War, Recession, and Marital Instability:
Conditional Effects of Uncertainty in Washington State, 2000-2010

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Abstract

The first decade of the 21st century was a tumultuous and economically unstable period for many American families. Yet we know little regarding how the periods of recession and America's extended participation in two wars affected the incidence of divorce. We use county-level monthly divorce filings from the past 10 years and updated estimates of the married at-risk population to test how sources of upheaval such as increases in unemployment, changes in property values and income, and military deployment affect the incidence of divorce. We also test whether these effects are conditional on the economic context in which they are embedded. Our findings suggest that sources of uncertainty tend be positively associated with divorce filings, but the size and significance of the effects depend on the greater macro-economic context. We conclude that economic instability destabilizes marriages, and families are not inherently slow to respond to structural changes at the macro-level.

Introduction

Scholars have long been interested in the effects of widescale social and economic disruptions on marriage and divorce. Nearly 150 years ago, observers made note of war's destabilizing effects on marriage; in the wake of the U.S. Civil War, divorces increased from a rate of 1.2 per 1000 marriages in 1860 to 1.8 in 1866 (Jacobson 1959). This interest is not limited to the effects of military conflict, however. Other researchers have focused on the response of family arrangements to sudden or severe economic dislocations that may challenge norms of household resource allocation or otherwise disrupt long-established patterns of behavior in marriage (Elder 1974; Ware 1982; Westin 1976). Still others point to the enduring resilience of family bonds, and suggest that these ties are remarkably adaptive in their ability to absorb social, economic, and cultural "shocks." These authors maintain that the fragility of marriage in recent years is vastly overstated.

The tumultuous events of the past decade have rekindled interest in the robustness of marriage as an institution amid turbulence elsewhere in the social order. This is particularly true of the 2008 collapse of housing and credit markets on which household consumption had largely depended for much of the decade (Warren and Tyagi 2003; Treas 2010). The late-2000s financial crisis triggered an unusually deep and widespread period of job loss that extended into most sectors of the economy and is held responsible for high levels of unemployment and underemployment. The implications for families of this economic turbulence have been the subject of speculation among journalists and the public alike, ranging from coverage of the "he-cession" of job loss in traditionally-male

sectors of employment and its consequences for marriage, to recent claims about the increasing prevalence of "undivorced" couples who resolve to lead separate lives but say they cannot "afford" to liquidate jointly-held assets that are now worth pennies on the dollar.[1]

The arrival of an economic crisis more severe than any since the Great Depression tends to obscure the fact that other events over the past 10 years have introduced other forms of uncertainty into the environment. In the U.S., these include the dot-com bust and shorter-lived recession of 2001, the disruptions created by the attacks on September 11, 2001, and the prosecution of wars in Iraq and Afghanistan. Shifts throughout the decade in the intensity of economic vs. other sources of dislocation provide opportunities to examine how family processes respond to different macro-level sources of uncertainty about the future.

In this paper, we use monthly data on divorce filings from January 2000 to September 2010 to examine how, at the county level, dissolution behavior responds to changes in the environment that signal shifts in the risks confronting families, the costs of getting a divorce, and more broadly, the ability of couples to predict or plan for the future. We make use of a complete monthly time series covering more than 10 years for all counties in a single state – Washington – to see how changes in unemployment, in average home values, and in other features of the local environment have affected dissolution filings over the past decade. We also make use of updated county-level estimates for the at-risk population of married couples, and include other measures of population structure in our models.

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[1] See Pauline Paul, "The Undivorced." *New York Times*, July 30, 2010; Susan Pease Gadaua, "Contemplating Divorce: Whether you Should Stay or Go." *Psychology Today*, August 22, 2010; Anna Pryor, "Keeping Finances Afloat during a Divorce." *Wall Street Journal*, June 29, 2009

For these counties, we find no evidence that rising unemployment, declining home values, or shrinking household incomes depress the incidence of divorce in a locale. Indeed, rising unemployment leads to an increase in the number of divorce filings, and this effect is most pronounced during the 2008 recession. However, we do not find evidence that an increase in the proportion of active military in an area increases the divorce filing rate during any of the periods examined. Our findings suggest that increases in socio-economic uncertainty associated with income or housing price shocks or rising unemployment are disruptive for marriage, but that the effects of uncertainty are conditional on the greater economic context in which they are embedded.

Background and Predictions

Contemporary Perspectives on Economic Uncertainty and Marital Dissolution

Economic uncertainty, broadly defined, has been linked to marital disruption by several empirical studies over the past several decades, yet there is a lack of consensus regarding *how* economic downturns might impact family behavior. Most mechanisms linking economic context to family behavior support one of two arguments, one centered on *relational stress* and the other on *relative costs* (Fischer and Liefbroer 2006). Under the relational stress approach, family life is disrupted during economic downturns, especially for families on the lower end of the socio-economic distribution, because spouses are under pressure to keep their families and lifestyles afloat. Conflicts arise when partners, especially men, are less able to support their families if they are chronically unemployed or have insufficient earnings (Cherlin 1992; Conger et al. 1990; Liem and Liem 1990). In addition, during periods of economic contraction, partners may

avoid costly joint investments such as housing because they lack the financial resources or because the uncertainty of the environment deters large investments of this type. This has consequences for marriage and divorce because these investments strengthen interdependence and build cohesiveness in couples; when they are foregone, spouses miss an opportunity to solidify their ties to each other (Brines and Joyner 1999).

The relative costs argument, on the other hand, implies that dissolution should be *less likely* during periods of economic recession. During periods characterized by high unemployment and low earnings, divorce may be especially costly because it involves the loss of marital surplus realized through economies of scale and household specialization that may help people maintain their standard of living or even survive in the event that one or both spouses lose work or earned income (Becker, Landes and Michael 1977; Becker 1981). Thus, the negative financial prospects that characterize recessionary periods may convince spouses, especially financially-dependent spouses, to wait out their marriages (Cherlin 1992; Peters 1993). As we mentioned above, during the current recessionary period, the mainstream media has touted these types of arguments to explain perceived trends among some couples who, in a more affluent or stable period, might otherwise divorce.

