

Lessons Learned from Non-Marriage Experiments

Daniel Schneider

Summary

In the contemporary United States, marriage is closely related to money. Men and (perhaps to a lesser extent) women with more education, higher incomes, larger stocks of wealth, and more stable employment are more likely to marry than are people in more precarious economic positions. But is this relationship truly causal? That is, does economic insufficiency cause people to marry later and less often?

Daniel Schneider reviews evidence from social experiments in areas such as early childhood education, human capital development, workforce training, and income support to assess whether programs that successfully increased the economic wellbeing of disadvantaged men and women also increased the likelihood that they would marry. These programs were not designed to affect marriage. But to the extent that they increased participants' economic resources, they could have had such an effect.

Examining these programs offers three key benefits. First, their experimental designs provide important insight into the causal role of economic resources for marriage. Second, they give us within-group comparisons of disadvantaged men and women, some of whom received economic "treatments" and some who did not. Third, they by and large assess interventions that are feasible and realistic within the constraints of U.S. policy making.

Schneider describes each intervention in detail, discussing its target population, experimental treatment, evaluation design, economic effects, and, finally, any effects on marriage or cohabitation. Overall, he finds little evidence that manipulating men's economic resources increased the likelihood that they would marry, though there are exceptions. For women, on the other hand, there is more evidence of positive effects.

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In contemporary America, marriage is tightly related to money. Men and, perhaps to a lesser extent, women with more education, higher incomes, larger stocks of wealth, and more stable employment are more likely to marry than are those in more precarious economic positions. This well-supported finding suggests that these kinds of economic insufficiency may cause later and less marriage. But it leaves us wondering whether the relationship between economic resources and marriage is causal and, if it is, what we might then do from a policy perspective.

In this article, I review 15 social experiments in areas such as early childhood education, human capital development, workforce training, and income support to assess the extent to which programs that successfully increased the economic well-being of disadvantaged men and women also increased marriage. These programs were not designed to affect marriage. But, to the extent that they increased economic resources, they could have had such “marriage effects.” Examining these programs offers three key benefits. First, their experimental designs provide important causal insight into how economic resources affect marriage. Second, they let us compare disadvantaged men and women, some of whom received an economic boost and some who did not. Third, these studies by and large assess interventions that are feasible and realistic within the constraints of U.S. policy making.

Overall, for men, I find little evidence that manipulating their economic resources increases the likelihood they will marry, with one notable exception. For women, there is no evidence that increasing their economic resources makes them less likely to marry

by increasing their independence, and some evidence that it increases the likelihood they will marry.

Economic Resources and Marriage

Patterns of family formation have changed dramatically in the United States over the past 60 years. Women’s median age at first marriage rose from 20 in 1950 to 26.6 in 2012; for men, it rose from 23 to 28.6 in the same period. The share of women projected to never marry has also increased.¹ At the same time, nonmarital coresidence—that is, cohabitation—has become increasingly common. In 2011–13, nearly 70 percent of women reported that they had ever cohabited, and cohabitations composed 28 percent of all unions among women age 19–44.²

These shifts are dramatic, but the growing stratification of family formation by socioeconomic status has perhaps been even more striking. Increasingly, there is a divide in marriage and cohabitation by educational attainment and by race and ethnicity. Compared to others, less-educated and African American men and women are less likely to marry, and less-educated men and women in general are more likely to cohabit.³

These decades of change in marriage have also seen stark changes in the economy, characterized by rising economic inequality; declining unionization; stagnant wage growth for most workers; a loss of stable, well-paying middle class jobs; and a general sense of rising economic insecurity and uncertainty. A large number of sociologists, demographers, and economists have sought to connect these demographic and economic trends. Their research has marshaled evidence to suggest that declining economic fortunes among less-educated and African

American men and women is one important cause of the changes in family formation.

These studies generally examine either the relationship between an individual's own economic status—as measured by income, education, employment, or wealth—and his or her transitions to marriage or cohabitation, or the relationship between the pool of economically attractive potential partners and an individual's transition to marriage or cohabitation. Below, I briefly review some key findings from this work, highlighting gender differences in the relationship between economic resources and how people form unions and differences in the relationship between economic resources and the type of unions they form.

Men's Economic Standing and Marriage

There are strong theoretical reasons to expect that men's economic resources would be positively related to getting married. Such resources could make men more attractive as potential spouses and, perhaps, also make them feel that they are ready for marriage according to social norms. Empirical research supports this idea. Men's employment, earnings, education, and wealth are all positively related to whether they marry, and a greater supply of employed men of the same age and race is positively related to whether women marry.⁴

Most of this work assesses economic standing by measuring current employment and earnings. However, it seems more realistic to expect that, although men and women weigh current economic standing when considering marriage, long-term economic potential should also play an important role in their calculations. Perhaps the most direct shorthand way to assess long-term economic potential is education.

