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Wealth and the Propensity to Marry

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WEALTH AND THE PROPENSITY TO MARRY

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A DISSERTATION
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OF PRINCETON UNIVERSITY
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ABSTRACT

American marriage has changed in important ways over the latter half of the twentieth century and in the first decades of the twenty first century. Marriage is increasingly delayed and even forgone with those changes particularly pronounced for African Americans and those with relatively less education. These changes are intertwined with increases in non-marital cohabitation and fertility. In concert, these demographic shifts have important implications for inequality as those who are already disadvantaged increasingly marry later and less, leading to less exposure to the benefits that marriage appears to confer on both children and adults.

Scholars of the family have long focused on how education, employment, and earnings affect individuals' likelihoods of marriage. However, recent qualitative and ethnographic research suggests that to adequately understand current patterns of marriage entry, scholars must look beyond these characteristics to consider the role of wealth in union formation.

This dissertation takes a comprehensive and multidimensional approach to examining the link between wealth and the transition to marriage. In the first empirical chapter, I use data from the National Longitudinal Survey of Youth – 1979 to model the relationship between the ownership of key personal assets and transition to first marriage. I find that ownership of a car and financial assets for men and a car and other assets for women is positively related to entry into first marriages and that accounting for gaps in wealth ownership by race and education explains a portion of the marital divides along those same axes of differentiation. The second empirical chapter draws on data from the Fragile Families and Child Wellbeing Study to model the relationship between wealth and marriage in the contemporary period for a sample of disadvantaged parents who were unmarried at the birth of their children. I find additional evidence of a link between asset ownership and marriage entry. However, I find little evidence that asset ownership is related to entry into cohabitation or that access to other economic resources can take the place of assets for marriage. In

the final empirical chapter, I use a novel data source to assess how wealth losses during the Great Recession may have impacted plans to marry and find evidence that men and women who have lost wealth are more likely to plan to delay marriage.

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Chapter 1:

Marriage, Wealth, and Inequality

1.1 INTRODUCTION

Since the middle of the twentieth century, the institution of marriage has undergone dramatic change in the United States. Increasingly, men and women are marrying later and larger shares of the population are never marrying. Of particular note, marriage has become increasingly stratified, with large gaps emerging between blacks and whites and the more and less educated in the timing and incidence of first marriage (Ruggles, 1994; Fischer and Hout, 2006; Jencks and Ellwood, 2004a).

These shifts in marriage matter because the family can function to perpetuate inequality. A large body of research in sociology, demography, and economics documents the positive effects of marriage on adult and child social and economic wellbeing. If the already disadvantaged, as marked by race and education, are marrying later and less, we might well expect then that this differentiation in marriage might serve to cement inequality and cumulate disadvantage within and across generations.

Scholars of the family have long focused on how education, employment, and earnings affect individuals' likelihoods of marriage (Wilson, 1987; Oppenheimer, 1988; and see Jencks and Ellwood, 2004a and Burstein, 2007 for reviews of the literature). However, recent qualitative and ethnographic research suggests that to adequately account for the significant shifts in marriage, scholars must look beyond these characteristics to consider the role of wealth in marriage entry. These scholars suggest that increasingly, young people are waiting to marry until they have accumulated assets such as financial savings, a car, and even a home (Edin and Kefalas, 2005;

Gibson-Davis, Edin, and McLanahan, 2004; Cherlin, 2004; Smock, Manning, and Porter, 2005). However, the ethnographic cross-sectional data analyzed to date does not allow us to test the importance of wealth for marriage in the population at large. Nor do these studies provide estimates of the extent to which differences in wealth might explain differences in marriage by race and education.

Finally, we know relatively little about why wealth might matter for marriage. It may be the case that wealth is valued for marriage for its insurance or use-value, as a way of buffering the newly formed household against possible economic shocks that might destabilize the marital relationship. Here, wealth matters for what it can buy. It might instead, though, be that wealth matters for marriage for the information that successful asset acquisition conveys about partner quality. Here, wealth matters for what it signals. Alternatively, wealth may be valued for marriage for its symbolic value, as a signifier of the kind of economic arrival and affluence that scholars such as Cherlin (2005) argue is now seen as necessary for respectable marriage. Here, wealth matters for what it symbolizes within a new framework for the cultural meaning of marriage that lends unique cultural value to marriage, connecting it in particular to wealth in a way that even cohabitation and childbearing may not be.

However, despite these gaps in the literature, there has been very little quantitative work that uses population data to test these ethnographically derived theories.

The first empirical chapter of the dissertation employs a longitudinal individual-level approach to modeling marriage entry. I analyze data from National Longitudinal Survey of Youth – 1979 (NLSY-79) and estimate discrete time hazard models of the relationship between asset ownership and entry into first marriage. I find evidence of a strong positive relationship between the ownership of financial assets and cars and entry into marriage and I show that accounting for

differences in men's asset ownership by race and education can explain a significant proportion of the marriage gaps along those same lines.

The second empirical chapter of the dissertation draws on data from the Fragile Families and Child Wellbeing Study to examine the relationship between asset ownership and transitions to marriage among a sample of parents who were unmarried at the birth of their child – a group that very much resembles the young disadvantaged men and women who are the focus of the ethnographic literature. I find further evidence of a positive link between men's and women's assets and marriage. However, I find no evidence that asset ownership increases the risk of cohabitation or that assets matter less for marriage when men and women have access to another kind of economic resource – the ability to borrow. I suggest that these findings buttress Cherlin's claims about the unique cultural meaning of marriage.

In the final empirical chapter I draw on a new cross-national survey to assess how the wealth destruction of the global economic crisis has affected men's and women's plans to marry. This work, in the tradition of sociological investigations of the effects of the Great Depression and Farm Crisis on family life, provides both cleaner causal estimates of the connection between wealth and marriage and early evidence of how the global economic crisis has affected the family. In order to shed further light on why wealth might matter for marriage and to investigate the claim that marriage has a unique cultural value in the United States, I also examine if the tie between wealth losses and marital intentions varies by country context.

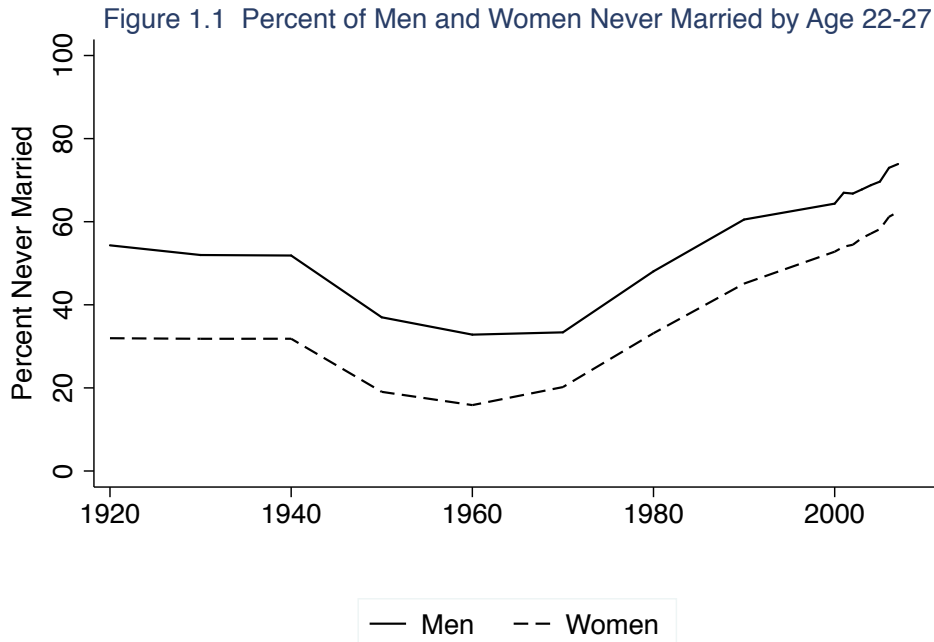
Together, these analyses provide a comprehensive portrait of the relationship between wealth and marriage entry, examining variation in the relationship by race, education, and gender, and in the context of normal macro-economic conditions and the extraordinary environment of the global economic crisis. This work shows the important effect of wealth on marriage entry and sheds some new light on the causes of marital change and stratification in the United States. I present

evidence of an important aspect of a process of inter-generational inequality, showing how inequalities in wealth may lead to differential entry into marriage, in turn affecting adult wellbeing and child outcomes in the next generation.

1.2 MARITAL CHANGE AND INEQUALITY

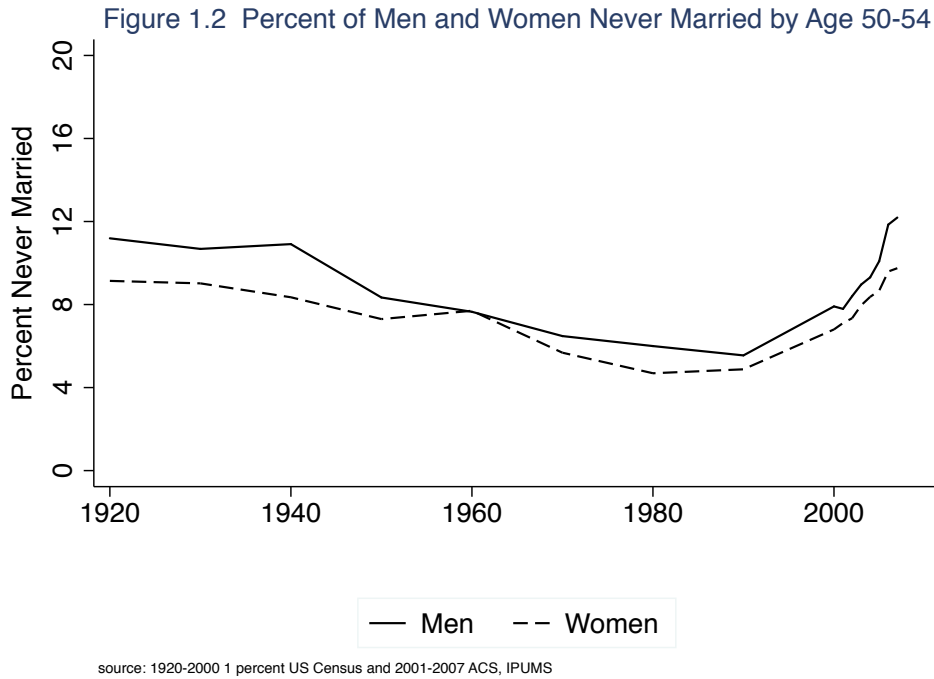
Over the past several decades, Americans have changed the ways in which they form families. These changes are noticeable in increasing rates of cohabitation (Taylor et al, 2011), in the rising share of births that occur outside of marriage (Jencks and Ellwood, 2004a), and in the shifting timing and incidence of first marriage.

As many scholars have noted, there have been particularly marked changes in American marriage since the middle of the twentieth century (Teachman, Tedrow, and Crowder, 2000; Cherlin, 2010). Perhaps most notably, marriage now occurs later for both men and women. Figure 1.1 uses data from the decennial U.S. Census to chart the share of young men and women who had never married by age 22-27, over the period from 1920 to 2000, and then uses data from the American Community Survey to extend the chart through 2007. There is an evident shift between a low-point at 1960 and the present in the share of young people having never married at these relatively young ages. As compared with 33% of men and 16% of women in 1960, approximately 64% and 53% of similarly aged young people had never married in 2000, with the shares rising to 74% and 62% in 2007, according to the ACS.



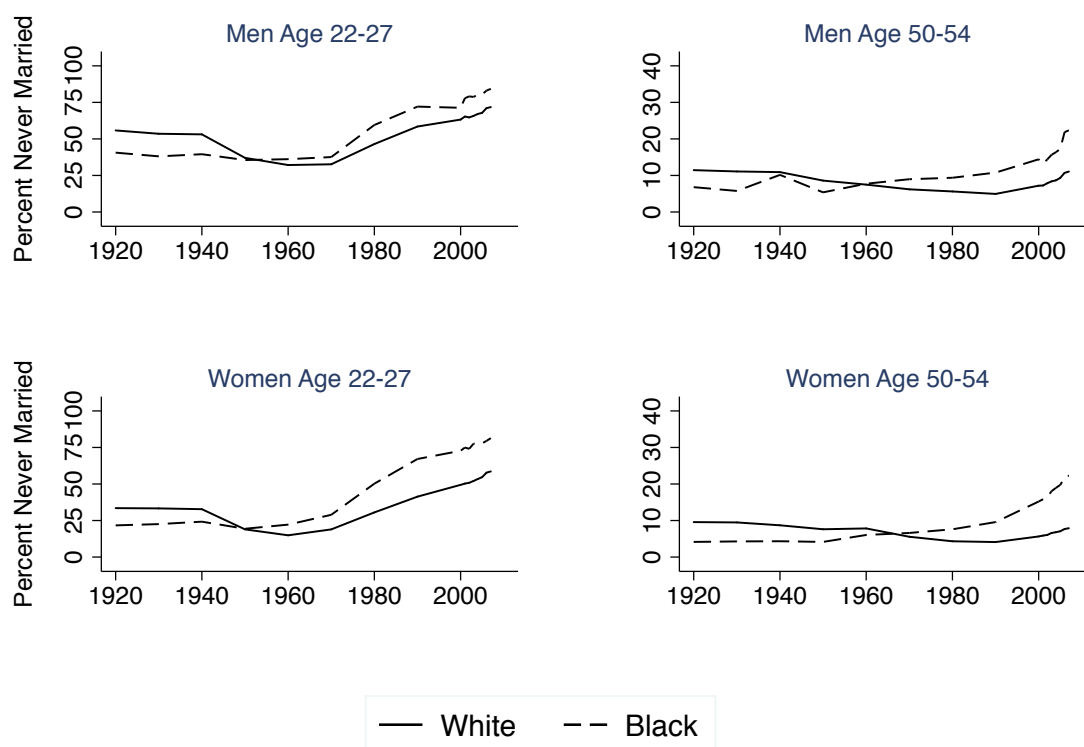
source: 1920-2000 1 percent US Census and 2001-2007 ACS, IPUMS

However, this is not simply a pattern of later marriage. Figure 1.2 shows the share of young men and women who have never married by the relatively older ages of 50-54. Evident in this graph is a similar, though smaller, shift. Larger shares of men and women remained never married at these relatively older ages in the first decade of the 21st Century than at any point in the last 90 years. While some might go on to marry, this is suggestive of some increase in the share of men and women who will never do so. Interestingly, by this metric marriage in 2007 looks more like it did in 1920 than in 1970.



The most pronounced changes in marriage, however, are only evident when we examine the population along the lines of race. A distinct marital divide has appeared over the last several decades. Figure 1.3 shows how the share of black and white men and women that is never married at both younger (22-27) and older (50-54) ages has diverged since the middle of the past century. The charts of the share of men and women never married at ages 22-27 shows an increasing delay in first marriage for blacks that far outpaces that of their white counterparts. The charts of the shares of men and women never married at the older ages of 50-54 signals a widening divide in the shares that will ever marry. By 2007, 8% of white women (11% of men) had never married by age 50-4 as compared with 22% of black women (23% of black men).

Figure 1.3 Percent of Men and Women by Race Never Married by Age 22-27 and age 50-54



Source: 1920-2000 1 percent US Census and 2001-2007 ACS, IPUMS

While less pronounced, there is increasing evidence of a widening marital divide by education as well. While it is well established that more educated men have been more likely to ever marry than their less educated counterparts, this was not always so for women for whom there has been an education penalty. However, recent data suggests a reversal of this pattern for women, with more educated women now more likely to ever marry than their less educated peers (Goldstein and Kenney, 2001).

Scholars have identified these shifts in marriage, along with transformations in cohabitation and fertility, as important elements of the second demographic transition. And scholars have argued that these trends matter a great deal not only because they signal the transformation of key social institutions, but because these changes in the family may have implications for social and economic

inequality (McLanahan, 2004; Western, 2006; Massey, 2007; Martin, 2006; McLanahan and Percheski, 2008).

Marriage is associated with a host of positive outcomes for adults and their children, including improved educational, behavioral, and health outcomes for children and increased earnings, wealth, and better health among married men. While the causal nature of these relationships has been subject to challenge, a number of studies that use available methods of causal inference, such as twin studies, longitudinal analysis with individual fixed-effects, and natural experiments such as divorce law changes, show some evidence that the effects of marriage are real (as reviewed by Ribar, 2003).

This evidence on the benefits of marriage, taken together with the demographic data on the widening marital divide between the more and less advantaged, is suggestive of how the family may function to perpetuate inequality within and across generations. In concentrating the benefits of marriage on those adults and children already marked for advantage by race and education, these demographic processes have the potential to compound disadvantage. For these reasons, scholars have dedicated substantial effort to understanding why marriage has changed, such that it is later, less, and more stratified.

1.3 WHY MARRIAGE CHANGED

Cultural Roots of Marital Change

It is possible that these changes in marriage may simply indicate the declining value of marriage. It does appear that marriage has lost much of its practical worth as the sole acceptable forum for sex, childbearing, and companionship (Cherlin, 2005). Extra-marital sex is little censured; alternative family forms are increasingly common and socially accepted. Indeed, a small group of scholars gives priority to cultural factors in their explanations of marital change. These accounts put

forward the idea that marriage has simply become less valued, seen as an out-of-date institution as individualism and gender egalitarianism took hold over the later half of the twentieth century (summarized by Cherlin, 2004). Differences between blacks and whites in perceptions of marriage could then explain race-based differences in marriage behavior (Wilson, 2002) and perhaps also divergence in marriage among whites by education (Murray, 2012). Indeed, in Murray's (2012) telling, the retreat from marriage among the white working class is symptomatic of broad cultural erosion that has affected multiple social institutions.

However, this hypothesis receives little empirical support. Survey respondents consistently ascribe a high value to marriage and report that they hope to marry (Thorton and Young-DeMarco, 2001; Edin, 2000). Similarly, in qualitative work, Gerson (2010) finds that nearly all of the young people interviewed as part of her study of gender and family life aspired to marriage. Accounting for negative attitudes towards marriage also does little to explain black-white differences in marriage (Bulcroft and Bulcroft, 1993; Sassler and Shoen, 1999).

An alternative cultural approach embraces the idea that the divergence in marriage between blacks and whites is the product of cultural change. However, this account also allows that economic factors may have an important role to play. Patterson (1999) revisits historical debates on the structure and strength of black families in slavery, taking issue with Gutman's (1977) claim that marriage was prevalent under slavery and suggesting that Gutman's (1977) estimates are undermined by poor methodology and, importantly, by a failure to account for the quality of marital unions. Building on this point, Patterson (1999) argues that the cultural legacy of slavery is one of gender distrust and conflict and that that this manifests in important negative consequences of marriage among blacks in the contemporary period. But, Patterson's is not simply a cultural explanation. In order to account for the demographic reality that a period of relatively little differentiation in marriage patterns between blacks and whites intervened between slavery and the appearance of the

marital divide, Patterson (1999) suggests that the cultural legacy of slavery was activated by the appearance of male joblessness and female economic autonomy in the more contemporary period.

In a somewhat similar vein, Anderson (1989, 1990) suggests that a culture of gender distrust in which men are focused on sexual exploits pervades poor black communities and forestalls marriage. But here too, we do not encounter a purely cultural argument. Anderson (1989, 1990) suggests that gender distrust and focus on sexual encounters is a response to a lack of economic opportunities for young black men who, rather than defining manhood through unattainable stable employment and earnings, turn to “sexual prowess.” In both Patterson and Anderson’s accounts, culture matters a great deal in explaining changes in marriage among blacks, but it is intertwined with economic change and acts only as the proximate cause, mediating the relationship between economic change and marriage.

Economic Roots of Marital Change

These scholars excepted, the weight of theoretical and empirical attention has focused on the role of economic factors alone in marital change. One view, advanced by Becker (1991), suggests that women may use economic resources as a means of establishing independence. Becker (1991) argues that the primary benefit of marriage is to establish a venue in which men and women specialize and provide each other with the benefits of market work and housework. If women have economic resources of their own, their incentive to marry should be less, perhaps then explaining the long-term shifts in marriage entry in the United States. There is, however, quite mixed empirical evidence for this hypothesis. A number of empirical findings using individual-level data and event history models suggest that women’s economic resources may do no harm to their chances of marriage, and may even increase them (Bennet, Bloom, and Craig, 1989; Sweeney, 2002). However, studies that make use of a marriage markets approach find some evidence that women’s economic

standing is negatively related to the prevalence of marriage (see reviews in Jencks and Ellwood, 2004a, 2004b).

In contrast to Becker's supposition, Valerie Kincade Oppenheimer (1988) points to increasing uncertainty and delay around men's career entry processes in delaying marriage. Making use of event history models of marriage entry, Oppenheimer and colleagues present compelling evidence that men who had finished school and transitioned to stable year-round and full-time employment were more likely to transition to marriage. Evidence, Oppenheimer argued, that changes in the American economy that led to slower and less certain employment transitions were likely to have important effects on marriage. This hypothesis is largely born out in studies that make use of individual-level longitudinal data to assess how economic characteristics affect transitions into marriage. This literature finds strong evidence of the association between men's employment and earnings and their chances of marriage (Oppenheimer, Kamijn, and Lim, 1997; Clarkberg, 1999; Carlson, McLanahan, and England, 2004).

William Julius Wilson's (1987) canonical work on the shortage of marriageable black males makes the related argument that relatively more severe economic setbacks among blacks may explain the widening disparities in marriage by race. Building on a literature in demography that focused on imbalanced sex ratios as an explanation for a growing black-white marital divide (Guttentag and Secord, 1983), Wilson proposes including in the ratio only those men who were not only unmarried, but were also marriageable, as defined by being employed. Calculating the "marriageable male pool index" in this way, Wilson (1987) shows preliminary evidence for an increasing shortage of marriageable black men and a relationship between imbalanced ratios and rates of non-marriage. The limited economic opportunities for black men, worsened by de-industrialization and the loss of stable working class jobs, are then implicated as the key culprit behind a widening marital divide. Subsequent empirical studies have shown that marriage market characteristics can account for

significant portions of the black-white marital divide (Harknett and McLanahan, 2004), but the consistency and size of the effects does vary across studies (Burnstein, 2007).

The theoretical propositions of Becker (1981), Oppenheimer (1988), and Wilson (1987) all focus on the importance of education, employment, and income for marriage entry. For these scholars and for much of the empirical literature that followed, marriagability is in large part defined by men and women's performance in the labor market.

1.4 THE IMPORTANCE OF WEALTH

A new line of literature, much of it ethnographic and qualitative, suggests the importance of using a broader conception of economic resources in examining marriage entry. In particular, this work suggests that couples increasingly feel they must lay claim to some assets before marrying, as distinct from the need to secure a job or complete education. A number of recent qualitative studies have documented the emergence of this asset-based marriage bar, which, importantly, appears to be a widely shared and basically middle-class standard of marriage. Young men and women report before they get married, they feel they must have some money in the bank, own a car, and perhaps even a home (Edin and Kefalas, 2005; Gibson-Davis, Edin, and McLanahan, 2005; Smocking, Manning, and Porter, 2004).). For instance, Edin and Kefalas (2005) report one respondent's view of marriage, that only "after everything is situated the way I want it to be situated, then I'll be ready to get married. After I have a house and a car and everything, and I'm financially stable..." (2005: 112). This sentiment is mirrored in interviews with young men and women from all across the country including those living in cities such as Austin, Boston, Charleston, Chicago, Milwaukee, New York, Toledo, Philadelphia, and San Antonio.

Why Wealth Might Matter

Why though might wealth matter for marriage? The literature suggests several explanations. First, wealth may play an important role in marriage entry for the consumption and insurance value or use-value it provides. Education and employment experience certainly provide an important measure of economic potential. But, as employment insecurity and instability has increased (Hacker, 2006; Jacobs, 2007; Jacobs and Newman, 2008), it may be that young people seek out spouses with assets and/or wait to marry until they have assets themselves because such wealth provides a further buffer against the economic hazards of the market. This buffer may be especially valued because economic misfortune can have real negative consequences for relationship quality and stability (Liker and Elder 1983; Conger et al, 1990; Conger, Reuter, and Elder, 1999). Assets then go beyond other markets of economic security to provide a degree of insurance for a marriage. We might expect then that any relationship between wealth and marriage would be most pronounced for those most subject to economic uncertainty – the less educated and those without access to other economic resources.

Alternatively, any relationship between asset ownership and marriage could be attributable to the signaling value of wealth. Having financial savings, owning a car, or being a homeowner may convey valuable information to a potential spouse about partner quality, particularly proxying for more difficult to observe characteristics such as planning and impulsivity. It is important to note that this conception of the value of assets is distinct from suggesting that the relationship between assets and marriage is simply spurious, driven by those same characteristics being omitted from the analysis. Were this a problem of omitted variable bias, then the argument would be that potential partners do not consider assets at all in the process of marriage entry, they are simply confounded with those traits that partners do consider. In contrast, the signaling argument suggests that

potential partners very consciously consider assets, but as a signal of the more important characteristics mentioned above.

Finally, the importance of wealth for marriage may epitomize a new cultural meaning of marriage and a new normative standard of marriagability. In contrast to scholars who suggest a de-valuation of marriage, Cherlin (2005) argues that there has been a re-valuation and suggests that there has been a real change in the social meaning of marriage. Where marriage once came early in the sequence of events of young adulthood, Cherlin (2004) argues that marriage is now the culmination of this process, the capstone to young (or not so young) adulthood. In this way, marriage has not lost its cultural value but has in fact taken on a different, perhaps heightened, symbolic value. But, it is a status that is desired but not easily attained. Whereas marriage was once a means by which a young couple might establish an economic unit and strive for economic success, marriage now must follow economic achievement.

In particular, Cherlin (2004, 2005) and Edin and Kefalas (2005) argue this high economic standard for marriage takes form in the need for young people to hold some basic forms of personal wealth in order to meet the normative “bar” for respectable marriage. These scholars suggest that beyond having completed schooling, holding a job, and receiving a regular income, having attained some level of asset ownership is a key means by which young people demonstrate the economic success now seen as the necessary pre-requisite for marriage. Edin and Kefalas (2005) suggest that young people, both low-income and more affluent, now aspire to a common middle-class standard of marriage, a “white-picket fence” ideal, of holding some financial savings, owning a car, and even owning a home before marrying.

It is, of course, possible that these explanations are not competing so much as they are complementary. It could well be that wealth is now perceived as a normative standard for marriage

with particular social and cultural meaning but that, underlying this is the very functional role that wealth can play as an economic insulator against a newly volatile and insecure economy.

Theoretical Antecedents

While this argument, that wealth matters for marriage and that may be emblematic of a changed cultural meaning of marriage, is novel, it is certainly not without its indirect precedents.

The last several decades of literature on marriage in the United States has focused on education, employment, and earnings. However, older literature on the United States and Europe and contemporary literature on the less-developed world both emphasize the role of wealth in marriage entry. Demographers have suggested that patterns of delayed and forgone marriage in Europe in the nineteenth and early twentieth centuries could be explained in part through the prism of wealth (Davis and Blake, 1956; Hajnal, 1965; Kennedy, 1973). These scholars suggested that while young people wanted to marry, they felt constrained to delay marriage until they were able to establish independent households through home and land ownership. For instance, Davis and Blake (1956) note that in Ireland there was a general standard of “no holding, no marriage.”

That wealth is a necessary pre-requisite of marriage would also be utterly unsurprising to scholars who focus on bride price and dowry in the contemporary less developed world. Marriage payments of this kind have been found across regions of the world for, literally, thousands of years (Siwan, 2007). They typically involve the transfer of wealth, often in quite substantial amounts and often in the form of jewelry, cash, and household goods. In recent research in Egypt, Salem (2011) describes how even in the face of limited economic opportunity, young people see these matrimonial transactions as key to respectable marriage and strive to meet the high cost, delaying marriage, particularly for men. The high value of marriage payments and the consequences for marriage timing and entry have also been the focus of accounts in the popular press. For instance, a

2011 New York Times article details how home ownership has become a key qualification for marriage, one based on a historical legacy of bride price, a contemporary fear of housing instability, and the desire for a degree of social status (Jacobs, 2011).

While distant temporarily and spatially, Edin's and Cherlin's arguments are similar in spirit to an hypothesis advanced by a number of demographers and sociologists undertaking country-specific studies of economic and social change in the 1950s-1970s. These scholars observed that high economic expectations could produce delays in marriage. For instance, Taeuber (1958) noted that the "postponement of marriage in Japan may be a product of pressures that prevent the realization of desires rather than of changes in ideals and a new way of life" (p. 213). Couples may value marriage even as they delay it because social prices, or "desires," erect normative barriers to marriage transitions. A similar argument can be made to explain postponed marriage in Ireland (Davis and Blake, 1956). Kennedy (1973) explains that "an increase in the desired minimum standard of living" in mid-twentieth century Ireland led to "an increase in postponed marriage and permanent celibacy" (p. 150). In both cases, marriage itself is practically possible, but entry is limited by the high-perceived social price of marriage. In a similar vein, Easterlin (1987) traces how cohort size can similarly raise and lower the social price of marriage. Synthesizing this literature, Dixon (1978) notes that the perceived feasibility of marriage is conditioned by this social price and that a discrepancy between what is seen as socially necessary for marriage and what can actually be achieved economically can give rise to marriage delay and decline.

This work, in its emphasis on how economic resources and arrangements are used to define intimate relationships, also owes a theoretical debt to the research of sociologist Viviana Zelizer. At the most general level, the work discussed above takes for granted that economic activity and intimate relations could reasonably be expected to comingle. But as Zelizer (2007; 1997) has pointed out, this has not always been a given in the scholarly literature with classic accounts positing

that economic activity would necessarily have a destructive effect on social relations. Zelizer's insight is to point out that in multiple realms, economic activity and social relations are complementary and mutually constitutive. Marriage is, of course, no exception; "from dating to the brink of marriage...the mingling of courtship and economic transactions occurs continuously" (Zelizer, 2005: 108).

