

Recession and Divorce in the United States: Economic Conditions and Divorce Rates, 2007-2009

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ABSTRACT

The economic recession that began in 2007 prompted speculation over its effects on divorce rates in the U.S. Opposing hypotheses suggest either the recession increases divorce through a stress mechanism; or it reduces divorce through increasing its economic costs or strengthening family bonds. I test the relationship between unemployment, home prices and home foreclosures, at the state level, and divorce rates in 2008 and 2009 using the American Community Survey. Results show a decline in divorce rates from 2008 to 2009, but little evidence that higher or rising unemployment or foreclosure rates affected that decline. However, declines in home price were significantly associated with lower divorce rates (except in outlier states). I interpret this as most consistent with the economic cost perspective.

INTRODUCTION

Divorce rates have fallen in the United States since the early 1980s, more or less steadily despite swings in the business cycle (Amato 2010; Kreider and Ellis 2011). Further, over the last century, dramatic waves in period-based divorce rates belie a near-linear upward trend in divorce probabilities for sequential birth cohorts (Schoen and Canudas-Romo 2006). Thus, economic cycles do not appear to be the major influence in long-term divorce trends. Nevertheless, the severity of the economic recession that began in 2007 has prompted speculation over its effects on U.S. families, and early effects have apparently been found already, for example, on fertility (Sutton, Hamilton and Mathews 2011) and cohabitation (Kreider 2010).

Several couple-level theories suggest economic recessions might affect divorce rates, even if only in the short term (Amato and Beattie 2011). On the one hand, economic hardship adds stress to marriages that *increases* the risk of marital conflict and dissolution (Hardie and Lucas 2010; White and Rogers 2000). Job loss and low earnings are perhaps the best studied

aspects of economic hardship, with men's conditions usually found to be especially consequential (Lewin 2005; Ono 1998). But home foreclosure, poverty, wage declines, job shift changes, fear of unemployment, or other economic threats (actual or perceived) may have similar stressing effects.

On the other hand, there are two mechanisms by which economic hardship might *reduce* the occurrence of divorce, at least temporarily. First, loss of a job or a decline in the value of a home may make divorce more costly relative to available resources. Divorcing presents costs in housing, legal fees, and losses from diminished economies of scale. The recession may have increased the economic shocks that make these costs insurmountable for some individuals or couples considering a divorce. Beyond the direct effects, by altering available opportunities and prices, fluctuations in the job and housing markets put pressure on many more people than are directly affected by changing jobs or moving between residences. So a recession may alter decision-making in families that do not themselves suffer job loss or experience home foreclosure – consistent with broad declines in economic expectations (Hurd and Rohwedder 2010).

Second, hard economic times within families may draw some couples closer together in resilience, so that even those considering divorce might set aside their conflicts and pull together, resulting in declining divorce rates. Wilcox (2011) has advanced this argument for the recent recession, partly based on the agreement of some survey respondents with the statement, "the recession has deepened my commitment to my marriage."

¹

¹ However, Wilcox also reports that those who acknowledge financial stress as a result of the recession place themselves at *higher* subjective risk of divorce or separation. The data from that study are not publically available.

In the recent recession, men's unemployment, falling home prices and rising rates of home foreclosures in particular have been pronounced features of the household economic landscape (Farber 2011; Mattingly and Smith 2010). The collapse in home prices in particular was much more dramatic than had been seen in the previous six recessions (Gascon 2009). Home foreclosures tripled from 2006 to 2009, to almost 2.5 million per year (Mian, Sufi and Trebbi 2011). Foreclosures and falling home prices contribute to the economic stress levels in millions more households than were directly affected by unemployment.

While there is abundant evidence that economic stress increases the odds of divorce at the family level, such evidence for the cost or resilience predictions is as yet elusive. However, consistent with the expectation that recessions forestall or prevent divorces, two recent studies have analyzed state-level time series of divorce and unemployment rates, and both find that higher unemployment is associated with lower divorce rates since 1980, using a variety of state-and year-level fixed-effects specifications (Amato and Beattie 2011; Hellerstein and Morrill 2011). This paper builds upon those studies, neither of which focuses directly on the recent recession or tests indicators of the housing crisis.

