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Macroeconomic Conditions and Marital Stability from 1998-2009**

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## **Is a Bad Economy Good for Marriage? The Relationship between Macroeconomic Conditions and Marital Stability from 1998-2009**

### **ABSTRACT**

In the United States, the Great Recession has been marked by severe shocks to labor and housing markets. In this study, we combine longitudinal data from the Fragile Families and Child Wellbeing Study (FFCWS) with administrative data on local area unemployment rates and state-level mortgage delinquency rates to examine the relationship between labor and housing market distress and marital dissolution among couples with children. Although the recession increased economic hardship in our sample, we find no evidence that these economic stresses accelerated or increased rates of marital dissolution. On the contrary, our findings are consistent with the hypothesis that the recession led some couples to delay or forego marital separation. This relationship was strongest in subgroups that were hardest hit by the recession: racial and ethnic minorities and those with low levels of educational attainment.

The global economic crisis has shaken the economic foundations of households across the United States. In November of 2009, the unemployment rate reached 10.2%, the highest rate in the last quarter of a century (Goodman 2009). In 2008 and 2009 combined, 7.1 million foreclosures were recorded (Levy 2009). These economic shocks may have repercussions for marital stability. An economic downturn is characterized by increased experience of economic hardship and stress, which in turn may increase marital stress and marital dissolution. However, economic downturns may also forestall marital dissolution if couples cannot afford to maintain separate households. The historical record is mixed in terms of which of these offsetting effects dominates. The popular press provides anecdotal evidence of couples unable to afford the cost of separation during the Great Recession of the late 2000s, but systematic analysis is limited by the lack of recent and detailed data (Black 2009; Vedantam 2011). Public and policy interest in marital stability is often fueled by concerns about child well-being. Therefore, the question of foremost policy interest becomes: How is the recession affecting the stability of marriage among couples raising children? This is the focus of our paper.

Although many prior studies have examined the relationship between macroeconomic conditions and divorce, key questions remain open. Macro-level studies have analyzed the relationship between unemployment and divorce at the state level but have not captured variations in the economy at more local levels. Most of these prior studies have also stopped short of the current recession of 2008. An important element of the current recession is the housing market collapse, which may also influence marital stability. But, in focusing on unemployment, prior research has not explored this possibility. In addition, the macro analytic approach in prior research is not well suited to take into account variations in the composition of the married population over time, or to uncover subgroup differences in the relationship between the economy and marital stability. Our paper fills each of these gaps.

In this study, we combine longitudinal data on married couples from the Fragile Families and Child Wellbeing study with two measures of macro-economic conditions – local area unemployment rates and state-level mortgage delinquency rates. Using event history models, we assess the extent to which macro-economic measures of local economic distress are associated with marital dissolution. Our augmented set of Fragile Families data is particularly well-suited to examining our research questions because data collection for the fifth wave of the survey occurred between 2007 and 2010, the prime early years of the Great Recession. Our approach extends earlier research by incorporating local variations in unemployment and measures of housing market distress, and by controlling for the composition of the married population. Our individual-level data also allow us to analyze the relationship between the economy and marital dissolution for subgroups that have experienced the brunt of the recession: African Americans, Hispanics, and those having low levels of educational attainment.

## **THEORY AND PRIOR RESEARCH**

The relationship between macroeconomic downturns and divorce is theoretically ambiguous. The family stress model developed by Conger and Elder and co-authors (see Conger, Rueter, and Elder, 1999; Conger, Elder, et al. 1990) predicts that economic downturns will increase the experience of economic stress in married couples, which in turn will lead to marital stress and conflict and diminished marital quality. Whether a decline in marital quality precipitates a separation is a matter of theoretical and empirical debate. On the one hand, the declines in supportiveness and increases in conflict associated with economic hard times may create psychological or emotional pressure and incentives to end a marriage. On the other hand, practical, monetary considerations may prohibit couples, even those with poor marital quality, from separating.

The historical record from the twentieth century contains precedents for both economic downturns stabilizing *and* destabilizing marriages. Rates of marital dissolution declined during the Great Depression, consistent with the idea that divorce was unaffordable or at least perceived to be too costly during a time of widespread economic hardship. For instance, Monahan (1940) notes that the divorce rate dropped twenty percent following the economic crash of 1929. This decided downturn in the rate persisted through 1933 as the depression dragged on, a result so unsurprising at the time that Stouffer and Spencer (1936) noted that “sociologists could have predicted in advance that the depression of the 1930s would produce a great decline in marriage and divorce” (p. 56).

