determining the probability and amount of PFTs (Altonji et al., 1997; Cox,

1987; McGarry & Schoeni, 1995). In particular, studies have found that family members with higher incomes are more likely to provide a PFT and provide larger amounts (Altonji et al., 1997; Cox, 1987; McGarry & Schoeni, 1995). This finding leads to our first hypothesis:

Hypothesis 1: The Great Recession was associated with a reduction in PFT receipt among families with young children because it was associated with a reduction in the income of potential donors.

On the other hand, research has also found that individuals are more likely to provide PFTs to lower income family members and provide them with larger amounts of money the lower their income (Altonji et al., 1997; Cox, 1987; McGarry & Schoeni, 1995). This finding suggests a second hypothesis:

Hypothesis 2: The Great Recession was associated with an increase in PFT receipt among families with young children because it was associated with lower incomes among potential recipients.

The degree to which hypothesis 1 or hypothesis 2 is supported is likely to be determined by which influence is stronger: the reduced ability of potential donors to provide PFTs or the increased need for income among potential PFT recipients.

Income, Unemployment, and PFTs

In addition to overall associations, we study differences in the association between the unemployment rate and PFTs by income level. No empirical research has explored whether family income moderates the association between aggregate economic conditions and PFTs. From a theoretical standpoint, it is unclear whether the responsiveness of PFTs to the Great Recession will vary across income levels. Because low-income individuals were the most likely to experience unemployment in the Great Recession (Sum & Khatiwada, 2010), we might expect

that low-income mothers were more likely to have lost their job (or to have household members who lost their job) and to need additional income than higher income mothers. Moreover, low-income mothers may have been less likely than higher income mothers to have money saved that they were able to draw upon to help absorb the shock of unemployment (Beverly & Sherraden, 1999). These two factors suggest that low-income mothers may have experienced greater need for PFTs during the Recession than mothers with higher incomes. This leads to our third hypothesis:

Hypothesis 3: Low-income mothers with young children experienced a greater increase (or smaller decrease) in PFT receipt during the Recession than higher income mothers, because the Recession left them with greater financial need.

But, PFTs involve network dynamics, not just the wellbeing of one individual or family. In general, studies have found that networks are homophilous, meaning that members of a network often share many characteristics in common (McPherson, Smith-Lovin, & Cook, 2001; Wimmer & Lewis, 2010). Research has found that the family, an important part of the network and the most common source of PFTs, is especially likely to be homophilous (McPherson et al., 2001). The members of a poor mother's network are, thus, more likely to be poor than the members of a higher income mother's network. As a result, the network members of poor mothers are likely to have been more negatively impacted by the Recession, and may therefore be less able than the network members of higher income mothers to provide PFTs. This suggests a fourth hypothesis:

Hypothesis 4: Low-income mothers experienced smaller increases (or larger decreases) in PFT receipt during the Recession than higher-income mothers because members of their network were more financially constrained during the Recession.

Family Structure, Unemployment, and PFTs

We also study differences in the association between the unemployment rate and PFTs by family structure. As was the case with family income, no research has looked at whether family structure moderates the association between aggregate economic conditions and PFTs, and theory does not provide a clear guide. In addition to having lower incomes (Acs & Nelson, 2002; Manning & Lichter, 1996), single mothers may be particularly vulnerable to a recession because, unlike married or cohabiting mothers, they do not have a partner in the household who may still be employed and bringing in income if they lose their job (McLanahan & Booth, 1989). For this reason, single mothers may have had greater need for PFT receipt during the Recession than mothers in other family structures. This leads to our fifth hypothesis:

Hypothesis 5: Single mother families experienced a greater increase (smaller decrease) in PFT receipt during the Recession than did mothers in other family structures because they experienced greater financial need.

But, just as was the case with low-income mothers, members of a single mother's network are, because of homophily, likely to be lower income and to have been more negatively impacted by the Recession than the network members of a married or cohabiting mother. This suggests a sixth hypothesis:

Hypothesis 6: Single mothers received smaller increases (experienced larger decreases) in PFT receipt than married or cohabiting mothers because members of their network were less able to provide PFTs due to greater resource constraints.

