The effect of state labor market conditions on cohabitation

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In the United States, cohabitation has replaced marriage as the first coresidential union experienced in adulthood (Manning, Brown, and Payne, 2014). The likelihood of cohabiting, however, varies substantially by social class. Data from the most recent (2006-2010) National Survey of Family Growth indicates that 70% of women with less than a high school diploma cohabited in their first coresidential union, compared with only 47% of women who had completed (at least) a college degree (Copen, Daniels, and Mosher, 2013). Numerous studies have examined the factors associated with entering into a cohabiting union, but these often focus on individual attributes (Guzzo, 2006; Sassler and Goldscheider, 2004; Smock and Manning, 1997; Vespa, 2012). This is surprising, given that a good deal of research on living arrangements, such as that focused on divorce or returning to the parental home is premised on the importance of macroeconomic conditions – levels of unemployment, for example, or earnings (Hellerstein and Morrill, 2011; Kreider, 2010; Mykyta and Macartney, 2011).

A growing body of qualitative research on cohabitation among young adults suggests that financial factors expedite transitions into cohabitation, but not marriage (Sassler, 2004; Sassler and Miller, 2011; Smock, Manning, and Porter, 2005). When asked the reasons that motivated their entrance into shared living, cohabitors frequently mention a variety of factors: housing needs, convenience, economic rationality, financial necessity, as a sign of commitment or to be able to spend more time together, as well as in response to family situations (a desire to leave the parental home, or a response to a pregnancy) (Rhoades, Scott, and Markman, 2009; Sassler and Miller, 2011; Sassler, 2004). Economic factors, such as job loss, inadequate earnings, or difficulty affording rent were mentioned more often by less educated cohabitors, whereas college educated cohabitors more frequently mentioned convenience and economic rationality as reasons for moving into their cohabiting unions (Sassler and Miller, 2011). Furthermore, young adults

from less economically advantaged households moved into their shared living arrangements at a significantly more rapid tempo than did youth from more advantaged backgrounds (Michelmore and Sassler, 2013; Sassler, Michelmore, and Holland, 2014). In fact, cohabitation remains far more prevalent among those with lower levels of educational attainment, and they also move into shared living at younger ages than do the college educated (Copen et al,, 2013; Kennedy & Bumpass, 2008). Those who have experienced the greatest increase in cohabitation, then, are those who are most likely to be affected by state earnings policies and economic conditions.

To what extent are variations in state earnings policies – such as minimum wage laws – associated with entrance into cohabitation? In this analysis, we use the Survey of Income and Program Participation (SIPP) to examine how state-level labor market characteristics affect cohabitation rates among 18-45 year old women. We focus on women who have no more than a high school diploma to isolate the sample of women most likely to be affected by fluctuations in the low-wage labor market. We also examine how state unemployment rates affect cohabitation decisions, as previous work has shown that changes in living arrangements are likely to occur following a job loss or in times of high unemployment (Kreider, 2010; Wiemers, 2010). Results suggest that women with low levels of education are more likely to cohabit when state unemployment rates increase, and cohabitation rates fall when states increase their minimum wages. These findings suggest that financial considerations play an important role in cohabitation decisions among low-educated women, and highlight the importance of paying closer attention to macroeconomic factors that shape living arrangements.

Background

A sizable body of demographic research has explored changes in the union formation patterns of young adults. There has been considerable delay in the age at first marriage, and the majority of young adults now cohabit; as a result, the rise in cohabitation has offset changes in the levels of and timing of marriage (Manning et al., 2014). Even as cohabitation has become more acceptable across the social class spectrum, there are important class disparities in both the prevalence and the processes leading up to living with a partner, and subsequent outcomes following entrance into shared living (Lichter, Michelmore, Turner, and Sassler, 2014; Michelmore and Sassler, 2013; Sassler and Miller, 2011). Cohabitation has increased the most rapidly among young adults with lower levels of educational attainment. Results from the most recent (2006-2010) NSFG reveals that over three-quarters of women aged 15 to 44 who lacked a high school degree (76%) had ever cohabited, compared with less than half (48%) of women with a college degree or more (Copen et al., 2013). The less educated also moved in with their partners at younger ages than their more educated counterparts (Copen et al., 2013). Among the factors predicting cohabitation are indicators of social class of family of origin, such as parental educational attainment and family structure while growing up; respondent's employment and school enrollment status, as well as educational attainment, and attitudes towards cohabitation (Sassler and Goldscheider, 2004). Research on more recent cohorts also find that various forms of debt (both education debt and credit card debt) increase the risks of forming cohabiting unions, particularly among women (Addo, forthcoming).