And, indeed, there is evidence that more highly educated men are more likely to marry at some point in their lives than are their less-educated counterparts.⁵ Several scholars have used other measures of long-term potential, such as future expected earnings; ownership of a home, vehicle, or financial assets; career maturity; and labor union membership. They've found strong positive relationships between these measures and marriage.⁶

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Though changing marriage patterns have motivated much of the research on men's economic standing and marriage, very few studies actually estimate to what extent the changes we've seen in age at first marriage and stratification in marriage can be explained by changes in men's economic standing or by changes in the strength of the relationship between men's economic standing and marriage. Instead, most studies examine the experiences of a particular group of people born around the same time. The few studies that have actually examined how changes in men's economic standing contribute to changes in marriage have found mixed effects. One early study, from 1992, found that changes in young black men's employment could account for about 20 percent of the change in their marriage patterns between 1960 and 1980.⁷ Two more recent studies found that rising inequality in men's wages could explain about 20 percent of the decline in women's propensity to

marry between 1970 and 1990.⁸ Even fewer researchers have investigated whether the strength of the relationship between men's economic resources and marriage has changed over time, but prominent accounts of family change suggest that, if anything, young people have come to place a higher premium on economic resources as a social prerequisite of marriage.⁹

Women's Economic Standing and Marriage

The late UCLA sociologist Valerie Oppenheimer championed the idea that greater economic resources could be positively associated with marriage for women in the same way as for men, as economic resources also make women more attractive as potential partners.¹⁰ However, other scholars have suggested the opposite, arguing for an "independence effect" through which better-off women might have enough resources to opt out of marriage.¹¹

The argument for an independence effect has influenced the debate over how receiving social welfare affects marriage. One set of studies, using city-level data on women's employment, earnings, and welfare receipt, has found that men are less likely to marry when they live in places where women have higher economic standing.¹² But there is little evidence for the idea that women's income, education, or assets have a negative relationship with whether they choose to marry. In fact, reviews of scholarship on the subject report that better-off women are more likely to marry than are their more disadvantaged peers.¹³ This holds true for women's education, income, and assets, though the magnitude of these relationships is often smaller than it is for men.¹⁴

One possible reason that we don't see an independence effect for women is that

the theory was developed with reference to a model of marriage, based on gender specialization, that increasingly no longer exists. Indeed, the relationship between women's economic standing and marriage may have changed over time as the economic bargain of marriage moved from gender specialization—the man holds a job, the woman takes care of the home and the children—to a more egalitarian model.¹⁵ We see some supporting evidence for this perspective in Europe, where women with more education are more likely to marry in countries where gender roles are more egalitarian, but less likely to marry in countries where gender roles are more traditional.¹⁶

Cohabitation

Though both marriage and cohabitation are forms of romantic coresidence, research suggests that these two arrangements have very different social meanings. Marriage is often predicated on economic stability and status, and cohabitation is a more fragile and preliminary arrangement suitable for those who lack the resources seen as socially necessary for marriage.¹⁷ For instance, poor and working-class men and women report that the high economic standard for marriage doesn't apply to cohabitation. In fact, they say that cohabitation is the appropriate choice for young couples, often parents, who are romantically involved but have not yet accumulated the economic prerequisites for marriage.¹⁸

This view finds support in demographic studies that examine the relationship between men's and women's economic resources and entry into cohabitation versus entry into marriage. For instance, a study that estimated respondents' future earnings potential found that although white men with higher expected earnings were more

likely to marry, there was no evidence of a relationship between the expected earnings of either men or women and how likely they were to cohabit.¹⁹ Similarly, research using longitudinal data—that is, data that follows people over time—shows that better-educated men and women are more likely to marry, but that there is no relationship between educational attainment and cohabitation; also, people with unstable employment are more likely to cohabit and less likely to marry.²⁰ A more recent study of a relatively disadvantaged group of young parents found further evidence of how education shapes the way they form unions. In this group, greater educational attainment increased the likelihood that both men and women would marry, and it reduced the likelihood that men would cohabit.²¹ (For more on cohabitation, see Wendy Manning’s article in this issue.)

Possibilities and Pitfalls

We have strong evidence that men who are better off, as marked by income, employment, education, and wealth, are more likely to marry and perhaps less likely to cohabit. Although there is a theoretical case for an independence effect, in which women’s economic resources are negatively related to marriage, little empirical evidence supports this proposition. Do these relationships between economic resources and how people form unions hold lessons for policy?

The positive relationship between economic resources and marriage, and the negative relationship to cohabitation, might lead us to conclude that programs designed to improve people’s economic standing should also make them more likely to choose marriage over cohabitation. The implied approach is appealing, particularly because efforts to encourage marriage through education and

advertising have met with limited success.²² However, several potential pitfalls are inherent in making this leap from what we observe in the research to making policy.

First, though the finding of a positive association between economic status and marriage is widely documented and robust, the relationships that we see between marriage and earnings, employment, education, and wealth could be spurious. That is, other characteristics of individuals could affect both their economic standing and how likely they are to marry, and these unobserved characteristics could be the real cause of each. In their studies of marriage, scholars have tried to account for such characteristics as propensity to plan ahead, interpersonal skills, and disposition toward marriage, but these are difficult to measure. Social scientists have developed statistical tools to estimate causal effects using observational data, but it has proven difficult to apply such techniques to the study of how economic resources affect union formation.

Second, although policy is most concerned with patterns of union formation among less well-off men and women, research generally considers the relationship between economic resources and union formation in a representative sample of the population. This is good insofar as this work allows us to make statements about the whole population. But relatively little research has focused on how economic factors affect union formation among the disadvantaged young people whose lives policy primarily seeks to improve. Research that focuses on this group might find different results than does research on representative samples of the population.

Finally, research on economic factors and union formation has not generally translated

the relationships we observe into specific, actionable policy. For example, the research suggests that obtaining a college degree, finding steady work, or acquiring assets would raise the probability of marriage. But are such economic transformations possible? Can policy realistically effect such changes? While a major national policy like a guaranteed minimum income or universal child savings accounts might encourage marriage, such ambitious policies would seem to have a slim chance of being enacted in the current political environment. Could effective work and education policies that are already in place or under consideration also produce measurable effects on union formation?

Experimental evaluations of interventions to enhance human capital and employment have produced reliable causal estimates, focused on key populations, and, by their very design, mapped realistic policy interventions to their demographic effects.

