The Partisan (Red/Blue) Fertility Response to the Great Recession

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Text and results below are forthcoming in a Russell Sage volume (Authors S. Philip Morgan, Erin Cumberworth and Christopher Wimer. *The proposed paper will extend these analyses.*

Fertility rates in the United States have varied dramatically over the past century, plummeting during the Great Depression, skyrocketing during the post-WWII baby boom, declining again in the baby bust of the 1970s. The total fertility rate (the TFR) is the most commonly used fertility measure and is defined as the number of births a woman would have if she, over her lifetime, experienced the age-specific rates of a given period. The major changes in the TFR occurred during periods of massive social transformation, such as the Great Depression in the 1920s and 30s, and the postwar baby boom and bust of the 1950s and 60s. Since then, the U.S. has experienced an extended period of striking stability, with Americans averaging close to two children per woman. For several decades prior to the Great Recession the U.S. current fertility rate hovered around 2.1, or near the "replacement rate" – the level necessary for replenishing the population (net, of course, any immigration and the effects of existing age structure). But even small changes in the TFR translate to large and substantial changes in the absolute number of children born each year – more than four million babies were born each year in the period 2000-2008, so even a modest decline (say 5 percent) means several hundred thousand fewer births (200,000). Moreover, the relative stability of the TFR in recent decades masks other important changes such as a dramatic increase in nonmarital fertility and a two-decade long increase in ages of first birth. The Great Recession could impact these aspects of fertility as well as the overall rates and absolute numbers.

So how might the experience of the 2008-2009 Great Recession affect fertility? Over three decades ago, the demographers William P. Butz and Michael P. Ward (1979) argued that a "counter-cycle" fertility response was emerging. Specifically, because more women were in the workforce they might use periods of unemployment and weak employer demands as an opportune time to have children. In other words, the opportunity costs of children would be less during economic downturns. Further, with greater gender equality childcare provided by the un- or under-employed spouse (mother or father) would lower the primary cost of childbearing – lost wages and income.

No doubt such calculations influence some women and couples, but past evidence from the U.S. and other developed countries suggests that the dominant effects of economic downturns reduce fertility (Sobotka et.al. 2010). Why? Making the decision of when to have a child is one of the most important decisions people can make because of its dramatic short term costs and long term implications. For most couples, having a child is a decision best made when they can arrange to take care of a baby and when they are sufficiently economically secure in their jobs and their future to make such a long term commitment. Thus, in times of recession, when uncertainty and insecurity about the future runs rampant, we might expect that persons would postpone having children and fertility rates would drop (Bongaarts and Feeney 1998). To this dominant narrative, one must note its inconsistency with important "facts on the ground" in the U.S. – over 38 percent of births are to unmarried women (Martin et.al. 2009), and 49 percent of all pregnancies are unintended (Finer and Henshaw 2006). Thus, many of the decisions about pregnancy and birth are not made by married couples and many decisions about childbearing are made after an unintended pregnancy occurs. Most evidence suggests that less certain times would reduce the likelihood of births among the unmarried too and might lead some to abort unplanned pregnancies that they might have carried to term in more secure economic circumstances.

An examination of how married and unmarried women respond differently and whether the resolution of unintended pregnancies is changing are both crucial questions, though not ones that can be directly addressed at this time. The data needed to address these questions will not be available for several more years (from important and detailed data like that available in the National Survey of Family Growth, or NSFG). But we can examine overall fertility trends using monthly data on the number of births published by the National Vital Statistics Service, adjusted for the number of women of "childbearing years," defined here as those aged 15-44 (this is referred to as the General Fertility Rate, or GFR). We find that fertility does appear to be "changing course" in the current recession.

<Insert Figure 1 here >

Let us begin with the more recent experience and where our evidence is weakest. The provisional GFR (the fertility rate for women aged 15-44) does show a clear reversal in 2008 after rising steadily from 2003. Though not shown in figure 1, the fertility rate dropped even further in the first third of 2009.[1] Given that the recession began around December 2007 (the official declaration that the economy was in recession), the timing of this reversal is generally consistent with the hypothesis that people are responding to the recession by curtailing or postponing their fertility. Our confidence in the provisional GFR is bolstered because in prior years the final (or adjusted) GFR has varied little from the provisional estimates. Their correspondence, shown in figure 1, is impressive. We also show in figure 1 the commonly used and easily interpretable TFR (left scale); we include the TFR so one can see that the GFR and TFR tell similar stories for the recent period and so that one can compare the current level of variation with that in the past. The data needed for calculation of the TFR in 2007- 2009 are not available at this writing. As figure 1