That the less advantaged are more likely to enter into cohabiting unions, and do so more rapidly, than their more advantaged counterparts suggests that financial constraints may play an important role in couples' decisions to move in together. Yet there is little empirical evidence to

corroborate such a hypothesis. While a handful of studies have explored the impact of economic conditions on moving back in with parents (Kreider, 2010; Matsudaira, forthcoming), no research of which we are aware has examined how state-level macroeconomic factors are associated with individual decisions to enter into a cohabiting union. The SIPP provides one data source that enables us to assess that relationship. In 1996, the SIPP began identifying cohabiting partners in the household relationship roster, making it easier to link trends in macroeconomic conditions with union formation decisions. Because the SIPP is partially longitudinal, we can assess state labor market conditions prior to the move-in date and observe how changes in labor market conditions affect transitions into cohabitation.

We focus in this paper on two particular state-specific indicators of economic conditions: minimum wage laws, and unemployment rates. Both vary considerably across states, enabling us to assess how variation, over time and across regions, contributes to changes in the formation of cohabiting unions. Proponents of raising the minimum wage argue that doing so is an effective means of improving the economic conditions of the working poor. Critics of raising the minimum wage, in contrast, assert that doing so will result in secondary effects that will ultimately be detrimental to the very populations they are designed to aid – resulting in higher unemployment, for example, or curtailing access to health care, as employers hire fewer workers, cut back work hours assigned, or offer less generous benefit plans.

While there has been a long literature on how the minimum wage affects the low wage labor market, we argue for the need to expand studies of the impact of economic conditions to other aspects of the family, such as union formation. Cohabiting with a romantic partner, for instance, may be an effective way to cope with economic hardship, particularly since housing costs account for up to half of household income for poor and near-poor households (Quigley

and Raphael 2004). This could partially account for why there has been little evidence that the minimum wage affects poverty rates (Burkhauser and Sabia, 2007) — individuals may be able to successfully avoid poverty by moving in with their partners during times of economic hardship. When assessing the costs and benefits of raising the minimum wage, living arrangements should be taken into account because of their implications for social welfare. Cohabitation may have a deleterious effect for poor women and their children, as it is associated with higher levels of domestic violence, child mistreatment, and instability than marriage (Anderson, 2010; Brown and Bulanda, 2008; Fomby and Cherlin, 2007; Graefe and Lichter, 1999; Kenney and McLanahan, 2004). Furthermore, young cohabiting women with less than a college degree, and those in poorer quality relationships, have higher contraceptive failure rates than do married and single women (Fu, Darroch, Haas, and Ranjit, 1999; Sassler and Miller, 2014), and unintended pregnancies are associated with a range of negative outcomes for children (Brown and Eisenberg, 1995; Crissey, 2006; Hummer, Hack, and Raley, 2004). If increasing the minimum wage allows individuals more economic leeway to progress more slowly in their relationships they may be better able to avoid poor-quality relationship matches and their associated risks, with potential spillover implications for the take up of other social welfare programs such as Medicaid, WIC, food stamps, and traditional welfare.

The Minimum Wage

The minimum wage, established through the Fair Labor Standards Act in 1938 under President Franklin D. Roosevelt, sought to address the poverty concerns of workers buffeted by the Great Depression. Along with establishing a minimum wage of 25 cents an hour ($4.13 in 2013 dollars), the bill also banned child labor, and reduced the workweek to 44 hours (U.S. Bureau of Labor Statistics, 2014). Since then, states also have had the ability to set their own

minimum wages at or above the federal minimum wage. As of 2014, in fact, only five states in the U.S. had no laws about a minimum wage (which therefore meant they defaulted to the Federal rate), another 19 states had set their minimum wage to equal that of the federal minimum wage, and 23 states and the District of Columbia had minimum wages higher than the federal minimum wage of $7.25.[1]

The federal minimum wage has been repeatedly increased since 1996, when it was $4.75, to 2009, when it reached its current level of $7.25. But the real value of the minimum wage has fluctuated over time, as it is not indexed to inflation (U.S. Department of Labor, 2012). Furthermore, the constituency favoring raising the minimum wage is potentially quite small, if only those earning the minimum wage are considered. Only seven percent of hourly workers earned the minimum wage in 1997 (after it was increased), but this is larger than the four percent of hourly workers who earned the minimum wage in 2013 (U.S. Bureau of Labor Statistics, 2014). Yet certain groups are more likely to earn the minimum wage than others, namely workers who are young, female, have low levels of educational attainment, and part-time workers. Many of those opposed to raising the minimum wage argue that workers with the least skills (teenagers, high school dropouts) experience the greatest unemployment after a minimum wage increase (Burkhauser and Sabia, 2010; Currie and Fallick, 1996; Neumark and Wascher, 1995), but recent surveys suggest that more than two-thirds of all minimum wage earners in 2013 were over the age of 18 and approximately 25 percent of 19-24 year old workers earned the minimum wage (U.S. Bureau of Labor Statistics, 2014).