These three problems limit the degree to which existing work on union formation and economic resources can guide family policy. However, we can overcome these problems by considering findings from a very different line of empirical research. Specifically, experimental evaluations of interventions to enhance human capital (that is, formal education, vocational education, or job training) and employment have produced

reliable causal estimates, focused on key populations, and, by their very design, mapped realistic policy interventions to their demographic effects.

Experimental Evaluations of Economic Interventions

To identify the most relevant evaluations, I imposed a number of selection criteria. First, I focused on experimental interventions that randomized participants into treatment and control groups and tracked the outcomes of both groups over time. Second, I focused on studies conducted in the United States. Though randomized experimental designs have been used around the world, I'm concerned with economic factors and union formation in the United States, which is arguably quite distinct from Europe and even Canada. Third, I focused on interventions that were designed to affect participants' human capital, employment, or income, including modifications to state social welfare policies.²³ Using these criteria, I found 76 eligible experiments. Rather than review each individual experiment again, I summarized the findings of previous reviews.²⁴

It's important to bear in mind that evaluations of these interventions focused on their economic effects. Of the 76 eligible experiments, only 15 assessed participants' union status when they were questioned in a follow-up months or years after the experiment ended. Almost all of these studies assessed union status at the follow-up point rather than assessing transitions between one status and another. That is, these evaluations generally report differences in the share of treatment and control group members who were married at follow-up and not the share that got married between the end of treatment and follow-up. Many of these experiments took

Table 1. Effects of Economic Interventions on Men's and Women's Marital Status

<i>Intervention</i>	<i>Significant Positive Effects on Marriage?</i>	
	<i>Men</i>	<i>Women</i>
Early Childhood		
Moving to Opportunity	N	Y
Perry Preschool	N	Y
Project STAR	Y	Y
Abecedarian	N	N
Education, Job Training, and Job Placement		
Career Academies	Y	N
Job Corps	N	Y
Job Start	N	N
CEO	N	–
Youth Challenge	N	–
ERA	–	N
CET	–	N
Other Interventions		
New Chance	–	N
New Hope	–	Y
Opportunity NYC	–	Y
WCSD	–	N

place at multiple sites, presented estimates for multiple subpopulations, examined outcomes at multiple follow-up points, or some combination of the three. So, at times, I discuss more than one estimate of a given program's effect on marriage.

Review of Experiments

The experiments I review below are roughly divided into three groups: those that attempted to intervene relatively early in life; those that delivered education, job training, or job placement later in life; and a residual category of interventions that took other approaches to improving men's and women's socioeconomic status. Table 1 gives a brief summary of these interventions' key effects on marriage, separately for men and women. Finally, I discuss a fourth category of interventions that experimented with changes in welfare rules.

I examined these evaluations to see how the experimental manipulation of economic status might offer insight into the role of economic resources in union formation. However, these evaluations were conducted to determine whether the economic interventions produced their intended effects. In other words, it's not a given that these interventions worked. Indeed, though several of these interventions produced large and relatively long-lasting economic effects, the economic effects of others were modest and inconsistent over time.

Early Life Interventions

Perry Preschool Project

Perry, based in Michigan, ran from 1962 to 1967; it tested the effects of providing preschool education to a target population of disadvantaged African American children.²⁵ The children received a 2.5-hour

in-school program with a 6:1 student-teacher ratio and a daily home visit of 1.5 hours. Participants were enrolled for either one or two academic years.

This project is particularly valuable because it was a randomized experiment and because study subjects were followed over an extended period of time, with follow-up at ages 19, 27, and 40. The current scholarly and policy interest in early-life interventions is partly inspired by Perry's apparent positive effects on the wellbeing of treatment group members from childhood well into adulthood, including greater educational attainment, less involvement with the criminal justice system, and higher earnings, though more recent analysis suggests that the positive effects on men may have been overstated.

Perry's age 40 follow-up revealed substantial differences in marital status in the treatment and control groups. Among men who went through the program, 57 percent were married or cohabiting; 23 percent were divorced; and 20 percent were single, never married, or not cohabiting. The control group males were less likely to be in romantic unions (the respective figures were 33 percent, 23 percent, and 44 percent). However, this analysis didn't separate marriage and cohabitation. A new, more rigorous analysis of the Perry data found no effects on men's marriage at age 27. However, it found evidence that Perry's largest effects were on the female participants, for whom it documents positive impacts on IQ, high school graduation, criminal behavior, unemployment, and receiving welfare. It also found that Perry had a large positive effect (a 32 percentage point increase) on the likelihood that women would be married by age 27.

Abecedarian

A total of 111 children born between 1972 and 1977 in Orange County, North Carolina, were enrolled in the Abecedarian Project if they appeared to be at high risk of school failure, based on 13 sociodemographic factors.²⁶ Treatment had two phases. In early childhood, treated children received year-round child care with a systematic curriculum. For the first three years of school, treated children were assigned a home-school resource teacher who worked to increase parental involvement. So children could be untreated, or treated in one or both of the early childhood and school-age stages. In practice, evaluation studies have focused on comparing the early childhood treatment group with the control group. Adult follow-up occurred at ages 21 and 30. At age 21, those who received the early childhood treatment were more likely to be in college, and at age 30, they had higher educational attainment and more full-time employment. However, there was no significant difference in marriage at either age 21 or 30 between those who received the early childhood treatment and the control group.

Project STAR

The TN STAR experiment, which began in 1985, enrolled more than 11,000 kindergarten children through third-graders at 79 schools in Tennessee to evaluate how smaller class sizes affected learning. Children in the treatment group were assigned to classes with 15 students on average, while control group members were assigned to larger classes, averaging 22 students.