However, later research suggests that this relationship had reversed in post-World War II America. Higher levels of unemployment and worsening unemployment were found to be positively related to divorce in the period from 1947 to 1979, a result consistent with the theory that economic stress leads to diminished marital quality and elevated rates of marital dissolution (South 1985). South (1985) explains this reversal as the product of a changed social context – one in which the costs of divorce had become less salient in a more affluent America and one in which legal changes had somewhat reduced those costs.

It is striking then that recent research suggests that the pendulum has swung back again: in the most recent periods of study, poor macroeconomic conditions are associated with lower rates of divorce, a return to the empirical pattern of the Great Depression.

A trio of recent papers uses panels of state level data on divorce rates and unemployment rates to document this changed relationship between macro-economic conditions and divorce in the contemporary United States. Using the longest of the three panels (1960-2005), Amato and Beattie (2010) find that while there is no significant effect of unemployment on divorce over the entire forty-five year period, that null effect masks a significant negative relationship between unemployment and divorce rates in the period from 1985 to 2005, an effect that is robust to the

inclusion of state and year fixed effects. In the recent period, Amato and Beattie (2010) find that a one-percentage point increase in unemployment is associated with a 0.4 percentage point decrease in divorce. These results are confirmed in work by Hellerstein and Morrill (2011a) and Schaller (2011) who use somewhat shorter panels of data, 1976 – 2009 and 1978 – 2009 respectively, that match fairly well to Amato and Beattie's (2010) later period.

Reflecting on the results, Amato and Beattie (2010) suggest that the negative relationship between unemployment and divorce at the aggregate level is reflective of the role of cost in the decision to divorce and speculate that the turn-about in the relationship is indicative of Americans' increasing expectations for what constitutes "an acceptable standard of living" (p. 707) and their fears that such a standard would be unattainable following divorce.

These studies conducted at the macro level have limitations. First, these studies cannot control for the changing composition of married couples, which represents the lagged effects of economic conditions. Economic conditions affect who marries and affect the likelihood that a cohort of marriages will break up (Cvrcek 2011) and economic conditions will also affect the timing of childbearing, which in turn influences divorce (Fischer and Liefbroer 2006). Second, all of these studies focus on unemployment rates and none includes measures of the unique and severe housing market crash of the late 2000s. Third, these studies are not able to provide information on which population subgroups were most affected.

Two recent studies combine macroeconomic data with microdata, but in each case, the analysis stops short of the current recession and does not incorporate measures of the housing market. Hellerstein and Morrill (2011b) use data from the Survey of Income and Program Participation from 1996 through 2004 in which women retrospectively report their marital transitions. Consistent with the macro-level studies, Hellerstein and Morrill (2011b) find that weak macroeconomic conditions are associated with a decline in divorce even after controlling for the characteristics of the married

population. Arkes and Shen (2010) use a similar approach, pairing data from the NLSY-79 cohort with data on unemployment rates and examine the period from 1978 through 2006, but find different results. In contrast with the macro level studies and Hellerstein and Morrill (2011b), Arkes and Shen find that higher unemployment *increases* the chance of divorce for couples married between 6 and 10 years.

Groups historically disadvantaged in the labor market – race and ethnic minorities and those with low levels of educational attainment – have been hardest hit by the recession. Gaps in unemployment rates across race and education groups have widened considerably since the recession began (Hoynes, Miller, and Schaller 2011). According to the Bureau of Labor Statistics, the unemployment rate in 2009 was 16.3 percent for Black men compared with 8.8 percent for White men, and 14.9 percent for men with less than a high school degree compared with 4.7 percent for male college graduates. Recent research also suggests that Blacks and Hispanics have been subject to higher rates of foreclosure during the recession than their White counterparts (Gruenstein-Bocian, Li, and Ernst 2010). If the recession indeed affected marital stability, then we might expect the reverberations to be most strongly felt among racial and ethnic minorities and low educated groups.

## **DATA AND METHODS**

The Fragile Families and Child Wellbeing Study (FFCWS) is a prospective cohort study of almost 5,000 births occurring in 20 U.S. cities between 1998 and 2000. The study tracks the mothers and fathers of the birth cohort, and has interviewed these respondents at five points in time: at baseline, and 1, 3, 5, and 9 years after the initial interview. Data collection for the nine-year follow-up began in 2007 and was completed in March of 2010. This data collection schedule had the fortuitous benefit of capturing the experiences of these fragile families both before and during the economic crisis.



The sample for our analysis of marital dissolution consists of 2,229 mothers who were married at any point during the study. About half of the married sample (n=1,181) were married at the time their children were born. The other half of the married sample (n=1,048) married the father of the focal child or a new partner at some point during the follow-up period. About two-thirds of marriages after the birth were to the focal child's father and the other one-third were to new partners. Same-sex marriages are not captured in our data.