There is a long, contentious literature on how the minimum wage affects the low-wage labor market, but less on how it shapes living arrangements. Critiques of raising the minimum wage contend that increasing it could mean that the goods and services many households rely on,

such as groceries and childcare, become more expensive as the cost of hiring workers increases. Empirical evidence suggests that a 10% increase in the minimum wage increases prices of food, at most, by 4% and overall prices by 0.4% (Lemos 2004). This would indirectly result in poorer financial conditions, even for workers who earn more than the minimum wage. Firms might also respond to increases in the minimum wage by hiring fewer workers and substituting workers with greater skills, thereby increasing the unemployment rate. On the other hand, if minimum wage increases are not coupled with an increase in prices, a higher minimum wage would result in greater purchasing power among workers. Lost in such debates, however, are discussions of other possible spill-over effects such as those related to housing decisions made by individuals with low earnings. An increase in the minimum wage may also improve individual's ability to live in better quality housing, arrangements that are less crowded and have more amenities.

The impact of unemployment rates on household living arrangements is less ambiguous than that of the minimum wage. High unemployment rates have been linked to a range of negative outcomes. In the labor economics literature, previous work has shown that individuals who graduate from school during a bad economy (i.e. high unemployment rates) earn lower wages, and that these effects persist well into the career (Kahn 2010). Using a similar framework, other studies have found that leaving school at a time of high unemployment rates may also have negative consequences for health (Maclean 2013). In terms of household living arrangements, most of the research focuses on the association of high unemployment and 'doubling up' (or young adults living with their parents) (London and Fairlie, 2006; Kreider, 2010; Matsudaira, 2009; Wiemers, 2010). Some of these studies use variation in economic conditions geographically (Matsudaira, 2009; London and Fairlie, 2006), while others look at individual job loss (Wiemers, 2010). These studies find increases in the share of households

doubling up or in youth returning to live with their parents when unemployment rates increase. To our knowledge, there have been no direct analyses of the impact of labor market conditions on cohabitation patterns. While many young adults have the option of moving back in with their parents during times of economic hardship, such opportunities may be more constrained for those from less advantaged families, whether because of space constraints or because parents experience insecure housing themselves (i.e., foreclosure or marital disruption and relocation). Cohabiting with a romantic partner may be the most economically feasible option.

Hypotheses

Based on our review of the literature, we posit several hypotheses to test:

1. Coinciding with previous work on the effect of unemployment rates on household living arrangements, we expect unemployment rates to be positively associated with cohabitation rates. States experiencing larger changes in unemployment rates over time should also experience higher rates of cohabitation.
2. The impact of minimum wage changes is more ambiguous. On the one hand, increases in the minimum wage may increase the financial well-being of individuals and thus reduce the likelihood of cohabiting by reducing the financial constraints of low-wage workers. On the other hand, if minimum wage increases also induce more individuals to look for work, we might see higher minimum wages coupled with higher unemployment rates, which may increase cohabitation rates. We therefore expect minimum wage increases to have a negative effect on cohabitation for individuals who are already working, but perhaps no effect or a positive effect on individuals who have no earnings and may be looking for work. These individuals may experience more difficulty in finding employment and may move in with a partner out of convenience or financial need.
3. Finally, we hypothesize that not all women will be affected equally by changes in state minimum wages and unemployment rates. We expect larger responses among women who have less education, as these women are more likely to work in minimum wage jobs and have unstable employment. Given the literature on who receives the minimum wage,

we also expect younger women to be more responsive to changes in the state minimum wage than older women.

Data and Method

Data come from a sample of unmarried women between the ages of 18 and 45 in the Survey of Income and Program Participation (SIPP). The SIPP is a nationally-representative household survey that follows individuals within households for three to four years, interviewing households every four months. Beginning in the 1996 SIPP panel, cohabiting partners were specifically identified in the household, whereas they were often classified as non-related roommates in panels prior to 1996. Because we can explicitly identify cohabiting partners beginning in the 1996 panel, we use data from the 1996, 2001, 2004, and 2008 SIPP. The SIPP contained information on 36,700 households in 1996, 36,700 households in 2001, 46,500 households in 2004, and 52,000 households in 2008. By pooling information from these four panels, we have data on individuals between 1996 and 2012. This time period is particularly interesting for this analysis because it provides data on households during the economic boom period of the 1990s, the recession and recovery in the early 2000s, and the Great Recession of 2007 through 2008, resulting in a wide distribution of unemployment rates within states over time.

All individuals in the household 15 years old and older are interviewed. Because the survey oversamples low-income households and minorities, we utilize the panel weights in all analyses (U.S. Census Bureau 2009). The data contain detailed information regarding income from various sources for each individual living in the household. The data are also partially longitudinal, in that households are followed for 48 months in 1996, 36 months in 2001, 48 months in 2004, and 60 months in 2008. Households are interviewed every four months regarding the income and household characteristics about the previous four months. This four-

month interviewing strategy was implemented with the hopes of better-capturing fluctuations in income and family structure than a survey administered every year. Its large sample size, coupled with detailed information on income and household characteristics make the SIPP an ideal data source for investigating the effects of state labor market conditions on cohabitation rates.