The intervention's positive effects on test scores are well documented.²⁷ A more recent study linked the original evaluation data to administrative tax records to conduct a longer-term follow-up. It found that students assigned to small classes were more likely

to be enrolled in college by age 20, though they didn't have higher earnings by age 27. Additionally, children (both boys and girls combined) assigned to small classrooms were more likely to have married by age 27 than were control group members.²⁸

Moving to Opportunity

The U.S. Department of Housing and Urban Development sponsored this major study of the effects of providing housing vouchers to low-income families living in disadvantaged neighborhoods in New York, Baltimore, Boston, Chicago, and Los Angeles. Begun in 1994, the study enrolled approximately 4,600 families. Treatment group members got vouchers that they could use to offset the cost of rent. One group was allowed to use its vouchers anywhere. A second group was allowed to use the vouchers only for housing in a low-poverty neighborhood for the first year; members also received assistance with finding such housing. A control group received neither vouchers nor house-finding assistance.

The program was motivated by research suggesting that living in a high-poverty neighborhood can hurt children's and adults' wellbeing in many ways.²⁹ Follow-up studies conducted over the first 10 years of the program found that Moving to Opportunity had mixed effects. Treatment group members were more likely to live in low-poverty neighborhoods, and adult women and their female children in the treatment group had better health by several measures, including obesity, diabetes, and psychological distress. However, there were few effects on employment or income or on children's educational outcomes or involvement in criminal behavior.³⁰

I found no published estimates of Moving to Opportunity's effects on adults' marriage.

However, a recent analysis found evidence that girls who were under 13 at the time of treatment were more likely than control group members to be married by the time they were in their 20s, and somewhat less likely to have children when they were teenagers. In general, the younger the child at the time of treatment, the stronger these effects, suggesting that early-life intervention may be particularly important.³¹

Education, Job Training, and Job Placement Interventions

Career Academies

The strongest support for the idea that improving the economic standing of men with low socioeconomic status might induce more marriage is found in the evaluation of the Career Academies program. Career Academies date to the 1980s and currently operate around the country. These small schools within schools allow a group of students and teachers to remain together for two to four years and focus on a single area, such as health or information technology. These academies are explicitly oriented toward easing the transition from school to work with career-focused classes and internships.

The nonprofit social policy research organization MDRC conducted a large randomized trial of Career Academies in nine U.S. high schools, following 1,400 young men and women in Maryland, Florida, Pennsylvania, California, Texas, and Washington, DC.³² Participants were drawn from disadvantaged communities. About one-third lived in single-parent households and one-quarter in households receiving social welfare. Still, the sample was somewhat diverse socioeconomically; for example, 12 percent of the students' fathers had graduated from college, and two-thirds lived in two-parent households. Enrollment

in Career Academies produced large economic returns, particularly for men. Participants saw earnings gains averaging 11 percent per year over control group members, for a total increase of almost \$17,000 over the eight-year follow-up period. There were no effects on education, however. A large share of both the treatment and the control group graduated from high school or received a GED.

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When it comes to union formation, the eight-year follow-up found large and statistically significant impacts on marriage/cohabitation for men. Thirty-six percent of men in the treatment group were married or living with a partner at follow-up, compared with 27 percent of men in the control group. Moreover, further analysis found that the program increased marriage among young men and that the impact on living independently with a child or children and a partner was concentrated only among young men who were married.³³

Career Academies has thus been one of the most successful interventions in terms of improving men's economic standing and affecting whether they marry. However, the same cannot be said of women. Career Academies had few if any significant effects on women's educational attainment, months employed, hours worked, hourly

wages, or total monthly earnings, and, as we would expect, no effects on women's relationship status.

Job Corps

Begun in 1964, JobCorps is an educational and vocational program for disadvantaged youths ages 16–24 that aims to give them the skills to either find work or seek additional education. Participants come from households that either receive welfare or subsist below the poverty line, and a very large majority are younger than 20, nonwhite, and have not completed high school. The mostly residential 28-week program includes a set of services tailored to participants' individual needs, including formal education, instruction in independent living, health care and health education, vocational training, and help finding a job.

The experimental National Job Corps Study began in November 1994, enrolling about 9,500 people in the treatment group and 6,000 in the control group by February 1996.³⁴ Follow-up occurred four years after participants finished the program. Control group members were not permitted to enroll in Job Corps for three years, but they could enroll in similar programs.

Job Corps had positive effects on the education and training of male participants. It also produced positive impacts on employment and earnings that first appeared after three years and persisted through the four-year follow-up. On average, participants' earnings increased by about \$600 over the four-year period, though these gains were concentrated in years three and four. Job Corps participants were less likely to be arrested (mostly in the first year); they were also less likely to be convicted or incarcerated, and less likely to be victims of a crime.

Despite the positive effects in other areas, there were no significant differences in the share of male treatment and control group members who were married after four years, about 13 percent of each. Similarly, there were no significant differences between the groups in the share who were cohabiting. But the follow-up period was only four years, and all the participants were under 24 when they enrolled. Given that the median age of first marriage in the United States for men is currently 29, it's possible that participants simply saw themselves as too young to marry, though there were no differences in cohabitation.

JobCorps participation also increased weeks employed in the year, hours employed per year, and earnings in the year for women, though these effects were significant only for women who had no children when the program began. Among these women, 16 percent of treatment group members were married after four years, compared with 13 percent of control group members. A later study similarly found that increases in employment and earnings associated with JobCorps increased women's but not men's likelihood of marriage.