[1] Because of significant seasonality in the GFR, including partial 2009 data in figure 2 would be misleading. However, the first quarter of 2009 data show a substantial drop from the first quarter of 2008 (data available from authors upon request).

shows, The GFR series generally track the TFR trends and we expect that, once the data are available, the TFR will also show a decline in 2008 and 2009.[2]

Moving to earlier periods, figure 1 shows the effects of previous recessions on fertility. As in other chapters we show recession periods by shaded rectangles where the width of the rectangle indexes each recession's duration. Using the TFR as the key fertility measure to assess the effects of these prior recessions, note that the TFR consistently responds to recessions by downward deflections of the fertility trend (that is, by reversing an upward trend or, as in the case of the 1990, halting the increase). This effect is consistent with our conclusion based on the GFR provisional data available for the beginning of Great Recession (2008).

But note that the TFR change is modest both in response to recessions and most other factors in the post 1975 period. The TFR has varied in a relatively narrow range (from about 1.75 to 2.1). The lower TFR rates prior to 1990 reflect pervasive postponement of childbearing that are less dramatic in recent years; controlling for this pervasive postponement would cancel most of the upward trend seen in the TFR across the 1975-2006 period (see Bongaarts and Feeney 1998). Compared to the dramatic shifts earlier in the century, the changes associated with recent recessions (shown in figure 1) are modest. For example, the TFR changed by over one birth in response to the Great Depression (decline), the baby boom (increase), and the baby bust (decline). (Data not shown; see Morgan 1996). In comparison the TFR only declined by about .1 in response to the most recent recessions (about five percent). The 2001 recession was associated with a two percent decline in the TFR. Taken all together the evidence consistently points to a modest (two to five percent) decline in fertility associated with the initial stages of the Great Recession.

[2] Examination will reveal that the ratio of the TFR/GFR increases overtime. This bias results because the TFR more fully accounts for women's age distribution. Specifically, in the 1970s and 80s there were larger proportions of women in their 20s compared to the last two decades when the proportions of women in their 30s and 40s increased. The TFR standardizes (or controls for) these differences the GFR does not. This TFR advantage makes it the preferred estimate for years when it is available.

Of course, it is difficult to conclude that a simple 2008 reversal in fertility rates is truly a response to the recession, no matter how appropriate the timing. We must, therefore, look for other ways to test whether the observed declines are sensitive to changes in economic conditions (or perceptions thereof). This leads to the question of whether states particularly hard hit by the recession are showing steeper fertility declines. To examine this question, we first simply examined fertility trends for states with the largest jumps in unemployment since the beginning of the recession and states with the smallest jumps in unemployment since that same point (between December 2007 and December 2009, the last month available prior to this analysis). Both the least and worst hit states, however, showed similar declines since the start of the recession.[3] Thus initially, we found no evidence that the "hardest hit" states had greater fertility declines.

But other evidence does suggest that the nationwide declines in fertility may be driven by concerns about the economy. In a recent survey of women conducted by the Guttmacher Institute, many women reported that, because of the economy, they wanted to reduce or delay their childbearing. In total, over forty percent of surveyed women answered affirmatively to having such concerns, while over fifty percent of low-income women and women who reported being financially worse off (compared to the prior year, 2008) reported such concerns. If these women's concerns translate into actual behavior, then the recent declines in fertility may indeed be a reaction to the anxiety and uncertainty of the Great Recession.

Another survey by the Guttmacher Institute suggests that women's concerns are indeed translating into action. Based on a 2009 survey of sixty family planning centers, the Guttmacher Institute reports that two-thirds of centers were serving increasing numbers of clients overall, while an even higher percentage of centers reported serving more low-income and uninsured clients. Nearly two-thirds reported declines in clients paying full fees, suggesting that for many centers,

[3] Results available upon request.

the recession was straining their abilities to meet women's reproductive needs. This strain is mirrored by reports of various service delivery challenges experienced by these family planning centers. Nearly half of surveyed centers reported staff layoffs or hiring freezes in early 2009, while about a third reported cutting back certain types of methods or services to clients. A quarter of family planning centers reported longer wait times in their offices. It seems, then, that women's increasing demand for reducing fertility is translating into tough times for family planning providers, suggesting that the recession-induced dip in fertility is quite real. Given family planning centers' difficulty in meeting service demands it also seems likely that the percent of pregnancies unplanned could be increasing. These service shortages may therefore attenuate the overall Great Recession fertility decline.