We focus on the sample of unmarried women at the beginning of the survey who identify as the main respondent in the household, following them over the course of the panel to assess whether they have entered a cohabiting union or married at the end of each year of the SIPP survey. We limit the sample to women who are the main respondents in the household in order to identify cohabiting partners. The SIPP does not explicitly ask each individual whether they are cohabiting with a partner, as in some other surveys. Instead, each individual in the household is asked about their relationship to the household head, making it quite difficult to determine the relationship between other members of the household.[1] This allows for identifying whether the household head is living with a cohabiting partner, but also implies that our results are not necessarily representative of all women. For example, by restricting the sample to women who are the main respondents in their households, we have a sample that is predominantly single mothers. These women may be of particular concern for policy because they are much more likely to be living and raising their children in poverty, but they also may enter and exit cohabiting relationships in different ways than childless women. Finally, we limit our sample to women who have no more than a high school degree in order to specifically target those who are most likely to be affected by changes in state minimum wages and unemployment rates. This yields a sample of 16,929 person-years, representing 6,119 unique women. As a robustness

[1] The SIPP does contain a set of detailed household relationship questions where it is possible to determine the relationship between any two individuals residing in the household, but these questions are only assessed once throughout the course of the panel, making it impossible to determine any dynamic processes of entering and exiting cohabiting relationships.

check, we also examine how women with at least some postsecondary education are affected by unemployment rates and the minimum wage, but perhaps because these women are more likely to have stable employment and higher wages, we find no significant effects of state minimum wages and unemployment rates on cohabitation patterns of these women.

Our primary independent variables of interest are the state-level minimum wage in each year, and the state-level unemployment rate in each year. In our preferred specifications, we include state and year fixed effects, so the effects of these variables on cohabitation and marriage patterns are identified by within-state changes in these terms in different years. State-level fixed effects account for differences in political ideology or cultural factors that are constant over time within states. These would account for overall differences in cohabitation patterns between, for example, New York and Arkansas. Year fixed effects control for trends over time that affect all states, such as the Great Recession in the late 2000's. Because some states were hit harder by the recession than others, we can account for national trends but also assess the effect of experiencing disproportionately higher unemployment rates than the national trend. Our analysis period spans from 1996-2012, including the extended boom period of the 1990s, as well as the Great Recession beginning in 2008.

Figure 1 illustrates how the average state minimum wage and unemployment rates varied over this time period. The average state minimum wage was just over $6.00 in 1996 (2011$), rising to $7.33 by 2011. Over this time period, the unemployment rate varied significantly, reaching a low of 4% in 2000 just before the recession of 2001, and peaking at 9.6% in 2010 following the Great Recession. While the federal unemployment rate more than doubled over this time period, there was also substantial variation in unemployment rates across states. In 2010, when unemployment rates were at their highest during this time period, the unemployment

rate varied from a low of 4 percent in North Dakota, to nearly 14 percent in Nevada. In 2000, when the unemployment rate was at its national low, state unemployment rates ranged from 2.3 percent in Virginia, to 6 percent in Alaska. We use this variation to analyze how the likelihood of cohabiting varied within states that experienced large fluctuations in unemployment rates over this time period.

[FIGURE 1 about HERE]

The SIPP contains relatively little information on demographic characteristics and virtually no information on family background characteristics, but we control for race, age, education, whether the respondent has any children living in the household, and whether the respondent has ever been married. Prior research has linked many of these demographic characteristics to differences in cohabitation rates. In general, low-educated women are more likely to cohabit (Kennedy and Bumpass, 2008), as are white women (Sassler et al., 2013) as are women who have never been married before.

Empirical Strategy

We run OLS regressions predicting the likelihood of cohabiting in each year, as a function of state labor market and individual demographic characteristics.[2] We include state and year fixed effects in our preferred specifications, such that the labor market characteristics are identified off of within-state changes in these variables each year. All analyses cluster the standard errors at the state level, to allow for correlation of errors among women living in the same state. States that do not have minimum wages or experience no change in these variables over time are included to help identify effects of the year fixed effects and demographic characteristics. We measure state minimum wages in 2011$, while states that do not have

[2] We also used logistic regressions and found very similar marginal effects as those from an OLS regression. We focus on the OLS regressions for simplicity.

minimum wages are assigned a value of zero. The unemployment rate is also measured at the state annual level, ranging from 2 to 14 percent over this time period. We include basic demographic characteristics available in the SIPP such as age, race, education, whether the respondent has any children, and an indicator for whether the respondent has ever been married. Models take the following basic form:

$$Cohab_{it} = \beta_0 + \beta_1 mwage_{st} + \beta_2 unemp_{st} + \beta_3 X_{it} + \gamma_s + \delta_t + \varepsilon_{it}$$

Where $Cohab_{it}$ is an indicator variable for whether individual *i* in year *t* is cohabiting. $mwage_{st}$ is the minimum wage in state *s* in year *t*, while $unemp_{st}$ is the unemployment rate in state *s* in year *t*. X_{it} is a vector of demographic controls at the individual-year level, γ_s and δ_t are state and year fixed effects, respectively. The coefficients of interest here are β_1 and β_2, which represent the effect of a one-dollar increase in the state minimum wage or a one percentage point increase in the state unemployment rate on the likelihood of cohabiting for each individual.

