Wealth, Family Structure, and the Great Recession

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ABSTRACT

This paper examines the association between the Great Recession and wealth among families with young children. Using longitudinal data from the Fragile Families and Child Wellbeing Study (N=4,898), we investigate the association between unemployment and net worth and how the association varies by family structure – married, cohabiting, and single mothers. We find that a five percentage point change in the unemployment rate, akin to that of the Great Recession, is associated with net worth that is 46% lower, home net worth that is 44% lower, and car net worth that is 26% lower. We also find that the recession was associated with higher odds of home loss and for single mothers, higher car loss. Although the absolute decline in wealth was largest for married families, as a percent of total wealth, cohabiting and single mothers experienced the largest losses.

Keywords: Wealth, Assets, Home Ownership, Family Type, Unemployment, Recession

JEL classification codes: D31, J12, E24, I3

The Great Recession was the worst recession since the Great Depression (NBER, at ⟨http://www.nber.org/cycles.html⟩). The unemployment rate rose from 5 percent in December 2007 to 10.1 percent in October 2009, and housing prices and the stock market plummeted by 20 and 30 percent respectively (Case & Shiller, 2010; Wolff, 2012). The simultaneous collapse in the labor, housing, and stock markets resulted in many families experiencing a dramatic overall decline in net worth (Chakrabarti, Lee, van der Klaauw, & Zafar, 2011; Grusky, Western, & Wimer, 2009; Hendey, Mckernan, & Woo, 2012; Hurd & Rohwedder, 2010; Kochhar, Fry, & Taylor, 2011; Wolff, 2012). Two thirds of American households experienced a decline in wealth, one out of four families lost their homes, and at least one quarter lost more than half of their net worth from 2007 to 2009 (Grusky et al., 2009). Even among families who neither lost their jobs nor experienced foreclosure, many suffered a decline in wealth as a result of plummeting home values.

Wealth is a key measure of financial well-being as it enables families to withstand short term income losses from unemployment or other unexpected events, and to smooth consumption over time. Wealth and assets play a particularly important role for families with children as economic wellbeing is positively associated with children's healthy development (Bradley & Corwyn, 2002; Conger & Donnellan, 2007; Haveman & Wolfe, 1995; Sherraden, 1991; Yeung & Conley, 2008). For children, we might anticipate that an economic shock like the Great Recession may have long term consequences on their future socioeconomic outcomes (e.g., health, educational attainment, productivity). Moreover, wealth and assets may also be especially important for poor families with children as they were more strongly impacted than other families by unemployment (Sum & Khatiwada, 2010), and are more likely to be credit

constrained. Therefore, low-income families with children may have been more severely impacted by the economic downturn.

This paper investigates the association between the city unemployment rate and household assets and wealth among families with young children, and explores differences in the association among married, cohabiting, and single mother households. Although a number of studies have analyzed the impact of the Great Recession on household assets and wealth (Bocian, Li, & Ernst, 2010; Chakrabarti et al., 2011; Grusky et al., 2009; Hendey et al., 2012; Kochlar, Fry, & Taylor, 2011; Sum & Khatiwada, 2010), to date, no study has examined heterogeneous responses by family structure. This is an important omission as married families are more likely to accumulate wealth and less likely to lose it in a contraction as compared to both cohabiting and single mothers (Becker, 1981; Lam, 1988; Weiss, 1997).

To investigate the extent to which the Great Recession reduced wealth among families with children by family structure, we use data from the Fragile Families and Child Wellbeing study (FF). FF is a longitudinal birth cohort survey of about 4,900 children born between 1998 and 2001. These data are well suited to the study of the Great Recession as the most recent wave of data was collected between May 2007 and February 2010, coinciding with the Great Recession. The FF data were collected across 20 large U.S. cities providing great geographic variation in economic conditions across cities. Our study focuses on home and car ownership and value, as these assets are the two most commonly held by moderate and low-income families (Blank & Barr, 2009; Domhoff, 2011; Spilerman, 2000). We link data on the unemployment rate to the FF household data and exploit the temporal and geographic variation in unemployment rate across cities to estimate the association between the unemployment rate and household wealth.

We add to the literature on the Great Recession and assets by studying differences in the associations between unemployment and wealth by family structure. We are the first study to utilize the aggregate unemployment rate to study the Great Recession and assets. By using the city unemployment rate and pooling data over the years (2002 to 2010), we are able to exploit a much larger variation in local economic conditions than the previous research that has mostly focused on changes over the period of the Great Recession.

BACKGROUND

Theory

Economic theory predicts that when individuals face liquidity constraints or restricted access to credit that limits their borrowing, they accumulate buffer assets to insure themselves against negative income, employment, or health shocks, to be able to smooth consumption (Deaton, 1991). Depending on their initial level of wealth and on the nature of the shock (transitory or permanent), credit constrained individuals may respond by either selling their buffer assets, adjusting their consumption, or both (Carroll, 2001; Reis, 2009). If individuals have sufficient wealth then buffer assets will be sold to smooth consumption. If individuals have low levels of wealth, they may lower consumption to preserve their savings. Really low-income families, those with few savings and little wealth, likely reduce consumption in times of economic stress that may affect their well-being (Blank & Barr, 2009; Spilerman, 2000).

Heterogeneity by Family Structure

The amount and type of wealth that households own varies by nuclear family structure. Married households have higher incomes and accumulate more wealth than single parent (or cohabiting) families (Acs & Nelson, 2002; Lupton & Smith, 2003; Manning & Lichter, 1996; Smith, 1995; Waite, 1995). There are a few reasons to expect heterogeneity in wealth

accumulation and in the impact of the Great Recession, by nuclear family structure. First, marriage is a risk reducing institution. Married (and cohabiting) couples have two potential earners in the household that may adjust their labor supply (or labor force participation) to offset job-related problems faced by a partner (Becker, 1981; Lam, 1988; Lupton & Smith, 2003; McLanahan & Booth, 1989; Weiss, 1997). Cohabitation, however, is generally a less stable relationship, where expectations and financial obligations of each partner are more uncertain, and where legal enforcement may be more difficult (Scott, 2004). This instability in the cohabiting relationship may result in less risk sharing between partners. Single mothers on the other hand, who do not have a partner to rely upon, may have to draw on assets more quickly than married or cohabiting families in the event of an economic shock.