Given this evidence, we decided to examine the state-level differences more closely for evidence of greater fertility declines in hardest-hit states. Figure 2 will help demonstrate our strategy. Figure 1 compared birth rates (the TFR and GFR) for twelve- month calendar-year periods. As figure 2: panel A shows, 2008 births (January through December 2008) are produced by conceptions concentrated (nine months earlier) between mid 2007 and mid 2008. This "conception period" overlaps some but does not correspond closely with the beginning of the recession. In fact, half of the conceptions producing 2008 births likely occurred before the recession officially began. Thus panel A shows that the contrast of the 2008 and 2007 calendar years provides a weak contrast of periods with and without recession. In addition, in December of 2008 (the date we identify as the beginning of the recession) there was some disagreement regarding whether the U.S. was heading into a recession and certainly the extent of the economic downturn was unanticipated by many in December 2007. Thus, a strong behavioral response in

these early months of the recession is unlikely. In short, upon closer examination the 2008 versus 2007 calendar year contrasts provide a weak test of Great Recession effects on fertility.[4]

In panel 2 (figure 2), we show a comparison that provides a stronger test: we will compare births in the first third of each year 2007-2009. We also show "conception periods" beginning nine months earlier, when most pregnancies leading to these births began. These three conception periods provide sharp contrasts: one (2007) well before the recession, one (2008) a few months prior to the onset of the recession, and one (2009) when the recession was approaching the crisis period of late 2008/early 2009. Recent data from NCHS provide a count of births in January-April by state and year. We use these data to see if fertility declines (2007-2009) were greater in states where the recession was more severe.

Let us point out that either outcome is reasonable. First, a finding of greater declines in harder hit states could reflect the individual behaviors of those most intensely feeling the economic downturn. More persons affected would translate to more people altering their behavior. Individual responses to the felt consequences of the downturn cumulate to produce measurable aggregate-level effects. Alternatively, persons might "feel" the recession more intensely if many in their neighborhoods, communities, and state are being negatively affected by the recession. Thus, the effects are felt at a community (measured here as a state) level and influence most persons in the state whether they personally "felt" the effects of the downturn or not. A final possibility is that peoples' sense of the crisis is driven by a national media that makes events in Detroit or Jackson "feel" as if they are happening in Denver and Raleigh. The interrelatedness of the national economy and the pervasiveness of national news coverage may make all events "local." Thus,

[4] Most of the estimates of the Great Recession fertility effects are based on this 2007-2008 comparison. See for instance Hamilton et.al. 2010 or Livingston and Cohn 2010 and media reports based on them (for example, msnbc.com news services, April 6, 2010, URL: http://www.msnbc.msn.com/id/36195004/ns/health-womens_health/)

rationales are plausible for both larger effects in hardest hit areas and for pervasive effects across all states.

Using the fifty states as units of analysis, we estimate a "difference-in-difference" model. We regress *changes* in the January- April birth rate (2009/2007 or 2009/2008) on *changes* in unemployment. [5] Panel B (figure 2) shows the timing of the fertility measurement. The unemployment contrast is calculated as the difference in the state unemployment rate from June 2009 to December 2007. The timing of this measurement is less crucial because we are trying to capture the "hardest hit" states and this measurement is a contrast of unemployment pre-recession versus its peak.

Figure 3 shows a simple scatterplot of these differences-in-differences; an association is clearly visible between unemployment changes and fertility changes. The simple correlation between the birth rate and unemployment changes is -.33. If we treat these observations as a simple random sample, then we could easily reject the null hypothesis (that is, no association) at conventional levels (p=.02). More importantly, the association reflected by a simple linear association is substantively important. A doubling of the unemployment rate (say from four to eight percent, an increase in factor change from one to two) reduces fertility by 2.5 percent. At the national level (if we agree that the recession doubled the unemployment rate), these results imply that the recession would reduce the number of 2009 births (relative to 2007) by about 100,000 (.025 x approximately four million births).[6]

<Insert Figure 3 Here>

[5] The monthly NVSR provide only counts of births by state. We calculated rates using midyear estimates of state populations (U.S. Census Bureau, Population Division 2009). All results described here hold whether one uses changes in births or changes in birth rates as the indicator of fertility change.