In some analyses, we run these models separately by different subgroups to analyze who is most affected by changes in state labor market conditions. We run regressions separately by educational attainment, employment status, race, and age. We expect better-educated individuals to be less affected by changes in state labor market conditions than low-educated individuals because they are less likely to hold minimum-wage jobs, and may be employed in more stable jobs. As discussed above, we would expect the effect of minimum wage changes to differ for individuals who are working compared to those who are unemployed or not in the labor force. Finally, we would expect younger women to be more affected by changes in state minimum wages, as they might be more likely to work in low-wage jobs than older women.

Preliminary Results

Table 1 shows descriptive statistics for the sample of 18-45 year old unmarried women with a high school degree or less. Approximately 13 percent of this sample cohabits at some point during the SIPP survey. While the SIPP does not contain much information on family background characteristics, the average woman in our sample earned about $1,300 a month (2011$) and was 33 years old. The majority of these women have children, due to our restriction of the sample to women who are the main respondents in the SIPP survey. Over half of these women have never been married, and 30 percent have less than a high school diploma. This sample is also predominantly made up of racial and ethnic minorities, with whites making up just 45 percent of the sample: 31 percent of these women are black, while 21 percent are of Hispanic origin. We next look at variation in cohabitation rates by these demographic characteristics, shown in Table 2.

Consistent with trends found in prior work, we see that women with lower levels of schooling are more likely to cohabit than highly-educated women (13 percent for those with a high school diploma or less compared to 10 percent of those with some postsecondary schooling). White women are more than three times as likely to cohabit as black women (16 percent compared to 5 percent), and women under the age of 30 are more likely to cohabit than women 30-45 years old (16 percent compared to 11 percent). Finally, women with no positive earnings are more likely to cohabit than women with positive earnings (14 percent compared to 12 percent).

The OLS results (table 3) present three models: one with only the state labor market characteristics and year fixed effects, one with state labor market characteristics along with state and year fixed effects, and one that adds demographic controls along with state and year fixed effects. Only women with a high school diploma or less are included in the sample. Model 1, a

naïve model, shows how the likelihood of cohabiting varies across and within states with higher minimum wages and unemployment rates. The results suggest that women who live in states with more generous minimum wages are more likely to cohabit. Without including state fixed effects in the model, we are not controlling for differences in the overall cohabitation rate across states. Even though cohabitation has become relatively widespread, certain states may be more liberal in their attitudes towards cohabitors than others. In model 1, we find that higher minimum wages are correlated with a higher likelihood of cohabiting among low-educated women.

In model 2 we add state fixed effects to control for time-invariant, state-specific characteristics that may affect the likelihood of cohabiting with a partner. The coefficients in this model can be interpreted as the within-state change in the likelihood of cohabiting with a one-unit increase in the independent variables of interest. For instance, increasing the state minimum wage by $1 (about $150 per month for a full-time worker) reduces the likelihood of cohabiting by 0.8 percentage points—about a 6% reduction (on a base of 13%). The unemployment rate is positively associated with cohabitation—a 1 percentage point increase in the unemployment rate is associated with a 0.8 percentage point increase in the likelihood of cohabiting over the course of the SIPP panel. Including demographic controls in model 3 does little to change the estimates. Increasing the minimum wage is associated with at 0.8 percentage point decline in cohabiting, and increasing the unemployment rate is associated with a 0.9 percentage point increase in the share of women cohabiting.

Results by subgroups

We next run models separately by subgroups to observe which groups are most affected by state minimum wages and unemployment rates. We first run models separately by educational attainment, and then focus on the less-educated sample of women and run models

separately by employment status, race, and age. Not surprisingly, we find no significant effects of state minimum wage changes or unemployment changes on cohabitation patterns of women with at least some college experience.

Focusing on the sample of women with a high school degree or less, we next run models separately by employment status, race, and age. For employment status, we run the regressions separately based on whether the respondent had positive monthly earnings. Perhaps not surprisingly, individuals who have positive earnings are more affected by the state minimum wage than individuals who have no earnings. While we find no significant impacts of state minimum wages or unemployment rates on individuals with no earnings, we do see a larger, positive effect of the unemployment rate on non-working individuals than on working individuals. This is in line with expectations—the state minimum wage should not have a significant impact on cohabitation patterns for individuals who are not working, while they may be more affected by the unemployment rate in a state. In contrast, we would expect state minimum wages to significantly alter cohabitation decisions of women who are working, particularly women who are likely to work in minimum-wage jobs.