Most research that has examined the effects of macro-economic cycles on dissolution among post-World War II cohorts supports the relational stress perspective; that is, relationships are less durable during periods of economic hardship. Most notably, South (1985) analyzed several cohorts spanning 1949 to 1979 and found that during periods of high unemployment the divorce rate increased, whereas during periods of economic growth, the divorce rate decreased. Throughout the postwar period, the

financial and social costs of divorce decreased, and this secular trend held through recessionary periods; spouses dissatisfied with their marriages faced a more liberal legal environment, less social stigma, higher average incomes relative to pre-war decades, and a growing female labor force that was less dependent on marriage for economic support (South 1985, pp. 38-39). More recent research has linked other macro-level indicators of economic uncertainty to marital instability such as men's declining labor market opportunities (Ruggles 1997), rising inflation (Nunley 2009), and eroding consumer confidence (Fischer and Liefbroer 2006).

While most recent studies tend to find a positive association between indicators of economic instability and marital disruption, the belief that divorce rates rise during times of prosperity and decline during times of hardship is stubbornly persistent, resurfacing in the literature during the last prolonged recession in the 1980s (South 1985). Equally important, the rising costs perspective that underlies it remains credible and continues to inform research on the effects of macro-economic conditions on divorce trends (Fischer and Liefbroer 2006; Nunley 2009).

Moreover, we know little so far about how changes in the economy have affected families during the first decade of the 21st century. Changes in the structure of labor markets and the rise of new forms of contingent or nonstandard employment may have acclimated today's husbands and wives, especially young married people, to the idea that work is precarious (see Kalleberg 2009). Unemployment may be less disruptive for marriages today because it might mean something different than it did just 20 years ago. On the other hand, the concurrent rise in homeownership and in beliefs about the centrality of investing to build wealth or ensure a prosperous future in an era of flat

wages may have introduced a new factor (or magnified the importance of an old one) in calculations of the costs of divorce.

We also know very little about how the substantial and recent increase in military mobilization – a non-trivial source of instability for military families and perhaps the communities surrounding bases – has affected the incidence of marital disruption. While other researchers have examined the effects of military mobilization during wartime in the 20th century (e.g. Pavalko and Elder 1990), it is still unclear how the recent mobilization period has affected the families of military personnel. This is an important question because mobilization over the last decade took place in a different economic context than the previous wars, and it is unclear how recent policies that extend the duration of service might have impacted families.

In the sections that follow, we introduce our key variables of interest and generate predictions drawn both from previous research and our conjectures about the effects of events that transpired over the past decade. We note, however, that our unit of analysis – county level data – limits our ability to draw inferences about decision making at the household level. As we indicated above, most (though not all) theories of marital disruption address dynamics at the couple- or household-level, and our attempts to gauge the effects of the Great Recession on the durability of marriage will make ample use of these theories, especially those addressing decision making amid uncertainty. Unfortunately, new waves of the kind of couple-level panel data ideally suited for testing these ideas, such as the Panel Study of Income Dynamics (PSID), will not be available for some time. In its absence, we rely on observations at the county-level to test hypotheses of how couples might respond to their changing environment.

Employment Effects. Decreases in the availability of employment are probably one of the most profound sources of uncertainty for families in a market-driven society. Studies have linked unemployment to unstable relationships (Conger et al. 1990; Liem and Liem 1990) and an increased risk of divorce (Jalovaara 2003; Preston and McDonald 1979; Ruggles 1997; South 1985). In addition, at least one study has found a positive relationship between unemployment and the divorce rate at the county level using cross-sectional data (Breault and Kposowa 1987).

We therefore predict that increases in a county's unemployment rate will have a destabilizing effect on families and should be positively associated with marital disruption. However, we also predict that the effect of unemployment is conditional on the current economic climate. Studies of The Great Depression and the arguments of contemporary commentators suggest that when employment is scarce, spouses avoid formal divorce because they cannot afford to lose the resources that marriage provides. As this research suggests, the destabilizing effects of unemployment should be even more pronounced during periods of economic contraction, precisely because uncertainty about employment locally is coupled with uncertainty about the economic horizon at large. A spouse's unemployment may not be viewed as a temporary set back until she or he finds another job, but rather, unemployment may be seen as a chronic condition that will profoundly affect a family's access to resources. Thus, insofar as uncertainty destabilizes marriages, we expect to find the positive effects of unemployment to be greater during the recessionary periods and less severe during the period of economic growth.

Income and Assets Effects. Relative income, as a measure of uncertainty and instability, has been implicated as a factor associated with marital disruption. Most studies have examined the role of women's contribution to household income as a predictor of divorce and have found mixed results (see White and Rogers 2000). For the past several decades, the risk of divorce is substantially higher for lower-income families relative to their higher earning counterparts, especially during the early years of marriage (Cherlin 1992; Preston and McDonald 1979; but see Mott and Moore 1979). Indeed, several studies examining the effects of macro-economic factors on divorce rates at the county or district level have found a similar pattern; higher median incomes are negatively associated with the incidence of divorce (Birch, Weed and Olsen 2004; Breault and Kposowa 1987). However, Oppenheimer (1994) has argued that men's declining labor market position should be particularly destabilizing for marriages, particularly because men are still more likely to occupy the breadwinner role, an argument that has been supported elsewhere (Ruggles 1997). This argument may be particularly salient in the current recessionary period insofar as men are more adversely impacted relative to women.

To capture the effect of changes in the expected value of household income, we include a measure of county's median income in our analysis. Based on the prevailing findings that lower incomes are destabilizing for marriage, we predict an inverse relationship between median income and the number of divorce filings. But the effects of income may depend on the greater economic context in which families are embedded. Thus, we expect the negative effect of a county's median income to be greater during periods of economic recession.

We also include a more direct income-related measure of economic uncertainty, percent living below the poverty line, as a predictor of divorce filings. We expect increases in the percent living below poverty to be positively associated with divorce filings, especially during periods of economic uncertainty. To our knowledge, our study is the first to examine the role of poverty at the county or state level on marital disruption.