[6] A recent Pew Report based on data for twenty-five states also finds associations between fertility decline and measures of the severity of the recession in particular states. See Livingston, G. and D. Cohn (2010).

Interestingly, the results above are virtually unchanged if we substitute the 2009/2008 change for the 2009/2007 change analyzed above. This result confirms that that the timing of the fertility response is anchored in the period roughly twelve months after the recession onset. Analysis of subsequent data would allow us to document the longer run effects, but such data are not available at this writing.[7] We expect that these effects will intensify in the later two-thirds of 2009.

The results above beg the question: is there heterogeneity in state responses to the recession? The scatterplot (figure 3) above certainly suggest that this could be the case; the linear description of the association only accounts for eleven percent of the state variation. We address several interesting hypotheses linked to the striking fertility differences between "red" and "blue" states. Specifically, Lesthaeghe and Neidert (2006; 2009) show strong associations between state-level measures of fertility (the total fertility rate) and the percent voting for Democratic versus Republican presidential candidates. For instance, using data for 2000, the state-level correlation of the TFR and the percent voting for Bush (vs. Gore) was +.78 (Lesthaeghe and Neidert 2006: figure 8) – fertility is substantially higher in red states. We ask: do red/blue states vary in their response to the Great Recession? This question has broad and important implications – is a recession caused/perpetuated by a set of material circumstances or by a perceptual frame that "interprets" these material conditions as problematic or threatening? The most reasonable answer is that these two factors interact to produce a recession (see Sewell 1992; 2005). A community of persons, through process of interaction and communication, mutually construct a recession from material conditions and shared perceptual frames. We know that economic downturns occur periodically, and our observations and experiences and media accounts and official declarations lead us to

[7] Data for April, May and June of 2009 has been recently released (see NCHS's NVSR 58:9, 12,13). Adding data for the second quarter of 2009 and thus analyzing fertility in the first half of the year produces results indistinguishable from those described here.

acknowledge the current one as quite serious. But do perceptions of the Great Recession's seriousness vary systematically and does such variation affect childbearing?

Let us now develop two competing processes whereby interpretative frames (or schemas) would play a crucial role. First, Lesthaeghe and Neidert (2006) interpret the blue/red state difference as reflecting more and less movement, respectively, toward features of the "second demographic transition" – that is, increased cohabitation, postponed marriage and childbearing, and small families. This transition, in turn, is fueled by schemas stressing secular individualism and self-actualization. In the context of the Great Recession, because timely family formation (marriage and childbearing) takes on a greater importance in red states, it might be less curtailed in red states. After all, the higher fertility in red states suggests greater pronatalism in the face of globalizing forces that have pushed fertility well below the replacement level in most economically developed countries. So net of objective economic conditions, this scenario suggests less responsiveness (smaller fertility declines) in the less "secular" red states.

A second hypothesis can be developed around differences in the perception of the recession as a crisis and its long term impacts. The blue-red difference corresponds to a partisan "MSNBC vs. Fox news" viewing pattern, respectively. The extent of the crisis and the likely impact of the Obama administration may have altered how people experienced the recession. The optimism that Obama's election generated, especially in blue states, may have dampened the concern about the recession or increased optimism that it would end quickly and well (that is, with a robust recovery). This interpretation stresses, in addition to the objective real time circumstances, that partisan perceptions regarding the severity and long-term impact of the Great Recession could influence fertility relevant decisions.

We address this hypothesis by calculating for each of the fifty states a simple blue-red indicator -- the ratio of the November 2008 percent voting for Obama versus McCain. A value of

1.0 is a fifty-fifty split (for example, North Carolina); Wyoming and Vermont set the observed range among the fifty states, with values of .51 and 2.2 respectively. As shown in appendix A, we use the difference-in-difference approach again and regress state fertility change on state unemployment change, but this time we include the blue-red factor. Our hypothesis is that the unemployment change might have different effects depending on this blue-red contrast. This substantive argument implies an interactive effect described formally in the appendix. Its substantive implication can be seen in table 1.

