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Introduction

Household and family living arrangements have become increasingly visible in public policy discussions, especially with the passage of the landmark Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). The law, which responded to a trend of rising rates of childbirth outside of marriage, emphasizes the reinforcement of marriage as the preferred arrangement for families with children. PRWORA also attempts to influence children's living arrangements in another way, mandating multi-generational households for teen parents who have not completed high school. Although the population of teen parents receiving welfare is small, the focus on their living arrangements signals policymakers' interest in shaping living arrangements beyond marriage.

The law's primary focus on marriage was partly motivated by the disconcerting finding that children who grow up with a single parent fare worse later in life than those growing up with married parents (McLanahan and Sandefur 1994). Even after controlling for income and other intervening factors, children living with single parents have worse educational and family formation outcomes than those living with two parents or with step-parents. Children of divorced parents similarly fare worse than those in intact families on these and other measures (Amato 2000; Seltzer 1994).

Demographic shifts in living arrangements have led to fewer children living with married parents over time. For instance, between 1985 and 2000, children became less likely to live with married parents, and more likely to live instead with a single mother, particularly one who cohabits with an unmarried partner (who may or may not be the child's biological father) (Dupree and Primus 2001). These trends were especially strong for poor children. A similar trend occurred for adult living arrangements, showing increases in cohabitation over this same time period (Bumpass and Lu 2000; London 1998).

Shifts in societal and personal beliefs regarding marriage, divorce, and cohabitation that have occurred since the 1960s are a prime reason for demographic trends away from marriage. Less traditional views have taken root, and as a result the stigma associated with divorce and cohabitation has decreased

over time. In particular, sexual intimacy, childbearing and child rearing have become increasingly acceptable outside of marriage (Thornton and Young-DeMarco 2001).

Another documented reason for shifts in family living arrangements is the imposition of welfare waiver programs in the 1990s, culminating in 1996 with PRWORA (Acs and Nelson 2004; Bitler, Gelbach, and Hoynes 2005; Schoeni and Blank 2000). In general, findings from these studies indicate that welfare reforms have had results consistent with the goal of increasing two-parent or married families, at least for some subgroups. The effects are mostly small, due in part to the short time period in which these reforms were implemented.

Fluctuations in the economy represent a third and unexplored potential cause of movements in the distribution of living arrangements over time. There are several reasons to expect that economic conditions could affect the distribution of living arrangements. First, economic recessions place financial pressure on families, which might lead to doubling up through marriage, cohabitation, or living with other unrelated or related adults or families. At the same time, there may be an offsetting effect where job loss creates financial hardship, resulting in increased rates of marital dissolution. The converse of these pressures is that if parents tend to prefer living independently over living in shared non-marital arrangements, economic expansions might lead to more independent arrangements. Finally, economic conditions may affect the attractiveness of potential partners. Previous research finds evidence that men's economic status affects union formation for both African-Americans and whites (see Fein et al. 2003 for a review).

In this chapter, we explore the role that economic conditions play in determining the distribution of children's living arrangements. We use data from the 1979-2004 Annual Demographic Files of the Current Population Survey (CPS) and the 1986-2001 panels of the Survey of Income and Program Participation (SIPP). The long time period and large sample sizes of the CPS allow us to examine the relationship between economic conditions and living arrangements over the past 25 years and for several subgroups of children. The SIPP's longitudinal panels allow us to examine the effects of economic conditions on transitions into and out of living arrangements. This is critical to the analysis because

economic conditions may have larger or at least different effects on flows into and out of living arrangements compared to the stock of living arrangements.

Previous Studies

The literature on family living arrangements has focused on two broad questions. First, what are the consequences for children of living in different or changing household structures? And, second what demographic trends and policy changes have affected the distribution of living arrangements over time? We focus on the second question in the empirical analysis, but briefly review the literatures on both questions to provide context and motivation.

A large body of research provides evidence that the composition of children's households affect their outcomes later in life and as such, childhood living arrangements can provide important information about young adult and adult economic and family circumstances. In their 1994 book, Sara McLanahan and Gary Sandefur demonstrate that children who grow up with a single parent fare worse than their counterparts who grow up with married parents. In particular, children of single parents have lower educational achievement, higher rates of teen birth (women), and higher rates of adult idleness (men). Furthermore, children of single or divorced parents are more likely than those in married parent families to leave home at an early age (Cherlin, Kiernan and Chase-Lansdale 1995); have intercourse at an earlier age (Kiernan and Hobcraft 1997); have a non-marital teen birth (Cherlin, Kiernan and Chase-Lansdale 1995); form adult unions with lower rates of success (Teachman 2004); and have other behavioral problems and health vulnerability (Dawson 1991).

Single parent families are complex and not all living arrangements are associated with similarly negative outcomes for children. For instance, Deleire and Kalil (2002) show that children who live in multi-generational families with a single parent and at least one grandparent have developmental outcomes that are on par with children from married couple families. With young parents in particular, multi-generational families can provide positive parenting support (Chase-Lansdale, Brooks-Gunn, and Zamsky 1994). Children living in stepfamilies with a divorced parent who is remarried tend to fare at

least as bad as those with an unmarried single parent (McLanahan and Sandefur 1994). Children have become increasingly likely to live with a parent and unmarried cohabitor over the past two decades. Cohabitation is a less stable arrangement than marriage and as a result children living in cohabiting families are more likely to experience family instability (Bumpass and Lu 2000), which in itself can be damaging to children's outcomes.

Children in single parent families and stepfamilies are nearly twice as likely to experience a childhood move as children with married parents (Astone and McLanahan 1994). This mobility is a key contributor to the lower educational attainment for children in non-intact families (Astone and McLanahan 1994; Crowder and Teachman 2004). Higher rates of childhood living arrangement transitions are also associated with increased risk of early premarital intercourse (Albrecht and Teachman 2003). These adverse effects may occur because children who move are likely to have weaker connections to their community, including their peers and neighbors, and therefore less social capital than children who do not move (McLanahan and Sandefur 1994).

In short, previous research offers substantial evidence that children's living arrangements are important determinants of future outcomes. These findings provide a motivation for the second strand of literature, which focuses on identifying the determinants of living arrangements. Studies have examined a number of determinants, but have generally focused on the role of welfare benefits and reforms on family or child living arrangements. The most recent papers examine the effects of the 1990s welfare waivers and late 1990s Temporary Assistance for Needy Families (TANF) implementation on living arrangements. These studies rely on state differences in the timing and type of pre-PRWORA welfare waivers and TANF policies to identify their effects. For instance, Bitler, Gelbach, and Hoynes (2005) find that welfare reforms over the 1990s shifted the distribution of living arrangements for specific subgroups, and in unexpected ways in some cases. African-American children living in households where the head had no more than a high school diploma were more likely to live without their parents as a result of reforms. Latino children were more likely to live with married parents. Corroborating these

findings, Brandon and Fischer (2001) find that children living in states with lower welfare benefits have higher rates of separation from their parents.

Two types of reforms are primarily responsible for observed shifts in living arrangement distributions: increased child support enforcement (Acs and Nelson 2004; Jagannathan 2004) and family caps (Acs and Nelson 2004).¹ Both serve to increase the percent of children living with two parents (married or not). Schoeni and Blank (2000) also find that pre-PRWORA waivers led to small increases in marriage with commensurately small decreases in female headship, particularly among lesser educated women. In contrast, Fitzgerald and Ribar (2004) find little evidence that waivers affected female headship decisions. Other recent work shows that welfare waivers and TANF have slowed entry into marriage, but also reduced divorce (Bitler, Gelbach, Hoynes and Zavody 2004).

Random assignment evaluations of welfare waivers have also examined the effects of reforms on marriage with mixed and modest results (Fein et al. 2002). Re-analysis of four states' experimental data shows some evidence that where economic impacts of welfare reforms were greatest, demographic effects—including marriage, cohabitation, and living with others—were also larger (Fein, London and Mauldon 2005).