Control Variables

In addition to income-to-needs ratio and family structure, our analyses include a number of basic demographic variables related to PFTs. Research has found differences in PFTs by race

(Hofferth, 1984; Hogan, Hao, & Parish, 1990; Jayakody, 1998; Lee & Aytac, 1998; O'Brien, 2012; Radey & Padilla, 2009), education, (Hofferth, 1984; Jayakody 1998; Lee & Aytac, 1998), and age (Cox & Raines, 1985; Fingerman, Miller, Birditt, & Zarit, 2009; Schoeni, 1997), so we control for these demographic characteristics.

We also control for a number of health, behavioral, and personal characteristics found to be related to PFTs or for which there may be a link. Research has found differences in PFTs by self-reported health status (Eggebeen & Hogan, 1990), immigrant status (Glick, 1999; Mazelis & Mykyta, 2011), grandparent co-residence (Mazelis & Mykyta, 2011), grandmother's education (Berry, 2006; Mazelis & Mykyta, 2011; Swartz et al., 2011) and whether a mother lived with both her parents at age 15 (Lee & Aytac, 1998), so we control for these variables. In addition, we control for whether the respondent gave a PFT to others, as research has found that reciprocity is important in determining PFT receipt (Edin & Lein, 1997; Mazelis & Mykyta, 2011). We also control for multipartnered fertility, as research has shown that multiple partner fertility influences perceived availability of financial support (Harknett & Knab, 2007), and therefore, may influence actual PFTs. Respondent depression, impulsive behaviors, and substance abuse may influence whether network members are willing to give PFTs to respondents or whether respondents are willing to ask for them, so we control for each. Lastly, we include controls for city and interview year because aggregate conditions not captured by the unemployment rate may differ across cities and time, and these differences may influence PFTs.

METHOD

Data

We used data from Fragile Families, a longitudinal study consisting of 4,898 births between 1998 and 2000. The study is designed to be representative of births in large U.S. cities

and includes an oversample of unmarried births (for a full description of the sampling strategy, see Reichman, Teitler, Garfinkel, & McLanahan, 2001). Data were collected in 20 U.S. cities (populations greater than 200,000) in 15 different states. Mothers and fathers were interviewed in the hospital when the child was born (1998-2000), and follow-up interviews were conducted when the child was 1 (from 1999 to 2001), 3 (from 2001 to 2003), 5 (from 2003 to 2006), and 9 years old (from 2007 to 2010). Ninety percent of the mothers who completed interviews at birth were interviewed again when the focal child was roughly one year old, 88 percent at the 3 year survey, 87 percent at the 5 year survey, and 76 percent at the 9 year survey. The 9 year interviews (conducted between May 2007 and February 2010) occurred during the Great Recession, providing us with great variation in the unemployment rate.

In this study, we used mother-reported data because it is more complete than the father-reported data and because mothers are more likely to live with children, a population that may be especially impacted by changes in income due to PFT receipt. The data were pooled across survey waves from year 1 to year 9. If there was no attrition, our sample would have consisted of 4,898 mothers and 19,592 person-year observations. One hundred ninety one mothers (approximately 4%) were not interviewed in any of the waves from year 1 to 9, reducing our sample to 4,707 mothers and 18,828 person-years. The number of person-years was reduced further to 16,250 after accounting for the fact that, of the 4,707 remaining mothers, 1,771 were not interviewed at one or more of the interview waves. After accounting for missing observations on our dependent variables and the variables by which we stratify (income level and family structure), our sample was reduced to 4,701 mothers (96% of the original sample) and 16,156 person-year observations (our sample varies slightly by outcome variable). We used multiple imputation to impute values for missing data on the covariates, a technique that uses observed

data to estimate values for respondents who are missing data (Allison, 2002; Rubin, 1976).

Although we did not use the imputed values for PFTs or family structure and income, we did include them in our imputation model (Von Hippel, 2007). In the analyses shown in this paper, we imputed 5 data sets, and took the average estimate from these 5 data sets. We also estimated our analyses on the data without imputing for missing values (not shown), and the findings were similar.

Analyses of respondents who attrited suggest that they were more economically disadvantaged than the remaining sample. Mothers who attrited had lower income-to-needs ratios, were more likely to not have obtained a high school degree, and were less likely to be married. Attriters were also less likely to be White and more likely to be immigrants. We address how attrition might affect our results in the discussion section.