We might also expect the relative value of assets such as homes to affect divorce rates. Investment in assets like real estate and property emerged during the late 20th century as a common means for married couples to build wealth. At the turn of the 21st century, additional incentives were put in place to not only increase rates of homeownership but encourage the purchase of larger, more expensive homes through the availability of easy credit. Several counties in Washington State emerged as "hot markets" for residential real estate during the mid years of the decade (e.g. King, Pierce, Benton, Clark and Walla Walla), and even sleepier ex-urban regions (e.g., Grant) experienced a housing boom, mirroring trends elsewhere in the country.

While few studies have examined the impacts of housing values on marital stability, there is some evidence that married couples' asset investments are inversely related to divorce (Bracher et al. 1993; Rainer and Smith 2010; South and Spitze 1986). The argument is that home ownership is not simply an investment in joint assets, but an investment in the marriage itself. Not only do homeowner spouses have more to lose upon divorce, they also are signaling a commitment to the longevity of the relationship. Plus, spouses who invest in assets may simply be less likely to divorce to begin with. But the effect of owning a home may differ depending on the *value* of the home. As far as we

know, no research has examined the role of changing home value on the incidence of relationship dissolution.

We include a measure of median home value in our model to systematically evaluate how changes in property values affect divorce in general and during periods of uncertainty. Other things being equal, counties with rising median home values represent places where married homeowners who might be considering divorce can reasonably count on being able to sell the house on favorable terms. The risks of getting a poor return on one's investment are therefore small. But where home values decline, particularly amid uncertainty about when the market has reached bottom, unhappy couples may decide that they cannot "afford" to liquidate their joint holdings in what is probably their largest real asset – their home. The collapse of the "housing bubble" in 2007-2008 left many homeowners with assets that would yield a much smaller return than they might have realized only a year before. As a county-level manifestation of the "reverse wealth effect," places with declining home prices are likely to see a decline in divorce filings as some people defer divorce until the market becomes more predictable or upbeat.

As several recent journalistic accounts of "The Undivorced" describe, unhappy couples are offering this sort of reasoning for why they are, for the time being, holding off on filing for dissolution.[1] Therefore, while we expect a positive effect of home price on divorce filings throughout the decade under observation, we expect to find effects of greater magnitude during the early and especially the late 2000s, after the 2007 financial and credit collapse arguably locked down previously "hot" housing markets and made the costs of dissolving marital assets especially steep amid declining home values.

Military Mobilization Effects. The previous decade saw a rise in the deployment of military personnel due to the September 11th attack on the World Trade Center and the continuing conflicts in Iraq and Afghanistan. However, there is a paucity of literature examining the effects of military mobilization on family behavior. There is evidence that married men who were enlisted during World War II were more likely to see their marriages end in divorce compared to married civilian men (Pavalko and Elder 1990; see also Preston and McDonald 1979). The authors argued that wives faced both the emotional costs of separation from their spouse as well as the economic costs of balancing the family budget on a limited income. More recently, Lundquist (2007) used NLSY data and found that married military personnel were at a higher risk of divorce than their civilian counterparts.

We include the percent of a county's population employed as military in our models as a predictor of divorce. In general, we anticipate a positive association between increases in the percent of the population enlisted in the military and divorce filings because an increase in the military composition indicates an influx of families whose relationships and economic situations are precarious due to the uncertainty surrounding recent war efforts. Whether the effect of a county's military presence varies by the economic context of the previous decade is less clear. On one hand, we might suspect that the effects of an uncertain military life might be exacerbated in a period of economic uncertainty, much like the effect of unemployment. On the other hand, we might also expect that the relative economic stability of the mid-decade may not extend the same cushion to military families as it does to others, insofar as these were years characterized by increasing mobilization with no end in sight. In addition, the activation in 2002 of a

"stop-loss" policy extending troop deployments further increased uncertainty for families with deployed spouses. Thus, while we predict that sources of instability, like unemployment, might be less damaging to families during the mid-decade growth period, the increasing presence of unstable, military families on divorce filings might be exacerbated during the same period.

Data and Measures

Measuring Behavior that Signals Divorce: County-level Dissolution Filings

To test our hypotheses, we compiled monthly data on divorce filings that occurred between January 2000 and September 2010 for all 39 counties in the state of Washington. These data were drawn from monthly caseload reports maintained by the Judicial Information System (JIS) of the Courts of Washington State. Each month, the JIS records a count of petitions for marital dissolution or legal separation by county.[2] Using these data, we summed the number of dissolution and separation petitions occurring each month to arrive at the total number of actions initiating the legal end of a marriage in a given month in each county. One Eastern Washington county, Lincoln – known as the "quickie divorce capital of the state" – permits dissolution by mail without requiring a court appearance.[3] As a result, the number of filings in this small county is disproportionately high and most filings originate with petitioners who live elsewhere. The Lincoln county data were therefore dropped from the analysis, leaving a monthly

[2] The JIS differentiates between dissolution petitions involving minor children and those that do not in its caseload reports. For the analysis presented here, we do not distinguish between filings that involve dependent children and other actions; in a second paper, we have analyzed these filings separately

[3] "Divorce by Mail: No Need to Go to Court." By Francie Grace. May 3, 2003 *(AP.)*

time series of 129 observations for each of the remaining 38 counties in the state.[4] The number of monthly filings varies from "none" for some months for very small counties, to several hundred per month for populous counties such as King (Seattle), Pierce (Tacoma) and Spokane.