JOBSTART

The JOBSTART demonstration gave low-skilled school dropouts a set of training and support services designed to place them in jobs. It was modeled on JobCorps, but it wasn't a residential program and was therefore less expensive. As with JobCorps, participants received basic remedial education, vocational training, and job placement services. The participants, ages 17–21, were drawn from very disadvantaged backgrounds. All were high school dropouts with limited literacy, and they lived in households that received public assistance or subsisted at less than the federal poverty line.

MDRC evaluated JOBSTART at 13 sites in New York, Georgia, Connecticut, California, Illinois, Pennsylvania, Texas, Colorado, and Arizona.³⁵ A group of 2,312 young people was randomly assigned to either the treatment or the control group. Follow-up surveys were conducted one, two, and four years after the program ended.

The program significantly increased the chances that participants would earn a GED or complete high school; 42 percent of the treatment group did one or the other, versus 28.6 percent of the control group. Initially, participants had lower earnings than those in the control group because they were more likely to be enrolled in school than to be working. But over the next two years, participants' earnings began to increase compared to those of the control group, although the difference was not statistically significant. Perhaps unsurprisingly, then, the program had no effects on marriage for either men or women. As with JobCorps, the young age of the participants likely limited the potential for marriage effects to appear after four years. But where JobCorps had significant economic effects, JOBSTART did not, making marriage effects unlikely in any case.

Center for Employment Opportunities (CEO)

This transitional jobs program, run by the Vera Institute of Justice, places recently released ex-offenders directly into paid jobs, where they earn minimum wage. In addition to a short employment-preparation program, participants also receive counseling on employment and other matters. Eventually, participants get help in making the transition to a permanent job. Participants were older on average than those involved in JobCorps, JOBSTART, or Career Academies, with a mean age of 34. They were also quite

disadvantaged. About half lacked a high school diploma, and nearly 100 percent were nonwhite.

MDRC evaluated the program from January 2004 to October 2005.³⁶ Of 977 ex-offenders referred by their parole officers, 568 were assigned to the program and 409 to a control group. Follow-up surveys were conducted after one, two, and three years. Control group members weren't directly placed in transitional jobs, but they did get help finding other work. The program generated a large but short-lived increase in employment. The increase was driven by the treatment group's access to transitional jobs; after the jobs ended, treatment group members did not fare any better than those in the control group. The program had more sustained impacts on participants' recidivism, reducing convictions and incarcerations over the two-year follow-up period.

The program did not affect marriage, however. There were no significant differences between the treatment and control groups in whether they had ever been married, were married at the time of the follow-up survey, or were cohabiting.

National Guard Youth Challenge

This quasimilitary 17-month program helps youth who have dropped out of high school. It involves a two-week qualification phase followed by a 20-week residential phase, in which participants, or "cadets," receive training in eight areas and study for a GED. At the end, participants are placed in jobs, education, or military service.

MDRC conducted a randomized evaluation of the Challenge program beginning in 2005, enrolling 1,200 participants and following up to assess a range of outcomes at nine, 21, and 36 months.³⁷ Participants

ranged in age from 16 to 18. They were overwhelmingly male and had generally performed poorly in school, as shown by low grades and suspensions. At 21 months, members of the treatment group had higher mean weekly earnings and educational attainment than did members of the control group; various subgroups also saw positive effects on full-time employment. At 36 months, treatment group members were more likely to have graduated from high school or received their GED, were more likely to be employed, and had higher annual earnings.

The study did not separately examine marriage and cohabitation, only finding no effect of participation at 21 months on the combined outcome of living with a spouse or partner. At 36 months, 24 percent of program group members were married or cohabiting versus 20 percent of control group members, but this difference was not considered significant.

Employment Retention and Advancement (ERA)

This project used randomized trials to test 12 programs around the country, each using different interventions designed to help low-wage workers retain work and advance. The interventions fell into three groups: (1) programs that offered career counseling and training for low-wage workers; (2) programs that offered help with job placement, often for particularly disadvantaged populations, such as those with disabilities or substance abuse problems; and (3) programs that used a mix of services and targeted them primarily at welfare recipients.

MDRC studied 45,000 control and treatment group members, beginning between 2000 and 2004 and conducting follow-up between three and four years later.³⁸ Of the 12

program sites, the evaluation study found significant economic effects for only three of the programs: those in Texas, Chicago, and Riverside, California. The interventions at these sites appeared to produce gains in earnings and employment for their low-income, single-parent clients.

Most of the evaluation data was drawn from administrative records, which did not contain information on romantic union status. However, a survey that asked about marriage and cohabitation was conducted at 42 months at three of the 12 sites: Chicago, Riverside, and Los Angeles, two of which (Chicago and Riverside) had shown positive effects on economic outcomes at both 12 and 42 months. The survey found no significant effects on marriage at any of the three sites and mixed effects on cohabitation.

Center for Employment and Training (CET)

This program provided employment training in a work-like setting in San Jose, California, seeking to connect participants to jobs.³⁹ The model was expanded and tested at 12 sites around the country in the mid-1990s; it was successfully implemented, with high fidelity to the model program, in four. However, the economic impacts of even these successful implementations were very weak. Access to the program didn't increase young people's employment or earnings by the end of the 54-month follow-up period, compared with a control group. After 30 months, positive effects on women's employment and earnings were evident, but they didn't persist beyond that point, while evidence of negative effects on men's employment at 30 months also did not persist at 54 months. Effects in the medium- and low-fidelity sites were either negligible or negative. Perhaps not surprisingly, then, there were no impacts on union status.