Of course, mechanisms for increased or decreased divorce rates during recessions might be operating simultaneously – working in opposite directions for different families, or even presenting opposing influences within the same families. That means a finding of no contextual effect on divorce cannot rule out such mechanisms. But given the severity of the economic shock that began in late 2007 – and some of the unique qualities of the recession that followed – we may be able to discern which, if any, of these mechanisms may be active for the recent period.

There is not yet data adequate to conduct thorough individual-level analyses of marital outcomes for the recent recession, which would optimally involve marital and homeownership

histories as well as employment information for both spouses (e.g., Hansen 2005). However, the introduction of a divorce event question in the American Community Survey in 2008 presents the opportunity to calculate the odds of divorce for all states for the years 2008 and 2009 (Elliot, Simmon and Lewis 2010).

If recession indicators across states are associated with rising divorce rates, that would be consistent with the stress perspective at the couple level, as economic shock and hardship fray marital relationships. If, on the other hand, states with more severe recession symptoms have lower divorce rates, that might be consistent either with the costs-of-divorce perspective, or with the family resilience argument. Distinguishing between the two negative effects (cost versus resilience) on divorce is difficult. However, the three indicators here present somewhat different profiles. Unemployment and foreclosure might trigger resilience as well as making divorce more difficult to afford, through loss of income or home resale opportunity (as foreclosed homes sell for less). But home prices are different, since they represent not a hardship but only a potential barrier to home resale – they are mostly experienced as hardship if a family needs to sell their home. If falling home sale prices are associated with lower divorce rates, then, such evidence would seem more consistent with the divorce-cost than the resilience predictions.

HYPOTHESES

From this review, three hypotheses emerge. If economic hardship puts strain on marital relationships, the experience of unemployment or home foreclosure may increase the odds of divorce. Thus,

 H_1 : Economic stress. Divorce rates are higher in states with greater or faster-rising unemployment and foreclosure rates.

Lower or falling home prices, on the other hand, are weaker indicators of economic stress, since they primarily tax people who are attempting to sell homes (such as those already considering divorce). On the other hand, divorce is often costly, and economic crises may make it unaffordable for more people, especially those needing to sell a home, so that,

 H_{2a} . Divorce costs. Divorce rates are lower in states with lower or faster-falling house prices, and greater or faster-rising unemployment and foreclosure rates.

Any of these economic trends may increase the relative costs of divorce by making it more difficult or lucrative to sell homes and/or find new jobs. However, home prices are especially pertinent to H_{2a} if people considering divorce face the decision to sell a home – falling home prices, especially given highly-leveraged mortgages, leave many families financially stuck in their homes.

Finally, although the evidence is scant, Wilxox (2010) speculates that couples experiencing economic hardship may rally around their relationships – especially postponing or reconsidering divorce – which leads to the last hypothesis,

H2b. Resilience. Divorce rates are lower in states with greater or faster-rising unemployment and foreclosure rates.

Again, home prices seem less relevant here, because they do not introduce as much stress within marriage, relative to the other indicators, except for those attempting to sell their homes.

Using a few simple state-level indicators of the severity of recession drawing from the unemployment and housing crises, , therefore, I offer preliminary tests of the association between the recent recession and divorce patterns – which might help illuminate the mechanisms for such an association. In the next section I describe the research design, before turning to the results.

DATA AND METHOD

I calculate divorce rates for each state with individual data from the 2008 and 2009

American Community Survey (ACS), via IPUMS (Ruggles et al., 2010). The ACS is an annual survey of more than 2.2 million U.S. households, weighted to represent the national population.

Because of its large sample size, it offers the opportunity to analyze divorce for all 50 states and District of Columbia, whereas the vital statistics registration of divorces excludes 5 states, including California. Further, as of this writing the 2009 rates were considered preliminary and subject to revision (Tejada-Vera and Sutton 2010).

The sample includes women who are: (a) ages 15 and older; (b) currently married, or divorced in the 12 months preceding the survey, and; (c) living in the U.S. one year before the survey. Women report whether they have divorced in the previous 12 months. I code women according to their residence in one of the 50 states or the District of Columbia; however, because divorce often takes a year or more to unfold, I use the location in which the women were living one year earlier, and exclude those living outside the country at that time.