The number of divorce petitions in a county obviously depends on the size of the population at risk. Other research using county-level data attempts to correct for differences in the at-risk population by controlling for total population size (e.g. Breault and Kposowa 1987) or the population of women of marriageable age (e.g. Wilkinson et al. 1983). These are at best rough proxies for the size of the at-risk population: the number of married couples in a county at the beginning of the observation period. The 2000 Census provides accurate counts of these households for every county in the US. Fortunately, these counts can be updated annually with estimates from the American Community Survey (ACS) for several counties from 2001-2008, and for others of even modest size (pop. 20,000) starting in 2005. We combined the 2000 Census data and ACS estimates to generate current estimates of the size of a county's married-couple population; these were updated annually. When a new annual estimate is unavailable, we simply carried forward the value from the previous year. Although we were unable to obtain a complete panel of annually-updated estimates for the at-risk population, our series gives us estimates for a county's annual "petition" rate (number of filings per

[4] Data inspection revealed a suspect report of 0 filings for Yakima County (pop. 230,000) in January 2005. A WA Courts data archivist confirmed this was in error; we replaced this count with the reported value for December 2004.

thousand married couples) that coincide with the reported range for the divorce rate per thousand married women since the year 2000 in the U.S and in Washington State.[5]

County-level Independent Variables: Exposure to Uncertainty

Our income, poverty, assets, and unemployment measures are drawn from a variety of publically-available data sources. The unadjusted unemployment rate was available through the Bureau of Labor Statistics' compilation of Local Area Unemployment Statistics (LAUS).[6,7] We add a three-month lag to the unemployment variable because the effects of unemployment on family behaviors are unlikely to be felt immediately. To measure housing values we use the county-level median housing property value from quarterly market reports maintained by the Washington Center for Real Estate Research (WCRER).[8] Finally, we gathered data on counties' median income and percent of residents living below the poverty line using data from the Small Area Income and Poverty Estimates (SAIPE) division of the U.S. Census Bureau.[9] Unlike the unemployment data, median housing value is estimated quarterly while median income and percent poverty are estimated annually. Thus, we treated each quarterly or annual estimate as a proxy for each individual month's estimate within the nested time period.

We measure the military composition of a county as the percent of the county population whose employment is categorized as military personnel. These data were

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[5] Compared to rates of divorce, we observe rates between 2000-10 that are a bit elevated – in the range of 20 – 28 per thousand, but this is to be expected from counts of legal *petitions*, since not all of these actions are finalized in an actual divorce.

[6] Unfortunately, the Local Area Unemployment Statistic's measure of unemployment is not adjusted for seasonality. We plan to address the seasonality of unemployment in the next version of this paper.

[7] Bureau of Labor Statistics. See http://www.bls.gov/lau.

[8] College of Business, Washington State University, Pullman, WA. See http://www.wcrer.wsu.edu/default.aspx.

[9] U.S. Census Bureau. See http://www.census.gov/did/www/saipe.

drawn from annual tables from the non-profit Regional Economic Analysis Project (REAP), a collaborator with the Bureau of Economic Analysis (BEA).[10]

Control Variables: Population Processes, Age Structure, and Ethnicity

We include measures based on intercensal population estimates from the U.S. Census Bureau and the American Community Survey (ACS) to control for potentially spurious relationships and to address common findings in prior research.[11] We include three measures that capture changes in a county's population distribution. First, we simply control for the total population of a county. Second, we include a measure for population density in order to address the common finding that divorce is positively associated with urbanicity (Birch, Weed, and Olsen 2004; Breault and Kposowa 1987; Shelton 1987). Third, because research has shown that in- and out-migration (a proxy for residential instability) positively affect divorce (Breault and Kposowa 1987; Glenn and Shelton 1985; but see Wilkinson et al. 1983), we include a measure for residual net migration, or the total amount of population change within a county that cannot be explained by natural population growth such as births and deaths. To capture the effects of a county's age structure we include a measure for the percent 65 years or older. Finally, we control the percent black and the percent of Hispanic origin. The latter control is particularly salient for research examining Washington State counties because, historically, many counties with agriculture-based economies have relied on large

[10] U.S. Department of Commerce. See http://www.reaproject.org.
[11] U.S. Census Bureau. See http://www.census.gov/popest/estimates.html.

populations of Hispanic laborers. Indeed, as of 2010, a handful of counties boast Hispanic populations that exceed well over 25 percent.[12]

Like our economic indicators, data for each of our control measures are collected on an annual basis so we are forced to use the annual estimates as a substitute for each monthly observation within a given year. However, while there is within-county variation on each of our measures across the ten-year period, the change between adjacent years is rarely of large magnitude, which suggests reasonable stability from month to month within a given year. Thus, we are confident that we do not lose substantial information by using an annual estimate to predict a monthly observation for these particular variables.

Method and Analytical Strategy

As discussed in the previous section, we use panel data to estimate the net effects of county-level economic indicators on total number of divorce filings. Because our study relies on monthly divorce filing totals and monthly estimates of the unemployment rate, our unit of analysis is the county-month. Although several modeling strategies are available to us, we chose a fixed effects approach to eliminate the potential bias from county-invariant, unobserved disturbances that may be correlated with divorce filings. An example of such county-invariant disturbance might be a county's religious climate or county-specific filing procedures under the assumption that these unobserved variables remain fixed over the period of interest. Although we do not present the data here, the fixed effects strategy allows us to generate a county-specific intercept for each county,

[12] We acknowledge that the census measure for Hispanicity does not count as a perfect racial-ethnic measure. However, the census's measure for Hispanic origin aligns itself reasonably well with the available data on the demographic compositions of Washington's counties.

which is almost always necessary when using geographical units that are not randomly drawn from a population (Wooldridge 2009:493).

In addition to county fixed effects, we include fixed effects for month and year for each of our models. The monthly effects are particularly important because much of the divorce trend is dominated by seasonal fluctuations. For example, preliminary analyses suggested that divorce filings appear to follow a seasonal cycle with far fewer divorces from November to January and sporadic spikes around mid-spring and late summer. Our inclusion of year fixed effects allows us to control for possible period effects that apply to all counties, but are not accounted for by our economic measures, our control measures, and the seasonality of divorce. For brevity, we do not show the monthly and yearly effects in our tables, but we address the patterns within the text.