Other Interventions

New Chance

This program was designed to increase the educational attainment of unwed mothers who were high school dropouts.⁴⁰ New Chance offered participants an array of services that included academic instruction, training for employment, help finding a job, and instruction in parenting skills, among others. The program was implemented between 1989 and 1992 at 16 sites around the country. Enrollment was randomized, and respondents were contacted for follow-up at 18 and 42 months. The evaluation found, first, that many control group members were able to obtain similar services through other means, meaning that the comparison of treatment with control group members was really a comparison of the use of different services, rather than a comparison of people who received services with people who didn't. With that in mind, the results suggest that those in the program were more likely to get their GEDs, but were not any more likely to work or reduce their use of welfare, among other outcomes. The share of treatment group members who were married was 8 percent at 18 months and 13 percent at 42 months, not significantly different from the 7 percent and 12 percent of control group members.

New Hope

Between August 1994 and December 1995, low-income people in two Milwaukee, Wisconsin, neighborhoods were given the opportunity to opt in to a program of wage supplements, affordable health insurance, child-care subsidies, and community service jobs.⁴¹ Those who were interested were randomly assigned to treatment and control groups. The program lasted for three years, during which nearly 90 percent of participants made use of at least one

program benefit; on average, participants drew on the available benefits in about half of the program months.

The New Hope evaluation enrolled 1,300 people. About 750 had children, and these families were tracked over eight years. The evaluation found strong evidence of positive effects on employment and income, poverty, health, children's involvement in structured programming and activities, and children's academic achievement. While most of the economic effects faded once the program ended, effects on children's activities, school engagement, and social behavior persisted through follow-ups at five and eight years.

New Hope appeared to increase marriage, though only for women who had never been married when they entered the program. The 337 women who had never been married when the program began, and who gave information about their marital status at a five-year follow-up, were nearly twice as likely to have married by year five than were control group members (20.7 percent vs. 11.8 percent); there were no effects on cohabitation. Further, as we would expect, New Hope's marriage effects were partially mediated by the program's impacts on earnings and employment; that is, it appears that the gains in income preceded the changes in marital status. Taken together, then, we have strong evidence that economic resources have a positive causal effect on women's marriage.

Opportunity NYC

This conditional cash transfer program—that is, a program in which participants receive cash in exchange for completing certain actions—is a multifaceted antipoverty effort piloted in New York City in 2007. Participants could earn cash rewards for compliance with a set of 22

behaviors, including children's school attendance and achievement, regular health-care visits and coverage, and employment and human capital development.

Completing any of these behaviors could earn participating families rewards ranging from \$20 to \$600.

In cooperation with another nonprofit, Seedco, MDRC conducted a randomized evaluation of the program that followed 4,800 participants, most of whom were women, studying outcomes at 18 and 42 months.⁴² Participating families lived in one of six low-income communities and had incomes of less than 130 percent of the federal poverty line. The data on outcomes came from administrative records and surveys. The evaluators found that almost all of the families (98 percent) received rewards; the average family received about \$3,000 per year. Those who earned the most tended to be more educated, employed full time, and married. Participants saw a range of positive economic effects, including reduced material hardship and improved household savings. However, the program had only modest or no effects on most measures of children's education and family health, and it had mixed effects on employment.

The 18-month follow-up found some evidence that the program affected marriage. Nineteen percent of participants reported that they were married and living with a spouse, compared with 15.6 percent of control group members, a statistically significant difference. There were no significant differences in the share of each group who were living with a partner: 10.6 percent of participants and 9.3 percent of control group members. The program's effects on marriage could have been produced by either the cash rewards

themselves or by participants engaging in the encouraged behaviors, or both. However, the evaluators also suggest that marriage could reflect strategic economic behavior in which initially single treatment group members married to bring their partner into the program and so increase the possibility of earning rewards by having two enrolled adults in the household. However, whatever the reason, by the 42-month follow-up survey, there were no significant differences in the share of participants and control group members who were married (18.7 percent vs. 17.8 percent), and, in fact, treatment group members were somewhat more likely to have divorced (15.4 percent vs. 13.1 percent).

Wisconsin Child Support Demonstration (WCSD)

Wisconsin's Child Support Demonstration Evaluation reports the results of an experimental child support policy that increased the income of low-income unmarried mothers.⁴³ The analysis is based on survey and administrative data collected from a sample of 709 women in treatment and control groups who entered the study between September 1997 and July 1998 and were followed up in the spring and summer of 2004. In general terms, the study participants were quite disadvantaged; two-thirds of mothers were black and only half had completed high school.

The program had some positive effects. Those in the treatment group were more likely to establish paternity and more likely to receive child support. Further, as expected, the program increased women's total support; treatment group members received 20 percent more than control group members in year one and 12 percent more in year three. Six and a half years after the program began, however, there was

no significant difference between the two groups in whether they were married to or cohabiting with the fathers of the children who were the focus of the study. However, treatment group mothers were significantly less likely to be cohabiting with men who were not the fathers of the children. Perhaps increased economic resources don't reduce the likelihood that women will marry, but do reduce the need to enter into cohabiting relationships with men who are not the biological fathers of their children.

Welfare Reform Interventions

Many evaluations conducted in the 1990s sought to understand how modifications to state public assistance policies might affect marriage. These interventions were conducted in the context of large-scale changes to federal public assistance policy, in particular the 1996 passage of the Personal Responsibility and Work Opportunity Reconciliation Act, which replaced the Aid to Families with Dependent Children program with Temporary Assistance for Needy Families. The new program had a very different structure. It put limits on how long people could receive public assistance and required participants to engage in employment-related activities. It also provided enhanced earnings disregards, meaning that program participants could remain eligible while earning more money.