State-level unemployment data are from the Bureau of Labor Statistics' Local Area Unemployment Statistics Program, which publishes annual average unemployment rates for every state and the District of Columbia (BLS 2011). For home prices I use the House Price Index (HPI) published by the Federal Housing Finance Agency. The HPI is based on same-house sales among single-family homes. Because it requires a home to be sold before its price is recorded, it reflects sale price trends more than home values per se. It is scaled so that 1991 prices are equal to 100; I averaged the unadjusted quarterly values for each calendar year (Federal Housing Finance Agency 2011). Real estate foreclosure data are from the private company Realtytrac, which for the years 2007-2009 released an annual report that included the

percentage of housing units with at least one foreclosure filing during the calendar year (Realtytrac 2007, 2008, 2009).

Levels of unemployment, home prices and foreclosures reflect economic conditions that may influence divorce rates, while changes in these measures reflect the severity of the recession net of the baseline rates. Amato and Beattie (2011) find the strongest effects of unemployment on divorce in the contemporaneous year or with a one-year lag. However, the ACS asks not about the calendar year, but rather about the 12 months previous to the interview. Therefore, I lag state variables one year (providing scores between one year and contemporaneous), and also use one-year changes. The change variables reflect 2007-2008 changes for the 2008 cases, and 2008-2009 changes for the 2009 cases. The variables used are summarized in Table 1, and all values are listed in Appendix Table A1.

In the home price and foreclosure data, four states are relative outliers – California, Nevada, Arizona and Florida. Each of these has several scores that is 2 standard deviations or more away above or below the state mean. Since their inclusion affects the regression models, I present those models with these states removed, and examine them separately.

I estimate state-year regression models combining 2008 and 2009, providing a sample size of 102 (50 states plus the District of Columbia in each year), or 94 when the four outlier states are removed. The regressions are weighted by the population of married women in each state, and each includes a dummy variable for the year 2009 to capture the national trend. Thus, the results are equivalent to an analysis of unadjusted individual-level odds of divorce across states with a year fixed effect. For each pair of variables – unemployment, home prices and foreclosure rates – I estimate one model separately for each variable and year, and then a model with the variables combined.

RESULTS

With population weights, the ACS provides an estimate of 1,304,298 divorced women in 2008, and 1,209,820 in 2009. The corresponding refined divorce rates of 21.6 per 1,000 married women in 2008 and 20.0 in 2009 are shown in Table 1.² The lagged unemployment rates range from 2.7% to 8.3%, while one-year changes in unemployment rates range from 0% to 5.8% during the two years prior to 2008 and 2009. Home prices fell from 228 the year before 2008 to 209 the year before 2009, with average changes of about -7 and -5 in the two years. Housing units in foreclosure represented .007% to 7.29% of all units, with one-year changes from near zero to almost 4% across states.

The regression results are presented in Table 2. There are no significant effects for unemployment or foreclosure rates or changes. For each of these variables the coefficient is less than its standard error, in all but one case less than half its standard error. The models are also particularly weak, with adjusted R-square terms between .019 and .03. These results provide no support to any of the three perspectives: stress, divorce-cost, or resilience.

In contrast, the home price index results show a significant, positive effect of home price change on divorce rates, and R-square terms two- to three-times larger. That means divorce rates were higher where home prices fell less – in other words, falling home prices are associated with lower divorce rates. This is not consistent with the stress perspective, which predicts increased divorce during economic downturns. And because falling home prices reflect a barrier to home sales, among the two positive perspectives this result is more consistent with the divorce-cost hypothesis (H_{2a}) than the resilience hypothesis.

² This number for 2008 is several thousand less than that obtained in Ellis, Simmons and Lewis (2010), presumably because I exclude those not living in the U.S. one year earlier.

For interpretation, the regression results are plotted in Figure 1. The top three cells of the figure are from Model 1 for unemployment, house prices and foreclosure, while the bottom cells are for Model 2 from each of the corresponding variables. The grey points and lines reflect 2008 values and their weighted regression line, while the black points and lines reflect the 2009 values and their weighted regression line.³ Each plot is scaled so that the *x*-axis runs from better economic conditions on the left to worse conditions on the right. Remember that only house price changes – the middle plot in the bottom panel – have a statistically significant slope for economic conditions.