The ideas discussed above also have more specific resonance in Zelizer's theoretical work. Fundamental to the cultural account in Cherlin and Edin's arguments is the idea that the possession of financial assets is used to define the boundaries around inter-personal relationships, distinguishing between those who are ready for marriage from those who are not. This formulation tracks very closely to the theoretical architecture of Zelizer's "relational economic sociology" and in particular to the argument that economic transactions and resources are used to create boundaries and distinguish social relations. Zelizer (2012) suggests that,

In all economic action, people engage in the process of differentiating meaningful social relations. For each distinct category of social relations, people erect a boundary, mark the boundary by means of names and practices, establish a set of distinctive understandings that operate within that boundary, designate certain sorts of economic transactions as appropriate for the relation, bar other transactions as inappropriate, and adopt certain media for reckoning and facilitating economic transactions within the relation (p. 2).

Certainly many aspects of this account of economic activity are at work in the posited relationship between wealth and marriage. There is the suggestion that marriage is importantly differentiated from other functionally similar relationships such as cohabitation, the notion that a distinct boundary exists between these states and the idea that certain economic transactions – the saving of money and accumulating of assets – are if not limited to marriage, then necessary for it. This recognition places the investigation of the role of wealth in marriage not only in dialogue with demographic inquiries into the changing nature of American marriage but in conversation with efforts to integrate culture into understandings of economic activity and to clearly mark the household as a key site of economic activity.

1.5 PRIOR EMPIRICAL RESEARCH

These precedents acknowledged, it remains the case that Cherlin and Edin's hypothesis, emphasizing the importance of wealth for marriage in the contemporary American context as a concrete manifestation of a complex interaction of cultural and structural factors, is novel. It is also the case that these ideas have gone relatively untested empirically. The important exception is a set of ethnographic and qualitative studies and a very small number of quantitative studies.

This qualitative work has focused on young unmarried couples, many of them parents, all of them members of the working poor (Edin and Kefalas, 2005; Gibson-Davis, Edin, and McLanahan, 2005; Edin, Kefalas, and Reed, 2004) or working class (Smock, Manning, and Porter, 2005). In interviews with these young people a number of sociologists have detailed how these young women (and some men) report valuing marriage and aspiring to matrimony, but of feeling blocked from it by limited economic means (Edin, Kefalas, and Reed, 2005). In the telling of these young people, to enter into respectable marriage, sanctioned by family, friends, and community, requires having some personal wealth in place (Gibson-Davis, Edin, and McLanahan, 2005; Kefalas et al, 2011). Holding a steady job is important but not sufficient. Having some money saved, owning a car, and even owning a home are also part of the normative standard for marriage. This literature, on the importance of wealth as a pre-requisite of marriage, fits with prior work by Townsend (2002) on the tight coupling of marriage and homeownership in conceptions of masculinity and work by Warren and Tyagi (2004) on how important home ownership is for the middle class, and how much the costs of that weigh on family budgets.

While the literature does provide some support for the notion that young people want to have these savings in place in order to forestall any negative effects of economic shocks on the relationship (Edin and Kefalas, 2005), the weight of the evidence seems to support the idea that this

need for personal wealth for marriage is a concrete manifestation of the changed cultural ideal of marriage, one in which that status is reserved for the affluent, treated as a luxury good.

A much smaller volume of literature has attempted to ascertain if evidence of a link between personal wealth and marriage can be found using demographic methods and data representative of the population. What work exists uses data from the NLSY-79 and the NSFH to show that the ownership of financial assets is positively linked to marriage as is car ownership and car value (Mamun, 2005; Dew and Price, 2011). In contrast to the emphasis on home ownership that is found in the qualitative literature, there is limited evidence of a relationship between home ownership and marriage, perhaps because it is so rare among the young.

1.6 UNANSWERED QUESTIONS

Though this extant qualitative and demographic literature is useful, important questions about the role of personal wealth in marriage entry remain unanswered. We can think of some of these questions as being essentially concerned with demographic issues and some with issues of social meaning. In this context, I distinguish between these two classes of inquiries primarily by whether they seek to document a relationship between wealth and marriage or seek to explore why wealth might matter for marriage.

In terms of demographic inquiries, we first lack basic estimates, with data representative of the population, of the relationship between personal wealth and marriage entry. Additionally, though the prior empirical and theoretical work on earnings and employment suggests that men's and women's resources might be differently related to marriage entry, whether men's assets and women's assets may matter differently remains to be investigated. Finally, we lack an accounting of the extent to which inequalities in wealth ownership by race and education may, in the face of a positive

relationship between wealth and marriage, explain at least a portion of the marital divides that exist along those same ascribed and achieved lines.

In terms of inquiries related to social meaning, the qualitative and ethnographic literature has gone a significant way towards providing evidence of why wealth may matter. This work, as described above, suggests that as proffered by Cherlin (2005), wealth has an important symbolic meaning. However, we can, to some extent, further test the competing explanations of whether wealth matters for marriage due to insurance value, signaling value, or symbolic value. I attempt to take account of the signaling value explanation by adjusting for those characteristics, beyond current income and employment, that might more directly capture those qualities that make for a “good partner.” Specifically, I assess if the relationship between wealth and marriage is robust to accounting for such difficult to observe qualities as impulsivity, cognitive ability, planfulness, and financial knowledge. I then propose to make a number of “critical comparisons” that will shed some light on the relative import of the insurance and symbolic value explanations.

First, I attempt to operationalize and compare the “symbolic” and “insurance/use” value explanations by comparing how marriage entry is related to dichotomous measures of simply owning key assets to measures of the value of those assets. Second, I attempt to test the idea that wealth has broad symbolic importance rather than narrow insurance- or use-value for the most vulnerable by comparing how wealth matters for marriage across groups. Third, I endeavor to test if the relationship between wealth and union formation is really unique and particular to marriage or whether it also appears for transitions to cohabitation. Finally, fourth, I try to test if this relationship between wealth and marriage is uniquely American, or a feature of other countries as well.

1.7 CHAPTER OUTLINE

My attempts to answer these questions are documented in the three empirical chapters that follow. In each chapter, I attempt to provide some answers to the demographic questions and some attempt at answering the more complex questions of the meaning of wealth. This dissertation is very much an exercise in triangulation. By adding a body of evidence based on quantitative and demographic approaches, I am attempting to triangulate with the existing theoretical and qualitative literature. And within my own inquiry, I am trying to triangulate by drawing on multiple sources of data across time and place. Below, I provide a brief overview of these efforts.

Chapter 2: Wealth and the Marital Divide¹

In this first empirical chapter I draw on longitudinal data to examine the relationship between asset ownership and marriage, the extent to which that relationship explains differences in the timing of first marriage entry by race and class, and the reasons why wealth may matter for first marriage. I use data from the National Longitudinal Survey of Youth – 1979, which has followed a cohort of young men and women born between 1957 and 1965 for approximately 30 years, beginning in 1979. I model the transition to first marriage using discrete time hazard models estimated with logistic regression, estimating if the hazard of marriage varies by wealth ownership and if that relationship explains differences in marriage by race and education.

I find evidence of strong positive relationships between men's ownership of cars and financial assets and the risk of first marriage as well as somewhat weaker evidence of a positive relationship between women's car ownership and ownership of other assets and first marriage. There is evidence of pronounced differences in the risk of first marriage in any given period by race and by education in the NLSY-79 data as well as evidence of similar differences in asset ownership. I find that

¹ A version of Chapter 2 has been published as Schneider, Daniel. 2011. "Wealth and the Marital Divide." *American Journal of Sociology* 117(2): 627-667.

accounting for the ownership of assets diminishes the black-white divide in first marriage by approximately 30% and the educational gradient by a somewhat larger margin, for men. Efforts to adjudicate between insurance/use and symbolic interpretations of why wealth matters for marriage by comparing simple ownership of assets with measures of asset value are not definitive. However, I find no evidence of significant variation in the relationship between asset ownership and first marriage by race or education, a result in the line with prediction that assets are part of a broad social standard of marriagability.

This chapter answers some basic demographic questions about the role of personal wealth in marriage, showing the extent of the positive relationship and the extent to which accounting for wealth helps to explain differences in marriage entry by race and education. It also attempts to shed light on why wealth matters by contrasting different measures of wealth and looking for variation in the relationship between wealth and first marriage across groups.

Chapter 3: Asset Ownership and Union Formation in Fragile Families

The next empirical chapter of the dissertation makes use of data from the Fragile Families and Child Wellbeing Study. This study followed a large group of unmarried parents whose children were born in large American cities between 1998-2000. I make use of the four waves of follow-up data to examine how the ownership of a home, a car, and a bank account is related to parents transitions to marriage or to cohabitation.

I find that couples in which the fathers of the focal children own any of these three key assets have a higher risk of transitioning to marriage than couples in which fathers lack these key assets, net of adjustments for earnings, welfare receipt, education, and family background characteristics. I also find evidence that women's car and home ownership is positively related to

marriage. These relationships are also robust to controls for those characteristics, such as impulsivity and cognitive ability, that might measure partner quality.

However, I find no evidence of a significant association between asset ownership and transitions to cohabiting non-marital relationships and I find no evidence that assets matter less for marriage when these unmarried parents have access to other economic resources, specifically credit, that might also serve to insure the new household against economic shocks.

These analyses advance our understanding of the role of personal wealth in marriage entry by focusing on a sample of disadvantaged parents who are very similar to the young people who are the focus of the ethnographic and qualitative literature and who, because of their status as both singletons and parents, are of primary policy interest. Further, this analysis moves us forward from the examination of marriages in Chapter 2 occurring to late baby-boomers, to an examination of marriage and cohabitation for a current cohort. Finally, by contrasting the role of wealth in marriage and cohabitation and by examining if there is variation in the relationship between assets and marriage by access to credit, this chapter sheds additional light on the questions of the social meaning of wealth.

Chapter 4: Marriage and the Global Economic Crisis

The final empirical chapter of the dissertation relies on data from the Global Economic Crisis Survey, a multi-national survey fielded by TNS/Research International (the largest for-profit market research company in the world) in August and September of 2009. I examine data on 7,420 respondents living in six countries: the United States, Great Britain, Canada, France, Germany, and Italy. I use data from the survey on self-reported changes in wealth between the survey and before the economic crisis along with reports of marital intentions to examine if, just as the ownership of

assets may make one more likely to marry, the loss of wealth as precipitated by the economic crisis may have led many young people to put off plans to marry.

I find that respondents who lost wealth have higher odds of reporting a lower likelihood of marriage and that this relationship is robust to controls for income, unemployment, age, gender, education, and novel measures of financial sophistication. While the cultural view of the role of wealth in marriage entry would lead us to expect that this relationship should be stronger in the United States than in Europe, I find limited evidence of such variation in the relationship.

This chapter then makes three primary contributions to the literature. First, by examining the effects of a shock to wealth, I am able to estimate a cleaner causal link between wealth and marriage. Second, I should be able to provide initial insights into how the economic crisis has affected marriage entry in the contemporary period. Finally, third, these data allow me to make the critical comparison of the relationship between shocks to wealth in the United States and in Europe and so add another piece of indirect evidence on whether wealth matters for marriage for its symbolic or insurance/use value.

Chapter 2:

Wealth and the Marital Divide

2.1 INTRODUCTION

There has been a retreat from marriage in the United States over the past four decades. Since 1960, young people have been marrying at older ages and a larger share of the population is now expected to never marry (Fischer and Hout, 2006). These demographic shifts in the age at entry and prevalence of marriage have been far larger for blacks and less educated adults as compared with whites and the more educated. Consequently, gaps in marital status by race and education have widened substantially (Ellwood and Jencks, 2004a; Fischer and Hout, 2006). Prior explanations for delays in marriage and growing race and educational gaps have focused primarily on changes in economic opportunity and, to a lesser extent, on cultural differences.

The dominant economic explanation has focused almost exclusively on the role of labor market performance, measured as employment and earnings, as the explanation for the growing marital divide (Wilson, 1987; Oppenheimer, 1988; Bennett, Bloom, and Craig, 1987; and see Ellwood and Jencks, 2004a and Burstein, 2007 for reviews of the empirical literature). A few studies have also suggested that culture may play a role, arguing that blacks and lower-class young men and women may have come to devalue marriage relative to white and more affluent peers (Wilson, 2002; South, 1993) or that black women may have higher economic pre-requisites for marriage than other women (Bulcroft and Bulcroft, 1993).

In this paper I propose and test a novel explanation for delays and declines in marriage and for the divergence in marriage by race and education; namely, that wealth is an important predictor of first marriage and that accounting for wealth will explain a portion of the racial and educational

divides in first marriage. Wealth has assumed a more important place in sociological research (Keister and Moller, 2006) as researchers are increasingly investigating how the ownership of wealth shapes the organization of social life. These studies underscore the fact that wealth is not simply a function of income (Hurst et al, 1998) and is distributed even more unequally than income in the United States (Kopczuk and Saez, 2004; Scholz and Levine, 2004). Wealth is also associated with positive benefits ranging from increased capacity to cope with emergency to higher levels of political power and social status (McKernan, Ratcliffe, and Vinopal, 2009; Keister and Moller, 2000).

Yet very little quantitative research has examined whether wealth is linked to marriage entry and whether inequalities in wealth ownership may explain differences in marriage by race and education. An important exception is recent qualitative research by Edin and her colleagues (Edin and Kefalas, 2005; Edin and Reed 2005; Gibson-Davis, Edin and McLanahan 2005) which suggests that young people aspire to marriage, but are deterred from marrying because they believe they should have some money in the bank, own a car, and even own a home before they marry. For these young people, a steady job and a stable relationship are not enough – wealth must also precede marriage (Edin, Kefalas, and Reed, 2004; Edin and Kefalas, 2005; Gibson-Davis, Edin, and McLanahan, 2005). Since blacks and less educated people have less wealth than whites and more educated people (Conley, 1999; Oliver and Shapiro, 1995; Bucks, Kennickell, and Moore, 2004), we would expect members of these wealth-poor groups to delay marriage as compared with members of more advantaged groups.

In this paper, I use data from the NLSY-79 to test the hypotheses that wealth is associated with marriage and that accounting for wealth can explain a portion of the racial and educational divides in marriage, even after adjusting for conventionally studied measures of socio-economic status. Assuming that wealth is part of the story, there are two possible explanations for why wealth might matter for marriage: its *symbolic* value (Cherlin, 2004; Lamont and Molnar, 2002) or its *use or*

insurance value (Edin and Kefalas, 2005; Oppenheimer, Kalmijn, and Lim, 1997). In the final portion of the paper, I use the NLSY-79 to examine these two possibilities.

2.2 BACKGROUND

Changing Patterns of Marriage

The United States experienced rapid demographic change during the second half of the twentieth century, particularly in terms of family formation behavior. Between 1970 and 2000, the median age at first marriage rose by about four years and the proportion of individuals who never married doubled, growing from 5% to 10% (Fischer and Hout, 2006; Fitch and Ruggles, 2000).

The most striking change however has been the growing differences in marriage entry by race and by education. Black-white differences in marriage have been documented from the late nineteenth century (Ruggles, 1994). But, over the past several decades these initial differences have grown significantly as the rate of increase in the mean age of marriage and the percent of the population that will never marry has been far faster for blacks than whites (Ellwood and Jencks, 2004a; Ellwood and Jencks, 2004b; Raley, 2000; Bennett, Bloom, and Craig, 1989).

Some comparative data makes this change clear. In 1980, 81% of white women had married by age 25-29 as compared with 63% of black women. However, in 1980, that gap was mostly eliminated by age 55 when 96% of white women and 93% of black women had married. Over the next twenty years the percent of whites and blacks ever married declined at every age. Yet the decline was far steeper for blacks, exacerbating existing differences and erasing existing similarities. In 2000, the percent of white women ever married by age 25-29 had dropped by 13 percentage points to 68% but the drop was far larger for blacks, plummeting 25 points, to just 38%. Similarly the black-white gap in percent ever married by age 50 – 54 had grown from 3 percentage points in 1980 to 10 percentage points in 2000 (Lichter and Qian, 2004). Analysts estimate that more than

one-third of black women now in their thirties will never marry (Lichter and Qian, 2004; Teachman, Tredow, and Crowder, 2000).

A similar divergence in marriage patterns has appeared between the more and less educated (Goldstein and Kenney, 2001). During the mid-twentieth century, there were few differences in the marital status of people aged 30-44 by education. However, by 1970, marriage behavior was differentiated by education, and over the next several decades men and women who lacked a high school diploma became increasingly less likely to be living in a married couple household than their more educated counterparts (Fischer and Hout, 2006). While the overall share of women between the ages of 25 and 34 who were married declined over these decades, consistently higher shares of women with a high school diploma or more education were married than those with less than a high school education (Lichter and Qian, 2004).

Marriage and Wellbeing

Delayed marriage, elevated rates of non-marriage, and the widening marital divide are of social concern because a large body of social science research suggests that marriage imparts substantial benefits to men and women (Ross, Mirowsky, and Goldstein, 1990; Waite, 1995; Waite and Lehrer, 2003). Married men and women appear to engage in healthier behavior, experience lower mortality, and have less emotional distress than their unmarried counterparts (Umberson, 1987; Lillard and Waite, 1995; Simon, 2002). Married men also appear to fare better in the labor market than their unmarried counterparts. When employed, married men appear to earn higher wages than unmarried men and when looking for work, married men search for shorter periods of time (Hill 1979; Daniel 1992; Cornwell and Rupert 1997; Korenman and Neumark 1991; Teachman, Call, and Carver 1994). The economic benefits of marriage also appear to extend beyond earnings to wealth (Lupton and Smith, 2003; Yamokoski and Keister, 2006). While some of these effects

may be attributable to differential selection into marriage, research using fixed-effects, natural experiments, and other methods of causal inference suggest that at least a portion of the relationship is causal (Ribar, 2004).

The decline in marriage has also corresponded with an increase in non-marital fertility. The result of this shift (along with the increase in divorce) is that children are spending more time in single-parent households (Ellwood and Jencks, 2004a; McLanahan, 2004). These changes have generated concern because a large body of research indicates that children growing up in non-marital households may be uniquely disadvantaged (Sigle-Rushton and McLanahan 2004; Thomas and Sawhill 2005).

Given that changes in family formation have been concentrated among already underprivileged families, we might worry that the relationship between parents' marital status and economic status could cement cycles of disadvantage and further entrench poverty across generations. Disparities in marriage feed into a within-cohort and cross-cohort process of cumulative disadvantage in which men and women from already disadvantaged groups marry later and less and so are further disadvantaged by missing out on the benefits of marriage for themselves and their children (DiPrete and Eirich, 2006). The role of the family in perpetuating disadvantage across generations has recently been mentioned in a number of prominent accounts of inequality in the United States (Western 2006; Massey, 2007; McLanahan 2004). As I argue below, wealth represents a specific manifestation of this process of cumulative disadvantage as those with less wealth are likely to marry later and less and so do not reap the same benefits that marriage imparts for future wealth accumulation.

Wealth and Disparities in First Marriage

An emerging line of qualitative research suggests that differences in personal wealth may help explain the marital divides by race and education. This research, focused on low-income, unmarried parents in the United States in the first decade of the 21st century and advanced most prominently by Edin and Kefalas (2005), suggests that young couples are delaying marriage until they have a steady source of income and a strong relationship, but that these economic and relational attributes are not enough. Couples also feel that having some money in the bank, owning a car, and even a home are necessary pre-requisites of marriage (Edin and Kefalas, 2005; Gibson-Davis, Edin, and McLanahan, 2005).

In the modern American context of racial and educational wealth inequality, a mismatch between economic standards of marriageability and access to resources could explain disparities in marriage. Edin and Kefalas (2005) argue that disadvantaged unmarried men and women highly value marriage but feel bound to own certain assets before marrying. In qualitative studies, respondents report that a stable job and income are necessary but not sufficient qualifications for marriage. Savings, car, and home ownership must also precede marriage (Edin, England, and Linnenberg, 2003; Edin, Kefalas, and Reed, 2004; Cherlin, 2004). Economic pre-requisites of this sort appear to be commonly held by low-income couples (Gibson-Davis, Edin, and McLanahan, 2005; Smock, Manning, and Porter, 2005).

While earlier research on attitudes regarding marriage suggests that black women may place a greater priority than white women on wealth-based pre-requisites of marriage (Bulcroft and Bulcroft, 1993), more recent ethnographic evidence suggests that there is little differentiation by race or class. Rather, according to these scholars, wealth has become part of a widely shared “middle-class” standard of marriage (Cherlin, 2004; Edin and Reed, 2005; Gibson-Davis, Edin, and McLanahan, 2005). However, blacks and less educated adults have relatively low levels wealth in comparison

with other Americans. Whites' mean wealth is greater than blacks' mean wealth by a factor of nearly five (Conley, 1999; Oliver and Shapiro, 1995). There is similar wealth inequality by education (Bucks, Kennickell, and Moore, 2004), which may influence asset accumulation independently of income by increasing financial knowledge, promoting earlier investing, and providing access to better and more varied financial advice (Yamokoski and Keister, 2006; Chang, 2005). Consequently, members of these wealth-poor populations may have particular difficulty in meeting wealth-based standards of marriage (Edin, England, and Linnenberg, 2003).

In both Edin and Kefalas' (2005) work and in Wilson's (1987) earlier focus on labor market performance, disparities in marriage are not caused by differences in the value people ascribe to marriage, but rather by inequality in young people's abilities to satisfy commonly held economic standards of marriagability. Edin and Kefalas' (2005) key innovation is to identify wealth as a consequential element of that standard. While Edin and Kefalas' (2005) focus is on the role of wealth in marriage entry in the first decade of the 21st century, that relationship might also help to explain the pronounced emergence of racial and educational divides in marriage during the last decades of the twentieth century.

The few quantitative studies on the relationship between wealth and marriage have mostly focused on the relationship between homeownership and marriage, generally finding that owning a home increases the likelihood of marriage, all else equal (Gibson-Davis, 2009; Lloyd and South, 1996). Given this prior quantitative research and the qualitative evidence for the role of wealth in first marriage, I expect that wealth will be an important predictor of first marriage.

Hypothesis 1: Wealth ownership will be a statistically significant and large predictor of marriage, net of controls.

While there is some evidence that financial wealth predicts entry into marriage (Mamun, 2005; Dew and Price, 2009), to my knowledge, no work has examined the extent to which differences in wealth may explain differences in first marriage by race and education. I expect that

differences in the *level* of wealth between blacks and whites and the more and less educated will explain a portion of the differences in marriage entry that emerged between these groups since the 1960s. However, I do not expect that wealth will be differentially valued for marriage by race or education.

Hypothesis 2a: Adjusting for wealth ownership will explain a portion of the negative relationship between being Black and entering into first marriage and a portion of the positive relationship between education and entering into first marriage.

Hypothesis 2b: The relationship between wealth and marriage will not vary by race or education.

Why Wealth Matters

Recent research suggests that wealth may be an important economic pre-requisite of marriage and may help to explain the disparity in marriage by race and education. However, the literature is less clear about why wealth may be important for marriage. Perhaps the most prominent explanation focuses on the symbolic value of wealth. Cherlin (2004) has argued that marriage really no longer serves the functional purpose of being the sole socially acceptable forum for sex, companionship, and childrearing. Rather, marriage has become primarily a “marker of prestige,” and “the purchase of a home, and the acquisition of other accoutrements of married life” have become ways to display the “attainment of a prestigious, comfortable, and stable style of life” that is suitable for marriage (Cherlin, 2004: 857). Part of this “display” occurs very early, as couples appear to increasingly value and prioritize large and costly weddings and are reluctant to simply wed in modest civil ceremonies (Cherlin, 2004; Edin and Kefalas, 2005; Smock, Manning, and Porter, 2005). Such elaborate ceremonies require outlays from savings, often provided by the couples themselves (Cherlin, 2004).

By this logic, wealth matters for what it symbolizes to others beyond potential partners. Quite apart from its economic value, wealth takes on a social meaning and is used to define

relationships, in this case to define eligibility for marriage (Zelizer, 1997). Owning a home, a car, or having some savings becomes a way to cross a symbolic boundary and qualify for marriage. In Cherlin's (2004) account, marriage is increasingly a status category associated with wealth and stability – with having “made it.” The visible ownership of wealth becomes a way for young people to qualify for membership in this essentially Weberian status group. In a variant on Veblen (1973), though the actual value of their holdings may be small, by practicing a kind of “conspicuous ownership” young people outside of the upper class may display the symbolic markers of group eligibility.

A second explanation for the importance of wealth for marriage focuses on use-value or insurance-value. This benefit of wealth could manifest in a number of ways. A potential partner with wealth may be better able to help provide the material aspects of a comfortable life by liquidating assets or augmenting earned income with interest or dividends. Additionally, assets might be valued for marriage in the same way that job stability and a mature career are valued; as a means of facilitating assortative mating (Oppenheimer, 1988), providing couples with a buffer against uncertainty about the economic future (Oppenheimer, 1988; Oppenheimer, Kalmijn, and Lim, 1997; Kalmijn and Luijkx, 2005), and even protecting against the harmful effects of economic distress on marital quality. In regards to this third purpose, Edin and Kefalas (2005) describe how their female respondents worried that marrying without savings would subject their relationships to high levels of stress in the event of income or job loss. Such ethnographic evidence accords with research showing increasing actual and perceived economic risk and insecurity (Hacker, 2006; Jacobs, 2007; Jacobs and Newman, 2008) and substantial evidence that economic distress has a negative effect on marital quality (Liker and Elder 1983; Conger et al, 1990; Conger, Reuter, and Elder, 1999).

In sum, though the literature suggests two possible reasons for why wealth might be valued as a pre-requisite for marriage, there is little consensus and limited empirical data. For both men and women, the primary puzzle relates to whether wealth would be an important predictor of marriage because it a) is a cultural symbol of economic arrival and marriageability or b) provides use value.

If wealth is primarily valued as a cultural symbol, then the simple ownership of wealth without regard to its value or underlying associated debt should matter most for marriage entry. This simple ownership of wealth satisfies the public standard of financial arrival and marriageability as displayed through the ownership of a home, a car, or financial assets.

In contrast, if assets are primarily important in marriage for their use value, whether for facilitating assortative mating, purchasing goods and services, or providing a buffer against economic shocks, then the value of the assets as measured by the worth of individual assets or an individual's overall net-worth, should be most salient. This should be particularly so for the value of financial wealth. Below, I propose two testable hypotheses based on these theoretical propositions. These hypotheses specify the empirical relationships I would expect to find if assets are primarily valued as a cultural symbol.

Hypothesis 3a: Dichotomous measures of wealth ownership will be significant predictors of first marriage and measures of the value of assets or of net worth will not be.

Hypothesis 3b: The negative relationship between race and first marriage and the positive relationship between education and first marriage will be attenuated to a greater extent by the inclusion of dichotomous measures of wealth ownership than by measures of the value of assets or of net worth.

2.3 DATA AND METHODS

Data

I draw on data from the National Longitudinal Survey of Youth – 1979 (NLSY-79). This survey captures the marital experiences of the “late baby boom” cohort, those born between 1957 and 1965. The NLSY-79 began interviews with 12,686 young men and women aged 14 to 22 in

1979 and surveyed them annually through 1994 after which point interviews have been conducted biennially. The NLSY-79 contains a main sample designed to be representative of the non-institutionalized civilian population as well as two oversamples, one of the white poor population and one of the military population. I include both over-samples in the analysis, but, in order to focus on black-white differences in marriage entry, I exclude respondents who report any race/ethnicity other than black or white.²

Measures of Marriage, Wealth, Race, and Education

To measure entry into marriage, I use a question, asked at each survey wave, which inquired about the nature of any changes in the respondent's marital status and then collected information on the date of that change. From these reports, I create a variable summarizing year of first marriage. I use a separate item that collects information on current marital status to check the accuracy of my measure of year of first marriage, excluding respondents who report being separated, divorced, or widowed who have not previously reported a first marriage.

I measure wealth ownership with three different sets of variables. First, I construct four dichotomous measures of ownership: ownership of a home (with ownership including homes with mortgage loans outstanding), ownership of a vehicle (also including vehicles owned with debt outstanding), ownership of financial assets (bank accounts, CDs, stocks, bonds, mutual funds, retirement accounts, and trusts), and a dichotomous measure of owning other wealth (not captured in the other measures). In order to test hypotheses 3a and 3b regarding why wealth may matter for marriage, I also construct two alternative measures of the value of wealth. First, I create separate measures of the market value of respondents' vehicles, homes, financial assets, and other assets, all without regard to debt. I exclude the top 5% of respondents by wealth and take the natural log of

² Excluding the white poor and the military over-samples does not substantively change the results.

the value of wealth (adding a small constant to each value prior to taking the log to retain the zero values). Second, I create a measure of overall net-worth that is calculated as the (market value of vehicles – debt on vehicles) + (market value of the home – debt on the home) + market value of financial assets + market value of other assets – the value of other non-secured debt, excluding the top 5% of respondents by net-worth. To take the natural log of net-worth, I first take the absolute value of the measure, then add a small positive constant (to retain the zero values), take the natural log, and then multiply the cases that originally had negative values by -1. All asset and debt values are measured in hundreds of 2006 dollars adjusted using the CPI index. The NLSY-79 first asked a full set of questions about the ownership of wealth beginning in 1985. This data was then collected consistently through 2004 with the exception of in 1991 and 2002.

I measure race with a dichotomous variable coded using information collected at the baseline survey (1 = black; 0 = white). I capture educational attainment with two time-varying predictors: having completed 12 to 15 years of education and having completed 16 or more years of education (relative to having completed less than 12 years of education). These two sets of measures allow me to examine differences in marriage entry by race and education and the extent to which differences in wealth may explain those marital divides.