In the years before the Personal Responsibility and Work Opportunity Reconciliation Act was passed, a number of states secured federal waivers to conduct experimental pilot studies of the effects of modifying existing Aid to Families with Dependent Children rules. In general, these welfare reform experiments tested the effects of one or more of the following interventions: (1) mandatory employment,

(2) enhanced earnings disregard, and (3) time limits on receiving welfare. One study pooled the data from 14 such experimentally evaluated interventions.⁴⁴ Since all these modifications were designed to reduce dependency on public benefits and increase employment, the authors wanted to see whether the interventions could either increase women's marriage (if greater affluence encourages marriage) or decrease women's marriage (if greater affluence allows for more independence). However, they found little evidence of any effects on marriage, positive or negative, whether they were examining the main sample, demographic subgroups, or specific combinations of policy changes.

Another review, rather than pooling the data, examined each experiment individually.⁴⁵ While it found that one, the Minnesota Family Investment Program, increased marriage for long-term recipients of public assistance, and another, Delaware's ABC program, produced small increases, none of the other 12 programs affected marriage. In sum, there is no strong evidence that these alterations of public assistance policy, which could have increased work and income, had consistent positive effects on women's marriage. That said, there is also no evidence that any of them reduced women's likelihood of marriage, as the independence hypothesis might predict.

Conclusions

Over the past 40 years, social scientists have undertaken a massive effort to understand the social and economic forces behind family change in the United States. Scholars have used large representative surveys of men and women, followed respondents over many decades, and carefully modeled the relationships between their economic

resources and their transitions to marriage and cohabitation. A fairly consistent story has emerged: Men's economic resources are positively associated with marriage, but perhaps not with cohabitation; women's economic resources, perhaps contrary to expectations, are also associated positively with marriage and perhaps negatively with cohabitation.

This social science research estimates the relationship between economic resources and union status based on the economic resources that men and women come to possess through social and economic processes. In this review, in contrast, I've drawn on a much smaller but potentially very useful set of studies that randomly assign some people to a control group that is simply followed over time and others to a treatment group that receives an intervention designed to increase the amount and kind of their economic resources.

This experimental method is very powerful. It allows us to exclude the possibility that unobserved personal and social processes that determine different people's economic resources also determine their union status. These experiments are also useful because they focus on the disadvantaged subgroups of men and women who are of primary concern to both scholars and policy makers. Finally, these experiments also test concrete and actionable policy ideas. They tell us whether to expect significant effects on family formation from economic interventions that are often already under way or might realistically be scaled up.

Effects on Men's and Women's Marriage

What have these experiments shown us about how economic factors affect union status? For men, the evidence is not very strong. One study, JOBSTART, essentially had no

economic effects and so, unsurprisingly, no effects on being married. Two others, JobsCorps and Center for Employment Opportunities, had positive economic effects, but neither affected marriage. A fourth study, the National Guard Youth Challenge, had positive economic effects, but it assessed only the combined outcome of being married or living with a partner, rather than marriage by itself, finding no effects.

The exception is Career Academies. In line with expectations from observational studies, Career Academies produced large economic effects, and, when they were surveyed nine years later, participants were significantly more likely to be married than were control group members. Why was this intervention so much more successful than others? Perhaps the simplest explanation is the size of the economic effects. But certain features of the program's implementation and evaluation may also have contributed. First, the Career Academies follow-up period was fairly long—nine years, as opposed to two to four years for JobsCorps, JOBSTART, Center for Employment Opportunities, and National Guard Youth Challenge. Though most economic effects appear quickly (unless delayed by increased school enrollment), marriage effects may take longer, and this may be particularly true for the relatively young participants in job training and placement programs like Career Academies and JobsCorps. Second, the Career Academies study population was disadvantaged, but it appears to have been somewhat better off than those involved in JobsCorps or JOBSTART. For example, while 24 percent of Career Academies respondents lived in households that received social welfare, nearly all participants in those other two programs received public benefits.

For women, the experimental results are more nuanced. First, there is very little evidence for the hypothesized independence effect, through which greater economic resources would reduce women's likelihood of marriage. For the most part, experiments that successfully raised women's economic standing show no evidence of such reductions in marriage. For example, the Employment Retention and Advancement programs in Chicago and Riverside, as well as JobsCorps (when considering women without children), all had significant economic effects but did not depress marriage. Reviews of welfare reform experiments similarly found no effects.

But, second, several interventions offer evidence that increasing women's economic resources can increase marriage. JobsCorps provides only indirect evidence of this. But several other studies that evaluated either multifaceted programs to alleviate poverty or early childhood interventions have found clear and significant positive effects. Perhaps the best example is New Hope. This intervention, designed to support poor working adults through an earnings supplement, subsidized child care and health insurance, and temporary work when needed, produced large economic effects and, after five years, significantly raised the share of those who were married among those who had never previously been married when the program began. Though it ran for a limited time and thus didn't promise long-term support, it provided help on an as-needed basis, with participants able to use a variety of supports when necessary. In New Hope, we see some evidence for the argument that managing economic risk may affect marriage. A second multifaceted antipoverty program, Opportunity NYC, also had some positive effects on marriage, though it took a different form from New

Hope—participants were paid when they engaged in program-sanctioned activities. Opportunity NYC successfully increased employment and appeared to increase marriage as well, but only at the 18-month follow-up and not at 42 months. While these effects may have been the result of increased financial stability due to program payments, it is also possible that they were simply a strategic response to program rules that made spouses eligible for the conditional cash transfers.