<Insert Table 1 Here>

In table 1 we show expected state values given their increase in unemployment and their blue/red voting pattern. Our estimates suggest that the more "blue" the state, the weaker the negative effect of the recession. Stated differently, the recession was felt or perceived as more severe in red states. Given an average effect of about -2.5 percent (-.025 in models only including employment change, or -.03 for North Carolina in this interactive model). In comparison, the reddest state (Wyoming) has an effect approximately twice this great. The bluest state (Vermont) is predicted (in this model) to have no fertility decline (actually a 1 percent increase is predicted). These precise predictions (expected values for particular cases) are meant to be only illustrative; the broader conclusion is that partisan perceptions seem to condition the recession effects on fertility. To repeat our substantive conclusion: the fertility of those in blue states was less affected by a given severity of the recession; we suggest that this is because of their greater optimism regarding the recession – it would be of modest duration and severity and the recovery would be robust.

While these data are consistent with this "story," so are many others (that we or others could develop). Why believe this one? As his collaborators will attest – Morgan predicted this scenario prior to looking at the data based on personal experiences of Republican versus

Democratic responses to the Great Recession – yes, at a family event! The perceptual biases reflected in the coverage of contemporary events by MSNBC and FOX are striking. So, this hypothesis, while based partly on personal experience, is a "real test" based on full national data and is not a post-hoc rationalization. But if this story is correct, new data (available soon) should show similar (or even stronger) results for comparison of the second third of the years (2007-09). As figure 2 suggests, the difference in blue/red perceptions likely peaked in a "conception window" that encompasses the months following the Obama election (and would be most apparent in May-August of 2009).

Supporting evidence for the claims above are available also from survey data. Specifically, survey data show a blue/red difference in perceptions of the Great Recession. We found these survey results following the tests described above, and they provide powerful evidence of partisan perceptions regarding both the intensity and likely duration of the Great Recession. Figure 4, for instance, shows responses from Democrats, Independents and Republicans to the question: "Right now do you feel your standard of living is getting better or worse?" One would expect that the proportion saying "better" would decline during the recession (and it does); but the differential changes of the partisan groups show that their interpretation of the underlying material conditions are quite different. With the inauguration of the Obama administration the Republicans have adopted a more pessimistic view of their standard of living while the Democrats adopted a more optimistic one. Consistent evidence comes from questions about how long the Great Recession will last or will a recovery begin next year. Responses to both questions show strong partisan patterns – Republicans predicting a longer recession and a lower likelihood of recovery next year. The conclusions of the Gallup report mirror the argument we are making here:

> Life evaluation trends among all Americans have followed a roller-coaster route over the course of the economic downturn. Throughout the past two years, however, two factors -- income and politics