Confounding Factors

Estimating the relationship between wealth and first marriage is complicated by the need to parse out the direct effect of wealth on marriage from confounding relationships between marriage, wealth, and other characteristics. In Appendix Table 1, I present descriptive statistics for a number of possible confounding variables, tabulating them separately for men and women and by whether the respondent transitioned to first marriage in the next period. These simple descriptive statistics

serve to show the relationships among these potentially confounding variables and first marriage entry in the analysis sample.

Labor market performance is a potentially important confounding variable in the relationship between wealth and first marriage. While income and employment are by no means determinative of wealth, there is a strong positive association (Schneider and Tufano, 2008; McGrath and Keister, 2008) and there is also a strong positive link between income, employment and marriage (Oppenheimer, Kalmijn and Lim, 1997; Clarkberg, 1999; Sweeney, 2002). I construct a variety of measures of labor market participation and performance. I create a continuous measure of amount of total earned income from wages, salary, tips, self-employment, and military service for which respondents with no earned income are assigned values of \$0 (in thousands of CPI adjusted 2006 dollars).³ Following Oppenheimer, Kalmijn, and Lim (1997) I also use respondents' reports of hours and weeks worked per year to categorize them as working fulltime for the full year, fulltime for part of the year, part-time for either part of the year or the full year, or not working. I also include a dichotomous measure of current school enrollment.

A similar possibility of confounding arises with respect to welfare receipt. The receipt of public benefits such as AFDC/TANF and Food Stamps/SNAP may discourage marriage (Teitler et al, 2009; Carlson et al, 2004; and see Moffit, 1998 for a review) and public assistance eligibility guidelines may also discourage recipients from accumulating wealth (Hubbard, Skinner and Zeldes, 1994; Ziliak, 2003; Nam, 2008). To take account of this possible confounding relationship, I include time varying measures of receipt of AFDC/TANF and receipt of Food Stamps/SNAP in a given calendar year.

Non-economic factors might also confound the relationship between wealth and first marriage. Religious affiliation is predictive of wealth accumulation by young adults (Keister, 2003;

³ The results are robust to the inclusion of an alternative broader measure of income that includes income from disability payments, veteran's benefits, or worker's compensation.

2007) and religious affiliation (Lehrer, 2004) and religious attendance (Wilcox and Wolfinger, 2007; Carlson, England, and McLanahan, 2004) are predictive of first marriage. I include controls for both religious affiliation (comparing conservative protestants to mainline Protestants, Catholics, Jews, and others as categorized using the rubric employed by Steensland et al, 2000) as measured at baseline and frequency of religious services attendance as assessed in 1982 and 2000 (comparing those attending services once a month or less to those attending two to three times per month, once a week, and more than once a week).

Marriage entry varies by place of residence with men and women residing in the American South more likely to marry (Sweeney, 2002; Clarkberg, 1999; Lloyd and South, 1996) and those residing in an urban area less likely to marry (Sweeney, 2002; Sassler and Goldschneider, 2004). This place-based variation can also affect wealth accumulation (Keister, 2003). I include two time-varying measures, residing in the south and residing in a Metropolitan Statistical Area (SMSA) to account for these relationships.

Aspects of family background may also have important effects on both marriage and wealth. Parent's education is positively associated with wealth as an adult (Keister, 2004; Keister and Yamokoski, 2006) and is linked to marriage (e.g. Goldschneider and Waite, 1986). Similarly, growing up with divorced parents is negatively associated with wealth as an adult (Keister, 2004) and with marriage (Clarkberg, 1999; Carlson, England, and McLanahan, 2004; Sassler and Goldschneider, 2004). At baseline, the NLSY-79 measured whether the respondent was living with both biological parents at age fourteen and measured the respondent's parents' education when the respondent was age fourteen. Both measures are included as time invariant covariates.

Respondents' demographic behavior may also affect wealth accumulation and marital entry. Never married women with children are particularly disadvantaged in terms of wealth accumulation (Keister and Yamokoski, 2006) and while non-marital pregnancy appears to raise the risk of

marriage (Brien, Lillard, and Waite, 1999), having a non-marital birth may make women less likely to marry (Bennet, Bloom, and Miller, 1995; Brien, Lillard, and Waite, 1999; Graefe and Lichter, 2002, Qian, Lichter, and Mellott, 2005). However, there does not appear to be a relationship between non-marital parenthood and wealth for men and men who father a child outside of marriage may actually be more likely to subsequently wed (Stewart, Manning, and Smock, 2003).

Other aspects of respondents' living situations, such as co-residence with parents, might also be expected to affect wealth accumulation and marriage entry, but there is less empirical evidence to indicate a confounding relationship. While earlier work suggests that living independently prior to marriage might delay first marriage (Goldschneider and Waite, 1987), the effects of independent living on wealth accumulation are theoretically ambiguous as living in the parental home might help young people to conserve resources and save or might reduce homeownership and make young people less likely to have separate finances and solely-owned assets. The possible confounding effects of cohabitation are similarly unclear. While evidence suggests that unmarried parents cohabiting at the time of the birth of their child are more likely to marry than those not cohabiting (Carlson, McLanahan, and England, 2004; Harknett and McLanahan, 2004), there has been little work linking cohabitation to wealth accumulation. In order to adjust for these factors, I construct three time-varying dichotomous indicators: ever reporting having a biologically-related child, co-residence with one or both parents, and cohabiting with an unmarried partner of the opposite sex.

Analytic Strategy

I model the transition to first marriage using a discrete time event history model, estimated with logistic regression (Allison, 1984). The data are structured as a person-year file with the discrete time period defined as the calendar year, which is also the duration variable for the event-history analysis. By this method, NLSY-79 respondents can have a maximum of 25 person-year

observations, encompassing the years from 1979 until 2004. However, I exclude observations prior to 1985 as little wealth data was collected before that year, resulting in a maximum of 19 person-year observations. Most respondents are observed for fewer than 19 person-years either because they marry before 2004 (so are no longer at risk of the event) or because they attrite from the study before marriage and before 2004. Discrete time event history methods allow significant latitude in the modeling of hazards. I include a dichotomous indicator for each of the 19 periods, omitting the first. I also include a linear term for age in the models, though the results are robust to the inclusion of a quadratic term and to centering the age variables on the sample mean (30.5) to reduce multivariate collinearity in the models that include both a linear and quadratic term.

It is relatively straightforward to include time varying covariates within this framework. Much of the data is collected annually and is easily assigned to a person-year observation. For each time varying covariate, I lag the measure by one period, ensuring that the characteristic occurs temporarily prior to marriage. This method of ensuring temporal priority is particularly important in the case of the measures of wealth because research suggests that marriage may facilitate wealth ownership (Yamokoski and Keister, 2006). However, lagging the measures of wealth does not eliminate the possibility that *plans* to marry rather than *marriage* itself cause wealth ownership. In other words, individuals may save in anticipation of marriage rather than wealth being the catalyst for marriage. While I am unable to disentangle these effects, the distinction may not be crucial. Whether individuals marry because they have wealth or accumulate wealth because they plan to marry is not actually an important conceptual distinction. In both cases, individuals would be responding to a wealth-based standard of marriage that required wealth ownership to precede marriage. Both cases would also be distinct from the case in which aspects of the marital situation, such as increased specialization or discrimination in favor of married people, caused wealth

accumulation. Again, I exclude the possibility of that later situation by lagging wealth ownership to be prior to first marriage.

Measurements of some characteristics were not made at every wave and between 1994 and 2004 surveys were conducted only every two years. In those cases, values for the time varying covariates were imputed to be equal to the value provided at last inquiry. Otherwise, missing data is handled through list-wise deletion. As noted above, I only model transitions to marriage between 1985 and 2004, as little wealth data was collected prior to 1985. That data limitation means that I must exclude respondents who married before 1985. Since the NLSY-79 began by interviewing respondents aged 14 to 22 in 1979, the youngest respondents in my analysis sample are 21 in 1985. These rules yield an analysis sample of 3,688 male and female respondents.

I split the analysis sample of respondents by gender and conduct the analyses separately for men and women. By dividing the sample, I allow the relationship between first marriage and the measures of economic and demographic characteristics to vary by gender. Allowing for such variation is important because prior research suggests that gender may play an important moderating role in many of these relationships. For instance, income may have a positive relationship with men's chances of marriage (Wilson, 1987; Oppenheimer, 1988) but may have a negative relationship with women's chances of marriage if women's labor force participation erodes the advantages derived from a model of marriage built on traditional sex roles and a gendered division of household and workplace labor (Becker, 1981). Gender may similarly moderate the effects of public benefits receipt, religion, and prior births on marriage. While there is no research that directly suggests that the relationship between wealth and first marriage might vary by gender, the evidence of variation in the relationship between first marriage and other economic characteristics suggests that this is a reasonable possibility.

I generate a set of weights using the NLSY-79 Custom Weighting program that I employ in tabulating descriptive statistics. However, I do not employ the weights in my multivariate analyses because, used in conjunction with list-wise deletion, incorrect betas and standard errors may result.

2.4 RESULTS

Wealth and First Marriage

My first hypothesis is that wealth would be an important predictor of first marriage, net of controls for possibly confounding economic and demographic characteristics. Table 2.1 presents simple bivariate statistics (weighted), separately for men and women and pooled across all survey years (1985 – 2004) in the analysis sample, which show the unadjusted relationship between wealth and first marriage. While ownership of a vehicle, financial assets, and other assets is fairly common for both men and women, those who marry are more likely to hold these assets than those who do not. For example, 86.29% of men and 80.43% of women who transition to marriage in the next period own a vehicle as compared with 75.13% of men and 72.90% of women who do not marry. Home ownership is much less common among this relatively young group of unmarried men and women (the average age for men and women is just 30) with approximately 17% of men and 21% of women owning a home. There is also much less differentiation in homeownership between those who marry and those who do not and women who own homes actually appear less likely to marry.

Table 2.1. Ownership of Men and Women Who Marry and Who Do Not Marry in the Next Period

	Men			Women		
	Marry	Do Not Marry	t-test	Marry	Do Not Marry	t-test
Own Home (%)	16.80	17.22		13.49	21.14	***
Own Vehicle (%)	86.29	75.13	***	80.43	72.90	***
Own Financial Assets (%)	80.49	69.47	***	80.48	72.58	***
Own Other Assets (%)	64.02	56.54	***	58.04	51.07	***
Person-Years	15,632			12,637		

* p<0.05, ** p<0.01, *** p<0.001

While Table 2.1 pools respondents across ages, Figure 2.1 plots a set of hazards of first marriage by age for men and women by asset ownership.⁴ The figure shows the hazard of first marriage for those who own a home, a vehicle, financial assets, or other assets (solid lines) versus those who do not (dashed lines). At nearly every age though the early 40s, men who own one or more of these assets have a much higher hazard of first marriage than men who do not. There is a similar, though less striking, relationship for women that extends through the mid 30s.

Figure 2.1. Hazard of First Marriage for Men and Women by Asset Ownership

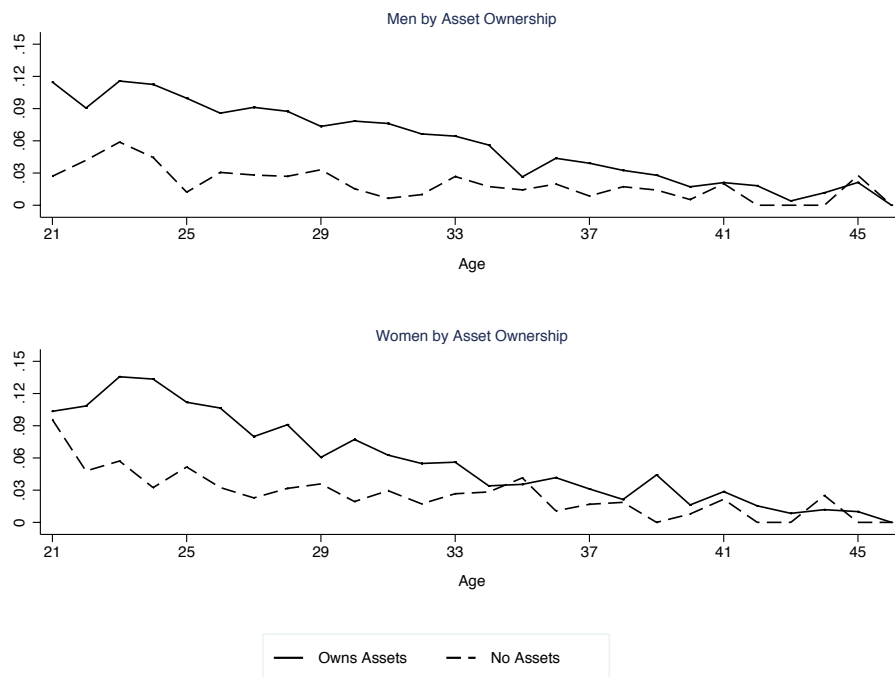
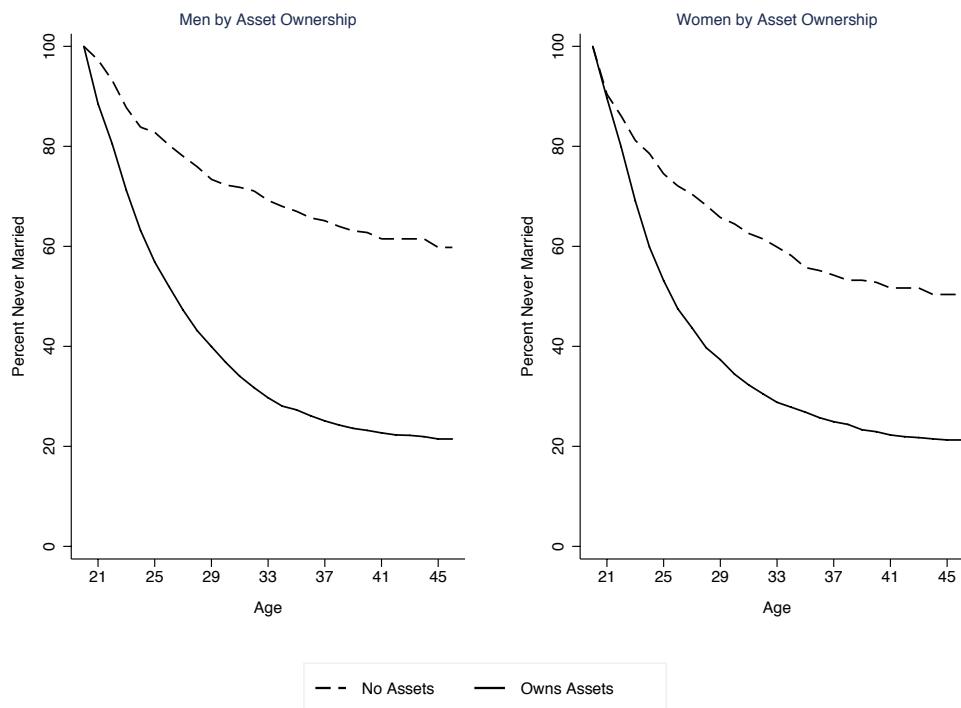


Figure 2.2 presents a set of simulated survival curves estimated from the hazards presented in Figure 2.1, comparing hypothetical men and women who own at least one asset at every age to men and women who never own any assets. For men, the comparison reveals that owning assets substantially hastens first marriage entry, with about half of those who were unmarried at age 20

⁴ Hazards are calculated as the number of events at a given age divided by the number of respondents exposed to the risk of event at that age.

marrying by age 27 if assets were owned at each of the prior ages against just one quarter marrying by that age if assets were never owned. Further, asset ownership raises the proportion ever marrying by age 46, with about 80% of those who owned assets at every prior age estimated to marry against 40% of those who never owned assets. The results are similar for women, with half of women who owned assets at every

Figure 2.2. Survival Scenarios for Men and Women by Asset Ownership



age marrying by age 26 against approximately 28% of those who did not own assets at any of the preceding ages and with approximately 80% of women who owned assets at every age marrying by age 46 compared with just 50% of women who never held assets.

The bivariate tabular and graphical representations show evidence of a relationship between wealth ownership and first marriage. However, this relationship could be the artifact of a confounding association between wealth, marriage, and other characteristics. To account for that

possibility, I estimated discrete time event history models with logistic regression, adjusting for a number of demographic and economic characteristics. I present estimates of the average marginal effects (AME) of men and women's characteristics on first marriage. While coefficients from logistic regression cannot be properly compared across models with different covariates because the introduction of an additional control variable (x_2) may change the coefficient on a variable x_1 both via an indirect effect and by increasing the explained variance of the model, the AME of a given variable is comparable across logistic regression models (Mood, 2010) and is likely more substantively meaningful than coefficients or odds ratios.

Hypothesis 1 predicted that wealth would have a positive relationship with first marriage, net of controls. Consistent with that prediction, as shown in Model 4 of Table 2.2, I find that men who own a vehicle have a 2.6 percentage point higher probability of first marriage in any given year than men who do not own a vehicle and that men who have financial assets have a 1.5 percentage point higher probability of first marriage in any given year than men who do not have financial assets. Both of these relationships are statistically significant at the 0.001 level. The relationship between wealth ownership and first marriage is distinct from that of income, employment, education, school enrollment, and welfare receipt.

Model 5 reports the results of a model that also includes controls for religion, church attendance, family structure at age 14, parents' educational attainment, ever having had a child, residence in the south, and residence in an urban area. The relationship between wealth and first marriage is robust to the inclusion of these additional covariates.⁵

⁵ The relationship between marriage and wealth was also robust to the inclusion of two additional controls (for living with parents and cohabiting with a partner of the opposite sex) that were not included in the main models because of theoretical ambiguity about their relationship with wealth and marriage.

Table 2.2. Predictors of Transition to First Marriage for Men, Average Marginal Effects from Discrete Time Logistic Regression (NLSY-79)

	Model 1	Model 2	Model 3	Model 4	Model 5
Black	-0.030 ***	-0.024 ***	-0.025 ***	-0.017 ***	-0.019 ***
High School Graduate	0.023 ***	0.016 *	0.016 *	0.007	0.008
College Graduate	0.060 ***	0.035 ***	0.037 ***	0.022 *	0.024 *
Age (years)	-0.002 *	-0.004 **	-0.003 **	-0.004 ***	-0.003 **
Wealth Ownership					
Own Home	--	--	--	0.003	0.001
Own Vehicle	--	--	--	0.026 ***	0.025 ***
Own Financial Assets	--	--	--	0.015 ***	0.016 ***
Own Other Assets	-	--	--	0.003	0.004
Earned Income (\$ thousands)	-	0.001 **	0.001 **	0.001 ***	0.001 **
Public Benefits					
Received AFDC/TANF	-	0.122 **	0.123 **	0.117 **	0.118 **
Received Food Stamps/SNAP	-	0.007	0.008	0.017	0.017
Employment Status					
Not Working	-	-0.030 ***	-0.031 ***	-0.020 *	-0.021 **
Full-Time Work, Part Year	-	-0.015 ***	-0.016 ***	-0.011 **	-0.012 *
Part-Time Work	-	-0.016 **	-0.016 **	-0.011	-0.011
Enrolled in School	-	0.006	0.007	0.004	0.004
Family Background					
Living with Both Parents at 14	-	-	0.001	-	0.000
Father College Graduate	-	-	-0.005	-	-0.004
Mother College Graduate	-	-	-0.002	-	-0.001
Religion					
Jewish	-	-	0.019	-	0.028
Catholic	-	-	0.005	-	0.004
Mainline Protestant	-	-	0.010	-	0.009
Other	-	-	0.016	-	0.016
Religious Services Attendance					
Two to Three Times per Month	-	-	0.012	-	0.010
Once a Week	-	-	0.013 *	-	0.011
More than Once a Week	-	-	0.010	-	0.011
Reside in Urban Area	-	-	-0.016 **	-	-0.017 **
Reside in South	-	-	0.009	-	0.007
Ever Had Child	-	-	0.009	-	0.010
Person-Years	15632	15632	15632	15632	15632

* p<0.05, ** p<0.01, *** p<0.001

Table 2.3. Predictors of Transition to First Marriage for Women, Average Marginal Effects from Discrete Time Logistic Regression (NLSY-79)

	Model 1	Model 2	Model 3	Model 4	Model 5
Black	-0.036 ***	-0.029 ***	-0.031 ***	-0.027 ***	-0.030 ***
High School Graduate	0.019 *	-0.003	-0.003	-0.005	-0.006
College Graduate	0.045 ***	0.008	0.006	0.006	0.004
Age (years)	-0.006 ***	-0.006 ***	-0.006 ***	-0.006 ***	-0.006 **
Wealth Ownership					
Own Home	--	--	--	-0.013	-0.013
Own Vehicle	--	--	--	0.013 *	0.014 *
Own Financial Assets	--	--	--	-0.004	-0.005
Own Other Assets	-	--	--	0.019 ***	0.019 ***
Earned Income (\$ thousands)	-	0.000 ***	0.000 ***	0.000 **	0.000 **
Public Benefits					
Received AFDC/TANF	-	0.009	0.010	0.011	0.012
Received Food Stamps/SNAP	-	-0.018 *	-0.018 *	-0.019 ***	-0.017
Employment Status					
Not Working	-	-0.034 ***	-0.034 ***	-0.031 ***	-0.030 ***
Full-Time Work, Part Year	-	-0.002	0.002	0.003	0.004
Part-Time Work	-	-0.005	-0.004	-0.002	-0.002
Enrolled in School	-	-0.008	-0.009	-0.007	-0.009
Family Background					
Living with Both Parents at 14	-	-	-0.002	-	-0.003
Father College Graduate	-	-	0.005	-	0.005
Mother College Graduate	-	-	-0.007	-	-0.007
Religion					
Jewish	-	-	0.004	-	0.004
Catholic	-	-	0.004	-	0.004
Mainline Protestant	-	-	0.001	-	0.002
Other	-	-	-0.012	-	-0.012
Religious Services Attendance					
Two to Three Times per Month	-	-	0.009	-	0.009
Once a Week	-	-	0.010	-	0.011
More than Once a Week	-	-	0.002	-	0.003
Reside in Urban Area	-	-	0.010	-	0.009
Reside in South	-	-	0.003	-	0.002
Ever Had Child	-	-	-0.000	-	0.000
Person-Years	12637	12637	12637	12637	12637

* p<0.05, ** p<0.01, *** p<0.001

I present the results of a comparable analysis for women in Model 4 of Table 2.3. Also consistent with hypothesis 1, I find that wealth has a statistically significant positive relationship with first marriage for women. Women who own a vehicle have a 1.3 percentage point higher probability of marriage in any given year and women who possess assets other than a vehicle, home, or financial assets have a 1.9 percentage point higher probability of marriage in any given year than women without those assets. As was the case for men, and as shown in Model 5, adjusting for social and demographic characteristics does not change those relationships.

In partial confirmation of hypothesis 1, I find evidence that vehicle ownership, the ownership of financial assets, and the ownership of other assets predict first marriage, net of controls for a large number of possible confounding variables. This relationship is especially strong for men.

Wealth and Disparities in First Marriage

Hypothesis 2a contends that, in light of the strong relationship between wealth ownership and first marriage, accounting for wealth ownership will explain a portion of between-group differences in marriage. The results presented in Table 2.2 and 2.3 provide some support for this hypothesis.

Model 1 of Table 2.2 describes the relationship between race and education and the transition to first marriage for men, adjusting only for age. Examining the results, compared with white men, black men have a 3.0 percentage point lower probability of first marriage in any given year. Similarly, being a high school graduate or a college graduate (relative to someone with less than a high school education) is a significant advantage, associated with a 2.3 and 6.0 percentage point higher probability of first marriage in any given year, respectively.

Are these associations between race and education and men's marriage explained by differences in other economic factors such as income, employment, school enrollment, or welfare receipt? Including these covariates (Model 2) somewhat reduces the AME of the variable for black, shifting it from -0.030 to -0.024, a 20% change. Including these economic covariates also narrows the marital divide between the more and less educated, reducing the high school advantage by 30% and the college advantage by 42%. However, both race and education still have statistically significant relationships with marriage.⁶

As predicted by hypothesis 2a, including wealth reduces the relationship between being black and entering first marriage. As shown in Model 4, after adjusting for wealth, the AME on black goes from -0.024 to -0.017. While being black still has a statistically significant negative association with first marriage, wealth narrows the gap from Model 2 by about 30% judging by changes in the AME. Similarly, including wealth reduces the relationship between having a high school diploma (relative to none) and first marriage by 56% and renders it statistically insignificant. Including wealth also reduces the relationship between having a college diploma (relative to less education) and first marriage by 37% judging by change in the AME between Models 2 and 4. Though it does not eliminate the racial or educational gap in first marriage for men, wealth explains a large portion of these gaps in first marriage and, for race and high school, a larger portion than traditionally included covariates such as earned income, employment, and welfare receipt.⁷

⁶ Y-standardized coefficients can also be compared across models (Winship and Mare, 1984; Mood, 2010). Doing so yields nearly identical results to those described here and below.

⁷ I also estimated alternative models that compare the average marginal effect of being black on first marriage in any given year across three models in which the first just included the age-adjusted relationship between being black and marriage, the second added in the measures of educational attainment, and the third added in the measures of wealth ownership. Adjusting for education reduced the average marginal effect of being black by 20% while adjusting for wealth ownership further reduced the average marginal effect of being black by 40%. Re-estimating the models such that the second model introduced both education and the full set of economic controls reduced the average marginal effect of being black by 33% and including measures of wealth in a third model further reduced the average marginal effect of being black by 29%.

Model 3 of Table 2.2 shows the relationship between race and education and first marriage after adjusting for both economic factors and for social and demographic characteristics. Comparing the AMEs of race and education on marriage reported for Model 2 (which just includes the economic factors) and for Model 3 (which includes the full set of covariates) reveals that accounting for family background, religion, religious services attendance, residence, and fertility history does little to explain the racial and educational marital divides. The average marginal effect of being black on marriage is essentially unchanged as are the average marginal effects of education on marriage. Further, comparing the estimates from Model 3 with those from Model 5, which also includes the measures of wealth ownership, reveals that wealth operates similarly to partially explain the marital divide even after accounting for these social and demographic factors. In short, the relationships of interest are little changed by the inclusion of these additional controls.

Table 2.3 presents identical analyses for women. Model 1 shows the relationship between first marriage and race and education, controlling only for age. As was the case for men, black and less educated women are significantly disadvantaged in terms of entry into first marriage. Compared with white women, black women have a 3.6 percentage point lower probability of first marriage in any given year in the baseline model. Similarly, being a high school graduate or a college graduate (relative to someone with less than a high school education) is a significant advantage, associated with a 1.9 and 4.5 percentage point higher probability of first marriage in any given year, respectively. Model 2 introduces adjustments for income, public benefits receipt, employment status, and school enrollment. Including these covariates reduces the black-white gap by approximately 19% (judged by the change in the AME of black between Models 1 and 2). Further, these measures of labor market performance appear to explain much more of the educational divide in first marriage for women than for men as including them renders the relationship between marriage and education insignificant.

Compared to men, there is less evidence among women for hypothesis 2a, that wealth explains gaps in first marriage by race or education. While controls for labor market performance reduce the black-white marital divide by about 19%, adjusting for wealth narrows the gap by only an additional 7%. Further, wealth plays little role in explaining the educational divide in first marriage as labor market performance seems to completely explain that disparity.

As was the case for men, taking account of social and demographic characteristics in addition to economic characteristics does little to explain the racial or educational divides in marriage for women. The relationships between being black and marriage and between education and marriage are substantively similar in Model 2, which includes economic controls, and in Model 3, which also includes social and demographic controls. Further, the inclusion of these characteristics does not change the extent to which wealth ownership explains race and education gaps in marriage. The reduction in the relationship between being black and marriage with the inclusion of assets is similar in models that only adjust for economic factors (comparing Model 2 and Model 4) and models that also adjust for social and demographic characteristics (comparing Model 3 and Model 5).

These results provide strong support for hypothesis 2a for men, showing that wealth explains a portion of the race and educational divides in first marriage. However, there is quite limited support for hypothesis 2a with regards to women.

Hypothesis 2b predicted that the strength of the relationship between wealth and first marriage would not vary by race or education; that there would be no differences in how wealth is valued for marriage across groups. I test for differences by race and education in the relationship between wealth and first marriage by including interaction terms between race and wealth and between education and wealth in the models of first marriage. I find that the interaction between measures of wealth ownership with a variable for being black is statistically insignificant; that is I do

not find any evidence to suggest that the importance of wealth varies by race either for men or for women results not presented in tables).⁸

Interacting wealth ownership with the education variables is a more complicated exercise. Ideally, interactions would be tested between wealth ownership and both high school and college completion. However, models estimated with the full set of these variables show substantial multivariate collinearity between the dichotomous indicators of college and high school completion, wealth ownership, and the interaction of those variables. There are similar problems when the data are consolidated to examine the interaction between high school completion and wealth ownership. Limiting the model to just include interactions between college completion and wealth ownership minimizes the variance inflation factors on the wealth indicators and the interaction terms. These models test whether the relationship between wealth ownership and marriage is different for college graduates as compared with non-graduates. A Wald test of the joint significance of the interactions suggests that, as a group, there is no significant variation by education in the relationship between wealth and marriage for men or for women (results not presented in tables).⁹ These tests provide strong evidence to support hypothesis 2b. I find no evidence that the relationship between wealth and first marriage varies by race/ethnicity or education.

Robustness Check - Left-Censored Cases

In the tests of hypotheses 1, 2a, and 2b, described above, I track the NLSY-79 sample from 1985, when complete data on wealth was first collected and the youngest respondents were age 21. By doing so, I exclude respondents who marry before 1985. This left censoring may bias the sample in two possible ways. First, I do not observe any marriages between 1979 and 1985. Second, I do

⁸ Tested jointly, there is also no statistically significant interaction between race and asset ownership.