Looking at results separately for black and white women, we find that white women are more influenced by state minimum wages than black women and there is no association between state unemployment rates and cohabitation for white women. Cohabitation patterns for black women, in contrast, are not influenced by state minimum wages, but are positively associated with unemployment rates. A 1 percentage point increase in the state unemployment rate is associated with a 2 percentage point increase in the likelihood of cohabiting for black women.

Finally, we look at how state minimum wages and unemployment rates affect cohabitation patterns differentially for older and younger women. Women under 30 are less

likely to cohabit following increases in state minimum wages, but are unaffected by state unemployment rates. In contrast, women who are at least 30 years old are more likely to cohabit when state unemployment rates are high, but are no less likely to cohabit when state minimum wages increase. These patterns are not surprising, as we might expect that younger women are more likely to be working in minimum wage jobs, and thus are more affected by changes in state minimum wages.

Simulations

To put these results in more familiar terms, we next illustrate how cohabitation patterns would change following simulated changes in state minimum wages or unemployment rates. Figure 2 presents results from these simulations. Using model results from Table 3, we find that 11% of 18-45 year old low-educated women cohabited by the end of the SIPP survey. If there were no minimum wage, the share of the sample cohabiting would increase to 15.6%. If instead, all states increased their minimum wages by one dollar, only 10% of the sample would cohabit. Finally, if every state experienced a one percentage point increase in the unemployment rate, we would see an increase in the share of women cohabiting by about 1 percentage point. These results represent an approximate 7% change in the likelihood of cohabiting among low-educated women as a result of an increase in the minimum wage by one dollar or a change in the unemployment rate by one percentage point. In contrast, there is virtually no change in cohabitation patterns for women who are less likely to be affected by fluctuations in the minimum wage or unemployment rates—those with at least some college experience.

Discussion and Next Steps

The results from this analysis reveal that state labor market conditions have a significant impact on decisions to cohabit among low-educated women. To our knowledge, this is the first

study to examine how macroeconomic conditions affect cohabitation patterns using quantitative data of a nationally-representative sample of low-educated women. Results support findings in the qualitative literature that couples often move in together out of financial necessity or cost savings (Sassler, 2004). Using OLS regressions with state and year fixed effects, we find evidence that within-state changes in the minimum wage and unemployment rate have significant effects on cohabitation patterns of low-educated women. We find virtually no impact of these changes on women with at least some college experience, who are less likely to work in low-wage jobs. Instead, we find that changes in the minimum wage are more likely to affect the cohabitation patterns of low-educated women with positive earnings, who are white, and under the age of 30. In contrast, we find that cohabitation patterns among black women and women over the age of 30 are more affected by changes in state unemployment rates than minimum wage changes. For every $1 increase in the state minimum wage, we find a 0.8 percentage point decline in the likelihood of cohabiting among women with a high school degree or less. In contrast, we find that a 1 percentage point increase in the state unemployment rate leads to a 0.9 percentage point increase in the likelihood of cohabiting.

These results contribute to previous work on the effects of the recession on household living arrangements. Most prior work on macroeconomic conditions and living arrangements focused on young adults returning home to live with their parents, or on families choosing to 'double up' during difficult financial circumstances. In this analysis, we considered an alternative coping strategy during economic downturns: cohabitation. We focused on a sample of women who were the main respondents in the SIPP survey—a sample that is predominantly single mothers. This sample is of particular concern for policy, as changes in the living arrangements of these women also affect the well-being of their children. An abundance of

research has found negative associations between family transitions and child well-being (e.g. Fomby and Cherlin, 2007; Magnuson and Berger, 2009). Cohabiting women also report significantly higher rates of unintended pregnancies than do married or single (non-cohabiting) women (Fu et al., 2009; Finer & Henshaw, 2006), and unintended pregnancy rates are particularly high among younger cohabiting women, cohabiting women with lower levels of educational attainment, and those in lower quality relationships (Bouchard, 2005; Finer & Henshaw, 2006; Zabin et al., 2000). Changes in state labor market characteristics may contribute to the number of family transitions a child experiences and may additionally partially account for negative consequences associated with family transitions if these transitions are also coupled with a job loss or increased stress during times of high unemployment.

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[1] There are, of course, some exemptions to the Fair Labor Standards Act. Some of these exemptions apply to specific types of businesses (such as enterprises that have annual gross volume of sales or business done that falls below $500,000, or employees of smaller firms (under 6 employees). Other exemptions from the FLSA regulations apply to workers in a particular class: full-time students and those with disabilities can be paid less than the minimum wage if the employer obtains a certificate from the U.S. Department of Labor. Additionally, under the Youth Minimum Wage Program initiated in 1996, those under 20 years old can be paid $4.25 an

hour for the first 90 days of employment. For more information on exemptions, go to: http://www.dol.gov/whd/regs/compliance/hrg.htm).