Second, marriage (and cohabitation) enhances wealth accumulation as the total wealth produced by both spouses exceeds the sum of the wealth produced by each individual party (Becker, 1981). In addition, there are economies-of-scale, where two partners can live less costly than one through savings in rent and other shared expenses (Waite, 1995). Single mothers, on the other hand, face the dual roles of provider and caregiver, and fewer economies-of-scale, and therefore may have more difficulty accumulating savings over time (Garfinkel & McLanahan, 1986). Finally, marriage may promote wealth accumulation through its protective effect on the health of spouses, which reduces mortality rates and increases life expectancy (Lillard & Weiss, 1996; Waite, 1995).

In sum, married households have the greatest risk sharing and the largest amount of assets, cohabiting couples have some risk sharing and some wealth, but much less than married mothers, and single mothers have no risk sharing and the fewest assets. In the event of an economic shock, because married households have the most risk sharing, we anticipate less of an

effect on their assets (their partner may be able to enter the labor force), than in cohabiting or single mother households. Married mothers in general also have more assets, therefore in an economic crisis they may be more able to draw on those assets before needing to sell their home or car. Therefore we anticipate that single or cohabiting mothers would also be more likely to lose their cars or homes than married mothers. But, because married mothers also have more assets than cohabiting or single mothers, we might instead expect that an economic shock would have a larger impact on their overall assets. Essentially, married mothers have more to lose. This leads to two hypotheses: First, married mothers will be less likely to lose their car or home than cohabiting or single mothers, and second, married mothers will lose a greater absolute amount of wealth than cohabiting or single mothers, but it is likely to be a smaller percentage loss given their higher overall levels of wealth.

Empirical Studies of the Great Recession and Wealth

Recent research on the impact of the Great Recession on wealth has documented significant declines in net worth and asset holdings from 2007 to 2009. Studies have found that household wealth declined by 18% (Bricker et al., 2011), that median net worth fell about 28% (Kochhar, Fry & Taylor, 2011), and that wealth declined for the most among vulnerable populations – minority groups, the young, the less educated – during the Great Recession (Bosworth, 2012; Emmons & Noeth, 2012; Kennickell, 2011, 2012; Kochhar, Fry & Taylor, 2011; Pfeffer, Danziger, & Schoeni, 2013; Shapiro, Meschede, & Osoro, 2013; Wolff, Owens, & Burak, 2009). To date, only one study has investigated changes in wealth during the Great Recession by relationship status. Pfeffer, Danzier, and Schoeni (2013) estimated the impact of the Great Recession on wealth by studying changes in household net worth over time (from 2007 to 2011), holding other household demographic and socioeconomic characteristics constant.

Their study is of note as they investigated heterogeneity in the changes in wealth by relationship status (married versus single) and by whether a child was present in the household, but not differences by relationship status among families with children. Pfeffer and colleagues found that married couples had more wealth both before and after the Great Recession than single men and women but despite lower levels of wealth, single households experienced a larger percent loss in wealth during the recession. They also found that households with children had lower levels of wealth (pre and post-recession), but that the percent loss was greater for households with children.

Our study moves beyond earlier research by studying families with children, investigating differences in the associations between the Great Recession and assets by family structure, and by utilizing the aggregate unemployment rate to study the association between local economic conditions and assets using longitudinal data from 2002 to 2010.

Control Variables

In addition to studying differences by family structure, our analyses controlled for a number of basic demographic variables related to asset ownership. These controls were race/ethnicity, age, education, income, and immigration status as prior research has documented differences in wealth by these demographic characteristics (Blau & Graham, 1990; Conley, 1999; Oliver & Shapiro, 1997; Wolff, 1998).

METHOD

Data

The Fragile Families and Child Wellbeing Study (FF) is a birth cohort study of 4,898 children born between 1998 and 2001 in 20 large U.S. cities (populations of 200,000 or more). Mothers and fathers were interviewed shortly after the birth and follow up data were collected

one (1999-2001), three (2001-2003), five (2003-2006), and nine years (2007-2010) after the child's birth (five waves in total). The FF study oversampled births to unwed parents, which constituted about three fourths of the total respondents.

FF provides an opportunity to study whether the Great Recession was associated with household wealth, as the most recent data collection, year 9, occurred between May 2007 and February 2010 and the 20 cities sampled in FF, located in 15 states, exhibited large variation in labor market conditions. We used mother's reports, as children are more likely to live with their mothers, and because mothers had higher response rates than fathers. Of the almost 5,000 mothers interviewed at baseline, 90% were interviewed at year 1, 88% were re-interviewed at year 3, 87% at year 5, and 76% at year 9.

We pooled the data across survey waves (years 1 to 9) to study the association between the unemployment rate and assets. Of the 4,898 mothers (19,592 mother-year observations) included in FF, 4,585 mothers (13,569 mother-year observations) completed at least one follow up survey and had complete information on all outcome variables (we had very few cases of missing information on covariates, approximately 2%). We lost 3,343 mother-year observations from the total of 19,592 mother-years, as they were not interviewed at any wave (from year 1 to 9), reducing our sample to 16,249 mother-years. Of these 16,249 cases, the same was reduced further to 13,569 person-years — our final sample — because 2,680 mother-years did not provide complete information on home and/or car value and/or debt.

Comparing mothers who attrited (3,343 mother-year cases) with mothers who did not attrite (16,249 mother-year cases), we found that mothers who attrited were more economically disadvantaged. These mothers were less educated, more likely to be cohabiting or single, a minority, an immigrant, or poor at the baseline interview, compared to mothers who remained in

the sample, although these differences were small. We discuss how attrition might have affected our findings in the discussion section.