Private Financial Transfers

Our analyses focused on two measures of PFTs, each of which refers to the past 12 months. First, we created a dichotomous variable to indicate whether a mother received a PFT from the question: “In the past 12 months, have you received any financial help or money from anyone other than (FATHER)? Please include your relatives and friends, and his relatives and friends, but don’t include help from any government or private agency.” Mothers who indicated that they received a PFT were asked approximately how much financial help they received. Second, we used this information to create a continuous variable for dollar amounts received. Mothers who indicated that they did not receive a PFT were given a value of \$0, as has been done in previous research (Cox & Raines, 1985; Jayakody, 1998; Schoeni, 1997). Mothers unable to provide an exact estimate of the dollar amount of PFTs received were asked to provide a range (this occurred in 784 person-years, which was less than 5% of total cases). In these

instances, we coded respondents as having received the midpoint value of the range. For instance, when mothers indicated that they received between \$5,000 and \$10,000, mothers were coded as having received \$7,500 (the midpoint) for that wave. PFT dollars received were positively skewed, so we log transformed the variable to reduce the skewness. As recommended by Cameron and Trivedi (2009), to keep respondents who received \$0 in the analysis, we coded all such cases in our logged variable as .00001 less than the logged PFT value of the respondent who received the smallest PFT amount.

Unemployment

We constructed the average unemployment rate over the year prior to the mother's interview to match the time frame of our dependent variables. Using data from the Bureau of Labor Statistics' Local Area Unemployment Statistics (LAUS), we appended two unemployment rates to the data set, a current city unemployment rate and a baseline city unemployment rate. For the current city unemployment rate, we attached the unemployment rate for the Core Based Statistical Area (CBSA) in which the mother lives at the time of the interview (for each interview wave). For the baseline city unemployment rate, we appended the unemployment rate from the CBSA that the mother lived in during the baseline survey (even if she has moved) at the time of the interview.

We constructed these two measures because earlier studies have found that mothers who lived in a city with high unemployment rates were more likely to move in a later survey wave than mothers that lived in cities with lower unemployment rates (Pilkaukas et. al., 2012). If a mother moved from the baseline city to another city to avoid high unemployment, this could introduce bias into our analyses if the current city unemployment measure is used. By using the baseline city unemployment rate, we were able to examine the relationship between the

unemployment rate that individuals would have faced had they remained in the baseline city and PFTs. Despite the potential bias in the current city unemployment rate, in analyses (not shown) we found that the association between the unemployment rate in the current city of residence and PFTs was similar to that of the baseline city, just slightly smaller. We present analyses using the unemployment rate in the baseline city because we feel it is more exogenous.

Because individuals can leave the labor force altogether (and may be especially likely to do so in a deep recession), the unemployment rate may underestimate the true rate of people who are out of work during the recession. The employment rate (number of employed people divided by the working age population aged 18-64) can help address changes in labor force participation rates not captured by the unemployment rate. Using data from the Current Employment Statistics (CES) survey and Census, we constructed average annual employment rates for the baseline city. In analyses not shown, results using the baseline city employment rate were similar to those using the unemployment rate in the baseline city.

Income-to-Needs and Family Structure

We conducted stratified analyses by family income-to-needs ratio as well as family structure to investigate whether the associations between the unemployment rate and PFTs differ by these two characteristics. To investigate differences by income, we used a time-varying measure of the income-to needs ratio, which adjusts household income for family size and indicates where a household's income stands in relation to the poverty threshold. We broke the income-to-needs ratio into 4 categories: mothers whose household income was 0-99%, 100-199%, 200-299%, and at least 300% of the poverty threshold (reference). To study differences by mother's family structure, we included a time-varying measure coded as single (reference), married, or cohabiting.

Additional Measures

Our analyses included a number of other covariates. We controlled for race (Non-Hispanic White, Non-Hispanic Black, Hispanic, or other race/ethnicity), educational attainment (less than high school, high school, some college, or college degree or more), and respondent's age at the birth of the child (a continuous measure). We also controlled for self-reported health status (excellent, very good/good, or fair/poor), respondent's mother's education (less than high school, high school, some college, or college degree or more), and dichotomous measures for multipartnered fertility (whether the mother had children with multiple partners), immigrant status (whether the mother is foreign born), whether the mother lived with both of her parents at age 15, substance abuse (whether drinking or drug use ever interfered with the mother's employment or personal relationships), and grandparent co-residence (whether one or more of the mother's own parents or her in-laws lived in the same household).