To distinguish between the general, additive effects of our variables and the possibility that the effects of our variables are contingent on periods marked by economic growth or downturn we use two different modeling approaches. Our first two models, Model 1 and Model 2, are based on the full set of observations spanning the ten-year period of interest. Model 1 introduces the variables central to our analysis, unemployment, median housing value, median income, percent poverty, and percent military. Model 2 includes both our variables of interest as well as the control variables. Models 3-5 include the full set of variables and are based on sub-samples of the dataset that correspond with recent business cycles: 2000 to 2003, 2004 to 2007, and 2008 to 2010 respectively. These three periods correspond roughly with the dot.com burst of the early 2000s, rising employment and stability of the mid-2000s, and the recent recession of the end of the decade. While there may be debates regarding how Washington's

economy was affected relative to other U.S. states during the periods of interest, Figure 1 shows that, according to trends in unemployment, Washington follows the same general trend that characterized most of the country throughout the decade. Indeed, nearly every county in our analysis follows the documented trend.

< Figure 1 About Here>

Results

Descriptive Results and Sources of Heterogeneity

In Table 1 we present the mean and standard deviation for each of our variables for January 2000, the first month-year in our time series. We distinguish between three groups of counties by their total populations: small counties (population 20,000 or less), mid-sized counties (population greater than 20,000 and at least 60,000), and large-sized counties (population greater than 60,000).

<Table 1 About Here>

Perhaps surprisingly, Table 1 suggests that many of our key variables do not appear to vary dramatically by county size. The average filing rate for January 2000, our benchmark month, ranges between 1.28 and 2.02 filings per 1,000 married couples for the small-sized to large-sized counties respectively. Unemployment and median income

vary by county size as one might suspect; counties with larger populations that tend to be characterized by economic growth have higher average median income and lower average unemployment rates. It is worth noting that while average median housing value does not appear to vary substantially by county size, this is probably due to the fact that a small subset of low-population counties has remarkably high median home values. We suspect that these counties are somewhat exclusive and are more reflective of resort-style communities or contain large shares of coastal property.[13] Finally, the average percent of residents living below the poverty level is lower in larger counties. This finding is not surprising for Washington State where counties with high rates of poverty tend to be rural with agriculture-based economies.[14]

However, basic descriptive statistics do not convey the important forms of heterogeneity both across-county and within-county across time. To better summarize these forms of heterogeneity in Washington State, we highlight three counties from different regions that vary in their socio-economic characteristics: Benton County, Grays Harbor County, and King County.

Benton County is located in the south-central region of the state with a moderately-sized population (nearly 150,000) and an agriculturally-reliant economy. Like many counties east of the Cascade Mountains, Benton County has a high Hispanic population (about 12.5% in 2000) that is mostly employed in agriculture[15]. While Benton County's economy is dependent on agriculture, a large percentage of non-farm laborers

[13] For example, San Juan County, a county made up of several small, difficult-to-reach islands has median home values that exceed $300,000. This value approaches the typical housing value of King County, the county that contains Seattle, Bellevue, Kirkland, and other cities with property values that are comparable to other large metropolitan centers with strong economies.

[14] Indeed, in Ferry County, a small rural county with under 20,000 residents, over 20% of the residents lived below the poverty level at the start of the decade.

[15] We might add that bordering counties boast even higher percentages of agricultural laborers of Hispanic origin

are employed as government employees due to the presence of the U.S. Department of Energy's Hanford Site. In short, the county is moderately-sized, ethnically diverse, and manages to offset market pressures and vulnerability to meteorological effects on agricultural yield with substantial government employment. Neighboring agriculturally-based counties do not provide their residents with the same opportunities for government employment.

Grays Harbor County, located on the western side of the Washington peninsula, contains a population about half the size of Benton County (about 67,000). The county has not fared as well as Benton County over the past decade. Like much of the peninsula, Grays Harbor County, which relied heavily on the manufacturing of natural resources, suffered major job loss during the economic restructuring of the 80s and 90s; indeed, Grays Harbor could be reasonably classified as a distressed county with 15 percent of its residents living under the poverty level at the start of the decade. Unemployment rates here tend to be volatile, and median income and housing values are much lower than many other counties. The demography of Grays Harbor also differs markedly from Benton County; the county is mostly white with a heavy Native American population due to the proximity of two tribal reservations.

King County, the location of the Seattle Metropolitan Area and arguably the economic epicenter of the state, is the most heavily and densely populated county in Washington. King County's economy has changed dramatically over the past several decades from a resource manufacturing economy to an economy centered on exports and the high-tech industry; the major airplane manufacturer Boeing exemplifies King County's export status and the high-tech giant, Microsoft, reflects the growing

technology industry's presence. These industries, alongside expanding service and professional sectors, have helped shield King County residents from the steep job and revenue losses that have disrupted other regions in Washington and across the country over the past decade. Indeed, King County has one of the lowest poverty rates, lowest unemployment rates, and highest median incomes in the state throughout the ten year period of interest. King County is also racially diverse, but its share of Hispanics is small compared to the agriculture-based counties of Eastern Washington.

Figure 2 illustrates within-county variation for Benton, Grays Harbor, and King in terms of the divorce filing rate. Again, across-county differences exist, as is evidenced by King County's continuously lower rate relative to Benton and Grays Harbor Counties. But each county's filing rate also fluctuates over time, although not always in the same direction. In our data set, some counties, such as Grays Harbor, exhibit more variation in filings over time than others. Although not shown here, our other key economic and demographic indicators also demonstrate sufficient levels of within-county, across-time heterogeneity.