The majority of these studies have controlled for economic conditions in their analyses, but they typically cover the time period in which welfare waivers and TANF were implemented. This may not be long enough to understand how changes in the business cycle affect child living arrangements. There has been some recent attention to the effects of the economy on family living arrangements and evidence suggests that the economy may indeed play a role in living arrangement decision-making. Lichter, McLaughlin and Ribar (2002) find that the retreat from marriage was not counteracted by the economic expansion of the 1990s, although the expansion did serve to slow the decline that might otherwise have occurred. London (2000a) and Winkler (1992) demonstrate that housing costs are important factors in single parents' living arrangement decisions at a point in time. Studies also indicate that state welfare benefit levels affect single parents' living arrangements (Folk 1996; London 2000a; Winkler 1992).

Although the literature on children's living arrangements has yet to establish a link between economic conditions and household composition for children, there is an established literature that documents the effects of financial stress on marriage outcomes. Conger et al. (1990) demonstrate that economic pressure affects how married couples interact with each other, and in particular leads to more hostile interactions. These hostilities can result in divorce, and a number of studies have demonstrated this effect. In a review of this literature, White and Rogers (2000) find consistent evidence that in married couples, a spell of unemployment for the husband doubles the rate of divorce. Income loss is particularly troubling for African-American families, whose divorce response to this loss is two to three times larger than whites' (Yeung and Hofferth 1998). There is mixed evidence on the effects of wives' unemployment on marital stability (White and Rogers 2000). Some studies indicate that higher earnings among women leads to stability in the marriage, but others find that higher wages and rates of employment lead to an increased probability of divorce. Generally, the literature finds that economic factors play a larger role in the marital instability of African-Americans than whites.

Data and Living Arrangement Definitions

We use data from two sources in this chapter: the 1979-2004 Annual Demographic Files of the Current Population Survey (CPS) and the 1986-2001 panels of the Survey of Income and Program Participation (SIPP). The SIPP data cover most years between 1986 and 2002, but even with overlapping panels omit 1989, 1995, and 1999-2000. Both sources of data span a long time frame, offering information about periods of low and high unemployment. Using the CPS, we examine the relationship between economic conditions and the distribution of children's living arrangements over a 25-year period. We also explore the relationship using a more detailed set of living arrangements over the past 15 years. Using panel data from the SIPP, we examine the effects of economic conditions on annual changes in children's living arrangement status over the past two decades.² We discuss each dataset and our living arrangement definitions in more detail in the next sections.

The Current Population Survey

The Annual Demographic File of the CPS is collected annually in March by the U.S. Bureau of the Census and the Bureau of Labor Statistics. It is representative of the entire U.S. population and contains responses for more than 130,000 people. The CPS collects information on every member of the household, and catalogues the relationship of each of the members to the household head. By examining relationship codes and the characteristics of the household members, it is possible to create a set of detailed living arrangements that capture whether children live with married parents or an unmarried parent, and the presence of other adults in the household. Using this information for the entire 1979-2004 period, we examine three categories of living arrangements:

- Children living with married parents and no other adults in the household³;
- Children living with an unmarried parent and no other adults in the household; and
- Children living in all other arrangements, including without any parents.

Beginning in 1989, the CPS provides a more detailed set of household relationship codes that allow us to expand our living arrangement categories as follows:

- Children living with married parents and no other adults in the household;
- Children living with an unmarried parent and no other adults in the household;
- Children living with an unmarried parent and the parent's cohabitor, who may also be the child's parent or have his or her own children in the household as well;
- Children living with married or unmarried parents and one or more grandparents;
- Children living with married or unmarried parents and other related or unrelated adults (who are not cohabitators or grandparents); and
- Children living in households that do not contain a parent.

It is important to note that prior to 1996, the CPS did not explicitly identify cohabitators. We rely on methodology used in London (1998) to identify potential cohabitators. Specifically, people classified as cohabiting must be of the opposite sex, be unrelated and unmarried, and be within 10 years of age of each other. The introduction of explicit codes for cohabitators in 1995 allows us to examine the efficacy of these assumptions. We find some overcounting of cohabitators in earlier years, but a smooth upward trend in the rate of children living with cohabitators that is consistent with the cohabitation trends identified in the literature during this time period. We include code change dummy variables as appropriate in our

regression specifications to capture the 1995 change. In addition, the CPS was redesigned in 1994, changing many of the basic questions. We include a code change dummy for that year as well.

We limit our sample to children who are not household heads, spouses or cohabitators. We further limit our analysis to children ages 3 to 15 for several reasons. First, it is possible that childbearing is associated with changes in economic conditions, and we want to ensure we do not confound the effects of economic conditions on childbearing and living arrangements. Limiting the analysis to children over age 2 should reduce this problem. We limit the analysis to children under age 16 because we do not want to include teen parents in our sample of children. Their living arrangement decisions are likely to be based on criteria that do not apply to the remainder of the sample. The children of teen parents are included in the sample. In addition, young people over age 15 may decide to leave home for a variety of reasons that are related to their own personal preferences and hence not applicable to other children.⁴ We find similar results to those reported in this chapter when we include all children ages 0 to 17.

The Survey of Income and Program Participation

The SIPP was created jointly by the U.S. Department of Health and Human Services and the Bureau of the Census to be a major source of information on demographic and economic conditions in the United States. It is a longitudinal survey that interviews respondents every four months for a period of 24 to 48 months for the panels we use. During each interview, respondents are asked to recall their activities over the prior four months resulting in monthly data. The earliest SIPP panel began in 1984, but we exclude the 1984 and 1985 panels because the relationship to head codes we use to create living arrangements are less detailed than in the later years. We also exclude the 1989 panel because it does not cover a full year. With the 1986-2001 SIPP panels, we are able to create a more detailed set of living arrangement codes equivalent to the set of living arrangements defined in the CPS.

The SIPP follows original adult household members throughout each panel, even if they leave the household. Original child household members are only followed if they continue to live with an original sample adult. For example, if a child moves from a parent's household to a grandparent's household, the child is not re-interviewed until he or she returns to her parent's household. As a result, we cannot follow

moves from parental to non-parental homes. We therefore omit children who live without their parents at any point in the panel months we examine. We instead concentrate on the vast majority of children who continue to live with at least one parent even when the composition of others in the household changes.

Starting in the 1996 panel, unmarried cohabitators are coded separately from other unrelated roommates allowing a more precise identification of cohabiting parents. In the earlier panels, we considered anyone who was an unrelated roommate/cohabitor of the opposite sex and appropriate age group a cohabitor. Where appropriate, we include a code change dummy to account for this change.

We concentrate on one-year transitions in living arrangements, for example comparing each child's living arrangement in their wave 1-month 4 interview to their living arrangement in their wave 4-month 4 interview. Similarly, we compare living arrangements from the wave 4-month 4 interview to those in the wave 7-month 4 interview. In the 1996 panel, which has the longest time frame, we also compare their wave 7-month 4 interview living arrangements to their wave 10-month 4 living arrangements. We use the interview in month 4 of each wave to minimize recall bias. As with the CPS, we limit children to those who were between the ages of 3 and 15 at the time of their first interview and are not household heads, spouses or cohabitators. We also exclude children who live in states that are not uniquely identified by the SIPP.⁵

Measures of Economic Conditions and Welfare

We use state-level unemployment rates to measure the economic conditions in a particular year. In the CPS, we use the annual unemployment rate corresponding to the year prior to the March interview. In the SIPP, we use the seasonally adjusted monthly rate that corresponds to the month in question. We also create dummy variables indicating the presence of a welfare waiver in the state during the period of the interview and whether or not TANF had been implemented in the state.⁶ These variables turn on and off during the period between 1992 and 1998; before 1992 there were no waivers, and after 1998 all states had implemented TANF. We also include the maximum state welfare benefit available to a family of three in each year, adjusted to 2004 dollars.