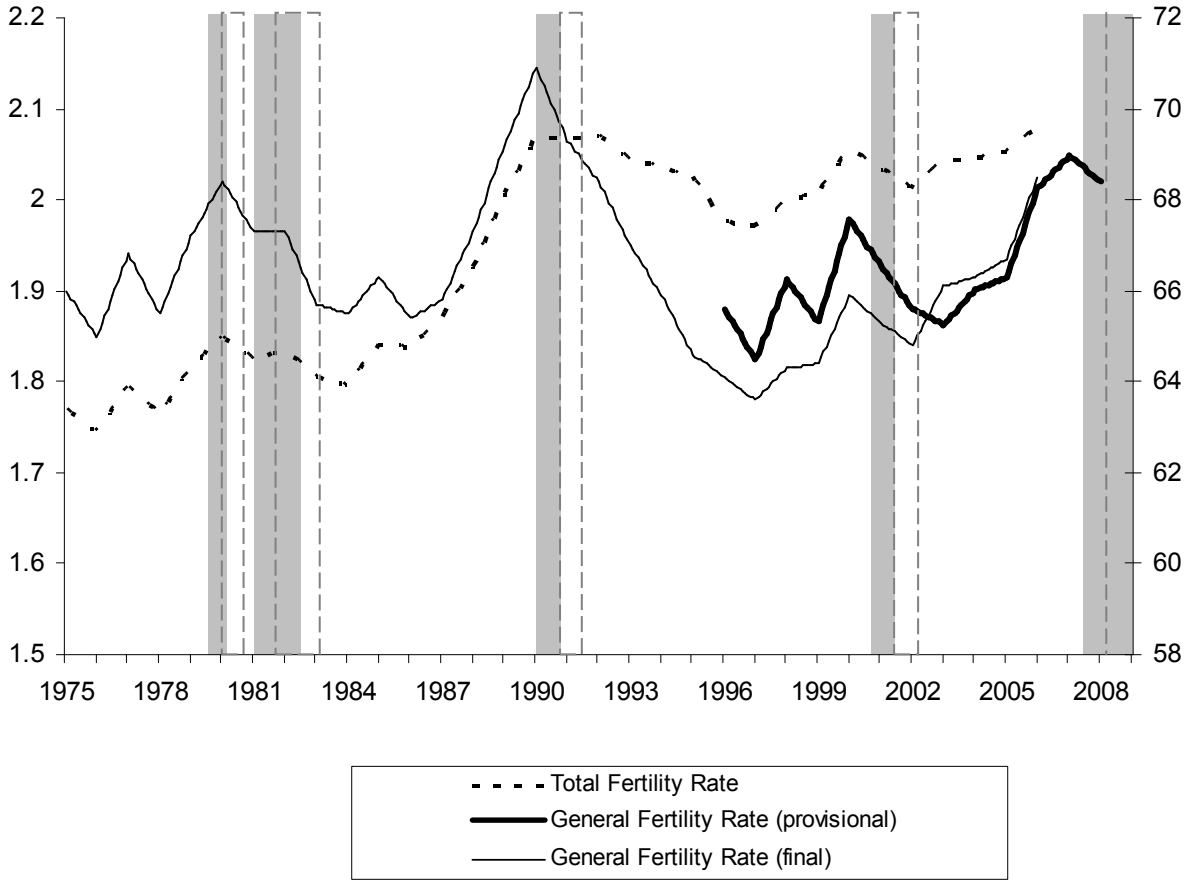
> -- were consistently related to respondents' optimism about their lives. …. Democrats at all income levels have developed a more upbeat view of economic conditions since Obama's election, whereas Republicans have generally soured on the economy. These findings offer a stark demonstration of how politics influences our perceptions not only of how we view the world around us, but also how we view our own lives. (Gallup 2009).

<Figure 4 about here>

Pushing further this strategy of "mining" heterogeneous effects is hampered because of data availability at this time. The social demographic strategy of decomposition would provide many other clues (and opportunities to test these and other dynamics). In time we will know if "planned" versus "unplanned", marital versus nonmarital, teen versus older, and other types of fertility were more responsive to this recession.[8] The empirical patterns examined here provide the contours of the richer narrative that will eventually be told.

Figure 1. The fertility rate drops for the first time since 2003

[8] Hamilton et.al. (2010) compare fertility in 2008 to data in 2007 and find evidence that fertility fell for all age groups except those women in their 40s; they also report that both marital and nonmarital fertility declined by about 2 percent. Note again that we argue that the comparison of these two years as a recession effect is problematic (see figure 2 and discussion).



Note: The vertical bars shaded gray show recession periods. The vertical bars outlined in gray show a nine-month lag to the recession period.

Definitions: The general fertility rate (GFR) is the number of live births per 1,000 women aged 15-44 years. The total fertility rate (TFR) adjusts for the age distribution of women, and can be interpreted as the number of children a woman would expect to have over her lifetime given the age-specific fertility rates at that point in time. The TFR and final GFR shown here are final annual estimates published by the National Center for Health Statistics (2007). The provisional GFR shown here is based on provisional estimates published by the National Center for Health Statistics in their monthly National Vital Statistics Report. Each point represents the average of the monthly fertility rates for all twelve months in each year.