<Figure 2 About Here>

Full Time-Period Analysis

Our baseline fixed effects model, not shown here, includes only month and year fixed effects. As we mentioned above, the month fixed effects demonstrate remarkable

seasonality in the prevalence of divorce filings, with large decreases in the winter months of November through January and substantial increases in mid-spring and late summer. The year effects also pick up on potential period-driven trends in divorce filings. With the referent year set at 2000, there is very little evidence of significant change in divorce filings over the decade. However, the coefficient for each subsequent year (except 2006) is positive, suggesting that Washington may have experienced a small, secular increase in the rate of divorce filings over the past 10 years.[16]

In Table 2, we present Model 1 and Model 2, each building upon the baseline fixed effects model. Model 1 includes the effects of the county-level economic indicators over the ten-year period. Our prediction that a rising unemployment rate is a source of uncertainty that positively affects divorce filings is supported here. However, percent living below poverty, another source of uncertainty and instability appears to be *negatively* associated with marital disruption. Why the effect of unemployment is positive, and the effect of poverty is not, is unclear. It may be that the recent media accounts were partially correct, at least for families living on the lower end of the income distribution. Struggling families who reside in counties characterized by rising poverty may be especially pressed to rely on the benefits of household specialization and economies of scale. Thus, while increasing unemployment may destabilize family processes, a rise in the number of families living below poverty may signal to families the severity of the economic climate, and spouses may become increasingly interdependent in an effort to make ends meet.

[16] Because our data file includes observations for the total population of Washington counties (*sans* Lincoln County) and not a sample, the use of significance tests to draw inferences about unobserved effects for the population is inappropriate. We nonetheless follow the informal convention of using p values under such circumstances to convey information about the salience of observed non-zero effects for the population under study.

<Table 2 About Here>

The results generally support our predictions regarding county median income. We anticipated that a county's median income would be inversely related to marital disruption because lower incomes have traditionally been associated with a higher risk of divorce. This prediction is confirmed by the significant and negative effect of median income during the full ten-year period. Insofar as rising incomes are correlated with less uncertainty and economic growth, our findings support South's (1985) assertion that the divorce rate decreases during periods of economic expansion. We also predicted that the effect of average housing value on divorce filings would, in general, be positive because a healthy housing market would allow spouses to gain more from the dissolution of investments, and this prediction is also supported by our results. Thus, of the two family resource indicators, increases in median income appear to decrease the risk of filing for divorce.

We predicted that an increase in the percentage of a county's population employed by the military would be positively associated with divorce filings. Our results do not support this prediction. The coefficient is negative suggesting that increases in military personnel lower the divorce-filing rate, but this finding is not significant.

In Model 2, we introduce our control variables for the population distribution, age structure, and percent black and Hispanic. The economic indicators of interest remain largely unchanged, suggesting their effects are robust even when we control for various features of the population. Most of the effects of the control variables are non-significant.

However, our representation of the age structure, the percent aged 65 or older, appears to have a large, positive effect on the divorce filing rate. Indeed, as we show below, this effect persists across all periods examined.

Why is a growing elderly population associated with more divorce filings? To answer this question we closely examined each county that experienced a marked growth in older people over the past decade. These counties tend to be clustered in the Northeast, Southwest, and peninsula regions – all regions that are characterized by economic depression and small total populations. One possibility is that families that are less at risk of divorce have self-selected out of these depressed regions, leaving behind a more divorce-prone at-risk population. However, our control for the residual net migration should capture this effect; indeed, a close examination of trends in migration revealed that not a single county with a growing elderly population witnessed a large increase or decrease in migration. Therefore, the effect is not likely due to the out-migration of stable couples. This also suggests that these counties are not retirement destinations for older couples since the growth appears to be mostly from an aging native population. Another possibility is that increases in the relative size of the elderly population coincide with a shrinking proportions of children and youth, and thus if, among the married, children represent joint investments that deter divorce, we might observe a positive effect of population aging. However, including a term in the model for the percent of the population aged 19 and under has no effect on our results. We can only speculate that a growing elderly population is associated with a greying population overall in ways that are destabilizing for marriage in a locality, perhaps because of its effect on community

investment in family-friendly public goods. Whatever the case, this finding requires further examination.

County-level Dissolution Filings: Results by Period

A key part of our argument about the effects of uncertainty on dissolution is that events that introduce uncertainty into the environment are multifaceted and are more or less salient for divorce depending on locale and historical context. For example, increases in unemployment that appear to follow a predictable path consistent with "normal" business cycles may be less destabilizing than job losses tied to a recession unprecedented in living memory. Likewise, places with an increasing proportion of residents in the active military expose more married couples to uncertainties about deployment during wartime, especially if these are intensified by the adoption of new policies (like "stop-loss") that make tours of duty less predictable and potentially more destabilizing for married couples in the area.

To test these ideas, we re-ran our models to examine whether effects associated with changes in economic or social conditions that might magnify the sense of uncertainty are sensitive to the periods in which these changes took place. We divided our observations into three periods corresponding to 1) the dot-com "bust" of 2000 and the recession of 2001 that produced job loss through 2003, 2) the post-recessionary period between 2004 and 2007, when uncertainties intensified around the length and scope of wars in Iraq and Afghanistan, and 3) the months after December 2007, the official start date of the "Great Recession." As discussed above, we expect that county-

level factors associated with economic uncertainty are more salient for filing rates in the early and (especially) late years of the decade, whereas the percent in military in a county will be more salient for divorce filings when the pursuit of two military campaigns was at its height.

<Table 3 About Here>

Table 3 shows estimation of our complete model for the three time periods. Several findings are immediately apparent. First, the positive effect of the lagged unemployment rate on divorce filings is largest during the recent recession. However, while the effect is positive during the economic growth period, it is negative and non-significant during the earlier recession. We predicted that unemployment would have its largest effects during both recession periods compared to the growth period, but we did not find that here. However, we suspect that unlike the most recent recession, families may have perceived the earlier recession as part of the typical business cycle and thus viewed unemployment as a temporary inconvenience, though this does not explain why unemployment is positive and significant during the growth period.

Our results indicate that the effect of median income follows a pattern that is somewhat consistent with our predictions. We argued that the effects of change in median income would be most pronounced during the recent recession. This is clearly the case; the coefficient -0.066 is larger than the coefficients in the other two periods. However, the negative effect of median income is smallest during the first recessionary period. Apparently, the stabilizing effect of increasing income (or destabilizing effect of

decreasing income) grew over the past decade, culminating in the large effect we see in the recent recession.