Empirical Model

To explore the effects of economic conditions on children's living arrangements we estimate several models of living arrangements. The probability of living in a particular arrangement can be expressed as:

$$(1) \quad L_{ist} = \beta X_{ist} + \delta U_{st} + \chi S_{st} + \gamma T_t + \alpha_s + \varepsilon_{ist},$$

where L_{ist} is one of six potential living arrangements, X_{ist} are individual-level characteristics of the children, U_{st} is the state-level unemployment rate, S_{st} are state-level controls for maximum welfare benefits and waiver and TANF implementation; T is a time specification, α_s are state fixed effects, and ε is the error term.

In X_{ist} , we only include children's characteristics as control variables because of concerns about the endogeneity of the characteristics of adults in the household and the children's living arrangements. In all models, we include the children's age, race and ethnicity, sex, and a measure of urbanicity—central city status in the CPS and metropolitan area status in the SIPP.

Children's living arrangements might respond to economic conditions in a variety of ways. For example, in periods of high unemployment when families may be feeling economic pressure, they may be more likely to double up with others (London 2000a). Families with one parent may opt to combine households with other family members or a cohabitor in order to share expenses. At the same time, job loss and economic pressure can create marital problems, leading to marital breakup and resulting in fewer children living with married parents (Conger et al. 1990; Yeung and Hofferth 1998; White and Rogers 2000). Slack labor markets may also have an effect on the attractiveness of potential spouses by increasing unemployment and lowering wages. Hence, in relatively high unemployment periods, we might expect to see some offsetting trends. At the same time, we might find marital dissolution and worsening marriage markets, leading to increases in children living alone with one parent, we might also see increased doubling up, which would decrease the share of children living alone with one parent.

In the stock model that examines trends over time in living arrangements, we use CPS data to test how variation in unemployment rates across states and over time affects the distribution of living arrangements. We separately model the probability of each living arrangement using probit models. We are most interested in the magnitude of the estimated coefficient δ , which demonstrates the effect of unemployment rates on the probability of living in a particular arrangement.

The previous model captures the effects of economic conditions on the stock or net flows of living arrangements, but we might expect stronger effects on the flows into and out of living arrangements. For example, recessions may increase both flows into single parent households through marital dissolution and flows out of single parent households because of financial pressure. These dynamic effects may result in a small or nonexistent response of the stock measure to changes in the economy.

The probability of a child making a living arrangement transition over a one-year period can be expressed as:

$$(2) \quad LT_{ist} = \beta X_{ist} + \delta U_{st} + \chi S_{st} + \gamma T_t + \alpha_s + \varepsilon_{ist}.$$

We estimate probit models for the probability of transitioning into and out of each living arrangement over the course of one year. In both the stock and transition models, standard errors are corrected for serial correlation across states.

It is important to note that the distribution of family living arrangements changed tremendously over the time period we are examining. In the last two decades of the 20th century, children became less likely to live with married parents, and more likely to live with a single parent, particularly one who was cohabiting with an unrelated partner. It is likely that some portion of these trends is the result of changes in societal norms, including a less stigmatizing view of divorce and non-marital cohabitation. It is important to ensure that our estimates of the effects of unemployment levels on living arrangements and living arrangement transitions are purged of these underlying trends. We therefore experiment with several specifications aimed at controlling for the underlying trends. We estimate models that include

quadratic time trends, code change dummy variables (that refer to the timing of survey code changes in the data), and year fixed effects. As discussed in the next section, the results are qualitatively similar. We include year fixed effects in most models.

Trends in Living Arrangements and Living Arrangement Transitions

Figures 1-3 compare children's living arrangements in the CPS with the national unemployment rate from 1989 to 2004. Over this time period, the decline in marriage is quite evident (Figure 1), and does not appear to correspond strongly to fluctuations in the national unemployment rate. The decline in marriage occurs both during periods of high and low unemployment, although the trend in the percent of children living with married parents is somewhat flat in the late 1990s when the national unemployment rate reached its low point.

The trend in the percent of children living with a single parent (and no other adult) also does not appear to be strongly related to aggregate unemployment (Figure 2); the trend remained largely flat throughout the period. However, between 2000 and 2004, changes in percent of children living with a single parent do follow a similar trend to the aggregate unemployment rate. There was a small decline in the percent of children living with a single parent when unemployment was low, and a slight rise in this percent as unemployment rose. This relationship is not consistent with the prediction that single parent families would double up in the presence of economic pressure.

Figure 3 displays trends in the other four living arrangements we examine: children living with a parent and cohabitor, in multi-generational households, with other, or without parents. Note that between 1993 and 1995 two of the trends experience discontinuities, which are evident in the sudden rise in children living without parents between 1993 and 1994 and the dip in the percent of children living with a single parent and cohabitor that occurs between 1994 and 1995. These are the result of changes in the CPS survey that occurred during the time period.

These discontinuities notwithstanding, we find increases in each of the three shared parental living arrangements over time, and no change in the percent of children living without parents. The

percent of children living with a cohabiting parent rose from 2 percent to over 4 percent between 1989 and 2004, and the trend does not appear to align with aggregate unemployment rates over the period. The percent of children living in multi-generational households increased from 4 to 5.5 percent. In the early 1990s, there was some co-movement between aggregate unemployment rates and the percent of children living in this arrangement, however in more recent years this is not apparent. The percent of children living in other parental arrangements, with roommates, aunts or uncles, or others increased and fell slightly during the time period, but overall changed very little and appears to be unresponsive to aggregate unemployment.

Figures 1-3 illustrate the overall trends in living arrangements, which likely respond to differences in societal norms as well as other factors, including economic conditions. Although dramatic changes occur in the distribution of living arrangements over this time period, it is important to note that the vast majority of children continue to live with either married parents or a single parent and no other adults in the household. Between 1979 and 2004, the percent of children living in parent-only households fell from 86 percent to 79 percent.

Thus far, the reported estimates only capture the relationship between national unemployment rates and living arrangements as they exist at a point in time. It is possible that even if economic fluctuations do not have a large effect on the overall distribution of living arrangements, perhaps due to the counteracting influences that we hypothesized earlier, they might have a large effect on the probability of moving into or out of specific living arrangements. Figures 4 and 5 use data from the 1986-2001 SIPP panels to examine the probabilities of transitioning into and out of various living arrangements. Note that even with overlapping panels, the SIPP does not cover each year from 1986-2002. Dotted lines in Figures 4 and 5 connect points across years for which we are missing data.

Between 8 and 10 percent of children change living arrangements over a one-year period. There is some fluctuation in this overall transition rate, but not necessarily in concert with fluctuations in the aggregate unemployment rate. When we examine the types of transitions that occur, however, we find what appears to be some co-movement with trends in economic conditions. Figure 4 graphs the trends in

transition rates into and out of married parent (only) households. The transition rate into a married parent living arrangement is defined for those not living in this arrangement in the base year. The discontinuities between 1994 and 1996 are likely the result of a code change in the 1996 SIPP that affects how cohabitators are identified. Because we are better able to identify children living with cohabitators in 1996, movement from this arrangement into marriage is adjusted upward for 1996 and beyond. Removing this discontinuity, the trend would show a constant decline over the 1995 to 1998 period.

Figure 5 demonstrates that in the raw data, there appears to be co-movement between the aggregate unemployment rate and both transitions into and out of marriage. If one visually shifts down the portion of the lines from 1996 forward to meet the earlier line, a steady decline in both transitions can be observed during the strong economic expansion of the late 1990s. An increase in transitions out of marriage can be observed when the aggregate unemployment rate begins to rise, but not for transitions into marriage which remain flat. Note that a transition out of marriage may not always equate divorce or separation. Children moving from households that include their parents as the only adults into households that have other related or unrelated adults in them are also coded as moving out of married parent households. In both cases, movement out of marriage is consistent with our theory, which predicts higher unemployment to lead to marital strife and doubling up.

Figure 5 shows trends for transition rates into and out of single parent households. This figure shows a clearer relationship between transitions out of single parent households and unemployment. Ignoring the discontinuity in 1996 that results from the code change, the transition rates out of single parent households appear to map closely to the national unemployment rate. This is consistent with our theory, which predicts that in times of greater economic pressure, single parent households will be more likely double up by getting married, cohabiting, or sharing housing with other relatives or non-relatives. The converse does not appear to be true—transitions into single parenthood do not fluctuate with the business cycle.