Measures

Wealth

We used reports of asset ownership to construct eight measures of family wealth. No information on financial assets or stocks was collected, so net worth was measured using mother's reports of two types of physical assets: home and vehicle. Although we could not account for all potential assets, for the bulk of the low and middle income U.S. population, cars and homes represent the two most commonly owned and valuable assets (Boehm & Schlottmann, 2008; Current Population Reports 1986, Tables 1, 3; Herbert & Belsky, 2008; Taylor et al., 2011; Wolff, 2010). In addition, as the sample was predominately low-income, where ownership of stocks, bonds, and other financial assets is rare, we were not likely to be missing out on too many assets for most respondents (Blank & Barr, 2009; Domhoff, 2011; Spilerman, 2000). The fact that we could not investigate savings or debts is a limitation of our study; for example, we could not determine if a family spent their savings or sold less valuable assets before selling their homes or cars during the Great Recession.

Home and car ownership. Home ownership was defined as a dummy variable that took the value of one when a mother reported owning a home and zero otherwise. Car ownership was coded as one when a mother reported owning a car and zero otherwise.

Net worth. We studied three measures of net worth: home, car, and total net worth. Home net worth was a continuous measure of the value of the home minus the debt on the home in 2010 dollars. Home value and home debt (mortgage) were measured in the first survey wave, where a mother reported owning a home. If a mother reported owning a home in subsequent

waves but did not change residence, we carried forward the value of that home using the Home Price Index (and adjusting prices to 2010 dollars using the Consumer Price Index [CPI]) for their specific city of residence. We made no adjustment to the home-owner's reported mortgage amount (as mothers did not re-report the remaining mortgages on their homes or whether they refinanced a mortgage) and thereby under-estimated the net value of the home and net worth (as mortgage value may be overestimated). The underestimate is likely to be small because in the early years of a mortgage most of the payment goes toward interest payment rather than principal.

Car net worth was coded as a continuous measure of the value of the car (i.e., truck or van also apply) minus the debt on the car in 2010 dollars. Car value and car debt were reported in each survey wave, where a mother reported owning a car. We did not have information on whether a mother still owned the same car as previously reported or whether she bought a new (or multiple) vehicles. Therefore, this variable was an estimated car net worth. Lastly, total net worth was coded as the value of the home plus the value of the car minus the debt on these two assets. If mothers owned no physical assets, the net worth variable took the value of zero.

Home and car loss. Home loss was defined as a dummy variable that took the value of one when a mother reported not owning a home in the current wave conditional on having owned a home in the previous wave, and zero otherwise. This variable was only defined for those who bought a home prior to year 9 (restricting the variable to those that reported owning a home previous to wave 9 gave them an opportunity to lose a home). Similar to home loss, car loss was defined as a dummy variable that took the value of one when a mother reported not owning a car in the current wave conditional on owning a car in the previous wave, and zero otherwise. Again, this variable was only defined for those who owned a car at some survey wave prior to year 9.

For both car and home loss, we could not identify whether a mother lost (or was foreclosed upon) or sold the asset. Thus, these variables served as proxies for home and car loss.

Additional year 9 measures. In the year 9 survey, a few additional measures of wealth were collected. Although they were not the main focus of our study, we included descriptive information on these assets as they provide more information on a family's capacity to accumulate buffer assets and wealth. These variables included whether a mother held a credit card debt, a loan (e.g., student, bank, or any other from a different lending institution), or had at least two months of savings, and the amount on each one.

Unemployment

The twenty metropolitan sample cities in FF provided considerable variation in the unemployment rate over time, which was especially large during the Great Recession years (2007-2009) when the last data collection took place. For example, some metropolitan areas faced dramatic economic downturns (e.g., Detroit, Michigan), whereas others were less negatively impacted by the financial shock (e.g., Norfolk, Virginia). Using data from the Bureau of Labor Statistics' Local Area Unemployment Statistics (LAUS), we appended a measure of city unemployment rate to the FF data based on a mother's sample city using her Core Based Statistical Area (CBSA, similar to a Metropolitan Statistical Area) and date of interview. We used the city in which she was originally sampled (rather than her current city of residence) to control for the possibility of endogenous migration in response to changes in unemployment rates. But, because a proportion of mothers migrated from their sample city, we also analyzed how the unemployment rate in the current city of residence was associated with changes in household wealth. These results are discussed in the extensions section.

Family Structure

Family structure was defined as being married, cohabiting, or single at the birth of the child. We studied baseline relationship status (as opposed to later relationship statuses) for two reasons. First, patterns of asset accumulation are likely to vary greatly by relationship status at child's birth. Second, since family structure can be affected by economic fluctuations, by holding constant the relationship status at birth we reduced the problem of endogenous controls.

Additional Variables

We included a number of basic socioeconomic and demographic characteristics of the mother that were measured at the baseline survey that research finds are associated with asset accumulation. These controls were: a continuous measure of mother's age at the birth of the child, and a set of dummy variables for race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, or other race/ethnicity), education (less than high school, high school, some college, and college or more), and immigrant status (foreign born). We also controlled for the income-to-needs ratio (using the official U.S. poverty thresholds, adjusted by family size and year) to create dummy variables indicating less than 100% of poverty, 1-199% of poverty, 2-399% of poverty, and 400%+ of poverty.

Analytic Strategy

To estimate how the Great Recession was related to household wealth, we used two empirical models, an Ordinary Least Squares (OLS) regression for the continuous outcomes (total net worth, home net worth, and car net worth) and a logistic regression (Logit) for the binary outcomes (home loss and car loss). Both models used pooled data from years 1 through 9 with covariates from the baseline survey. Equation 1 describes the linear approach:

$$Y_{i,t} = \beta_0 + \beta_1 UR_{c,t} + \beta_3 X_{i,t-1} \ \alpha_c + \alpha_t + \varepsilon_{i,c,t} \qquad (1)$$

where $Y_{i,t}$ denotes the i'th respondent's wealth outcome measured at time (wave) t, UR the current unemployment rate at baseline city c, X is a vector of mother i characteristics measured at baseline. The terms α_c and α_t are vectors of dummies for baseline city and wave, respectively. The city fixed-effects control for time-invariant factors at the city level and the wave fixed-effects absorb factors/shocks that occurred in a given time that affected both the labor market conditions and wealth outcomes. The term ε is the disturbance. All models were two-way clustered at the baseline city and at the mother level to account for the within-city and within-mother correlation in the observations (following Cameron, Gelbach, & Miller, 2006). The main parameter of interest is β_1.

The estimation of Equation 1 was also conducted using an individual specific fixed-effects approach for the continuous outcomes. Results from the fixed-effects models (not reported but available on request) were consistent with the OLS results described below.