In terms of the direction of effects, the effect of percent poverty is consistent with our predictions. Increases in the percent poverty have a destabilizing effect during the recessionary periods and, interestingly, a stabilizing effect during the growth period. However, the coefficient is smaller in magnitude and not significant during the recent recession, which runs contrary to our initial prediction. The finding that percent poverty has a negative effect on divorce filings during the growth period seems unusual at first glance, but this is consistent with the "relative costs" arguments described above. During periods characterized by economic expansion, poor families may view poverty as a temporary setback that can be overcome by pooling resources and relying on economies of scale. On the other hand, during periods of economic contraction, the disruptions affecting "fragile" families may be exacerbated amidst higher unemployment and greater uncertainty.

The effect of housing value appears to follow the same pattern as poverty, though it is only significant during the early recession and its negative effect is almost non-existent during the growth period. We expected the effect of housing value to be largest during the recent recession since this was a period characterized by massive wealth declines for homeowners. It might be the case that decreases in housing value *do* result in lower divorce filing rates in recessionary periods that are more typical of the business cycle because couples assume the market will quickly rebound allowing them to receive satisfactory returns for their assets. However, during the recent recession, couples at risk

of divorce but anticipating steep losses in home equity may be less inclined to ride out their marriages if it is unclear whether the market will recover in the near future.

The effect of percent military is in the expected direction for all three periods, but it never reaches statistical significance. This non-significant finding may be partially the result of small numbers. The percent military personnel within a county only reaches numbers higher than 1% in five counties. Thus, even in Washington State, this population may be too small to noticeably affect divorce filing rates. Unlike the economic indicators, the effects of the demographic and population variables do not appear to be conditional on the greater economic context. This is an interesting finding in and of itself. It suggests that variables that capture changes in the levels of uncertainty are more susceptible to changes in the greater context in which they are embedded. The effect (or non-effect) of changes in population, on the other hand, appears resilient in the face of greater changes to the economy. There is one exception to this pattern: the unusual finding that increases in the older population are associated with more divorce filings appears weakest during the middle period.

Discussion and Conclusion

Uncertainty is destabilizing. Our results show that increasing exposure to factors often associated with relational stress – unemployment and decreasing incomes– have effects on divorce behavior that are dependent on the macro-level temporal contexts within which such exposure occurs. That is, rates of divorce filing in a locale are not only

dependent on local conditions that signal high levels of stress and reduced attachments to work or civilian life, but to the history that gives such statuses meaning and context.

Our findings also show that it is possible to detect effects on rates of divorce filing that correspond precisely and rapidly to events in the world, even after accounting for other factors whose effects vary by time and space. This result is remarkable given evidence collected at a far more aggregate level suggesting that divorce rates have plateaued and remained stable in the U.S. for some time (Casper and Bianchi 2002). The picture this paints of union dissolution is one of equilibrium in the underlying processes that lead some wives and husbands to end their marriages. Our findings suggest that there is more to the story, and that dynamics of family life are not inherently slow to respond to events that signify a break with the past and greater uncertainty about the future.

Our argument about the importance of context for understanding divorce rates raises potential questions about our reliance on county-level data for a single state. We chose this strategy because we wanted to test our ideas on an initial sample of counties with extraordinarily reliable and consistent data on divorce filings. The State of Washington makes such data available. Although it is possible that our set of counties is unique in ways that limit generalizability to other parts of the country, between-county variation in our data is not unlike what we would find in a broader sample of counties. To the extent that Washington State has not been as hard-hit by the current recession as have other parts of the country, our results may understate the true effects of rising unemployment rates, declining family incomes and the like on the incidence of divorce filings. In future research, we intend to analyze data from a much broader array of regions in the U.S. to see if the patterns we report here extend to the rest of the country.

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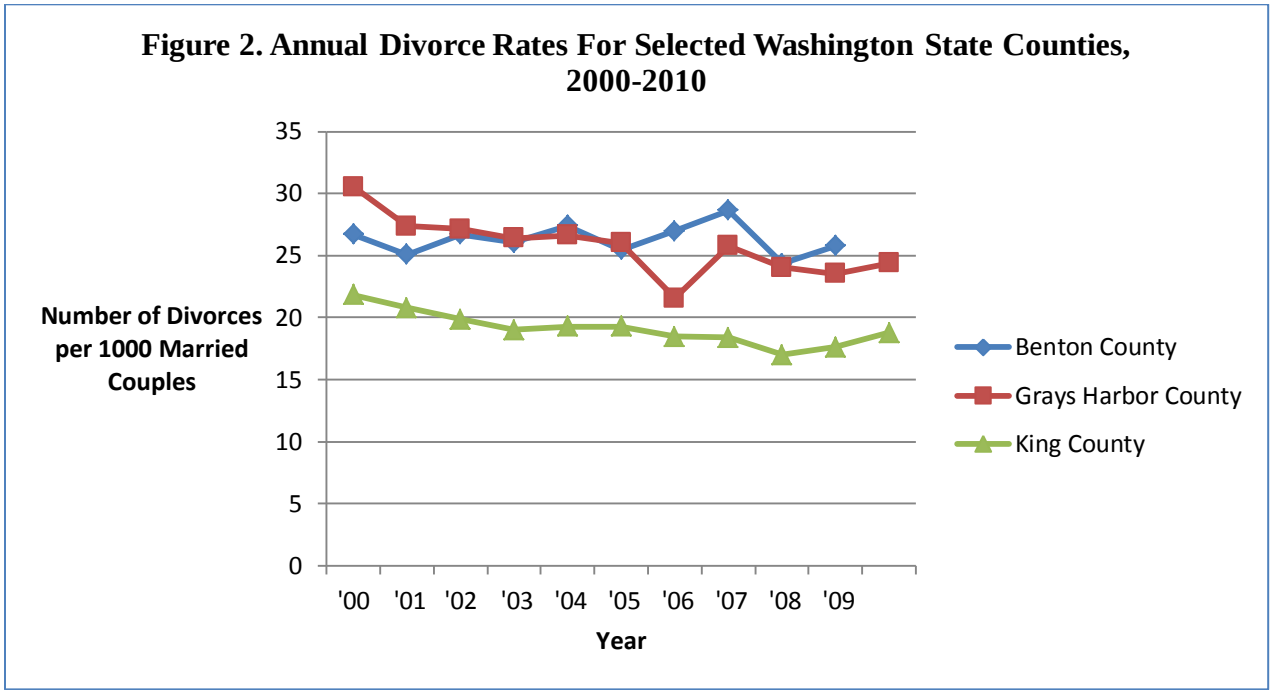
Source: Bureau of Labor Statistics (BLS)
Note: Data for 2010 are preliminary estimates



Source: Washington State Judicial Information System (JIS)

Table 1. Means and Standard Deviations for Selected Variables by County Size for January, 2000.