The Effects of Economic Conditions on Children’s Living Arrangements

Although the comparisons of trends in economic conditions and living arrangements are suggestive of potential effects, we need to control for other factors, such as the demographic trend away from marriage and the major changes that occurred in welfare over the past decade and a half. As discussed previously, we experiment with three models to parse the demographic trend from the effects of unemployment and other factors. We also examine the relationship between living arrangements and more local measures of unemployment rates.

Table 1 presents the results of these three models for the more detailed living arrangements in the CPS. We report marginal effects and their standard errors for probit regressions that also include dummy variables for child sex, age, race and central city status, and welfare waivers and TANF implementation timing. All models also include the maximum welfare benefit for a family of three in each state and year as well as state fixed effects. Standard errors are adjusted for the presence of common random shocks at the state level to address concerns regarding understated standard errors and serially correlated outcomes (see Bertrand, Duflo & Mullainathan, 2002; Kezdi 2002).

Estimates of the magnitude of the effects of unemployment rates on living arrangements are not overly sensitive to how we specify time trends, but we do find some variability in statistical significance. The first set of models reported in the table include a quadratic time trend. The advantage of the quadratic time trend is that theoretically, we expect societal preferences for living arrangements to follow a relatively smooth adjustment process. The quadratic trend allows for this sort of smooth change in norms and tastes for living arrangements over time, capturing, for instance, the relatively steady growth in cohabitation that occurs over our time period. In the second set of models, we add dummy variables for coding changes in the CPS survey instrument for living arrangements. In the last row, we allow for the most flexibility in controlling for other factors that change over time by including year fixed effects, which may be important if trends in norms and tastes for household and family structure are not entirely smooth. In particular, the change in welfare policy around 1996 might have led to a relatively quick change in tastes and norms that the quadratic time trend would not capture. This is our preferred model,

although it might lead to an understatement of the effects of economic conditions on living arrangements because the year fixed effects will also capture annual fluctuations in the macroeconomy.

With this specification, shown in the bottom row of Table 1, we find that a 1 percentage point increase in the unemployment rate over the 1989 to 2004 period is associated with a 0.36 percentage point increase in the probability of living with a single parent. A comparable increase in unemployment is associated with an offsetting 0.35 percentage point decline in the probability of living with married parents. Though statistically insignificant, this is the same magnitude effect as seen in the model that includes a quadratic time trend and no code change dummies. The specification that includes a quadratic time trend and the code change dummies shows a larger negative and statistically significant effect on the probability of living with married parents (-0.43 percentage points) and a larger positive and statistically significant effect on the probability of living with a single parent (0.47 percentage points). We find no evidence in any of the models that the unemployment rate affects the probability of living in the other arrangements. For simplicity, we present only specifications that include year fixed effects in the remainder of this chapter. We generally find a stronger relationship between unemployment and living arrangements in models that include a quadratic time trend with the code change dummies.

The regression results appear to identify a correlation between unemployment and the probability of living with a single parent or married parents that the raw data (shown in Figures 1 and 2) do not. This is because the national unemployment rate, shown in the figures, does not capture state-level variation in unemployment, which is driving the results of the regression. Models that include only the state unemployment rate as a regressor also show large and significant effects on some living arrangements.

Children of different races or ethnicities have very different living arrangement distributions. Means shown in Table 2 indicate that over the 1989 to 2004 time period, white children are substantially more likely than African-American or Latino children to live with married parents. African-American children are the most likely to live with a single parent or in a multi-generational family, and have the highest rate of living without parents. Latino children are the most likely to live in other shared arrangements, including with other family members or non-relatives. Given these differences, we might

also expect that the effect of economic conditions on living arrangements will differ by children's race or ethnicity. Indeed, the estimates reported in Table 2 indicate different effects of unemployment on the distribution of living arrangements for white, African-American, and Latino children.

The results for white and Latino children are similar to those for children as a whole; higher unemployment is associated with a higher probability of living with a single parent. The unemployment rate has no statistically significant effect on the probability of living in the other defined arrangements for these children. However, for whites, the negative effect of unemployment on living with married parents is even larger in absolute value than the effect on living with a single parent, and a comparably sized effect exists for Latinos as well. In models (not shown) that include the quadratic time trend and code change dummies, we find a negative and statistically significant effect of unemployment on living with married parents for whites. The unemployment rate has a smaller and statistically insignificant effect on the probability that African-American children live with either a single parent or married parents.

An important finding from Tables 1 and 2 is that the probability of living in any of the other arrangements, including cohabitation which is the fastest growing living arrangement over this time period, is not significantly related to changes in unemployment. The unemployment rate coefficients are statistically insignificant in the main specification (Table 1) and each of the specifications for racial groups (Table 2).

Using the CPS, the relationship between living arrangements and economic conditions can be examined over a longer time period which includes additional recessionary and growth periods. Estimates for probit regressions using data from 1979 to 2004 are reported in Table 3. Prior to 1989 it is not possible to identify all six living arrangements, and thus we concentrate on the main two living arrangements—living with married parents and living with a single parent. We group all other arrangements. In aggregate, we find results that are smaller than those from 1989-2004. For instance, over the longer period a 1 percentage point increase in the unemployment rate is associated with a 0.12 percentage point decline in the probability of living with married parents (compared to the 0.35 percentage point decline for the shorter time period). A comparable increase in unemployment is

associated with a 0.03 percentage point increase in the probability of living with a single parent, compared to 0.36 percentage points over the shorter time period. Similar differences can generally be seen across race and ethnicity groups. An exception, however, is for Latino children. The effect of a 1 percentage point increase in unemployment is a 0.76 percentage point decline in marriage over the longer time period, and a 0.37 percentage point decline in the shorter time period. Although estimates for the longer time period are generally smaller and more likely to be statistically insignificant, they do not conflict with the shorter time frame results.

Not shown in Tables 1-3 are estimates for the effects of welfare reform on the distribution of children's living arrangements. Included in all regressions are two welfare reform measures: a dummy variable indicating the timing of the implementation of a state welfare waiver and a dummy variable indicating the timing of TANF implementation. All waivers were implemented during the 1992 to 1996 period, and all TANF programs were implemented between 1996 and 1998. Given the truncated period in which these programs occurred and the long time period we examine, we find little consistent evidence that waiver programs and TANF affect children's living arrangements in either the 1979-2004 or 1989-2004 periods.⁷

The Effects of Economic Conditions on Transitions in Children's Living Arrangements

As noted previously, the static distribution of living arrangements may be less responsive to changes in economic conditions than the dynamic distributions of living arrangements. We now turn to estimating the relationship between unemployment and transitions into and out of living arrangements. Table 4 reports a five by five transition matrix of living arrangements in year 1 and living arrangements in year 2. Looking down the diagonal, one can observe that children living with married parents in year 1 are least likely to change living arrangements. Fewer than 5 percent are in another living arrangement one year later. Children living with a single parent and no other adults are the next least likely to change households, followed by those living in multi-generational households, children in cohabiting families, and children in all other arrangements.

The transition patterns are in line with other research indicating that when transitions occur, they are likely to progress toward independence (London 2000b). For example, much of the movement between family types is movement from arrangements in which parents live with other non-parental adults into arrangements where other adults are not present. The highest probability transitions occur when cohabiting unions dissolve or result in marriage, and when families in shared housing arrangements begin to live without other adults present. Note that these transitions might entail a move on the part of the transitioning family, or the move of another household member out of the residence.

To explore the effects of economic conditions on living arrangement transitions, we estimate probit regressions using the SIPP. Table 5 compares estimates from the CPS and SIPP using the stock living arrangement model (corresponding to year 1 for the SIPP). The SIPP control variables are largely the same except that the SIPP does not have a measure of central city status and instead we use a dummy variable indicating residence in a metropolitan area. Living arrangements are defined in the same way for both datasets, although we are unable to accurately measure transitions into and out of no parent households in the SIPP and therefore exclude that arrangement. The main difference between the SIPP and CPS samples are their different coverage of years (1989-2004 in the CPS and 1986-2002 in the SIPP), and the exclusion of certain states that are not uniquely identified in the SIPP. Without unique identification, we cannot assign an appropriate unemployment rate. The CPS results in panel 1 are the same as those reported in the bottom row of Table 1, with the distribution of living arrangements adjusted to reflect the presence of five rather than six categories. Panel 2 results are also from the CPS, but restricted to the SIPP time frame and states. Panel 3 shows results from the SIPP.