The dependent variable in our analysis is waiting time to marital separation, measured in months. The month and year of a marital separation was retrospectively reported by mothers. Mothers whose marital status changed from married to unmarried between survey waves were asked the month and year that their marriage ended. These reports represent the mother's own interpretation of marital separation, and may or may not represent a legal separation or divorce. If mothers began and ended a marriage in between two survey waves, these short-duration marriages would not be captured in our data. Over the follow-up, 596 of 2,229 marriages ended, or about 1 of 4 marriages.

To capture labor market and housing market distress, we use area-level measures of unemployment and mortgage delinquency. These macro-level measures are essentially exogenous to a given individuals' characteristics, but still capture an individuals' exposure to such distress. Because the Fragile Families data has been collected over a nearly 12 year period and across multiple cities and states, families were exposed to different degrees of severity of the economic crisis depending on the year and place of residence. We exploit this variation in timing and location by linking the FFCWS micro-data with macro-economic data from administrative sources.

We construct two measures of the strength of the macro-economy. First, we use monthly unemployment rates from the Bureau of Labor Statistics' (BLS) Local Area Unemployment Statistics (LAUS) series at the CBSA level. These unemployment data were merged with the Fragile Families

survey data by month and mother's geographic location at baseline. About 22% of mothers moved from their baseline CBSA during the follow-up, leading to some discordance between current place of residence and unemployment rate measures. Nevertheless, the pattern and significance of our results does not change when we restrict our sample to the 78% of mothers who lived in the same CBSA throughout the follow-up. Our measure of local unemployment should capture some of the variance in employment hardship and uncertainty experienced by individuals in different localities at different times. We include two measures based on the unemployment rate. The first is simply a three-month lagged measure of the unemployment rate. The second is the quartiles of unemployment rate, also lagged by three months. This categorical measure of unemployment is designed to capture non-linear relationships between the labor market and marital stability.

Second, we construct a time varying measure of state-level mortgage delinquency rates. While there is wide recognition that the national foreclosure rate has spiked, there is substantial geographic variation in the rate (Bernanke 2008; Merry and Wilson 2006). To measure delinquency on mortgage payments, we make use of the Mortgage Bankers Association's (MBA) National Delinquency Survey, a quarterly survey of lenders. The mortgage delinquency rate is defined as the end of quarter inventory of all mortgage loans on one to four unit residential properties that are delinquent as a share of all such outstanding mortgage loans. This data is available for the years 1979 – 2010 at the state level. We link these quarterly state-level reports of delinquency to respondents' records using respondents' state of residence at baseline. Although 14% of mothers moved out of state during the follow-up, restricting our analysis to the 86% of mothers who lived in the same state for the duration of the follow-up does not change the pattern or significance of our results and slightly strengthens the magnitude of the relationship between delinquency and separation. We create two measures based on the state mortgage delinquency rates. The first is simply a three-month lagged measure of the delinquency rate. The second is the quartiles of the delinquency rate,

also lagged by three months, which would detect non-linearities in the relationship between housing market distress and marital stability.

We also examine whether any relationships between macro-economic conditions and marital dissolution vary by the education or race/ethnicity of respondents. For education, we analyze less than high school, high school only, some post-secondary, and college graduate groups. For race/ethnicity, we analyze White, non-Hispanic; black, non-Hispanic; and Hispanic groups. Subgroups are based on mothers' self-reported characteristics rather than the characteristics of their male partners.

We draw on the rich Fragile Families data to include a number of social and demographic control variables. We include mothers' age, race/ethnicity (coded as dichotomous indicators of black, Hispanic, or other race relative to non-Hispanic whites), mothers' nativity, mothers' religion (dichotomous indicators of Catholic, other religion, or non-religious relative to Protestant), a dichotomous indicator of whether the mother lived with both her biological parents at age 14, and mother's education (coded as less than high school, high school diploma, some college, and college or more). Missing data were rare, affecting no more than 1% of observations for any variable. Missing data were imputed as predicted values from a regression.

### **Analytic Strategy**

Our principal analyses are based on event history models of time to marital dissolution. We use continuous time Cox proportional hazard models to estimate the relationship between macro-economic conditions and marital dissolution with exposure in person-months. Mothers who were married at the time of the birth are included in the sample with a control for their marital duration up to the time of the birth (married 0-1 years, 2-4 years, 5-7 years, 8 or more years, compared with

married after the birth). Mothers who were unmarried at the time of the birth entered the risk pool in the month they reported marrying the father or a new partner.

We conduct analyses for the overall sample of mothers who ever married and separately for race and education subgroups.

Our models of dissolution take months since the baseline interview as the duration variable with respondents censored at either the date of attrition from the survey (set as the date of last survey) or of the husbands' death. We analyze 197,248 person-months in our event history analysis. On average, mothers are observed for about 88 months (or a little over 7 years).