⁹ A corresponding test just limited to interactions between high school completion and asset ownership is not readily interpretable as the reference category is comprised of both those with more (college graduates) and less (high school drop-outs) education.

not observe any marriages by respondents under 21 years of age and few marriages by respondents in their early twenties. If the relationship between wealth and marriage either differed between the 1979 – 1985 and the 1986 – 2004 periods or if it differed depending on the age of the respondent at marriage, then the forgoing analyses might be biased by this left-censoring.

My ability to correct for this possible bias is somewhat constrained by survey design. The NLSY-79 collected detailed data on assets and debts beginning in 1985 and every year thereafter with the exception of 1991 and 2002. However, data on wealth prior to 1985 is not totally lacking. Prior to 1985, respondents were asked if they owned a home, a vehicle, or financial assets. However, the survey did not inquire about any other kinds of assets and did not collect any information on the value of the assets or of associated debts. Further, these questions were only asked in the years 1979, 1980, 1981, and 1982. In 1983 and 1984, the NLSY asked about home ownership, but not about vehicle ownership or financial assets. Additionally, these questions were only asked of respondents who (a) had a child, (b) were enrolled in college, (c) were married, (d) were living outside of the parental home, or (e) were over the age of 18.

Though the data on wealth is quite limited for the years before 1985, it is sufficient to conduct a basic analysis of the robustness of the main tests of hypotheses 1, 2a, and 2b to the inclusion of the left-censored cases. For this analysis, I estimate models of the relationship between wealth and first marriage for three different sub-samples. The first sub-sample includes respondents over the age of 18 observed between 1979 and 1983, the period prior to the years covered by the main analyses. The second sub-sample, shown for comparability, includes the over-18 sample observed from 1985 – 2004. This is the same time period that I examine in the main analyses, but these models only examine home, vehicle, and financial asset ownership. The third sub-sample includes respondents observed in the entire study period, 1979 – 2004. Because data on vehicle and financial asset ownership was not collected in 1983 or 1984, I set values for those years equal to the

1982 values. Additionally, even though additional measures of asset ownership were collected in the years from 1985 – 2004, to maintain comparability, I only consider home, vehicle, and financial asset ownership. For each sub-sample, I estimate a version of the models presented in Tables 2.2 and 2.3, first showing just the age-adjusted relationship between marriage and race and education, then introducing controls for labor market performance, and then measures of home, vehicle, and financial asset ownership.¹⁰

Table 2.4 presents the average marginal effects of race, education, and wealth ownership on first marriage. Overall, either limiting the analysis sample to the years 1979 – 1983 or taking the full panel from 1979 - 2004, the results are substantively similar to the main results presented in Tables 2 and 3.

In confirmation of hypothesis 1, I find that asset ownership is predictive of men's first marriage after controlling for labor force characteristics, though there is some variety in which assets in particular matter for marriage. The results presented in Table 2.4 for women are also consistent with those presented in Table 2.3. Across sub-samples, vehicle ownership is significantly related to first marriage.

In confirmation of hypothesis 2a, I find that introducing wealth explains a portion of the racial divide (between 13% and 36%) in men's marriage, and a larger portion than is explained by other economic attributes (which explain only between 4% and 27%). In the 1985-2004 and 1979 – 2004 subsamples, which include a greater range of ages, I find that adjusting for wealth also diminishes the education divide in men's marriage.

There is also evidence in each sub-sample of a black-white marital divide for women, though, as before, wealth accounts for less of this divide (between 4% and 13%) and for less of the

¹⁰ I tested, but do not present, the robustness of these results to additional controls for family background, religion, and geographic location. As in the models presented in Tables 3 and 4, including these covariates does not substantively change the results.

Table 2.4. Comparison of Relationship of Wealth and Transition to First Marriage across Samples, Average Marginal Effects from Discrete Time Logistic Regression (NLSY-79)

	Men (1980 – 1983)			Men (1986 – 2004)			Men (1980 – 2004)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Black	-0.057 ***	-0.054 ***	-0.047 ***	-0.030 ***	-0.022 ***	-0.014 ***	-0.038 ***	-0.032 ***	-0.025 ***
High School College	-0.010	-0.012	-0.015	0.023 ***	0.016 **	0.007	0.015 ***	0.009 *	0.003
	-0.027 *	-0.025	-0.026	0.049 ***	0.035 ***	0.021 **	0.046 ***	0.026 ***	0.017 ***
Economic Controls	--	Y	Y	--	Y	Y	--	Y	Y
Wealth									
Own Home	--	--	0.058 *	--	--	0.004	--	--	0.010 *
Own Vehicle	--	--	0.036 ***	--	--	0.029 ***	--	--	0.030 ***
Own Financial Assets	--	--	-0.009	--	--	0.016 ***	--	--	0.008 *
Person-Years	8103	8103	8103	21529	21529	21529	33158	33158	33158

	Women (1980 – 1983)			Women (1986 – 2004)			Women (1980 – 2004)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Black	-0.073 ***	-0.068 ***	-0.065 ***	-0.039 ***	-0.030 ***	-0.026 ***	-0.055 ***	-0.046 ***	-0.041 ***
High School College	0.008	0.001	-0.001	0.021 *	0.001	-0.003	0.019 **	0.004	0.000
	0.036	0.027	0.024	0.041 ***	0.011	0.006	0.044 ***	0.015	0.009
Economic Controls	--	Y	Y	--	Y	Y	--	Y	Y
Wealth									
Own Home	--	--	0.007	--	--	-0.005	--	--	0.002
Own Vehicle	--	--	0.020 *	--	--	0.014 ***	--	--	0.017 ***
Own Financial Assets	--	--	-0.002	--	--	0.008	--	--	0.006
Person-Years	7259	7259	7259	17425	17425	17425	27127	27127	27127

* p<0.05, ** p<0.01, *** p<0.001

divide than economic characteristics such as income and employment (which account for between 7% and 23%). Additionally, economic controls explain most of the educational divide in women's first marriage that is apparent in the two later (and older) sub-samples.

I also repeat my tests of hypothesis 2b, that the relationship between wealth and first marriage does not vary by race or education (not reported in tables). There is no evidence of an interaction between education and wealth ownership in any of the samples for either men or women. However, there is some evidence of an interaction between race and wealth once these left censored cases are included. There is a positive interaction between black and homeownership for women observed between 1979 and 1983 and a positive interaction between black and ownership of financial assets for men observed between 1979 and 2004. However, all of the other interaction terms are insignificant. In sum, with the exception of some evidence that contradicts hypothesis 2b, these tests show little reason to think that the main results of this analysis are biased by the left-censoring of early marriages.

Why Wealth Matters for First Marriage

The cultural interpretation of the role of wealth in marriage focuses on its symbolic value rather than its use value or signaling value. If this argument is correct, we would expect to find that simple ownership of wealth is more predictive of first marriage than measures of the value of wealth, as postulated in hypotheses 3a and 3b. Table 5 presents the results of this comparative analysis, separately for men and women.

Models 1a (for men) and 1b (for women) of Table 2.5 replicate Model 4 of Table 2.2 and Model 4 of Table 3, showing the relationship between dichotomous measures of wealth ownership and marriage, net of controls for economic characteristics. As in prior models, owning a vehicle and owning financial assets is positively related to marriage for men and owning a vehicle and owning

other assets is positively related to first marriage for women. Models 2a and 2b substitute measures of the market value of vehicles, home, financial assets, and other assets (in logged hundreds of 2006 CPI-adjusted dollars) in place of the dichotomous indicators of ownership. Individually, the value of men's vehicles and women's vehicles and other assets is significantly related to marriage. Moreover, including these measures of asset value serves to attenuate the relationship between being black and first marriage and education and first marriage to the same extent as the dichotomous indicators of wealth ownership. For instance, in Models 1a and 1b, which include the dichotomous indicators, the average marginal effect of being black on marriage in any given year is -0.013 for men and to -0.031 for women, identical to the -0.013 for men and -0.031 for women reported in Models 2a and 2b.

Models 3a and 3b employ a continuous measure of the natural log of net-worth in place of the other measures of wealth. Net-worth is significantly and positively related to marriage for both men and women. However, comparing the average marginal effect of being black on first marriage in any given year for men in Model 3a (-0.019) with those shown in Model 1a and Model 2a (-0.013 in both cases), it is apparent that accounting for net-worth does not as effectively close the black-white gap in men's first marriage.

Finally, I estimated models that include the measure of net-worth introduced above along with the four dichotomous measures of wealth ownership. The coefficients on the dichotomous measures are similar to those displayed in Model 1a and Model 1b of Table 2.3. The average marginal effect on men's car ownership is 0.029 and is 0.011 on financial assets, with significance levels unchanged. For women, the average marginal effect of car ownership of 0.012 is similar to that shown in Model 1b as is that average marginal effect of 0.017 on the ownership of other assets. For both men and women, net worth is not significantly related to first marriage when the measure

Table 2.5. Comparison of Measures of Wealth as Predictors of the Transition to First Marriage, Average Marginal Effects from Discrete Time Logistic Regression (NLSY-79)

Predictor	Men			Women		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Black	-0.013 **	-0.013 ***	-0.019 ***	-0.031 ***	-0.031 ***	-0.033 ***
High School College	0.005 0.017 *	0.006 0.018 *	0.011 * 0.027 **	-0.010 -0.006	-0.010 -0.007	-0.007 -0.002
Ownership of Wealth						
Own Home	0.012	--	--	-0.003	--	--
Own Vehicle	0.028 ***	--	--	0.013 *	--	--
Own Financial Assets	0.010 *	--	--	0.005	--	--
Own Other Assets	0.005	--	--	0.018 ***	--	--
Value of Wealth (ln \$ hundred)						
Market Value of Home	--	0.001	--	--	-0.000	--
Market Value of Vehicle	--	0.005 ***	--	--	0.002 **	--
Market Value of Financial Assets	--	0.001	--	--	0.002	--
Market Value of Other Assets	--	0.001	--	--	0.003 ***	--
Net Worth (ln \$ hundred)	--	--	0.002 **	--	--	0.002 **
Economic Controls	Y	Y	Y	Y	Y	Y
Person-Years	17050	17050	17050	13549	13549	13549

* p<0.05, ** p<0.01, *** p<0.001

is included along side the dichotomous indicators of asset ownership. In short, it appears that net of the value of men and women's total portfolio of real and financial assets, the ownership of these key assets positively affects marriage entry.

I find limited evidence to support hypotheses 3a and 3b. For men, the simple ownership of each of two kinds of assets is significantly related to marriage in any given year while just the value of vehicles is related to marriage. Yet, including the measures of the market value of each kind of assets serves to attenuate as much of the race and educational divides in marriage as the dichotomous measures. I also find that net-worth is significantly related to marriage for men, but that net-worth does not account for as much of the race and educational divides in marriage as the other two measures. For women, I find that both the dichotomous measures and the value measures of vehicle ownership and ownership of other assets are significantly related to marriage in any given year and these measures explain similar portions of the black-white gap in marriage. I also find that, as for men, net-worth is a significant predictor of first marriage. The strongest evidence for hypotheses 3a and 3b comes from the models that include both net-worth and the dichotomous measures. These seem to suggest that ownership, net of value, matters for marriage in important ways.

Robustness Checks

An additional issue of some importance is the role that vehicle ownership plays in first marriage. The results presented in Tables 2.2 and 2.3 suggest that just owning a vehicle raises the probability of first marriage in any given year by 2.6 percentage points for men and 1.3 percentage points for women relative to men and women who do not own vehicles. However, there are still at least two possible reasons that vehicle ownership might raise the risk of first marriage. First, vehicle ownership may serve as a symbolic marker. Second, vehicle ownership may allow for access to

larger marriage markets. To test the second possibility, I interacted vehicle ownership with residence in an urban area (an SMSA). If vehicle ownership primarily functioned to provide available transportation and allow access to a larger pool of potential partners, then vehicle ownership should matter more in non-urban places – both because potential partners might be less concentrated and alternative transportation might be less available. However, I do not find evidence of any such interaction (results not presented in tables).

Higher education may also have a complicated relationship with wealth and marriage. While education imparts a significant advantage in first marriage entry to men and women, it might be the case that in gaining a college education, men and women have taken on substantial debt and have delayed the acquisition of assets such as homes, cars, and financial savings which could delay marriage. Several pieces of evidence argue against that process, at least as it plays out over the ages from 22 – 46. On average across those ages, respondents with a college degree have higher levels of asset ownership than their less educated peers. In addition, adjusting for asset ownership reduces the educational advantage in marriage. Part of the reason why I do not detect such a relationship between education, wealth, and first marriage may be because while no means negligible, student loan debt for the cohort of men and women represented in the NLSY-79 was significantly lower than it is for more recent cohorts. Specifically, while average student loan debt for undergraduate and graduate education combined was nearly \$28,000 in 2002, such debts averaged about \$11,000 in the 1980s and, tracing the trend line further back, could conceivably have been lower still when the NLSY-79 respondents, who were aged 14-22 in 1979, were incurring student loan debt (Baum and O'Mally, 2003).

An alternative way to consider the relationship between education, wealth, and marriage is to recognize that part of the reason that higher education may matter for marriage, aside from the realized economic benefits of income, employment, and wealth, is that education may reduce

uncertainty about future employment and earnings (Oppenheimer, Kalmijn, and Lim, 1997). If wealth matters for marriage because it provides use-value in offering long-term security, then wealth might matter less for respondents who have completed college than for less educated respondents, who lack the security of a college degree. However, the finding of no significant interactions between wealth and education show this not to be the case; wealth ownership appears to matter equally across educational attainment. Similarly, there is no evidence of variation in the relationship between net-worth and marriage by education.

2.5 DISCUSSION

This paper presents evidence that wealth plays an important role in the timing of first marriage and provides new insight into three key questions about the nature of that relationship. First, wealth has a relationship with first marriage that is robust to the inclusion of controls for potentially confounding economic and demographic characteristics. This relationship is especially strong for men for whom vehicle ownership and financial asset ownership raise the probability of first marriage in any given year by 2.6 and 1.5 percentage points respectively, as compared to men without these assets. Second, wealth explains a portion of the racial and educational differentials in the transition to first marriage, and appears to operate similarly for blacks, whites, and the more and less educated. Again, these dynamics are particularly strong for men. Finally, I find limited evidence to adjudicate between the cultural/symbolic interpretation of the importance of wealth and the use- or insurance-value interpretation. The dichotomous measures, market value measures, and net-worth measures are all significant predictors of first marriage for men and women, and the ownership measures and market value measures explain similar amounts of the race and education divides and more of those divides than net-worth.

In all, I find evidence to support the argument that wealth is an important pre-requisite of marriage, especially for men. That wealth matters more for men than women in first marriage accords with prior work that finds earnings to be a more important predictor of first marriage for men than women (Sweeney, 2002). The priority given to men's wealth may well be an additional manifestation of the male breadwinner ideal. Yet, while wealth is more important for men than women, wealth is a positive predictor of first marriage for women. In contrast to the predictions from Becker's (1981) independence hypothesis, it appears that women do not use wealth to purchase autonomy, but rather that women's wealth is an important and valued factor in marriage entry, even if less so than for men.

In addition, I provide evidence on the extent to which differential wealth holdings explain between-group differences in first marriage transitions, adding a new element to the sociological literature on racial and educational differentials in marriage. For men, wealth explains a large portion of the race and education gaps in first marriage, and a larger portion of the black-white gap and the gap in marriage between high school graduates and non-graduates than conventionally studied covariates such as income, employment, and school enrollment. While including measures of wealth in models of first marriage does not eliminate the black-white gap in marriage, it does reduce the differential by approximately 30% for men, a larger share than that explained by measures of labor market performance (20%). Further, wealth reduces the advantage in marriage enjoyed by male high school graduates over non-graduates by 56% and renders it statistically insignificant and reduces the college advantage by approximately 37%, larger than or on par with the 30% and 42% reductions in the high school and college advantages that come with adjusting for labor market factors.

Edin and Kefalas (2005) suggest that the wealth-based economic standard of marriage is widely held across groups. My findings are generally supportive of this claim. Although wealth is

unequally held, I find little evidence that it is differentially valued for marriage across population sub-groups.

I find mixed support for the contention that wealth matters for marriage primarily for its symbolic value. Both the simple ownership of wealth and the value of that wealth appear to matter for marriage for men and women. My results support the idea that having wealth is an important predictor of marriage, but I find that the utility of wealth is not confined to simply owning assets but rather extends to the value of that wealth.

This analysis is subject to several limitations. First, I compare the relative importance of simple dichotomous measures of wealth to self-reported measures of market value and net worth in predicting first marriage. However, there is likely to be substantially more error in the measurement of the value of assets than the measurement of the ownership of assets, biasing the coefficients on the value measures towards zero. This problem makes it difficult to cleanly test hypotheses 3a and 3b, leaving some uncertainty about just why wealth matters for marriage. I also am not able to assess a third possibility, that wealth serves as a signal of partner quality, rather than as a valued good in of itself.

Second, I analyze the individual predictors of first marriage, following the approach of Oppenheimer, Kalmijn, and Lim (1997), Sweeney (2002), and Xie, Raymo, Goyette, and Thornton (2003) among others. I do not include marriage market measures such as the ratio of men to women or of employed men to women (Lloyd and South, 1996). It is possible that these measures along with wealth might go further towards explaining the remaining race and educational divides in first marriage.

A third issue relates to unobserved heterogeneity. Although I have included a large number of time-varying controls in my models, it is possible that wealth ownership and marriage are jointly determined by a third omitted variable, such as economic potential, or more abstractly, a sense of

responsibility or maturity. The evidence I have provided on the relationship between wealth and first marriage does not rule out the possibility that such omitted variables might exist. However, omitted variables of this sort would have to be distributed such that they would (1) be associated with wealth and marriage, (2) explain racial and educational gaps in marriage, (3) operate similarly by race and education, and (4) operate differently for men and women to explain the entire relationship between wealth and first marriage. That said, it remains the case that unmeasured variables correlated with wealth and marriage might exist and could bias the estimates presented here.

The findings presented here should be of interest to scholars broadly concerned with issues of inequality and mobility, race, and the family. First, by tracing the connections between wealth and marriage, this research presents new evidence on how disadvantage is transferred and compounded across generations. Future work should focus on further drawing out the complicated causal relationships between wealth, marriage, and inter-generational mobility.

This research also contributes to the literature on family demography by expanding our understanding of emerging disparities in marriage. I identify wealth as a powerful, and mostly overlooked, explanatory variable in the black-white and educational marriage gaps and demonstrate that wealth accounts for as much as or more of the gaps than explained by traditionally included covariates.

Over the last twenty years, there has been a building movement in social service, policy, and academic circles to help low-income individuals and families to build wealth. These interventions have included efforts to incentivize savings by offering matched savings accounts for low-income men and women in the United States as well as the large-scale provision of tax-privileged savings accounts endowed at birth for all children born in the U.K. Scholars and practitioners have also explored a host of lower cost interventions including initiatives that have sought to facilitate saving

out of Earned Income Tax Credit refunds or attempted to leverage the psychological appeal of lotteries to increase savings with prize-linked savings products (Tufano and Schneider, 2009).

This research offers several policy implications relevant to the continuing efforts of the asset-building field. First, contrary to concerns that such programs are unlikely to make a meaningful difference in the lives of the poor because these individuals are unlikely to accumulate significant savings, I argue that even small amounts of wealth may help disadvantaged men and women to meet the economic standard of marriage. Second, at a time when widespread crises in home mortgage markets have led commentators to question the wisdom of homeownership for financially insecure people, this research highlights the importance of other kinds of wealth for well-being – most notably financial assets and vehicles. Third, this work buttresses the case that wealth matters for the poor and disadvantaged. What people own, not just what they earn or know, shapes entrance into marriage and so may perpetuate disadvantage across generations.

Appendix Table 2.1. Demographic and Economic Characteristics of Men and Women Who Marry and Who Do Not Marry in the Subsequent Period

	Men		Women	
	Marry	Do Not Marry	Marry	Do Not Marry
Black (%)	10.74	20.03	13.55	26.83
Less than High School (%)	7.18	11.04	4.50	6.76
High School Graduate (%)	59.39	63.91	57.16	61.91
College Graduate (%)	33.43	25.05	38.34	31.33
Age (mean years)	28.22	30.48	27.87	30.74
Earned Income (mean \$ thousand)	38.5	31.39	29.87	26.27
Employment Status (%)				
Not Working	3.59	7.86	3.86	11.97
Full-Time Work, Full Year	61.47	54.85	58.35	53.64
Full-Time Work, Part Year	22.95	24.76	18.45	16.55
Part-Time Work	11.99	12.53	19.34	17.83
Enrolled in School (%)	12.65	10.44	15.46	13.27
Public Benefits (%)				
Received AFDC/TANF	1.55	0.88	3.99	8.27
Received Food Stamps/SNAP	3.13	3.47	4.55	11.70
Religion (%)				
Jewish	2.65	1.60	2.12	1.73
Catholic	32.09	31.18	35.23	25.04
Mainline Protestant	29.64	25.79	26.47	25.37
Conservative Protestant	18.46	23.13	20.73	28.12
Other	11.86	11.52	9.62	13.75
Religious Services Attendance (%)				
Not at All	24.50	27.49	17.67	20.64
Several Times a Year	27.97	26.76	27.81	28.11
Once per Month	10.50	12.02	10.54	10.96
Two to Three Times per Month	12.25	9.53	10.54	9.93
Once a Week	18.43	16.16	25.46	20.90
More than Once a Week	6.35	8.04	7.97	9.46
Reside in Urban Area (%)	81.45	84.24	86.99	84.74
Reside in South (%)	28.87	29.09	30.00	34.52
Family Background (%)				
Living with Both Parents at 14	80.69	75.81	81.45	76.51
Father College Graduate	23.56	19.76	27.08	22.65
Mother College Graduate	13.65	11.91	15.27	14.10
Ever Had Child (%)	11.09	18.03	14.53	29.96
Person-Years	15,632		12,637	

Chapter 3:

Asset Ownership and Union Formation in Fragile Families

3.1 INTRODUCTION

The shifts in marriage timing and incidence described in Chapter 1 are but one element of a broader pattern of family change that has taken place in the United States over the past fifty years. With the “retreat” from marriage has come increasing non-marital cohabitation as well as non-marital fertility. The result of these demographic transformations is a substantial increase in the number of fragile families – unmarried couples with children. These families are the subject of substantial policy and public interest that is particularly focused on the factors that precipitate or inhibit union formation among these men and women.

In this Chapter, I examine the extent to which asset ownership by these low-income unmarried parents is associated with transitions to marriage following the birth of a child. This work advances existing research by focusing on this particular policy relevant group of young people using data from the contemporary period. I use data from the Fragile Families and Child Wellbeing Study to examine how car, home, and bank account ownership by men and women is related to marriage between the unmarried parents of a cohort of children born between 1998 and 2000. Using longitudinal data collected over a nine-year period, I estimate logistic regressions of the relationship between asset ownership at time 1 on marriage at time 2. I find strong evidence that men’s and women’s assets are positively related to the mothers and fathers of the focal children entering into marriage, net of controls for labor market and other characteristics.

I also attempt to further draw out why assets are related to marriage entry. I do so with three additional analyses. First, I examine whether assets matter less for marriage for those young men and women who have access to credit. If wealth matters for marriage because it is a necessary pre-requisite of socially respectable marriage, then wealth should matter for marriage across population subgroups. But, if wealth matters for marriage primarily because assets are desirable as a buffer against economic shocks to the household, then wealth might be less important for those young people who have access to the economic buffer provided by credit. Testing for such differences, I find no evidence of variation in the relationship between asset ownership and marriage along the dimension of credit access. I argue that this result constitutes additional evidence for the idea that the relationship between wealth and marriage is indicative of a special cultural meaning of marriage.

Second, I compare how assets are related to marriage and to cohabitation. I estimate a set of multinomial logistic regression models explicitly contrasting transitions to cohabitation and to marriage, with remaining uninvolvement with the focal child's other parent. I find evidence that adjusting for social, demographic, and economic characteristics, asset ownership is significantly and positively associated with marriage but is not linked to cohabitation. I argue that this result supports the interpretation of Cherlin (2005), Edin and Kefalas (2005), and others that marriage has taken on a unique value that is partially expressed in a set of high economic standards for what constitutes respectable marriage, as distinct from non-marital co-residence.

Finally, I also explore whether asset ownership may be related to marriage for the information it may convey about partner quality. I suggest that if assets primarily matter for marriage for this signaling ability, then any relationship between asset ownership and marriage should attenuate once adjustments are made for those characteristics, such as cognitive ability,

impulsivity, and stability of employment, that might more directly capture partner quality. I find little evidence of that.

3.2 BACKGROUND

Over the past several decades, marriage in America has undergone profound changes. Men and women are marrying later and less (Cherlin, 2010). For instance, women's median age at first marriage rose from 20.3 in 1960 to 26.5 in 2011 and the share of adults over the age of 18 who were unmarried rose over that same time period from 28% to 49% (Taylor, Parker, Cohn, et al, 2011). These shifts have been most pronounced for the more disadvantaged, with widening gaps in the family formation process by race and emerging gaps by education (Stevenson and Wolfers, 2007).

However, this retreat from marriage is particularly notable because it has gone hand in hand with a shift in fertility patterns. Childbearing has, for many Americans, become decoupled from marriage (Bumpass, 1990; Cherlin, 2010; Gibson-Davis, 2011). In 1980, 18% of births occurred to unmarried parents. That share rose to 28% by 1990, 33% by 2000 and stood at 41% in 2009 (Martin et al, 2009). This shift is not simply the product of fewer births among married couples shifting the denominator. Rather, the increase in non-marital births since 1975 appears to be driven by both increases in the share of women who are not married and increases in the unmarried birth rate (Smith, Morgan, and Koropecky-Cox, 1996).

Notably, these births have not occurred only to single mothers but also to unmarried partners (Edin and Tach, 2012; Cherlin, 2010). Recent data from the National Survey of Family Growth suggests that nearly 60% of non-marital births are to women living with unmarried partners (Lichter, 2012). This relatively high rate of unmarried partnership at birth mirrors the well-known shift towards non-marital cohabitation in the life course (Smock, 2000). For example, the share of adults age 30-44 who were cohabiting rose from 3% in 1995 to 7% in 2009 (Taylor et al, 2011) and

approximately half of all women aged 15-44 in 2002 had cohabited at some point in their lives (Goodwin, Mosher, and Chandra, 2010).

One result of these demographic changes has been an increase in the number of what have been termed “fragile families.” These families, composed of unmarried parents and their children, are the object of considerable policy and academic interest (McLanahan, Donahue, and Haskins, 2005) because evidence suggests that family structure has important effects on child wellbeing (see reviews by Chapple, 2009; Ribar, 2004) and that these effects can redound across generations to perpetuate inequality and limit mobility (McLanahan and Percheski, 2008). Consequently, scholars and policy makers have sought in particular to understand if, when, and why these unmarried parents enter into co-residential unions, particularly into marriage.

Transitions to Marriage and Cohabitation

The theoretical and empirical literature suggests that there are important differences in the processes of entry into cohabitation and marriage. A large body of empirical work finds strong and consistent evidence that education, employment, and earnings are important factors in marriage entry (see reviews by Ellwood and Jencks, 2004; Burstein, 2007). In particular, men with more established careers as measured by engagement in full-time, full-year work have a higher risk of marriage than their less well-established peers (Oppenheimer, Kalmijn, and Lim, 1997) as do men who are employed and have higher earnings (Sweeney, 2002; Testa, Astone, Krogh, and Neckerman, 1989; Bennett, Bloom, and Craig, 1989). While there is also evidence that these same labor market characteristics are positively associated with marriage for women (e.g. Sweeney, 2002), this literature is more mixed and some studies (reviewed in Ellwood and Jencks, 2004a) find evidence more in line with Becker’s (1990) contention that women’s economic resources will be negatively related to marriage.

In addition to employment and earnings, education is also positively associated with marriage for men and, increasingly, for women as well (Goldschneider and Waite, 1986; Goldstein and Kenney, 2001), with the positive effects of college attendance concentrated among men and women from the least advantaged backgrounds (Musick, Brand, and Davis, 2012). A large body of evidence also suggests that women are more likely to marry when living in places with a favorable ratio of employed unmarried men to (Wilson, 1987; Lichter, LeClere, and McLaughlin, 1991; South and Lloyd, 1992). In sum, accumulating human capital and doing well in the labor market seems to make marriage more likely for men and for women, though the effects may be larger for men.

In contrast, these markers of labor market success appear to be far less important for transitions to cohabitation (though see Raley, 1996). While earnings is an important positive determinant of entry into marriage, the effect of recent earnings on cohabitation is significantly smaller (Clarkberg, 1999) and projections of future earnings are positively related to marriage but not to cohabitation (Xie, Raymo, Goyette, and Thornton, 2003). The relationship with marriage is also much stronger than with cohabitation for other measures of labor market success, including tenure at current job, number of prior employers (Clarkberg, 1999), and recent work experience (Oppenheimer, 2003).

There is also very strong evidence that education increases the likelihood of transitions to marriage rather than cohabitation (Sassler and Goldschneider, 2004; Thornton, Axinn, and Teachman, 1995), particularly for men in their early twenties. The consensus of the studies that compare the effects of men's and women's economic attributes on union formation (Xie et al, 2003; Clarkberg, 1999) seems to be that men's employment and earnings matter more, though this may not be the case for education (Thornton et al, 1995).