Estimates reported in Table 5 indicate a difference in cohabitation rates between the datasets, which appear to result from the different sample definitions. The cohabitation rate we observe over the time period for children is lower in the SIPP than in the CPS, but also lower in the restricted CPS sample than the full sample. In all cases we are providing a rough estimate of cohabitation rates for the earlier years of the sample. The probability of living in each of the two main arrangements is equivalent.

A comparison of the effects of unemployment on living arrangements across the three samples generally reveals similar results. As discussed previously, in the unrestricted CPS model we find what appears to be a tradeoff between married parent arrangement and single parent arrangements as unemployment increases. In the SIPP, we find a smaller effect of increased unemployment on living with married parents, and a larger effect on living with one parent, though neither is statistically significant (the unemployment marginal effect in the single parent regression would be significant at the 10 percent level). Also in the SIPP, there is a negative effect of unemployment on living in a multi-generational household, which is a counter-intuitive result. When we restrict the CPS sample to the SIPP states and years, we find results that are somewhere between the unrestricted CPS and SIPP models. We find an insignificant effect of unemployment on living with married parents, and a smaller significant positive effect on living with a single parent. We conclude that the differences in the findings for the stock model appear to be at least partially the result of unavoidable differences in sample definitions.

Even if unemployment is unrelated to the stock measure of living with married parents in the SIPP, the trends displayed in Figures 5 and 6 suggest that unemployment may play a role in determining transitions into and out of this arrangement. Table 6 examines the effects of unemployment rates on transitions into and out of the two most prevalent children's living arrangements: living with married parents and no other adults, and living with a single parent and no other adults.

Results for children of all racial and ethnic backgrounds, shown in the first panel, indicate that unemployment is positively related to the transition out of living with a single parent. A 1 percentage point increase in unemployment is associated with a 0.83 percentage point increase in the transition rate out of single parenthood. The unemployment rate, however, does not have an effect on transitions into single parent households. We also do not find evidence of a statistically significant relationship between the unemployment rate and the probabilities of transitioning into and out of living with married parents.

The results for white children are comparable to those for children overall. Neither African-American nor Latino children have statistically significant responses to unemployment fluctuations with transitions into or out of these living arrangements. The magnitude of the estimated effects of

unemployment rates on transitions into living with married parents (for Latinos) and transitions out of living with single parents (for both groups), however, are large.

Transitions into and out of the other three living arrangements show different patterns (Table 7). The probability of transitioning into cohabitation, a multi-generational household, or another type of shared arrangement is very low, between 0.5 and 1 percent. The probability of transitioning out of these arrangements is far higher, ranging between 19 and 32 percent. Our results indicate that transitions into cohabitation and shared household arrangements (not including multi-generation households) are responsive to increases in unemployment. When unemployment increases by 1 percentage point, the probability of children transitioning into cohabitation increases by 0.06 percentage points and the probability of transitioning into other shared arrangements increases by 0.16 percentage points. The point estimate in the transition out of cohabitation regression implies that unemployment has a sizeable, but statistically insignificant, effect on the probability. The point estimate implies that an increase in the unemployment rate of 1 percentage point leads to a reduced transition out of cohabitation of 1.3 percentage points. Both these sets of findings are consistent with theoretical predictions. When economic pressure mounts, families are more likely to double up, even if they do not change their marital status. Cohabiting parents may be less likely to marry or separate when unemployment rates increase.

Conclusions

Previous research indicates that living arrangements and living arrangement transitions are important determinants of children's future well-being. The distribution of living arrangements has changed dramatically over the past 25 years, with children becoming increasingly likely to live with a single parent, particularly one who cohabits with an unmarried partner, and less likely to live with married parents. This chapter has examined the relationship between economic conditions and the distribution of children's living arrangements and transitions into and out of various arrangements.

Economic conditions are likely to influence children's living arrangements through three main avenues. First, economic pressure creates family stress, which can lead to marital dissolution. Second,

economic pressure may create a need to double up with other adults in order to share household expenses. This doubling up could take a number of forms, including marriage, cohabitation, multi-generational households, and other shared arrangements. Finally, slack labor markets may reduce the attractiveness of potential spouses, leading to reduced entry into marriage.

Some of our results are consistent with these hypotheses. Using the CPS, we find that higher unemployment is associated with a higher probability that children live in single parent households (without other adults present) and a lower probability that they live with in married parent households. The latter finding, however, is statistically significant in some specifications. These findings are consistent with the first hypothesis—that economic pressure leads to marital dissolution. The findings do not appear to support the second hypothesis, however, that increased unemployment will lead to families to double up. Finally, the negative relationship between unemployment and the probability of living with married parents appears to be consistent with the spousal attractiveness hypothesis.

To further examine the ways economic conditions affect children's living arrangements, we model the probability of transitions into and out of various living arrangements using data from the SIPP. We find that between 1986 and 2002, higher rates of unemployment are positively associated with transitions out of single parent living arrangements. When we examine other living arrangements, we find that economic pressure is associated with an increased probability of entry into cohabitation and shared living arrangements, both of which are consistent with the "doubling up" theory.

The association between higher unemployment rates and movement out of single parent (alone) households is in line with our expectations. Recessions may create economic pressure that increase the likelihood of movement out of the most independent living arrangements and into shared arrangements. These movements may partly offset potential income and consumption losses caused by recessions, but the instability associated with these changes may have large negative consequences for children's future outcomes.

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Figure 1
Children Living With Married Parents