## **RESULTS**

Table 1 compares the characteristics of the entire married sample to the subsample whose marriages ended during the follow-up period. Mothers who had been married at least 2 years at the time of the birth were less likely to experience marital dissolution during the follow-up compared to mothers who were newly married at the time of the birth or married after the birth. This can be inferred because the proportion of the ever married sample who were married at least 2 years at baseline exceeds the proportion of the dissolution subsample who meet this criterion. This pattern is as expected given that the longer-duration marriages are selective in terms of their durability. Mothers with a college degree, who were white, who were immigrants to the United States, or who grew up in a two-parent family were also less likely to experience marital dissolution during the follow-up.

Table 2 summarizes labor market and housing market conditions in the period prior to the Great Recession and after the Great Recession began in 2008. Unemployment in the CBSAs in which respondents resided averaged 4.9% in the period from 1998 – 2007 but rose to an average of 7.3% in the period of 2008-2010. Within each portion of the time series, the variation in

unemployment rates was substantial. In the early period, unemployment ranged from 1.4% to 15.3% and in the later period from 2.7% to 22.1%. The mortgage delinquency rate in the Fragile Families states was 2.2% in the period from 1998 – 2007 and nearly tripled to 6.3% in the 2008 – 2010 period. Mortgage delinquency rates also varied dramatically within each of these periods. In all, these descriptive statistics portray the worsening of the United States economy during the economic crisis as well as the pronounced geographic and temporal variation in the rates of unemployment and mortgage delinquency across the cities and states in which Fragile Families respondents resided.

Figure 1 presents descriptive information on the percent of marriages that ended over each calendar year of the follow-up. Between 2000 and 2007, the percent of marriages ending within a calendar year ranged from 4.1 to 6.5. In 2008, the percent of marriages ending within the calendar year was 3.3%, the low point for the time series. In 2009, the dissolution rate of 3.9% was the second lowest point over the time series. This descriptive information does not take into account variations across cities in the severity of the recession, and does not control for the composition of the married sample. Our next set of results incorporate these details.

### **Results from Event History Models**

Table 3 presents results from Cox proportional hazards models of marital dissolution. Our models include fixed effects for city of residence and controls for the composition of the married population, including the duration of their marriages at the time they entered the sample. We find that higher unemployment is weakly associated with a lower hazard of marital dissolution but this relationship is not statistically significant (Model 1). In our next specification, presented as Model 2, we allow for a non-linear relationship between unemployment and marital dissolution by treating unemployment as a categorical variable divided into quartiles. The results from this specification

also show a weak negative relationship between unemployment and marital dissolution, which is not statistically significant.

The Great Recession dramatically affected the housing market as well as the labor market. Our next models estimate the relationship between mortgage delinquency rates and marital dissolution. Model 3 shows that higher mortgage delinquency rates are associated with lower rates of marital dissolution, but that this relationship falls short of statistical significance. The non-linear specification in Model 4 does yield significant results. The high rates of delinquency that characterize the Great Recession (i.e., delinquency rates in the top quartile) are associated with significantly lower rates of marital dissolution compared with the middle quartiles.

Our microdata allowed us to control for marital duration and other characteristics of the married population, characteristics that represent the legacy of prior economic and social conditions. Prior research based on macro-level outcomes such as the state-level divorce rate cannot take into account variations in the characteristics of the married population over time and across place. To see if this omission is consequential, we estimated naïve models that omit controls for married sample characteristics and control only for state of residence. These naïve models (not shown) generate results consistent with our full models, providing some reassurance that the omission of married sample characteristics does not bias macro-level analyses of state unemployment and state divorce rates.

### **Variation by Sub-Group**

Our evidence of a negative relationship between rates of mortgage delinquency and marital dissolution is an average relationship that does not reveal *for whom* housing distress decreases marital separation. The macroeconomic downturn affected some demographic subgroups more than others (Hoynes et al. 2011), and in Table 4 we explore how the relationship between the macroeconomy

and marital separation varied across subgroups defined by race/ethnicity and education. Our subgroup analysis provides information about whether the influences of the economic downturn were spread across all groups or concentrated in subgroups hardest hit by the recession, in particular, Black, Hispanic, and low education subgroups.

In the overall sample, the relationship between unemployment and marital dissolution was not significant. The top panel of Table 4 shows that this null relationship holds true across Black, Hispanic, and White subgroups and across the four education subgroups. We therefore do not find that unemployment has a stronger relationship to marital dissolution for subgroups that experience the highest rates of unemployment.