The mostly poor, unmarried, mothers in fragile families are far more likely to transition to cohabitation than to marriage as compared with non-mothers (Qian, Lichter, and Mellott, 2005;

Lichter and Graefe, 2001). But, just as in the broader population, the supply of “marriageable men” is positively linked to marriage (Harknett and McLanahan, 2004; Harknett, 2008), the generosity and availability of welfare (TANF and Food Stamps) predicts marriage (Knab et al, 2009), and individual income and employment is associated with marriage (Gibson-Davis, 2009) and more strongly associated with marriage than with cohabitation (Carlson, McLanahan, and England, 2004).

The Meaning of Marriage

This disjuncture in the relationship between labor market success and marriage versus cohabitation can be read as supportive of an account of American marriage recently put forward in the literature by Cherlin (2004, 2005a, 2005b). In this work, Cherlin (2005a, 2005b) suggests that while marriage is now “optional,” in that other socially acceptable forum exist for childbearing, co-residence, and sexual intimacy, marriage has not been devalued, but has rather been elevated. Cherlin (2004) argues that marriage, “has evolved from a marker of conformity to a marker of prestige” and that it now is the culminating event that occurs after “attaining steady employment or starting a career...[and] putting away some savings” (p. 855). In this way, Cherlin (2004) argues that marriage is now the “capstone” rather than the starting point to early adulthood.

But this cultural explanation is also bound up with economic realities. The high regard in which marriage is held means that not just anyone can marry: the pre-requisite of respectable marriage is economic success or at least stability (Smock, 2004). In this way, marriage entry is constrained not by a lack of interest in the institution, but by a shift towards seeing marriage as an institution of the affluent in the context of limited economic opportunity for many (Cherlin 2005a; Edin and Kefalas, 2005).

The implication of this research is that economic resources matter for marriage not simply because marriage is a co-residential union with shared economic responsibilities and risks, but

because matrimony has a unique cultural value that is epitomized by a high economic threshold for respectable marriage. This argument is buttressed by the claim that while also a co-residential union, cohabitation does not come with the same standards of attained affluence that marriage seems to have become imbued with (Cherlin, 2005b) and by the claim that assets matter for marriage equally across social groups, even for those, by dint of stable employment or educational attainment, who are relatively protected from economic risks (Edin and Reed, 2005).

This affluence is defined, as suggested by prior work, by employment and earnings. But, the most recent literature also suggests that stocks of economic resources matter, in addition to flows. The normative standard of economic success necessary for respectable marriage includes having some savings, owning a car, and even owning a home.

Wealth and Union Formation

The evidence for the importance of wealth for marriage is most comprehensively presented in a series of ethnographic and qualitative studies focused on poor and working class men and women living in cities across the United States. This work reveals that these young people value marriage a great deal and see it as a “cultural ideal” (Edin, Kefalas, and Reed, 2004: 1008). However, to these disadvantaged young people, the barriers to marriage appear quite formidable. As Edin, England, and Linnenberg (2003) explain, “couples firmly believe that it is not respectable to marry without meeting the economic bar” (p. 13), and Gibson-Davis, Edin, and McLanahan (2005) suggest that their respondents felt that “to marry without achieving an adequate standard of living first was shameful” (p. 1308). But, this economic standard is more than simply holding a job or being able to afford an apartment. Rather, these young people aspire to a “middle-class” standard of affluence as the proper precedent to marriage (Edin and Reed, 2005).

This standard includes having some financial savings, owning a car, and even owning a home (Gibson-Davis, Edin, and McLanahan, 2005; Edin, Kefalas, and Reed, 2004). The desire to hold these assets before marriage is not limited to the most disadvantaged. In interviews with working-class young people, Smock, Manning, and Porter (2005) find evidence of a similar set of asset-based pre-requisites to marriage, with nearly three-quarters of their sample identifying economic concerns as a key part of the standard of marriagability.

While Cherlin, Edin, and others argue that this relationship between wealth and marriage is indicative of the special cultural meaning of marriage, other explanations are certainly possible. In particular, wealth may be valued for marriage for the insurance value it provides to a new household. By this logic, any relationship between wealth and marriage is not indicative of the symbolic value of marriage and associated hurdles to entry, but rather of the desire to have a buffer against economic shocks to a new household. Wealth might also play a useful insurance function for women in the event of divorce, helping a newly single individual to avoid the downward mobility that can accompany union dissolution.

Another alternative to the symbolic view of the value of wealth for marriage is that current asset ownership may serve as a signal of partner quality, of the ability of potential spouse to accumulate funds and be a responsible steward of resources.

Some evidence from the qualitative literature suggests that this alternative explanation may not be correct. There is a real contrast apparent in the literature in the role of assets in marriage and in cohabitation. Though both are co-residential committed relationships, in line with the literature discussed above, the young respondents in these qualitative studies do not see a need for assets to be in place in order to cohabit – only to marry (Gibson-Davis, Edin, and McLanahan, 2005). Kefalas et al (2011) describe similar differing orientations towards cohabitation and marriage among the young people in their qualitative study with national scope, discussing a young woman who is co-resident

with the father of her child, but is unwilling to marry because she feels they have not yet “met the economic bar for marriage” (p. 865). This contrast in the role of assets for marriage and for cohabitation contains some of the richest evidence for the contention that marriage has a special symbolic value (Cherlin, 2005; Edin and Reed, 2005).

Interestingly, there is also a notable difference between the importance of assets for marriage against the seeming lack of emphasis on having assets prior to childbearing. While the young people studied by Edin and Kefalas (2005) have had children while in a tenuous economic position, they do not see their low levels of economic standing as sufficient for marriage.

Several recent studies have sought to build on this qualitative and ethnographic evidence by using large-scale survey data to examine how the ownership of financial assets is connected to entry into marriage. There is some evidence that financial assets are positively linked with entry into first marriage (Mamun, 2005; Schneider, 2011) and that car ownership and car value may also be associated with transitioning to marriage (Schneider, 2011; Dew and Price, 2011). There is somewhat weaker evidence that homeownership may precipitate marriage (Mamun, 2005), perhaps because it is relatively rare among the young.

Contrasting entry into marriage with entry into cohabitation, Dew and Price (2011) find some evidence that car value is associated with marriage but not cohabitation and Mamun (2005) reports a positive relationship between financial assets and marriage but not between such assets and entering into cohabitation. Among cohabiters, Dew and Price (2011) find weak evidence of a link between women’s savings and transitions to marriage and Mamun (2005) finds somewhat stronger evidence of a positive association between financial assets and transitions to marriage.

Unanswered Questions

However, these quantitative and demographic studies are limited in three key respects. First, the qualitative studies that inspire this work are almost exclusively focused on how the unmarried parents of children think about marriage, cohabitation, and wealth (the exception being Smock and Manning, 2005). However, none of the quantitative studies described above actually focuses on this group, instead generally examining transitions to marriage in the population at large. While valuable, using this broader sample comes at the cost of not honing in on the unmarried parents of children who are the sub-population of primary policy interest.

Second, while the qualitative studies described above are based on data collected in the first years of the twenty-first century, the demographic work discussed above uses data from the NLSY-79 and NSFH, studies that track marriages occurring mostly in the 1980s and early 1990s. While these quantitative studies may then reveal evidence for a relationship between wealth and marriage in earlier decades, they cannot confirm whether this relationship is evident in the contemporary period.

Third, the existing qualitative and quantitative research has not clearly articulated and shown why wealth might matter for marriage. One way to draw out an answer comes out of thinking through an alternative explanation to the cultural story presented by Cherlin and Edin. Assets may matter for marriage because they provide a degree of insurance against shocks to the household. By drawing down wealth in hard times, married couples can protect against volatility and uncertainty. By this logic then, we should expect that assets will matter most for marriage for those men and women who do not have access to other kinds of financial buffers. However, by the cultural logic, assets should matter similarly for everyone regardless of access to other kinds of resources because assets are a necessary symbol of economic arrival for all. Tests of this nature have not been conducted in the literature.

As discussed above, a second way to draw out why wealth might matter for marriage is to compare the role of assets in transitions to marriage versus cohabitation. While some prior studies have done so, they have not conducted these analyses for fragile families in the contemporary period. This type of comparison is important because Edin and Kefalas (2005) and Cherlin (2005) suggest that the relationship between wealth and marriage is indicative of the unique cultural value that young people place on matrimony. This argument gains analytical leverage by comparing the relationship between wealth and marriage, which they argue is strong and positive, with that of wealth and cohabitation, which they argue is null. This comparison enables these scholars to suggest that wealth matters for marriage not because it matters for co-residence, but rather because marriage has unique cultural value. However, we should be careful not to oversimplify the comparison between marriage and cohabitation. Beyond the possibility of differences in cultural meaning and the similarity of co-residence, cohabitation and marriage may differ in the implied longevity of the relationship: cohabitation may still be thought of as a shorter-term arrangement than marriage and so one less in need of firm economic footing. This would suggest that wealth would be positively linked to both marriage and cohabitation, but would matter more for marriage.

Finally, we can attempt to distinguish between these two explanations and the possibility that assets matter for marriage because they are a signal of partner quality. If the latter is the case, then we might expect that the relationship between assets and marriage would be accounted for by such characteristics as impulsivity and cognitive ability that more directly measure this latent construct of partner quality.

In the empirical analysis that follows I examine the nature of the relationship between personal wealth and union transitions, examining first how wealth is related to transitions to marriage among a sample of unmarried parents of children born between 1998 and 2000. I measure the ownership of cars, homes, and bank accounts and examine how each is related to marriage. I

next examine if wealth matters less for marriage among those men and women who access to alternative kind of economic resource - credit. Finally, I undertake a similar analysis of the relationship between wealth and transitions to cohabitation, here comparing how wealth matters for transitions to marriage and to cohabitation.

3.3 DATA AND METHODS:

Data

I make use of data from the Fragile Families and Child Wellbeing Study (FFCWS). The FFCWS is uniquely well suited to the inquiry described above because it was fielded in the first decade of the twenty-first century, includes a large sample of unmarried parents, and tracks multiple kinds of union transitions.

More specifically, this prospective cohort study is based on a sample of approximately 5,000 births that occurred in large cities between 1998 and 2000, with an oversample of births to unmarried parents. Both the mothers and fathers of the focal children were contacted for interviews at baseline and these adults were then contacted for re-interview after 1 year, 3 years, 5 years, and 9 years.

Union Formation

The FFCWS is valuable because it contains measures of union transitions for a group of parents that were unmarried at the birth of their child. The data collected at baseline and at each follow-up wave allows me to construct several measures of marital status across the five survey waves.

First, using mother's reports, I create a measure of transitions to first marriage to the focal child's father. Mothers who are never married to the focal child's father at time 1 (they may be

cohabiting with him or not) enter the risk set for transition to first marriage by time 2, when the outcome is assessed and mothers who have married the focal child's father are distinguished from those who have not. For example, I use mother's reports of her relationship to the focal child's father at the year 1 survey in concert with mother's reports at the year 3 follow-up to create a measure of transitions to first marriage to the focal child's father between those two waves. Mothers who are missing at time 2 are excluded as are those mothers who have ever before been married to the focal child's father (where possible, missing information at time 1 is imputed using prior reports). Mothers who are single at time 1 but transition to being married to a person other than the focal child's father at time 2 are treated as remaining single. Mothers who are married to a person other than the focal child's father at time 1 and remain so or transition to being single are treated as remaining single across both waves and mothers who are married to a person other than the focal child's father at time 1, but are married to the focal child's father at time 2 are treated as having married.

Second, I use a similar logic to create a measure of whether the mother of the focal child transitions from not being in a co-residential non-marital relationship with the father at time 1 to being in a co-residential non-marital relationship with him at time 2 and use this information to create a combined measure that distinguishes between mothers who (1) were not married to the focal child's father at time 1 (cohabiting or not) and were married to him at time 2, (2) were unmarried and not cohabiting with the focal child's father at time 1 and were cohabiting with him at time 2, and (3) were not married to the focal child's father at time 1 and were neither married to nor cohabiting with him at time 2. Mothers who report cohabiting with the focal child's father at time 1 and are still cohabiting at time 2 are omitted. Mothers who are cohabiting with the focal child's father at time 1 and are neither cohabiting nor married at time 2 are treated as not having

transitioned to cohabitation or to marriage (joining those in group (3) above), but the results are robust to omitting these mothers, as discussed below.

Asset Ownership

Prior work on the relationship between wealth and marriage has been subject to the data constraint of only having information on the asset holdings of the respondent and not of potential partners. Thus researchers can examine how a respondents' own assets are related to a respondent's own likelihood of marriage, but not how a respondent's potential spouse's assets are related to the transition. The FFCWS design mitigates (but does not eliminate) this concern because the study's focus on unmarried parents means that each respondent has a readily identifiable likely spouse for whom asset data is collected: the focal child's other parent.

I examine the relationship between my three measures of union transition and the asset holdings of mothers and fathers. The FFCWS contains data on respondents' home, vehicle, and bank account ownership as well as the value of the former two assets. However, the quality of data on assets varies somewhat by survey wave.

At baseline, respondents in eighteen of the twenty cities were asked if they owned a car. A comparable question was also asked in each of the follow-up surveys in which all respondents were queried about whether they owned a car, truck, or van. In these follow-up surveys, but not at baseline, respondents' partners' vehicles were included if those respondents reported being in a co-residential relationship.¹¹ I create a set of dichotomous measures capturing whether at each wave each male respondent reported owning a vehicle, including unmarried respondents in co-residential relationships who reported that they or their partner owned a vehicle. I create a similar set of dichotomous measures for women's vehicle ownership. Information on the estimated market value

¹¹ The question wording is such that it cannot be discerned if the asset was owned by the respondent, by the partner, or was held jointly.

of the (best working) vehicle and the associated debt was collected at each follow-up wave but not at baseline. Using this data from each follow-up wave, I create measures of the market value, debt, and net value (market value – debt) of men’s vehicles and women’s vehicles, trimming the bottom 1% and top 1% of reports and taking the natural logs of the amounts.

Some information is also available on homeownership. The baseline item asked only if respondents were living in a home that was owned or being bought by someone in the respondent’s family, not, more narrowly, if the respondent or respondent’s partner owned the home. However, clearer information is available in the subsequent waves. At each follow-up, respondents were asked if they owned their own home and then, if so, what the approximate market value of the home was and what the associated debt was.¹² I create a set of dichotomous measures capturing whether, from the 1-year follow-up forward, male respondents reported owning their own homes. I create a similar set of measures for female respondents. As above, I also create measures of the market value, debt, and net value of men’s homes and women’s homes, following similar procedures for handling outliers and transforming the data.

Finally, at each follow-up wave, but not at baseline, respondents were asked if they held a bank account. As with vehicle ownership, respondents in co-residential relationships were asked if they or their partners held such an account. Using this information, I create a set of dichotomous measures of men’s and women’s account ownership at each of the follow-up waves. However, unlike vehicle ownership, an additional item breaks out account ownership into accounts that were solely held by the respondents, jointly held by the respondent and partner, or solely held by partners. Using this information, respondents’ are coded as holding a bank account if they have their own

¹² The wave 4 survey first asked respondents if they had moved and then only asked questions about homeownership of those who answered affirmatively. Homeownership status at wave 3 is carried over for those who had not moved at wave 4.

account or have a joint account with a partner. Respondents who report that only their partners have an account are coded as not having a bank account.

Access to Credit

While the focus of the main analysis is on how the measures of wealth described above are related to union formation, in a set of supplementary analyses, I also make use of three measures of access to credit. The first measure is based on respondents' assessments of their ability to borrow \$1,000 from someone in the event that the respondent needed help during the next year. The second measure is based on respondents' assessments of whether they know someone whom they could count on to co-sign a bank loan for \$1,000 and the third for a bank loan of \$5,000. Each measure is coded as a dichotomous variable equal to one if the respondent would be able to access the form of credit. These questions have the virtue of asking about respondents' perceptions of the availability of support rather than asking about realized support. This question construction effectively decouples the question of access to credit from that of the need for credit.

Other Variables

I control for a number of other characteristics that might be expected to confound the relationship between asset ownership and union transitions. Certain demographic characteristics of respondents are likely to be related both to asset ownership and to union transitions. Of foremost importance, minority race/ethnicity status is both negatively related to asset ownership (Conley, 1999) and to marriage (Schneider, 2011). I use mother's baseline reports of race/ethnicity to construct dichotomous measures of being white non-Hispanic relative to being black non-Hispanic, being Hispanic, or being of another race/ethnicity. I also create time invariant measures of the family background of respondents, coding dichotomous measures of whether female and male

respondents resided with both parents when the respondents were aged 15. In addition, research by Keister (2003) suggests that religion may be linked to patterns of asset accumulation and other research in turn suggests a relationship between religion and union formation (Wilcox and Wolfinger, 2007). To adjust for any such confounding relationship, I introduce measures from the baseline survey of whether mothers were Protestant as compared to Catholic, another religion, or no stated religion.

The education of the parents of the focal child can also be expected to be related to both union transitions, with the more educated more likely to marry (Harknett, 2008), and to wealth, with the more educated likely to hold more assets (Bucks, Kennickell, and Moore 2006). I code education as a set of dichotomous variables, separately for mothers and fathers, in which those with less than a high school diploma are compared to those with a high school degree, those with some post secondary education, and those with a college degree or more.

Several aspects of labor market performance might also confound the relationship between asset ownership and union transitions. In the main analyses presented below, I use mothers' and fathers' reports at each wave of income earned from their all jobs in the past year, trimming the top 1% and bottom 1% of reports and taking the natural log of the reported value. As described in the results section, I also test the robustness of my results to using an unlogged measure of all earned income, to using a measure of income earned in the last year at the respondent's main job (logged and unlogged), and to not trimming outliers. I also test whether introducing a separate control for having worked in the last week alters the main results as well as whether the results are changed with the inclusion of a measure of ever being out of work over the nine years of the survey.

Mother's receipt of food stamps or TANF might also confound any relationship between assets and union transitions. There is some evidence that the eligibility rules for public assistance programs suppress asset ownership (Nam, 2008) and that regardless of the actual regulations, many

recipients perceive that the rules prohibit the ownership of assets (O'Brien, 2012). There is also evidence that suggests that welfare receipt may be negatively related to marriage (Teitler et al, 2009). I code a dichotomous variable capturing mother's receipt of either TANF or food stamps in the past year, with this measure created from mother's reports at each wave.¹³

Father's incarceration also has important consequences for union formation (Western, Loppo, and McLanahan, 2006) and can be expected to have negative effects on asset accumulation and economic attainment more generally (e.g. Western, 2002). I use a measure of whether the father of the focal child has ever been incarcerated at the time of each follow-up interview. Using an alternative, more limited, measure of whether the father was incarcerated at the time of either the mother or the father's interview leaves the results unchanged.

Analytic Strategy

The main analyses consist of three sets of multiple regression models. Each set of models is estimated on a person-wave file in which respondents are represented for all of the paired surveys in which they were eligible for one of the transitions captured by the outcome variables described above. For example, a respondent who was not married to the father of the focal child at the 1-year follow-up and remained unmarried at the 3-year follow-up but then married the father by the 5-year follow-up would appear in the data for the first pair of surveys and would also appear in the data as a transition between the 3-year and 5-year follow-ups.

I estimate how the ownership of assets (and other covariates) as measured at time 1 is related to transitions made between time 1 and time 2 as calculated from reports at time 1 and time 2. This strategy of lagging the key time varying covariates to occur one period prior to the outcome ensures that that, in the language of causal analysis, asset ownership leads to union transitions rather than

¹³ Prior work (Knab et al, 2009) has constructed measures of state-level policies for TANF and Food Stamps and used to predict marriage.

union transitions leading to asset ownership. This strategy also means that I examine transitions between baseline and 1-year, 1-year and 3-year, 3-year and 5-year, and 5-year and 9-year as a function of assets held at the earlier of each of those paired surveys, but do not use information on asset ownership as reported at the 9-year follow-up. However, because of the limited amount of data that was collected on asset ownership at baseline, I am not able to use transitions between baseline and the 1-year follow-up in the main analyses on the pooled file. I discuss the robustness of the results to alternative methods of handling this data in the results section. Finally, for the reasons discussed above, these analyses also do not seek to explain respondents' union status at baseline.

I first use logistic regression models to estimate the relationship between my key measures of asset ownership and transitions to first marriage to the focal child's father. I estimate one set of models using father's assets and a separate set of models using mother's assets to assess if men's and women's assets might matter differently for marriage. I next examine if there is variation in the relationship between asset ownership and marriage by whether men and women have access to informal credit or could count on someone to co-sign loans. I then present a set of multinomial logistic regression models in which respondents who do not form co-residential unions are compared to those who transition to marriage and those who transition to cohabitation. Finally, as discussed in the text, I conclude with an examination of the robustness of the results to alternative ways of measuring asset ownership, labor force participation and returns, other controls, and the transitions themselves.

I make use of two analysis samples. The first contains the 4,924 person-wave cases in which a respondent was at risk of first marriage to the focal child's father at time 1 (defined as never before being married to him) and either remained unmarried to him or married him at time 2. The second contains the 3,040 cases in which a respondent was at risk of either first marriage or cohabitation with the focal child's father at time 1 and either remained non-co-resident with him, was co-resident

with him, or was married to him at time 2. In all cases, these sample sizes reflect the exclusion of cases in which the focal child's parents had ever before been married and cases in which both the mother and father of the focal were not interviewed at time 1 or the mother was not interviewed at time 2. Because of missing data on the key asset and control variables for fathers, sample sizes for models of fathers' assets on union formation are reduced to 3,179 and 2,302 cases respectively while missing data on mothers' assets and controls reduces sample sizes for the analogous models of mothers' assets on union formation to 3,067 and 2,189.

3.4 RESULTS

Marriage Entry

While unmarried at birth, a significant share of the parents of the focal children in the Fragile Families Study transitioned into relationships over the first nine years of the children's lives. Between the first-year follow-up and the third-year follow-up, approximately 9% of never married parents entered into marriage. A similar share of parents, about 9% who were never married at the three-year follow-up, married by the five-year survey. Transitions to marriage were somewhat less common between the five-year and nine-year follow-up surveys with 8% of mothers and fathers marrying.

Asset Ownership

Table 3.1 describes the low levels of asset ownership among the unmarried parents present in the analysis sample. For instance, 1 year after the birth of the focal child, at wave 2 of the survey, just 61% of fathers who remained unmarried to the focal children's mothers owned a car, as compared with 83% of the population at large in 2001 (Bucks et al, 2006). Similarly, nearly 60% of fathers reported that they did not have a bank account, far in excess of the 13% of households

nationally that were “unbanked” in 2001 (Bucks et al, 2006). Finally, just 9% of fathers reported owning their own homes at the 1-year follow-up, a fraction of the 66% homeownership rate for the US population in 2001 (Bucks et al, 2006). For men, these low rates of asset-ownership remained relatively stable across the waves of the survey.

Table 3.1. Asset Ownership of Unmarried Men and Women

	Wave 2	Wave 3	Wave 4
Men’s Assets (% own)			
Car	61	61	61
Bank Account	41	41	40
Home	9	11	11
Women’s Assets (% own)			
Car	47	51	54
Bank Account	39	43	49
Home	6	8	10

The unmarried mothers in the sample reported similarly low levels of asset ownership. At the first follow-up, 47% of the unmarried mothers of the focal children owned vehicles, 39% held bank accounts, and 6% owned their own homes. However, for women, there is some indication of improving economic fortunes as the share that owned a vehicle increased across waves to 54%, the share that held a bank account rose to 49%, and the homeownership rate ticked up to 10%. While there appear then to be some modest gains for women, on the whole Table 3.1 portrays a very disadvantaged population, one in which the simple ownership of basic assets like a car and a bank account might well be distinguishing markers of economic success.

Asset Ownership and Marriage Entry: Bivariate Results

Table 3.2 presents data showing the bivariate relationship between asset ownership and transitions to marriage, separately for men and women’s assets. The figures in the first pair of columns in compare the share of men who owned a car who transitioned to marriage with the share

Table 3.2. Asset Ownership and Union Transitions

	Men's Assets at t_1				Women's Assets at t_1							
	Own Car		Own Home		Own Car		Own Home					
			Have Bank Account				Have Bank Account					
	Yes	No	Yes	No	Yes	No	Yes	No				
Wave 3	11	5	16	8	12	7	13	6	20	8	11	8
Wave 4	11	4	14	8	14	5	11	6	15	8	11	6
Wave 5	10	4	14	7	11	6	10	4	15	7	10	6

% Transitioning to Marriage between t_1 and t_2

of men who did not own a car who transitioned to marriage. Whether examining the relationship between car ownership at wave 2 and transitions between wave 2 and 3, car ownership at wave 3 and transitions between waves 3 and 4, or car ownership at wave 4 and transitions between waves 4 and 5, there is a consistent positive relationship between owning a vehicle and transitioning to marriage. In each case, approximately 10% of those who own a car transition to marriage with the focal child's mother as compared with 4% to 5% of those who do not own a car. There is evidence of a similar positive relationship between homeownership and marriage entry. Here too, across waves, approximately twice the share of men who report owning a home transition to marriage as compared to non-homeowners. The third pair of columns reveals that larger shares of men who hold bank accounts transition to first marriage with the focal child's mother by the next wave (between 11 and 4%) than men who are unbanked.

Larger shares of women who own these key assets also appear to transition to marriage with the focal child's father as compared with women who do not. While the share varies somewhat across waves, between 13% and 10% of women who own cars marry by the next wave as compared with between 6% and 4% of those who do not. Similarly, between 20% and 15% of homeowners transition to marriage against 7-8% of non-owners. While approximately 11% of women with bank accounts marry by the next survey wave, the share is smaller (between 6% and 8%) among the unbanked.

Assets Ownership and Marriage Entry: Logistic Regression Results

Table 3.3 presents the first key regression results. These models, based on pooled data from across the four follow-up waves of the FFCWS, show the relationship between asset ownership and transitions to marriage and to cohabitation. The first column of Table 3.3 (Model 1) presents estimates of the relationship between men's asset ownership at time 1 among a pool of unmarried

Table 3.3. Asset Ownership and Union Formation: Odds Ratios from Logistic Regression Models

	Transitions to Marriage			
	Model 1		Model 2	
<i>Father's Asset Ownership</i>				
Car	1.804	***		
Home	1.435	*		
Bank Account	1.582	**		
<i>Mother's Asset Ownership</i>				
Car			1.542	**
Home			1.720	**
Bank Account			1.175	
Mother lived with parents at age 15	0.957		0.962	
Father lived with parents at age 15	0.975		1.077	
<i>Mother's Religion</i>				
Protestant (ref)				
Catholic	0.812		0.812	
Other Religion	1.283		1.202	
Not Religious	0.656	+	0.645	+
<i>Father's Religion</i>				
Protestant (ref)				
Catholic	1.104		1.101	
Other Religion	0.943		0.918	
Not Religious	0.648	+	0.683	
Mother Received Public Assistance	0.687	*	0.690	*
<i>Mother's Education</i>				
Less than High School (ref)				
High School Diploma	1.091		1.098	
Some Post-secondary	1.252		1.193	
College	0.984		0.895	
<i>Father's Education</i>				
Less than High School (ref)				
High School Diploma	0.747	+	0.771	
Some Post-secondary	0.785		0.914	
College	1.296		1.413	
Father Ever Been Incarcerated	0.969		0.885	
<i>Earnings from all Jobs in Past Year (ln)</i>				
Mother's Earnings	0.968	+	0.970	
Father's Earnings	1.047		1.061	+
<i>Mother's Race</i>				
White Non-Hispanic (ref)				
Black Non-Hispanic	0.580	**	0.637	*
Hispanic	1.142		1.177	
Not White, Black, or Hispanic	0.669		0.808	
Mother's Age	1.003		0.995	
Father's Age	0.982		0.986	
Observations	3179		3067	

parents and marriage between the parents at time 2, adjusting for observable characteristics that might confound the relationship. These estimates reveal that men who own any of the key assets of a car, a home, and/or a bank account have significantly higher odds of marriage to the mother of their child than men who do not. Men who own a car have 1.8 times the odds of marriage by the next wave as compared to men who do not own a car. Home ownership raises the odds of marriage by 44% over those who do not own their homes. Holding a bank account is associated with 58% higher odds of first marriage as compared with being unbanked.

The second column (Model 2), presents results of an analogous model that substitutes women's ownership of a home, car, or bank account for men's. Here, it appears that women's car ownership is also positively associated with marriage between the focal child's parents, raising the odds by 54% relative to non-owners. Just as for men, it appears that women's homeownership also raises the odds of marriage—by 72% as compared to non-owners. However, women's bank account ownership is not significantly associated with marriage.

In sum, the two key models presented in Table 3.3 suggest that asset ownership by men and women is positively and significantly associated with marriage between unmarried. These results are confirmed using alternative measures of asset value.

The relationships of principal interest in Table 3.3 are those between assets and transitions to marriage. However, Table 3.3 also contains some information on how other characteristics of these mothers and fathers are related to marriage. The two logistic regression models presented in Table 3.3 are differentiated by whether they include men's assets or include women's assets (which results in slightly different sample sizes for the two models due to differences in missing data on men's and women's assets). The control variables in the models are the same and the relationship between controls and the outcomes is, consequently, quite similar across the two models. Focusing

then on the model that includes men's assets, we see that relatively few of the social and demographic controls are significantly associated with marriage.

The conspicuous exception is race. Couples in which the mother is an African American have just 58% the risk of marriage relative to couples in which the mother is white, non-Hispanic. In prior work, Schneider (2011; and Chapter 1 of this Dissertation) finds that adjusting for asset ownership explains a portion of the black-white differential in transitions to first marriage among a nationally representative sample of young people born in the late 1950s through early 1960s. To assess the degree to which assets might play a similar role here, I re-estimated the model without the measures of asset ownership but on the same analysis sample as used in the models presented in Table 3 and with all of the other controls. Comparing the marginal effects on mother being African American in the two models reveals that accounting for asset ownership reduces the white advantage in marriage by approximately 20% - somewhat less than estimated by Schneider (2011), but a not insubstantial reduction.