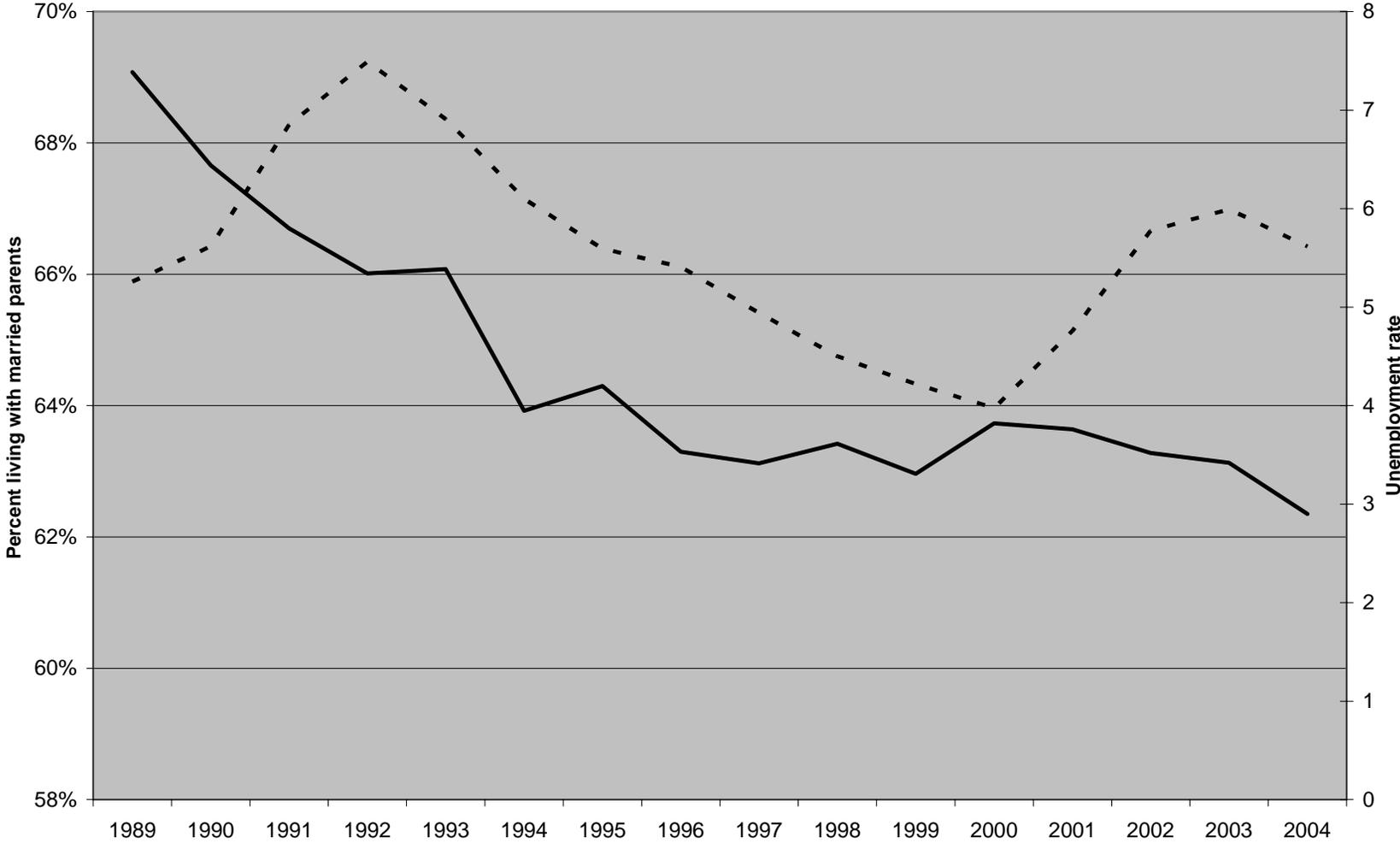


Figure 2
Children Living with a Single Parent

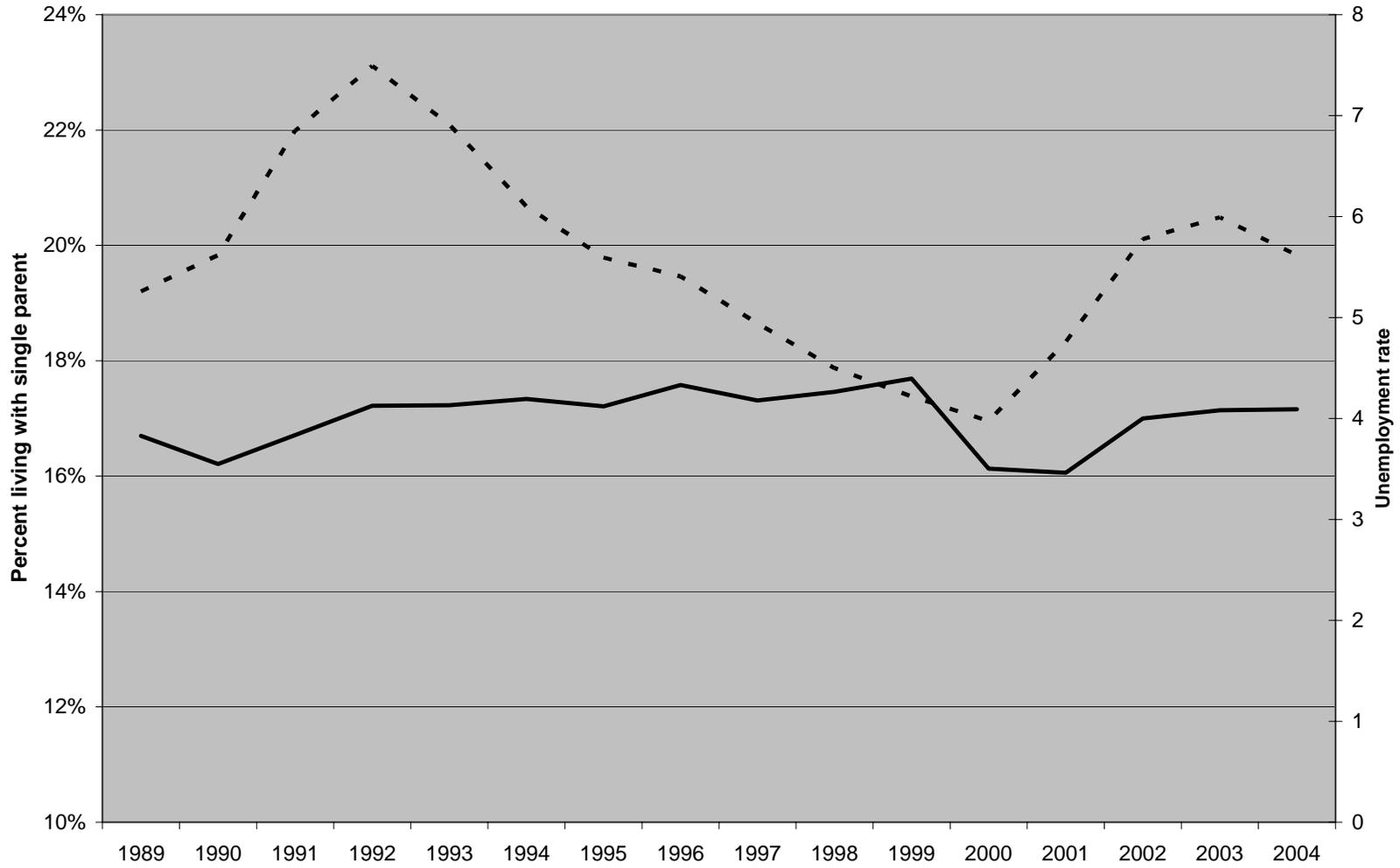


Figure 3
Children Living in Various Other Arrangements

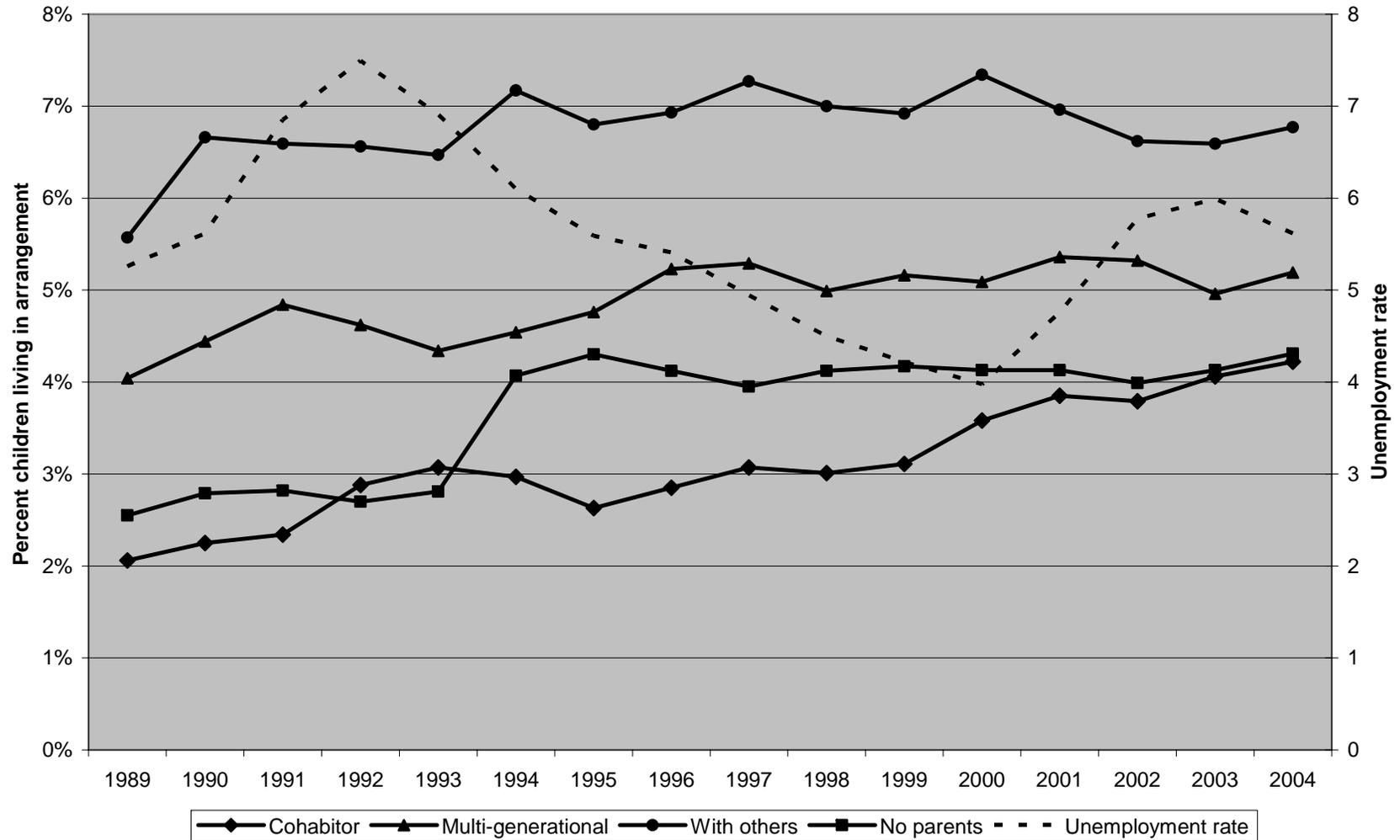


Figure 4
Transitions into and Out of Married Parent Households
and Unemployment Rates



Figure 5
Transitions into and Out of Single Parent Only Households
and Unemployment Rates

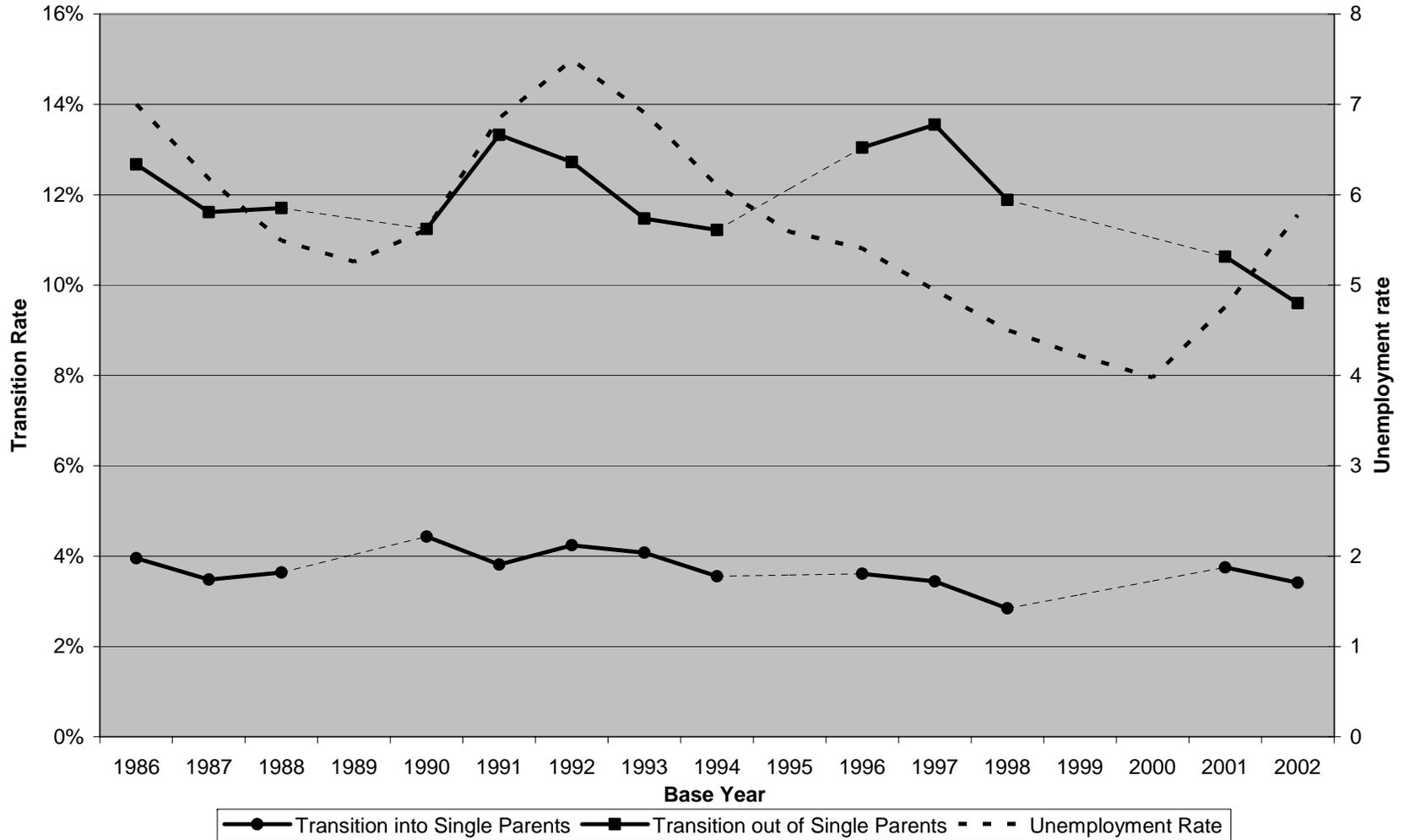


Table 1
Living Arrangement Probit Results
March Current Population Survey (1989-2004)

	Dependent Variable										
	Married Parents		Single Parent		One Parent and Cohabitor		Multi- Generational Household		Parent and Others		No Parents
Mean of Dep. Variable	0.6572		0.1781		0.0298		0.0359		0.0433		0.0653
Quadratic Time Trend											
Unemployment rate	-0.0035 (0.0012)	**	0.0038 (0.0012)	**	0.0005 (0.0004)		-0.0006 (0.0006)		-0.0001 (0.0006)		-0.0004 (0.0004)
Quadratic Time Trend and Code-Change Dummies (1994 and 1995)											
Unemployment rate	-0.0043 (0.0015)	**	0.0047 (0.0012)	**	-0.0002 (0.0004)		-0.0007 (0.0006)		0.0000 (0.0007)		0.0002 (0.0005)
Year Fixed Effects											
Unemployment rate	-0.0035 (0.0019)		0.0036 (0.0015)	*	-0.0004 (0.0005)		0.0002 (0.0008)		-0.0001 (0.0009)		-0.0001 (0.0005)
Sample Size	547,535		547,535		547,535		547,535		547,535		547,535