The bottom panel of Table 4 reveals that the relationship between higher mortgage delinquency rates and lower marital dissolution rates is concentrated among Black and Hispanic subgroups. The results we present are from Cox models that analyze each race/ethnic subgroup separately. For Blacks and Hispanics, moderate levels of mortgage delinquency are associated with a significantly higher hazard rate of marital dissolution compared with the high level of mortgage delinquency associated with the recession. For these groups, the hazard of dissolution is between 2 and 2.5 times larger in conditions of moderate mortgage delinquency compared with the highest quartile of mortgage delinquency. In contrast, for White mothers, mortgage delinquency is not related to marital dissolution. In separate models, not shown, we test the significance of the difference in the relationship between mortgage delinquency and marital stability across race and ethnic groups by interacting race/ethnicity with mortgage delinquency. We find a significant interaction between Black and mortgage delinquency and a nearly significant interaction ( $p < .10$ ) between Hispanic and mortgage delinquency, suggesting that recession had a significantly stronger influence on Black couples, and perhaps Hispanic couples, than on White couples.

The education subgroup results, although not as strong, also suggest that the relationship between housing market distress and marital stability was concentrated in the subgroups that were hardest hit by the economic downturn. The relationship between mortgage delinquency and marital stability is stronger among less than college education subgroups compared with the college educated subgroup. For the less than college education groups, the lower two quartiles of mortgage delinquency are associated with a higher hazard rate of marital dissolution relative to the top quartile of mortgage delinquency, though the differences fall short of statistical significance. In contrast, for college educated mothers, the lower two quartiles are associated with the same or a lower hazard rate of marital dissolution relative to the top quartile. The differences across education groups are not statistically significant, but combined with the results across race/ethnic subgroups, are suggestive that the subgroups hardest hit by the recession were those that experienced an increase in marital stability.

### **Robustness**

Theory and prior research do not provide a clear guide on the lag time between macro economic downturns and their repercussions for marital stability, but our results are robust to alternative lag specifications. Our analysis assumes that economic downturns have effects on marital dissolution in a relatively short period of 3 months. We estimated the relationship between the labor and housing market conditions in month  $X$  and marital dissolution in month  $X + 3$ . One reason why we chose a relatively short lag is that our measure of marital dissolution is not defined in legal terms but instead as the point that a mother defines as the beginning of her marital separation. If our dependent variable was legal divorce, we would have expected a longer lag. Although we feel it is reasonable to expect a fairly short lag between economic downturns and marital separation as reported by mothers, the choice of a 3 month lag is arbitrary. We tested the robustness of our results



to the substitution of 6-month lagged measures of the labor and housing market in place of the 3-month lags presented in our tables and found a pattern of results that was consistent in magnitude and significance.

The results we present are based on unemployment rates and mortgage delinquency rates. In separate models not shown, we repeated all of our analyses using alternative measures of labor market and housing market strength: employment-to-population ratios and foreclosure rates. In theory, employment-to-population ratios may capture effects of discouraged workers during bad economic conditions that would be missed by unemployment rates, but we find that results based on unemployment rates and employment-to-population ratios are similar: Neither one is significantly related to marital stability but each follows the pattern that worse economic conditions are associated with marital stability. Mortgage delinquency is a precursor to foreclosure, and these two rates are highly correlated. Foreclosure is more rare and more visible than mortgage delinquency as a measure of housing market distress. Nevertheless, the pattern of results for mortgage delinquency and foreclosure are similar. In each case, greater housing market distress is significantly associated with greater marital stability in our categorical specification.

## **DISCUSSION**

The Great Recession of 2008 – 2010 stands out clearly as a period of economic hardship in the states, cities, and households where Fragile Families couples resided. Mortgage delinquency rose sharply in these states and unemployment increased markedly in these cities. Our data allowed us to estimate the effects of the recession on marital stability for a policy relevant group: mothers raising young children.

Recent research has found that poor economic conditions have a stabilizing effect on marriage at the macro level. These studies have focused on unemployment rates and we build on

this research by showing that housing market distress has a stabilizing effect on marriage in a recent time period. We find that higher mortgage delinquency rates in a state are associated with lower rates of marital dissolution.

For homeowners, a bad housing market would increase the cost of marital dissolution by making it difficult for them to sell their homes. Couples who own their homes and are considering separating in a bad housing market are often faced with a set of undesirable or unworkable options. The cost of the mortgage may be out of reach for either member of the couple on his or her own. Houses, particularly those recently purchased, may be valued at less than their mortgage, meaning that the sale of the home would result in potentially large out of pocket expenses. These problems are quite likely to have affected Fragile Families couples. We estimate that about half of married couples in our sample are homeowners, and a sizeable minority are new homeowners. Based on home ownership data collected in the 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> wave of the study, we find that 15% of married couples in our sample bought their homes between 2003 and 2005, and 18% of married couples bought their homes between 2005 and 2008. This devalued asset is likely to represent a substantial impediment to marital dissolution for these couples.