Several interventions offer evidence that increasing women's economic resources can increase marriage.

I've also discussed how several interventions in young children's lives affected marriage in adulthood. Of the four interventions that focused on young children—Abecedarian, the Perry Preschool Project, Moving to Opportunity, and Project STAR—three had significant positive effects on marriage decades after intervention.

Third, for women, cohabitation has some interesting dynamics. Unlike for marriage, there is little reason to think that increasing economic resources would increase cohabitation. Rather, we would expect a decline in cohabitation, either because of an independence effect or because those who are better off would opt for marriage over cohabitation. In general, evaluations that assess cohabitation separately from marriage find no effects. However, the Employment Retention and Advancement site in Chicago found evidence of higher rates of cohabitation among the treatment group women than among the control group

women. New Hope, on the other hand, found lower rates (but though the difference was large at 31 percent of treatment vs. 23 percent of controls, it was not statistically significant). Wisconsin's Child Support Demonstration Evaluation offers perhaps the most nuanced finding, showing that although marriage and cohabitation with the father of the children in the study was unaffected, treatment group women, who had higher incomes as a result of the intervention, were less likely to cohabit with other men. This finding, at least, supports a version of the independence hypothesis.

The Limits of Experimental Design

Though experimentally based empirical work offers some evidence that increasing men's and women's economic resources can increase marriage, the findings are by no means overwhelming. Many interventions have had economic effects but no detectable marriage effects. In some cases, this lack of marriage effects can perhaps be attributed to relatively short follow-up periods or the young age of participants at follow-up, but several other factors could be at play.

First, a key virtue of the experimental studies I've reviewed is that they test either existing programs or interventions that have potential to be implemented widely. But it's also possible that the improvements in short-run earnings or employment that these interventions produce may simply not be large enough to affect marriage, and if we could produce even greater economic change, then marriage effects might follow. But it's also possible that the real economic impediment to marriage is not current economic standing but expectations about the future, and that even when their income temporarily rises, people may still feel uncertain about their economic future. Alternatively, if access to economic

resources earlier in life establishes a certain understanding of marriage and family, then these cognitive models might well persist despite improved economic standing later in life.

Second, these experimental interventions are highly focused on individuals. While manipulating men's and women's own economic resources may affect marriage, this approach ignores the larger social context in which union formation occurs. For instance, if neighborhood poverty exerts an independent negative effect on union formation, then simply altering one person's income while leaving other aspects of the context in which they live unchanged may not accomplish much. The effects of the Moving to Opportunity program on the treated children's marriage in later life suggest that such contextual effects may be quite important. More broadly, the changes in family structure over the past several decades have occurred in a context of widening economic inequality, which may affect marriage. Individual-focused interventions do little (and intend to do little) to address such broad distributional issues.⁴⁶

Third, we may be focusing too much on the role that economic factors play in family change. In interviews, low-income and working-class men and women discuss the importance of economic factors for marriage, but they also give great weight to non-economic factors, including trust, relationship quality, and gender equality.⁴⁷ These relational factors often play a bigger role than economic factors do in people's decisions about forming relationships.⁴⁸

Future Research

Given these limitations, can we learn more from this line of inquiry? I would suggest

that future work examining experimental evaluations pursue three avenues.

First, among the most dramatic findings we've seen are Perry Preschool's and Project STAR's significant effects on marriage, decades after the intervention. Though Abecedarian, a contemporary early-childhood experiment, shows no such effects for a pooled sample of men and women, other early interventions may have marriage effects in adulthood. Several observational studies of Head Start's effects on adult outcomes find no strong association with teen parenthood or years spent in marriage, but an ongoing experimental evaluation of Head Start—the Head Start Impact Study—promises to provide clearer insight into the program's effects later in life if control and treatment group children are followed into adulthood.⁴⁹ Finally, an evaluation of another educational intervention—the Harlem Children's Zone's Promise Academy, which is targeted at middle and high school students, rather than preschoolers—finds large effects on teen pregnancy, though marriage has not yet been assessed as an outcome.⁵⁰

Second, though I report here only on experimental evaluations that assessed marriage as an outcome, I identified many more experimentally evaluated economic interventions that did not report marriage outcomes. It might be possible to examine marriage as an outcome of those interventions, either using archived data or, perhaps, interviewing participants again. Though new interviews would be expensive and difficult to execute, this approach would ensure adequate follow-up time for any marriage effects to appear.

Recent work on family formation in the United States suggests that beyond income,

work, and education, young couples also feel that assets are an important prerequisite for marriage.⁵¹ In interviews, poor and working-class couples express a desire to have some savings, own a car, and even purchase a home before marrying.⁵² This observation parallels a movement in social policy and social services to help poor families build savings.⁵³ Perhaps the most prominent such effort is the American Dream Demonstration, a randomized evaluation of a matched savings program in Tulsa, Oklahoma. Though this intervention produced only a modest increase in savings, it would be useful to see whether this increase translated into any measurable change in asset ownership and therefore in marriage.⁵⁴

Lastly, current and future evaluations of economic interventions should consider

examining marriage and cohabitation as outcomes, for both men and women. Though many post-intervention outcomes can be assessed using administrative data, information on union status will generally have to be obtained through follow-up surveys. However, such surveys are frequently used, and collecting and reporting union status outcomes would be valuable. Among current and planned interventions, it would be good to learn whether we see effects on marriage from Family Rewards 2.0, a revised version of the conditional cash transfer model used in Opportunity NYC that is currently being tested in the Bronx and Memphis; the GED Bridge to Health and Business program; and the ASAP program (designed to speed community college completion in New York).

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