Notes: (1) All specifications include dummy variables for sex, age, race, central city status, welfare waiver and TANF implementation, state fixed effects, and the maximum welfare benefit level for a family of three. (2) Marginal effects and robust standard errors are reported. (3) *p<.05, **p<.01.

Table 2
 Living Arrangement Probit Results by Race
 March Current Population Survey (1989-2004)

	Dependent Variable					
	Married Parents	Single Parent	One Parent and Cohabitor	Multi- Generational Household	Parent and Others	No Parents
White (N=361,700)						
Mean of Dep. Variable	0.7447	0.1320	0.0278	0.0298	0.0432	0.0220
Unemployment rate	-0.0039 (0.0022)	0.0033 (0.0015)	* -0.0007 (0.0006)	0.0014 (0.0009)	0.0003 (0.0009)	-0.0005 (0.0005)
African-American (N=68,617)						
Mean of Dep. Variable	0.3317	0.3864	0.0362	0.0751	0.0819	0.0881
Unemployment rate	-0.0010 (0.0044)	0.0020 (0.0054)	0.0012 (0.0018)	-0.0014 (0.0021)	-0.0028 (0.0042)	0.0022 (0.0025)
Latino (N=88,911)						
Mean of Dep. Variable	0.5545	0.1761	0.0335	0.0583	0.1347	0.0422
Unemployment rate	-0.0037 (0.0050)	0.0057 (0.0028)	* -0.0013 (0.0020)	-0.0013 (0.0023)	-0.0013 (0.0040)	0.0009 (0.0018)

Notes: (1) All specifications include dummy variables for sex, age, central city status, welfare waiver and TANF implementation, state fixed effects, year fixed effects, and the maximum welfare benefit level for a family of three. (2) Marginal effects and robust standard errors are reported. (3) *p<.05, **p<.01.