Our research also provides some preliminary insights into the effects of the Great Recession on inequality. Groups historically disadvantaged in the labor and housing markets – race and ethnic minorities and those with low levels of educational attainment – have been hardest hit by the recession. Yet, our research shows that the overall effect of the recession has been to reduce dissolution and that these effects are concentrated among these disadvantaged groups. In this sense, though the recession's economic impacts have fallen hardest on racial minorities and the less educated, that could have had the result of narrowing the racial and educational divides in marital dissolution. Whether this narrowing will ultimately have a positive or negative effect on adult and child wellbeing remains to be seen. We might anticipate positive effects if this dynamic served to

preserve low-conflict marriages. However, if these dynamics served to keep high conflict marriages intact, that could have the opposite effect, decreasing child and adult wellbeing and widening racial and educational inequalities in wellbeing.

In contrast to recent research at the macro and individual levels, we do not find a significant relationship between unemployment and marital stability. One possible explanation for the relatively weak relationship between unemployment and marital stability in our research is the local CBSA level at which we measure unemployment. Recent macro-level studies have measured unemployment and divorce at the state level and found significant relationships (Amato and Beattie 2010; Hellerstein and Morrill 2011; Schaller 2011). This raises an important question about the most appropriate level of aggregation to use when linking macroeconomic conditions to social demographic outcomes.

We suspect that different levels of measurement capture different underlying theoretical mechanisms. Local area measures of the economy would be most appropriate if those who directly experience job loss or home loss drive the relationship between the economy and marital stability. Under this scenario, local macroeconomic measures aggregate and reflect these individual experiences of economic distress and would best capture the causal mechanism at work. However, we suspect that the influence of the economy on marital stability may be driven in part by feelings of economic insecurity among those who have *not* directly experienced job loss or home loss, but who nevertheless experience feelings of fear and insecurity during an economic downturn. We expect that individuals' perceptions of the economic climate come from a variety of sources, including social networks (the circumstances of friends and family), the media (local and national), and observations in daily life in neighborhoods, schools, and workplaces. Some of these sources are geographically proximate while others reflect national conditions. In the Great Recession, people may well have developed their feelings of economic security or insecurity based on the economic

conditions of their state or country rather than their locality. The national media attention to the collapse of the stock market and the housing market may have been more influential for people's sense of economic insecurity than their local climate of unemployment. If this is the case, and if feelings of economic insecurity affect marital stability, then state or national economic conditions may have more of an influence on social demographic outcomes than local economic conditions do.

Beyond potentially resolving a discrepancy between our results and those of prior research, the issue of the relative roles of realized economic distress and economic uncertainty in shaping social demographic outcomes is important in its own right and deserving of future research. Our research and other recent studies linking macroeconomic indicators to marital stability are limited in their ability to flesh out underlying mechanisms that lead to greater marital stability in times of macroeconomic distress. Bad economies may lead to greater marital stability through at least two disparate pathways. In bad economies, those who personally experience economic or housing hardship may be less likely to separate than they would be in a stronger economy because the costs of setting up separate households are out of reach. Alternatively or in addition, the stabilizing effect of a bad economy may be driven by those who do not directly experience economic or housing hardship but nevertheless experience feelings of insecurity given the state of the economy. This climate of uncertainty and low consumer confidence may push couples towards the status quo of remaining in their marriage, even those couples who retain their jobs and their homes during the downturn. This second pathway has not been considered or tested empirically but is a plausible and intriguing possibility. The macro effects of the recession on marital stability and other outcomes may go beyond the aggregation of individual instances of job loss or foreclosure (Hellerstein and Morrill 2011). Under this scenario, the social demographic influences of macroeconomic conditions are widespread, affecting a much broader segment of the population than the unfortunate subset who lose their jobs or their homes. A fruitful direction for future research is tackling this question of

whether the social demographic consequences of the recession reflect the responses of those who directly experience economic hardship, or whether recessions influence social demographic behavior in a more sweeping and pervasive manner.

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**TABLES:****Table 1. Characteristics of Mothers Ever Married and of Mothers who Dissolved Marriage during Follow-up**

	Ever married sample	Dissolution subsample
<i>Marital Duration at Baseline</i>		
Married During Follow-up	0.47	0.52
0-1 years	0.14	0.19
2-4 years	0.18	0.14
5-7 years	0.11	0.09
8 plus years	0.09	0.06
<i>Race/Ethnicity</i>		
White	0.32	0.24
Black	0.33	0.41
Hispanic	0.30	0.31
Not White, Black, or Hispanic	0.05	0.03
<i>Education</i>		
Less than high school	0.25	0.28
High school	0.27	0.31
Post-secondary	0.29	0.31
College degree	0.20	0.09
Immigrant	0.22	0.16
Average Age (years)	26.68	25.43
<i>Religion</i>		
Catholic	0.34	0.31
Protestant	0.46	0.50
Other religion	0.11	0.10
No religion	0.08	0.09
Lived with both parents at age 15	0.54	0.45
N persons	2229	596