Finally, what do the outlier states show? Data from the four states – Arizona, California, Florida and Nevada – are summarized in Figure 2. All experienced dramatic drops in house prices from 2007 to 2009, falling faster than any other states by a wide margin (several standard deviations faster than the mean for all states). They also had many more foreclosures than the rest of the states, and had faster increases in foreclosure rates – especially Nevada, which by 2009 had more than 10% of its residences in foreclosure, compared with a national average of 1.6%. Nevada's divorce rate increased by 2.3 per 1,000 married women – compared with the national drop of 1.6.⁴ Arizona's divorce rate was unchanged while Florida and California had declines close to the national average. These results are mixed, but they are most consistent with the stress perspective, as the states with the worst housing crisis – Nevada and Arizona – had increasing or flat divorce rates in opposition to the national trend, while the other outlier states were close to the national trend.

³ Since no year interaction terms are in the models, the two lines in each graph are constrained to be parallel.

⁴ Note that because these divorce rates are calculated based on state of residence, Nevada's rate does not include divorces that state granted to people living in other states.

DISCUSSION

In summary, this analysis of the divorce rate among a sample of 1.32 million U.S. women in 2008-2009 provides little evidence for an effect of the economic crisis on divorce at the state level. The national divorce rate declined during the recession in these data, from 21.6 per 1,000 married women to 20.0, but that decline was not strongly patterned according to the severity of the recession, at least as indicated by unemployment and housing foreclosure rates or changes. Only in the case of house price changes was the relationship statistically significant, showing lower divorce rates in states where house prices fell more in the previous year.

Except in the four states with extreme housing crises, these results provide no support for the suggestion that recession-related stress increases divorce. In contrast, they provide some support for the idea that the recession reduced divorce rates. Between the two possible mechanisms for declining divorce rates, the results are more consistent with the divorce-cost than the resilience perspective. House prices affect people's flexibility in dividing up a household in the case of divorce, so falling prices may make divorce a more formidable obstacle. However, in most cases falling home prices do not reflect a hardship to be overcome if families are *not* considering selling their home, so this is not a good measure of generalized stress. The result thus provides less support to the notion that couples pull together in the face of hardship, resulting in lower divorce rates. Unlike the general results, which support neither the stress hypothesis nor the resilience hypothesis, the evidence from the outlier states points toward a stress response, as falling values and rising foreclosures are associated with a greater number of divorces than expected based on national averages.

In light of these contradictions, and the aggregate level of the data, any interpretation is obviously speculative. All we can be sure of is that, as in most of the last several decades,

divorce rates fell from 2008 to 2009. And that decline was faster in states where home prices fell further (with the exception of the severe-crisis states), for reasons that at least suggest avenues for future research.

Indeed, these results should interject a note of caution into the fast-moving discourse on the effects of the recession, which the news media and public have been eager to consume. Consider the response to W. Bradford Wilcox's (2009:17) conclusion, based on continued national decline in divorce rates, that "one piece of good news emerging from the last two years is that marital stability is up." Bishop Richard Williamson (2009) declared that "every cloud has a silver lining," and called the report "some good news for Christmas." The *New York Times* columnist Ross Douthat (2009) paraphrased the report to say, "economic stress seems to have made American marriages slightly more stable overall." These conclusions were undoubtedly premature, and may have been wrong altogether.

Although the recession formally ended when economic growth was recorded in 2009, its effects in terms of high unemployment and foreclosure rates have persisted into 2011. However, with regard to divorce, history shows that fluctuations in divorce rates resulting from changing economic conditions may reflect the *timing* of divorce more than the odds of divorce for specific marriages or birth cohorts (Schoen and Canudas-Romo 2006). In fact, the long-term effects of this recession on divorce may in the end follow from changes in the timing and quality of marriages during the down years, rather than from the dynamics within already-married couples today (Cvrcek 2011). Further impacts of these events on American family structure and behavior are likely to emerge in future studies.