To study differences in the association between the Great Recession and wealth by family structure we performed separate analyses by stratifying the sample into married, cohabiting, and single mothers. We conducted Chow tests to investigate whether the associations between the unemployment rate and wealth differed across family structure (e.g., married versus single, married versus cohabiting).

RESULTS

Descriptive Results

Table 1 provides descriptive information on the sample composition and shows differences by family structure at child's birth. Twenty-five percent of the sample was married, 36% cohabiting, and 38% single. Mothers were about 25 years of age. Twenty-two percent of mothers were White, half were Black, and one quarter were Hispanic. Fifteen percent of mothers

were immigrants. Mothers were relatively economically disadvantaged; 33% had less than a high school degree, 30% a high school degree, almost 25% had some college, and 12% had completed college or more education. In terms of income, 40% of the mothers were poor (income-to-needs ratio below 1) and a quarter were near poor (income-to-needs ratio between 1 and 2). Differences by family structure revealed that married mothers were significantly more likely to be White, to be immigrant, were more educated, and had higher income-to-needs ratios, than cohabiting or single mothers. In comparison, cohabiting and single mothers were more likely to be Black or Hispanic, to have lower levels of education (more than 70% had a high school degree or less), and to be either poor or near poor than married mothers.

[Table 1 around here]

Table 2 presents summary statistics of the wealth and asset variables. For the full sample, the mean net worth was $29,300. One quarter of the sample owned a home which on average was valued around $240,000, and 10% had experienced home loss (sold their home and not bought a new one). Car ownership was more common, 66% owned a car with an average car value of $8,400, and 10% had experienced car loss (sold their car and not bought a new one). Wealth varied enormously by relationship status. Married couples had significantly higher levels of net worth compared to cohabiting and single mothers ($88,300 versus $12,200 and $6,600, respectively), were significantly more likely to own a home (55% versus 17% and 10%) and to own a vehicle (90% versus 66% and 50%). Cohabiting and single mothers were also twice as likely to have lost their homes as compared to married mothers (13% and 14% respectively, versus 7%) and their cars (11% and 14% versus 4%).

[Table 2 around here]

Table 2 also shows descriptive statistics of more comprehensive wealth measures that were available for year 9 only. We found that married mothers were significantly more likely to have any credit card debt than cohabiting or single mothers (51% versus 36% and 33%, respectively) and to have larger amounts of credit card debt ($4,300 versus $1,800 and $1,400). On the other hand, married mothers were also more likely to have at least two months of savings (42% versus 14% and 12), and to save larger amounts ($14,300 versus $6,000 and $5,000). Calculating household net worth with these more comprehensive measures reduced the level of wealth from $28,200 (based on home and car only) to $24,000 (based on home, car, debts, loans, and savings) –approximately 15%.

Multivariate Results for the Full Sample

[Table 3 around here]

Table 3 presents the main results of the association between the city unemployment rate and household net worth for the full sample. The unemployment rate coefficient was statistically significant and indicated that a one percentage point increase in the unemployment rate was associated with $3,600 lower net worth. To estimate the percent change in net worth during the Great Recession, we studied the predicted change in net worth associated with a 5 percentage point change in the unemployment rate. To do this, we focused on the last wave (since it covered the period of the Great Recession) and we calculated a predicted net worth holding the unemployment rate constant at 5% (and the covariates set to the mean), and we compared it with a predicted net worth holding the unemployment rate constant at 10%. We then calculated the

percent change by dividing the predicted net worth at 10% unemployment by the predicted net worth at 5% unemployment. We found that a 5 percentage point change in the unemployment rate was associated with a 46% predicted decline in net worth.

In terms of the covariates in the full regression model, we found that being married was associated with $25,000 higher net worth relative to being unmarried, net of differences in age, race/ethnicity, immigration status, education, and income. Similarly, education was associated with higher net worth; a college degree was associated with almost $50,000 greater wealth as compared to less than a high school degree. Net of other factors, Hispanic mothers had $24,000 less and Black mothers $13,000 less net worth compared to White mothers (although this difference was not statistically significant). Moreover, these results showed the highly non-linear effects of income on household wealth, which has been extensively documented in previous research (Brownning & Lusardi, 1996; Lupton & Smith, 2003). For example, we found that having an income-to needs-ratio of 4 and above is associated with 14 times higher the net worth associated with having an income-to needs-ratio between 2 and 4, and with 25 times higher the net worth associated with having an income-to-needs ratio between 1 and 2.

[Table 4 around here]

In Table 4 we disaggregate total household net worth into home and car net worth and study how the unemployment rate is associated with the probability of losing a home and a car. We studied the two net worth outcomes using ordinary least squares regressions and the home and car loss using logistic regressions. We found that a one percentage point increase in the UR was associated with significantly lower home net worth (almost $3,000) and significantly lower car net worth ($120). Moreover, we found that a rise in unemployment was significantly

associated with 11% higher odds of home loss for mothers who had owned a home prior to year 9. Lastly, the unemployment rate was associated with 2% higher odds of car loss, although the coefficient was not significant. When we estimated the predicted percent change that occurred in the Great Recession, increasing the unemployment rate from 5 to 10%, we found that home net worth was 46% lower and car net worth was 26% lower, and that the estimated odds of home and car loss were 50% and 8% higher, respectively.

As we were particularly interested in differences by family structure, Table 4 also presents the coefficients on the covariates for being a married or cohabiting mother (the omitted category is being a single mother). We found that being married was associated with greater home net worth (by $24,000) relative to being unmarried, conditional on all other individual covariates. Married and cohabiting mothers also had higher car net worth, $1,600 and $350 respectively, than single mothers. Although we did not find that relationship status was associated with home loss, we find suggestive evidence that cohabiting mothers may have experienced higher odds of home loss than single mothers. With respect to car loss we found that being married and cohabiting was negatively associated with car loss.