In contrast to the generally insignificant effects of social and demographic variables on union formation, Model 1 of Table 3.3 reveals several notable relationships between economic characteristics and union formation. Mother's who receive public assistance have just 69% the odds of marrying as those who do not ($p < 0.05$). Additionally, mother's log earnings are also negatively associated with marriage. While father's earnings are not significantly related to marriage relative to staying single in Model 1, the association is significant at the $p < 0.10$ level in Model 2 and, in both, the point estimate is positive, suggesting that fathers with higher earnings have a higher risk of marriage.

Asset Ownership and Marriage Entry: Variation by Access to Credit

While asset ownership is positively linked to marriage between the parents of the focal children in the years following the focal children's births, this evidence does not speak to why assets are linked to marriage. We might reasonably expect though that if these assets are valued for marriage for the insurance value they provide, insuring the new household to the dangers of economic shocks, then the benefit of assets for marriage should be particularly pronounced for those men and women who would have few other resources to turn to buffer such shocks.

One such resource, besides assets, that these men and women might turn to cope with such a shock is credit. While the Fragile Families Study does not include detailed data on access to consumer credit, the dataset does contain measures of respondents' self-assessed ability to borrow \$1,000 from family or friends, ability to find a co-signer for a loan of \$1,000, and for a loan of \$5,000. Access to these sources of credit is not uncommon, but it is by no means universal. 64% (51%) of fathers (mothers) reported that they believed they would be able to borrow \$1,000 in the event it was necessary, 69% (59%) believe they could find a co-signer for a \$1,000 loan and 51% (40%) thought they could do so for a \$5,000. These men and women are distinguished from their peers by having access to a way to cope with emergency that does not rely on their own assets.

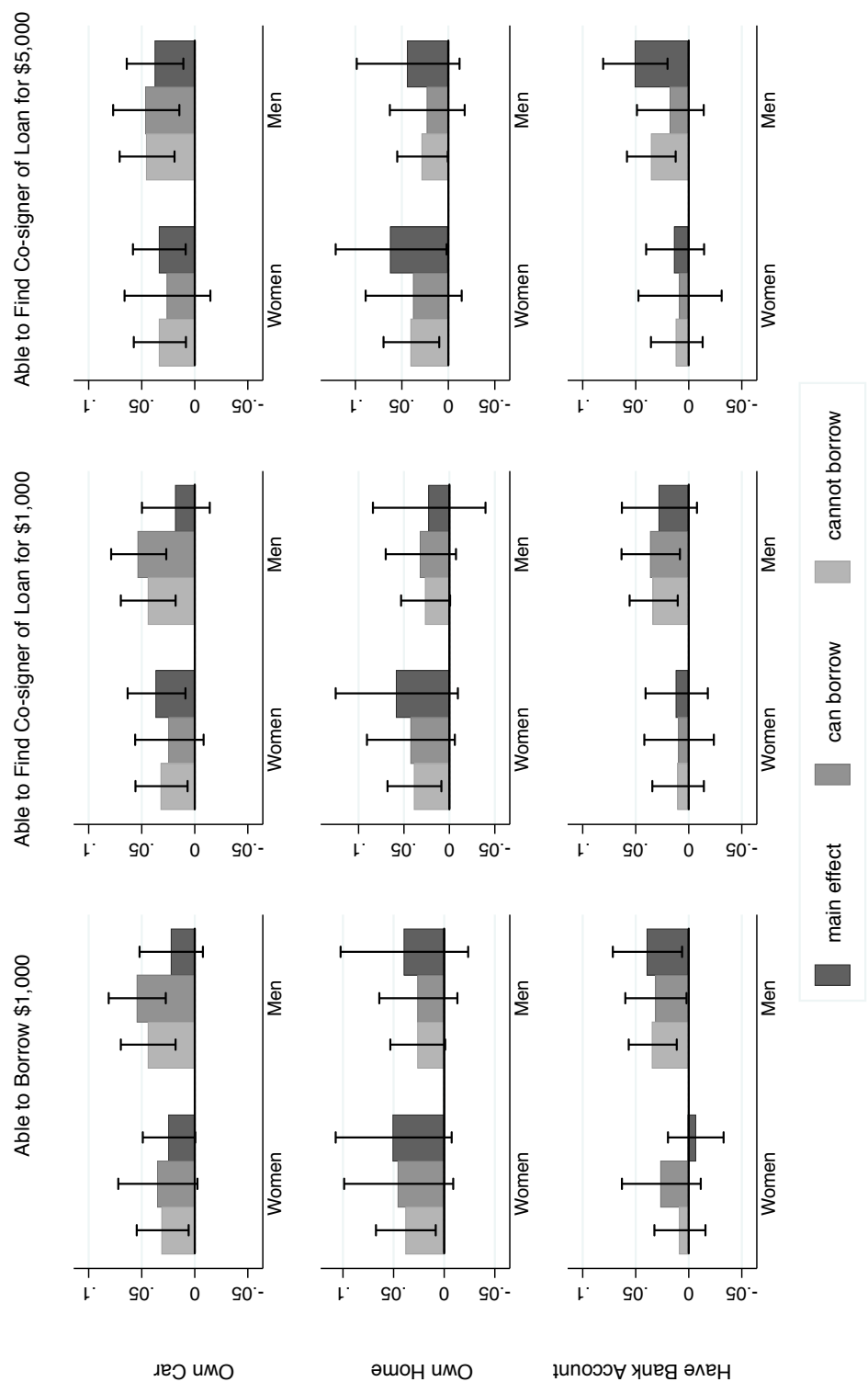
Does having access to such forms of credit then reduce the importance of assets for marriage? The results summarized in Figure 3.1 suggest that the answer is no. Figure 3.1 shows the relationship between car ownership, home ownership, bank account ownership and marriage, separately for men and women. In each panel, the darkest bar shows the relationship between possession of the asset and the predicted probability of marriage based on estimates from Model 2 of Table 3.3 when taking all other covariates at their means. The two lighter bars in each panel show if those relationships, between assets and marriage, varies depending on whether respondents could or could not access each of three kinds of credit (borrow \$1,000 in the first column, find a co-

signer for a \$1,000 loan in the second column, and find a co-signer for a loan in the final right-most column).

As summarized above, there is consistent evidence of strong positive relationships between car ownership and marriage for men and women, evidence of a positive relationship between home ownership and marriage for women, and between bank account ownership and marriage for men. But, the figure also shows no significant variation in those relationships by respondents' access to credit. While insignificant, the direction of the interaction is as expected for women's home ownership – it is more important for marriage for those who cannot borrow. But, the direction is actually the reverse of what we would predict based on an insurance value argument for car ownership.

In sum, these results reveal little evidence to support the contention that assets should primarily matter for those who cannot provide a household buffer through other means. Instead, in pointing to generally non-significant variation by credit access in the relationship between asset ownership and marriage, these results would seem more aligned with the idea that assets are part of a broadly held set of economic pre-requisites of marriage. That said, it is important to acknowledge that the lack of variation in the relationship between assets and marriage by access to credit could also be because these two financial resources are not exchangeable. While either might serve to buffer a household against a financial shock, individuals might still prefer to turn to savings over credit where possible. Indeed, Lusardi, Schneider, and Tufano (2011) suggest just this kind of hierarchy of preferences in their work on the methods that households use to cope with financial emergency.

Figure 3.1. Average Marginal Effect of Asset Ownership on Marriage by Availability of Social Support



Asset Ownership and Entry into Marriage or Cohabitation: Multinomial Logistic Regression

Results

A second means of exploring why assets may matter for marriage is to contrast the relationship between assets and marriage with the relationship between assets and cohabitation. If assets matter primarily for the security they provide to a new household then we might expect assets to be positively linked to transitions to both cohabitation and to marriage. But, if assets are part of the normative standard of respectable marriage, then we might expect assets to only be positively linked to marriage.

Table 3.4 presents results from a pair of multinomial logistic regression models that speak to these comparisons. In these models there are three categories of outcomes: not transitioning, transitioning to cohabitation, and transitioning to marriage.

Men's assets are positively and significantly related to the transition to marriage between the focal child's parents rather than not forming a union. As shown in the second column of relative risk ratios, when the father owns a car, the risk of marriage is raised by approximately 2.1 times as compared with couples in which fathers do not own a car. Father's homeownership raises the risk by 58% and account ownership by 48%. However, there is no evidence of a significant association between asset ownership and transitions to cohabitation rather than not forming a union. Point estimates are close to one or below and do not approach statistical significance.

These estimates compare the outcomes of marriage and cohabitation against the reference category of not forming a co-residential union. Adjusting the model to compare transitions to marriage against cohabitation shows that there are statistically significant differences in the relationship between men's car ownership ($p < 0.01$) and homeownership ($p < 0.05$) and getting married relative to transitioning to cohabitation. Bank account ownership also has a positive

relationship with marriage versus cohabiting, but just fails to meet a $p < 0.10$ threshold for significance (not shown in tables).

Table 3.4. Asset Ownership and Union Transitions: Relative Risk Ratios from Multinomial Logistic Regression Models

	Model 1			Model 2		
	Cohabitation/ No Transition	Marriage/No Transition		Cohabitation/ No Transition	Marriage/No Transition	
<i>Father's Asset Ownership</i>						
Car	1.003	2.057	***			
Home	0.554	1.582	*			
Bank Account	0.995	1.475	*			
<i>Mother's Asset Ownership</i>						
Car				0.616	*	1.995 ***
Home				1.372		2.054 **
Bank Account				1.093		1.036
Mother lived with parents at age 15	1.274	0.969		1.126		0.958
Father lived with parents at age 15	1.070	1.038		1.041		1.123
<i>Mother's Religion</i>						
Protestant (ref)						
Catholic	1.366	1.015		1.205		0.994
Other Religion	0.517	1.196		0.488		1.133
Not Religious	0.905	0.666		0.970		0.660
<i>Father's Religion</i>						
Protestant (ref)						
Catholic	1.364	1.228		1.483		1.250
Other Religion	1.251	0.998		1.200		1.001
Not Religious	1.368	0.699		1.407		0.724
Mother Received Public Assistance	0.938	0.558	***	0.945		0.578 ***
<i>Mother's Education</i>						
Less than High School (ref)						
High School Diploma	0.756	1.117		0.776		1.087
Some Post-secondary	0.952	1.089		0.841		1.015
College	1.061	0.843		1.359		0.733
<i>Father's Education</i>						
Less than High School (ref)						
High School Diploma	0.886	0.647	*	0.891		0.671 *
Some Post-secondary	0.851	0.706	+	0.747		0.834
College	0.696	0.986		0.845		1.046
Father Ever Been Incarcerated	1.426	+	0.809	1.488	+	0.707 *
<i>Earnings from all Jobs in Past Year (ln)</i>						

Mother's Earnings	0.967	0.935	***	0.994	0.930	***
Father's Earnings	0.990	1.053		0.980	1.066	+
<i>Mother's Race</i>						
White Non-Hispanic (ref)						
Black Non-Hispanic	1.198	0.548	**	1.069	0.651	+
Hispanic	1.029	1.206		1.362	1.325	
Not White, Black, or Hispanic	1.302	0.597		1.716	0.708	
Mother's Age	1.018	1.006		1.009	0.993	
Father's Age	1.001	0.986		1.015	0.991	
Observations	2,302			2,189		

The results of the second multinomial model, with women's assets as the key predictors, show that women's car ownership and women's homeownership (versus not owning those assets) are both associated with nearly twice the risk of marriage between the focal child's parents relative to not forming a union. As in the earlier models in Table 3.3, women's bank account ownership is not significantly associated with marriage. Finally, in the multinomial model, women's car ownership is negatively related to transitions to cohabitation, with a relative risk ratio of .616. For women, the relationship between the ownership of a car and marriage relative to cohabitation is also statistically significant at the $p < .001$ level (not shown in tables).

Assets and Marriage After Accounting for Additional Measures of Partner Quality

The analyses discussed above are designed to distinguish between the insurance value and symbolic value explanations. It is also possible though that assets matter because they serve as useful signal of partner quality. If this were the case, then accounting for less readily observable characteristics, aspects of personality or cognitive processing, might explain away the association between assets and marriage because those characteristics would more directly capture this construct of partner quality.

The FFCWS data contains several measures that in some ways capture these characteristics. Father's impulsivity is measured using the level of respondents' agreement (on a four point scale)

with the each of six statements including, “I will often say whatever comes into my head without thinking first” and “Often, I don’t spend enough time thinking over a situation before I act.” In creating the scale, responses are summed and then divided by the number of questions answered. Mother’s and father’s cognitive ability is measured using the Wechsler Adult Intelligence Scale – Revised. While potentially useful, the usability of these measures is limited in that the underlying questions were not fielded until the year-1 follow-up (for impulsivity) and the year-3 follow-up (for cognitive scores).

For that reason, I do not include these measures in the main models, but do assess the robustness of the results to their inclusion in alternative models. Re-estimating the models presented in Tables 3.3 and 3.4 with controls for impulsivity and cognitive ability reveals that the relationships between asset ownership and marriage (in both the logistic and multinomial logistic models) are not substantially affected, with the relationship between marriage and car and bank account ownership somewhat reduced and the relationship between marriage and home ownership somewhat strengthened, for men and for women (with the exception that bank account ownership is not significantly linked to marriage in any of the models for women).

Finally, I also assessed the sensitivity of the relationship between asset ownership and marriage to the inclusion of two measures of employment. The results were quite similar when adjusting for time-varying measures of whether mothers and fathers were employed in the week prior to the survey. The results were also robust to the inclusion of a measure that categorized mothers and fathers according to their employment histories over the first four waves of the survey. This variable was set equal to one for mothers and fathers who had ever been out of work over the first four waves of the survey and set equal to zero for those who were continuously employed. As would be expected, couples in which fathers were coded as ever not working had lower odds of transitioning to marriage than couples in which fathers were continually employed.

Robustness

Alternative Measures of Asset Ownership: It is important to recognize that there is some degree of ambiguity in the definition of the asset measures. Specifically, it is not possible to separate mothers who are the sole-owners of their homes or cars from those who jointly hold these assets with an unmarried partner. Understanding whether joint and sole asset ownership matter differently for marriage is important. If joint asset ownership was most important, that might suggest that more than the possession of assets, the trust and commitment that come with joint ownership is what drives the statistical relationship.

We can go some ways to untangling these relationships by focusing on bank account ownership. For this measure of asset ownership, we can separate sole-ownership of an account by mothers and fathers from joint ownership of an account. I create an alternative measure of bank account ownership that sorts respondents into three categories of account ownership: no account, an account held separately from spouse, and only joint accounts. Re-estimating Model 1 using this measure reveals that the positive relationship between men's bank account ownership and marriage evident in Table 3.3 is driven by a strong link between joint bank account ownership and marriage. While holding only a separate account is not significantly related to marriage, joint account ownership raises the odds of marriage by 2.65 times ($p < 0.001$) relative to not holding an account (not shown in Tables).¹⁴ The results are similar for women's account ownership: sole ownership of a bank account does not raise the odds that the focal child's parents will marry, but joint account ownership doubles the odds (not shown in Tables).

Prior work on household accounting systems suggests that couples who hold joint accounts may differ in important ways from those that maintain separate accounts (Pahl, 1990; Treas, 1993). In particular, couples with separate accounts may have lower levels of commitment to the

¹⁴ An alternative coding of account ownership that sorts respondents into not owning an account, holding only a separate account, or holding a joint account yields substantively similar results.

relationship (Treas, 1993). That might suggest then that joint bank account ownership primarily matters for marriage because it captures something about relationship commitment.

Specifically, is it the case then joint account ownership is simply a signal of a strong relationship with high levels of trust and that this underlying characteristic of the relationship makes both joint account ownership and marriage more likely? To account for this possibility, I re-estimated the models described above after including a control for mother's reports of relationship quality with the focal child's father as rated on a five point scale from excellent to poor. Higher relationship quality is positively associated with transitions to marriage, but does not explain the relationship between joint bank account ownership and marriage entry (not shown in Tables). Alternatively, might it be the case that a joint bank account is simply an observable manifestation of extant plans to marry such that the couples have not accumulated assets in order to marry, but simply combined them in preparation? To account for this possibility, I re-estimated the models described above after including a control for mother's report at baseline of the likelihood of marriage, coding unmarried respondents who thought the chances of marriage to the focal child's father were good or certain as 1 and all others as zero. Perceptions that marriage is likely are positively associated with marrying, but do not alter the relationship between joint bank account ownership and marriage entry.

The models discussed above have used simple dichotomous measures of asset ownership as the key explanatory variables. However, as discussed in the prior section, the Fragile Families Study includes some data on the value of these assets, specifically on the market value and associated debt of cars and homes. From these two pieces of information, we can also construct a measure of the net value of each of these two assets. This data is useful, but of somewhat limited usability. While the self-assessment of ownership is unlikely to suffer from significant misreporting, there is good reason to be cautious of giving too much credence to self-reports of the market value of assets.

Additionally, there is significantly more missing data on the measures of asset market value and associated debt than on simple ownership.

With those limitations in mind, I first re-estimate the logistic regression model of transitions to marriage using a measure of the log of home market value, the log of car market value, and the same dichotomous measure of bank account ownership as employed before. I next substitute measures of the log of debt held against cars and homes and, finally, measures of the log of net-value (market value – debt) of cars and homes. In each case, I find a positive relationship with entry into marriage: couples in which the fathers have cars and homes that have a higher market value, have a greater net value, and even have more associated debt, all have a higher odds of transitioning to marriage.

Bias from Left Censoring: The union transitions examined above occurred between the first and ninth years of the focal children's lives. Omitted from this analysis are those transitions to cohabitation and to marriage that occurred between birth and the children's one-year birthdays. Prior work has examined these transitions in detail (Carlson, McLanahan, and England, 2004) and, while there is no particular reason to suspect that the relationship between assets and union formation would vary substantially by the age of the child, it is possible that taking account of these earlier transitions could shift the estimates. However, incorporating these transitions into the analysis is not entirely straightforward because no reliable data on homeownership and no data at all on bank account ownership were collected before the one-year follow-up. We do, however, have data on car ownership across the entire panel and so can estimate the sensitivity of the estimates of car ownership to including the full set of transitions.

To do so, I used the full five waves of the Fragile Families Study to estimate how car ownership is related to transitions to marriage and to cohabitation, including the full set of control variables used in Tables 3.3 and 3.4, with the exception of father's incarceration history which is not

collected at baseline. Then, for comparison, I re-estimated the models in Tables 3 and 4 that were run on the more limited set of transitions, now using only the measure of car ownership and the controls. I find that the relationship between men's (women's) car ownership and entry into marriage remains significant and positive when using all transitions, but the coefficient is reduced by 26% (34%) against the coefficient from the model just using those transitions occurring between the one-year and nine-year follow-ups. The estimates from the multinomial models based on the full set of transitions of the relationship between car ownership and marriage relative to not forming a union remain positive and significant but are reduced by 17% for men (27% for women) against the estimates presented in Table 3.4. There is a similar non-significant relationship between car ownership and cohabitation against staying single whether using the full set of transitions or just the more limited set, for both men's and women's car ownership.

These analyses reveal that left-censoring is not a significant problem. However, the relationship between car ownership and marriage is diminished when these transitions that occurred in the year immediately following the birth of the focal child are considered. This could be taken as evidence that the asset-based normative standards of marriage are relaxed immediately following a non-marital birth.

Alternative Measures of Earnings: The estimates of the relationship between asset ownership and union transitions are adjusted for the log of men's and women's earnings from all jobs in the prior year, with respondent reports of earnings below the 1st percentile or above the 99th percentile set to missing. I tested the sensitivity of the models to using logged and non-logged versions of the measure, with and without the exclusion of outliers, and using only earnings from the respondent's main job in place of earnings from all jobs. The coefficients on the key asset variables are relatively insensitive to these different specifications of earnings, with statistical significance unvarying across the models and the direction and magnitude of the relationships unchanged. The point estimates do

shift somewhat. For instance, the variation in the value of the coefficients on father's car, home, and bank account ownership (range divided by high estimate) from the logistic regression models of marriage is 8%, 8%, and 19%. For mothers, the corresponding extent of variation is 16%, 15%, and 32%.

Coding Transitions: there is some ambiguity in how to properly define the couples that are “at risk” at time 1 for union formation at time 2, in the context of the multinomial models. In the results presented in Table 3.4, couples who are cohabiting at time 1 but who are not co-residing at time 2 are treated as having failed to transition to marriage and so are grouped with those who are not in a co-residential union at time 1 and are neither cohabiting nor married at time 2. However, because these couples are co-resident at time 1, they should perhaps be excluded from the analysis along with those who are married at time 1 in that they have already make one of the transitions of interest. Re-coding the outcome variable to exclude these couples reduces the analysis samples to 1,825 and 1,708 couples for men's and women's assets, respectively, but leaves the results largely unchanged. Men's car ownership raises the odds of transitions to marriage against not making a transition by a slightly larger margin than in the baseline models (OR = 2.278 vs. OR = 2.057), as does women's car ownership (OR = 2.458 vs. OR = 1.995). The relationship between bank account ownership and marriage does not change for men (OR = 1.450 vs. OR = 1.475) and remains insignificant for women. While the link between women's homeownership and marriage is largely unchanged in these alternative models (OR = 2.136 vs. 2.054, the relationship between men's home ownership and marriage is reduced, with the odds of marriage for male homeowners only 42% higher than non-owners and not significant in this more limited sample as compared 58% higher odds ($p < 0.05$) in Table 3.4.

3.5 DISCUSSION

This study focuses on a group of young men and women who were unmarried at the birth of their children. These young people are economically disadvantaged by many measures. Notably, relatively few of them hold the basic assets that serve as the financial ballast of most American households. Bank account ownership, car ownership, and home ownership were not commonly held by this group of parents.

In this paper, I build on an existing body of qualitative and ethnographic research to examine how asset ownership might be importantly connected with entry into marriage and to explore what that might tell us about the cultural meaning of marriage in contemporary America. I model whether these unmarried parents married between 1 year and 9 years following the birth of their child as a function of men's and women's ownership of a car, a bank account, and a home prior to marriage. This work improves upon prior demographic and quantitative work in this area by focusing on the fragile families that are the subject of the motivating ethnographic literature and are of primary policy interest and by analyzing data on this population from the contemporary period.

I find strong evidence that couples in which the man or the woman owns a car have a higher risk of marrying as compared with couples that lack these assets. It is of course possible that it is not car ownership per se that is important, but rather the access to employment and marriage markets that car ownership affords. Two aspects of the study design militate against those alternative interpretations: (1) the Fragile Families sample is constructed from a frame of births in large cities, mitigating the extent to which cars might be important for accessing jobs and (2) I study marriage between the parents of the child, mitigating the extent to which cars might enhance opportunities to meet a wider circle of potential partners.

I also find evidence of a higher risk of marriage among couples in which either the man or woman owns a home rather than not. Home value and car value (market and net) are also positively associated with entry into marriage, suggesting that more valuable assets increase the risk of marriage. The data do not allow, however, for a more fine-grained assessment of the quality of these assets and the measures of value are imprecise and missing for many respondents.

Couples in which men hold bank accounts are also at a higher risk of marriage than those in which the men are unbanked. These positive relationships are evident in simple unadjusted descriptive statistics and in adjusted estimates from a logistic regression model. Asset ownership, neither impossible nor by any means common among these young men and women, appears to be an important predictor of entry into marriage.

Cherlin and Edin, among other scholars, argue that disadvantaged young parents like those studied here fail to marry not because they do not value marriage, but rather because the social standard for respectable marriage is a level of economic achievement that is difficult to attain. These results provide support for their hypothesis in so far as I find that marriage is more likely among those unmarried parents who have attained a level of basic asset ownership than among those who have not. What this analysis does not seek to confirm are the high levels of support for marriage and aspiration to marry that is reported in the qualitative literature. These basic results also do not help us to discern why assets may matter for marriage and in particular to distinguish between a view of assets as valuable for their signaling value, their insurance value, or their ability to satisfy the normative standards of respectable marriage.

To distinguish between the insurance value and symbolic value explanations, I undertake two supplemental analyses. I first assess whether assets matter less for marriage for those men and women who have access to other economic resources that could be used to buffer the household against shocks – credit. I find no evidence of such variation. Assets appear to matter similarly for

marriage whether these young people have access to credit or not. The comparison between joint and sole ownership of bank accounts provides a limited degree of additional insight into the question of the role of insurance value. I find that joint ownership of a bank account is predictive of marriage entry but that sole ownership is not. We might expect that if assets mattered for marriage for their use or insurance value, then it would not matter if these assets were held solely or jointly, their value would be what counted. That it is jointly held bank accounts that matter for marriage seems then in better accord with the idea that assets are valuable for helping couples meet the normative expectation that economic stability and prosperity are necessary for respectable marriage, an explanation more in line with that offered by Edin and Kefalas (2005).

Second, I assess whether assets matter differently for marriage and for cohabitation. In contrast to the results for marriage, I find no evidence of a connection between asset ownership and the risk of entering into a co-residential but non-marital union. In multinomial logistic regression models, the measures of asset ownership are not significantly related to cohabitation and there is some suggestion that women's asset holdings may in fact reduce the risk of cohabitation. Comparing the relationship between asset ownership and these two outcomes more formally reveals a significant difference in the link between car and/or homeownership and marriage versus cohabitation.

Finally, to examine the signaling value explanation, I examine whether adjusting for impulsivity and cognitive ability, as well as a measure of employment stability, can account for the relationship between assets and marriage. I find little evidence of such a dynamic.

These results accord with prior research contrasting the role of education, employment, and earnings in marriage and in cohabitation. As in that work, I find evidence that measures of economic success, here captured with asset ownership, matter for marriage but not for cohabitation.

These results seem to reveal a real difference in how these two kinds of committed co-residential relationships are conceived of.

This could be because marriage is usually a longer-term commitment than cohabitation and so the economic resources of one's partner may be of greater importance. This argument is at least partially belied by the reality that the romantic relationships studied here are between unmarried partners. Through parenthood, they have already entered into some kind of long-term tie.

Alternatively, as suggested by Cherlin (2005), it could be that marriage has a unique cultural value that is quite distinct from that of cohabitation. The strong positive relationship between personal wealth and marriage, but not cohabitation, is then evidence of the high economic standard for respectable marriage and so then indicative of the symbolic value of matrimony. This view accords with the qualitative and ethnographic literature that suggests that both men's and women's assets would be related to marriage among unmarried parents, but not necessarily to cohabitation (i.e. Edin and Kefalas, 2005). It also aligns, to some degree, with a separate line of work that finds evidence of differences in the amount of housework done by men and women in cohabiting versus marital unions (South and Sptize, 1994; Gupta, 1999). This research on household labor also then suggests that marriage has a distinct social meaning, evidenced in that case by more highly gendered patterns of housework.

In sum, these results show that the ownership of basic household assets by both men and women is an important positive determinant of marriage but not of cohabitation and that the import of assets for marriage is not lower when respondents have access to other economic resources. These results, based on longitudinal data with controls for a large number of potentially confounding factors lend some support the argument that there are important economic barriers to marriage and that this "marriage bar" may be indicative of a special cultural value that is ascribed to marriage, marking it as distinct from non-marital co-residence.

It is important to note however that the forgoing analysis is based on regression analysis of observational data. The nature of this approach leaves the results open to the objection that the relationships detailed here are spurious. I have endeavored to adjust for a large number of readily observable factors such as education, earnings, employment, incarceration, and welfare receipt that might confound the relationship between asset ownership and union formation. In addition, I have confirmed that the results are relatively insensitive to alternative ways of operationalizing those possibly confounding characteristics. I have also shown that adjusting for less commonly observed characteristics, such as intelligence test scores and measures of impulsivity, which might confound the relationship does not meaningfully affect the estimates. Finally, the analysis sample is composed of adults who were unmarried at the birth of their child. While there is substantial heterogeneity within that group, we might still reasonably expect that this common characteristic would minimize the extent to which the sort of unobserved characteristics that are associated with a non-marital birth might be present and so might also bias the relationship between wealth and union formation.

That said, there is clearly something different about the respondents who hold wealth as compared to those who do not. It may be that they have received transfers from family members or it may be that they are simply better “savers.” Whether one thinks of these factors as threats to causality or as mechanisms that explain individual-level differences in wealth is largely a rhetorical and not an empirical matter.

This analysis of data from the Fragile Families Study is also limited in several other key respects. First, the analysis of entry into marriage and cohabitation is based on a pooled file of couple-waves. However, the five waves of the Fragile Families Study are inconsistently spaced with one year between the baseline and wave 2, 2 years between waves 2 and 3, 2 years between waves 3 and 4, and four years between waves 4 and 5. The consequence is that the length of time between when the covariates are measured and union status is then subsequently observed, is not regular.

This means that some men and women who are coded as not having assets at time 1, do in fact accumulate them before time 2 and that, conversely, some who are coded as having assets at time 1 have lost them some time in advance of observing union status at time 2. These discrepancies between the survey data and reality are likely more pronounced for the later, more widely spaced, waves. However, while less than ideal, we would expect that this would essentially increase measurement error and bias our estimates towards zero.

Second, the data do not allow me to easily discount an important competing hypothesis to the one advanced here. I have suggested that asset ownership is positively related to marriage because assets constitute a part of the marriage bar and serve to demonstrate the economic success that is necessary for respectable marriage. However, the evidence is also consistent with couples who have jointly held assets entering into marriage in order to formalize their joint ownership and take advantage of the legal structures of matrimony governing joint property. While my empirical evidence does not adjudicate between these explanations, it is of course important to consider the full body of work on this topic and examination of the qualitative and ethnographic literature reveals no discussion of such legalistic motivations. Further, the relatively low value of the assets in question for most of these couples would seem to make it very unlikely that couples would actively seek out legal protection through marriage.