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Table1. Description of variables used in the analysis

Weighted means	2008	2009	Min.	Max.
Divorce per 1,000 married women Divorced in 12 months preceding the survey	21.6	20.0	9.52	33.72
Unemployment lagged -1 Per 100 in labor force in year t-1	4.61	5.77	2.70	8.30
Unemployment change Per 100 in labor force in year t - rate in year t-1	1.17	3.47	.00	5.80
House price index Same-house sales price, 1991=100 in year t-1	227.8	209.4	164.0	334.0
House price index change HPI in year t - HPI in year t-1	-7.32	-5.26	-26.05	3.02
Foreclosure lagged -1 Per 100 houshing units in year t-1	1.04	1.84	.007	7.29
Foreclosure change Per 100 housing units in year t - rate in year t-1	0.81	0.36	-0.34	3.91
State N Individual N (for divorce rate)	51 668,217	51 669,630		

Table 2. OLS regression coefficients for divorce rate on state characteristics, 2008-2009

A. Unemployment	Model 1	Model 2	Model 3	
Intercept	21.249***	21.353***	21.348***	
	(1.732)	(.772)	(1.761)	
Unemployment lagged -1 ^a	.077		.001	
	(.361)		(.418)	
Unemployment change ^b		.212	.211	
		(.505)	(.586)	
Year 2009	-1.648*	-2.048	-2.047	
	(.816)	(1.356)	(1.376)	
Adjusted R ²	.029	.030	.020	
B. House price index				
Intercept	26.633***	22.689***	25.906***	
	(2.564)	(.720)	(2.556)	
House price index lagged -1 ^a	024		016	
	(.012)		(.012)	
House price index change ^b		.351*	.286+	
		(.141)	(.149)	
Year 2009	-1.739	-1.713*	-1.803*	
	(.786)	(.776)	(.776)	
Adjusted R ²	.062	.082	.089	
C. Foreclosure				
Intercept	21.634***	22.061***	22.121 ***	
	(.791)	(.779)	(.936)	
Foreclosure lagged -1 ^a	135		082	
	(.689)		(.691)	
Foreclosure change ^b		-1.285	-1.273	
		(1.298)	(1.309)	
Year 2009	-1.507+	-1.890*	-1.852*	
	(.848)	(.861)	(.920)	
Adjusted R ²	.020	.030	.019	

⁺ p < .10; * p < .05; ** p < .01; *** p < .001.

Note: House price index and foreclosure models exclude Arizona, California, Florida and Nevada. N = 102 in the unemployment models; N = 94 in the home price and foreclosure models.

^a 2007 values for observations in 2008 and 2008 values for observations in 2009.

^b 2008-2007 values for observations in 2008, 2009-2008 values for observations in 2009.

Figure 1. State recession indicators and divorce rates, 2008-2009.

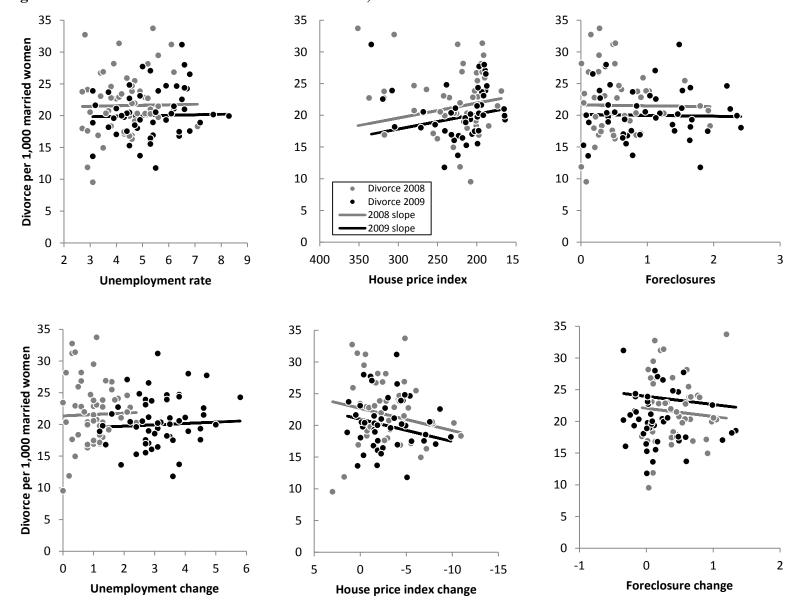


Figure 2. Housing market outlier states, compared with national average.