Multivariate Results by Family Structure

[Table 5 around here]

Given the heterogeneous distribution in wealth and asset holdings across family structure, we also examined married, cohabiting, and single mothers separately. Table 5 stratifies the sample by mother's relationship status (at the child's birth) and shows results for all outcome variables. In general, we found larger absolute declines in wealth for married families; however, the relative losses associated with the Great Recession were larger for

cohabiting and single mother households. A one percentage point increase in the unemployment rate was associated with $9,300 lower net worth for married women, $2,000 lower net worth for cohabiting couples, and $1,400 lower net worth for single mothers. Chow tests indicated that the differences in associations between the unemployment rate and household wealth between married, cohabiting, and single mothers were all statistically significant. Estimating the percent change in net worth with a 5 percentage point change in the unemployment rate (during year 9), we found that net worth was 42% percent lower for married households, 54% lower for cohabiting couples, and 62% lower for single mothers.

Results for home and car net worth also indicated that married mothers experienced a larger absolute decline in their home and car wealth. A one percentage point increase in the unemployment rate was associated with home net worth that was significantly lower for married couples, $7,900, and for cohabiting and single mothers it was $1,700 and $1,300 lower, respectively. Chow tests indicated that for the home net worth analyses, married mothers were distinct from cohabiting and single mothers. Although car net worth was lower as a result of an increase in unemployment, we only found a significant decline for married couples ($314), who on average were more likely to own vehicles and to own more expensive ones than single or cohabiting mothers. Chow tests showed a similar pattern for car net worth: we found statistical differences between married and unmarried mothers' unemployment rate coefficients, but not between single and cohabiting mothers. Finally, the association between unemployment and home loss did not differ by marital status, but car loss was significantly higher for single mothers as compared to married and cohabiting households.

Extensions

Other Measures of Labor Market Conditions: Employment-to-Population Ratio. Our main focus in this paper was on the unemployment rate. Although, since long spells of unemployment, like in the Great Recession, may discourage workers from continuing to look for jobs, induce other members in the household to search for a job or work longer hours, we also examined the association between the employment-to-population ratio and wealth. Using data from two different sources, the LAUS (which uses data from the Current Population Survey) and the Current Employment Statistics (CES) survey, we constructed employment-to-population rates (number employed divided by the population aged 18-64 obtained from the census) that were merged to FF based on a mother's sample city and date of interview. Results showed that using the employment rate provided results that were qualitatively similar to those obtained from the unemployment rate. Our overall findings indicated that a one percentage point increase in the employment rate was associated with a $3,200 increase in net worth (compared with a $3,600 decline when we used the unemployment rate). These results are available upon request.

Migration. Since a number of mothers migrated over time from their original/baseline cities to other areas (19% since baseline interview), we examined whether economic conditions in the current place of residence, rather than in the sample city, were also associated with household wealth. So for example, if a mother was first interviewed in New York, NY, but she later moved to Corpus Christi, TX, in the first unemployment measure (sample city) we appended the unemployment rate for New York for all survey waves. In the second unemployment measure (current city) we appended the New York unemployment rate to the survey waves for when she lived in New York, and then appended the unemployment rate for Corpus Christi for the survey waves in which she resided in

Corpus Christi. Although this approach allowed us to study the unemployment rate currently faced by mothers, using the current city of residence unemployment rate is endogenous, as families may self-select to migrate to cities with better economic conditions. For this reason, we selected the sample city unemployment rate as our preferred model.

Results showed substantially similar estimates of the unemployment rate in the current city of residence to those obtained using the baseline/original city, providing evidence of little selective migration. We found that a one percentage point increase in the current city unemployment rate was associated with a $3,130 decline in net worth (compared with $3,600 when we used the sample city unemployment rate). Differences by family type provided results that were very similar in magnitude and confirmed that unmarried mothers were more likely to experience larger wealth losses.

DISCUSSION

In this paper, we studied the association between the local area unemployment rate and household wealth among families with children. We moved beyond prior work on the Great Recession by examining differences in associations by family structure –married, cohabiting, and single—and by employing an empirical strategy that exploited variation in the unemployment rate over time and across cities. We found that a one percentage point increase in the unemployment rate was associated with $3,600 less net worth for families with children, lower home and car net worth ($2,971 and $270 respectively), and an 11% increase in the odds of home loss.. Overall, when we estimated the percent change in net worth for urban families with children in the Great Recession (modeling a change in the unemployment rate from 5 to 10%), we found a 46% decline in assets. Although we used a different empirical approach, our results are consistent with previous research and in particular with those studies analyzing longer

periods of time. Kochhar et al., (2011) found that median net worth fell by 28% from 2007 to 2009, the Federal Reserve found a 39% decrease 2007 to 2010 (Washington Post, 2012), and Pfeiffer el at., (2013) found a decrease by 43% from 2007 to 2011.

Most important, we also found differences in the associations between the unemployment rate and assets by relationship status. Although the absolute decline in wealth was larger for married families than for cohabiting or single mothers, the percent decline in wealth was much larger for cohabiting and single mothers than for married couples. Both the greater absolute decline and smaller percentage decline in wealth for married families are consistent with theory. Marriage leads to greater wealth accumulation because of gains from trade, economies of scale, and risk sharing. As a consequence, married families are at risk for much greater absolute losses. But, the same factors that promote greater wealth accumulation for married couples protect them against losses.

We found mixed support for our expectation that married mothers would be less likely to lose their homes and cars as a result of the recession. Though home loss was much more common among cohabiting and single mothers (13% and 14%, respectively), than among married couples (7%), we did not find statistically significant differences in the association between the unemployment rate and home loss by relationship status. On the other hand, single mothers were significantly more likely to lose their car with an increase in the unemployment rate. In supplemental analyses, we found some evidence that indicated that those single mothers who were more likely to lose their vehicles were those who owned the least expensive cars. These findings are consistent with the theoretical idea that single mothers are the most credit constrained among all groups and they are less able to risk share (as they have no partner) in times of economic need.

This study has some limitations. Most important, the measures of household wealth used here were based only on home and car assets (the only two assets available in all waves of FF). Although housing remains the most important asset held in household portfolios and automobiles are the most important asset for lower income families (Domhoff, 2011; Scholz & Seshadri, 2009; Spilerman, 2000; Wolff, 1998), other assets and debts may be more sensitive to unemployment than homes and cars. Second, our sample is not generalizeable to the population as FF is an urban birth cohort sample. But, the oversample of nonmarital births allowed us to distinguish the associations with the unemployment rate by relationship status. Third, we found that attrition in FF is positively correlated with economic disadvantage. Hence, it is likely that the missing mothers – who are more likely to be unmarried, low educated, and poor – are those with fewer assets and lower wealth. Thus, our study may underestimate the relationship between the unemployment rate and wealth among families with young children.