Table 1. Descriptive statistics, 1996-2008 SIPP sample of women 18-45 years old who are the main respondents in the survey; by education at interview

	HS grad or less	Some College or more
Cohabiting	0.13	0.10
State minimum wage (2011$)	5.71	6.04
State unemployment rate	5.82	6.02
Monthly Earnings (2011$)	1314.28	2985.21
Education		
Less than HS	0.30	0.00
HS grad	0.70	0.00
Some College	0.00	0.60
College grad	0.00	0.40
Race		
White	0.45	0.64
Black	0.31	0.22
Hispanic	0.21	0.09
Other	0.04	0.05
Age	33.05	33.17
Never been married	0.55	0.59
Has children living in household	0.77	0.47
N	17,547	29,161

Note: Data from the 1996, 2001, 2004, and 2008 Survey of Income and Program Participation. Sample is restricted to 18-45 year old women who were the main respondents in the first wave of the SIPP panel. All values are weighted.

Table 2. Share of population cohabiting, by subgroup

	Educational attainment		Employment status		Race		Age	
	HS grad or less	Some College+	Working	Not working	White women	Black women	<30	>=30
Cohabiting	0.13	0.10	0.12	0.14	0.16	0.05	0.16	0.11
Number of observations	16,929	27,823	10,870	6,059	7,992	5,156	5,523	11,406

Note: Data from the 1996, 2001, 2004, and 2008 Survey of Income and Program Participation. Sample is restricted to women who were the main respondents in the first wave of the SIPP panel. All values are weighted.

Table 3. OLS regressions predicting likelihood of cohabiting by the end of the SIPP panel, women 18-45 with no more than a high school degree

	Model 0: No controls, no State FE	Model 1: No controls	Model 2: With controls
Minimum wage	0.004 †	-0.008 *	-0.008 *
	(.002)	(.003)	(.003)
Unemployment rate	0.004	0.008 †	0.009 †
	(.005)	(.005)	(.005)
Monthly earnings (in thousands)			-0.002
			(.002)
Education			
LTHS			0.015
			(.011)
HS grad(reference)			
Race			
White (reference)			
Black			-0.129 ***
			(.016)
Hispanic			-0.026 †
			(.015)
Other			-0.049 *
			(.022)
Age			-0.003
			(.005)
Age squared			0.000
			(.)
Never been married before			0.041 ***
			(.013)
Has children living in household			0.018
			(.016)
State Fixed Effects	N	Y	Y
Year Fixed Effects	Y	Y	Y
R-squared	0.02	0.03	0.06
N	16929	16,929	16,929

Note: Data from the 1996, 2001, 2004, and 2008 Survey of Income and Program Participation. Sample is restricted to women who were the main respondents in the first wave of the SIPP panel. All values are weighted.

Table 3b. OLS regressions predicting likelihood of cohabiting by the end of the SIPP panel, women 18-45 who are the respondents in the survey, differences by subgroup

	Model 2: by Education level		Model 2 by employment status		Model 2 by race		Model 2 by age	
	HS grad or less	Some College+	Working	Not working	White women	Black women	<30	>=30
Minimum wage	-0.008 *	-0.001	-0.012 ***	0.001	-0.015 **	-0.003	-0.017 **	-0.001
	(.003)	(.003)	(.004)	(.007)	(.005)	(.004)	(.005)	(.004)
Unemployment rate	0.009 †	-0.003	0.005	0.010	0.004	0.020 †	-0.001	0.012 *
	(.005)	(.003)	(.006)	(.007)	(.009)	(.012)	(.01)	(.006)
Monthly earnings (in thousands)	-0.002	0.00	0.000		0.00	0.01 *	0.00	0.00
	(.002)	(.001)	(.003)		(.003)	(.003)	(.005)	(.002)
Education								
LTHS	0.015		0.007	0.02	0.02	0.00	0.01	0.02
	(.011)		(.013)	(.014)	(.021)	(.007)	(.017)	(.012)
HS grad								
Some College		0.03 ***						
		(.006)						
College grad								
Race								
White (omitted)								
Black	-0.129 ***	-0.05 ***	-0.116 ***	-0.15 ***			-0.19 ***	-0.09 ***
	(.016)	(.008)	(.015)	(.022)			(.025)	(.016)
Hispanic	-0.026 †	0.00	-0.027 †	-0.02			-0.04	-0.02
	(.015)	(.018)	(.013)	(.032)			(.031)	(.016)
Other	-0.049 *	-0.02	-0.072 ***	-0.02			-0.07 †	-0.03
	(.022)	(.012)	(.02)	(.046)			(.038)	(.033)
Age	-0.003	0.00	-0.008	0.00	-0.01	0.00	0.07	-0.01
	(.005)	(.005)	(.007)	(.007)	(.008)	(.007)	(.042)	(.022)
Age squared	0.000	0.00	0.000	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)	(.)	(.001)	(.)
Never been married before	0.041 ***	0.04 ***	0.040 ***	0.04 **	0.04 †	0.01 ***	0.09 ***	0.02 *
	(.013)	(.006)	(.013)	(.021)	(.023)	(.013)	(.026)	(.011)
Has children living in household	0.018	0.01	0.019	0.02	0.03	0.00	0.05 *	0.01
	(.016)	(.008)	(.016)	(.023)	(.022)	(.02)	(.023)	(.016)
State Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
R-squared	0.06	0.04	0.06	0.08	0.06	0.06	0.11	0.04
N	16,929	27,823	10,870	6,059	7,992	5,156	5,523	11,406