Table 3
 Living Arrangement Probit Results
 March Current Population Survey (1979-2004)

	Dependent Variable		
	Married Parents	Single Parent	Other Arrangement
<hr/>			
All Children (N=882,988)			
Mean of Dep. Variable	0.6609	0.1701	0.1691
Unemployment rate	-0.0012 (0.0009)	0.0003 (0.0008)	0.0005 (0.0011)
White (N=596,661)			
Mean of Dep. Variable	0.7548	0.1268	0.1184
Unemployment rate	0.0001 (0.0010)	0.0004 (0.0007)	-0.0006 (0.0009)
African-American (N=111,192)			
Mean of Dep. Variable	0.3380	0.3665	0.2954
Unemployment rate	-0.0016 (0.0024)	0.0014 (0.0030)	0.0006 (0.0024)
Latino (N=133,087)			
Mean of Dep. Variable	0.5631	0.1770	0.2599
Unemployment rate	-0.0076 (0.0036)	* 0.0016 (0.0025)	0.0062 (0.0043)
<hr/>			

Notes: (1) All specifications include dummy variables for sex, age, central city status, welfare waiver and TANF implementation, state fixed effects, year fixed effects, and the maximum welfare benefit level for a family of three. The first specification also includes controls for race. (2) Marginal effects and robust standard errors are reported. (3) *p<.05, **p<.01.

Table 4

Living Arrangement Transition Matrix
Survey of Income and Program Participation (1986-2002)

Year 1 Living Arrangement (row percent shown)	Year 2 Living Arrangement					N (unweighted)
	Married Parents Alone	Single Parents Alone	Cohabiting Single Parent	Multi-Generation Household	Other Shared Household	
Married Parents Alone	95.48	2.68	0.08	0.43	1.33	108,085
Single Parent Alone	5.92	88.00	1.89	1.20	2.98	29,738
Cohabiting Single Parent	11.91	15.68	67.88	0.62	3.91	2,981
Multi-Generational Household	7.79	7.35	0.54	80.87	3.44	6,864
Other Shared Household	18.97	10.39	1.44	1.61	67.59	10,164

Table 5
Living Arrangement Probit Results
Comparison of SIPP and CPS

	Dependent Variable				
	Married Parents	Single Parent	One Parent and Cohabitor	Multi- Generational Household	Parent and Others
CPS 1989-2004 (N=547,535)					
Mean of Dep. Variable	0.6927	0.1906	0.0319	0.0384	0.0463
Unemployment rate	-0.0035 (0.0019)	0.0036 (0.0015)	* -0.0004 (0.0005)	0.0002 (0.0008)	-0.0001 (0.0009)
CPS 1989-2002, states restricted to SIPP states (N=410,722)					
Mean of Dep. Variable	0.6938	0.1915	0.0302	0.0378	0.0466
Unemployment rate	-0.0029 (0.0022)	0.0033 (0.0016)	* -0.0007 (0.0006)	0.0002 (0.0009)	-0.0001 (0.0010)
SIPP 1986-2002 (N=157,832)					
Mean of Dep. Variable	0.6927	0.1871	0.0180	0.0411	0.0612
Unemployment rate	-0.0017 (0.0030)	0.0042 (0.0025)	0.0004 (0.0009)	-0.0028 (0.0010)	** 0.0001 (0.0014)

Notes: (1) All specifications include dummy variables for sex, age, race, central city status, welfare waiver and TANF implementation, state fixed effects, year fixed effects, and the maximum welfare benefit level for a family of three. (2) Marginal effects and robust standard errors are reported. (3) Restricted CPS sample and SIPP sample exclude Maine, North Dakota, South Dakota, Vermont, and Wyoming in all years, and also Alaska, Idaho, Iowa, and Montana prior to 1996. These states are not uniquely identified in the SIPP. (4) *p<.05, **p<.01.

Table 6
 Living Arrangement Transition Probit Results
 Survey of Income and Program Participation (1986-2002)

	Dependent Variable				
	Transition Into Married Parents	Transition Out of Married Parents	Transition Into Single Parent	Transition Out of Single Parent	
All Children					
Mean of Dep. Variable	0.0912	0.0452	0.0378	0.1200	
Unemployment rate	-0.0018 (0.0029)	0.0008 (0.0014)	-0.0001 (0.0014)	0.0083 (0.0030)	**
Sample Size	49,747	108,085	128,094	29,738	
White					
Mean of Dep. Variable	0.1113	0.0411	0.0334	0.1450	
Unemployment rate	-0.0024 (0.0045)	0.0010 (0.0016)	0.0006 (0.0014)	0.0106 (0.0048)	*
Sample Size	27,473	86,272	97,592	16,153	
African-American					
Mean of Dep. Variable	0.0452	0.0657	0.0698	0.0807	
Unemployment rate	0.0002 (0.0038)	-0.0074 (0.0052)	-0.0082 (0.0045)	0.0010 (0.0060)	
Sample Size	14,472	8,578	13,177	9,873	
Latino					
Mean of Dep. Variable	0.1103	0.0610	0.0419	0.1176	
Unemployment rate	-0.0119 (0.0072)	0.0027 (0.0078)	-0.0040 (0.0047)	0.0082 (0.0129)	
Sample Size	5,150	8,365	10,841	2,674	

Notes: (1) All specifications include dummy variables for sex, age, metropolitan status, welfare waiver and TANF implementation, state fixed effects, year fixed effects, and the maximum welfare benefit level for a family of three. (2) Marginal effects and robust standard errors are reported. (3) *p<.05, **p<.01.0

Table 7
 Living Arrangement Transition Probit Results
 Survey of Income and Program Participation (1986-2002)

	Dependent Variable	
	Transition Into Arrangement	Transition Out of Arrangement
<hr/>		
Single Parent and Unmarried Cohabitor		
Mean of Dep. Variable	0.0053	0.3212
Unemployment rate	0.0006 (0.0003)	* -0.0132 (0.0251)
Sample Size	154,851	2,981
<hr/>		
Multi-Generation Family (Married or Single)		
Mean of Dep. Variable	0.0066	0.1913
Unemployment rate	0.0002 (0.0004)	-0.0079 (0.0094)
Sample Size	150,968	6,864
<hr/>		
Other Shared Arrangement (Married or Single)		
Mean of Dep. Variable	0.0180	0.3241
Unemployment rate	0.0016 (0.0008)	* -0.0048 (0.0177)
Sample Size	147,668	10,164
<hr/>		

Notes: (1) All specifications include dummy variables for sex, age, race, metropolitan status, welfare waiver and TANF implementation, state fixed effects, year fixed effects, and the maximum welfare benefit level for a family of three. (2) Marginal effects and robust standard errors are reported. (3) *p<.05, **p<.01.

¹ Family cap policies remove the incremental welfare benefits associated with additional children for women who become pregnant while receiving aid.

² We cannot use matched CPS data to examine living arrangement transitions because individuals and families who move are not followed in the CPS.

³ Adult children of the parents who live in the household are not considered other adults. If a child lives in a household with his or her parents and an adult sibling, that child is coded as living with married parents.

⁴ See Goldscheider (1997) for a review of the home leaving literature.

⁵ In the 1996 and 2001 panels, these states are: Maine, North Dakota, South Dakota, Vermont, and Wyoming. Prior to 1996, Alaska, Idaho, Iowa, and Montana were also not uniquely identified.

⁶ These dummy variables are coded using information provided in the report *State Implementation of Major Changes to Welfare Policies, 1992-1998* (U.S. Department of Health and Human Services 1999).

⁷ When we restrict our time frame and sample to those used by Bitler et al. (2005), we obtain results that are highly comparable to theirs, showing that for some groups of children, welfare reforms affected the probability of living in certain arrangements.