This work is also limited in its ability to account for another means by which couples may display the markers of economic attainment that Cherlin and others hypothesize are important for respectable marriage – an expensive wedding. Such an event might well symbolize the affluence now necessary for marriage and the cost of such a wedding could either be in addition to the need to have the assets discussed in this work or could be funded out of such assets – by liquidating savings perhaps. Unfortunately, because data on weddings is lacking in the Fragile Families Study (as in most such data sets), I am not able to examine this question directly.

Finally, I have framed these analyses as, in part, adjudicating between an insurance value and a symbolic value interpretation of why assets matter for marriage. I have not engaged with, and cannot easily test, an alternative perspective: that these two explanations for why wealth may matter for marriage are not mutually exclusive but rather mutually constitutive. At the core of Cherlin's and Edin's culturally-oriented arguments about wealth and marriage is the contention that wealth matters for marriage more now than it did before and that this shift exemplifies the changed meaning of marriage. While the rationale for a changed meaning of marriage is discussed in this work, it is less clearly articulated why wealth in particular has become more important. It is possible that rising insecurity and volatility in the economy have prompted young people to want to have wealth before marrying for "insurance" reasons and that this practical purpose underlies the "cultural" shift. This is, in some ways, a functionalist account of culture – one in which economic realities affect standards for marriage which are then interpreted by young people themselves as aspects of culture.

Chapter 4:

Marriage and the Global Economic Crisis

4.1 INTRODUCTION

The timing of marriage has changed dramatically in the United States over the past fifty years. This shift is evidenced perhaps most clearly by changes in two indicators: the median age at first marriage and the share of the population that will ever marry. Since 1950, the median age at first marriage in the United States has risen markedly, to 27.4 for men and 25.6 for women, up from 22.8 and 20.3, respectively in 1950 (Cherlin, 2010; Census, 2006). At the same time, the share of men and women who will never marry has also grown from 5% in 1970 to 10% in 2000 (Fischer and Hout, 2006; Fitch and Ruggles, 2000).

But, despite these shifts towards later and less marriage, matrimony remains widely desired in the United States (Thorton and Young-DeMarco, 2001). For instance, a February 2010 poll of Americans found that 82% of men and women aged 18 – 29 considered “having a successful marriage” to be “one of the most important things” or a “very important, but not the most important, thing” in life. Just 6% replied that it was not important at all (Pew, 2010). Similarly, a 2007 poll found that just 8% of men and women aged 13-24 said that they probably or definitely did not want to get married. Of that 8%, just 4% thought marriage was an “outdated institution” (Associated Press, 2007). These public opinion results point to the continued salience of marriage in the United States.

What then explains this disconnect between behavior and preferences? Substantial scholarship suggests that the timing of marriage is affected by the ability of men and women to marshal the economic resources that are viewed as normative pre-requisites of marriage. Over the

past thirty years, scholars have documented the relationship between marriage and income, employment, and education, arguing that men who show evidence of labor market success are more likely to marry (Oppenheimer, Kalmijn, and Lim, 1997; Wilson, 1987; Sweeney, 2002), perhaps because these economic factors signal future economic stability and facilitate assortative mating (Oppenheimer, 1988). These markers of labor market performance may function similarly for women (Sweeney, 2002), but the relationship may also run in the reverse, with more economically successful women less likely to marry because of increased self-sufficiency (Becker, 1981).

The inability of young people to access these resources, because, for instance, of the declining labor force position of working-class men (Oppenheimer, 1988) may have then precipitated changes in marriage patterns. It is also possible that the economic standard for marriage may have risen. Cherlin (2004, 2009) argues that increasingly marriage is seen as a status good, a relationship reserved for those who have achieved some level of economic success. Cherlin argues that particularly in the contemporary period, economic resources have come to serve as a key symbolic qualification for marriage, marking out those with the necessary status from those who are not “ready.” Cherlin (2004) describes the change as one in which marriage

...has evolved from a marker of conformity to a marker of prestige. Marriage is a status one builds up to, often by living with a partner beforehand, by attaining steady employment or starting a career, by putting away some savings, and even by having children. Marriage's place in the life course used to come before those investments were made, but now it often comes afterward. It used to be the foundation of adult personal life; now it is sometimes the capstone. It is something to be achieved through one's own efforts rather than something to which one routinely accedes (Cherlin, 2004: 855).

If the economic standard for marriage has risen, it appears that it may have also broadened to include new kinds of economic resources. Recent literature on economic factors and marriage is distinct for looking beyond education, employment, and income to consider the role of wealth, such as homes, cars, and financial assets, in governing marriage entry.

This focus on wealth is apparent in a number of recent qualitative studies of marriage among low-income and working-class men and women. These studies have looked beyond income,

employment, and education to document the emergence of an asset-based standard of marriage. Young men and women report that before they get married, they feel they must have some money in the bank, own a car, and perhaps even a home (Edin and Kefalas, 2005; Gibson-Davis, Edin, and McLanahan, 2005; Smocking, Manning, and Porter, 2004). For instance, Edin and Kefalas (2005) report one respondent's view of marriage, that only "after everything is situated the way I want it to be situated, then I'll be ready to get married. After I have a house and a car and everything, and I'm financially stable..." (2005: 112). This sentiment is mirrored in interviews with young men and women from all across the United States including those living in cities such as Austin, Boston, Charleston, Chicago, Milwaukee, New York, Toledo, Philadelphia, and San Antonio (Smock, Manning, and Porter, 2005; Cherlin, 2004; Edin, Kefalas, and Reed, 2004; Gibson-Davis, Edin, and McLanahan, 2005; Edin and Kefalas, 2005).

These theoretical and qualitative studies offer two possible explanations for why wealth might matter for marriage. First, wealth may affect marriage for the same reasons that scholars hypothesized that education, employment, and income affected marriage: because it serves as a signal of future economic prospects or because it provides insurance value. Second, wealth may matter for marriage for very different reasons than labor market success matters for marriage: wealth could serve to satisfy a new cultural standard of marriage that imbues marriage with significant social status. This later explanation suggests the priority given to wealth would be an element of a new cultural process governing marriage entry. Cherlin (2004, 2009) has argued that this emphasis on wealth is indicative of a change in how people view the institution of marriage in the United States – as a marker of status – and of a change in the role of economic resources– to symbolic qualifications.

4.2 BACKGROUND

Prior Demographic Research and Unanswered Questions

There has, however, been relatively little quantitative research on the relationship between wealth and marriage and even less work that would distinguish between the explanations for the importance of wealth for marriage. The few papers on the topic do though seem to bear out the hypotheses and findings of this qualitative and theoretical literature. For instance, Dew and Price (2009) find that visible assets – such as a car – are positive predictors of first marriage for non-cohabiting men in the late 1980s and early 1990s. Schneider (2011) draws on data from the National Longitudinal Survey of Youth – 1979 to show that the simple ownership of assets such as a home, car, or financial assets, is positively related to first marriage for men and women and that inequalities in asset ownership by race and education explain a portion of the disparities in marriage entry along those same axes.

However, this small volume of empirical work is limited in three key respects. First, it is difficult to separate the role of wealth in marriage entry from other economic characteristics and from more difficult-to-observe “personality” characteristics that might be causally linked to both wealth and marriage. For instance, identification is made difficult because income, employment, education, and wealth are all tightly linked. While such resources can be observed and adjusted for, other characteristics, such as responsibility, maturity, or foresightedness, which might cause wealth and marriage, are more difficult to control for. This problem of endogeneity makes it difficult to offer clear inferences about the relationship between wealth and marriage.

Second, much of the prior quantitative work on wealth and marriage has focused on marriages mostly occurring in the 1980s and 1990s (Schneider, 2011; Dew and Price, 2010; Mamun, 2005). This work detects a relationship between wealth and first marriage that accords with the ethnographic and theoretical work discussed above. However, that qualitative research is based on

marriage in the first decade of the 21st century. With the exception of the preceding chapter, no quantitative demographic research examines the link between wealth and marriage in this more contemporary period.

Finally, third, the small volume of quantitative research on wealth and marriage has not been able to clearly adjudicate between the explanations for why wealth might matter for marriage. One possible way of doing so would be to examine the relationship between wealth and marriage in cross-national perspective. Cherlin (2009) suggests that the U.S. is unique in having come to imbue marriage with special social status and economic resources such as wealth with symbolic importance. Yet, that proposition has not been tested in any research that compares the United States with Europe. Previous qualitative and quantitative studies of the link between wealth and marriage have been confined to the United States only or to homeownership in the European context (Holland, 2010; Mulder, 2006; Mulder and Wagner, 2001).

The Global Economic Crisis as an Empirical Test

Beginning in December of 2007, American and European financial markets began a long and at times sharp decline that left them, by March at 2009, at just 50% of their value relative to start of that period.¹⁵ That was but one symptom of a deep and far-reaching global economic crisis. For instance, in the United States, the 10.2% unemployment rate recorded in November 2009 was the highest in the last quarter century and 7.1 million foreclosures were recorded in 2008 and 2009 alone (Goodman, 2009; Levy, 2009).

These events conspired to significantly decrease household wealth in the United States and abroad. Moreover, these wealth losses were difficult to foresee and reached across asset-classes, affecting both the stock market and housing market broadly. In this way, the economic crisis caused

¹⁵ Based on performance of Dow Jones, S&P 500, and S&P Europe 350. Data drawn from Google Finance.

a shock to household wealth, which while likely associated with individual risk preferences, financial knowledge, and wealth, was also driven by broad structural features of the economy unrelated to individual characteristics. Just as the ownership of assets may increase the likelihood of marriage, the loss of wealth as precipitated by the economic crisis may depress the likelihood of marriage. By focusing on wealth losses caused by the economic crisis, we can circumvent some of the problems of endogeneity that have constrained prior work on this topic.

A focus on the economic crisis also helps to address two other limitations of prior work on the relationship between wealth and marriage. First, the economic crisis provides an opportunity to gain insight into the relationship between wealth and marriage in the contemporary period, extending prior findings that have focused on marriage in the 1980s and 1990s. Second, the economic crisis was global, affecting households and national economies in North America, Europe, and beyond, allowing for a cross-national test of the relationship between wealth loss and marriage.

4.3 DATA AND METHODS

Data

I draw on a multi-national survey fielded in August and September of 2009. The full set of survey data contains respondents age 18-65 in 13 countries: the United States, Great Britain, Canada, France, Germany, Luxemburg, Portugal, Netherlands, Italy, Mexico, Argentina, Singapore, and Hong Kong for a total of 13,853 respondents. However, although many of the same questions were asked in each of the 13 countries, questions about demographic and economic characteristics are only fully comparable for five countries. This study then uses data on 6,485 respondents, including 2,148 in the United States, 1,001 in Great Britain, 1,132 in Canada, 1,097 in France, and 1,107 in Germany.

This data has only recently been collected and has been used in just two studies to date (Lusardi, Schneider, and Tufano, 2010; 2011). The global market-research firm TNS fielded the survey using an online questionnaire given to members of its Ncompass and Express Online omnibus panels, i.e., individuals who are recruited to the panel through a variety of online channels and who are then surveyed regularly on behalf of multiple clients. TNS then draws from this panel of respondents for each survey, with the number of people approached for a given survey determined by desired sample size and guided by a general invitation response rate of between 7.5% and 19.5%.

Because of the repeat nature of an omnibus panel, the participants can be selected through stratified sampling so as to be representative of each country's population 18–65 years of age, and results can be subsequently weighted to better reflect each nation's population. Comparing the characteristics of the American TNS respondents to those of the U.S. population based on ACS and SCF data, Lusardi, Schneider, and Tufano (2011) find close similarity in terms of income, wealth, education, employment, age, gender, race/ethnicity, marital status, household composition, and region.

However, it remains the case that the TNS sample might differ from the broader populations in more subtle, difficult to observe, ways. One potential source of bias might be introduced by fielding the survey on-line. Though studies have shown on-line surveys to reduce social desirability bias (Bronner and Kuijlen, 2007; Duffy et al 2005), this method also means that respondents are restricted to those with Internet access. While Internet access approaches 80% in the United States (Horrigan, 2010), those who remain disconnected may be more disadvantaged in ways that are not necessarily captured by the observable socio-economic characteristics. Further, variation in Internet access across countries (OECD, 2010), may lead to some problems of comparability across the countries in the data. A second source of bias may be introduced by the

design of the survey. Participants are compensated for participation with small monetary awards. This might bias the sample towards those with lower incomes and perhaps also towards those with more free time. However, TNS notes that few respondents report that their decision to participate is driven by economic factors.

Measures

I assess how wealth losses stemming from the economic crisis may have affected respondents' plans to marry. The outcome variable is drawn from responses to a question that asked respondents, "As a result of the economic crisis, are you any more or less likely to get married in the immediate future?" Respondents were given the option of selecting either "more likely," "less likely," "no difference," "not relevant," or "don't know / refuse." This question has the virtue of allowing respondents to self-select on relevancy. In the U.S. sample, 44% of respondents answered that the crisis had affected their plans to marry and 56% reported that the question was not relevant. The percentage reporting that the question was not relevant fairly closely aligns with the 57% of the U.S. population age 18-65 that was married in 2009 (Census, 2011).

My key predictor variable is constructed from a survey item that asked respondents about changes in wealth since the economic crisis. Respondents were asked in August or September of 2009, "How does your current "wealth" (financial assets you own, value of your house, other real estate, business equity etc.) compare to your wealth a year ago?" Respondents reported if it was approximately the same, had increased (0% - 10% or > 10%), or had declined (1% - 10%, 10% - 29%, 30% - 50%, or > 50%). For ease of interpretation, I collapse these response options into a four-category variable: a gain in wealth (of any magnitude), stasis in wealth, a small loss in wealth (less than 30% decline in value), or a large loss in wealth (30% decline in value or more). In some analyses, I further collapse this variable into gain in wealth, stasis in wealth, or loss in wealth.

Of some importance is that this variable captures changes in wealth. Though this data was collected at single point in time, the dependent variable and this measure of wealth both capture changes in state, in essence simulating, with cross-sectional data, a differencing approach that would normally require longitudinal data.

Further, this measure of change in wealth has the virtue of delinking wealth losses from amount of wealth holdings in so far as large holdings are not necessary to sustain large *percentage* wealth losses in the same way that large holdings can be expected to be mechanically linked to large *value* wealth losses. To make this separation still clearer, I also include a measure of current wealth holdings derived from a question that prompted respondents to provide the combined value of their financial assets, as falling within a set of value ranges (depending on the country). In my first set of analyses, of the U.S. sample only, I use all 13 available value ranges. In my cross-national analyses, I recoded the data such that the responses were distributed into four categories: the bottom 30 percent by wealth, the 30th – 60th percentile by wealth, the 60th – 90th percentile by wealth, and the top 10 percent by wealth. I then combined these into a single variable.

Individual measures of the wealth shocks caused by the economic crisis are likely less endogenous than measures of individual wealth used in prior research. However, I adjust my models for a number of other economic characteristics in a further effort to take account of omitted variable bias in the relationship between wealth and marriage. Wealth is associated with education, income, and employment (Schneider and Tufano, 2008; McGrath and Keister, 2008) and these economic characteristics are also linked to marriage (Oppenheimer, Kalmijn and Lim, 1997; Clarkberg, 1999; Sweeney, 2002). In models that only use the U.S. sample, I include a nine-category measure of income (less than \$20,000; \$20,000 - \$29,999; \$30,000 - \$39,999; \$40,000 - \$49,999; \$50,000 - \$59,999; \$60,000 - \$74,999; \$75,000 - \$99,999, \$100,000 - \$149,999; greater than \$150,000) with the first category omitted. I also control for education using a four-category measure that

compares those with a high school degree or less to those with trade or technical training, some college education, or a college degree or more. Third, I code respondents as either employed (working full time, part time, or self-employed), out of the labor force (retired, unable to work, disabled, in school, or not working and not seeking work), or unemployed and seeking work. I include the dichotomous indicators of being out of the labor force and of being unemployed in my models.

In my analysis of the cross-national data, I attempt to adjust for the possible confounding relationship between wealth, marriage, and other economic characteristics by including cross-nationally harmonized measures of income, education, and employment. Respondents were asked to report their households' combined yearly pre-tax income with response options listed as a series of value ranges. However, both the number of response options and the value of the ranges differed across countries. For each country, I recoded the data such that the responses fell into four approximately equal-sized quartiles. I then combined the country-specific quartiles of income into a single income variable. I enter dichotomous indicators for income quartile into the regression equations, with the top quartile omitted as the reference group. I parse education into a three-category variable: high school diploma or less, technical school or some college education, and college degree or more education. I then enter education into the regression equations as a set of dichotomous indicator variables, with high school diploma or less as the reference category. Information on employment status is available for the United States, Great Britain, France, and Germany, but not for Canada. For the four countries for which this data is available, I adopt the measures of employment discussed above for the U.S. In my main models I do not include this measure of unemployment, but do test the robustness of my results to the inclusion of this measure (and so to the exclusion of Canada) and find that the results are substantively similar (not shown in tables).

I also adjust the models for several demographic characteristics. In the models limited to the U.S. sample, I control for race/ethnicity (comparing black, Hispanic, Asian, and other respondents to white), for the presence of children in the household, for co-residence with parents, for region (comparing North East, Mid-West, and West to South), and for marital status (comparing separated, divorced or widowed, and never married, to those co-residing with a partner). In both the analysis of the U.S. sample only and of the cross-national analyses, I include a measure of gender of the respondent, equal to one if the respondent is female. In both the U.S.-only and cross-national analyses, age is coded as a categorical variable separating those who are age 18-24, 25-34, 35-49, and 50-64. I enter age into the regression equations as a set of dichotomous indicator variables, with 50-64 as the reference category.

The survey also collected two pieces of information that are less commonly measured but are potentially important covariates: respondents' financial planning and respondents' risk literacy. While prior work has been able to adjust for confounds such as education, income, and employment such studies have not been able to include controls for more difficult to observe measures such as foresight and financial responsibility. These measures are particularly useful because they may constitute a more direct measure of "partner quality" than asset ownership and so adjusting for them may help to distinguish whether assets matter for marriage for signaling value about partner quality or for other, perhaps more symbolic, reasons.

I create a scale variable that combines responses to seven items gauging respondents' financial planning in the year prior to the crisis: (1) Wrote down a plan for your income and expenses for the coming year, (2) Reviewed your retirement statements and accounts, (3) Tried to figure out how much you and your family need to save for retirement, (4) Calculated the value of what you own and debts you owe, (5) Tried to determine what type and how much insurance coverage you need, (6) Considered how much your financial holdings (savings and investments)

might change depending on the performance of financial markets, and (7) Actively learned about financial matters. The scale has an alpha of 0.68. I also created a dichotomous variable equal to one if the respondent provided a correct response to each of three questions designed to gauge “risk literacy.” Respondents were asked to calculate the expected return on a lottery, calculate the expected return on an investment, and answer a question about risk and diversification.

Analytic Strategy

Much of the prior research on wealth and marriage has focused on the U.S. and I begin by examining the U.S. sample only. I first provide some descriptive analysis of the two key variables: changes in plans to marry and changes in wealth, showing the distribution of responses to each item and their bivariate association. I then estimate a logistic regression model with a dichotomous measure of being less likely to marry (vs. more likely or equally likely) as the outcome variable and changes in wealth as the key predictor. I report the results from three model specifications, contrasting the unadjusted model, a model with standard economic and demographic covariates, and a model that also includes the measures of risk literacy and financial planning.

I next estimate similar models on a pooled sample of data for the respondents in the United States, Canada, Great Britain, France, and Germany. I first estimate the model just with country fixed effects and then include the full set of controls discussed above. I also test the robustness of these results to exclusion criteria on age and marital status that are designed to restrict the sample to respondents more likely to be considering a first marriage.

Finally, prior literature suggests that wealth may matter differently for marriage intentions depending on country - that, specifically, wealth may play a more important role in the United States. To assess this proposition, I re-estimate the logistic regression models separately by country

and test for differences in the relationship between changes in wealth and marital intentions between the United States and Canada, Great Britain, France and Germany.

Of the 6,485 respondents interviewed in the United States, Canada, Great Britain, France, and Germany, 2,393 reported that the question of change in plans to marry was relevant to them. Of these respondents, I exclude the 58 who were missing information on my measures of gender, age, education, financial planning, and risk literacy, a 2.42% reduction in sample size. Of the remaining respondents, 34% were missing data on income, wealth, or changes in wealth. I include dichotomous indicators for those respondents who are missing data on any of these variables. I also assess the robustness of my results to handling missing data using multiple imputation. For this robustness check, I used the ice (Imputation through Chained Equations) routine in Stata (Royston, 2009) to impute missing data for education, income, wealth, and changes in wealth, using logistic models to impute missing data for dichotomous variables and multinomial logistic regression models to impute missing data for categorical variables. For each such regression, I included the full set of model covariates as predictors, along my dependent variable; changes in marital intentions. I create five imputations of the data and analyze it using the `mim` commands in Stata (Royston, Carlin, and White, 2009). Comparing the main models with the re-estimates using the multiply imputed data shows that there is very little change in either the size or the statistical significance of the relationships between wealth changes and changes in marital intentions. For instance, the odds ratios on wealth losses in Models 1, 2, and 3 of Tables 4.1 and 4.2 shift by between 2% and 3% when comparing the baseline estimates to the estimates from multiply imputed data (not presented in tables).

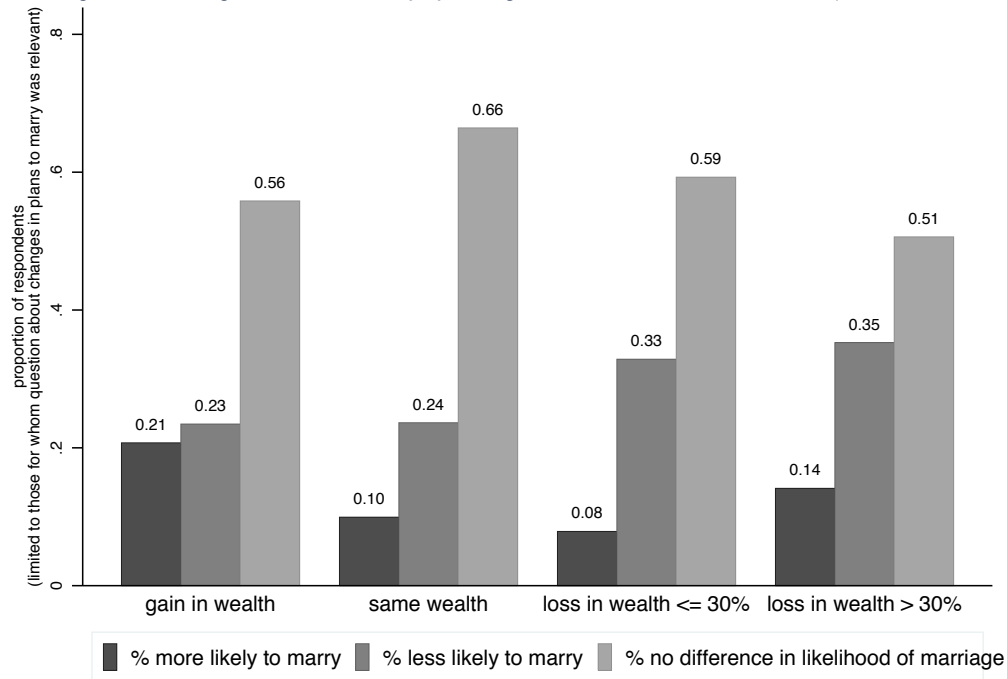
4.4 RESULTS

Changes in Wealth and Changes in Marital Plans in the United States

In the U.S., a large share of respondents (59%) reports that their likelihood of marriage is unchanged by the economic crisis. But, I also find that a significant minority of respondents (29%) reports that the economic crisis has affected their marriage plans. This impact cuts two ways. Most prominently, I find that a substantial minority of respondents report being less likely to marry as a result of the crisis. More than one-quarter of respondents (29%) in the United States report a decreased likelihood of marriage. A smaller share of respondents (12%) reports just the opposite - the economic crisis has made them more likely to marry. Respondents also report that the economic crisis precipitated changes in wealth holdings. While about a quarter of respondents reported that their wealth remained relatively unchanged, large shares of respondents reported wealth losses: 45% of individuals lost some wealth and 18% of individuals lost at least 30% of their wealth.

Figure 4.1 presents bivariate evidence of the relationship between changes in wealth and changes in plans to marry in the United States. Here, we expect that wealth losses should be associated with being less likely to marry and that wealth gains should be linked with being more likely to marry. Tracking the red bars (% less likely to marry) across the categories of change in wealth shows a steadily increasing relationship between larger losses in wealth and higher likelihood of reduced plans to marry. Among respondents who report no change in wealth, 24% report being less likely to marry – a share that rises to 33% of respondents experiencing a loss of less than 30% and to 35% of respondents experiencing a loss in wealth greater than 30%. A small but noticeable share of respondents in each category of wealth change reports being more likely to marry. Of note, this share, 21%, is highest among those reporting gains in wealth.

Figure 4.1: Changes in Plans to Marry by Changes in Wealth in the United States (TNS Global, 2009)



If the changes in wealth experienced by respondents are exogenous to individual characteristics, then the bivariate relationships reported in the prior section may be accurate measures of the relationship between wealth change and marital intentions. Table 4.1 examines if this is the case. Model 1 presents odds ratios from a logistic regression for which the outcome is equal to one if the respondent reported being less likely to marry as a result of the crisis and zero otherwise and the primary predictor is changes in wealth. Not adjusting for any other characteristics, those who have lost up to 30% of wealth have 58% higher odds and those who have lost 30% or more of wealth have 76% higher odds of being less likely to marry as a result of the economic crisis, relative to those whose wealth is unchanged.

Table 4.1. Relationship between Changes in Wealth and Being Less Likely to Marry (vs. More Likely or No Different) as a Result of the Crisis. Odds Ratios from Logistic Regression on United States Sample.

	Model 1 Unadjusted		Model 2 Adjusted		Model 3 Adjusted	
<i>Change in Wealth</i>						
No Change in wealth (reference)	--		--		--	
Increase in wealth	0.990		0.908		0.894	
Decrease in wealth < 30%	1.581	*	1.639	*	1.622	*
Decrease in wealth >= 30%	1.760	*	1.704	*	1.677	*
\$30,000 - \$39,999			1.250		1.223	
Constant	0.310	***	0.375	*	0.352	*
Observations	857		857		857	
Pseudo R ²	0.010		0.070		0.072	

* p<.05, ** p<.01, *** p<.001

Notes:

1. Model 2 includes controls for age, gender, education, income, wealth, employment status, race/ethnicity, household composition, region, and marital status.
2. Model 3 also includes controls for risk literacy and financial planning.

Model 2 shows the relationship between changes in marital intentions and changes in wealth after adjusting for income, education, employment, and demographic characteristics. As in Model 1, there is a positive relationship between having experienced losses in wealth and being less likely to marry as a result of the crisis. Moreover, the odds ratios on wealth loss shift relatively little (from 1.581 to 1.639 among those losing up to 30% of wealth and from 1.760 to 1.704 among those losing 30% or more of wealth) between Model 1 and Model 2. Finally, Model 3 adjusts for two additional characteristics that might plausibly confound the relationship between wealth and marriage but that are much less commonly measured in other data sources: financial planning and risk literacy. Yet even adjusting for these characteristics leaves the relationship between being less likely to marry and changes in wealth largely unaffected.

The models described above compare respondents who report being less likely to marry with those reporting that they would be just as likely or more likely to marry as a result of the economic crisis. We might expect, however, that changes in wealth would be differentially related to being just

as likely to marry and to being more likely to marry. To allow for this type of variation, I estimated a multi-nomial logistic regression model in which the outcome could be (1) less likely to marry, (2) more likely to marry, or (3) just as likely to marry. However, using the four-category measure of changes in wealth (gain, same, losses < 30%, losses $\geq$ 30%) produces small cell sizes among respondents who report being more likely to marry. Consequently, I substitute a measure of any wealth losses in these models for the more fine-grained measure used above. As before, respondents who experienced any loss in wealth have a higher risk of being less likely to marry while there is no significant relationship between gaining wealth and being less likely to marry (relative to the base outcome of no change in the chances of marriage). In contrast, I find that while losses are not significantly related to being more likely to marry, gains in wealth are; respondents whose wealth increased over the prior year have a much higher risk of being more likely to marry (not shown in tables).

Wealth and Marriage in Five Developed Countries

The pronounced changes in marital intentions as a result of the economic crisis are not unique to the United States. While the share of respondents (who found the question applicable) reporting that they would be less likely to marry is largest in the U.S. at 29%, 25% of respondents in the U.K. also expressed that sentiment as did 20% of those in France and Germany, and 18% of those in Canada. While just 12% of respondents in the U.S. and 9% of respondents in Canada reported being more likely to marry, the fraction was higher in the U.K., France, and Germany at 12%, 17%, and 21% respectively.

Drawing on the pooled sample of respondents in these five countries, I first estimate a logistic regression model predicting being less likely to marry as a function of changes in wealth, first with just country fixed-effects (Model 1) and then including possibly confounding individual

characteristics (Model 2 and Model 3). Table 4.2 reports the results of these models. I test whether there is relationship between a categorical measure of wealth loss and dichotomous indicator of being less likely to marry (versus no different or more likely). I find that respondents reporting a reduction in wealth of less than 30% have 48% higher odds ($p < 0.001$) of being less likely to marry, relative to respondents who report no change in their wealth. Respondents who report a reduction in wealth of more than 30% have 81% higher odds ($p < 0.001$) of being less likely to marry relative to those with no change in wealth. There is no statistically significant relationship between an increase in wealth and being less likely to marry.