Depression was measured dichotomously (whether the mother is depressed) using the conservative threshold of the Composite International Diagnostic Interview-Short Form, a standardized tool that assesses whether respondents experience a major depressive episode (dysphoric mood or anhedonia; hereafter "depression") (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998). We controlled for impulsive behaviors using an abbreviated six-item form of Dickman's (1990) impulsivity scale, which measures a mother's ability for self-control with items such as whether the mother often does or says things without considering the consequences. Lastly, we created dummy variables for each city of residence and interview year. All control variables were measured at baseline with the exception of impulsivity (which was not assessed until year 3) but is considered an unchanging characteristic, depression (measured at the

1 year follow up but asks about the prior year), and PFTs given to others and interview year, which are both time-varying.

Analytic Strategy

To explore our first question (whether there is an association between the unemployment rate and PFTs received), we conducted logistic regressions to investigate the odds of PFT receipt and tobit regressions to study the log dollar amounts received. With individual level panel data, two of the most common approaches to logistic regression are to introduce individual fixed- or random-effects because these two approaches explicitly model the fact that repeated observations of the same individual are unlikely to be independent (Allison, 2012). For odds of PFT receipt, we chose to present results from a logistic regression model with individual random-effects. Although logistic models with random effects do not control for unobserved time invariant characteristics like logistic models with individual fixed-effects, they have the benefit of not discarding information for individuals who do not change on the dependent variable (Allison, 2012). The individual fixed-effects estimates (not shown) were similar to the random-effects estimates, suggesting that the omission of unobserved time invariant variables was not driving our results (Allison, 2012). Because unobserved time invariant variables did not appear to be driving our results and nearly half of our observations were excluded from individual fixed-effects estimates due to lack of change on the dependent variable, we presented individual random-effects logistic models to avoid discarding a significant amount of potentially useful information.

To estimate the association between the unemployment rate and log PFT dollars received, we used tobit models, as has often been done in research that explores PFT dollars as the outcome (Cox & Raines, 1985; Jayakody, 1998; Schoeni, 1997). The tobit model is a nonlinear

model that assumes that all respondents have some positive probability of not receiving a PFT but that among those who do receive a PFT, the dollar amount is a continuous random variable (Jayakody, 1998; Jensen & Tienda, 1988; Tobin, 1958). Because PFTs received are clustered around \$0 and it is impossible to observe negative PFT amounts, the tobit model is an appropriate choice as it allows us to include respondents who received \$0 in our analysis without violating model assumptions (Jayakody, 1998; Jensen & Tienda, 1988). Similar to probit models, fixed-effects tobit models that use standard parametric maximum-likelihood methods produce biased estimates, especially when there are more observations than time periods (Arrellano and Hahn, 2007). For this reason, we presented estimates from tobit models with individual random-effects to account for repeated observations of the same individual.

To answer our second research question (whether there are differences in the association between the unemployment rate and PFTs received by income-to-needs ratio and family structure), we conducted a number of stratified regression models. First, we explored whether there were differences in the unemployment rate and PFT associations stratifying by income-to-needs. Second, we conducted analyses stratified by family structure. For all stratified analyses we ran both a random-effects logistic model to study odds of receipt and a random-effects tobit model to study log dollar amounts received. We then conducted Chow tests on the fully interacted models to determine whether the unemployment rate coefficients across income-to-needs levels and family structures were significantly different from one another (e.g. <100% of poverty vs. 100-199, married vs. single; Chow, 1960).

RESULTS

Descriptive Results

Table 1 describes the sample. After weighting the data to make it nationally representative of births in large US cities, the average unemployment rate in the sample was 6%. More than half of our weighted sample was married, one-fifth was cohabiting, and a quarter was single. Approximately 35% of the sample was living in poverty and additional 25% of the sample was near poor (100-199% of the poverty ratio).

[Table 1 around here]

Table 2 describes PFTs by family structure, income-to-needs ratio, and the unemployment rate. The first row of Table 2 indicates that 28% of the pooled sample received a PFT and that the average PFT amount received was \$433. Rows 2 through 5 of Table 2 describe patterns of PFTs by family structure. Single mothers were more likely to receive a PFT than both cohabiting and married mothers, and they received larger PFT amounts than cohabiting mothers. Rows 6 through 10 of Table 2, we describe patterns of PFTs stratified by income-to-needs ratio. Mothers living in poverty (income-to-needs ratio of less than 1) or near poverty (between 1 and 2 times the poverty threshold) were more likely to receive PFTs than mothers with incomes above 3 times the poverty level, but received much smaller amounts. Lastly, rows 11 through 14 in Table 2 describe patterns of PFT receipt by the unemployment rate. Mothers living in low unemployment areas (less than 4%) were more likely to receive a PFT (33%) than mothers living in high unemployment areas (25%), but there were no differences in dollars received by unemployment rate. These analyses are limited because they do not account for the fact that mothers in high unemployment areas may be different from mothers in low unemployment areas in ways other than the unemployment rate which they are exposed to. We further tested the association between the unemployment rate and PFTs received using multivariate regression models to better account for confounding factors.