**Table 2. CBSA-Level Unemployment Rates and State-Level Delinquency Rates before (1998-2007) and during (2008-2010) the Great Recession**

	1998-2007	2008-2010
Unemployment rate		
Average across CBSAs	4.9	7.3
Range across CBSAs	1.4 to 15.3	2.7 to 22.1
Delinquency rate		
Average across States	2.2	6.3
Range across States	0.4 to 5.9	2.1 to 20.6

**Table 3. Cox Proportional Hazards Model Predicting Waiting Time to Marital Dissolution. Hazard Ratios (z statistic) are shown.**

	Model 1	Model 2	Model 3	Model 4
<i>Unemployment</i>				
Rate	0.98 (0.38)			
Lowest quartile		1.13 (0.72)		
Second quartile		1.04 (0.27)		
Third quartile		0.92 (0.55)		
Highest quartile (ref.)		--		
<i>Delinquency</i>				
Rate			0.93 (1.59)	
Lowest quartile				1.51 (1.65)
Second quartile				1.97 ** (3.06)
Third quartile				1.82 ** (2.87)
Highest quartile (ref.)				--
<i>Marital Duration at Baseline</i>				
0-1 years	1.80 ** (5.14)	1.80 ** (5.13)	1.79 ** (5.10)	1.77 ** (4.99)
2-4 years	1.08 (0.58)	1.08 (0.57)	1.07 (0.50)	1.06 (0.41)
5-7 years	1.23 (1.28)	1.23 (1.27)	1.23 (1.25)	1.21 (1.17)
8 or more years	1.06 (0.27)	1.05 (0.26)	1.05 (0.24)	1.03 (0.17)
Married during follow-up (ref.)	--	--	--	--
<i>Race/Ethnicity</i>				
Black	1.57 ** (3.59)	1.57 ** (3.58)	1.56 ** (3.57)	1.57 ** (3.60)
Hispanic	1.43 * (2.46)	1.43 * (2.46)	1.43 * (2.45)	1.43 * (2.45)
Other race	1.25 (0.88)	1.26 (0.89)	1.26 (0.89)	1.27 (0.92)
White (ref.)	--	--	--	--

<i>Mother's Education</i>				
High school	0.99 (0.10)	0.99 (0.12)	0.99 (0.12)	0.99 (0.13)
Post-secondary	0.94 (0.52)	0.94 (0.51)	0.93 (0.61)	0.93 (0.61)
College	0.45 ** (4.41)	0.45 ** (4.42)	0.44 ** (4.47)	0.44 ** (4.46)
Less than high school	--	--	--	--
<i>Mother is an Immigrant</i>				
	0.68 ** (2.87)	0.68 ** (2.87)	0.67 ** (2.90)	0.67 ** (2.92)
<i>Mother's Age</i>				
	0.99 (1.38)	0.99 (1.38)	0.99 (1.38)	0.99 (1.36)
<i>Mother's Religion</i>				
Catholic	0.99 (0.11)	0.99 (0.13)	0.98 (0.14)	0.99 (0.11)
Other religion	0.95 (0.34)	0.95 (0.33)	0.95 (0.38)	0.95 (0.38)
No religion	1.05 (0.32)	1.05 (0.29)	1.05 (0.34)	1.05 (0.33)
Protestant	--	--	--	--
<i>Mother lived with both parents at age 15</i>				
	0.89 (1.34)	0.89 (1.32)	0.89 (1.33)	0.88 (1.35)
<hr/>				
N of Person-months	197248	197248	196717	196717
N of Persons in sample	2229	2229	2234	2234
N of dissolutions	596	596	596	596
<hr/>				

\* p<0.05, \*\* p<0.01

Hazard ratios for city fixed effects are not shown.