Figure 2. Timeline of births, pregnancies, and the 2008-2009 recession

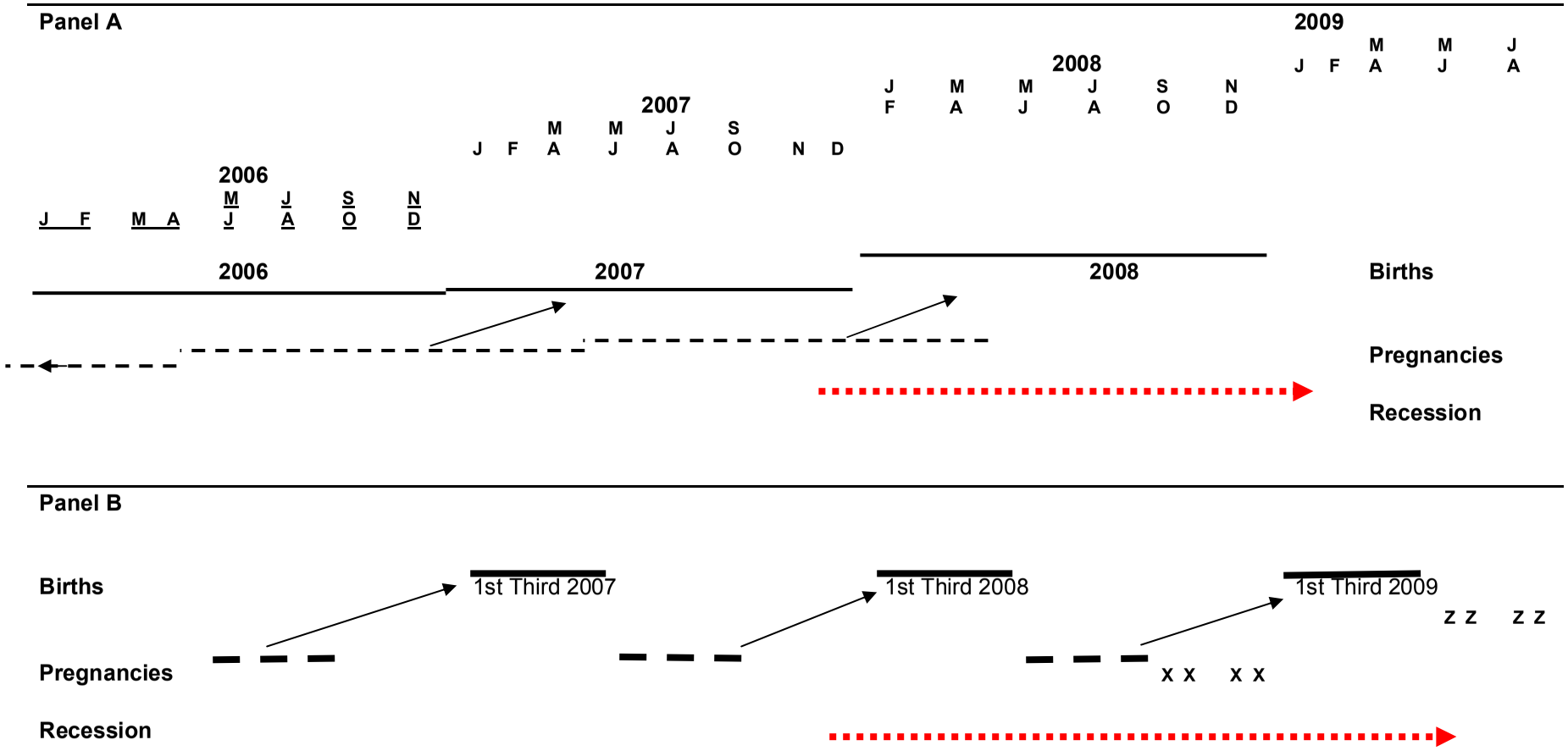
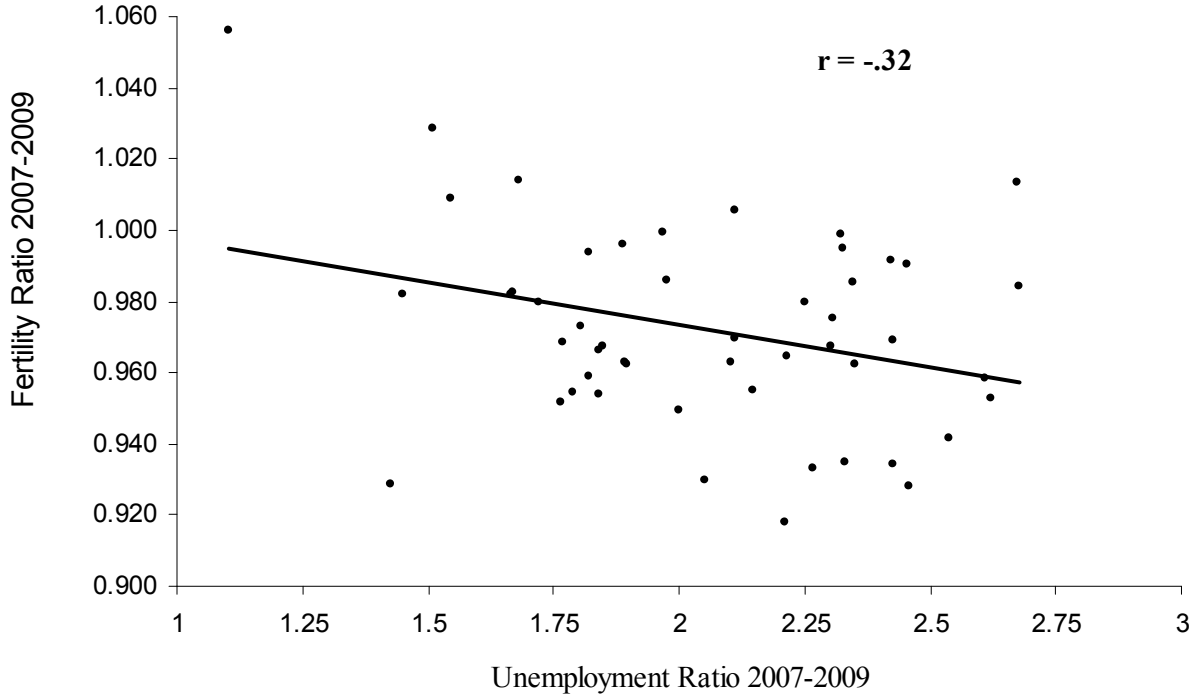