	Counties With Fewer Than 20,000 Residents		Counties with At Least 20,000 to 60,000 Residents		Counties with More Than 60,000 Residents	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Divorce Filing Rate (per 1000)	1.28	0.75	1.80	0.73	2.02	0.45
At-Risk Population (in 1000s)	2.21	1.30	7.58	2.15	59.79	77.26
Unadjusted Unemployment Rate	9.17	2.61	7.69	2.07	6.75	2.02
Median Income (in 1000s)	36.55	4.56	35.42	3.49	43.01	6.54
Percent Below Poverty Level	13.74	3.56	14.42	2.50	11.04	3.03
Median Home Value (in 1000s)	128.43	64.75	111.43	31.83	129.91	40.59
Percent Military Personnel	0.38	0.02	0.41	0.12	1.55	2.76
Total Population (In 1000s)	9.86	5.95	37.07	11.61	299.30	405.79
Population Density	15.49	24.63	25.35	14.16	223.98	236.92
Residual Net Migration (In 1000s)	0.05	0.15	0.06	0.69	1.44	3.11
Percent Aged 65 or Older	15.51	3.83	14.57	4.41	12.59	2.94
Percent Black	0.30	0.14	1.03	0.77	2.16	0.30
Percent Hispanic	8.56	14.58	10.92	13.42	9.34	9.56

Sources: Washington State Judicial Information System (JIS), U.S. Census Bureau, Bureau of Labor Statistics (BLS), American Community Survey (ACS), Washington Center for Real Estate Research (WCRER), and the Regional Economic Analysis Project (REAP).
Note: Lincoln County is not included in the analysis.
Sources: Washington State Judicial Information System (JIS), U.S. Census Bureau, Bureau of Labor Statistics (BLS), American Community Survey (ACS), Washington Center for Real Estate Research (WCRER), and the Regional Economic Analysis Project (REAP).
Note: Lincoln County is excluded from the analysis

Table 2. Unstandardized Coefficients from the Linear Fixed Effects Models Predicting Washington State County-Level Divorce Filings, 2000-2010 (Standard Errors in Parentheses)

	Model 1	Model 2
Unadjusted Lagged Unemployment Rate	0.020**	0.021**
	(0.009)	(0.009)
Median Income (in 1000s)	-0.027***	-0.029**
	(0.008)	(0.008)
Percent Below Poverty Level	-0.009	-0.003
	(0.010)	(0.010)
Median Home Value (in 1000s)	0.001***	0.001***
	(0.000)	(0.000)
Percent Military Personnel	-0.010	0.013
	(0.085)	(0.093)
Total Population (in 1000s)		0.001
		(0.002)
Population Density		-0.000
		(0.002)
Residual Net Migration (in 1000s)		0.007
		(0.008)
Percent Aged 65 Or Older		0.026**
		(0.040)
Percent Black		-0.149
		(0.096)
Percent Hispanic		0.018
		(0.017)
N	4674	4674
Within-County R^2	0.07	0.08

Sources: Washington State Judicial Information System (JIS), U.S. Census Bureau, Bureau of Labor Statistics (BLS), American Community Survey (ACS), Washington Center for Real Estate Research (WCRER), and the Regional Economic Analysis Project (REAP).
Notes: Fixed effects for years and months in all models; Lincoln County is excluded from the analysis.
** p < 0.10; ** p < 0.05; ***p < 0.01*

Table 3. Unstandardized Coefficients from the Linear Fixed Effects Models Predicting Washington State County-Level Divorce Filings By Period, 2000-2010 (Standard Errors in Parentheses)

	Model 3 (2000-2003)	Model 4 (2004-2007)	Model 5 (2008-2010)
Unadjusted Lagged Unemployment Rate	-0.004	0.037**	0.067**
	(0.016)	(0.018)	(0.020)
Median Income (in 1000s)	-0.017	-0.029**	-0.066***
	(0.044)	(0.014)	(0.018)
Percent Below Poverty Level	0.127**	-0.044**	0.044
	(0.043)	(0.014)	(0.048)
Median Home Value (in 1000s)	0.004**	-0.000	0.001
	(0.001)	(0.001)	(0.001)
Percent Military Personnel	0.092	0.113	1.991
	(0.590)	(0.251)	(5.350)
Total Population (In 1000s)	0.003	0.008	-0.002
	(0.012)	(0.007)	(0.011)
Population Density	-0.007	-0.005	-0.003
	(0.001)	(0.006)	(0.017)
Residual Net Migration (In 1000s)	0.023	0.000	0.008
	(0.017)	(0.020)	(0.030)
Percent Aged 65 Or Older	0.219**	0.123**	0.202*
	(0.013)	(0.040)	(0.105)
Percent Black	-0.253	-0.399	-0.322
	(0.423)	(0.345)	(0.786)
Percent Hispanic	0.091	-0.003	-0.070
	(0.064)	(0.065)	(0.098)
N	1,710	1,824	1,140
Within-County R^2	0.07	0.10	0.10

Sources: Washington State Judicial Information System (JIS), U.S. Census Bureau, Bureau of Labor Statistics (BLS), American Community Survey (ACS), Washington Center for Real Estate Research (WCRER), and the Regional Economic Analysis Project (REAP).
Notes: Fixed effects for years and months in all models; Lincoln County is excluded from the analysis.
** p < 0.10; ** p < 0.05; ***p < 0.01*