[Table 2 around here]

Unemployment and PFTs

In Table 3, we report results designed to answer our first research question: What is the association between the unemployment rate and PFTs received? The results indicate that a one percentage point increase in the unemployment rate was associated with 10% higher odds of receiving a PFT and with a statistically significant greater amount of PFT dollars received. The results failed to support Hypothesis 1, which predicted that an increase in the unemployment rate would be associated with reduced PFT receipt due to reduced financial resources available to potential donors. Instead, our results were consistent with Hypothesis 2, which predicted that higher unemployment rates would be associated with greater PFT receipt due to the increase in financial need of potential PFT recipients.

Table 3 also documents the association between our covariates and PFT receipt. Of particular interest are the family income-to-needs ratio and family structure covariates, as these are the measures of family context that we expect may moderate the association between the unemployment rate and PFT receipt. Results demonstrate that both family income and family structure were directly associated with PFT receipt. We found that mothers who were poor (0-99%), near poor (100-199%), and with incomes 2 to 3 times the poverty threshold were more likely to receive, and received more PFT dollars, than mothers whose income was 3 times the poverty threshold or higher. In addition, married and cohabiting mothers were less likely to receive a PFT and received smaller PFT dollar amounts than single mothers.

[Table 3 around here]

Family Context as Moderator for Unemployment and PFTs

Tables 4 and 5 present results that aim to answer our second research question: Does family context moderate the association between the unemployment rate and PFT receipt? Table 4 focuses particularly on the moderating role of family income. For mothers in the bottom two income groups (poor and near poor), a 1 percentage point increase in the unemployment rate was associated with a 13% and 20% higher odds of receiving a PFT respectively, as well as with a statistically significant greater amount of PFT dollars received. By contrast, for mothers with incomes 2 to 3 times the poverty threshold, a 1 percentage point increase in the unemployment rate was associated with 19% lower odds of PFT receipt and a statistically significant reduction in PFT dollars received. Finally, the unemployment rate coefficient for the highest income group was not significantly different from \$0 received. Chow tests on the fully interacted models which compared each income group to one another (<100 vs. 100-199, 200-299 vs 300+, etc) indicate that the odds of receiving and dollar amounts received unemployment rate coefficients for the poor, near poor and highest income groups were significantly larger than the unemployment rate coefficients for mothers with incomes in the 200-299% category. Results were consistent with Hypothesis 3, which predicted that poor and near poor mothers would experience the greatest increases in receipt during the Recession, due to the disproportionate financial impact that the Recession had on lower income individuals. By contrast, results failed to support Hypothesis 4, which predicted that poor and near poor mothers would experience the smallest increases in PFT receipt during the Recession because their possible donors were also likely to be hardest hit by the Recession.

[Table 4 around here]

Table 5 provides evidence on whether family structure moderates the association between the unemployment rate and PFT receipt. Chow tests on fully interacted models comparing each

group (married vs. single, married vs. cohabiting, cohabiting vs. single) indicated that the unemployment rate coefficients for both odds of receipt and dollar amounts received were not statistically different across family structure groups. In short, results were inconsistent with both Hypothesis 5 (single mother families were expected to experience the greatest increase) and Hypothesis 6 (single mothers were expected to experience the smallest decrease). The results suggest that family structure did not moderate the association between the unemployment rate and PFTs.

[Table 5 around here]

DISCUSSION

In this paper, we studied two research questions: 1) What is the association between the unemployment rate and PFT receipt? And 2) Do family income and nuclear family structure moderate the association between the unemployment rate and PFTs received? By exploring these questions, we made a number of important contributions to the literature on PFTs. Our study was the first to investigate the association between the unemployment rate and both odds of PFT receipt and dollar amounts of PFTs received using longitudinal data collected both before and during the Great Recession. Additionally, no research that we are aware of has explored whether family context moderates the association between the unemployment rate and PFTs, an important omission because disadvantaged families were disproportionately harmed by the Great Recession (Sum & Khatiwada, 2010).