Despite some limitations, this paper highlights two important policy concerns. First, to the extent that limited asset holdings reduce the potential for a family to achieve social and economic development, the effects of the Great Recession accentuated the gap in economic well-being between married and unmarried families. Second, given the well-documented relationship that exists between households' wealth and assets, and child development, the fact that so many families experienced declines in net-worth could suggest important long-term effects on young children whose parents faced economic distress.

A useful extension of our work would be to explore how household consumption was affected by the recession and how this in turn affected household welfare. Although this paper provides suggestive evidence that credit constrained individuals are more likely to sell or give up their cars when they face an economic shock, studies that can explore whether increases in debt

or the sale of smaller assets is related to consumption smoothing would be another area of research.

REFERENCES

Acs, G., & Nelson, S. (2002). *The kids are alright? Children's well-being and the rise of cohabitation*. The Urban Institute, Washington D.C.

Becker, G. (1981). *A treatise on the family*. Cambridge: Harvard University Press.

Blank, R., & Barr, M. (2009). *Insufficient funds: Savings, assets, credit, and banking among low-income Households*. Russell Sage Foundation, New York.

Blau, F.D., & Graham, J. (1990). Black white differences in wealth and asset composition. *Quarterly Journal of Economics*, 105:321-40.

Bocian, D.G., Li, W., & Ernst, K. (2010). *Foreclosures by race and ethnicity: The demographics of a crisis*. Center for Responsible Lending, Durham, NC.

Boehm, T.P., & Schlottmann, A. (2008). Wealth accumulation and homeownership: evidence for low-income households. *Cityscape,* 10(2): 225-256.

Bosworth, B. (2012). Economic consequences of the Great Recession. Evidence from the Panel Study of Income Dynamics. *Center for Retirement Research, Working paper* (2012-4).

Bradley, R.H., & Corwyn, R.F. (2002). Socioeconomic status and child development**.** *Annual Review of Psychology*, 53: 371-399.

Bricker, J., Bucks, B., Kennickell, A., Mach, T.L., & Moore, K. (2011). Drowning or weathering the storm? Changes in family finances from 2007 to 2009. *NBER, Working Paper 16985.*

Brownning, M., & Lusardi, A. (1996). Household saving: Micro theories and micro facts. *Journal of Economic Literature,* v. XXXIV, 1797-1855.

Cameron, C., Gelbach, J., & Miller, D. (2006). Robust inference with multi-way clustering. *NBER, Technical Working Paper* 327.

Carroll, C. (2001). A theory of the consumption function, with and without liquidity constraints. *Journal of Economic Perspectives,* 15(3), 23–46.

Case & Schiller U.S. National home price index (2010). Link: http://us.spindices.com/indices/real-estate/sp-case-shiller-us-national-home-price-index

Chakrabarti, R., Lee, D., van der Klaauw, W., & Zafar, B. (2011). Household debt and saving during the 2007 recession. *NBER, Working Paper* 16999.

Conger, R.D., & Donnella, M.B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology*, 58, 175–199.

Conley, D. (1999). *Being black, living in the red: Race, wealth and social policy in America*. Berkeley: University California Press.

Current Population Reports. (1986). *Household wealth and asset ownership*. Household Economic Studies. US Department of Commerce, Washington D.C.: Gov. Print. Office.

Emmons, W., & Noeth, B. (2012). *Household financial stability: who suffered the most from the crisis?*. Regional Economist, Federal Reserve Bank of St. Louis. Link: http://www.stlouisfed.org/publications/re/articles/?id=2254

Deaton, A. (1991). Saving and liquidity constraints. *Econometrica*, 59, 1221–1248.

Domhoff, W. (2011). Wealth, income, and power. Report. Link: http://xa.yimg.com/kq/groups/17260182/879982920/name/wealth+distribution+ala+uc+santa+cruz.pdf

Garfinkel, I., & McLanahan, S.S. (1986). *Single, others and their children: A new American dilemma*. Urban Institute, Washington D.C.

Grusky, D., Western, B., & Wimer, C. (2011). *The Great Recession*. Russell Sage Foundation, New York.

Haveman, R.H., & Wolfe, B. (1995). *Succeeding generations: On the effects of investments in children*. Russell Sage Foundation, New York.

Hendey, L., Mckernan, S.M., & Woo, B. (2012). Weathering the recession: The financial crisis and family wealth changes in low-income neighborhoods. *The Urban Institute*, http://ssrn.com/abstract=2205363.

Herbert, C.E., & Belsky, E.S. (2008). The homeownership experience of low-income and minority households: A review and synthesis of the literature. *Cityscape,* 10 (2): 61-94.

Hurd, M.D., & Rohwedder, S. (2010). Effects of the financial crisis and great recession on American households. *NBER, Working paper* 16407.

Kennickell, A.B. (2011). Tossed and turned: Wealth dynamics of U.S. households 2007 – 2009. *Finance & Economic Discussion Paper*. Federal Reserve Board, Washington D.C.

_____ (2012). The other, other half. Changes in the finances of the least wealthy 50 percent, 2007-2009. *Finance & Economic Discussion Paper*, Federal Reserve Board, Washington D.C.

Kochhar, R., Fry, R., & Taylor, P. (2011). *Wealth gaps rise to record highs between whites, blacks, and Hispanics*. Pew Social & Demographic Trends, Washington D.C.

Lam, D. (1988). Marriage markets and assortative mating with household public goods: theoretical results and empirical implications. *Journal of Human Resources*, 23: 462-487.

Lillard, L., & Weiss, Y. (1996). Uncertain health and survival: Effect on end-of- life consumption. *Journal of Business and Economic Statistics*, 15(2): 254-68.

Lupton, J., & Smith, J.P. (2003). Marriage, assets, and savings, in *Marriage and the economy*, (ed. Grossbard-Shechtman, S.). Cambridge University Press.