Figure 3. Fertility falls the most in the states with the biggest increases in unemployment.



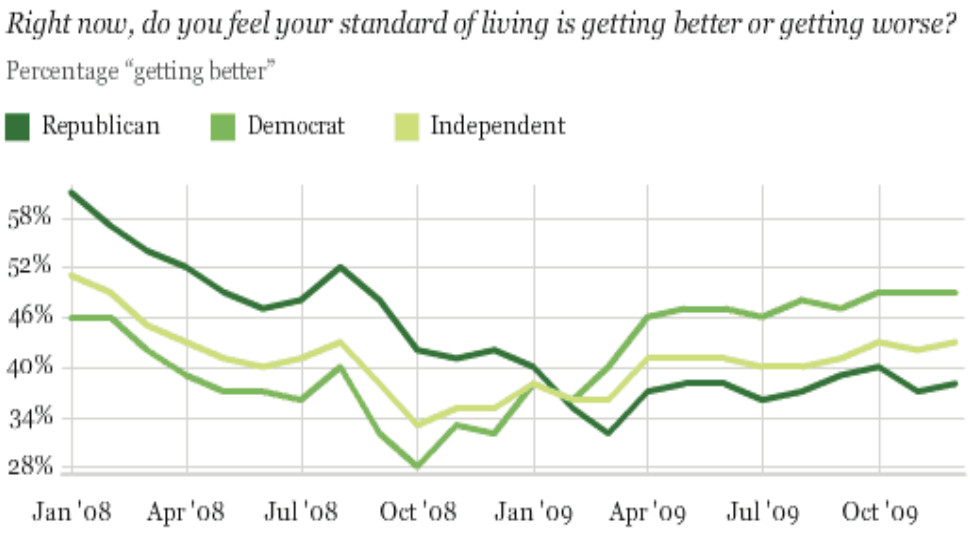
Note: The "fertility ratio" is the ratio of the general fertility rates from January to April of 2009 and 2007, as reported by Vital Statistics. Values less than 1.00 indicate lower fertility in 2009, and values greater than 1.00 indicate higher fertility in 2009. The "unemployment ratio" is the ratio of the unemployment rates from December of 2009 and 2007, as calculated from the Current Population Survey. Values greater than 1.00 indicate higher unemployment in 2009.

Table 1. Recession effects by state voting pattern (blue/red)

Selected State	Observed Voting Pattern	Predicted Recession Effect
Wyoming	0.50	-0.05
Arkansas	0.75	-0.04
North Carolina	1.00	-0.03
Minnesota	1.25	-0.02
California	1.50	-0.01
Vermont	2.20	0.01

See Appendix 1 for details of analysis

Figure 4. Partisan differences in perceptions of the recession, January 2008-December 2009



Source: Gallup

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