From a theoretical standpoint, it was unclear how the Great Recession would influence PFT receipt because the Recession was likely to reduce incomes of both potential PFT donors (reducing network resources) and potential PFT recipients (increasing financial need for PFT receipt) (Altonji et al., 1997; Cox, 1987; McGarry & Schoeni, 1995). We found that an increase

in the unemployment rate was associated with significantly greater odds of receiving a PFT and PFT dollars received. Our results were, therefore, consistent with Hypothesis 2: increased financial need was a more important determinant of PFT receipt during the Recession than reduced network resources.

The way in which family context would moderate the association between the unemployment rate and PFT receipt was also theoretically ambiguous. On the one hand, disadvantaged mothers (low-income and single mother families) may have been more likely to experience an increase in PFT receipt than more advantaged mothers because they were likely to experience greater financial need during the Recession. On the other hand, because networks tend to be homophilous (McPherson, Smith-Lovin, & Cook, 2001; Wimmer & Lewis, 2010), PFT receipt may have increased less for disadvantaged than more advantaged mothers, as network members of disadvantaged mothers are likely to have been harder hit by the Recession and to have fewer financial resources themselves. In terms of family income, our results provide support for the view that disadvantaged families experienced greater increases in PFT receipt during the Recession, as poor and near poor mothers experienced statistically significant increases in both odds of PFT receipt and PFT dollars received, increases that were statistically different from mothers earning between 2 and 3 times the poverty threshold. In terms of family structure, our results support neither view: family structure did not moderate the association between the unemployment rate and PFT receipt.

This paper has some limitations. First, our sample was not generalizable to the population, as Fragile Families is representative of mothers who gave birth in large cities in the United States. Many of the mothers in the sample, however, were low-income, and were likely to be particularly reliant on network support and especially vulnerable to difficult economic times.

Second, because Fragile Families is a panel survey, some respondents attrited from the sample for the entire period of observation or for specific survey waves. As mentioned earlier, mothers who attrited generally were more disadvantaged than mothers in our analytic sample. The impact of attrition on our findings is unclear. On the one hand, our analytic sample was disproportionately White, native born, and high school educated or more (all factors associated with higher levels of PFT receipt), suggesting that our results may constitute a slight overestimation of the association between the unemployment rate and PFT receipt. On the other hand, our analytic sample also had a higher income-to-needs ratio than mothers who attrited and consisted disproportionately of married respondents (factors associated with less PFT receipt), both of which suggest that our findings may be underestimates. Given the conflicting evidence regarding the direction in which attrition would impact our results and the strong main association that we observed between the unemployment rate and PFT receipt, we believe it is unlikely that our substantive results would change without attrition.

Despite these limitations, this study may have important implications for public policy. Previous research demonstrated that mothers with children were able to rely on greater public support during the Recession to deal with greater financial needs (Pilkauskas et al., 2012). Our results suggest that mothers with children did not solely rely on the public safety net during the Recession; mothers also relied on the private safety net during the economic downturn, as they experienced higher odds of PFT receipt and greater PFT dollars received. Additionally, our results suggest that some of the most disadvantaged mothers (those with low incomes) experienced particularly large increases in PFT receipt, suggesting that their greater need compared to higher income mothers may be being met by greater PFT receipt.

Although these results provide encouraging evidence that mothers were able to rely on the private safety net during the Recession, this does not suggest that public support is any less necessary. First, we did not find differences in the association between the unemployment rate and PFT receipt by family structure. Single mothers likely experienced greater need in the Recession than mothers in other family structures. But, our results indicate that this greater need was not met by a greater increase in PFT receipt, suggesting that the need of single mothers may not have been met as effectively by PFTs as the need of mothers in other family structures. Second, our results and previous research (Dominguez and Watkins, 2003; Mazelis & Mykyta, 2011; Nelson, 2000) have demonstrated that reciprocity is an important determinant of social support. In the short term, our results suggest that low-income mothers did not experience a reduction in PFT receipt compared to more advantaged mothers due to a lesser ability to reciprocate social support. If, however, the Recession has long-term financial implications for the disadvantaged, and limits the ability of disadvantaged mothers to reciprocate support over time, it is possible that PFT support will be unsustainable. Third, even if disadvantaged mothers are able to rely on PFTs over the long term, network members providing PFTs are likely to have limited economic resources themselves, due to homophily, and, therefore, are likely to be stretching themselves thin when they provide financial assistance to low-income mothers.