Note: Data from the 1996, 2001, 2004, and 2008 Survey of Income and Program Participation. Sample is restricted to women who were the main respondents in the first wave of the SIPP panel. All values are weighted.

Figure 1. Fluctuations in the real minimum wage and unemployment rate over the time period of analysis

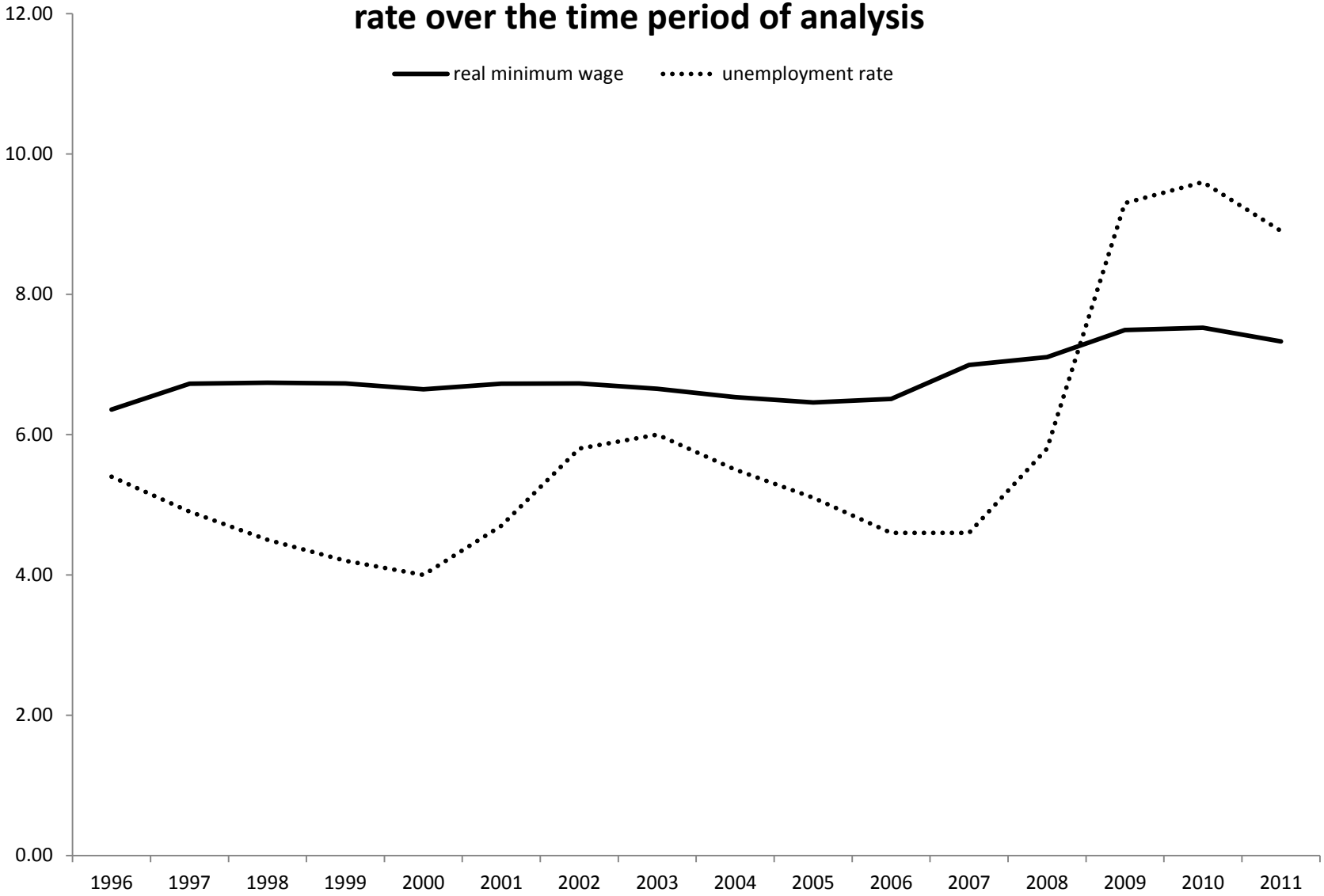

Figure 2. Share of women cohabiting, simulations from Model 2 OLS regression