Table 4.2. Relationship between Changes in Wealth and Being Less Likely to Marry (vs. More Likely or No Different) as a Result of the Crisis. Odds Ratios from Logistic Regression on Pooled Five-Country Sample with Country-Fixed Effects

	Model 1		Model 2		Model 3	
	Unadjusted		Adjusted		Adjusted	
<i>Country Fixed-Effects</i>						
United States (reference)	--		--		--	
Canada	0.580	***	0.603	***	0.632	***
Great Britain	0.859	***	0.977		1.033	
France	0.657	***	0.637	***	0.695	***
Germany	0.635	***	0.623	***	0.629	***
<i>Change in Wealth</i>						
No Change in wealth (reference)	--		--		--	
Increase in wealth	0.963		0.967		0.940	**
Decrease in wealth < 30%	1.491	***	1.562	***	1.526	***
Decrease in wealth >= 30%	1.800	***	1.773	***	1.740	***
Constant	0.313	***	0.264	***	0.210	***
Observations	2260		2260		2260	
Pseudo R ²	0.016		0.034		0.040	

* $p < .05$, ** $p < .01$, *** $p < .001$

Note:

1. Model 2 includes controls for age, gender, education, income, and wealth.
2. Model 3 also includes controls for risk literacy and financial planning.

Model 2 introduces controls for gender, age, income, education, and wealth. Of note, even after adjusting for these possibly confounding factors, the relationship between wealth and marriage intentions is little changed. Respondents who lost up to 30% of their wealth had 54% higher odds ($p < 0.001$) and those who lost 30% or more of their wealth had 78% higher odds ($p < 0.001$) of

being less likely to marry, relative to those whose wealth was unchanged. Further adjusting for risk literacy and financial planning (Model 3) also does not substantively change these results.

As noted in the earlier discussion of measures, information on labor force status is only available for respondents in the United States, Great Britain, France, and Germany. Re-estimating Model 2 for those countries only shows that the odds of delaying marriage for those with a small (large) wealth loss are 1.6 (1.7) times higher than for those with no change in wealth – estimates that are quite similar to those displayed in Table 4.2 (Model 2). Further adjusting for labor market participation in the model estimated on the four country sample does relatively little to change these odds, shifting them to 1.56 and 1.64.

The models presented thus far include all eligible respondents ages 18 – 64. However, it may be the case that wealth and marriage are differentially tied for young adults as opposed to those in middle age. Such variation would be noteworthy because shifts in the meaning of marriage may have the most important life-course consequences for young adults. There are two age-based concerns to consider in particular.

The first concern is that, given age patterns of saving, it may be that young adults were relatively little affected by the shocks to the housing and equities markets from the global economic crisis. These young adults may have had little in savings and, to the extent that they held financial assets, such wealth may have been held in less risky products such as savings accounts.

Table 4.3 provides some evidence that mitigates these concerns. I compare young adults, age 18-34, a group clustered in age around the median age of first marriage in the United States, Canada, Great Britain, France, and Germany, with the oldest respondents in the sample, those 50 - 64. It appears that while young adults are less wealthy than their older counterparts, they still hold substantial assets. For example, while about 40% of young adults held less than 1,000 (Euros, Pounds, Dollars, or Canadian Dollars depending on the country) in assets, about 35% had between

1,000 and 20,000 and 25% held more than 20,000 in wealth. Additionally, it appears that the wealth holdings of young adults were affected by the economic crisis. Twenty-four percent of young adults reported up to a 30% decline in wealth and 12% reported a decline of greater than 30%, smaller than the shares of older adults reporting such declines, 37% and 14% respectively, but still representing large shares of the young adults.

Table 4.3. Post-Crisis Wealth and Changes in Wealth in Past Year for Respondents Ages 25 – 34 and Ages 45 – 64, Percent of Respondents.

	Age 18 - 34	Age 50 - 64
<i>Post-Crisis Wealth</i>		
Zero	21	17
Less than 1,000	18	11
1,000 to 2,999	11	7
3,000 to 4,999	7	4
5,000 to 9,999	9	7
10,000 to 19,999	8	9
20,000 to 49,999	10	10
50,000 to 99,999	8	12
100,000 to 249,999	5	12
250,000 to 499,999	2	6
500,000 to 999,999	1	2
> 1 million	0	1
<i>Change in Wealth</i>		
Increase in wealth	27	14
No change in wealth	37	35
Decrease in wealth < 30%	24	37
Decrease in wealth ≥ 30%	12	14

The second age-based concern is that despite having some financial assets and despite such assets being affected by the crisis, young adults may still put less emphasis on wealth as a pre-requisite for marriage because of their earlier life-course stage, one perhaps more focused on education and career than the accumulation of financial assets. This concern admittedly runs counter to the qualitative evidence on wealth and marriage in the United States, but could certainly shape the relationship in Canada, Great Britain, France, or Germany. To test for this possibility I re-

estimate Model 3 from Table 4.2 on three subgroups: (1) respondents age 18 – 34, (2) respondents who have never been widowed, divorced, or separated, and (3) respondents who are single, never married, and are not cohabiting (with the key distinction between the groups being the presence of cohabiters). These sample exclusions allow me to hone in more precisely on young people entering first marriages. However, the latter two tests are only possible for respondents in the United States, Canada, France, and Germany as no information on marital status is available for respondents in Great Britain.

Table 4.4 presents the estimates from these models, adjusted for the set of controls for age, gender, education, income, wealth, risk literacy, and financial planning. Model 1 shows the relationship between changes in wealth and being less likely to marry for respondents age 18 – 34. I find that wealth losses increase the likelihood of being less likely to marry, raising the odds by 2.16 times ($p < 0.001$) for those losing more than 30% in wealth and by 1.76 times ($p < 0.001$) for those losing up to 30% of wealth. For young people as for all respondents, wealth losses seems to discourage plans to marry and, if anything, these effects appear larger among younger respondents than among all respondents. However, of note, young people reporting gains in wealth also have somewhat higher odds of being less likely to marry than those whose wealth stayed approximately the same ($OR = 1.195$, $p < 0.05$).

Models 2 and 3 report evidence of a similar dynamic for respondents who have never been separated, divorced, or widowed and for respondents who are single, never married, and not cohabiting. For both groups, wealth losses are linked with a higher likelihood of being less likely to marry. In Models 2 and 3, there is no evidence of positive effects of wealth gain on being less likely to marry. Because data is lacking for Canada, these models do not include controls for labor force status. As before, re-estimating the models to include controls for labor market status but then to exclude Canada, does not substantively change the results.

Table 4.4. Relationship between Changes in Wealth and Being Less Likely to Marry (vs. More Likely or No Different) as a Result of the Crisis for Three Sub-samples. Odds Ratios from Logistic Regression on Pooled Five-Country Sample with Country-Fixed Effects

	Model 1 Age 18-34		Model 2 Not Sep/Div/Wid		Model 3 Single Never Married, Not Cohabiting	
<i>Country Fixed-Effects</i>						
United States (reference)	--		--		--	
Canada	0.708	***	0.647	***	0.581	***
Great Britain	1.362	***				
France	0.927		0.744	***	0.531	***
Germany	0.481	***	0.595	***	0.871	
<i>Change in Wealth</i>						
No Change in wealth (reference)	--		--		--	
Increase in wealth	1.195	*	0.825		0.845	
Decrease in wealth < 30%	1.761	***	1.528	***	1.708	***
Decrease in wealth >= 30%	2.163	***	1.619	***	1.896	***
Constant	0.312	***	0.207	***	0.329	
Observations	1174		1603		574	
Pseudo R ²	0.057		0.047		0.078	

* p<.05, ** p<.01, *** p<.001

Note: All models include controls for age, gender, education, income, wealth, risk literacy, and financial planning.

Cross-National Heterogeneity in the Effect of Wealth Changes on Marital Intentions

The results presented in Table 4.2 reveal something about the role of country in changing marital intentions. It appears that, relative to the United States, after adjusting for individual characteristics, Canadian, French and German respondents had approximately 65% the odds of being less likely to marry while the odds for respondents in the U.K. were not different from those in the U.S. (Model 3). These relationships speak to the overall effect of the economic crisis on marriage intentions in these countries. The coefficients on the country fixed-effects do not reveal, however, how the relationship between changes in wealth and marriage intentions might vary by country context.

Table 4.5 presents estimates of the relationship between changes in wealth and being less likely to marry, estimated separately by country. In these models, I collapse the categories of

wealth change into any gain and any loss (compared with approximately the same wealth) because limited sample sizes in Canada, Great Britain, France, and Germany creates sparse cell counts when I employ the four -category measure of wealth.

As discussed above, for the United States, the relationship between wealth loss and lower likelihood of marriage is quite similar to that found in the pooled models. Respondents who have lost any wealth have 65% higher odds ($p < 0.05$) of being less likely to marry, relative to those whose wealth was unchanged. There is no relationship between wealth gains and lowered likelihood. The relationship between wealth loss and being less likely to marry is not statistically significant in any of the four other countries, but the point estimates are of a similar size in Canada, France, and the U.K. to that of the United States. Germany stands out for having a noticeably different point estimate that is quite close to one.

I next use the test recommended by Paternoster, et. al. (1998) to test for significant differences between the estimates for the United States and the other four. Implementing the test using the coefficients and standard errors generated from the models reported in Table 4.5, I find that there are no significant differences in the relationship between wealth loss and marriage across countries.

Table 4.5. Relationship between Changes in Wealth and Being Less Likely to Marry (vs. More Likely or No Different) as a Result of the Economic Crisis. Odds Ratios from Logistic Regression by Country.

	Model 1 United States	Model 2 Canada	Model 3 Great Britain	Model 4 France	Model 5 Germany
<i>Change in Wealth</i>					
No Change in wealth (reference)	--	--	--	--	--
Increase in wealth	0.919	0.957	1.056	0.767	0.972
Decrease in wealth	1.648 *	2.011	1.867	1.435	0.910
Constant	0.225 **	0.316	0.400	0.212	0.022 ***
Observations	880	299	383	356	341
Pseudo R ²	0.046	0.120	0.069	0.092	0.086

* p<.05, ** p<.01, *** p<.001

Note: All models include controls for age, gender, education, income, wealth, risk literacy, and financial planning.

4.5 DISCUSSION

This work advances our understanding of the changing cultural meaning of marriage and the relationship between wealth and marriage by using a shock to wealth, studying marriage in the contemporary context, and doing so in a comparative cross-national perspective.

In the U.S., respondents who report wealth losses have significantly higher odds of being less likely to marry as a result of the economic crisis and these odds increase with the magnitude of the wealth loss. Moreover, the relationship between wealth loss and being less likely to marry is robust to controls for standard socio-economic characteristics as well as measures of risk literacy and financial planning. In supplementary analyses, I find that while wealth losses are linked to being less likely to marry, gains in wealth are linked to being more likely to marry.

The economic crisis has had very real effects on marital intentions beyond the U.S. - in Europe and in North America. On average across these countries, 24% of respondents considering marriage report that the economic crisis made marriage less likely and 14% report that the crisis made marriage more likely. The wealth losses engendered by the economic crisis appear to play an important role in explaining these changes in marital intentions. On average across countries, wealth losses are strongly linked to marriage being less likely. Respondents who report losing up to 30% of wealth have 52% higher odds and respondents losing more than 30% of wealth have 74% higher odds of being less likely to marry relative to respondents whose wealth remained steady and compared to being more likely or just as likely to marry.

While prior theory suggests that this relationship might be particularly pronounced in the United States, I find no evidence of variation in the relationship between wealth losses and changes in marital intentions across these five North American and European countries. We should be careful before taking this as clear evidence against a unique pattern of change in the cultural meaning of marriage in the United States as this work is subject to several limitations.

First, while the TNS Global Economic Crisis data are uniquely valuable for gauging changes in marital intentions and in wealth around the global economic crisis, the data is limited in some respects. The survey was conducted on an opt-in basis, had a relative low response rate, was limited to those with broad-band access, and had relatively extensive missing data on some key variables. Further, while the cross-national structure of the data is useful, key measures are not available across all countries and it is difficult to harmonize other measures.

Additionally, these data are focused on examining the connection between changes in wealth and changes in marital intentions. It is possible however that these reports of intentions are unreliable either because respondents over-estimate their initial chances of marriage or underestimate the effects of wealth loss on their actual marital behaviors.

Third, it is possible that changes in wealth are endogenous and simply proxy for other unobserved characteristics. However, this risk of omitted variable bias is minimized by using the shock to wealth from the economic crisis, adopting a measure of relative change in wealth, and controlling for financial planning and sophistication. That said, respondents' changes in wealth, while presumably largely a function of broad structural economic conditions, cannot be fully divorced from individual circumstances. Even though the crisis had stark negative effects across asset classes, including on home equity and stocks, losses surely varied by respondents' portfolio allocations and these allocations were surely shaped by risk tolerance and financial knowledge as well as by affluence. While the controls for risk literacy, financial planning, and wealth mitigate these concerns to some extent, we should remain cautious of interpreting these wealth losses as fully divorced from individual characteristics.

Fourth, it remains difficult to disentangle the instrumental importance of wealth for marriage from the cultural importance of wealth for marriage. Examination of the variation in the relationship between wealth change and marital intentions across countries does help to distinguish

the cultural from the instrumental, but the distinction remains difficult to operationalize in quantitative research.

Fifth, while the Economic Crisis was global, its impacts appear to have been more pronounced in the U.S. than in the four other countries examined here. Given the dependent variable asked specifically about changes in marriage plans as a result of the crisis, this variation in the severity of the crisis may limit the power of the cross-national comparison.

Chapter 5:

Conclusion

5.1 INTRODUCTION

American marriage has undergone a pronounced transformation since the middle of the twentieth century. Most scholarly accounts have attributed this change to either shifts in the structure of the American economy or shifts in American values and culture. A more recent line of research proposes something of a hybrid perspective, arguing that while cultural orientations towards marriage have changed, marriage remains valued and desired. These scholars suggest that what explains marital delay, decline, and stratification is a shift towards seeing marriage as an institution of the affluent in the context of limited economic opportunity for many (Cherlin 2005a; Edin and Kefalas, 2005).

Recent ethnographic and qualitative research suggest that this perception, that respectable marriage is reserved for those who have already “arrived” economically, takes specific form in the sense that young people should have some personal wealth before marrying. However, there has been very little demographic research that attempts to confirm if wealth indeed matters for marriage entry and explore just why that might be. The three empirical chapters of this dissertation are designed to answer those two broad questions: Is personal wealth an important pre-requisite of marriage? And, if so, how, why, and for whom?

5.2 DOES WEALTH MATTER FOR MARRIAGE?

The evidence presented here suggests that we should answer the first, demographic, question affirmatively. I draw on data from the NLSY-79, the Fragile Families Child Wellbeing Study, and

the TNS Global Economic Crisis Survey to examine the relationship between asset ownership and marriage. Across these different data sources, I find consistent evidence that net of labor market and other characteristics, wealth is positively and significantly related to marriage.

The use of these multiple sources of data means that the empirical operationalization of this relationship varies somewhat by chapter. In Chapter 2, I focus on how the ownership of homes, cars, financial assets, and other kinds of wealth are related to entry into first marriage among a nationally representative sample of men and women born in the late 1950s and early 1960s. In Chapter 3, I examine the connection between a similar set of assets and marriage in a more select sample – unmarried parents considering union formation in the first decade of the 21st Century. In Chapter 4 I turn to the particular circumstances of the Great Recession to examine how shocks to wealth affect intentions to marry among a broad cross-section of the American and European populations.

The finding that emerges is that those who have some wealth - cars and financial assets in particular - appear more likely to transition to marriage than their peers who lack these basic assets and that those who suffered the sharpest shocks to wealth during the Great Recession are most likely to plan to delay marriage. The evidence makes clear that women's assets are positively related to marriage entry, though the magnitude of the relationship may be somewhat smaller than for men.

More specifically, the results presented in Chapter 2 demonstrate that net of earnings, employment, welfare receipt, and a number of other social demographic characteristics, men who own vehicles and who possess financial assets have a significantly higher risk of transitioning to first marriage in any given period and that, while smaller in magnitude, women who own vehicles and possess other assets also have a higher risk of first marriage. The analyses presented in Chapter 2 also provide a sense of the magnitude of these effects by describing the degree to which accounting for differences in wealth by education and race can explain differences in marriage entry along those

same dimensions. Taking differences in wealth into account explains about 30% of the black-white gap in marriage and a significant portion of the educational gradient, for men.

The importance of wealth for marriage is confirmed in the results presented in Chapter 3. Unmarried fathers who own homes, cars, and bank accounts have about one and a half times the odds of marrying the mothers of their children as those who lack these key assets. Mothers who own homes and cars also have significantly higher odds of marrying the fathers of their children than mothers who lack these assets. These results are robust to alternative ways of handling left-censoring, measuring earnings and employment, and accounting for potentially confounding factors such as impulsivity and cognitive ability.

Just as the possession of these key basic assets appears to be positively linked to entry into marriage, losses in wealth may lead people to defer marriage. Chapter 4 presents evidence that those who have experienced large proportional shocks to personal wealth during the economic crisis report being less likely to marry. These results are robust to adjusting for income, education, and other aspects of socio-economic status. They are also robust to controls for financial planning and risk literacy – less commonly measured characteristics but ones that might be just the kind of hard to observe characteristic that could bias estimates of the relationship between wealth and marriage.

It certainly remains possible that the relationships documented across these three chapters are spurious. But, the link between wealth and marriage is robust to several different ways of specifying and adjusting for labor market experience and other background characteristics. These results are also robust to adjusting for traits such as impulsivity, cognitive ability, financial planning, and risk literacy that are difficult to observe but might well confound the relationship between wealth and marriage. Finally, the events of the Great Recession provide a useful testing ground for these relationships in so far as the shocks to wealth generated by the crisis were sharp, unexpected, and cut across asset classes.

5.3 WHY DOES WEALTH MATTER FOR MARRIAGE?

The answer to the second question concerning the meaning of wealth is more nuanced. In the three preceding empirical chapters I undertook a series of analyses designed to draw out if wealth matters for marriage primarily for its signaling value as a marker of partner quality, insurance or use value as a buffer against economic shocks to the household, or if wealth matters for marriage for its symbolic value as a marker of financial success and so of readiness for the culturally esteemed institution of marriage. Across the empirical chapters, I use five strategies to adjudicate between these explanations, with mixed results.

First, in Chapter 2, I suggest that if wealth matters for marriage primarily for its symbolic value as a visible marker of financial arrival, then the simple ownership of assets, as captured with dichotomous measures should be more predictive of marriage entry than measures that capture the actual value of respondents' wealth. These continuous measures, I suggest, would be a much better reflection of the importance of assets as a kind of buffer. However, empirical tests of this idea reveal few differences in significance, model fit, or the degree to which these different measures can help us to account for difference in marriage entry by race or education.

Second, in both Chapters 2 and 3, I employ another strategy to differentiate between these two explanations and shed some light on why assets matter for marriage. I argue that if wealth matters for marriage primarily because young people seek to have some buffer against economic shocks in place before forming a household, then we might expect that wealth would matter less for those who might find economic security and an insurance function elsewhere. Alternatively, if wealth matters equally for marriage whether or not individuals have access to such other resources, then that might be construed as supportive of the cultural account of wealth and marriage.

In Chapter 3, I test for variation in the relationship between marriage entry and car, home, and bank account ownership by whether respondents have access to credit as captured by

respondents' ability to borrow up to \$1,000 and find a co-signer for \$1,000 or \$5,000 loans. These analyses reveal no significant differences in the relationship between asset ownership and marriage by credit access. Though being able to informally or formally borrow these relatively large sums of money would likely help respondents to cope with economic shocks, that does not seem to reduce the importance of assets for marriage. I find similar evidence in Chapter 2. There, I assess if the importance of assets for marriage entry varies by educational attainment. We might expect that those with a high school or college diploma would be relatively more inured from the hazards of the economy than those with less education and that, consequently, assets might matter less for these men and women. However, testing for such interactions, I find little evidence of the variation that we would expect based on this insurance argument. In sum, across different implementations of this test in the NLSY-79 and Fragile Families data, I find that the importance of assets for marriage is relatively invariant by access to other economic resources and I argue that this evidence seems to support an account in which assets matter for marriage for their symbolic value more than their insurance or use value.

Third, in Chapter 3, I gauge if the relationship between asset ownership and marriage differs from that of asset ownership and cohabitation. If marriage is imbued with special cultural value that marks it as distinct from other forms of romantic co-residence, then we might expect that assets, theorized as a marker of the economic attainment necessary for respectable matrimony, would predict entry into marriage but not entry into cohabitation. I use data from the Fragile Families and Child Wellbeing Study to assess if assets matter differently for transitions to marriage between these unmarried parents and for transitions to cohabitation. While there is strong evidence of a positive link between assets and marriage, there is no evidence that assets are positively related to cohabitation (and some evidence of a negative relationship). This result accords with prior literature contrasting the relationship between income and employment with marriage and with cohabitation

and would seem to support the contention that assets matter less for their insurance value than for their symbolic worth.

In Chapter 4 I look to a fourth comparison for evidence of why wealth matters for marriage. I compare the relationship between wealth losses during the Great Recession and marital intentions in the United States and Europe and Canada. There is wide agreement that patterns of marriage differ between the United States and Europe where marriage rates are lower and cohabitation is more common and longer lasting. The work of Cherlin (2005) and others suggests that the high regard in which Americans hold marriage, as evidenced by the relationship between wealth and marriage, should manifest not only in differences between the U.S. and Europe in the incidence and timing of marriage but also in differences in the relationship between economic status and marriage. By this logic, we might expect that wealth shocks will have particularly pronounced effects on marital intentions in the United States as compared to the European countries and Canada. Testing for such differences using the TNS Global Economic Crisis Survey reveals little evidence to support this contention. It does not appear that marital intentions are much more influenced by wealth losses in the United States as compared with Germany, France, Great Britain, and Canada.

Finally, in Chapters 3 and 4 I attempt to assess the strength of evidence for the signaling perspective on why wealth matters for marriage. If asset ownership serves as a signal for partner quality, we might then expect that more directly measuring those characteristics at the heart of partner quality would attenuate the observed relationship between asset ownership and marriage. In Chapter 3, I make use of the rich data in the Fragile Families Study to adjust for measures of impulsivity and cognitive ability as well as for a measure of the stability of employment. Doing so does not account for the relationship between the ownership of cars, homes, and bank accounts and marriage between the parents of the focal children. In Chapter 4, I assess if adjusting for the unique measures of financial planning and of risk literacy attenuate the relationship between proportional

losses in wealth and marital intentions. Here to, I find that not to be the case, casting some doubt on the signaling value perspective.

In sum, these attempts at discerning why wealth matters for marriage return mixed results. Wealth has a similar relationship with marriage entry whether individuals have access to other forms of economic resources or not and wealth matters for marriage, but not for cohabitation – evidence that I argue supports the view of wealth as having important symbolic value. But, comparisons of how simple ownership of wealth versus the value of wealth related to marriage return inconclusive results and I find no evidence of variation in the relationship between wealth loss and marital intentions by country context. There is also limited support for the idea that wealth functions as a signal of partner quality.

5.4 DIRECTIONS FOR FUTURE RESEARCH

Additional work is needed then to tease out the reasons that wealth seems to matter for marriage. But, my findings also raise a broader theoretical question about the relationship between marriage, economic change, and economic standards for marriage. Work by Becker (1981), Oppenheimer (1988), and Wilson (1987) on the economic correlates of marriage all rely on a common element. Each scholar argues that pronounced changes in the labor market are responsible for changes in marriage entry. Becker (1981) focuses on women's increasing labor force participation outside of the home. Oppenheimer (1988) is primarily concerned with increasing uncertainty and delay in men's career entry. And Wilson (1987) hones in on the role of declining economic opportunities for black men. Despite the difference in focus, all three scholars assume a fairly static set of economic pre-requisites of marriage (Oppenheimer, 1988; Wilson, 1987) or a fairly static conception of the economy of households (Becker, 1981). In each of these accounts, what has changed is the economic structure.

In contrast, more recent accounts of marital change have argued that the economic pre-requisites of marriage have also changed, that the bar for marriage has risen (Edin and Kefalas, 2005). In the context of wealth, this argument suggests that rather than becoming less common or more stratified by race and education, wealth has become more important as a pre-requisite of marriage. Discerning whether wealth has become more difficult to obtain/stratified or has become more important for marriage is beyond the scope of this work. But, to assess the first possibility, future work should examine if the ownership of wealth and timing of wealth acquisition in the early life-course has changed across cohorts. To examine the second, future work should examine the relationship between wealth and marriage not just within a single cohort, but also across cohorts.

This area of research would also benefit from analysis that attempted to use methods of causal inference to confirm that the relationship between wealth and marriage is not spurious. There is at least one potentially useful source of experimental data. The American Dream Demonstration (ADD) was a randomized evaluation of an Individual Development Account program implemented by the Community Action Project of Tulsa County (CAPTC) in the late 1990s. IDAs provide matched savings accounts to low-income individuals and the ADD did so with an experimental design, following up with respondents over the course of ten years to gauge savings, but also to collect data on a range of outcomes including marital status. While scholars have evaluated the economic impacts of ADD (Grinstein-Weiss et al, 2012), these data could also be used to assess how savings effects the transition to marriage. But, beyond the limited accessibility of the data, the usefulness of the data are also limited by the study design's narrow geographic scope (Tulsa, OK) and by the fact that participants opted into the study and so both treatment and control group members were highly motivated to save.

An alternative approach would be to make use of an instrumental variables approach, identifying measures that one would expect to be related to marriage entry only through their effect

on asset ownership. Prior work on the effects of car and home ownership on employment and voting has identified several possible instruments. Manturnuk, Lindblad, and Quercia (2009) make use of the ratio of median monthly housing costs for home owners with a mortgage to the median rent paid by renters at the CBSA level as an instrument for home ownership and Raphael and Rice (2002) make use of state-level measures of the gas tax and of car insurance premium as instruments for car ownership. These instruments could be used in an analysis of how asset ownership affects marriage and such work would go some ways to addressing any lingering concerns about endogeneity in the relationship between wealth and marriage as documented in these chapters.

Future work could also seek to further examine the gender dynamics of asset ownership and marriage. I find evidence that wealth is positively related to marital entry for both men and for women. However, the effects appear larger for men and there is some differentiation by gender in terms of which assets matter. These results do not support the prediction that women's assets might be negatively related to union formation, but provide some support for the notion that men's assets matter more, perhaps because of a continued salient connection between money and masculinity. Future work might examine when that salience is activated. If the effects of asset ownership on marriage are mediated in part through conceptions of masculinity, then might assets matter more when masculinity is otherwise threatened, by low relative earnings or work in gender atypical occupations, perhaps?

Finally, the movement for same-sex marriage rights in the first two decades of the twentieth century provides fascinating insight into the meaning of marriage in America and opportunity for further research. First, the place of marriage at the forefront of the contemporary gay rights movement vividly illustrates the priority that Americans place on marriage. Equal citizenship and personal happiness are pegged to the ability to marriage – highlighting just how important the institution is in American culture. Second, this shift towards marriage rights provides an

opportunity to examine if the relationship between wealth and marriage is similar for gay couples as for same-sex couples. While it can be difficult to locate nationally representative longitudinal data that contain a sufficient number of gay and lesbian respondents, preliminary work on this topic could be done through the same kind of qualitative approach adopted in the earlier studies of wealth and marriage.

5.5 IMPLICATIONS

This dissertation contributes to an existing literature in social demography on the determinants of marriage and the factors that explain changes in American marriage in recent decades. My work goes beyond the standard explanations in the literature to explore the relationship between marriage and personal wealth. I show that wealth, above and beyond labor market characteristics, matters for marriage entry and marital intentions. Future demographic work should consider wealth, alongside income and employment, when analyzing processes of family formation.

My work also contributes to sociological understandings of the importance of wealth in processes of social stratification. While most sociological studies of inequality have focused on income and occupation, this work highlights the importance of considering the social consequences of disparities in wealth between white and black and the more and less educated. In this way, my research complements the relatively few other studies (Conley, 1999; Keister, 2000; Oliver and Shapiro, 1995) that focus on wealth and inequality. This research also begins to describe a more complex process in which wealth inequalities reverberate through the mechanism of family formation. I show that those already disadvantaged, by minority status and education, marry less in part because they have less wealth. Given the benefits of marriage for child and adult wellbeing, this difference can be expected to compound existing disadvantages within and across generations. In

this respect, my work provides additional empirical support for the contention in recent research (e.g. McLanahan, 2004; Massey, 2007) that the family is an important driver of inequality in the United States. Future work could usefully sketch out this process of cumulative disadvantage in more integrated detail.

Finally, this dissertation makes progress towards a quantitative test of some of the ideas behind accounts in economic sociology of intimate relations. I first note the theoretical ties between Viviana Zelizer's work in this area and Cherlin's and Edin's arguments that assets serve as a symbolic boundary for respectable marriage. I then use several empirical tests to examine how wealth serves to structure the formation of a key social relationship – a marriage. By contrasting the role of wealth in marriage and cohabitation and by comparing how the relationship between wealth and marriage differs by access to other resources, I advance the argument that personal wealth has an important and consequential social meaning. This evidence suggests that people draw boundaries and distinguish between different kinds of relationships in part through the use of economic transactions: marriage and cohabitation are different and one way that is shown is by the link between assets and marriage versus the absence of meaningful tie between wealth and cohabitation. These analyses also point to the specific cultural meanings attached to different kinds of economic resources. Chapter 4 notes that one possible limitation of the analysis of whether assets matter less for marriage for those with access to credit is that credit and assets may not be fully exchangeable. However, seen another way, this evidence of their non-substitutability buttresses the relational argument. Though credit and assets should be fungible from a functional finance perspective, here, in their meaning for marriage, they appear not to be.

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