To further our understanding on how families rely on the private safety net during recessions, we believe that future research should investigate the following areas. First, it may be important to explore not only whether the Great Recession influenced the odds and dollars amounts of PFTs received, but whether it influenced the number of times that families with children relied on PFTs. Considering the reciprocal nature of the private safety net, consistent reliance on PFTs may have different implications for network relationships than one-time

reliance, regardless of the dollar amounts received. Second, disadvantaged families have been found to often rely on in-kind support, such as childcare and housing, rather than financial support (Henly, Danziger, & Offer, 2005). Future research should explore whether the Great Recession impacted reliance on these in-kind sources of private support. Lastly, we found heterogeneity in the impact of the unemployment rate on PFT receipt by family income. Future research should explore other possible sources of heterogeneity. Heterogeneity across racial groups may be particularly promising, as research has demonstrated that Black and Hispanic workers were disproportionately harmed by the Great Recession (Hoynes, Miller, & Schaller, 2012).

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Table 1: Sample Descriptive Statistics (N=16,156)

	M or %	SD
Unemployment Rate	6	2
Family Structure		
Married	54	
Cohabiting	20	
Single	25	
Income-to-needs ratio		
<100% of Poverty	34	
100-199%	24	
200-299%	14	
300+%	29	
Age	27	6
Race/Ethnicity		
White	30	
Black	35	
Hispanic	28	
Other	7	
Education		
< High school	25	
High school	32	
Some college	23	
College or more	20	
Foreign Born	24	
Reciprocity	31	
Impulsivity	1	2
Depression	10	
Health status		
Excellent/great	33	
Very good/good	59	
Fair/poor	8	
Substance Abuse	1	
Multipartnered Fertility	25	
Lived with bio parents at age 15	53	
Grandmother's education		
< High school	23	
High school	48	
Some college	13	
College or more	16	

Grandparent in HH 18

Note: Sample selection based on non-missing on receipt of a PFT. Statistics are weighted using city weights for the baseline survey wave. N is not weighted. Means are reported for the unemployment rate, age, and impulsivity. All other numbers are percentages.

Table 2: PFTs Received and Given by Marital Status, Income-to-Needs Ratio, and the Unemployment Rate (N=16,156 Person-Years)

	Received %	Received \$
Total sample	28	724 (3292)
Family Structure		
Married (n=5,534)	22 ^{a,c}	832 (3470) ^a
Cohabiting (n=4,630)	33	448 (2059)
Single (n=5,992)	39 ^b	718 ^b (3678)
Income-to-needs ratio		
<100% (n=6,435)	31 ^f	340 (1638) ^{d,e} f
100-199 % (n=4,324)	30 ^h	470 (2113) ^{g,h}
200-299 % (n=2,265)	30 ⁱ	720 (2722) ⁱ
300+ % (n=3,132)	23	1381 (5148)
Unemployment rate		
Low = <4% (n=4,366)	33 ^{j,k}	637 (2687)
Medium = 4-8% (n=10,808)	28 ^l	736 (3376)
High = 8+% (n=982)	25	774 (3492)

Note: Sample selection based on non-missing on receipt of a PFT. Statistics are weighted using city weights for the baseline survey wave. Standard deviation in parentheses. N and each n are not weighted.

^a Married---Cohabiting difference in coefficients significant at P<.05,

^b Single---Cohabiting difference in coefficients significant at P<.05,

^c Married---Single difference in coefficients significant at P< .05,

^d Poverty 1---Poverty 2 difference in coefficients significant at P<.05,

^e Poverty 1---Poverty 3 difference in coefficients significant at P<.05,

^f Poverty 1---Poverty 4 difference in coefficients significant at P< .05,

^g Poverty 2---Poverty 3 difference in coefficients significant at P< .05,

^h Poverty 2---Poverty 4 difference in coefficients significant at P< .05. ,

ⁱ Poverty 3---Poverty 4 difference in coefficients significant at P< .05,

^j Low---Med Unemployment difference in coefficients significant at P<.05,

^k Low---High Unemployment difference in coefficients significant at P<.05,

^l Medium---High difference in coefficients significant at P< .05.