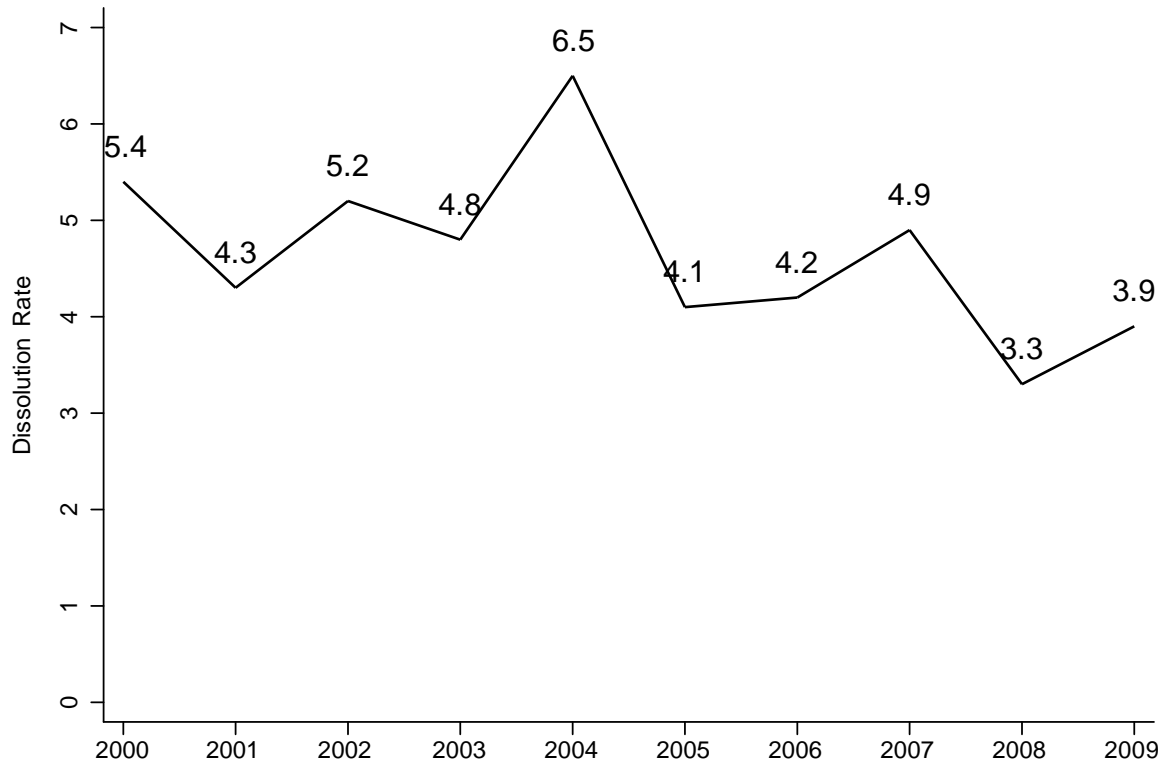
**Table 4. Cox proportional hazards models predicting waiting time to marital dissolution by subgroup. Hazard ratios (z statistics) are shown.**

	Black	Hispanic	White	Less than High School	High School	Some College	College
<i>Unemployment</i>							
Lowest quartile	1.08 (0.26)	1.32 (0.91)	1.08 (0.21)	0.98 (0.07)	0.86 (0.47)	1.64 (1.57)	1.03 (0.05)
Second quartile	0.93 (0.30)	1.30 (0.96)	1.04 (0.13)	0.84 (0.58)	0.92 (0.28)	1.09 (0.31)	1.68 (0.92)
Third quartile	0.91 (0.39)	1.09 (0.36)	0.83 (0.55)	1.05 (0.20)	0.76 (1.00)	0.81 (0.78)	1.28 (0.46)
Highest quartile (ref.)	--	--	--	--	--	--	--
<i>Person-months</i>	<i>57059</i>	<i>57542</i>	<i>69760</i>	<i>44061</i>	<i>48608</i>	<i>54903</i>	<i>49487</i>
<i>Delinquency</i>							
Lowest quartile	1.92 (1.60)	1.53 (0.85)	1.00 (0.01)	1.99 (1.38)	1.43 (0.76)	1.63 (1.15)	0.33 (1.15)
Second quartile	2.54 * (2.54)	2.18 + (1.71)	1.24 (0.52)	2.08 (1.63)	1.93 (1.61)	1.98 + (1.80)	1.03 (0.04)
Third quartile	2.48 * (2.57)	1.85 (1.38)	1.13 (0.34)	2.01 (1.64)	1.91 + (1.69)	1.47 (1.07)	1.86 (0.89)
Highest quartile (ref.)	--	--	--	--	--	--	--
<i>Person-months</i>	<i>57017</i>	<i>57386</i>	<i>69492</i>	<i>43844</i>	<i>48345</i>	<i>54882</i>	<i>49458</i>

Notes: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Hazard ratios for city fixed effects and control variables are not shown.

**FIGURE:**

**Figure 1. Marital Dissolution Rate (2000 – 2009)**



Notes: Marital dissolution rate is the percent of marriages observed in January of year 'T' that had dissolved by December of year 'T'. A large portion of the sample completed their final interview and were censored before the end of 2009. Therefore, we extrapolated the 2009 dissolution rate based on the data we observed to create an estimated dissolution rate for 2009 that is comparable to rates in the earlier years.