Manning, W., & Lichter, D.T. (1996). Parental cohabitation and children's economic well-being. *Journal of Marriage and the Family*, 58, 998–1010.

McLanahan, S., & Booth, K. (1989). Mother-only families: Problems, prospects, and politics. *Journal of Marriage and the Family*, 51, 557-580.

NBER - Business Cycles Reference Dates: http://www.nber.org/cycles.html

Oliver, M.L., & Shapiro, T.M. (1997). *Black Wealth / White Wealth: A new perspective on racial inequality*. Routledge, New York.

Pfeffer, T.F., Danziger, S., & Schoeni, R.F. (2013). Wealth disparities before and after the Great Recession. *National Poverty Center, Working Paper Series* #13-05.

Reis, R. (2009). The times series properties of aggregate consumption: implications for the costs of fluctuations. *Journal of European Economic Association*, 7(4): 722-753.

Scholz, J.K., & Seshadri, A. (2009). What replacement rates should households use? *University of Michigan Retirement research Center, Working paper* 2009-214.

Shapiro, T., Meschede, T., & Osoro, S. (2013). The roots of the widening racial wealth gap. explaining the black-white economic divide. *Institute on Assets and Social Policy.*

Scott, E. (2004). Marriage, cohabitation and collective responsibility for dependency. *University of Virginia Law School, Public Law and Legal Theory, Working Paper Series*, N.8.

Sherraden, M. (1991). *Assets and the poor: A new American welfare policy*. Sharpe, Armonk, NY.

Smith, J.P. (1995). Racial and ethnic differences in wealth in the health and retirement. *Journal of Human Resources*, 30 (Suppl.): 159-83.

Spilerman, S. (2000). Wealth and stratification processes. *Annual Review of Sociology*, v(26): 497-524.

Sum, A., & Khatiwada, I. (2010). *Labor underutilization problems of U.S. workers across household income groups at the end of the Great Recession: A truly great depression among the nation's low-income workers amidst full employment among the most affluent*. Center for Labor Market Studies, Northeastern University, Boston, MA.

Taylor, P., Kocchar, R., Fry, R., Velasco, G., & Motel, S. (2011). Wealth gaps rise to record highs between Whites, Blacks, and Hispanics. *Pew Research Center,* Washington D.C.

Waite, L.J. (1995). Does marriage matter? *Demography*, V. 32, No. 4, 483-507.

Weiss, Y. (1997). The formation and dissolution of families: why marry? Who marries whom? And what happens upon divorce. In the *Handbook of Population and Family Economics*, (ed. Rosenzweig, M.R. & Stark, O.), ed.1, v1, chapter 3, 81-123, Elsevier.

Washington Post (June 11th, 2012). *Americans saw wealth plummet 40 percent from 2007 to 2010* by Ylan Q. Mui, http://articles.washingtonpost.com/2012-06-11/business/35461572_1_median-balance-median-income-families

Wolff, E.N. (1998). Recent trends in the size distribution of household wealth. *Journal of Economic Perspectives*, 12 (3): 131-150.

_____ (2010). Recent trends in household wealth in the United States: Rising debt and the middle -class squeeze- an update to 2007. *Levy Economics Institute, Bard College*, *Working paper* 589.

_____ (2012). The asset price meltdown and the wealth of the middle class. *NBER*, *Working Paper* 18559.

Wolff, E.N., Owens, L.A., & Burak, E. (2009). How much wealth was destroyed in the Great Recession? in *The Great Recession*, Ed. Grusky, D.B. Western, D., and Wimer, C. Russell Sage Foundation, New York.

Yeung, J., & Conley, D. (2008). Black-White achievement gap and family wealth. *Child Development, 79*(2), 303-324.

Table 1: *Sample Descriptive Statistics by Relationship Status (N=4,898)*

	Full Sample	Relationship Status		
		Married	Cohabiting	Single
Relationship Status (*%*):				
Married	25.3	100.0	-	-
Cohabitating	36.0	-	100.0	-
Single	38.7	-	-	100.0
Age (*M*) [a,b,c]:	25.3 [6.1]	29.5 [5.6]	24.2 [5.5]	23.6 [5.7]
Race/Ethnicity (*%*):				
White [a,b]	22.5	45.8	19.2	10.8
Black [a,b,c]	47.9	24.1	45.3	66.0
Hispanic [a,b,c]	25.9	23.7	33.1	20.8
Other [a,b]	3.4	6.5	2.6	2.4
Immigrant [a,b,c]	14.5	23.2	15.7	7.8
Education (*%*):				
Less than HS [a,b,c]	33.2	14.4	38.2	40.8
HS [a,b]	30.3	19.3	34.3	33.9
Some college [a,b]	24.8	29.3	24.3	22.3
College or more [a,b,c]	11.6	37.1	3.1	2.9
Income-to-needs ratio (*%*):				
0-1 [a,b,c]	39.7	12.8	41.8	55.3
1-2 [a,c]	24.8	18.1	30.0	24.3
2-4 [a,b,c]	14.3	22.2	14.4	9.1
4+ [a,b,c]	17.7	43.5	9.5	7.0
N – person-years	*13,569*	*3,433*	*4,880*	*5,256*
N – mothers	*4,898*	*1,187*	*1,782*	*1,927*

Note: Standard deviation in parentheses. Sample includes all women in years 1, 3, 5, and 9. Statistically significant differences from t-tests ($p<0.05$) are noted as follows: [a] married versus cohabiting mothers [b] married versus single mothers [c] cohabiting versus single mothers.