Table 3: Probability of Receiving PFTs and Log Dollar Amounts Received by Unemployment Rate

	Logit (Coefficient)	Logit (Odds Ratio)	Tobit (Coefficient)
Unemployment Rate	0.10 (0.03)**	1.10	0.25(0.09)**
Family Structure (Single=Ref)			
Married	-0.55(0.07)**	0.58	-1.75(0.21)**
Cohabiting	-0.17(0.06)**	0.84	-0.48(0.17)**
Income-to-needs ratio (300+% =Ref)			
<100% of Poverty	0.80(0.09)**	2.22	2.25(0.27)**
100-199%	0.64(0.08)**	1.90	1.87(0.26)**
200-299%	0.52(0.09)**	1.68	1.54(0.27)**
Age	-0.06(0.01)**	0.94	-0.19(0.02)**
Race/Ethnicity (White=Ref)			
Black	-0.01(0.09)	0.99	-0.30(0.28)
Hispanic	-0.51(0.11)**	0.60	-1.92(0.35)**
Other	0.20(0.18)	1.23	0.56(0.56)
Education (< High School=Ref)			
High school	0.07(0.08)	1.08	0.23(0.24)
Some college	0.31(0.08)**	1.36	1.01(0.27)**
College or more	0.50(0.14)**	1.65	1.63(0.43)**
Foreign Born	-0.93(0.11)**	0.40	-3.02(0.35)**
Reciprocity	0.36 (0.05)**	1.43	1.06(0.15)**
Impulsivity	0.04(0.02)*	1.04	0.15(0.06)**
Depression	0.32(0.09)**	1.38	1.11(0.29)**
Health status (Excellent/Great=Ref)			
Very good/good	0.17(0.06)**	1.18	0.50(0.20)*
Fair/poor	0.03(0.12)	1.03	0.10(0.39)
Substance Abuse	0.23(0.17)	1.26	0.76(0.52)
Multipartnered Fertility	-0.12(0.07)	0.88	-0.33(0.23)
Lived with bio parents at age 15	-0.08(0.06)	0.92	-0.29(0.20)
Grandmother's education (< H.S.=Ref)			

High school	0.22(0.09)*	1.25	0.68(0.29*)
Some college	0.57(0.11)**	1.77	1.84(0.35)**
College or more	0.73(0.12)**	2.08	2.44(0.38)**
Grandparent in HH	0.32(0.07)**	1.38	1.00(0.22)
Number of Observations	16,156	16,156	15,993

Note: Regressions control for city and interview year fixed effects. Standard errors are in parentheses. Tobit coefficients are not directly interpretable beyond the significance level and direction.

* p<0.05, ** p<0.01

Table 4: Unemployment and PFT Probability and Log Dollars by Poverty Category

	Logit (Coefficient)	Logit (Odds Ratio)	Tobit (Coefficient)
Unemployment (<100%)	0.12(0.05)* ^b	1.13	0.32(0.13)* ^b
Unemployment (100-199%)	0.19(0.06)** ^d	1.21	0.49(0.18)** ^d
Unemployment (200-299%)	-0.21(0.09)* ^f	0.81	-0.76(0.28)** ^f
Unemployment (300%+)	0.08(0.08)	1.08	0.24(0.30)

Note: Regressions control for city and interview year fixed effects. Standard errors are in parentheses. Tobit coefficients are not directly interpretable beyond the significance level and direction.

^a Poverty 1---Poverty 2 difference in coefficients significant at P<.05,

^b Poverty 1---Poverty 3 difference in coefficients significant at P<.05,

^c Poverty 1---Poverty 4 difference in coefficients significant at P<.05,

^d Poverty 2---Poverty 3 difference in coefficients significant at P<.05,

^e Poverty 2---Poverty 4 difference in coefficients significant at P<.05. ,

^f Poverty 3---Poverty 4 difference in coefficients significant at P<.05

* p<0.05, ** p<0.01

Table 5: Unemployment and PFT Probability and Log Dollar Amounts by Marital Status

	Logit (Coefficient)	Logit (Odds Ratio)	Tobit (Coefficient)
Unemployment (Married)	0.11(0.06)	1.11	0.33(0.21)
Unemployment (Cohabiting)	0.12(0.06)	1.12	0.26(0.17)
Unemployment (Single)	0.07 (0.05)	1.07	0.15(0.13)

Note: Regressions control for city and interview year fixed effects. Standard errors are in parentheses. Tobit coefficients are not directly interpretable beyond the significance level and direction.

^a Married---Cohabiting difference in coefficients significant at $P < .05$,

^b Single---Cohabiting difference in coefficients significant at $P < .05$,

^c Married---Single difference in coefficients significant at $P < .05$.

* $p < 0.05$, ** $p < 0.01$