Table 2: *Descriptive Statistics of Wealth Outcomes by Relationship Status (N=13,569 mother-year observations)*

		Full Sample	Relationship Status		
			Married	Cohabiting	Single
%:	Home owner [a,b,c]	23.5	55.3	16.7	9.8
	Home loss [a,b]	9.9	6.9	13.3	14.0
	Car owner [a,b,c]	65.7	89.3	66.2	50.0
	Car loss [a,b,c]	9.8	4.3	11.0	13.6
$ (in thousands):	Net worth [a,b,c]	29.3 [142.0]	88.3 [264.6]	12.2 [46.5]	6.6 [36.0]
	Home value [a,b]	238.6 [307.3]	295.5 [368.4]	158.1 [147.8]	147.8 [142.3]
	Home debt [a,b]	118.9 [118.1]	141.7 [126.3]	88.3 [96.5]	81.5 [94.6]
	Home net worth [a,b]	115.6 [271.4]	150.1 [337.1]	66.3 [95.0]	60.2 [100.3]
	Car value [a,b,c]	8.4 [8.8]	12.2 [10.6]	7.0 [7.4]	6.2 [6.5]
	Car debt [a,b]	5.2 [8.3]	6.8 [9.7]	4.6 [7.5]	3.9 [6.8]
	Car net worth [a,b,c]	3.5 [7.7]	5.4 [9.7]	2.7 [6.5]	2.4 [5.7]
Outcomes for year 9 (%):	Credit card debt [a,c]	38.1	50.9	35.8	32.8
	Loans [b]	37.7	40.7	36.8	36.6
	Has 2 months of savings?	20.0	41.5	14.3	12.4
$ (in thousands):	Credit card debt [a,b,c]	2.2 [6.1]	4.3 [8.8]	1.8 [5.2]	1.4 [4.2]
	Loans [b]	8.8 [34.5]	16.9 [57.2]	6.5 [27.0]	6.1 [18.6]
	Has 2 months of savings? [a,b]	7.6 [8.5]	14.3 [13.1]	6.0 [5.2]	5.0 [4.3]
For everyone ($):	Adjusted net worth[1] [a,b,c]	24.0 [139.4]	76.5 [263.8]	10.1 [50.1]	4.9 [45.7]
	Net worth[2] [a,b,c]	28.2 [136.5]	84.6 [258.3]	12.7 [42.6]	7.5 [40.7]

Note: Standard deviation in parentheses. N =13,569 mother-years, year 9 n=3,515 mothers. Statistically significant differences from t-tests ($p<0.05$) are noted as follows: [a] married versus cohabiting mothers, [b] married versus single mothers, [c] cohabiting versus single mothers.
[1]Includes home, car, credit card debt, loans, debts, and savings.
[2] Includes home and car only.

Table 3: *The Association between Unemployment Rate and Net Worth (N=13,569 mother-year observations)*

	Net Worth	
Variable	*B*	*SE B*
Unemployment rate	-3,609***	1,022
Relationship status:		
Married	26,052***	4,726
Cohabiting	-71	1,448
Income to needs ratio:		
1-2	1,956	1,687
2-4	3,464	3,236
4+	48,095***	10,726
Age	1,907***	481
Race/ethnicity:		
Black	-12,946	9,716
Hispanic	-23,866***	5,403
Other race/ethnicity	53,619	46,854
Education:		
High School	592	2,253
Some College	-54	4,736
College or more	52,584***	10,245
Immigrant	3,079	9,369
% change[1]	*-46%*	
N	*13,569*	
R^2	*0.135*	

Note: Sample is pooled and includes all mothers in years 1, 3, 5, and 9 who report information on wealth. The model controls for individual covariates (race/ethnicity, age, education, income, and immigration status), city and survey wave fixed effects. Errors are clustered at the baseline city and mother levels.

[1]Predicted percent change in wealth associated with a change in the unemployment rate from 5 to 10% in year 9.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4: *The Association between the Unemployment Rate and Home and Car Net Worth, and Home and Car Loss*

	Home Net Worth (OLS)		Car Net Worth (OLS)		Home Loss (Logistic)			Car Loss (Logistic)		
Variable	B	SE B	B	SE B	B	SE B	OR	B	SE B	OR
Unemployment rate	-2,971***	736	-120***	40	0.10***	0.04	1.105	0.02	0.03	1.017
Relationship status:										
Married	23,588***	4,498	1,554***	217	0.02	0.10	1.023	-0.59***	0.12	0.557
Cohabiting	-483	1,443	344***	116	0.11	0.10	1.116	-0.14**	0.07	0.866
% change[1]	*-44%*		*-26%*		*50%*			*8%*		
N	*13,569*		*13,034*		*3,322*			*8,340*		
R^2	*0.127*		*0.101*							

Note: Sample is pooled and includes all mothers in years 1, 3, 5, and 9 who report information on wealth (home and car). All models control for individual covariates (race/ethnicity, age, education, income, and immigration status), city and survey wave fixed effects. Relationship status is defined at the baseline survey. Errors are clustered at the city and mother levels.

[1]Predicted percent change in wealth associated with a change in the unemployment rate from 5 to 10% in year 9.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 5: *The Association between the Unemployment Rate and Net Worth (Total, Home, Car) and Loss (Home and Car) by Relationship Status*

	Net Worth [abc] (OLS)		Home Net Worth [ab] (OLS)		Car Net Worth [ab] (OLS)		Home Loss (Logistic)			Car Loss [bc] (Logistic)		
Variable	B	SE B	B	SE B	B	SE B	B	SE B	OR	B	SE B	OR
Married												
Unemployment rate	-9,300***	2,349	-7,906***	1,898	-314**	124	0.11	0.07	1.111	0.00	0.09	0.998
% change[1]	*-42%*		*-39%*		*-32%*		*57%*			*1%*		
Cohabiting												
Unemployment rate	-1,960***	609	-1,671***	484	-114	71	0.10	0.08	1.109	-0.05	0.05	0.953
% change	*-54%*		*-57%*		*-31%*		*48%*			*18%*		
Single												
Unemployment rate	-1,409***	327	-1,301***	271	-32	69	0.11	0.10	1.120	0.08**	0.04	1.08
% change	*-62%*		*-69%*		*-14%*		*49%*			*39%*		

Note: N = 13,569 mother-year cases. Sample is pooled and includes all mothers in years 1, 3, 5, and 9 who report information on wealth (home and car). All models control for individual covariates (race/ethnicity, age, education, income, and immigration status), city and survey wave fixed effects. Relationship status is defined at the baseline survey. Errors are clustered at the baseline and mother levels.

Statistically significant differences from Chow tests ($p<0.05$) are noted as follows: [a] married versus cohabiting mothers, [b] married versus single mothers, [c] cohabiting versus single mothers.

[1]Predicted percent change in wealth associated with a change in the unemployment rate from 5 to 10% in year 9.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$